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**A STUDY OF THE INCORPORATION OF
GREEN INFRASTRUCTURE INTO
PLANNING COURSES IN UK HIGHER
EDUCATION**

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Submitted in partial fulfilment of
the requirement for the degree
of Doctor of Philosophy

Kingston University

November 2011

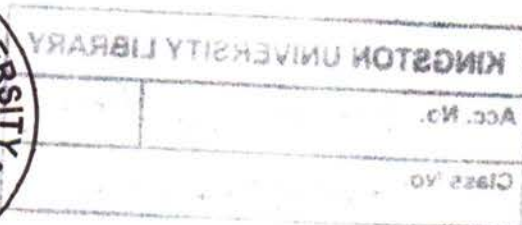


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Abstract

This thesis describes how Green Infrastructure has been incorporated into the syllabi of vocational-professional courses within the planning occupation. Within this it examines the competing authorities that seek to determine how this is accomplished, what form this new knowledge takes and how it should be taught.

Key drivers for change in syllabi are widely recognised: 'the market', universities as centres for innovation, professional associations as owners of a discrete body of knowledge, government as paymaster, and students as 'clients' or 'customers'. However, the relationship between these, as well as the relative power to determine authority, are undeveloped points within this understanding.

Various methods were adopted, but a central part of the work is case studies on four universities teaching planning courses. These are identified as Quality University, Balance University, Process University and Industry University. Despite each having a different philosophy of approach towards the nature and provision of higher education, each is found to provide teaching forms within the same paradigm. However, students within each university interpret their learning needs separately, and there is a fissure in the understanding of teaching and learning between student and university.

The research suggests that individuals are key drivers for change to syllabi, and proposes a number of ideal types: the Green Champion, the Green Infrastructure Champion, the Green Maverick, the Green Infrastructure Maverick, the Green Technocrat, the Green Antagonist, and the Green Ignorant. Champions are found to be a key driver in establishing new forms of knowledge and incorporating these into syllabi. Intellectual deviancy by individuals, identified as Mavericks, also introduces new forms of knowledge generally and Green Infrastructure specifically. However, quite where Green Infrastructure originates from is less clear. Professions also have a key role, despite their claims to be removed from the process of creating courses, but

there is far less evidence on corporate university structures or the government generating change. One useful social theory to contextualise these ideas is Anthony Giddens' view of High Modernity, in which all knowledge is contingent and there is no determinant authority; rather, competing and transient authorities vie for control.

Abbreviations:

ARB:	Architects Registration Board
CABE:	Commission for Architecture and the Built Environment
CIOB:	Chartered Institute of Building
ESD:	Education for Sustainable Development
GI:	Green Infrastructure
HEFCE:	Higher Education Funding Council for England
RIBA:	Royal Institute of British Architects
RICS:	Royal Institution of Chartered Surveyors
RTPI:	Royal Town Planning Institute
LI:	Landscape Institute

Acknowledgements

This PhD project would be impossible without the help of my interviewees, who gave up their valuable time to provide me data. In particular, special thanks are owed to those individual academic interviewees from my case studies who facilitated my visits, organised their colleagues and gave me access to information I wouldn't be able to obtain otherwise. Thank you ever so much!

I owe a great deal to my Mum, Dad and Rafał for their constant support through this process, right from the beginning.

Most of all I thank Tim for the inspiration, motivation and support.

Thank you.

Monika Wiśniewska

Chapter 1: Introduction

1.0. Purpose and boundaries of the study

This thesis examines the concept of Green Infrastructure, and the extent of its implementation within university curricula as the first stage of professional qualification in England. Whilst concepts like sustainability and Green Infrastructure have no national boundaries, the study needs to be placed in one contained planning system; in this case the English planning system. The focus of this thesis is placed upon the concept of Green Infrastructure within this occupational context and how it is subsequently given form in educational establishments offering vocational degree courses. All of this takes place in the Late Modern environment. Therefore, the thesis considers four interrelated issues:

1. the concept of Green Infrastructure;
2. a professional perspective – (planning);
3. a Higher Education context – (vocational university degree courses);
4. and Late Modernity.

Green Infrastructure is described as an interconnected network of green spaces at different spatial levels within various papers including Ahern (1995), Turner (1995), Benedict and McMahon (2002), Sandström (2002), Walmsley (2006), Mason *et al*, (2007), Mell (2009) and Wickham *et al* (2010). Whilst Green Infrastructure is a discrete subject, it also takes a particular form within specific educational and vocational contexts. Thus, the thesis examines it within both higher education and the professions to examine how this knowledge is commodified into a particular occupational specialism. Whilst it is a regeneration tool, it is one that is given a name, parameters and a purpose by, and for, higher education, the professions and the wider social, political and ‘business’ environment. This indicates the background of the study as Late Modernity where no single determinant authority exists but competing

authorities might obtain domination within a time and context (Giddens, 1991; Beck, 1992; Beck *et al*, 1994; Mulinari and Sandell, 2009).

This thesis concentrates upon higher education as the first stage of professional qualification; within the planning professions a university degree certifies for entry into the professional association without further qualifying examination. Hence, how Green Infrastructure is generated in higher education institutions is how it takes form within professional bodies of knowledge although which drives which will be discussed later. The particular occupational groups under study are those involved within the planning regime, specifically planners, surveyors, architects and landscape architects. “A grounding in a property-relation professional discipline is an essential foundation for a successful role (...) in physical regeneration. This can be drawn and take in a broad range of backgrounds (...) such as surveying, planning and architecture” (English Partnerships, undated). Professionals, in carrying out their occupation over a career, may accumulate and implement knowledge and understanding of the concept of Green Infrastructure from many sources. For this reason, this research needs to draw a clear distinction between knowledge that students accumulate during their degree course, the academic component of professional qualification, and, separately, their professional training, which is their practice experience. This will distinguish these elements from the wider impact of their lifelong professional development.

By studying Green Infrastructure within higher education the thesis will examine the philosophy that education plays a central role in implementing sustainable development (Ravetz, 2000). Whilst it is generally accepted that training personnel is a necessity for any knowledge-based process, the particular can offer insight into the general. According to ECTP (2005) this training is best achieved by bringing such ‘high-level knowledge’ to the closest point of its application. That is why this study concentrates on higher education curricula as this earliest stage of professional development.

1.1. Hypothesis

The core of this PhD study is an examination of Green Infrastructure as a body of knowledge, which has been given a very particular occupational form by the planning profession and is explicitly 'practical' in nature. Whilst the university is the locus for this, the process is driven by a number of competing authorities: commercial providers of the service, professional associations, clients, students, the government, universities. The PhD examines these actors and explains their contribution to and domination over GI. This includes issues such as why it comes into existence, how it is defined, what it does, how it is sold in the marketplace, what students ought to know, and how they should learn it. The hypothesis has been constructed to drive this examination and give the study a framework by following the dominant view that knowledge is given particular forms in order to create fictional services that are then sold to clients.

The hypothesis to be tested and mould the following discussion is that:

The introduction of Green Infrastructure into university courses in the Late Modern environment is driven by employers.

The thesis concentrates on the form that Green Infrastructure takes within universities. However, in the Late Modern environment all knowledge is contingent and subject to domination by competing stakeholders. By examining the roles of these various authorities within this educational process, including, *inter alia*, universities, lecturers, professional associations, firms, clients, students and wider constructs such as 'the market', the thesis will determine whether employers are the determining authority in developing GI, giving it its particular form, introducing it into curricula and teaching it in appropriate learning environments.

The hypothesis has been formulated to use as a vehicle to examine who originates GI, what, how and why is the form that it is given and how it is then taken up and taught

by universities. It does not solely concentrate on curricula since knowledge can be taught outside of this level of formality. For the same reason, the research examines where and how GI is found within individual lecturers' teaching as well as corporate university and professional association syllabi statements. Therefore, the overarching research question of this study concerns how new knowledge comes into being and how it is commodified into particular professional fields. The practical outcomes of this concerns how the Green Infrastructure concept comes into existence in a specific form in a particular occupation (planning), how it is embedded into professional education and what are the best teaching and learning methods to carry this out.

1.2. Objectives

To prove the hypothesis mentioned above, the following set of objectives needs to be fulfilled:

1. Establish that Green Infrastructure exists/is emerging within spatial planning as a discrete body of knowledge in respect to employers, academics, professional bodies, students, universities.
2. Examine the late modern environment and the emerging authorities within professional education generally, and with regard to introducing new knowledge such as Green Infrastructure specifically.
3. Establish the relative authoritative dominance of the authorities within objective 2 concerning the concepts of Green Infrastructure analysed in objective 1: how does Late Modernity determine the form of Green Infrastructure?
4. From this, construct a theoretical framework modelling the fields of professional education and Green Infrastructure in order to provide skeletal models for analysing the empirical data and explaining how Green Infrastructure is given form within universities.

5. Using the models developed in objective 4, identify the drivers that introduce Green Infrastructure into lectures, syllabi and courses, examine how this is achieved, and prove or disprove the hypothesis with regard to employers being the dominant authority; and
6. Identify and analyse the preferable teaching and learning methods for Green Infrastructure.

1.3. Origination of the Study

The selection of where to start any research project is fraught with methodological dangers since this point might be established on the basis of a preconceived bias rather than an empirically founded principle. And yet, the work must start somewhere.

The boundaries to this work involve education, including both bureaucratic and learning systems, the occupational use (and control) of that knowledge, and a focus upon one particular area of knowledge, which itself has come into existence and been packaged and identified as Green Infrastructure. Chapter 2 discusses how the work was actually started, and that was with education, and specifically with lecturers. These then pointed to ‘the market’, specifically professions, as originators, designers, owners and users of knowledge. It is with these occupational groups, the professional associations that the thesis will both start and end.

In terms of both its philosophy of approach and the actual empirical work, the thesis focuses not just upon Green Infrastructure as an abstract concept, but upon the form it takes within university departments and courses aimed directly at vocational education, specifically professionally accredited courses. So the key issue is not only the concept of Green Infrastructure itself but how it fits into a professional-higher education context, all of which is embedded in Late Modernity. Pragmatically, it would widen the work beyond the practical confines of a PhD thesis to examine every

single course at every university for traces of GI. More importantly, the thesis proposes, and will establish, that the form that GI takes within the interaction of professional associations, universities, government, 'the market' and all those individuals working within each of those, is the central research problem. Analysis of embeddedness within courses simply must recognise that the discussion concerns a particular occupational form of GI within specific education systems geared to that occupation.

For these reasons, the thesis does not examine departments dealing with geography, the environment or similar non-vocational aspects of GI. Equally, it is then adopting a philosophy that GI takes a particular professional form, and it is thus 'the professions' (to be detailed later) that do, indeed must, drive GI and the form it takes on courses established to train prospective members of particular professions. Hence, the discussion of education, both generally and for sustainable development, is an important part of the work, but the defining characteristic remains the particular *professional* form of that education.

1.4. The Nature of the Educational Process

The thesis discusses the nature of education and the various approaches to its study. Whilst there is what might be described as a general literature concerning the principle of education, different groups lay claim to particular aspects. For example, the separation of higher education from primary and secondary educational provision is widely accepted, but the place of further and vocational education is rather more problematic. This thesis argues that the process of education is the pre-eminent characteristic, and it examines education through various stakeholders. This adds further complexity, since it is argued that built environment (planning) education is unique in that it provides direct entry to its constituent professions, rather than act as a gateway to a profession's own direct examination process. Similarly, inasmuch as Green Infrastructure might be regarded as a part of the wider sustainable development

field, it has been argued that education for sustainable development is also uniquely different, to the extent that it is now known as ESD.

This creates a number of conflicting literatures and perspectives, which are mutually exclusive. This thesis approaches these contradictions from the *a priori* acceptance that there exist universities providing professionally accredited courses. It is the contested nature of Green Infrastructure within these departments that forms the focus of the research. Within professional education, sustainable development might, indeed, be separated, but it is the professional and departmental infrastructures that dominate. Therefore, in order to analyse the methods by which new knowledge is created, given form, packaged into course structures, taught, learnt and assessed, it is with these issues that the literature review concentrates. From this literature review (see Chapter 3) the foundation for the methodology and the chosen methods is selected.

1.5. Planning Profession

The study examines not so much a vocation, but a pre-existing profession. This requires an examination of the sociology of professions in order to develop a conceptual framework for explaining the *a priori* occupational forms created and served by the education under review. Again, the key question concerns how a profession creates an occupational identity through knowledge, specifically within new subjects – such as Green Infrastructure.

1.6. Green Infrastructure

The specific issue of Green Infrastructure is selected as a means of understanding the creation and development of new knowledge. Green Infrastructure is an important discipline in itself, and undoubtedly falls within the field of sustainable development. This supposes that it is part of the wider ESD literature. However, at the same time, it

is taking a particular occupational (professional) form and it is this form that dominates the study of GI. In essence, the study is not concerned with the establishment of GI, but its embedding within a particular vocational form.

1.7. Overview of the thesis

This thesis concerns the processes by which Green Infrastructure is integrated within university curricula and where the power to introduce it, and then achieve this integration, lies. This specific focus then allows generalisation on how new knowledge comes about, how it takes particular forms, and the mechanisms by which these ‘parcels’ of knowledge are introduced into university curricula. The research questions which accompany this research revolve around the following:

- Where and why does the knowledge referred to as Green Infrastructure originate?
- Who decides how and in what form this knowledge should be taught?
- How/why/where is this given particular identity in university curricula? Who leads this process?
- And with which occupational group(s)?

The research centres on the issues of the interaction between these factors, on where knowledge originates and what drives change in the forms of knowledge. Giddens (1991) proposes that in late modernity all knowledge is conditional and determined by competing authorities. The concept is characterised by the lack of a single, determinant, authority. Rather, authorities might dominate for a time, but will be continuously attacked by alternatives. For Green Infrastructure, this thesis identifies the competitors for the role of determining authority as: universities, the government, professional associations, business practice and students.

The locus for the research is the university since it is here that Green Infrastructure is taught, appears on syllabi, is given form on courses subject to professional validation

and in learning systems used by academics who have developed research and practical experience of GI. The thesis will argue that the question of the origins of knowledge is also answered here since GI is created, developed, given form and taught by individual lecturers, derived from the findings of their research or developed from their experiences in practice. Hence, the thesis offers evidence-based conclusions on where particular forms of knowledge originate, and in what processes. It refers to both individual intellectual deviancy and organised championship and leadership as alternative drivers in the process.

Universities can be perceived as places to 'enlighten fresh young minds', provide them with knowledge and skills, and to 'educate' students (NCIHE, 1997; Universities UK, 2007). But universities are also expected to produce graduates who are ready and capable to work in the professional environment, which places business as a driving authority (upon them) (CIHE, 2008; CIHE, 2009). Government is also increasingly requiring UK universities to provide 'practical' education and manufacture 'employable' graduates (BIS, 2009). Government, as paymaster, requires universities to provide directly useful (vocational) education in order to improve UK business efficiency in the global market (BIS, 2009). At the same time universities are market-driven entities selling certain products (courses, modules) to clients (students), and such that they are dominated by their clients' preferences (see for example Dill, 2007). All of these authorities co-modify knowledge. Universities sell packages of knowledge and invent modules and courses in order to attract clients who are willing to pay for the education. Professional associations claim ownership over parts of knowledge, and validate universities to offer professional courses in these subjects. These associations are also part of the wider business community, in which practice sees education as an incubator of graduates and a creator of a future workforce. To some extent, students reciprocate since they, too, want a job. Green Infrastructure, as a concept, is the creation of the contest between all of these authorities.

Universities are also organisations that exist in a socio-political environment. This drives them into becoming more bureaucratised and 'managerialised', where setting targets and benchmarks is crucial (Hacker and Garst, 2000). This impinges upon how knowledge is disseminated. It also draws attention to fissures within the concept of the 'university', not least between lecturers and 'managers'. Many ordinary lecturers feel that managerialism degrades the value of their institutions, their work and the form of knowledge (see for example Gill, 2008a; Gill, 2008b). Legitimacy (Suchman, 1995) provides a useful model to explain reasons and results of the move towards formalising provision in this way. Again, the introduction and establishment of GI reflects the tension between lecturers and managers. The case studies (chapters 6-9) show how GI is introduced in some departments, and not others, and how lecturer 'champions', and managerialised central departments, have each been used by universities to develop the concept – with varying results.

Whilst Giddens views the loss of a determining authority to be replaced by competing dominant authorities, the respondents in the thesis presented a loss of all authority. Professional practitioners examined for this PhD were unable to define GI in a coherent way. They reject the idea that they created it as a jurisdiction or as a fictional service. They describe it as an externalised concept, which they are taking up. Whilst this suggests it is client-led, government is seen as the greater driver. This strongly suggests that Green Infrastructure is not created directly by 'the Market' at all, and that neither employers nor their clients actually initiate new knowledge within occupational contexts. Rather they are looking towards students to arrive as prospective employees fully cognisant of GI as a skill that can be sold to clients. On the other hand, student respondents appear too disorganised and lack the knowledge to be able to interpret these requirements when they leave school at 18. The literature (see for example Redding, 2005) and the university case studies presented in this thesis do present a shift in student requirements, but students are not organised to create authority. The students' role has been changing from merely a recipient of knowledge towards a client demanding particular services. Thus students, as customers, demand courses and assess value for money between competing

providers. Certainly respondents in this thesis describe contradictory university identities: educational institutions; factories of ready-made graduates; and, market-driven providers of profit-generating services.

Universities are under pressure to produce 'relevant' degree courses, incorporating employability skills and teaching skills necessary to jobs. Within vocational built environment degrees operating in traditional professional occupational jurisdictions, this is almost second nature. However, where new ideas are coming into being the inclusion of such knowledge, its form, educational content and pedagogic delivery is more contentious. Universities are thus pressured into negotiating with business and professional associations in what subjects are taught. The obvious method of achieving this is to engage with employers and professional bodies and provide courses 'approved' by them.

This emphasis provides professions with the role of determining authority, not least since they exist exactly because they have created a stable exclusivity, an occupational jurisdiction and expertise recognised by clients and the State (Abbott, 1988). Creating and controlling knowledge is central to this. Profession requires the establishment of difference, of distance between professional and client (see, for example, Johnson, 1972; Larson 1977). Professions create a fictional commodity to distinguish between their 'professional' service and the more ordinary service of others. This 'fiction' involves a dialogue of competence, of the evaluation of this competence and the complex and esoteric nature of the service being created (see, for example, Larson 1977). Creating this difference brings about occupational dominance, which is recognised and endorsed by other parties, including clients and the State. Green Infrastructure follows this pattern. It is not inherently different from other greenway approaches, but it serves to generate separation and fictionalises a commodity that practitioners can sell. In this paradigm, professions can be seen as the drivers of GI. However, it also creates unique problems since GI is claimed by a number of professions. It also promotes interdisciplinary working and breaks down precisely those barriers that create jurisdiction for professions. All planning in the UK

faces a major hurdle in accepting this theoretical line of reasoning, because there is an obvious lack of occupational authority. Not only is there no State recognition of a single planning profession, but there are four professional associations laying claim to its occupational expertise. These are the Royal Town Planning Institute (RTPI), Royal Institution of Chartered Surveyors (RICS), Royal Institute of British Architects (RIBA) and Landscape Institute (LI) and all are recognised as equally authoritative since they are all chartered. These compete for members, for work for their members and lay claim to ownership of the body of knowledge that is 'Green Infrastructure' (GI). This produces four different drivers for creating GI. Conceptually, each approaches the concept from a different direction. Physically, GI is taught in different departments, by different people, in different forms and within different degree programs. However, even this is incomplete since these four do not have determining authority, even within their own disciplines. The most obvious is RIBA, where a statutory quango, the Architects Registration Board (ARB), has the duty of protecting the occupational title of architect. This includes defining appropriate educational standards and provides it with authority, or some levels of it, to determine appropriate knowledge. Conflict between the two authorities is continuous (see for example Building Design, 2002; Hyett, 2003). GI also provides an additional qualification to occupational authority since it requires inter-disciplinary information shards to make up its whole. These disparate small packets might create a whole when together as GI, but they must cross traditional occupational boundaries to get there. These boundaries are precisely what professions are. Yet further confusion is added to this situation by the respondents interviewed as representatives of the professional associations. All describe 'non-prescriptive' professional associations, (by) which they reject any suggestion that professions impose educational requirements upon universities. The courses under investigation are vocational courses accredited by professional associations and provide an entry to the profession. This provides an additional feature to the study of GI since it breaks with the traditional 'technical' content of planning courses. Professions can afford to appear non-prescriptive when all parties agree on the educational requirements of a prospective professional through longstanding traditional inter-organisational cooperation. However, can

professions remain so removed when their occupational jurisdiction is under direct threat from GI, and from GI appearing in other professions? Further, do they have the authority to act, or is Giddens correct, that they are merely one of a number of competing authorities in this?

The government also plays an important role in shaping knowledge into a form called Green Infrastructure. For example PPS (Planning Policy Statement) 12 indicates GI as an element of the core strategy produced by a local authority. However, PPS are prepared after wide public consultations (DCLG, undated). This reinforces the Giddens idea that in the Late Modern environment the government is not in an absolutist position and does not dictate. Rather, it acts as honest broker to negotiate agreement between competing authorities.

Universities provide the forum in which all of this plays out, and form the core of the study. However, business (specifically, employing practices) and the professional associations are also investigated to create data. The research uncovers evasion as a driving force of identity; each authority rejects any description whereby they are seen to wield determining power. Each constructs an identity in which they avoid authority. No group claims to be an authority, which proved an interesting finding. However, this reflects an identity built upon what Giddens describes as the aftershock of loss, of grieving for the death of the authority. Universities see employers as the authority to decide what/where/how Green Infrastructure should be taught since they need graduates with a certain set of skills. Yet practitioners are found by this research to be disinterested in higher education and unclear about GI. They seek 'employable' graduates with basic skills. Employers look to their professions to determine competence, yet professional associations describe a passive role, monitoring the quality of courses. The battlefield for these authorities is on the ground of the universities, and the research cycle was concluded with the in-depth examination of four English universities providing insight into professionally accredited courses in the planning field. Universities are the locus as well as a competing authority. Additionally, and whilst all authorities might incorporate some fracturing of

individuals away from the whole, they are the most broken in many ways. The research uncovered difference between ‘universities’ and departments, between departments and lecturers, between department and department, between lecturers and other lecturers, between lecturers and students, between student and student, and even between students within the same department. All of this might be expected from the literature on loose coupling (Weick, 1976) where it is anticipated that not all parts of an organisation necessarily work to the same goals, but GI offers insights into this process. In particular, academic deviancy and the role of individual champions, endorsed by the university, each offer explanations on how knowledge comes into existence and takes particular forms.

The thesis commenced with universities since GI knowledge is manifestly evident here in course syllabi. However, academics in a pilot study pointed to professions as the dominating authority in the process of the creation of new knowledge: they create consciously the construct of Green Infrastructure to serve their needs in creating a fictional commodity. However, both professionals and professions denied this and a dialogue in which all the engaged parties deny authority was uncovered. This proved to be only a part of the GI dynamic. The examination of engaged actors - universities, professional associations, professionals in practice, students, government - proved that in Late Modernity whilst professions are in a place of authority, this is only for a limited period of time and in a certain context. Then, the role of determinant authority is passed onto another actor, who will drive GI for a time, only to be attacked by others and replaced. Authorities fight over dominance constantly, succeed, are replaced and succeed again. The evolution of the Green Infrastructure concept and its form at a given period of time is a result of this competition for authority.

In addition to the general dialogue within the thesis summarised here, specific findings are also presented (in section 1.8, below) and which will provide the foundation for further work to be developed from them.

1.8. Contribution

The main contribution to knowledge which this thesis provides is proving the importance of green leaders and the irrelevance of formal corporate structures in introducing Green Infrastructure to curricula. This thesis emphasises the importance of individual academics in leading changes in curricula. These staff are 'business-orientated', both philosophically and pedagogically. They understand what the market needs and design courses to embed this perspective. Teaching and learning also tend to reflect the expectations of the wider profession, although the lack of resources is also a driver.

The second important factor is the role of intellectual deviancy in academics which leads to the creation of, and significant changes to, curricula. Deviancy allows academics to engage in incremental change by 'reinterpreting' syllabi to allow them to teach new subjects or introduce different teaching methods. Academics are only loosely coupled to formalised or managerialised processes that are seen as too bureaucratic to respond to those needs perceived as necessary by the deviant academics. Especially important are individuals named here as Green Champions, enthusiastic about greening courses but also who have real power within departments to make permanent change. Interestingly, the two green champions uncovered reveal different origins. Whilst one champion began life as a deviant and was ultimately rewarded with authority by proving herself correct, the second was employed directly into a role of managerial authority to generate change. This suggests that deviancy is also managerially sanctioned by universities. However, informality among colleagues in the university environment encourages academic deviancy and is the main driver. Again, their professional background is a key issue. They explain this loose coupling within a dialogue where the individual lecturer-cum-professional better understands a graduate's needs within the planning occupation than a centralised bureaucracy.

The thesis argues that vocational education differs from 'pure' education because of different academic traditions. A big role is played by professionals since this gives

students an insight in the future professional life. However, professionals tend to focus on specific technical aspects of a discipline, and not on providing 'rounded' education like educators from more 'traditional' backgrounds. Analysis of the backgrounds of respondent lecturers found that they are mostly members of professions, many with considerable experience of working in planning prior to becoming lecturers. This makes them 'practical' and implicitly biased towards the needs of their profession and business, an issue that many of the interviewees made particular and positive reference to.

For similar reasons, perhaps, theories of Education for Sustainable Development (ESD) do not apply to the concept of Green Infrastructure. There is nothing special or unique in the way it is taught and learnt. The evidence shows that GI is just another technical issue and it should be taught exactly like other technical elements of the curriculum. Projects and site visits are recommended teaching methods but they also are recommended for other subjects. Lecturers prefer to give lectures either because they are used to doing this, (they find it easy and not requiring major contribution from themselves), or because they have no resources to provide other teaching methods. Unfortunately, university managers did not want to take part in this research implying that they were not interested in Learning and Teaching methods. This made it difficult to test lecturers' claims that they taught through lectures primarily because of a shortage of resources.

Professional associations perceive themselves as non-prescriptive monitors of course standards. However, they can be intrusive since they have the means to lead changes in courses and even request setting up new ones. They also have the power to punish departments who do not incorporate these changes. Strong universities tend to have greater resistance to these intrusions. However, weaker universities rely on the 'branding' provided by professions to their courses. It might also be that these are of lower quality and require greater involvement by professional associations in their roles as protector of standards. Professional associations can rely on a dialogue of non-prescription where there is unanimity of agreement concerning the content of

courses, established over decades of cooperation. In newly developing knowledge areas, such as Green Infrastructure, this solidarity might not exist. The thesis provides evidence of tools of authority, including withdrawal of validation, syllabi requirements and even demands for new courses, which point to a dominance that professional associations' own dialogue underplays.

The issue of obtaining a representative sample of large, diverse and complex organisations such as universities and professional associations is discussed in chapter 2. However, a key further finding was the high level of agreement across respondents. Whilst the literature discusses socialisation and the generation of a gestalt within organisational and occupational environments, there was little evidence of any disagreement on the issues examined in the thesis within its vocational, planning, setting. Professions and professionals exhibit gestalt. Where fissures in collective did occur, this was across professional boundaries. Within universities lecturers might disagree across departments, but this conformed to their professional training and worldview. For example, quantity surveyors might disagree with their Green Champion at BU, but their views conform with quantity surveyors at PU. The idea of loose coupling represents this decoupling of lecturers from their university goals in the greater good of their professional gestalt. This in turn reinforces the discussion of the non-intrusive role of associations. Lecturers understand what their profession needs and are already providing this. There is, therefore, no need for a professional association to enforce such requirements.

Commercialisation of education is an important dialogue. However, the thesis finds students as too disorganised and vocational education as too esoteric for them to be seen as 'clients' driving syllabi or teaching systems. Whilst there is a wider discussion and impact of 'value for money' of courses, this is not related to course content. However, it might place further authority with professional associations where their 'branding' of courses as validated, is a strategic competitive advantage for the university. This applies to 'new' universities primarily. Similarly, government policies driving 'employability' are an important ideological issue, but lecturers are

already engaging with this, and it is not a dominating authoritative driver for vocational education – or, at least, not a new one.

Late Modernity provides a good theoretical framework to explain phenomena described in this thesis. Giddens (1991) says that there is no determinant authority and competing authorities struggle over temporary control and keep swapping roles. This is happening in the higher education environment where clients, professional associations, universities and employers fight to determine the ‘right’ things.

1.9. Conclusions

Chapter 3 will critically expand upon the literature concerning the creation of knowledge and its transformation into an educational service within a particular occupational discipline. The chapter will expand upon the interaction between the idea of ‘pure’ knowledge (ESD) and its practical counterpart (GI, within the planning profession). Prior to this, methodology and methods will be examined. As the literature establishes method, in this case the method also helps to establish the literature. Whilst the widest possible sources of literature on education, higher education, ESD, GI and the professions is acknowledged, within the boundaries of a PhD thesis critical selection is necessary. Chapter 2 examines the philosophical nature of this research problem. Chapter 4 provides the analysis of preliminary examination of academics and professionals in practice and their perception of the GI concept and drivers in educational processes. The nature of the relationship between professional bodies and universities as evidenced by representatives of the professional associations RIBA, RTPI, LI and RICS is established in Chapter 5. Chapters 6,7,8,9 cover case-studies chosen in order to achieve the research objectives. Chapter 10 discusses outcomes, conclusions of the work and recommendations for further work in the area.

Chapter 2: Methodology

2.0 Introduction

This chapter outlines and describes those research methods that are the most appropriate to achieve the research objectives explained in Chapter 1. In particular, it discusses the philosophical fundamentals of the chosen approach and the reasoning for choosing a specific research methodology. The chapter comprises four parts:

- (a) a discussion of theoretical perspectives of research design and methodology in order to illustrate the foundations upon which the work is built – the research philosophy;
- (b) a statement of the adopted methodology and methods;
- (c) a defence as to why this approach is the most appropriate; and
- (d) reference to the ethical and practical considerations taken into account as required by Kingston University to ensure compliance with research protocols.

A general discussion of the philosophy of research is provided within section 2.1. This establishes the sound basis upon which the research problem is approached. An overview of how section 2.1, general philosophy, produces particular methods is provided as an introduction to section 2.2. Given the importance of how data is created and collected, the discussion of what methods have been adopted, why and how, are treated together in specific sections related to each particular method.

The ethical concerns of the research have been separately audited during the research process, but a summary is provided.

2.1 Research philosophy

Research is based upon a specific perception on the world and the way of understanding its phenomena. This it derives from a research philosophy. Given that, a philosophy is an essential part of a research project as it provides “a set of linked

assumptions about the world which is shared by a community of scientists investigating the world” (Deshpande, 1983, p.101). Therefore, it is necessary to establish this perspective as a foundation for the research, but also to ensure that it is empirically tested and proven appropriate to the nature of the study.

Kuhn (1962, p. viii) considers research paradigms, which he defines as “universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners”. According to Kuhn a paradigm is a theoretical perspective accepted by the community of scientists, founded on the previous findings in the area, directing research through the specification of the subject of the study, the formulation of hypotheses to explain the phenomenon observed and identification the most appropriate empirical research techniques (Corbetta, 2003, p.10). The paradigm is a general concept including a group of researchers having a common education and an agreement on ‘exemplars’ of high quality research or thinking (Kuhn, 1977). It can be a set of beliefs, values and assumptions that a community of researchers has in common regarding the nature and conduct of research (Johnson and Onwuegbuzie, 2004, p.24).

Two major philosophical approaches to research are called positivism and interpretivism (Saunders et al., 2003). Creswell (1994) refers to the two main research approaches as 'quantitative' and 'qualitative'. Choosing which paradigm to use is influenced primarily by the nature of the topic under investigation. The difference between them can be understood by examination of four stages of empirical research: planning, data collection, data analysis and scope of findings. There is also the third acknowledged research paradigm called a mixed methods research. The purpose of this third philosophy is not to undermine the previous two methods but to gather together their strengths and also to minimise the weakness of the quantitative and qualitative method.

The quantitative method derives from a positivist philosophy. The radical quantitative believers think that the social observations should be treated with the same approach

as scientific research. Social phenomena are and should be considered as entities from which the researcher is detached. That makes it possible to create context-free generalisations and describe causes in a reliable and valid way (Johnson and Onwuegbuzie, 2004, p.14).

Quantitative research is based on the design based on the hypothesis formulated from theory. The researcher ought to preserve a neutral attitude towards the examined subject. Usually data are collected from representative sample and the target is to gather data in the same standard format for all cases. In this type of research analysis of the data focuses on variables which are examined with mathematical and statistical tools. The goal of the research is to produce generalisations – outcomes that apply on a conceptual level, in the wider field than studied.

The qualitative method is based on constructivism. According to qualitative researchers time- and context-free generalisations are not possible and not desirable to achieve because the researcher and the subject of the study is inextricably with the subject of study thus the subjective knower is the only source of the reality (Johnson and Onwuegbuzie, 2004, p.14). Qualitative research is based on open work plan, in which specific procedures emerge and change during the research. In this kind of research each case is treated in a different manner depending on relevance. Data analysis focuses on the whole subject and the aim is to understand the subject rather than relationships among variables. The goal of this research is orientated on the specific studied subjects rather than generalisations. A qualitative method “produces findings not arrived at by statistical procedures or other means of quantification” (Ritchie and Lewis, 2003, p. 3). Research strategies include action research, grounded theory, case study research and ethnography (Bryman and Bell, 2003). Examples of methods of data collection are observation and participant observation, interviews and questionnaires, documents and texts analyses, and the researcher’s impressions and reactions (Myers, 1997).

Less known than the other two strategies is the mixed methods approach (Creswell, 2003). This approach involves collecting and analysis 'qualitative' and 'quantitative' form of data. Mixed methods research should use a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution (Johnson and Onwuegbuzie, 2004, p.16). Triangulation of data sources provides less biased outcomes. Also one method embedded into another can provide insight into different levels of analysis (ibidem). In the mixed methods research are used both predetermined and emerging methods, open and closed- ended questions, multiple forms of data drawing on all possibilities as well as statistical and text analysis (Creswell, 2003).

Finally, the relationship between theoretical modelling and the particular study also consists of a continuum between deductive and inductive philosophies. A deductive approach adopts an a priori model and examines the evidence in regard of the expectations of the model. The inductive philosophy proposes that empirical evidence should create a model, and that prior presumptions should not be allowed to bias the work. Generally, the inductive method is seen as a scientific approach that provides general principles about a subject. Where smaller data sets of qualitative data are used, deductive methods are more appropriate. Deductive methods require a hypothesis to provide a specific focus on the theory for testing (see for example Saunders et al, 2003 on this).

The adoption of a research philosophy is thus central to the value of the work. As will now be discussed, a qualitative approach was selected since it reflects the social nature of the problem. For similar reasons, a mixture of deductive and inductive philosophy is adopted. Chapter 1 presents a hypothesis and Chapter 3 will critically review the available literature in order to provide a theoretical foundation thus drawing upon a deductive perspective. However, the following sections will establish the importance of the evidence in leading to conclusions, rather than a verbatim application of a model. Bulmer's (1984) concerns on focussing upon obtaining the evidence are taken as the primary philosophical approach here, rather than adopting a

pedantic application of deductive-inductive paradigms. Thus, the research methods are central to providing quality data, rather than a narrow interpretation of a particular philosophy. The reliance upon the unbiased evidence uncovered by the research to develop a conclusion is central. However, just as weak induction recognises the limits to generalisations that can be made from limited evidence, the requirements of deductive reasoning to place the evidence within a context is also accepted.

The first step was to do a literature review so the research is embedded in the wider theory. Then the empirical research was conducted to examine how things work in practice. Thus it can be concluded that it was deductive research. However, judging on the basis of the fact some observations were made and from that the theory of 'green ideal types' was derived, the conclusion is it is inductive piece of research. Altogether it is clear that both inductive and deductive methods overlap during the whole course of the study. This research involved both processes in a circular sort of way where theory leads to observations which in turn lead to identification of new patterns which lead to the development of new theories.

2.2 Applying a Research Paradigm

A comparison of the research methods definitely suggests that the qualitative approach is the most appropriate philosophy for the proposed PhD study. This research project examines the introduction of the concept of Green Infrastructure together with learning and teaching issues, and, additionally, drivers of educational processes. It is about the interpretations and actions made by social actors, and the research must draw out the actors upon why they did what they did, as much as what they did in itself.

A case-study approach was used to portray selected university environments. Various data such as interviews, focus groups and participation research, obtained during visits to a university was used to create a full picture of an organisation and processes

within. Case study is an excellent social research method for such work (see for example Yin, 1992). Each university is different so it was necessary to use a tool that allows for an in-depth examination of the object together with preserving its identity. It was crucial to put obtained information in the context of the described organisation. Additionally, the researcher took part in a variety of activities, including lectures, visiting libraries and cafeterias, using facilities and walking around campuses; so a lot of information was given non-formally and non-verbally.

Another problem was the description of the Green Infrastructure concept. Because there is no legal notion of GI as such, a definition is a matter of an interpretation by engaged people. Indeed, this discourse is a central part of the thesis. That is why it is not possible to use quantitative methods; participants have their own notion of GI which may differ significantly. Semi-structured interviews give an interviewee a chance for their own interpretation without imposing anything on them. Given that a particular version of the GI conception depends on a School, research interests of individuals and affects teaching and learning in the department, it was extremely important to accept each interpretation as equally valid. This would not be possible without using qualitative methods. Also it means that outcomes of this part of research were not quantifiable because any type of benchmark would be completely subjective and it would not possible to use the same method to every aspect of a case study e.g. comparing teaching environments.

Within this paradigm, it is also important to consider the contextual nature of the study. Qualitative research as discussed in section 2.1 refutes the idea that research is without context. The question, then, is how to reflect this within the research philosophy. Neither universities nor the concept of Green Infrastructure exist in a vacuum. Both are socially constructed by particular environments. The question, then, is how should these environments be viewed and how necessary is the selection of a social and political philosophy to steer this work? As will be discussed below, the selection of discrete subjects for study allows the researcher to examine these without determining a particular position. The advantage of this is that it allows the

research to focus upon the findings without inflicting upon it the bias of a preconceived interpretation. The danger is that it fails to understand the interaction of events and makes assumptions about causal relationships within a very narrow and incomplete set of parameters. To balance these, the following methods will focus upon the creation of new evidence and interpreting it within its own context. Chapter 10 will examine the context of these findings within a particular philosophical framework in order to draw out relationships between phenomena.

2.3 Methodology

The research strategy for the thesis is to establish an appropriate methodology for the collection of data in a framework that minimises bias. The following section provides both theoretical and practical arguments for the selection of the methods appropriate to the subject matter.

The prevalent methodology within the education field seems to be action study (see for example Huckle, 1999; Dawe et al., 2005; Reason, 2007) and this was initially considered as the approach to this study. However, two problems are apparent with this method, one pragmatic and the other theoretical. Action study requires course managers and lecturers to undertake the research since they are the only ones able to actually carry out changes in syllabi, learning outcomes, teaching methods and the like. However, this means that they are both actors and researchers. Research requires independence and a degree of removal that cannot happen here. There is also a tacit ethical issue, too. This is not an abstract problem, but affects real life students, their learning, the value of their ultimate qualification and their potential employment and salary prospects. The second issue is that the approach offers no comparison and no valid method of determining causality. Without a control group there is no comparison. There is no way of excluding external influences, such as the media, in determining changes and their causes. And there is no bias-free method of selecting subjects, since the course is open to anyone from any background who has achieved a

given educational standard measured by A-levels and their equivalents. What is needed is an independent approach that does not presume any preconceptions, and one that produces research as an end in itself rather than as a tool to directly improve the researcher's own course. For these reasons, the thesis breaks with traditional approaches to educational research.

2.3.1. Organisation of the research project

The research is loosely divided into four sections. The first section concerns an introductory perspective on the subject of research and the question of where to begin the work. Whilst the literature review discusses both Green Infrastructure and education, these are separated by different academic disciplines and do not overlap. Hence, education was determined as a starting point, simply by interviewing a random selection of academics in order to test whether this was indeed the starting point. The second section is related to professionals in practice in the built environment discipline (employers), the third one to their professional bodies, and the last one to the academic staff in selected departments and their students (as a means of validating those outcomes gained through examining the academic staff). Of course those four parts are related to and will overlap with each other.

Faced with two distinct phenomena, 'Green Infrastructure' and 'Education', the issue of where to start was central. It is imperative that findings are evidence-based, but where to start with obtaining the evidence? Since the central focus was on how education creates knowledge, then the first stage was determined to be with educationalists, and those who were involved with GI. However, this was not to presume this as the starting point. Rather, it was to discover if this was true.

2.3.1.1. First stage of the research

The group under the scrutiny of the first phase of the research consisted of selected representatives of academics in the built environment area. Selection was in

surveying, architecture, planning and landscape architecture, with experience determined on teaching of setting up courses. Because this project relates to the higher education processes, it was necessary to obtain an initial opinion about educational practices concerning the creation of curricula, introduction of new subjects in curricula and drivers for them. Thus, semi-structured interviews were carried out with five (see Appendix 1) academics in order to establish what drives change in higher education. This confirmed that 'the market' leads the demand for Green Infrastructure skills, with some interesting nuances, and so led to the setting up of interviews with practitioners to establish how they view GI and the skills/education required.

2.3.1.2. Second stage of the research

A series of semi-structured interviews was conducted with professionals concerning the Green Infrastructure issue how it came about, to establish those skills that graduates need to deliver green settlements and discuss how they might be learnt. As discussed earlier, there is no legally binding definition of Green Infrastructure, so the concept is interpreted in a number of ways depending on the engaged party. Thus it was decided that presenting the GI concept as a set of skills necessary in professional practice, would prove most effective as a way of describing the notion. However, the interviewed professional themselves did not see 'the market' as a key driver in the same way the academics had done, but considered their professional bodies as determining occupational training, markets and services.

The interview was divided into two parts. The first one was dedicated to the concept of Green Infrastructure: how the concept is perceived by practitioners, what are the modes of implementation, what skills are associated with GI and what is the importance of the concept in professional practice. The second part was about the role of higher education in delivering environmentally-literate graduates and the need for them. In order to brief potential interviewees, the lines of enquiry for the interview were prepared and sent over prior to the meeting. That allowed interviewees to

prepare themselves before the meeting and consider their responses. The total number of interviews conducted with professionals is fourteen (see Appendix 1). The particular occupational groups under study were again those involved within the planning regime, specifically planners, surveyors, architects and landscape architects. These interviews were transcribed in order to analyse them. Transcriptions were not sent back to interviewees as this practice add little to the accuracy of the transcript and there is a danger of the loss of data when an interviewee chooses to remove valuable material (Hagen at al, 2009). The outcome of this piece of research provided a basis for the development of a set of skills which are important, if not necessary, to utilise the concept of Green Infrastructure in professional practice. However, the characteristic traits produced were so broad that constructing a single definitive checklist proved impossible. This in itself provides insight into practitioners' interpretations on Green Infrastructure and the skills required in the market, but also pointed to professional bodies as drivers since they controlled how this knowledge was utilised within their occupations.

2.3.1.3. Third stage of the research

In this study the concept of Green Infrastructure is considered within the urban planning occupation. The focus of this thesis is on professionally accredited courses. Thus it was be necessary to talk to those dedicated professional associations that dominate the occupation about their role and interaction with higher education institutions, focusing on implementing GI into university curricula. It was appropriate to study those groups claiming jurisdictional control over this expert division of labour (Abbott, 1988). These are: Royal Town Planning Institute (RTPI), Royal Institute of British Architects (RIBA), Royal Institution of Chartered Surveyors (RICS) and Landscape Institute (LI). The Architects Registration Board (ARB) is also examined as the only statutory authority involved with these professional groups, in addition to collaborative bodies such as the Construction Industry Council (CIC). The methodology for this part of research was similar to the previous part. There was constructed a semi-structured interview for Education Officers of RICS, RTPI, RIBA

and LI. Five interviews were carried out (LI providing two separate interviews). After establishing a contact, potential interviewees were provided with a briefing for the interview and the lines of enquiry. The interviews were written up in order to provide a better quality of analysis. This concluded the three-part analysis seeking to answer the questions concerning the drivers for change in curricula, and especially for the greening of the curricula, external to universities.

In order to enrich and contextualize this empirical work, an archival examination of the requirements for future planners, surveyors, architects and landscape architects in qualifying as professionals is also included. This was achieved by examining the educational policies, proposals and discussions of the relevant professional associations. It is equally useful to study the benchmarks approved by the Quality Assurance Agency, the body reviewing standards and quality of the higher education across the UK. It gives an overview of these standards when compared with the requirements of the relevant professional associations.

2.3.1.4. Fourth stage of the research

The major, last, part of the PhD research deals with educational processes concerning GI at selected universities. The analysis of validated courses was initially carried out through collating available courses likely to cover 'environmental' issues. This was followed by a study of prospectuses and course documents in order to choose the most relevant. This establishes how universities and individual courses explain and give meaning to the individual interpretation of broad sustainability issues and Green Infrastructure. It gives the overview of the universities and courses they run, which meet the criteria set up by the professional bodies. This is the basis for choosing the most 'environmentally' engaged courses and people involved in teaching. That provides basis for the selection of data collection sources.

To minimise bias in the selection of the case studies, 'independent' opinions was sought concerning issues about embedding the concept of Green Infrastructure into

accredited courses. This information was initially meant to be provided by an Education Officer from an appropriate professional body. However these officers have limited involvement in course development, and provided only an overview from the perspective of the associations. Other independent sources included audits carried out by the Quality Assurance Agency and other bodies. These allowed for a representative selection, sampled on the basis of geography (dispersal within England, both large city and smaller town), type of university (especially 'old' or 'new'), operation of validated courses and similar characteristics. Universities were then contacted with a view to obtaining access to written materials, staff, students, administrators and facilities. In practice, no two case studies can offer exactly similar research experiences and the quality of data will be different in each. This is accounted for in the interpretation process and is reflected in the arguments derived from the data that follow. However, the universities represent all of the key variables – old and new university, north, south, east and west England, town and city – and four out of twenty planning-related providers provides a 20% sample coverage. As discussed earlier, whilst the work does generate a hypothesis and a general theory, it focuses upon being evidence-led through the specific, hence 'representativeness' is not a fundamental problem – further work can broaden the proof of the general theory, and the specific studies remain independently important whether the theory stands or falls.

The reason for investigating academic staff is to find out whether they implement the concept of Green Infrastructure into curricula, how they do it and why they do it. This includes examining how they understand, interpret and implement the idea. If they implement the concept in their courses, it is necessary to get to know in what way they deliver it and why they do it. This lecturers' point of view needs to be compared with their students' perspective. It shows whether there is consistency between teachers' and students' opinions on implementation the concept of Green Infrastructure in the higher education curricula. At the same time the students' opinion on the most effective teaching and learning methods is necessary to contrast and co-determine the most appropriate one for implementing GI into curricula. The

thesis presents an interesting examination of how lecturers and, separately, students construct an interpretation of teaching and learning within this discipline. This is also analysed with reference to pedagogic practice research.

Interviews with academics provided a starting point for collecting empirical data for this thesis. Having obtained the information also from professionals in the field and professional associations, it was necessary to talk to academic teachers and their students to find out their point of view on the greening of the curricula. There were chosen four universities to obtain data from. The reasoning for choosing these was that they run professionally accredited courses in the built environment area, they are engaged with 'green issues', they are a mixture of old and new universities and they are geographically dispersed. As well as in previous phases of research a semi – structured interview was constructed and was sent out together with a briefing and lines of enquiry. To test the reliability of the answers provided by academics, a questionnaire was also created for their students. Unfortunately it proved impossible to circulate a questionnaire among representative sample of students due to the lack of agreement/commitment of their tutors, absence of students and their disinterest in this research. Smaller groups of respondents were selected to run focus groups instead. Additionally every time a specific university was visited it was extremely important take part (aside from conducting interviews and focus groups) in lectures, students projects etc to see what learning and teaching methods are most effective in practice. Also to round out data for each university their facilities, ambiance etc were sampled, by wandering around, talking to students, looking around their libraries and similar.

This stage of research brings another piece of information on the process of greening the curricula. It also indicates the most effective learning and teaching methods especially in the context of GI. However, by 'effective' the research is not engaged with a scientific project of how the human brain might learn about GI, nor is it ergonomically testing lecture theatres for optimal lighting, heating or seating arrangements. Rather, it is socially constructing a concept of effectiveness through

comparative analysis of teachers and students within courses, across departments and between universities in order to establish what are regarded as the most appropriate teaching and learning methods for GI. To this end, the work is built upon the wider literature within the education for sustainable development discipline and will examine whether GI requires different, supplemental or similar methods to other subjects taught within planning syllabi.

The research was carried out anonymously in order to encourage participation. However, in order to allow better contextualisation and weighting of respondents views, some explanation of who the respondents are, is required. Therefore, the following classification system was developed.

Certain academic staff bear responsibility for the creation of courses and the management of schools and departments. The term *managerial academic* is used to portray this. These are typically described as head of department/ school, director of studies, director of undergraduate studies, director of postgraduate studies. Normally, they carry out very little teaching.

It is generally accepted that academics engage with some degree of management – of students, of subject matter, of managing courses. The title *senior lecturer* reflects this, and is applied to those respondents who might be described as course leaders, field leaders, level tutors, discipline leaders, subject leaders and the like.

All academics seem to be involved in managing, but the term *lecturer* is used for those who essentially teach, and manage only their own workloads, such as module leaders. Sometimes, a module leader in one university bore more responsibility (in terms of student numbers) than a course director in another, but this classification seeks to embrace functions and scope, and not effort. Often, lecturers are part-time staff.

The final classification is *administrator*, and reflects the fact that some senior academics have moved away from teaching and into managerial roles. Universities organise this in different ways, but some had particular clusters (usually referred to as a board or committee) responsible for greening issues. This might form part of a wider remit, such as quality, or not. Whilst these senior personnel are not pure administrators, they are not involved in teaching, but in the process of managing the teaching of others.

These terms are inserted into the text and into quotes where it has been felt useful to provide additional security of anonymity to the respondent and to the case study. Where this is done, the term is italicised to show that this is an insertion by the researcher. Hence, where a respondent might state 'my Head of School...' this will be written up as 'my *managerial academic*...'

Similarly, the case studies themselves are provided with fictitious names to create a further level of anonymity. This naming system requires the lack of any direct quotation to prevent text searches of Internet material and the creation of a fictitious referencing system to maintain the generated naming system. The lack of direct quotation is undoubtedly a loss, especially given the richness of some of the quotable material, but one that anonymity requires. The inability of a reader to validate the references that are disguised under this approach is also an issue. There is clearly a need to generate an anchor point to prove that the research is genuine, but also the need to protect anonymity in the relatively small population of planning courses within UK universities. In practice it is very unlikely that a perfect camouflage can be built up, but this format allows for plausible deniability and assures anonymity even if knowledgeable parties might infer the true identity of the case studies. As a final mechanism to create additional anonymity for all individual respondents within each case study, all respondents have been rendered genderless. This was only done once the analysis had been carried out and it was clear that gender was not a variable that played any role in the study. The masculine form was selected for consistency. On balance, and given the nature of the case studies, it was felt that this provides a

required additional level of protection to the promise of anonymity without any loss to the integrity of the data and the findings derived from it.

In total the following were carried out within the four case studies: fifty-eight separate interviews, a sampling of focus groups and a variety of participative, observational and ancillary case study work. All are transcribed or written up, and have been analysed in order to produce this thesis.

2.3.2. Methods of data collection

2.3.2.1. Interview

One of the primary methods of qualitative data collection is the interview. An interview has been defined as any person-to-person interaction between two or more people with the aim of eliciting information for a very specific purpose (Kumar, 1999). The interview method is particularly well suited to collecting subjective data. It enables more complex and less biased information regarding attitudes to be elicited than is possible by questionnaire. The main advantages of the face-to-face interviews are direct interaction between the respondent and the interviewer, the identity of the respondent is known, the quality of information is deeper and the researcher has control over the process.

The interview method was chosen because it allows the researcher to achieve a better, more insightful view on the interviewee's opinion. Also there is a higher rate of responses comparing to for example a survey. Also the technique of 'snowball' was used. The technique of snowball means that a researcher seeks potential interviewees by asking (in this case) practitioners and academics about similar profile courses and engaged peers.

The interview technique is appropriate under the following circumstances:

- When the interviewees are homogenous and share the same characteristics.
- When the interview includes the most crucial issues.
- When interpersonal contact is necessary to explain and describe questions.
- When the interviewees should explain why and how things had happened.
- When is necessary deeper context of the case study (Naoum, 1998).

Semi-structured interviews are used. This type of interview is more formal than the unstructured interview. Although this form also uses 'open' and 'close – ended' questions, they are not placed in any specific order and there is no schedule. Semi – structured interviews start by asking 'warming-up' questions to develop a relationship with a respondent. Then interview continues by asking general questions to obtain an overview followed by more detailed questions to explore interesting for the researcher subject.

According to Merton and Kendal (1946) there are four distinguishing characteristics of this type of interview, all of which correspond to their use in this work:

1. The respondents are known to have been involved in a particular studied experience.
2. It refers to the situations that have been analysed prior to the interview.
3. It proceeds on the basis of an interview guide specifying topics related to the research hypotheses.
4. It is focused on the respondents' experiences regarding the situations under study.

The semi-structured interview was chosen precisely because it provides a balance between allowing interviewees to completely determine the flow of the interview and forcing the participant into reacting to the presumptions behind structured pre-determined questions. There are many problems associated with the interview method. These include encouraging interviewees to elaborate their replies whilst not leading them to give particular answers. Also the way the interviewer is dressed, the

interviewer's age and social background can also influence the responses given (Cohen et al.,2007). This is important in the case of this PhD as English is not the mother tongue of the interviewer. Interviews also tend to produce a small sample and it could be difficult to analyse the information representatively. However, recognising these problems allows the researcher to minimise their impact and conduct them appropriately.

This method was used in every stage of the research. The outcome of the interviews is to answer the research questions: has the concept of Green Infrastructure been taught at the course, what are drivers for educational processes, how has it been taught and what are the most effective teaching methods. Using this method allowed for an in-depth examination of GI issues whilst talking to academics, students, professionals and Education Officer of professional associations.

2.3.2.2. Participation

Another method of the data collection is participation research. It involves descriptive data collection as the basis for interpretation. The participant joins a group for some fixed period of time observing behaviour, listening to conversations, asking questions.

Burns (2000) states that this is a relevant method for the evaluation of school life, hospital life, prison life etc. since these contexts are entirely cultural entities. One of the problems related to participant observation is gaining access to a social environment relevant to the studied issue.

Gans (1968) distinguished three roles of participant observers. They are:

- total participant when the researcher is completely involved in the situation
- researcher-participant when the researcher is only partially involved and can function fully as a researcher in the course of situation
- total researcher when the researcher is not involved in the situation.

For the purpose of this PhD the most suitable seems the role of a researcher-participant. Whilst this means that the analysis of the gathered data will be subjective, careful weighing of the inferences will ensure that objectivity is maintained.

Four university case studies were selected for this research project. Each of them was visited. Usually a visit lasted for at least two days and was repeated after some time to gather additional observation and spot possible changes. Only one university was visited only once due to such agreement with the university staff. A 'visit' to the university consisted not only of interviews with academics and running focus groups for students but also of taking part in various academic activities, observing students, facilities and the general environment of the university. So during a stay at the university, the researcher had a look at classrooms, the content of libraries, 'environment-friendly' facilities, displays, exhibitions etc, took in the general ambience and generally took notice of the educational atmosphere. This is utilised to provide a context to the overall case-study.

In order to determine the most effective methods of learning and teaching it was necessary to take part in different learning and teaching methods e.g. presentations, lectures, debates etc. That piece of research was possible to complete due to the courtesy of the interviewees. The researcher took part in various form of teaching practice. In this case an optimal situation is when a researcher is not taking part in the activity but is only watching it and making notes although the participants are aware of his/her presence. That prevents them from interfering with the subject of examination, which is in this case a student. The presence of a third party during for example a school examination may intimidate the participants and in consequence change their behaviour, which leads to improper conclusions. However, this was resolved by 'giving time' to students to get used to the presence of the researcher. When students were feeling comfortable it was possible to ask questions and make comments in order to understand better students' opinions, whilst ensuring that students did not feel intimidated.

Observing lecturers and students in their 'natural environment' allows the researcher to view the interaction between students, and lecturers and between students during various forms of learning activities. In considering the best learning and teaching methods a very important factor is the human factor, it means people taking part in a particular activity as personal assets of a particular person can change completely the students' attitude towards subject or his/her teaching methods. So, it is important to distinguish whether students are describing the best teaching methods rather than a particular lecturer and their attitude towards him or her.

2.3.2.3. Focus group

A focus group can be defined as a group interview "centred on a specific topic ('focus') and facilitated and co-ordinated by a moderator or facilitator - which seeks to generate primarily qualitative data, by capitalising on the interaction that occurs within the group setting" (Sim and Snell, 1996). A focus group was considered as useful research tool and a number were carried out, producing useful evidence. The strength of this method lies in the ability to gather large amount of data on a very specific topic (Morgan, 1997). However, it did prove difficult to judge a representative sample of individuals and the results were sometimes skewed by a minority of vocal and unrepresentative participants. It was hard for the researcher to a priori establish balanced groups because participants were not known, especially in the case of students. Therefore in practice it was difficult to include for age, gender, student level, particular interests, or even disciplines. Conversations became sidetracked far too easily and participants did not focus on the requested question. This is an accepted problem (for example Sussman et al, 1991) with this methodology where data is being collected from non-expert participants and where the group cannot be carefully pre-selected. However, this method was necessary because it was the only one that participating universities would support since it was the quickest and the easiest way to gather a number of participants together at the same time. So in

order to conduct this piece of research at all, it was decided to carry out focus groups with students.

Focus groups ideally need a second person to record the discussion on a whiteboard or similar to facilitate the discussion and provide a record to back up the recording. This is also a challenge for a PhD researcher, who must by the very nature of the degree process work alone. It was resolved by taking notes at the time of the focus group together with recording the meeting. Afterwards recordings were transcribed and analysed.

2.3.2.4. Questionnaire

A questionnaire is a written list of questions, the answers to which are recorded by respondents (Kumar, 1999). Questions and answers are standardised. Respondents read and interpret the questions by themselves. Thus questions must be clear and understandable. Also the layout of the questionnaire must make questions easy to follow. The questionnaire must contain simple questions. There are a number of problems related to this type of research. Usually there is a low response rate – respondents do not return questionnaires. There is no opportunity to explain and clarify questions so each respondent can interpret them in different way. The responses to a question may be influenced by another question where the respondent reads all the questions before answering. The answers cannot be deepened by the additional data collected in different research method (ibidem).

A questionnaire was originally devised for students respondents. However, it was decided that this method was not appropriate. A blind test proved that there was a great chance that questions would not be understood properly (even though questions were as simple as possible). Additionally, there was very little response rate as students were not willing to spend their time doing an anonymous questionnaire. Distribution also required the cooperation of teachers in making time available for

classes to complete the form. This proved difficult to arrange. Only in one case study was the method used, and data was not utilised because it was not representative.

2.4. Ethical Issues

The research was conducted according to the Kingston University research protocols complying to “Ethics: Guidance and Procedures for Undertaking Research Involving Human Subjects” (2007). A proposal for the research was accepted by the Director of Studies and the Ethics Committee and subsequent stages were approved by the appropriate committees through the University’s procedures. Whilst the nature of the work involved human subjects, there was no risk of social, psychological or physical discomfort.

Participation in the research was voluntary and self-selected. Whilst the original selection criteria were developed by the researcher, ultimately respondents chose to accept an invitation to participate. There were no benefits to participation. All participants were provided with an overview of the work, and an explanation of their part within it and what their particular aspect of the work was seeking to achieve. Confidentiality was guaranteed and recording only took place by prior agreement. If an interviewee did not agree to be recorded, only written notes were taken during the interview.

2.5. Falsification

In any sort of research, there is always the problem of error and falsification by respondents. Problems of omission, of misremembering, of inaccuracy are a problem with interviewing human participants. However, the case study approach does allow cross-checking across participants, secondary materials and through the researcher’s own observations.

Deliberate deceit is a different problem. Whenever research involves dealing with organised bodies and their formalised literature that is created to establish a particular position, there always exists the problems examined by legitimacy theory. Hopwood (1984) argues that organisations are *expected* to behave in particular patterns and will adopt processes that *appear*, to the outside world, to conform to these norms. This falsification is a deliberate and consistent policy to deceive. Since universities are expected to engage with environmental concerns generally, perhaps GI in particular, they will establish the form and function that will prove that they are engaging with this. Departments might exist to disseminate 'green education'. Brochures and web pages might describe new learning and teaching modes. Whilst these might exist, equally they might simply serve the function of legitimising the existence of the institution by proving its environmental credentials. Given the resources an organisation commits to this deception, how realistic is it to expect a lone researcher to see through it?

Since the focus of the research is upon individuals, specific courses and particular departments, one way of doing so is by examining the extent to which individual departments or courses are decoupled from any central position. Weick (1976) describes any organisation as a loosely coupled system, illustrating his proposal by reference to a football match, in which every player, the coaches, the spectators and the referee each have their own individual set of goals. Within the organisation, managers, employees, owners and clients have individual interests that are only *loosely coupled* to those of the company with "some evidence of its physical or logical separateness" Weick (1976, p.3). Therefore, since, to adapt Weick's example, the research is concerned with the players, their coaches, the referee, and not the corporate team or the league it plays in, then loose coupling offers a potential to explain the specific on its own merits.

The concept of loosely coupled systems offers a particular interest here, since environmentalism generally is traditionally perceived as a deviant belief or approach, and Weick believes that the concept is particularly found in such situations. And

whilst 'the green' might now be incorporated into the mainstream, loose coupling offers a means by which corporate positioning can be removed from what actually happens in the classroom.

These theories will be discussed in the context of the study in Chapter 10. However, by studying the specific, the research reduces the problem of deliberate corporate prevarication. Also, by utilising both archival data and secondary literature, and contrasting this with a range of primary data from multiple interviews through to personal observation, then a series of cross checks will draw attention to any inconsistency.

2.6. Conclusions

This research follows an interpretivist paradigm, rejecting existing theories for danger of bias. It is inductive research, placing emphasis upon the observation of empirical reality to explain data and then generate a theory.

This research project is divided into four parts. These include: preliminary examination of academic staff, then interviews with professionals in practice, which is followed by examination of representatives of professional associations, and finally the investigation of four university case studies. These four parts examine the main stakeholders taking part in educational processes. Each part of the study ends with a conclusion which leads to the next part of the research.

The major research method chosen for this research was an interview. Values of using this research method were discussed earlier.

This chapter is followed by the literature review chapter. Despite relying upon the inductive approach, it utilises the deductive argument on the importance of theory, using existing literature to provide a sound basis of context.

Chapter 3: Literature Review

3.0. Introduction

This chapter contains a critical literature review that builds up a theoretical framework for this thesis. Giddens (1991) describes the current phase of development of modern institutions as Late Modernity. Late (High) Modernity offers a conceptual explanation of the nature of occupational knowledge, of the competing parties who lay claim to expertise and how learning takes particular social forms. Giddens (1991) discusses the nature of authority of these parties in the late modern environment. He argues that there is no determinant authority, but rather there exists a dilemma between authority and uncertainty. This encourages and creates many claimants to authority and the right to determine what should be done. Whereas in past years, one all-powerful expert group would determine occupational skills and thus what should and should not be taught, now there are competing interests trying to impose themselves and their view on how knowledge should be given form. These are referred to as drivers in this thesis, and include government, universities, academics, professional associations and businesses. All will now be examined, individually and within the Late Modern environment, in terms of their involvement with Green Infrastructure.

This Literature Review Chapter summarises the current state of knowledge of Green Infrastructure (GI), covering definition, origins of the concept as well as practical implementation. Particular attention is paid to the GI concept within (planning) professional bodies, and their competences requirements. This is necessary in order to understand how GI is enacted within higher education, the subject of this work. GI is located within a particular context, placing emphasis upon the form it takes within occupations, and how it is actually carried out. This involves professions, markets and clients. As will be shown, GI is a constructed concept and falls within the scope of a number of occupational groups. At the same time it is an idea that has evolved,

from and within, a number of ideas about 'the environment'. The result is a contradictory and incomplete meaning to the term, which makes examining how it is then introduced into university courses problematic. The nature of this educational form and ultimately how it is put into syllabi is also part of a wider context, that of the place of education in the Late Modern environment. Universities exist to serve the needs of business, to educate and enlighten, to create new knowledge, and to make money. All those sometimes contradictory functions and actions are a result of drivers of Late Modernity. All of these themes will be developed within this chapter.

It is tempting to describe GI with a definition, including a series of characteristics or traits. These might then be converted into a list of skills from which teaching curricula can be developed and professional associations validate qualified proponents. However, as was discussed in Chapter 2, the qualitative nature of this research recognises the importance of context. GI is not a value-neutral 'entity' but is a social construct, developed by a number of different parties. The following constructs can be used to flesh out the meaning of GI and place it within a contextual framework. Only then can there be an examination of the unique experiences of those within this study.

3.1. What is Green Infrastructure?

Any discussion of GI should recognise that whilst the particular packaging might be new, the concept is not. GI is an old wine in a new bottle (Davies et al, undated), something repackaged for a new audience. This suggests that syllabi might be more about repackaging what is already done, rather than engaging with 'new' knowledge. It also raises questions concerning whether this rebranding is the result of a shift in power between dominating occupational, contextual and educational forces. Both universities and government play a direct role in this. GI is the intellectual domain of certain academics who are establishing their credentials by contributing an original idea to human knowledge, whilst government needs to be seen to be 'doing something' about urban sustainability. Professional associations also have a role to

play because they claim occupational jurisdiction on the basis of expertise. New expertise like GI is both threat and opportunity.

The starting point for GI is the idea that an interdisciplinary approach encompassing biological, social and other aspects is necessary to consider urban ecological systems (Ahern, 1995). This provides a better understanding of the challenges of planning use and management (Tzoulas et al, 2007). But at the same time an interdisciplinary approach can be a root of inconsistency in common theories, the naming and general understanding of the urban open green space issues. It is caused also by different experiences, scholarly traditions, research methods and specialised language (Massa in Tzoulas et al, 2007). For example in the literature there are numerous names given to 'greenways' including ecological infrastructure, ecological network, extensive open space system, multiple use modules, habitat networks, wildlife corridors and landscape restoration framework, although there are differences between many of these terms (Ahern, 1995, p.133). So whilst there is a consensus emerging on the benefits of protecting networks of land, there is also little agreement on terminology (Ahern, 1995). This constitutes major obstacles to understanding and developing the issue of urban ecological systems.

Green Infrastructure has different meanings depending on stakeholder and individual perception of the entity (Davies et al, undated). Different meanings also create different names. There is no consistency in naming neither in the scholarly literature (Ahern, 1995) nor in formulating policies. For example, Edinburgh and Leicester had, and could apply, their own definitions of urban green space and classification of parks (Mazza and Rydin, 1997, p.54). Thus this overview encompasses many elements like Green Infrastructure, ecological networks, open space systems, greenways movement. All mentioned elements are entwined, so it is not possible to describe one issue without mentioning the other aspects.

3.2. Definition

From greenways to Green Infrastructure

Fábos (2004) states that greenway planning came about as a result of the development of the landscape architecture profession in the United States. The first phase was planning of the Boston Park System in the nineteenth century. The second phase of the evolution was continuation of the park system in the early twentieth century. The third phase was the greenways development during the environmental decades of the 1960s and 1970s. In the UK, greenway planning in London culminated in Abercrombie's 1943-1944 plans for a network of open green space in and around the capital (Turner, 1995, p.281). Turner also states that greenways are supposed to be green paths, where one can travel from A to B in bucolic bliss. The attempt to recreate this experience in towns was the origin of the open space system (Turner, 1995, p.269).

According to Walmsley (2006) Green Infrastructure is one of the several initiatives illustrating different aspects of a greenway movement which proves the thesis that it is not a new concept. Greenways are linear landscape structures for multipurpose use, including nature conservation and aesthetics, and recreational and cultural purposes, but exclusively contain linear elements (Ahern, 2002 in: Opdam et al, 2006).

GI has been created to express possibilities of the greenways movement, enrich original concepts, enlarge its credibility and emphasise its importance for sustainability and green planning (Walmsley, 2006, p.288). Sandström (2002) argues that green infrastructure is a coherent planning necessity serving to upgrade urban green space which can be understood as an emphasis of the multi-purpose use of the urban greenery.

The greenways concept is not identical with Green Infrastructure (Natural England, 2009). Walmsley argues that Green Infrastructure idea differs from the concept of greenways in three aspects:

- ecology versus recreation—green infrastructure emphasises ecology, not recreation;
- bigger versus smaller—green infrastructure includes large, ecologically important ‘hubs’ as well as key landscape linkages;
- framework for growth—green infrastructure can shape urban form and provide a framework for growth. It works best when the framework pre-identifies both ecologically significant lands and suitable development areas (Walmsley, 2006, p.257).

The concept of GI derives from the idea of greenways but these two should not be mistaken.

Different academics and practitioners developed a whole variety of definitions depending on their own understanding, experiences or purpose the definition serves. From the comparison with greenways, there is consistency in that GI is ecological, large and urban. However, even this is not agreed by GI academics. Weber et al. (2006) stress that GI is defined by abundant and wide distribution of natural features. They do not mention the issue of interconnectivity between open spaces, which is the basis of the definition of Benedict and McMahon (2002). They also emphasise GI’s contribution to preserving biodiversity. However, whilst Environment Agency et al. (2005) and Walmsley (2006) both emphasise a network of linked, multi-functional greenspaces, for them the very significant aspect of spatial distribution is across an artificial man-made unit of space, the Sub-Region. Opdam et al. (2006) include social and economic needs, focusing on the fact that GI can provide these within sustainable landscapes and does not consider simply the biological.

These differences prove the importance of context, especially that of occupation, and are possible because there is no obligatory definition of Green Infrastructure. The

'closest' definition is the one that is defining open spaces, which is land laid out as a public garden, or used for the purposes of public recreation, or land which is a disused burial ground. (Town and Country Planning Act, 1990). According to PPG17 open space should be taken to mean all open space of public value, including not just land, but also areas of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and recreation and can also act as a visual amenity (ODPM, 2006).

For the purpose of this study the following definition seems to be appropriate:

Green Infrastructure can be considered to comprise of all natural, semi-natural and artificial networks of multifunctional ecological systems within, around and between urban areas, at all spatial levels (Tzoulas et al, 2007, p.169).

3.3. Origins of the concept

Whilst this thesis approaches GI as a formed discipline, its origins help explain the contradictory approaches found within it. It is characterised as both a top-down technocratic planning approach and an influence of the nature conservation movement and landscape ecology. Place is also important. Each locality where GI has been developed has different distinctive natural features like geology, hydrological system, flora, fauna etc., which have affected the process of shaping Green Infrastructure. Also each region has been developed in a different way with regards to its history, politics, legislation etc. Thus it is difficult, if not impossible, to describe one universal to every area pattern of development of Green Infrastructure.

3.3.1. Landscape ecology perspective

Urbanisation causes a great pressure on the surrounding environment and natural resources (Urdal, 2005). The enormous shift in the size of the population is also one of the sources of change in the global land use trends and landscape planning

strategies. Consequently there has been increasing interest in open green spaces, their role and the ways they can serve to counteract the negative effects of urbanisation (Sandström, 2002).

The effects on landscape are the same across the world:

- intensification of the land use;
- decrease in land heterogeneity;
- increase in land fragmentation (Ahern, 1995).

The primary ecological consequences of habitat fragmentation associated also with land conversion for human activities and land use intensification are:

- loss of native plant and animal species;
- invasion of exotic species;
- increased soil erosion;
- decreased water quality.

The magnitude and extent of these alterations induced by landscape change are influenced by the size, connectivity, shape, context, and heterogeneity of habitat fragments (Collinge, 1996, p.71). The degree of habitat heterogeneity indicates the number of species and probability of population persistence. Thus, decrease in land heterogeneity causes decline in richness of species and their ability to last (Collinge, 1996).

To prevent the above negative effects, a spatial concept of a 'patch and corridor' should be introduced, which stresses the importance of the size of a habitat and its connectivity with other habitats in order to protect species from isolation and decline.

The concept widely used in landscape ecology is based on the ecology theories of island biogeography of MacArthur and Wilson (1967) and metapopulation dynamic of Levins (1969). MacArthur and Wilson suggested that although their theory relates to population on oceanic islands, it may be also consistent for plant and animal communities inhabiting terrestrial 'islands' (MacArthur and Wilson, 1967).

The theory of metapopulation was developed to examine the dynamics of species inhabiting isolated habitats like mountain tops. Metapopulation consists of spatially dispersed populations. Despite temporary oscillations in the structure of metapopulation – some habitats are extinct, some colonised - the metapopulation remains stable (Levins, 1969). This concept has also application to the ‘terrestrial’ landscapes and habitats being under pressure from humans (Ahern, 1995; Collinge, 1996).

The aforementioned concepts lead to the conclusion that interconnected systems of patches and corridors are useful to maintain biodiversity:

- it provides connections and movement of species between preferred habitats;
- it allows genetic exchange between populations and may strengthen metapopulation;
- metapopulations have greater chances for survival in larger and well connected fragmented landscapes (Ahern, 1995; Tabarelli et al. 1999, Jongman, 2002).

As discussed earlier, the idea of a system of green open spaces emphasising connections between isolated areas that remain in an increasingly fragmented megalopolitan landscape, seems to be a solution to counteract threats to biodiversity. But Ahern (1995) argues that some form of ecological infrastructure is necessary for sustainable landscape conditions with respect to both biotic and abiotic resources.

In the discourse on the role of the urban open green spaces, a great emphasis is now placed upon maintaining and supporting ecological functions together with preserving its other functions and amenity values i.e. multi-purpose use of the urban greenery. The ecological functions are closely related to the issues of the natural resources management for example the water management or improving the air quality (European Commission, 1996).

3.3.2. 'Natural features' perspective

Green Infrastructure was developed in correlation with an area's natural features (see for example Attwell et al, 2005). Origins of Green Infrastructure can be tracked down to the pre-urban landscape. Natural features such as rivers, floodplains, shorelines were formed natural barriers to urban development. At the same time, river valleys comprise high quality green spaces and in that way green spaces reached city centres. Green Infrastructure development follows the pattern of green spaces. Natural attributes in the urban environment can resist urban sprawl and can be a part of a green spaces system. Land-use features were taken into consideration for the development of GI, which suggests that it was domain of landscape architects.

3.3.3. 'Infrastructure network' perspective

Historic and modern avenues, roads and parkways are tree-lined. Trees and shrubs alongside roads constitute ecological corridors in the built environment. Again, GI development follows the development of urban features such as roads, railways, canals etc. However, in this case it becomes a domain of planners and engineers.

3.3.4. 'Active management' perspective

Another layer of Green Infrastructure results from purposefully designed parks, gardens, allotments, playing fields etc as a part of human occupation (Attwell *et al*, 2005). The history of green spaces is entwined with the history of garden art, especially with development of the nineteenth century urban public parks. The development of public parks was a reaction to increasing urbanisation which has resulted in poor sanitary conditions and weakening community morals. Nature was perceived as an important, if not crucial, factor to improve hygienic conditions and an agent to raise workers' morals (Turner, 1998; Rogers, 2001). Parks were at the forefront of urban development (Greenhalgh and Worpole, 1995). The Victorian

parks were built to help shape not only the physical structure of expanding nineteenth century's industrial city, but also that of the rapidly growing urban population. Public parks were places in which the new populations of the city could enter the public domain of social existence and helped to give sense to the idea of an urban public. It was a metaphor for civilised society (Greenhalgh and Worpole, 1995). Park promoters clearly saw the creation of parks as a part of the political process (Conway, 1991, p.35).

In a contemporary perspective, urban green open spaces are valued for their social and spatial significance but also are important for their ecological values. There has been a shift in perceptions of the urban nature. The concept of nature and its influence on people has undergone similar development, from a romantic, anthropomorphic, aesthetic view of nature to a biocentric, ecological view (Jørgensen in Attwell et al, 2005, p.223). For both there exists an intention to actively create a space, rather than it simply evolving through inaction or abandonment. Development of GI becomes not only the responsibility of planners and ecologists but also politicians and social workers as GI serves wider social purposes.

3.3.5. Functions of Green Infrastructure

Its origins mean that GI can be clustered into existing subject areas: sustainable resource management; biodiversity; recreation; landscape; regional development and promotion (Davies et al, undated). From there, a list of detailed functions of Green Infrastructure should provide a basis for the development of skills necessary for introducing the concept in practice. These derive from the relevant literature (for example CABE, 2005; Environment Agency et al, 2005; Mason et al, 2007; Mell, 2009) and include:

- Improving of health and mental well-being
- Promoting a sense of community
- Help reducing crime, fear of crime and antisocial behaviour

- Providing opportunity for exercise, sport, active recreation, spiritual well-being and quiet contemplation
- Providing community resources for learning and training
- Providing a leisure focus and attraction for people of all ages from the existing and the growth communities
- Improving environmental quality, e.g. better air and water quality, climate control and noise attenuation
- Contributing to sustainable drainage and flood mitigation
- Providing the opportunity to protect, recreate and rehabilitate landscapes and habitats damaged or lost by previous development or agricultural change
- Reversing habitat fragmentation, help maintain and enhance biodiversity
- Contributing to the protection, management and enhancement of historic and natural sites and areas
- Improving and sustaining land values
- Reducing land management costs
- Providing an enhanced environmental backdrop that will assist in attracting business and inward investment
- Attracting and retaining people ensuring stable populations and labour supply
- Safeguarding and enhancing natural and historic assets
- Providing contact between people and nature.

The above list suggests that some of the skills necessary for the implementation of GI in practice should include: ecology, planning, landscape architecture, management, budgeting, surveying, heritage conservatory, etc. However, these functions are so broad, cross-disciplinary and involving different occupations that it is impossible to create a definite list of skills. If a list of skills cannot be developed, how is this contradictory discipline approached within education? How is this interdisciplinary knowledge given form?

3.3.6. Green Infrastructure in planning policy

GI is mentioned in PPS12 as an element of the core strategy produced by a local authority. “The core strategy should be supported by evidence of what physical, social and green infrastructure is needed to enable the amount of development proposed for the area” (PPS12) this proves growing importance and popularity of Green Infrastructure.

Also documents, namely PPS1, PPG17, PPS25 and Section 40 of the Natural Environment and Rural Communities Act recognise a need for the introduction of GI because of the benefits it provides (CABE, 2011). However, preserving old green spaces is more feasible than creating new ones. Adaptation strategies need to preserve and enhance existing green infrastructure, and increase it where possible, especially taking opportunities in re-structuring and new developments to create significant new spaces (Gill et al, 2007).

3.4. Introduction to educational issues

The previous part of this review dealt with the notion of Green Infrastructure, its progress and the occupations involved in the development of GI. Because the focus of this thesis is on the introduction of GI in university curricula, it is necessary to describe the current state of education in the UK because factors influencing the provision of education also determine how and to what extent GI is implemented in university courses.

For the purpose of this thesis the dominant authorities in Late Modernity engaged with professional higher education are described as:

- the government
- professional associations
- students
- professional practice.

These form an interrelated constellation of independent parties, illustrated in Fig. 3.1.

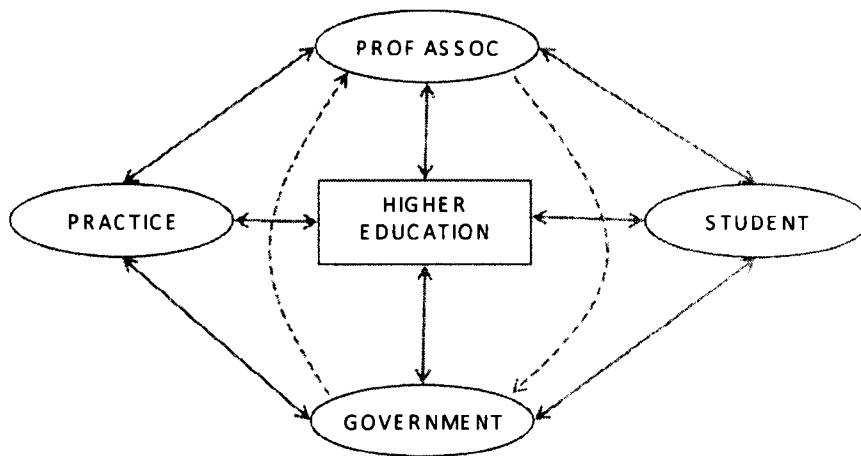


Figure 3.1 Constellation of Factors Enveloping Professional Higher Education

This constellation is influenced by professional practice, professional bodies, universities, social, political and economic environments, legislation, government policies and the like. The educational cycle is an iterative process and is changing constantly. Each factor impinges upon the others, which then react and create another force that returns to act on the first.

Learning and teaching is a reflective and refractive process (Calderhead, 1989). It is influenced by practice, and then it may be incorporated into curricula. After incorporation it returns to practice to be changed again. Academics' outlook is shaped by ideology, personal experiences, and various literature. Lecturers interact on a daily basis with students through a variety of teaching and learning activities; thus they transfer (bits of) knowledge, skills and point of view. Students have their own goals to achieve and so (bits of) knowledge, skills and attitude are changed and then are taken forward into professional practice which is in turn influenced by legislation, politics and clients. Professional practice co-operates with universities because universities are centres for innovation. They offer degrees and train people prior to employment and provide lifelong learning programmes. Also practitioners are

employed as teachers; they re-validate universities and provide a quality check. Universities also engage with visiting practitioners, for example Employers Forum (UTP, undated) in contacting and communicating with practice, and co-operating on projects with practice. Each of these stakeholders also interacts with professional associations. Professional bodies influence universities through accreditation of courses, examination and continuing professional development.

There are, however, a number of problems emerging from this model concerning the dynamics of the relationship between different stakeholders in higher education. Emerging questions are:

What is the purpose of the higher education?

What is the role of each stakeholder within higher education?

How do different stakeholders co-operate together and/ or compete with each other?

Is education answering a political agenda?

How does this reflect on how knowledge (GI) is given form (courses and syllabi)?

3.4.1. What is higher education?

The definition of higher education was included in the Education Reform Act 1988, Section 120, as “education provided by means of a course of any description mentioned in Schedule 6 of the Act” that is “a course of standard higher than the standard of courses leading to General Certificate of Education Advanced-level (GCSE A-level) or Business and Technology Education Council National Diploma or Certificate”. Students are 18 years old and over. More often mature students choose to study at undergraduate level, usually having worked for few years (HERO, undated). Courses last from one to four years full time, and up to nine part-time. There is a wide-range of courses on offer, with content and modes of study (full-time, part-time, flexible, or via distance learning) available at a number of institutions that are effectively competing with each other for student numbers, and the ‘best’ students particularly. And this introduces the contradictions within stakeholder interests.

However, the best place to start is with the stakeholder that provides the basis for the higher education system, and runs most of it in some form or another.

3.4.2. Stakeholder: Government

National government's functions with regards to higher education consist of:

- funding;
- regulation; and
- policy initiatives (HERO, undated).

The Higher Education Funding Council for England (HEFCE), which reports to the Department for Innovation, Universities and Skills (DIUS) is responsible for the distribution of money for teaching and research at universities and colleges. Their role is to advise the government on the needs and aspirations of higher education institutions and to promote English higher education (HERO, undated). Whilst it is not specifically stated, there is some level of managerial oversight to higher education by government. As a minimum, government ensures that universities and colleges are made accountable, that funding is being well spent (HERO, undated) and they are providing a high quality of teaching and research. The Quality Assurance Agency (QAA) assesses the quality of teaching and a Research Assessment Exercise (RAE) reviews research outputs every five years, although this is under review and is now referred to as the research excellence framework (REF) (HEFCE, 2010).

Government also stimulates policy with initiatives aimed to encourage universities to act in certain ways, usually by offering additional funding. For example, organisations have been created to promote lifelong learning and increase the collaboration between higher education and the business sector. This furthers the government's economic policies. Similarly, a body has been established to further excellence in UK science, engineering and technology, the Office of Science and Technology (OST). This supports government's technology policies. Government is also concerned with higher education as a tool of social, as well as economic, policy. One particular issue for the current government is the class bias within 'elite'

universities (see for example Sutton Trust, 2009). In this way, higher education serves existing government policy. It is also part of government's wider vision in creating the future. For example, the government recently consulted futurologists on forecasting skills likely to be needed in the future based upon scientific and technology trends (see for example Grimston, 2010).

Local government agencies are also involved in higher education. These are the Learning & Skills Council (LSC), Regional Development Agencies (RDAs) and Local Enterprise Councils (LECs). Their task is to develop the skills necessary for professional work, boost the local economy and bring together local business and education. Also governmental agencies such as local authorities provide information on learning opportunities available locally.

Widening participation in higher education is one of the most significant recent initiatives in the higher education sector (NICHE, 1997; DfEE, 2003). Thus the Office for Fair Access (OFFA) was established by the Higher Education Act 2004 (OFFA, 2008).

As Prime Minister Gordon Brown replaced, on 28 June 2007, the Department for Education and Skills (DfES) by two new ministries - the Department for Children, Schools and Families and the Department of Innovation, Universities and Skills (DIUS). In addition, the new Department for Business, Enterprise and Regulatory Reform (DBERR) took on the business and industry portfolios (DIUS, 2008). This gives a clear signal that the government emphasises the role of higher education as the 'new weapon' to ensure that Great Britain is one of the best places in the world for science, research and innovation, with ambition of delivering a world-class skills base (see for example BBC News, 2007a).

3.4.3. Stakeholder: Professions

Carr-Saunders and Wilson (1933) point to the troubled relationship between professions and higher education. Since profession is based upon a monopoly of expertise, however this may be constituted, the possession of specialised techniques is closely guarded. Therefore, allowing third parties, such as universities, to teach these and ultimately train professionals is a big step. Thus professions might be seen as an unwanted stakeholder. Similarly Burrage (2006) points to the control of training as one of the four characteristics of a profession. However, the planning professions appear to have, originally, been willing to ally with universities. This was because of the perceived status of a university degree over a professional qualification. There is also a suggestion that professional examinations and the whole qualification system was proving too expensive for the associations to maintain (see for example Quantity Surveyors' Research and Information Group, 1967; RICS, 1978). Hence, planning professions might be described as a rather more enthusiastic partner than other professional groups.

Whatever the initial position, the relationship between professional associations and universities has become more complex, as each progresses its own corporate interests. As discussed, education has become more commercial and engaged in a number of government initiatives, especially those linked with the expansion of higher education and equality of opportunity. To professions established to control occupations and create an esoteric elite, this has created problems. The most obvious is the issue of quantity and quality. Widening participation might be regarded as lowering entry standards or force a professional association to give up control of its entry control systems. In reality, there seems to have been something of a pragmatic truce on the issue. Government praises competence and hence supports the principle of controlled entry (see for example RICS Business 2009a), whilst professions demonstrate and promote 'fair' access to membership (see for example RICS Business 2009b). However, there is no doubt that professions, and certainly a vocal group of members of professional associations, have become increasingly concerned at the large numbers of graduates produced, and their poor quality (Askham, 1996; Estates Gazette, 1997; Carpenter, 1998; Property Week, 1998; Knutt and Seidl, 1999; Estates

Gazette, 2000a). This tends to involve their competence to use skills, rather than if they are being taught so-called 'critical' skills. It is also a problem for professions, especially as articulated by their members in the guise of employers, which in turn, generates a poor image of the professions. RICS implemented Agenda for Change, including a rationalisation of its education provision (RICS, 1997a; 1999a; 1999b; 1999c) to stop this. This rationalisation caused a rather severe rupture with universities, including the closure of a number of departments, all in the name of improving the standards of training (Tovey, 2000).

Similar problems have bedevilled architectural education, although the issue here tends to be that there is too much researcher domination and too little technical training (Fearn, 2008). The ARB – RIBA tension also involves education, to the extent that each has separate accreditation processes for universities to satisfy (Building Design, 2002).

Whilst professions have engaged with the needs of critical skills that lie outside their traditional occupational boundaries, such as inter-disciplinary working (Building Design, 2001), this does raise a primary problem for them. Professions exist to control skills within a formalised occupational expertise. Should these boundaries be removed by new skills, then professions would cease to exist. Hence, demarcation boundaries for knowledge raise potential problems between how universities place skills into their own departmental organisations, and how professions construct their own interpretation of knowledge and skills.

The discourse between universities and professions revolves around a number of issues, discussed above. However, these also then impinge upon students and their involvement in the decision where, and how to train themselves. The initial decision to co-operate concerned the quality of education. For example, *A Study of Quantity Surveying Practice* published in 1974 was critical of the low qualification standards of the average quantity surveyor. It promoted broadening the profession away from a narrow technical base, which has obvious issues for its occupational dominance. This

was only possible through education, specifically, entry into the profession through university degrees, according to the report. But thirty years on, do students perceive the quality issue in the same way, especially as they are increasingly directly responsible for paying for it?

3.4.4. Stakeholder: Students

By the mid-twentieth century the government was signalling that the number and profile of students should reflect the current need of the political agenda. The Barlow Report (1946) recommended increasing number of students, especially in science subjects, in order to fulfil the need for scientific manpower (Shattock and Berdahl, 1984). Later this shifted further, requiring access to higher education for everyone willing to study. Polytechnics and further education (FE) colleges were set up to allow working-class men and women to advance their education and training. The basic assumption in the Robbins Report of 1963, that courses of higher education should be available for all those suitably qualified and motivated to pursue them, was accepted (Committee on Higher Education, 1963). The report recommended further expansion, a broadening of both the regional spread and of the scope and diversity of higher education and the creation of specialist technological universities (see for example Morris, 1964). The 1966 White Paper 'A Plan for the Polytechnics and Other Colleges' (Department of Education and Science) described polytechnics as places for higher education linking industry and business. However, at the same time, these new institutions of higher education also began to select students in a similar way to the older universities; the small number of working-class students in new higher education institutions was comparable to the number of such students at universities (see for example Burgess, 1978).

Of course, all this produced a rather top-down approach on what students 'needed'. Government was joined in this by the professions. For business, quality has remained a constant concern. Are students being taught the 'right' things, and are they ultimately 'employable'? For example, the RICS' Mason Report arose out of

concerns about the level of competence that graduate quantity surveyors were exhibiting. It examined arguments between practices who expected technical competence and the universities who were concerned with wider issues than a technical standard education. The concern was of “inexplicably differing standards of competence between graduates, and of some practices finding difficulty in employing graduates without the need for further basic technical training” (Quantity Surveyors Education and Membership Committee 1982, p.1). The report offered a statement of expectation of graduate competence in terms of syllabus and task ability. However, more recently, a shift in approach has occurred, undoubtedly linked to the fact that students now pay their own fees. Universities and government are both engaged in discourses *with* students, rather than *about* them.

In the 1990s despite a rapid expansion of the higher education sector, public funding fell by around 25 percent. In 1994, the government imposed a ceiling on growth in full-time undergraduate student numbers, in spite of rising demand for higher education (HEFCE, 2002). In 1996 the National Committee of Inquiry into Higher Education was established by agreement between the main political parties to make recommendations on the purpose, shape, and direction of higher education in the UK in the next twenty years. The Report recognised powerful external factors such as current politics and technologies influencing higher education in the UK. There was increasing global competitiveness in the higher education ‘market’. National economies were increasingly depending upon higher education’s development of people with high level skills, knowledge and understanding, and on its contribution to research. Greater investment in the sector was needed, but it could not be achieved through public expenditure. New technologies were providing new opportunities for transmitting and storing information and this opened up the possibility of higher education programmes being offered remotely by anyone anywhere in the world, in competition with existing UK institutions. Of course, they also offered a global market place in which UK higher education can compete.

Culture and citizenship was also presented as a key theme for the sector; they should be promoted and enhanced by higher education (NCIHE, 1997 sec.16-22). In the years since the Robbins report, but particularly over the last decade of the twentieth century, there was an increasing diversity in the backgrounds of people coming into higher education. The assumptions in the Dearing Report were that this diversity, and the range of requirements on higher education, was to increase, especially if a national commitment to lifelong learning was to be achieved. The presumption was that more students would be able to take short programmes at varying levels to meet specific needs. Some graduates would need postgraduate-level programmes to deepen their knowledge and skills. Others would need to take programmes at undergraduate level or in further education to broaden or change their skills or pursue higher education from time to time to enrich the quality of their lives (NCIHE, 1997). On this basis the following themes and recommendations were included:

- new agreement between the state, individuals and their families, graduates and institutions where each contribute to and each benefit from;
- widening participation into higher education;
- students' contribution towards paying tuition fees;
- incorporation of measures to ensure the quality of teaching and wide recognition of qualifications;
- greater regional role of higher education institutions;
- autonomy of universities in order to maximise efficiency and effectiveness
- support of excellence in research (Dearing, 1997, also see for example BBC Politics, 1997; Barr and Crawford 1998; Crace and Shepherd, 2007).

The government published *The Response to the Dearing Report* where the new fees proposal was tackled (DfEE, 1998a) and published a green paper, *The Learning Age: a renaissance for a new Britain*, (DfEE, 1998c). This presented a vision of Britain as a learning society where other recommendations such as widening participation were emphasised. The government's white paper, *The Future of Higher Education* (DfEE, 2003), suggested introducing measures to improve funding of research and knowledge transfer, provide quality teaching, enable more people to access higher

education and allow universities charging up to £3 000 of the cost of each course. *Higher Education 2004* legislated proposals allowing English higher education institutions to charge, including variable tuition fees for postgraduate courses. Fees rose with inflation until an independent review, undertaken in 2009. It also introduced student support schemes, fee loans, and retained maintenance grants. Following *The Future of Higher Education*, the Higher Education Academy (HEA) was established to ensure that students in UK higher education were able to enjoy the highest quality learning experience in the world (HEA, 2008).

Recent educational discussion in the planning profession has revolved around two linked themes. Because of RICS' *Agenda for Change* the issues are most vocal within the 'surveying' profession, but these concerns are mirrored in all occupational groups. First, university entry standards are deemed to be operating inadequately. Initially it was claimed that universities accept too many students with too low grades. Professional planning courses are seen as cheap to operate for the universities and undemanding of students (Askham, 1996; Education News, 1996; Estates Gazette, 1997; Carpenter, 1998; Property Week, 1998; Bill, 1999; Knutt and Seidl, 1999; Estates Gazette, 2000a). However, fewer students then decided to enter such courses and complaints changed to there being a lack of graduates, though still of too little ability (Coppin, 2000; Estates Gazette, 2000b). This then leads to the second criticism that the resultant graduates are of low quality and less competent than during a perceived heyday of professional education; implied here is that standards were higher when a relevant professional association ran its own examinations. This alleged decline led to calls for the profession to consider accepting non-cognate graduates from higher quality courses and placing them on conversion (master's level) courses. At the same time, others pointed to low pay within the professions as a problem to recruiting so-called 'high fliers' (Estates Gazette, 1996; Simpkins, 1996) coupled with the low status of the industry (Williams, 1997; Baldock, 2000). Thus, opinion varied over which issue was the determinant and which the resultant (Lowe, 1998; Venmore-Rowland, 1998; Ross, 2001). The result for RICS was the implementation of the *Investing in Futures* proposals.

3.4.5. Stakeholder: Business

The development of higher education is inevitably connected with a knowledge transfer between the UK HE sector on the one hand and business and the wider community on the other hand. Since 1970's when economic growth was directly associated with the development of higher education, there has been a rise in the number of people with a higher education diploma. The expansion of higher education and the introduction of 'widening participation' has resulted in one third of the population having a higher education qualification (Webster and Robins, 2003). This reflects the increased number of knowledge – intensive occupations and the rising value of the knowledge economy within the economy as a whole (ibidem). Knowledge is replacing physical resources as the main driver of economic growth. The OECD calculates that between 1985 and 1997 the contribution of knowledge-based industries to total value added increased from 45% to 51% in Britain (The Economist, 2005b).

The association between higher education and an industry sector can be considered under following key themes:

- International Competitiveness
- Widening Participation
- Employability & Enterprise
- Research & Knowledge Transfer
- Workforce Skills
- Leadership & Values (CIHE, 2009)

Highly skilled graduates are required by knowledge-intensive businesses, and only these firms are capable of competing in international markets (CIHE, 2008a; 2008b). Higher education lies at the heart of competitive advantage of the UK because of the following reasons:

- A multi-cultural environment of universities encourages the development of world-class knowledge and world-class graduates. Overseas students bring a range of new and challenging perspectives. Such diverse teams create the dynamism for innovation;
- Problem-based learning is at the core of the UK higher education system. This process of challenge and enquiry reinforces the potential for innovation;
- There is a potential in the UK for building clusters of excellence to remain the quality of teaching, research and innovation;
- The future of the UK is inextricably bound to a successful high quality education system (CIHE, 2006).

It seems that higher education in the UK has a great potential due its multi-cultural environment and problem-solving based approach. But to achieve that there is a necessity to give access to higher education to every social group. Indeed, a higher education degree may be a tool to equalise discrepancies between social groups (HEFCE, 2009).

Under-qualified workers will be left to choose from an ever dwindling pool of unskilled jobs (CBI, 2007). Of course there is no such thing as a defined list of skills for graduates. It depends on a company, its size, character, type of industry etc. But there is something in common for most employers. According to CBI (2007) 'soft' skills such as team working are vital, even more important than 'hard' skills. It suggests that higher education may be considered as a way of socialisation into the work environment. This issue is very interesting especially in the light of an Institute of Directors Report (2007) which stated that the most desirable attributes of a graduate are: honesty and integrity, basic literacy skills, basic oral communication skills (telephone skills), reliability, being hard-working, having a good work ethics, numeracy skills, a positive "can do" attitude, punctuality, the ability to meet

deadlines, team working and co-operation skills. However, are these really 'higher education' skills?

Beside basic literacy and numeracy skills, graduates are expected to be honest, bright people able to work together and learn new things. So additional to delivering knowledge, higher education institutions are also places where graduates' ethos is shaped. Punctuality and meeting deadlines are expected at universities. Students are given self-reliant assignments but also collaborative projects. Simple university activities prepare students for their future work places. But employers want people who fit into the organisation: intelligent, flexible, creative people. So employers want people who can embrace at the university a professional work culture.

"Institute of Directors' members whose organisations recruit graduates tend to think highly of their overall quality. They set great store by graduates' employability skills when recruiting and, broadly speaking, are complimentary about what they see in their recruits. [...] There are, though, areas of concern, particularly on the basic skills front where there are clearly problems [...] although equally clear is the acceptance that businesses have a central role in working with the education system to help develop students' employability skills" (CBI, 2007).

The same survey shows that almost a third of employers (30%) have a problem with graduates' generic employability skills such as communication, team working and problem solving. They complain also about graduate's attitude to work (25%), self-management (33%), business-awareness (44%) and foreign language skills (49%). Of course a ranking of these skills does not depreciate a value of skills such as critical thinking, technical skills or deep subject knowledge (CBI, 2007). It emphasises the value of other skills appreciated by employers which create more employable graduate.

These findings are a response to the Leitch Report (2006) on skills where it is recommended that the UK should aim to be a world leader on skills by 2020 to stay

in the top of the most developed countries. It means that whilst, in the context of international competitiveness, it is increasingly important to train highly skilled graduates, universities should not only equip students with deep knowledge, but should also engender more practical skills which make a student more able to work.

Together with the growth of international markets such as India and China, one of the essential issues in higher education relating to its development, and improving its effectiveness and competitiveness in the modern economy, is a knowledge transfer between universities and a business sector (DfEE, 2003). So the role of universities as centres for research and innovation is increasing. Within a modern, knowledge-driven economy, knowledge transfer is about transferring good ideas, research results and skills between universities, other research organisations, business and the wider community to enable innovative new products and services to be developed. Together with increasing funds for education and research, there need to be established links between research and the market to ensure a return on invested funds and in the context of the international competitiveness - increased productivity, invention and innovation (DIUS, undated b).

There is, therefore, a complex thread of different claims on universities by businesses. These rise from basic skills such as answering the telephone through to gaining increasingly complicated knowledge and into innovation, and thereby generating new ideas that can be commercially employed for profit.

3.5. The role of higher education

The role of higher education cannot be precisely defined with any level of agreement. Dearing Report (NCIHE, 1997) described the four main purposes of higher education as:

- to inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well-equipped for work, can contribute effectively to society and achieve personal fulfilment;
- to increase knowledge and understanding for their own sake and to foster their application to the benefit of the economy and society;
- to serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels;
- to play a major role in shaping a democratic, civilised, inclusive society.

More recently still, for example, Warwick (Universities UK, 2007a) states that “(...)Its [higher education’s] prime purpose is the sharing of knowledge and the development of minds”. The higher education institutions in the UK are crucial to meet the nation’s challenges such as “ageing population, cross-border competition and increasing globalisation, increasing levels of information and technology and a more knowledge-intensive-based economy of goods and services, global conflict and international terrorism, and increased pressure on natural resources and the threat of climate change”.

These five areas constitute the context of the Comprehensive Spending Review as identified by the Treasury (HM Treasury, 2007). Higher education will meet these challenges by equipping the workforce to be more productive for longer, increasing the importance of higher education as an export, ensuring that universities are centres for invention and innovation, training highly skilled employees, providing research on global conflict and terrorism in order to understand and combat the threat, and developing solutions leading to more efficient use of resources (Universities UK, 2007). So, whilst the prime purpose of education is the development of minds it is being done for a specific utilitarian purpose which is national economic development and security.

Floud, talking about the role of higher education, refers to educators, entrepreneurs and idealists: "Universities educate and train people with the skills they need to participate fully in society and give them the skills employers need. They are entrepreneurial – they enable the UK to punch above its weight in terms of research and set up countless spin off companies in areas such as satellite technology, biotechnology and robotics. (...)Universities are also reaching into their communities, combating social exclusion and improving cultural understanding in their regions" (Universities UK 2001c). Again, predominantly it is a practical role of education but this time social matters are emphasised.

The place of knowledge has thus consistently been an issue of higher education provision, though usually by third, government, party reviews. The current strategic vision concerning English universities revolves around a number of questions: "How best can access to higher education be widened? How can universities most effectively equip future members of the UK's workforce? How do we measure those aspects of higher education that have a less clear economic impact? And how do we maximise the wider benefits of university research?" (Universities UK, 2002b). Of course, different stakeholders might hold different visions, as discussed in section 3.4, and these represent government's particular interests about:

- widening participation
- skills necessary for the workforce
- personal skills associated with different life experiences received at university
- universities as innovation centres.

The future of higher education according to Department for Innovation, Universities and Skills should be as follows:

- higher education institutions work to widen participation beyond young people leaving college or school with good A levels;
- put learners and employers at the heart of their provision; and
- strengthen their leading position in international education through excellent teaching and innovative research (DIUS, undated a).

The second point is particularly interesting in the context of this thesis. The notion of students as clients, as drivers of syllabi and as customers to whom service needs to be tailored is one that will be seen to be quite problematic. For example, how do prospective students, probably ignorant about their prospective occupation, know what a vocational course should include? On what experience can they base their judgment? But even the idea of ‘employers’ as creators of syllabi also presents difficulties when examined, since the professions are not actually employers. Rather they themselves might be seen to be an agent interfering in the establishment of market-orientated knowledge-based occupations.

Therefore, the results of these stakeholder actions, and their disagreements, can bring about changes in higher education.

3.6. Changes in Higher Education

3.6.1. Economic Environment: Privatisation

Private firms are increasingly involved with running education (see for example Ball 1990, 2007). This is creeping into HE, such as the creation of Higher Education Corporations from council-run Polytechnics. Universities need to plan and predict their own financial futures, and this includes having to respond to any financial shortfall. The basic duties of the Higher Education Corporation were described in the Further and Higher Education Act 1992: “It shall be the duty of each corporation— (a) to keep proper accounts and proper records in relation to the accounts; and (b) to prepare in respect of each financial year of the corporation a statement of accounts.” Universities are increasingly stand-alone legal entities, completely responsible for their own futures.

Financial shortfalls are affecting all UK universities (see for example BBC News, 2000; 2011). Full-scale privatisation of universities is also mooted continuously (see

for example BBC News, 2004; 2005). This means that one of the main targets of education is to fulfil financial targets which include issues such as cost per student and payment by results. But at the same time the financial issue is a part of a wider problem. “Market relevance is becoming the key orientating criterion for the selection of discourses, their relation to each other, their forms and their research. This movement has profound implications from the primary school to the university” Bernstein (1996, p.87).

Commodification of education is also occurring. The compartmentalisation of education into saleable ‘units’ through the modularisation of degrees is now firmly established. Students can select modules based upon their own selection criteria, rather than that prescribed by a field expert such as a tutor or professional association. Courses are also parcelled up to be sold easily to part-time students, distance learners etc – all in the name of ‘widening participation’. Fighting privatisation remains a central campaign of the lecturers’ union UCU (UCU, 2009).

Generally, the importance of ‘employability’ over education is pushed by government and employers, and accepted by others; the need is to train rather than educate. Necessary skills are the focus of education, not knowledge (see for example Ball, 1990). Tomlinson (2005) discusses the post-welfare market society and the rise of the individual and their need to ‘learn to compete’ and also to improve the national competitiveness (see for example DfEE, 1995). The global economy and the needs of the labour market play a strong rhetorical role here, reinforced by students who are perceived as measuring education in some form of cost-benefit analysis now that they pay directly for their own education. Graduates of any university are more likely to find employment or go onto further study than those who did not graduate from a university (Universities UK, 2001a). The value, and increasing vocational relevance, of higher education has been emphasised many times, for example in 2002 was launched the ‘*Employability and Diversity*’ project to highlight the role and diversity of universities in developing employable graduates (Universities UK, 2002h). The issue of employability is associated with skills necessary for graduates for their

professional practice. An employable graduate needs to obtain a set of skills to be attractive to a future employer. According to the government, employers should also take part in the academic route in order to equip students in skills for professional practice. Floud stated "It is all too easy for critics to point a finger and say 'graduates do not have the skills that employers want'. But many large graduate employers do not engage meaningfully with the higher education (HE) sector. Employers – and Government - must share the responsibility with universities, colleges and schools for enhancing employability" (Universities UK, 2002d). This again implies that employers are, or should be, creators of syllabi.

Students are perceived as customers or clients (Meighan and Siraj-Blatchford, 2003), especially since students and parents pay fees directly and fund education more generally with the abolition of maintenance grants. However, from 2000/01 to 2005/06 the sector as a whole has seen an increase of approximately 45 per cent in its overall income and in most of its components such as funding council grants, tuition fees and education grants and contracts, research grants and contracts, any other income, endowment and investment income. The significant increase in tuition fees can be associated with a number of overseas (non-EU) students, the fees of international students have doubled over the period and now amount to £1.5 billion. In the same period the number of the students in the UK increased by 15 per cent and the inflation of the UK economy increased by 14 per cent (Universities UK, 2007a; 2007b).

3.6.2. Operational Environment: Managerialism

Education has been transformed into a process, where setting of targets and benchmarks is crucial, rather than concern about learning. The primary idea behind it was to provide control and quality in every aspect of the educational process (Milliken and Colohan, 2004) but the effect of this was that teaching becomes standardised, courses conform to rules and teachers have to comply strictly with the regulations (see for example Hacker and Garst, 2000). For example Tomlinson (2005)

discusses it in the secondary education where the notion of linking appraisal of teachers' performance to their pay was introduced. The first chair of the review body that was created to make recommendations about school teachers' pay and conditions was a businessman from Rover cars - Graham Day who was famous for bringing total quality management and inter-factory competition to Rover. The first recommendation of the review body suggested that heads and governors should use appraisal information for promotion and pay increases (Tomlinson, 2005). Another result of that policy was that teachers were not perceived as professionals but as a technical workforce that needs to be managed (ibid), supporting the hypothesis of 'de-professionalisation' (see for example Murphy in: Kitchener, 2000) This notion describes professionals losing control of the overall goals of their work and their technical tasks which is caused by managerial attempts to more systematically control professional work (Kitchener, 2000). In schools this is exemplified by the National Curriculum based on the standards curriculum and 'league table' results, described as the nationalisation of education as the State seeks to impose ever greater control (see for example Young in: Moore, 2007; Farrell and Morris, 2003). In higher education institutions it may lead to situations where attempts to impose greater control result in introducing ethically dubious mechanisms (see for example Anon., 2008). Also attempts to introduce market coordination forms initiated by the 1988 Education Reform Act increased bureaucratic control (see for example Farrell and Morris, 2003). Others see the State in decline, and private firms and other cultural groups, including religion, as exhibiting this tendency (see for example Moore in: Ball 2007).

Higher education is facing problems such as overwhelming bureaucracy, external pressure, huge workload and poor management according to the University and College Union. "Bureaucracy, an overwhelming workload, poor management and external interference are the main reasons why nearly two thirds (62 per cent) of lecturers think about moving to work abroad" (UCU, 2006). But lecturers' vision of universities, its targets and performance is different from visions of university managers. The latter would like to introduce more business-like schemes such as marketing of higher education, whilst lecturers often see this rather as degradation of

the values of their institutions (Gill, 2008b). This may be an example of a wider argument about the role of universities and students perceived as potential clients. Academics are also under pressure from students now able to judge lecturers, for example on Internet forums. Judgement is always a subjective opinion but students tend to assess a lecturer's look and personality instead of quality of teaching (see for example Attwood, 2008a). This can result with an unfair rating of an academic teacher and might lead to further repercussion from university managers. Treating students as clients together with forcing them to assess lecturers may result in other tensions. Another example is the National Student Survey which forms a part of the revised Quality Assurance Framework (QAF) for higher education. The aim of the survey is to gather feedback on the quality of students' courses in order to contribute to public accountability as well as to help inform the choices of future applicants to higher education (HEFCE, 2007b). In practice students can judge everything (see for example BBC NEWS, 2007a) together with categories described in the survey. This creates biased judgement of an institution. Another problem is that students are forced by university staff to give good rates to a university (see for example BBC NEWS, 2008) which makes the whole survey unreliable and can send a wrong message to prospective students by overrating an university. Comments posted under the article describing such a case shows that this is a common issue. For example one student wrote: "Sounds pretty familiar, we have also been told exactly the same thing, which just shows how useless the survey is, the survey is meant to provide a measure as to how a university performs, but as it stands the survey just tells us how much the university's students value the prospect of a job after graduating", and another one: "We've been told several times that negative feedback will reflect badly on us and damage our career prospects" (ibidem). And there was also a bitter reflection from one of lecturers: "This is a classic problem with league tables. The significance attached to the results will motivate those involved to distort the results in their favour. Most universities operate internal feedback mechanisms, including feedback forms for each course taught, enabling staff to get an unbiased opinion of what students think. By contrast, the NSS is a public relations exercise, and as such is of little benefit to anyone" (ibidem). Cambridge University Students' Union strongly

advises not to take part in the survey arguing that the implementation of the survey is not correct, questions are not relevant and they do not cover the complexity of the subject (for example CUSU, 2007; BBC NEWS, 2007b).

3.6.3. Cultural Environment

There are many perspectives, often competing discourses, concerning the wider social environment and the role of education within it.

The decline of the State, and the rise of globalisation and commercial forces is a common theme which links to the idea of Late Modernity adopted in this thesis. These forces demand ‘popular’ courses, ideally ones cheap to run. This practice is also supported by the government in order to provide a quick return. Warwick said “Government help is needed to persuade the poorest students to embark on the courses that will bring enormous benefits to the students themselves and society as a whole” (Universities UK, 2002e). Sometimes these voices support economic nationalism, and at other times are subjugated to wider market forces. In the twenty first century it is axiomatic that education should be primarily to enhance employability skills (Tomlinson 2005). Thus over the ten years period from 1995/96 to 2005/06 there is an increase in number of enrolments in business and administration studies, social studies, creative arts and design and biological sciences (primarily because of the effect of increasing enrolments in psychology) whilst there is a consistent reduction in enrolments in physical sciences, engineering and technology (Universities UK, 2007). This confirms the hypothesis of the increasing number of cheap courses which are desired by both universities and students as cheap to run and available for budget tuition fees. But treating higher education merely as a ‘free-market’ depending on students’ demand raises concerns that it would lead to the deficit of ‘difficult’ courses. Floud is particularly concerned about this possibility: “The Government talks about a ‘free market driven by student demand’. Are, then, subjects such as engineering to be placed at the mercy of short-term fluctuations in student demand?” (Universities UK, 2002f).

The rise of ‘meritocracy’ and of ‘widening participation’, such that universities must accept wider ethnic and ability groups (see for example Halsey, 1990), is another theme. The UK Government has variously pledged that 30-50% of 18-year olds should study, and this is ideologically hard to oppose since it purports to be ‘fair’, equitable and the sign of a ‘good’ society (see for example Goldthorpe, in Halsey et al, 1997). Funding is the crucial problem when considering widening participation in higher education (Universities UK, 2002c). Warwick (Universities UK, 2001b) stated that “Universities are already working hard to increase access to higher education for those from under represented groups. But this cannot be done on the cheap – this expansion is expensive and universities need resources which fully match these additional costs.” The effect of this policy is increasing number of enrolment of higher education students, by about 33 per cent over the ten year period from 1995/1996 to 2005/2006 (Universities UK, 2007).

3.7. Education for Sustainable Development

GI is a vital element of introducing sustainable development into the urban environment. The focus of this thesis lies in incorporating GI in the curricula of courses training those who will work in planning disciplines. Therefore, it is important to analyse existing ideas on sustainable development in the curricula. This section provides an overview of Education for Sustainable Development (ESD) initiatives, focusing on the professional education UK context. A brief outline of what is education for sustainable development is presented in the first section. This is followed by a summary of ESD initiatives in the UK and a review of professional approaches towards sustainability. This provides a basis for comparison with the introduction of Green Infrastructure into university curricula and sustainability education.

A widely adopted definition of sustainable development describes it as “development which meets the needs of the past without compromising the ability of future

generations to meet their needs” (WCED, 1987). And Agenda 21 stressed the role of education as an agent promoting sustainable development.

“Education (...) should be recognised as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address the environment and development issues” (UN DSD, 1992).

Thus, education is thought to be an essential factor in the implementation of sustainable development. Hence, ESD claims to be something very different for courses, syllabi, teaching and learning. It has weighty political support and proposes a radical shift away from focussed degrees providing technical and jurisdiction – based training and education.

The themes of United Nations Decade of Education for Sustainable Development (DESD) include:

- Interdisciplinary and holistic learning rather than subject-based learning
- Values-based learning
- Critical thinking rather than memorizing
- Multi-method approaches
- Participatory decision-making
- Locally relevant information (UNESCO, 2009).

They are consistent with Sterling’s (1992) vision on education for sustainable development, which:

- “enables people to understand the interdependence of all life on this planet and the repercussions that their actions and decisions may have both now and in the future on resources, on the global community as well as their local one, and on the total environment;
- increases people’s awareness of the economic, political, social, cultural, technological and environmental forces which foster or impede sustainable development;
- develops people’s awareness, competence, attitudes and values, enabling them to be effectively involved in sustainable development at local, national and international levels, and helping them to work towards a more equitable and sustainable future. In particular, it enables people to integrate environmental and economic decision-making

- affirms the validity of the different approaches contributed by environmental education and development education and the need for the further development and integration of the concepts of sustainability in these and other related cross-disciplinary educational approaches, as well as in established subjects” (Sterling, 1992, p.1).

These propose to shift education from the more concrete traditional education to something less tangible. The UK government in support of ESD set up the Sustainable Development Education Panel, an advisory Non-Departmental Public Body responsible for schools, further and higher education bodies, and education in work, recreation and the home. This body considered issues of education for sustainable development and made recommendations for action (DETR, 1998). UK Sustainable Development Education Panel defined the role of education for sustainable development (ESD) as:

“about developing the knowledge, skills, understanding and values to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet of the future” (SDEP, 1998, p.30.).

All three definitions stress the importance of: interdisciplinarity, awareness, values, participation, and variety of approaches pursuing the sustainable future. ESD does not consist only of knowledge and skills but also of values and understanding. It is not an education about sustainable development providing only scientific facts, but an education for sustainable development which promotes a holistic approach exceeding traditional, and professional, boundaries between subject fields. Thus, it is essential to implement it across the curriculum, without restricting it to specific subject areas. Introducing ESD into curricula differs significantly from any other issues as ESD requires raising awareness and values in students.

3.7.1. ESD in the UK

The UK Government has been trying to implement sustainable development through various departmental strategies. The main UK initiatives within ESD are presented, in chronological order in Table 3.1. It is worth noting that these proposals, and their proposers, differ from those discussed in section 3.6. concerning the commercialisation of higher education. The interaction between the commercialisation of education and its focus upon employability, with that of ESD remains untested. The practical question of how to reorganise competing professional groups into multi-disciplinary harmony or of what technical subjects to remove in order to teach about ‘values’ is one that the empirical work in this thesis will discuss in some detail later.

Organisation	Initiative	Year
Department for Environment, Food and Rural Affairs (DEFRA)	Establishment of the Council for Environmental Education, to place sustainable development at the heart of education policy and practice (CEE, 2002).	1968 - 2005
Committee on Environmental Education in Further and Higher Education	Environmental Responsibility: An Agenda for Further and Higher Education published in 1993 (Toyne, 1993).	1992, reviewed 1996
UK Government (ODPM/DfES)	Sustainable Development Education Panel established.	1998
Higher Education Partnership for Sustainability (HEPS)	Three year project with eighteen universities and sustainable development charity Forum for the Future, to promote sustainability performance in universities (Parkin et al, 2004).	2000-2003
Forum for the Future	Launch of sustainability in the curriculum toolkit (Forum for the Future, 2002).	2002
Department for Education and	Launch of Sustainable Development Action Plan for Sustainability and Skills (DfES, 2003).	2003

Skills (DfES)		
Higher Education Funding Council for England (HEFCE)	Launch of consultation document on Sustainable Development in higher education (HEFCE, 2005).	2005
UK Government	Securing the Future - the key policy driver for sustainable development (SD) and education for sustainable development (ESD).	2005
Office of the Deputy Prime Minister (ODPM)	Launch of the Academy for Sustainable Communities to promote the development of knowledge and skills needed to create sustainable communities.	2005
Higher Education Academy	Monitoring research in education for sustainability. Launch of initial report on ESD in Higher Education (HEA, 2006).	2006
Department for Business Enterprises and Regulatory Reform	Draft strategy for Sustainable Construction- A consultation paper (DfBERR, 2007).	2007
Learning Skills Council and the Department for Innovation, Universities and Skills (DIUS).	Building Colleges for the Future: The Learning and Skills Council's National Capital Strategy for 2008-09 to 2010-11.	2008
HEFCE	A Strategic Review of Sustainable Development.	2008

Table.3.1 UK Government ESD initiatives (Author's adaptation from Murray and Cotgrave, 2007)

Whilst the above is updated to reflect more recent initiatives, it does point to another issue within ESD. The table concentrates on initiatives that are categorised as education. In other words, Murray and Cotgrave (2007) are neglecting work on particular issues that might include a discussion of education as a part of that particular problem. For example, the work of the UK Round Table on Sustainable Development is ignored, even though the group have a long history of looking at sustainability and have made proposals on sustainable education, but not as a discrete topic, rather, as a section of whatever issue they have provided advice upon. The Round Table was established in 1995 “to provide a forum for discussion on major issues of sustainable development. Its main purpose was to identify ways of achieving development in a sustainable manner” (UK Round Table on Sustainable Development, 2000). Relevant reports have included housing and urban capacity, transport infrastructure, planning for sustainable development, measuring sustainable development, biodiversity and environmental management and delivering sustainable development. The fact that none of these are titled ‘education’ nor targeted at university education does not mean that they do not have proposals for education within these fields. Yet, they are ignored because they are not ‘badged’ as ESD reports. This is a constant problem for professional education, where subjects are traditionally grouped within occupational skills, and where sustainability would be expected to support these, rather than be a discrete skill. This is not an issue that those dealing with ESD appear to have grasped, as shown by this example.

The overview of the ESD initiatives suggests that ESD is on the Government agenda. Those proposals are directed at universities and professional education. However, their impact is unknown. Other reports such as Dearing Report (NCIHE, 1997) or Leitch Report (2006) are well known and have had an impact on the academia. The ESD reports seem not to have similar power. They were not even mentioned by any interviewees, even those who are fully engaged with ESD. This suggests that ESD focuses Government’s attention but there is no ‘real’ outcome out of it. There is also the problem of a lack of respect by ESD for professional education.

3.7.2. Professional Education and ESD

The Toyne Report (1993) recommended that: “every Higher and Further Education institution should formally adopt and publicise [by 1994/95] a comprehensive environmental policy and an action plan” (Toyne Report, 1993, p.90). This report emphasised the role of a small number of professional institutions introducing principles of sustainable development and recommended further implementation. Toyne Report contained mostly non-prescriptive recommendations so its influence was trifling (Select Committee on Environmental Audit, 2003b). Toyne Report stated that persons and institutions responsible for defining national standards relating to industrial and professional practice, and associated qualifications and standards, such as industry lead bodies and professional bodies, should ensure that appropriate reference is made to sustainable development issues (Toyne Report, 1996). Again, that suggestion was so vague that anything from a simple mentioning of sustainable development, to broader introduction of principles of SD could be considered as an ‘appropriate reference’. The result was that “there is little evidence that ESD is being effectively integrated into higher and further education syllabuses” (Select Committee on Environmental Audit, 2003a). What the Select Committee did not investigate was *why* universities and professions did not consider ESD as necessary.

The Sustainable Development Education Panel stated that professional bodies and industry led bodies should implement sustainability requirements for course accreditation by 2010 (DETR, 1998). Seventeen professional bodies were invited to consult on the report. They stated that with regards to sustainability they want to be “only one step ahead of their members” and were not prepared to take on the leading role. Out of the four professional bodies in this research only RIBA and RICS expressed a need for the Panel’s help (DEFRA, 2000). However, both pointed to specific technical issues, such as environmental law. There was less interest in concepts such as ‘values’, although both RIBA and RICS accept that this might be an issue of professional practice and ethics. As peer associations, professions do not view ESD in the same way as government and ESD academics. Yet external views

continue to prevail upon the professions that the environment and sustainability are aspects of their professions. Thus, Egan Report (2002) stated that inclusion of training in generic skills for implementing sustainable development should be a requirement for accreditation purposes. This led to the publication of *The Egan Review: Skills for Sustainable Communities* (2004) which addressed the need for the development of skills for SD.

The Review of Sustainable Education Panel remarked on the low level of interest that employers' organisations have taken in the work of SDEP, suggesting that sustainable development education might not be on high on their agenda (DfES, 2003). This means that employers are not drivers for introducing sustainable environment issues in curricula. This Review acknowledged that SDEP's assistance in incorporating sustainable literacy into the professional ethos is limited due to the range, diversity and rivalry of professional bodies. Also, there have been cases where SDEP had only succeeded to a limited extent to identify who was best placed to take forward its recommendations and then brought it to their attention (*ibidem*). So the Government acknowledged that employers are not much interested in education for sustainable development. Professional associations may be willing to introduce sustainability issues but it is difficult to define what, where and to what extent they should be incorporated.

The place of education for sustainable development within a professional gestalt is unclear. However, because the built environment links together environmental, economic and social issues the need to balance those three strands of sustainable development is apparent to external observers (Elmualim et al., 2010). Thus, it seems necessary to discuss sustainable development literacy drivers deriving from the professional bodies maintaining the occupational control over the built environment discipline.

Discipline/ professional body	Undergraduate curriculum influence	Sustainability focus
<u>Architecture</u> Royal Institute of British Architects (RIBA) Members: 30000 (RIBA, 2005)	Outcome based “Criteria for Validation” in conjunction with departmental accreditation visit	Criteria includes design- specific social, cultural and environmental learning outcomes, and specific skills requirements (RIBA, 2002, p.5-6)
<u>Landscape Architecture</u> Landscape Institute (LI) Membership 6000 (LI, 2009)	Outcome based LI’s guidelines together with departmental accreditation visit	Courses need to have a core of defined landscape and environmental modules (LI, 2005, p.7)
<u>Surveying</u> Royal Institution of Chartered Surveyors Membership 110000 (RICS, 2004)	Curriculum expected to broadly support development of surveying competencies.	Need to ‘address’ education for sustainability (RICS, 2005, p.17). No formal requirements.
<u>Planning</u> Royal Town Planning Institute (RTPI) Membership 18000+ (RTPI 2006)	Education Policy Statement (2001) issued as guidance to universities. Revised Policy Statement on Initial Planning Education (RTPI, 2004).	Social, economic and environmental contexts and development of appropriate knowledge specifically referred to (RTPI 2004, p.3,9).

Table 3.2 Key construction-related professional bodies – input to education for sustainability literacy (Adapted from Murray and Cotgrave, 2007)

The form education for sustainable development takes in higher education institutions (HEI) is often criticised for being superficial, implemented only in theory, with lack of proof of practical implementation, and being fragmented and divided into specific, strictly defined subject fields (Thomas, 2004; Higgit et al., 2005). This is due to the problems with attempting to change traditional occupational control of knowledge, even whether they *should* be, and also the division between academic and lay knowledge (Bawden, 2004; Huckle, 2004). This is particularly so with vocational degrees in the built environment areas like architecture, surveying, planning, landscape architecture, where the content of curricula is highly dependent on requirements from professional bodies such as RIBA, RICS, RTPI, LI etc and where students are studying in order to obtain entry to a single professional discipline. One of the requirements for HEIs is “to make sustainability literacy a core competency for professional graduates” (HMG, 2005, p.39) but this is not necessarily how professionals and professions view competencies. Curricula including sustainable literacy must remove or reduce a traditional competency to make room. Courses doing this run the risk of making themselves less marketable, which is another requirement of government on HEIs. These graduates are perceived as less ready for practice if professions and/ or employers do not accept the principle that sustainability is a core part of professional jurisdiction.

3.8. Modelling Behaviour

From this critical analysis of the literature, a number of models can be derived to illustrate, explain and flesh out the evidence created in this thesis. These all flow from the Late Modern principle that a number of authorities are competing over dominance, including: universities (lecturers, managers, students), business, professions, students, and the government. An additional principle is the contingent nature of knowledge.

From the themes discussed earlier the following models have been crystallised to describe, explain and analyse the evidence generated:

- Green Championship
- Loose Coupling
- Legitimacy
- Routinisation
- ESD
- Co-habiting authorities

These models will now be described.

3.8.1. Green Championship

Late Modernity is described as a phase where there is no determining authority. All authorities are temporary and they exchange places one with another. This generates a question. What or who causes a situation when an authority becomes a *dominating* authority? The leadership concept offers an explanation to this problem. Leaders are capable of making great changes - they have special skills/knowledge/power accepted by followers (Weber, 1904/1949). The same process applies to introducing green issues such as Green Infrastructure into curricula and developing expertise as occupational jurisdiction. Such leaders are constituted as 'Green Champions' and are important in embedding sustainability in university courses (Hayles and Holdsworth, 2007) because of their special qualities. Thus, green championship provides a model useful in the analysis of 'green changes' in curricula.

One of the elements of green champions is the notion of 'leadership'. There are several ways of analysing the notion of a leader. For example Grint (2000) argues that a leader needs to be analysed through:

- an identity,
- a strategic vision,
- organisational tactics,
- and persuasive communication.

Fuller (2002, p.2) suggests that leaders of all types share "a core of action-and-mind sets [which include]:

- a strong sense of moral purpose,
- an understanding of the dynamics of change,
- an emotional intelligence as they build relationships,
- a commitment to developing and sharing new knowledge,
- and a capacity for coherence making”.

These characteristics will provide a template to measure Champions examined in the case studies. Steyrer (2009) distinguishes and describes four specific archetypes of a leader – a ‘father’, a ‘hero’, a ‘king’ and a ‘saviour’. Subject to confirmation from the evidence, the most appropriate type of leadership for introducing sustainability issues into curricula is a ‘saviour’. A saviour, especially a green saviour, is charismatic or even messianic, persuasive and wise. Leaders, according to the organisational studies, emerge when their subsequent followers recognise their charisma and the messianic message they preach. All attributes are important to include GI in university curricula. The green champion infuses its environment with passion. He or she inspires colleagues to teach, in this case, Green Infrastructure even though it may not be seen as core technical knowledge. The champion’s messianic enthusiasm together with persuasive character makes him/her a perfect Green Infrastructure zealot.

However, all of the discussed literature assumes a priori that there is/must be a leader. As discussed earlier, Giddens’s Late Modern theory states that there is no permanent leader. Every possible leader is transitory. Leaders may emerge in the moment of crisis but as soon, as the danger is over or another crisis happens, there will be another leader – another dominating authority. The case studies detailed later might provide evidence of this transitory lifespan.

3.8.2. Loose coupling

Educational institutions (as discussed in section 3.6.2.) are becoming more bureaucratised and they tend to rely on managers to comply with rules, achieve

various targets and provide quantifiable quality. At the same time, Green Infrastructure, as much as it is perceived an interesting concept with regards to urban environments, is not essential. Professionals in practice can barely define it and professional associations do not mention GI in their educational objectives, criteria for validation. Yet, still GI exists and it is being taught at universities. This model is seeking to explain why.

The model of loose coupling explains how courses are created through the uncoordinated action of individuals acting independently towards ends that are either loosely coupled or completely decoupled from the goals of their department or university. It regards GI as something developed 'bottom up' out of the research interests of academic staff, or through their interaction with business practice due to their association with the profession. GI is included in syllabi as a process of intellectual deviancy.

As discussed earlier, HE institutions are not homogeneous, rationally coordinated entities but rather a series of stable sub-assemblies responsive to each other, yet separate and independent (Weick, 1976). One of the consequences of this is that individuals can easily innovate their own areas; however it is difficult to change the whole system. Also a loosely-coupled system is able to respond to small demands from the environment, but cannot unify when facing major threats (Weick, 1982). This argument supports piecemeal changes to syllabi and the introduction of GI through individual action. Firestone (1985) argues that this decoupling precludes the idea of the central leader and emphasises the limitations of bureaucratic administration in educational institutions. Loose coupling argues that universities are facing too many policy pressures, and too many objectives for all to be achieved. Whilst managers seek to achieve all of these, lecturers cannot cope with conflicting demands and frequently see these as contradictory to their role as educators. Institutions are 'hyper-rationalized' (Wise, 1979) and there are too many goals (see earlier discussions on aims of higher education and the role of students) for centralised control to operate.

Loose coupling provides an explanation of why GI is taught, but is not on syllabi, in courses. Wise (1979) suggests that such 'hyper-rationalization' is a barrier to educating students. Teachers are unable to carry out their educational roles if they comply with managerialised objectives. Firestone (1985) for example points to the impossibility of maintaining quality when teaching greater numbers. Because GI is not core technical knowledge managers tend to exclude it in favour of those subjects and skills seen as essential in vocational courses. Teaching GI is not seen as productive in terms of producing employable graduates. However, lecturers view themselves as more responsive to the needs of their profession than these more bureaucratised agents and regard GI as a necessary skill. Individual academics find the concept intellectually stimulating and potentially important for students and are more prepared to take risks.

It might be seen that GI appears in assignments, syllabi or other course documentation. However, this does not undermine the model since lecturers are well aware that managers frequently do not read thoroughly the bureaucracy that they force lecturers to produce. Therefore, lecturers slip GI into formal documentation to reinforce their intellectual deviancy. In this way, piecemeal change is slowly accepted.

Loose coupling may also offer an explanation to the choice of learning and teaching methods at universities. Managers would like to see lecturers using a number of varying teaching methods as this would suggest good education practice. However, despite managers' wishes, lecturers tend to use lectures as a main teaching methods because it is cheap, effective, manageable and time-effective. Lecturers may want to 'save' their time for, for example, research or administrative duties.

Managers will react to this deviancy by re-coupling individuals and departments only when the loose coupling is seen as dangerous. So, for example, the model will expect imposition of control where decoupled teaching networks are seen as lowering

teaching quality, which is reported by students through the NSS Survey, and results in a fall in 'league position'. Whether GI is seen as 'dangerous' will be one particular insight that the model will help illustrate in the analysis to follow.

3.8.3. Legitimacy

"Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). The concept of legitimacy within higher education institutions is best described as satisfying expectations and establishing credibility. An organisation is expected to behave in a certain way and so it provides the characteristics of such activities in order to establish that it does carry out those activities expected by the observer. Legitimacy issues become important in Late Modernity. As there is no determining authority, most people are afraid of taking any action. There is nobody to tell everybody what to do. Thus, people need to rely on procedures and rules because actions based on them are perceived as appropriate and desirable within existing social rules. As discussed within Chapter 3, HEIs are expected to conform to certain directives, including financial and 'customer'-based imperatives, and prove quality through externally created measurement systems, including newspaper league tables and government-led student satisfaction surveys. Reaching, or attempting to reach, such goals places universities, or perhaps only their managers, comfortably in the Late Modern era. As a multitude of authorities exist and none of them is determinant, then it is better to rely on structures already accepted by society. This tactic postpones responsibility for any innovative, perhaps unsuccessful, action. It also provides satisfaction to both the government whose its goal are being realised and university managers whose administrative procedures are the basis for their existence.

Legitimacy expects Green Infrastructure to be there only when it is expected by a dominant authority. This dominant authority could be students as clients, government as paymaster or professional associations as a requirement of the profession.

The model might also illuminate teaching and learning paradigms, since it suggests that lecturers are prevented from using more innovative teaching methods. Lectures are good because they are perceived as desirable and useful within existing social conditions namely a lack of funding, a large number of students, poor facilities, and they are a centuries-proven learning vehicle.

Nevertheless, legitimacy provides the researcher with a practical problem of distinguishing between the corporate reality established by legitimacy functions and the reality of what actually happens in classrooms. The fact that a university states something as a 'fact' does not necessarily make it so, even where this might appear in 'working' documents such as syllabi. Similarly, if evidence is uncovered that staff do not follow a syllabus, does this necessarily mean that the syllabus is merely a functionary to the legitimacy process? There is no doubt within the legitimacy literature that all organisations engage with it. The need for this work is to recognise nuance of the broad concept, given the excess of some of the more populist literature. Despite these practical problems, the model offers great potential for explaining behaviour in Late Modern universities and professions.

3.8.4. Routinisation

As has been established, in the Late Modern period, there is no determining authority, there is nobody to tell everybody else what to do and how to do it. Actors do not have anything stable to rely on such as traditional routes, structures etc. Instead, rules and procedures are created to fall back on in case of any uncertainty. Educational institutions are one example of this. Universities create their own rules, quality control procedures, appropriate actions and behaviour. This provides them with some steady structures necessary in moments of uncertainty. The key issue in the legitimacy model is about fulfilling, or attempting to fulfil, expectations. Legitimacy creates procedures and routines because they are *expected*. In the model of routinisation, processes and rules serve as the mechanism by which education is actually run.

Mok and Welch (2002) state that managerialism, bureaucratisation and routinisation are the effect of the globalisation and welfare crisis. This new style of management is concerned with effective use of scarce resources and brings about performance indicators, quality assurance instruments, corporate managerialism, and commodification of knowledge. It is an active strategy of coping with changing conditions. In theory, in the routinisation model, actors focus on disseminating 'best practice'. In consequence, this is turned into a set of standard rules and processes which lead universities.

As there is no single determining authority, a new system of delegating responsibility emerged; routinisation. In a system like this, lecturers refer to course documents, policies, and examples of their colleagues. These managerialised processes then drive teaching and learning as routinisation creates styles of knowledge, packages of knowledge and ways of rationally creating systems.

Of course, the practical effect of this is that universities become bureaucratised, managerialised places where it is not possible to use one's judgement in case this may be too arbitrary. Everything is unified to a set of specific rules. Also a place and a form of knowledge become very inflexible. Every subject area must be in the right place with an appropriate set of rules. Interdisciplinary subjects are difficult to place in rigid university environments. This is the case with Green Infrastructure in which elements could be traced, for example to ecology, geography, planning, social sciences and architecture. Even in the area of built environment there are at least four professional bodies claiming ownership of GI. This makes introducing GI into curricula a difficult enterprise in a routinised teaching environment as this concept encompasses elements from various fields, and actors are not willing to cross occupational boundaries.

Routinisation is about creating standard processes to assure quality. This process gives a form to existing Green Infrastructure. One could expect GI in forms of certain

documents, protocols, standard forms. It forms a part of systemisation of quality assurance. GI is seen in particular shape, it should then appear in syllabi in certain ways. Routinisation establishes standards of teaching, standards of learning and GI conforms to that.

In Late Modernity knowledge becomes commodified and standardised as a part of quality assurance process. Through routinisation, knowledge can be packaged, sold and re-sold to a continuous standard in accordance with the demands of the current dominant authoritative. Managers want to unify all teaching methods in order to make modules easy to change, substitute or replace. Thus, managers want to make a lecture a basic teaching method. It is cheap, effective, it is easy to use with large groups and it is not very time-consuming. That is why, despite suggestions from the ESD literature that teaching Green Infrastructure may be more effective if using varying teaching methods, lectures should be expected to form the basis of courses.

3.8.5. Education for Sustainable Development

ESD relies on interdisciplinary learning with a strong emphasis on values. Claims that ESD is essential for the implementation of sustainable development suggest that this type of education is different from the ‘normal’ degrees providing technical and jurisdiction – based training and education. As discussed earlier, the key elements of ESD are: interdisciplinarity, awareness, values, participation, and a variety of approaches pursuing the sustainable future. It should cross traditional, and professional, boundaries between subject fields. Lecturers from a wide range of disciplines should participate in teaching GI.

GI should not be taught as a ‘dry’ scientific subject. Its parameters and benefits, for the environment, society, and as a course element, should be measured, primarily, in non-monetary values. Attaching a monetary value to GI makes it a ‘normal’ commodity. According to ESD, GI should be associated with a wide range of

benefits, sometimes non-measurable in monetary terms. If ESD drives GI into syllabi and classrooms, then this difference ought to be visible.

According to advocates of ESD, Green Infrastructure should constitute a separate field of study because of its uniqueness, quality, and its exceptional values for the environment. Again, this separation ought to be visible. Opponents argue that it is merely a very narrow part of a patchwork of ecology, planning or landscape architecture topics that take up 'space' better used on core technical knowledge. This model will allow the testing of each viewpoint on this.

ESD should pervade all courses and subjects. In consequence, GI is should not to be confined to a narrow subject area but it should bring together different disciplines. ESD is associated with 'values-based learning', which suggests that people who deliver subjects within the framework of ESD, should be deeply engaged with their discipline. As critical thinking is far more important than memorising facts, lectures should play a minor role in its teaching. The best methods of teaching and learning of the GI issue are role-playing, 'hands-on-experience', 'do-it-yourself' projects.

Because GI is a multidisciplinary issue, nobody is able to claim occupational control. Thus, there are no claimants, no professional bodies which can validate courses on Green Infrastructure. Where universities rely on professional accreditation this will be an interesting test of ownership. Will GI 'hang' between subjects and be treated as an auxiliary piece of knowledge, only for those who are interested? When resources are tight, is GI the subject to be excluded, or even first *not* to be included, in curricula?

3.8.6. Co-habiting authorities

The literature review has analysed the driving authorities concerning the establishment of Green Infrastructure as occupational knowledge within the planning profession. Late Modernity provides a conceptual basis to describe a lack of determining authority and a contingency of knowledge. Neither government, nor

business, nor professional associations nor universities control planning. This lack of a determining authority is especially appropriate for Green Infrastructure. As a new subject in the field there is no pre-Modern right of control and this situation encourages and creates many claimants to authority.

The concept of Late Modernity explains the apparent decline in the status of professions, and also their lack of dominance in how they lay claim to expertise and the ownership of knowledge, specifically GI. There are two claimants to authoritative expertise within traditional boundaries of the field of planning (Royal Institution of Chartered Surveyors, RICS, and Royal Town Planning Institute, RTPI). However, two others lay claim to expertise within at least parts of the professional jurisdiction established for planning (Royal Institute of British Architects, RIBA, and Landscape Institute, LI). All are drivers for establishing both the concept and occupational existence of Green Infrastructure. Indeed, the wider environmental field offers a clear example of Giddens' argument on the lack of determinant authority within occupations. For example, twenty-three professional associations cooperated as equals in considering 'environmentalism', or aspects of it, as an expertise that they consider their own, in creating the Society for the Environment, which has been granted a Royal Charter and the title Chartered Environmentalist. This entire situation provides a competing cluster of authorities, each trying to dominate planning and GI, or certain aspects of them. They all claim ownership over GI but only implicitly. Recently RICS published an information paper in which they examined the place of surveying with the concept (RICS, 2011). However, they did not create their own meaning but accepted that of Natural England. This exemplifies their lack of authority in driving meaning.

Professional associations do not indicate in their educational documents the need to introduce GI. This makes GI 'homeless', and thus, for universities which act according to rules and professional boundaries, 'uncomfortable' to include in curricula. This all creates a number of co-habiting authorities.

The Royal Charter, granted by the Privy Council, validates Giddens' (1991) analysis because it endorses the existence of a determinant authority by its award of Chartered status to the premier group within any field or occupation, and has done so for centuries. This creates a system of determining authorities, each recognised by, and recognising, each other. This system of granting such Charters might work efficiently in an age of traditional knowledge and unchanged modes of occupation. Yet how can it face the late modern era? How might it arbitrate when two groups lay claim to expertise in the same fields, and also find themselves competing with newer groups emerging to lay claim to new areas of knowledge? How can it engage with the increasingly complex occupational division of labour that has occurred since RICS was awarded its Charter in 1868 and RTPI in 1959? Indeed, how can it hope to compare what was done in 1868 with 1959? Giddens (1991, p.195) refers to "an indefinite pluralism of expertise" resulting from the uncertainty that is produced in Modernity. With High Modernity this uncertainty is globalised and the process is made more concrete. Giddens (1991), and certainly those who progressed his ideas within the study of occupations (for example Reed, 1996) expect powerlessness, uncertainty and commodification to destroy the traditional authority of professions. In GI, there are four professional bodies fighting for dominance in the field each engaging separately with courses, departments and universities, in addition to government and the wider business environment, with none being able to claim sovereignty. Perhaps, if one of the professional bodies could 'deal' successfully with Green Infrastructure, the rest of them would follow the example of best practice. Right now, GI remains in 'shady border' between occupations and will not be treated as core knowledge by any occupation.

In a similar way the dominance of the government has been eroded over time, and in High Modernity it is simply another driver and claimant on how knowledge should be provided. The government cannot claim control over planning. And the issue of the Royal Charter seems to offer, again, evidence validating Giddens' (1991) analysis. The government transferred a little of power to RTPI by providing them with the Royal Charter. However, at the same time the Royal Charter was also provided to

RICS, RIBA and LI, all of which claim ownership of a piece of knowledge called Green Infrastructure. Hence, it has created four determining authorities, clearly an impossibility. Indeed, if one considers further professions, such as Chartered Architectural Technologists, this number might be even greater. This reinforces the lack of dominance of Government in Late Modernity. Government cannot dictate. It is democratically elected and faces many competing pressures, including to serving the electors, to be 'business orientated', to raise taxation, to create acceptable social and cultural environments, to house, or allow citizens to house themselves, to protect the environment and to protect and generate employment. This suggests that the government cannot force any of the professional bodies to include GI in their educational requirements.

3.8.7. Learning and Teaching in Late Modernity

Is it possible to deliver and acquire knowledge in a predictable, repetitive and measurable way, especially when it comes to subjects so nebulous and multifaceted as GI? It does not seem likely because "from either a critical or a postmodern perspective, knowledge is socially constructed and situated in a particular context" (Kilgore, 2001, p.54). This statement has a number of implications on the learning and teaching in Late Modernity.

This thesis does not set out to distinguish the 'best' learning and teaching method quantitatively or scientifically. It is not establishing psychometric tests, for example, measuring the effectiveness of the human brain in certain light conditions or the spatial organisation of a classroom. Knowledge, in Late Modernity, is tentative, fragmented, multifaceted, subjective and contextual. This means that everybody is responsible for shaping and presenting knowledge. So everybody is in an equal position, this is especially important considering how diverse is the structure of participants in education, to choose the best method for them. That is why the researcher was asking lecturers and students about their personal impressions based

on everyday practice on the methods of teaching and learning that they find the most appropriate for the issue of Green Infrastructure.

There is no identical student, and there is no identical lecturer. Everybody has different targets to achieve, different life experiences. The delivery of the socially constructed piece of knowledge called Green Infrastructure depends on a constellation of competing authorities on what to do and how to do it. At the same time, “learning is a process of continuous deconstruction of knowledge, of playing with contradictions, and of creatively and productively opening the discourse of a field to an eclectic mosaic of many truths” (Kilgore, 2001, p.60). Thus, the approach in this thesis was used to encompass, include and give the same value to every opinion on teaching and learning Green Infrastructure, regardless of whether they may be contradictory or beyond traditional critical educational theories.

3.9. Conclusions: literature reviews in review

This chapter introduced the concept of Green Infrastructure and showed contradictions in understanding of the concept between different occupational groups. It later analysed the nature of higher education in order to place into a comprehensible context its examination of green infrastructure within a planning occupation paradigm.

Because the government is responsible for funding, regulation and policy initiatives, it plays a dominant role in HE. Government encourages universities to act in certain ways, usually by offering additional funding or threatening to cut it. Universities would like to see themselves as centres for innovation and research but at the same time they realise they need to produce employable graduates. Education has become more commercial as government has placed further policy initiatives upon the sector. This is especially true of those linked with the expansion of higher education and equality of opportunity, and linked HE with UK industrial competitiveness. However,

government is pressured into this by business, the electorate and other drivers. At the same time professions are concerned that this expansion comes at the cost of the quality of courses with an increasing number of poorer quality graduates regarding to their competence to use skills. It is perhaps unreasonable to expect those bodies reviewing higher education to explain the contradictions examined in the chapter. They are concerned more with policy and are set up to deal with particular issues rather than explain HE in its entirety. So, higher education is seen producing quality ideas *and* widening participation, for example. Both are expectations. It is, therefore, with the actual experiences of stakeholders that a more rigorous analysis of these issues can be investigated, and the following research will examine business and professions, although these two might also be distinctly separate, students and universities, although, again, these might also be in separate clusters of interests. Chapter 4 thus examines the views of business upon the creation, structuring and qualifying of green infrastructure knowledge. Chapter 5 looks to professional associations. Chapters 6-9 will adopt a case study framework to look at universities, lecturers and students. The work concentrates on the issue of green infrastructure, both to produce a manageable piece of work, but also because the discipline is new (potentially at least) as discussed earlier, and is thus a discussion upon the creation and dissemination of new knowledge.

In this chapter theoretical models which were crystallised from the literature review were presented. These are models of: Green Championship. Loose Coupling. Legitimacy, Routinisation, ESD and Co-habiting authorities. These models will be used as vehicles to help explain the empirical evidence, and which will, in turn, then be applied to illustrate, test, flesh out and reject the models.

The earlier parts of this thesis have analysed Green Infrastructure within UK higher education and established an appropriate methodology to bring these together under this study. The following chapters will now present and analyse new evidence within this framework, and derive conclusions about these issues from it.

Chapter 4: Professionals in Practice

4.0. Introduction

As was discussed within the methodology chapter, determining a starting point for any research is always problematic. The dangers of a priori assumptions need to be considered when initiating work. Additionally, the literature analysis in Chapter 3 reiterates the discussion concerning inductive versus deductive research within Chapter 2. Whilst the literature review provides a number of models to illuminate and test the evidence, the danger of bias from holding an a priori position need to be remembered when doing so. And the models discuss a series of competing dominating authorities over education generally, and in the creation of syllabi in particular. Where then to start?

4.1. Interviews with ‘preliminary academics’

This chapter establishes an introduction to the research, leading to the further investigation of educational processes and their drivers in later chapters. As discussed in Chapter 2, a small group of interviewees was interviewed in order to establish a starting point for the whole research project. These were academics with a number of years of experience in academic practice. This criterion was selected to ensure that they have a deep insight into educational processes. The research methods used in this part the project were an unstructured interview and a focus group. As discussed in Chapter 2, the rationale to generating this data was to establish the least biased, at least by the researcher, starting point to the work. The overarching question posed to the selected interviewees was what drives changes in education, especially new subjects, syllabi changes, teaching and learning methods. Interviewees were provided with a briefing note that summarised the literature on this, and highlighted the themes for discussion.

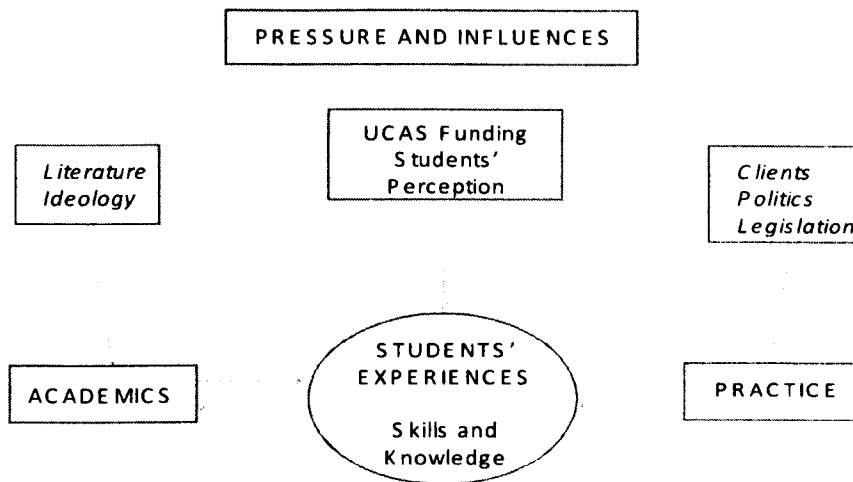


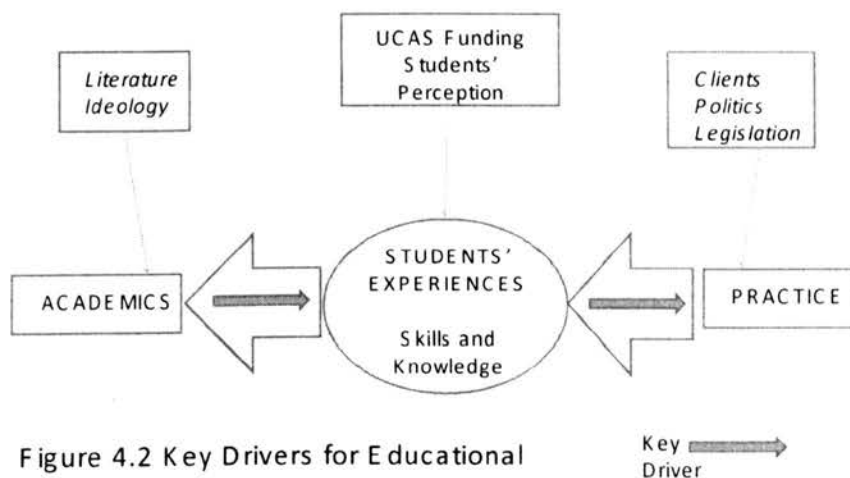
Figure 4.1 Pressure and Influences in Educational Process

The focus group encouraged the researcher to develop Figure 4.1 during its discussion. Interviewees PA1 and PA2 in particular agreed that pressures upon educational processes could be illustrated by this scheme. Students are taught and influenced more or less directly by academics. The focal point of educational processes is students and their experience at the university. At the end of the cycle, students graduate academia, becoming professionals in practice.

However, every stakeholder in this process is subject to external pressures. Academics are influenced by literature, current ideology and their peers. Students' experience at the university depends on the funding from funding bodies such as UCAS, on their home life and on students' perception of the educational process.

Similarly, professional practice depends upon its clients, current politics and legislations, and also to some extent its peers. Academics affect academia and academia influence professional practice, but there is also feedback. Whilst academic changes reflect changes in academia, these may be induced by professional practice.

This is a simple model illustrating educational processes. Whilst it reflects the outcomes of this part of the research, it could be argued that it is an overly simplistic scheme. For example, as discussed in Chapter 5, professional associations play a major role in the vocational degrees that they validate and yet this model does not include the influence of professional bodies on the university curricula. However, the focus group did present universities as determinant drivers of change. What they did not do is differentiate individual academics from departments or general university management. When discussing ‘academia’ they were rather vague in its exact meaning. Additionally, both PA2 and PA4 also, at separate times, described the important place of practice in operating practice-orientated courses. Whilst not directly refuting Figure 4.1 it does place a greater emphasis upon the feedback loop from practice through student experiences and back into academia. Figure 4.2 reflects this evolution in interpretation.



The process depicted in Figure 4.1 is implicitly a one-way route. Whilst the focus group did lay emphasis upon ‘academia’, this perhaps reflects the academic bias of the group members. However, relying solely upon the figure also fails to recognise the rounded discussion that developed away from the figure, and included competing

interactions between academics, employers and professional associations in producing new education subjects and methods of learning, and which constantly undergo evolution as each stakeholder experiences them. This discussion laid particular emphasis upon outcomes, that students were being trained to practice. What was central is the importance of the occupational requirements for new employees, who are those same ex-students.

This emphasis was reinforced by the general consensus between respondents PA1, PA2 and PA3 that educational processes are led by employers. Employers create a need in the market for a specific type of graduate that fits into this occupational need. This need is fulfilled by universities creating courses in order to create a desirable (from employers' point of view) graduate. By creating a graduate who is likely to find an employment, universities attract more students. This generates more income for the institution and, in consequence, funds growth. This puts pressure on academics to create courses and syllabi that reflect needs of professional practice.

Interviewee PA4 perceived the situation slightly differently. He agrees that employers lead educational processes, but argues that this is induced by the needs of their clients. Clients determine what 'product' they need. Thus, indirectly, they influence educational processes as employers fulfil wishes of clients, and employ graduates having a certain set of skills. However, the end result is the same, that employers lead educational processes (PA4).

The same process relates to very specific issues such as the concept of green infrastructure. Business people are agents for change with regards to university programmes. If they perceive the concept of green infrastructure as necessary in practice, if there are clients who need graduates with skills regarding GI, then they will influence academia to 'create' such students. Employers are the group responsible for introducing this concept into the university curricula because they perceive it as a set of skills necessary to do clients' work and thus employ graduates with such skills (PA2).

Chapter 3 discussed the theoretical and occupational differences towards green infrastructure. However, the respondents here relied upon those skills and knowledge necessary for its implementation in practice to drive what was put into course syllabi. Thus in order to examine the implementation of the GI issue in the university programmes, it is necessary to find out what sort of graduate (in relation to GI) employers seek. This then defines the concept in practical terms and establishes a catalogue of characteristics that syllabi and the teaching of those syllabi will inculcate into students.

This preliminary piece of research thus determines the starting point for the research: an examination of professionals in practice as drivers of educational change.

4.2. Professionals in practice

This section of the research examines the drivers for implementing green infrastructure concepts in professionally-validated courses. Specifically, it follows the evidence discussed in section 4.1 that places businesses as the determining factor. This requires creating data on the ways in which the meaning of this concept is constructed by various individuals and firms within the planning field. From this interpretation it was intended to develop a set of characteristic skills necessary for the implementation of Green Infrastructure into professional practice. However, as will be discussed, the hypothesis that practitioners are drivers of change is less clear within practitioner perceptions.

The data required to progress this examination upon drivers of educational change involves examining the relationship between practitioners and universities, and the perceptions of professionals upon their occupational environment and how this relates to giving meaning to the idea of green infrastructure. Therefore, a series of semi-structured interviews with practitioners were conducted. The content of the interview

is included in Appendix 3. The interview was divided into two parts. The first was dedicated to the concept of Green Infrastructure: how the concept is perceived by practitioners, what are the modes of implementation and what is the importance of the concept in professional practice. The second part was about the role of higher education in delivering GI-literate graduates and the need for them.

The outcome of this piece of research provided a basis for the development of a set of skills which are important, if not necessary, to utilise the concept of Green Infrastructure in professional practice.

4.3. Green Infrastructure in an Occupational Context

As discussed earlier the first part of the interview was intended to construct a concept of Green Infrastructure, and the way it is understood by professionals in the field. Chapter 1 discussed the lack of a mandatory definition of Green Infrastructure at the time when the research was in progress. As of 2008 PPS12 containing a definition of Green Infrastructure is valid.

A number of academic interpretations exist, also discussed earlier, but there is no statutory or obligatory interpretation to guide those in practice. This was recognised by respondents.

“GI is yet to be properly defined. People may have different ideas” (PP9).

“People understand it differently” (PP6).

“Right now it doesn’t have a strong policy status [and] it has to be defined in order to be meaningful” (PP1).

Some respondents were themselves vague and contradictory in how they might construct a definition for GI to an external audience (PP12 for example). This lack of

consistency in definition presents a methodological problem. Analysis of data requires that respondents are utilising the same words to mean the same things, and are agreeing on a generally accepted interpretation of a concept that they are discussing when compared to others apparently describing the same concepts. Some, such as institutions like Natural England and Environment Agency which (as PP6 stated) developed the concept, presume that theirs is an accepted occupational understanding, but this proved not to be the case. That said, a core consistency is observable.

Most respondents describe Green Infrastructure as a network of interconnected open spaces within and around the urban environment. This consists of all kinds (PP11) of open spaces also including spaces like river banks, historic landscapes or vegetated spaces in a linear form (PP3). This definition of the concept of GI is derived from the patches-and-corridors system, discussed in Chapter 3. This description was provided mostly by the interviewees with 'environmental' or 'ecological' degrees, who were able to outline a more precise definition than other respondents.

A second definition commonly given by interviewees is that Green Infrastructure consists of services provided by the environment in general (PP5) or by habitats (PP9).

Interviewees with 'ecological' degrees defined a 'purer' concept of green infrastructure than others, but all respondents, regardless their background, recognised a whole range of economic-environmental-social values services provided by green infrastructure to ecosystems. Examples included:

- drainage, shading, photosynthesis, carbon sequestration, aesthetic, recreational values, health values, biodiversity (PP5);
- flood management (PP6);
- capturing specific pollutants, providing additional moisture (PP9);
- social cohesion, social inclusion (PP13).

From these characteristic traits interviewees derived a series of functions offered by GI. These included:

- recreation, public health, education (PP4);
- water management, biodiversity (PP6);
- regeneration (PP9).

Also by improving the quality of the environment, GI has an indirect impact on property prices and on location decisions for business (PP13). Thus, it can be summarised that the GI concept consists of a network of open spaces providing a whole range of economic, environmental and social services.

However, the key issue stressed many times by respondents was the lack of GI within an occupational context. Specifically, GI was treated piecemeal because funding was only obtainable under various discrete headings. GI was not an established political concept; politicians required a simplified, 'presentable' form (PP6). For example, the benefits of GI to the environment need to be address as defined functions within an anthropocentric focus. For example "instead of saying that one of the values of green infrastructure is that it may generally improve the quality of air, we need to say that the function of GI is improvement of the local climate, which will benefit local communities" (PP6). Respondents are clear: politicians consider a problem only when it is linked to practical concerns. Pure ecological functions are not regarded seriously. For example, flood management is a 'hot topic' and so if GI is presented in a form of preventing floods it will get attention. PP6 summarised this: "it is a very utilitarian, almost technical aspect of GI rather than a general notion of GI which is about the network of green and open spaces".

This difference in perceptions between the ecologists and others is also evident between respondents. Interviewees within occupational backgrounds (for example PP7 and PP14, both engineers) tend to describe GI only in terms of functions it provides. They present a utilitarian approach and acknowledge the concept as long as it fits into their projects. Their definitions focused upon the services provided by the

ecosystem, adopting a technical and functional understanding of nature as a commodity to be consumed. PP8, an architect, described GI as “putting in place measures that can help development reach certain sustainability goals like reduction in water use, energy use, waste generation and general pollution measures like air quality control”.

There remains a central question as to whether GI is distinguishable from a general concept of sustainable development. For example PP10 described GI as “anything in terms of the built environment: buildings, transport infrastructure that encapsulates the concept of sustainability and makes up what is green”. Whilst there is no accepted definition of GI and the concept is not ‘properly’ defined, this interpretation seems to be too wide. It is disputable whether issues like for example rainwater harvesting, using high reflecting windows or using forest certified wood, which are introduced to reduce the environmental impact of buildings, or incorporating sustainable travel within a project, are really elements of Green Infrastructure rather than sustainable development. Respondents do seem to regard GI as a broad, ‘captural’ term. In this regard, there is no correlation between a respondent’s background and their misinterpretation. However, some respondents do recognise a distinction, when they are dealing directly with GI (for example PP9). This reflects their occupational experiences, rather than their educational background. Indeed, pragmatic occupational influences underlie this woolly conception of GI: clients and government understand practical realities such as water shortage or flooding, but are less interested in what they see as nebulous habitat concerns. Some interviewees recognise the need to include more elements to the ‘brand’ of Green Infrastructure in order to promote the idea ‘through the backdoor’.

“From ecological point of view it’s about habitat and species [...] It’s not that interesting to lot of people. People say we have other things to do. We’ve got to sort out the quality of life in our cities, we’ve got to sort out our drainage, climate change all those things. [...] We know how to do for example sustainable drainage system but if we see it as a part of GI then it has got more leverage” (PP9).

Respondents also recognise that, without any agreed definition, the GI idea itself is still changing: “the idea of networks, patches and corridors was fulfilling. Now we have to sit together with developers and surveyors” (PP9).

Whilst it is fairly easy to describe the GI, especially by graduates of ‘ecological’ degrees, the occupational context is what drives meaning. Practical implementation is possible only if the benefits of green infrastructure are emphasised. In practice, technical issues that are not essential elements of Green Infrastructure are also included into the overall concept. This is because they are useful, they make a fuller and more advanced conception of what GI actually is, and they help to build bridges between different disciplines, professions, qualifications and working backgrounds. The GI concept is a wide term, encapsulating a variety of elements already, and so it seems to be able to absorb this and still retain an identity among practitioners. In doing so, by including more aspects and functions of GI, the concept gains more support, interest and power. Since the definition of GI is not shaped completely, considering these different aspects will help to construct it; meaning will evolve from the interaction and competition between its myriad constituents. According to some interviewees, the concept of Green Infrastructure is about combining those elements and creating a new quality. The concept of Green Infrastructure seems to be an umbrella term for diverse elements (PP9) and it means “taking it [Green Infrastructure] to the next level. [...] Sometimes the concept of GI is a way of talking about green spaces [while] it should be understood as any other type of infrastructure” (PP6).

The evidence finds a contradiction in meaning between the academic secondary literature and the occupational use of the concept. The primary reasons for creating green open spaces were aesthetics and recreation (see for example Turner, 1995; Turner 1998). There remains a tendency to think that these reasons are still the most important reasons, even among practitioners like PP7. However, considering green spaces only from aesthetical and recreational point of view is an old way of thinking, and certainly not Green Infrastructure. Green Infrastructure may even be a theoretical

development of the idea of patches and corridors. As PP2 says, “the concept is useful as a description”. But it is also significant because “it helps to understand the purpose of the green spaces network over and above its recreational and aesthetic values [the most important aspect of GI is] performing particular functions” (PP6). So the network of green spaces is not similar to the concept of Green Infrastructure because it was created for a different purpose, to fulfil different needs. “Existing network of green spaces is designed for different purposes. We need to re-design it to make sure it fits for purpose, especially green spaces in urban areas. There’s still a recreational value, an aesthetic value but increasingly there is a wider set of values like flood management, urban heat island mitigation, ecological connectivity” (PP6).

4.4. Importance in professional practice

Interviewees emphasised the role and importance of Green Infrastructure in the urban environment. According to them, the name ‘Infrastructure’ suggests that this is an essential component of the urban environment and is being used to correct a traditional bias (PP1, PP2, PP5, PP6, PP9). Green infrastructure is “something aspirational. Other infrastructure for example housing, water purification plants, incinerators – these always take a priority. We lose sites every time for them without being able to prevent it. It may be the priority on paper but in practice we can’t seem to be protecting the Green grid at all” (PP1). Thus there are attempts to raise the status of GI as a crucial element of the urban environment. It is called “Infrastructure to bring up the value of green area” (PP2). “We want to ensure that it is seen as important as housing, schools, hospitals and urban transport” (PP1). “We feel that the green element is essential. We think that it has got more leverage, more currency if it is a part of infrastructure because it needs the same viewpoint with things like transport modes, making places safe, making economic base” (PP9). “It [the label of Green Infrastructure] gives that kind of status that needs to be taken seriously” (PP5). PP11 states that the fact that Green Infrastructure is regarded now as a part of infrastructure can be explained by the shift in the spatial policy. The first wave of the innovation came about five years ago with the housing agenda. The Government’s

concern was to build 'a million new homes' as the costs of housing were too high; 'key workers' could not afford to live within certain regions, and state action was perceived as a remedy for this. The UK was losing competitiveness because companies were located in places where living costs were smaller. The second wave looked to broaden transport infrastructure in order to support housing infrastructure. Now the notion of infrastructure is broader and includes education, health provision and green space provision (PP11). The Government and bodies like CABI are trying to pass a message that there is an economic argument for GI provision; better environmental and landscape settings will result in development progress. This is happening especially in areas such as Thames Gateway. "So the infrastructure agenda comes out of the National Economic Review" (PP11).

Interviewees are clear that GI is becoming more significant in practice. Also the variety of both local and national projects related to Green Infrastructure proves its growing importance in professional practice. Examples of projects are as follows:

- East London Green Grid (PP1, PP6.)
- Thames Gateway (PP11, PP13)
- river restoration strategies (PP6)
- creating parks (PP5)
- The Lee Valley Regional Park (PP13)
- Sites Specific Advice project on sustainable transport (PP10)
- Thames Landscape Strategy (PP4)
- Northwest Kent Countryside Partnership (PP2)
- BSkyB Headquarters Centre (PP8).

The number and scale of projects related to GI suggest that the concept is becoming very important in professional practice. The variety of projects proves that the GI concept is multi-faceted and engages a variety of professionals. Several groups of stakeholders are interested in the concept of Green Infrastructure. These can be:

- Green Grid, local authorities (PP1)

- Greater London Authority (GLA), landowners, Habitats for Wildlife, central government, Environment Agency, Wildlife Trust (PP2).
- Traffic and Transport, Strategic Planning and Development, Regeneration, Highways and Amenity, environmentalists, water engineers, transport engineers, (PP1)
- planners, ecologists (PP2).

The projects discussed by the interviewees indicate that despite the vague legal status of Green Infrastructure, the issue is particularly recognised within the London area due to big development projects like the Thames Gateway scheme. “It’s being done in and around London because of the Thames Gateway” (PP9). This is confirmed by plans of the Mayor of London who said: “The Green Grid concept aims to provide new and existing East London residents and workers with a multi-functional network of strategic open space and in turn improved quality of life. (...)The Green Grid is the London delivery end of DCLG’s ‘Greening the Gateway’ strategy” (Mayor of London, undated). The Green Grid and Thames gateway are particularly important in the context of the forthcoming 2012 Olympics so these initiatives are often linked together. The 2012 Olympics at Stratford will leave a major open space legacy in the form of the Olympic parklands, which will deliver substantial new open space areas (Landmark Information, 2005). So the Green Infrastructure issue is becoming a ‘hot topic’ because of its relevance to these higher status projects. “I’d say that work on GI in the Thames Gateway is a bit advanced because of the series of policy tools which elbow local authorities to coordinate policy actions. Outside the growth areas and the Thames Gateway it’s maybe a different issue” (PP11). So again appears a question of whether the GI issue is important for central and local authorities just because of the value it adds to more significant projects like the 2012 Olympics.

4.5. Funding

Organisations like, for example, Thames Landscape Strategy benefit from the newly acquired popularity of the term ‘Green Infrastructure’. “We used the term Green

Infrastructure only recently. It became a buzzword in some ways. It's the way of labelling how you address green spaces. It became with Green Grid and Thames Gateway and then Mayor of London and his Green Arc vision" (PP4). This means that organisations claiming to deal with Green Infrastructure have a better chance to receive funding. "If there's money available to a GI project, we are a GI project. So we need to re-brand ourselves" (PP4).

Nevertheless it would be a simplification to claim that in order to get funding, it is enough to re-brand it as Green Infrastructure. There is no well-established funding regime for GI projects. "The green spaces network has never been regarded as infrastructure so it doesn't have a long term proper funding regime. If there's a problem with funding, you leave the green space network but you wouldn't do that to the roads network. That's why you need to describe the green space network as infrastructure because that provides a mechanism for a long-term funding" (PP6). According to PP11 and PP15, costs of the open space provision are little but the most expensive is maintenance of Green Infrastructure contrary to other types of infrastructure. "When you tend to provide 'normal' infrastructure like roads [...] you've got high capital costs of putting it in place but then you've got low maintenance costs. The same is with most pieces of infrastructure. When you're coming to GI, the cost of providing is very little but real cost is in revenue cost, which is the cost of maintaining this space" (PP11).

4.6. Knowledge and skills

Interviews with professionals in practice were undertaken to create a set of skills and knowledge which is necessary for implementing the concept of GI in the occupational form(s) it takes in practice (and discussed in sections 4.1-4.5). Examining their experiences and implementation of the concept ought to provide evidence-based criteria for defining what GI is, or has become in an occupational context. There are two aspects to this. First, what are professionals actually doing, and how are they

doing it? Second, how does this then create a list of knowledge in a form suitable to test within university departments?

Some of the tasks and areas interviewees work on within the framework of their projects, include:

- creating policies, strategies, frameworks, responses to Mayor of London (PP1, PP3, PP4, PP6, PP13)
- liaising with different stakeholders (PP2, PP4)
- spatial planning (PP3)
- masterplanning (PP3, PP5)
- liaising with different stakeholders (PP2, PP3)
- introducing 'environment friendly' solutions to buildings (PP7, PP8)
- introducing sustainable transport solutions (10, 11, PP12).

This was then developed through the semi-structured interview process into a discussion of skill-sets. Interviewees included the following:

- ecology (knowledge, understanding, design) (PP1, PP2, PP5, Interviewee PP6, PP7, PP8)
- landscape architecture (PP1, PP4, PP11, PP13)
- engineering (PP1, PP6, PP10, PP14)
- geomorphology (PP1)
- planning (understanding planning requirements of the plan) (PP2, PP4, PP7, PP10)
- management (PP2, PP4, PP9, PP12, PP14)
- project management (PP1)
- risk assessment (PP2, PP3)
- team leadership (PP2)
- masterplanning (PP5)
- design (landscape architecture) (PP5, PP6, PP10)
- community consultation (communication) (PP5, PP9, PP13)

- bus driving (PP2)
- sustainability (PP2)
- fundraising (PP3, PP9, PP14)
- economics (PP6)
- hydrology (PP6, PP8)
- architecture (PP7, PP8)
- transport (PP5, PP10, PP11).

As can be seen, in both cases, practitioners provide a whole range of skills necessary for the incorporation of the GI concept in practice. Mainly it depended on their professional background and the kind of projects they are working on. However, the most obvious skills were connected with ecology and planning which proves that even people with technical degrees acknowledge the ‘ecological’ foundation to any meaning of green infrastructure. Professionals from other disciplines need to have some ecological knowledge. “Architects, landscape architects, building surveyors, quantity surveyors have their own discipline. [...] If they don’t know the environmental impact, then it’s going to continue the same mistakes [...]” (PP9). However, in providing a coherent series of traits for a ‘GI professional’, there was very little coherence within the occupations dealing with it. Not only did this complicate discussing the issue, but it then leads to problems when looking at what the professions expect from graduates, and what they believe should be taught as pre-professional knowledge by universities.

4.7. Learning and Teaching Issues

There was general agreement on the appropriate teaching methods for GI, which reflected the variable and occupation-specific content discussed above. It should be taught “through experience during, for example a work placement. [However] people need to learn from experienced managers. They need to be very closely supervised [because] you cannot afford to make a mistake in these projects” (PP1). There should

be an opportunity for students “to work in the industry for a semester” (PP8). This was supported by PP2 who said that “real learning is outside universities [but in the university environment] we should try to mime reality”. There was wide support for the ‘sandwich’ year at universities to provide this occupational learning. Universities should also cooperate with practice; projects on GI should be “connected with practice” (PP6, PP12). This could be arranged through partnerships with universities (PP4).

The nature of teaching was discussed, and the ‘project’ was widely mentioned. According to PP6 the concept of GI is not introduced enough in university curricula because teaching it is “very resource intensive” (PP6). None of the interviewees were very clear on what form a ‘project’ should take or how teaching more generally should be carried out. Understandably, their focus was on the outcome of the teaching process. For example, PP9 provided a somewhat woolly suggestion that there is a need to break up the occupational boundaries in order to work together on projects on GI. This should begin at universities, but details of such approach were not defined. This refers to the widely presented idea that there is a need for multidisciplinary work (see Chapter 3), but also reflects the lack of detail from any occupational or educational group on how to achieve this and the very real problem that professions exist exactly because they create exclusive occupations. Thus, PP9 reflects that thread in the literature, aspiring to cross-occupational education without actually providing the resources to overcome traditional boundaries to particular professional groups.

Only one interviewee suggested a detailed way of introducing GI in the university curricula:

“It’s about getting people [students] out there and make them involved into practicalities. That is really beneficial. It’s important for graduates to work on the real project to see how it looks like. Also it involves introducing practical examples and practitioners but also putting students in touch with practitioners that can explain one of their main projects from insertion to the completion. That’s quite helpful because some people don’t know how many steps is required in a complex project. It’s not about case-study but how to put case-studies together. Also it’s about reading relevant literature like for example Regeneration and Renewal. Theory is important as well because it helps understanding reality” (PP13).

When asked about the role of universities in preparing graduates skilled for working on the concept of GI, interviewees were generally disinterested. The typical answer was: “I don’t know” (PP3, PP5, PP10, PP11, PP14). Professionals do not know about pedagogical approaches “I don’t know what pedagogic approaches should be used. I’m not a good person to ask. It’s not my field” (PP7). They tend to focus on practical projects and do not really care about pedagogical approaches provided that they can obtain competent graduates that can be developed within the workplace. Similarly, no mention was made of GI and formalised continuing professional development in partnership with universities. Whilst this might be influenced by the nature of this research, university education seems to stop at graduation.

4.8. Conclusions

This chapter was intended to provide a set of skills which would enable a graduate to work on GI projects. Creating a set of functions of a GI professional would allow a benchmark to be created, with which university curricula could be tested. However, professionals describe GI as part of specific, competing, occupational services rather than as a discrete subject in its own right. Each takes the concept and interprets it through his own experiences. Since there is no obligatory definition of Green Infrastructure, it is open to such different interpretations. These interpretations depend on the interviewee’s background and type of work he or she is involved in. In practice this shows that practitioners are rather unclear of the GI concept in a ‘pure’ form. They can describe GI as they perceive it but sometimes those definitions cover different elements. This raises a provocative question: do they actually know what Green Infrastructure is? After all, most of the interviewees suggested that knowledge of ecology is extremely important when working on GI. But at the same time not all interviewees were ecologists by background. In that case, can they fully describe the concept of Green Infrastructure or only a small bit they are working on? Further, is the idea of a single concept of GI either tenable or preferable? Without statutory

occupational definitions, such overlap in giving meaning to professional concepts is, perhaps, inevitable.

The majority of respondents agreed that green infrastructure is important in professional practice. However, its precise form is unimportant. GI has evolved from earlier ideas, and will probably dissolve into another concept at some future stage. Parts of the concept are important to different occupations and to different individual practitioners as they carry out client work. Its multi-disciplinary aspirations might be an ideal to work towards, and universities have a particular place here. However, it is the multiple opportunities for funding GI enterprises, new development (especially in East London) and the variety of projects that interviewees described which all prove that Green Infrastructure is an important current issue. Therefore, it is the external, political, drivers that create the current terms of GI, and practitioners will lay claim to it in order to help their own work. The wider issue of a 'pure' meaning with a clear set of skills to be learnt and qualified for, is not an issue.

As discussed earlier, professionals in practice have a very pragmatic approach. They are interested in successful projects which are done in an effective manner in limited time and to a budget. If the project goes ahead because it is 'green infrastructure', then that is what they will call it. They are not particularly interested in what kind of graduates their companies employ as long as they are useful in terms of the completion of the project. They seek 'employable' graduates – people who can answer the phone, be polite and generally be flexible enough to learn new skills. Ideally, graduates should have skills discussed earlier, however these are massive themes. A graduate would have to spend considerable amount of time at the university if he or she wanted to acquire them all. Employers realise that as well so they are satisfied having a graduate who is willing to learn new skills and be socialised into the work environment. Thus it can be summarised that most interviewees are disinterested in higher education and they do not try to influence educational processes, except in the widest sense of creating 'employability'.

So do employers really originate demand? It seems that they do not, at least in a prescriptive manner. What the evidence did show, however, was the difficulty in referring consistently to a single group of 'employers'. The group called 'employers' examined for the purpose of this PhD varies considerably. Their occupational differences have been shown to drive meaning to GI as a concept, though there is general agreement on what skills they need in a graduate employee. However, other differences include local versus international firms, public bodies, local authorities, charities, consultancies etc. Each reacts to the market individually because they fulfil the needs of clients, and these can be equally disparate.

If professionals in practice cannot be described as holding beliefs in common, then their professional association would seem to be able to represent this diversity within a coherent framework. Associations are a peer group for such individuals, they are organised and powerful institutions that deal with the government, clients and universities, and they were mentioned by all the respondents when interviewed. Professions not only aggregate individual opinions but they can also give them a place to espouse them (such as employer forum) and perhaps even mould them (through trade journals and the like). Professions lay claim to a body of knowledge. Therefore, the next chapter will examine the role of the professional association as a driver of GI.

Chapter 5: Professional Associations

5.0. Introduction

As discussed in Chapter 3, the relationship between professional bodies and universities is a complex one since allowing universities to teach future professionals may be seen as ‘stripping’ professional associations of their position as a keeper of esoteric knowledge. The generation of this exclusivity is one of the main characteristics of a professional association (Johnson, 1972; Larson, 1977; Abbott, 1988). Therefore, having devolved teaching duties, there remains the question as to how professional association influence university degrees in order to retain control of selecting those who are qualified to join this esoteric elite. The most visible instrument that professional bodies are able to use is professional accreditation of a university course. Validations constitute an important element of a reputation of vocational courses in the built environment discipline precisely because graduating from a professionally accredited course is the first step for joining a professional association. This is widely accepted by academics (for example CSI1, CSP1, CSI6, CSB6) and representatives of professional associations. For example

“The RIBA is well known nationally and internationally, so there’s a certain amount of credibility if you like that goes with it and although technically a course doesn’t have to be validated by the RIBA all the Vice Chancellors consider that for the professional membership body to recognise the course this is a plus. It’s seen as giving it academic credibility” (PB2).

Also, graduation from an accredited course equips students with high level knowledge and skills of spatial planning (RTPI, undated).

By setting requirements that need to be fulfilled in order to achieve a professional accreditation, professional associations directly influence university curricula. In order to establish the nature of the relationship between professional bodies and universities, representatives of four professional associations (RIBA, RTPI, LI and

RICS) were interviewed. This gives an answer to what extent (if at all) professional bodies do in reality affect educational processes.

5.1. Accredited courses

Professional associations have a long history of working with universities (see Chapter 3). One of the interviewees described this relationship:

“from the RTPI’s point of view there’s a long history of working with universities on professional education in planning because it’s a vocational qualification and we have an arrangement which is very much in partnership with our education providers. The RTPI sets out a vision of education, it sets it out in its policy statement on initial planning education.(...) Any graduate of an accredited degree needs to have met the learning outcomes that are stipulated in the policy document. We have moved away from being very prescriptive and saying you have to do ‘x’ to saying you have to meet learning outcomes and then it’s up to the individual university to interpret those learning outcomes and put forward a case that what they are going to be delivering in terms of their curriculum, the content, the style and mode of delivery and how that’s going to meet the learning outcomes. There is room for flexibility within that” (PB1).

PB1 is emphasising key constituents in the relationship between professional bodies and universities. These are (from professional bodies’ point of view):

- a partnership with universities,
- learning outcomes,
- validation criteria,
- not prescriptive approach,
- and diversity within the same discipline.

5.2. Accreditation

Validation of a university course by a professional association is a confirmation of standards achieved by a university department. For example RIBA Validation is a review process that monitors compliance with internationally recognised minimum standards in architectural education and encourages excellence and diversity in

student achievement (RIBA, 2009). The first stage for obtaining a full accreditation is a provisional accreditation:

“the accreditation provisional which is the stage beforehand. (...) If you do get provisional accreditation it says ‘well these things seem okay but you need to work on one, two, three and four before you can submit for a full’. But for full accreditation you know, it is an in-depth scrutiny, you know very much an in-depth scrutiny and you know lots of varieties of questions that you might be asking” (PB1).

Another professional body, RICS, is trying to develop threshold standards in all countries throughout the world as a means of selecting the highest quality university partners. Until these thresholds are established the existing system of accreditation will be maintained to safeguard the standards of courses preparing graduates for the RICS Assessment of Professional Competence (RICSCourses, undated). “The accreditation process relies on experienced RICS academics and employers assessing each university surveying programme to ensure there is both an appropriate curriculum and the resources in place to enable the delivery of the programme to meet the high standards demanded by RICS” (ibidem).

Professional associations set standards that need to be achieved by Schools, in order to obtain an accreditation. Their role is to monitor the level of standards achieved by an educational institution. But this needs to be done in non-intrusive manner so a professional association is not interfering into educational processes. One of the interviewees describes it as following:

“How they [Schools] achieve it [accreditation] is their particular business because whilst we have to monitor that threshold standard and promote the upper end, promote the clever stuff, the cutting edge stuff, we also need to place ourselves in a role sufficiently that we cannot be seen as interfering (...) If on a visiting board we felt that the school was not demonstrating that students work was of an adequate standard against one or more of the criteria, we would say so and the school would then be what’s known as ‘conditioned’ which means that they would have to demonstrate to us that in fact they were now capable of complying with that criteria. So we have a mechanism such that you can actually alter the standard.” (PB2).

This seems to be contradictory. By obtaining an accreditation a School allows a professional association to interfere. Then, a School can be ‘conditioned’ for not complying with professional standards which may disrupt the functioning of a

School. It is understandable that whilst a professional association wants to be objective and non-intrusive as much as possible it is simply not possible considering the nature of a relationship between professional bodies and the academia.

The accreditation process depends whether it is a new or well established course:

“if you’re a new university, you have to go through an accreditation process and so that’s provisional accreditation followed by full accreditation and that process basically, it starts from a clean sheet of paper and the course team at the university will put forward proposals. (...) Once the accreditation has been there for three or four years we move them into Partnership Board which meets once a year and the Partnership Board is as it states, a board of equal partners to a certain extent. That’s the RTPI, the planning academics and the practice community and the role of the Partnership Board is to both scrutinise what has been delivered and to also discuss innovation, creativity and what are the key issues emerging from practice or from government or from business that perhaps need to be incorporated in future planning education” (PB1).

Partnerships with universities is according to RICS “the coming together of a university and RICS to establish a common goal and then to work together to achieve these goals” (RICS, 2008). The new way of working with universities, RICS calls a “light-touch approach” (PB3). Basically, it means changing their existing approach of centrally controlled courses, to allowing universities for a greater freedom and flexibility in developing courses.

“Once a Planning School has one or more established accredited courses (...) the School would normally be invited to move to a Partnership approach by setting up a Partnership Board. Partnership Boards offer an innovative and flexible approach to course development, accreditation and the future of initial professional planning education. They are designed to provide a lighter touch than full accreditation, whilst remaining proactive in ensuring that the School and its courses continue to operate effectively. The annual meeting, compared to a longer cycle of accreditation visits, ensures continual monitoring and development of a currently accredited course” (RTPI, 2007).

It is a form of keeping some level of control over a university without engaging the same amount of time and resources which are necessary for obtaining an accreditation. It is interesting that whilst all professional associations stated that their relationships with universities are not prescriptive and flexible; in this example a professional body keeps its proactive approach. It is not clear in which areas the

professional body is proactive, at the same time maintaining its non-prescriptive approach.

Accredited courses should provide graduates who have a various set of skills and knowledge in order to satisfy the needs of professional practice:

“The LI accredits courses at universities all over the UK. Courses cater for all aspects of the profession, including landscape and urban design, historic landscapes, environmental conservation, landscape management, restoration, planning and ecology. All accredited courses are required to provide a foundation for work in the profession and a range of transferable skills” (LI, 2009).

This means that accredited courses can cover any area of their subject discipline. Representatives of professional associations, who were interviewed for the purpose of this PhD, all agreed that all aspects of a particular discipline are equally valid. Thus there is no possibility that one course would be judged better than another one. All courses area are valuable as they cover different aspects of a certain discipline in the built environment education.

“The first thing is that we don’t rate schools, we don’t have a league table. We always get asked by anxious mothers and fathers ‘well which would you recommend is the best school’ and you basically have to say ‘well the best school in relation to what, what is your son or daughter interested in, in architecture’ because they generally always have an interest” (PB2).

Also the RTPI accredits all Planning Schools on an equal level, and does not offer advice on which school might offer a 'better' degree (RTPI, 2006). Schools can have different interests, specialisations which depend on their staff activities and relationships with their business partners. The position of professional associations is clear. They are willing to accredit any course designed by a university as long as it reaches established standards in education. So they role in designing a university course is a passive one. Professional bodies are ready to validate any course created by a university. This guarantees a standard across a really diverse range of delivery.

“We are saying that any school that we recognise, the students will have got the same professional skill sets and they will be operating at the same threshold but the manner in which they enhance those basic skill sets is likely to be very different. (...)With our validation system which has been going for decades and decades, it relies on a kind of intelligent intellectual analysis of whether students are complying with the criteria. So it does have a kind of real breadth to it” (PB2).

The same opinion was expressed by all interviewed professional associations. "Landscape architecture is a broad discipline and each school has its own strength. So Landscape Institute is not so prescriptive when it comes to the content of the course because all of the areas need to be covered but some of them more and some of them less depending of the interests of the School" (PB4). "There are different strengths of expertise for different universities" (PB5). However, "it certainly pays the school to offer something that's intriguing and original and which still delivers the professional competencies" (PB2). Professional associations are not prescriptive but they can judge and promote innovation and originality in university programmes.

Validation panels are made of a mixture of academics, practitioners and representatives of professional association. This wide cross-section of members of the Board provides an objective judgement taking into consideration different perspectives:

"It will be someone from the RTPI, normally myself [representative of an Education Department], a senior practitioner or academic and then at least two or three others who will be a mixture of academics and practitioners.(...) They come out from normally from our Accreditation and Partnership Board panels, so it's people who have been trained in the process in understanding what we're looking for, have an understanding of planning practice and the needs of planning practice and understanding of higher education" (PB1).

5.3. Criteria for validation

The Policy Statement on Initial Planning Education contains requirements that all accredited planning schools and qualifications must meet (RTPI, undated). In the case of RIBA this is document called 'Criteria for Validation' (RIBA, 2009) and the Landscape Institute's 'Accreditation Guidelines' (LI, 2005). The accreditation process provided by RICS relies on experienced RICS academics and employers assessing each university surveying programme to ensure that there is both an appropriate curriculum and the resources in place to enable the delivery of the programme to meet the threshold standards demanded by RICS (RICSCourses,

undated). These documents have been developed as a result of a constant evolution of educational processes and approaches of its assessment. For example

“policy statement has basically evolved over time and been refined over time. The last time it was comprehensively reviewed was in 2003 when there was an Education Commission, that was a body of people both academics and practitioners who actually did a lot of thinking around education and lifelong learning and came up with some changes to what we were doing which have been implemented more or less over the subsequent years and at the moment we’re doing an education review and that is made up of academics, practitioners and the institute and actually saying – is this still fit for purpose, things have moved on, are the things that are in here still appropriate, do they need updating, do they need refining, are our processes and procedures still appropriate. It is an RTP1 document but it’s influenced by the academic community and the practice community” (PB1).

So maintaining the validation criteria fairly general is a way to keep them up to date as they do not provide details of university programmes and they do not suggest which elements are to be included.

Validation criteria and the most importantly, learning outcomes published by professional bodies are instruments for the control of education processes at universities:

“The key thing is distinguishing between the input that we as the RIBA can make into the curriculum and the individual adaptations that any university makes to its curriculum. We validate the schools in the UK against a shared set of validation criteria and the current set have been running since 2003, 2002 – 2003 and they’re going to disappear about this time next year, September 2009¹. These are basically constructed under five subject headings for the current set up. So it’s Design, Cultural Context, Technology in the Environment Management Practice and Law and Communication. So these five headings apply to both the first degree in Architecture, part one and the second degree in Architecture, part two (...). Essentially within those big headline criteria every individual course provider, every university determines their own curriculum. So you may have a school that has a particularly strong interest say in Environmental Technology, the sustainability is in the energy agenda and so on and it may be that a great deal of their attitude towards design say would be driven by sustainability issues, a great deal of their concern about Cultural Context might also be driven by environmental issues. So that would start to establish the overall interpretation of our validation criteria by that individual course” (PB2).

¹ The interview took place in September, 2008. RIBA validation documents were still valid and available on its website in November, 2009.

Because the focus of this thesis is on the introduction of Green Infrastructure in university curricula, criteria for validation were examined to what extent they promote the concept. This is an example of validation criteria from RIBA under a heading of Technology and Environment:

“At Part 1: Technology and Environment students will demonstrate, within coherent architectural designs and academic portfolio, the ability to integrate knowledge of:

The principles of building technologies, environmental design and construction methods, in relation to:

- human well-being
- the welfare of future generations
- the natural world
- consideration of a sustainable environment
- use of materials
- process of assembly
- structural principles (...)

At Part 2 students will demonstrate, within coherent architectural designs and academic portfolio, the ability to integrate knowledge of:

- The principles and theories associated with visual, thermal and acoustic environments
- Climatic design and the relationship between climate, built form, construction, life style, energy consumption and human well-being

Understanding of:

- Building technologies, environmental design and construction methods in relation to:

- human well-being
- the welfare of future generations
- the natural world
- the consideration of a sustainable environment

- The impact on design of legislation, codes of practice and health and safety both during the construction and occupation of a project (...)

And ability to: Devise structural and constructional strategies for a complex building or group of buildings, employing integrative knowledge of:

- structural theories
- construction techniques and processes
- the physical properties and characteristics of building materials and components and the environmental impact of specification choices
- the provision of building services” (RIBA, 2003a).

Nothing here indicates the need to introduce *any* specific concepts, including Green Infrastructure. These headings are wide so they can contain any material subject to interpretation of academic staff and confirmation by the association. The heading Cultural Context may suggest (again subject to interpretation) a need for the

introduction of GI. However, this example definitely illustrates a position of professional bodies being non-prescriptive in educational processes.

RTPI states that in order to obtain professional validation of a course, a School needs to fulfil the criteria of and prove itself to be an “effective planning school” (RTPI, undated). Further reading into Policy Statement on Initial Planning Education (RTPI, undated) reveals that those criteria with regards to the academic content should “reveal and connect:

- Social science as an analytical framework
- The interplay between land use and transportation
- Design and the realisation of place
- Economic issues relating to development
- Environmental challenges
- Legal and institutional frameworks” (RTPI, undated).

The issue is whether these criteria contain a concrete and certain meaning, or are rather vague ideals. From the RTPI’s own guidelines (RTPI undated), these are neither prescriptive as to the content of academic degrees nor is there any benchmark given to measure effective as against ineffective planning departments. There are no specific issues mentioned that need to be included into university programmes. No particular skills and knowledge is emphasised as a basis of the planning profession. In terms of implementation, this view is supported by (PB1) who said that:

“So we leave them [learning outcomes] fairly generic so it allows for these new emerging issues to be incorporated into planning criteria and curriculum. So rather than saying – you must have a module on climate change - and say two years after there’s another issue coming through and so we’d have to ditch that and we now bring this in, we have learning outcomes which are a broad brush which allow the curriculum to develop naturally with the needs of society and the needs of the practice community” (PB1).

Hence the RTPI see themselves as not prescriptive with regards to university curricula. At the same time, however, the RTPI do ultimately judge on the effectiveness of planning schools, which is, by its very nature, prescriptive. In order

to provide a validation on the basis that a planning school is effective, a professional association needs to be prescriptive because the association must provide a set of rules, requirements or recommendations which will lead to obtaining an accreditation. Institutions must be provided rational benchmarks to achieve and thus be judged to have satisfied them.

“It’s up to the universities to meet the learning outcomes. If their course is very dated they’re not going to be able to convince the Partnership Board that their course is still relevant for practice (...). At each stage there is a yearly scrutiny on what is being delivered plus developmental discussion. We try and sort of say ‘okay what are you doing now, is this still relevant, these are emerging issues, how are you going to try and handle those things’ and so you have both the scrutiny and the developmental thing. It should be evolutionary rather than having to chuck everything out, a curriculum naturally should develop with the issues that its having to cope with” (PB1).

The same problem exists within architecture. Criteria are shared between RIBA and Architects Registration Board (ARB) but

“they’re developed within the RIBA’s Education Department in dialogue with the schools and in dialogue with the regulator (...)it’s basically a series of frequent conversations where you are trying to make sure that you’re expressing the criteria in a way that’s relevant to practice, relevant to the schools and broad enough so that they can *be interpreted*. So the RIBA used to have a thing called an Indicative Curriculum which was saying – these are the kind of things maybe you should be teaching. Now we don’t do that. We now say school A and school B have to be judged against the same validation criteria and we visit schools on a four yearly cycle, peer group reviewing and we make an assessment through evidence (...) as to whether that work reflects the validation criteria and they can reflect them in lots of different ways which is why there’s this multiplicity of offer in the UK schools and that ultimately is the kind of argument. Are these criteria broad enough to allow a really generous offer of educational opportunity to people. (...) it guarantees a standard across a really diverse range of delivery. What we are really doing is we are saying that any school that we recognise, the students will have got the same professional skill sets and they will be operating at the same threshold but the manner in which they enhance those basic skill sets is likely to be very different” (PB2).

Again, ‘loosely’ described valuation criteria must be interpreted in order to design a consistent university programme. This is an opportunity for developing completely different programmes growing from the same subject area. The idea behind it is that this variety of degree programmes will cover the broad discipline of architecture.

The approach of professional associations describing themselves as non-prescriptive raises questions about ensuring the quality of an accredited course. For example “RICS is not prescriptive in terms of course design. It positively welcomes a diversity of provision” (RICS, 2008). However, “RICS’s prime aim is to ensure that it only accredits courses of quality” (ibidem). The ‘light-touch’ approach which is not prescriptive and allows for a great variety of accredited courses creates some fissures in reality. For example in the Policy and Guidance on University Partnerships (2008) RICS reminds about the Agenda for Change (1998) established to raise the status of the surveying profession also through raising standards (see Chapter 3). Further RICS describes its vision for high quality education. This is based (among others) on “strong partnerships between RICS and a limited number of recognised centres of academic excellence throughout the world characterised by (...) highly competitive entry to courses at undergraduate and postgraduate level” (RICS, 2008). There is an institutional reinforcement of standards but how does it look in reality? None of the interviewees examined for this PhD complained about the quality of their students (in case of academics), or graduates (in case of employers and members of professional associations). Every visited university claims to have really high entry requirements for example the entry requirements for:

-PU for Quantity Surveying Consultancy are as follows: “Points: 300 and Units: to include at least two A-levels or equivalent” (PU, undated),

-BU for Quantity Surveying: “UCAS Tariff Points required is 270 and GCE A-Levels minimum number required is 2” (BU, undated).

Also RICS says that accredited centres are internationally recognised (RICS, 2008). But whilst not conclusive, evidence points to inconsistencies. Students were interviewed for the purpose of this research but also they were observed in less formal situations for example in libraries or cafeterias. Their behaviour was often not professional. Students taking part in focus groups took part in the exercise voluntarily, which means that they were the best and the most engaged students. However, many had very superficial understanding of processes (CSPFG 3) and others had problems drawing conclusions (CSBFG 1). This means that there may be problems with low standards of prospective and current students. They also used very

informal language including rude words. Whilst this does not confirm lack of standards at the intellectual level, it suggests low ethical standards which should be especially important for future professionals (see for example Greenwood, 1957; Downie, 1990).

5.4. Changes in curricula

As mentioned, professional associations' approaches are described as non-prescriptive in their interaction with universities. Nevertheless, Schools need to inform professional bodies about changes in curricula. "Any significant changes to a recognised course and the associated examination must be notified to the RIBA Head of Validation. This applies also to a series of small changes which cumulatively represent a significant change" (RIBA, 2003b). However, "courses are expected to evolve in order to reflect changes within architecture and higher education more generally" (ibidem). "There are two reasons [for the evolution of curriculum]. One, you could say there's a market reason but I think there's also if you're an academic you tend to be intellectually curious" (PB2). So there are contradictory approaches. Universities should be intellectually progressing. The point of this argument is that whilst being non-intrusive professional bodies have instruments for penalising and in effect changing Schools.

"Where the Visiting Board judges that graduates from a school satisfy the validation criteria and meet minimum standards requirements but still has concerns about aspects of the provision in the school, these can be communicated to the School by means of Recommendations. Recommendations might arise from concerns about such issues as the resourcing of a course, QA procedures, aspects of course provision, which, while meeting the criteria, give the Board cause for concern. The School is expected to act on recommendations and the RIBA would expect to see the outcomes reported on in the annual monitoring returns submitted by the School for the course concerned" (RIBA, 2003b).

So if changes are perceived by the Visiting Board as non-compliant to their interpretation of existing rules, then a School may be penalised by (in the worst case) the withdrawal of accreditation. This means that professional associations can

actively shape not only curricula, but also the overall functioning of an institution. It depends on the particular interpretation of validation criteria.

How accredited Schools view this process offers further insight into this apparent contradiction, and upon the nature of their relationship with professional bodies. For example (CSB5) agrees that the RTPI provide the School with a framework for the development of the programmes suggesting that this does introduce some constraints within the School needs to operate. This interviewee did not agree with the statement that the RTPI is not prescriptive at all, but accepts that these prescriptions have some flexibility and opportunity for negotiation. RTPI is aware that Schools view the situation from such perspective but still supports the view that this framework is flexible enough: “I mean we provide an overall framework and some universities would say that’s very constricting. I think there’s a lot of flexibility in that framework that framework says you know that you have learning outcomes to meet, you have to be what we call an effective planning school within that” (PB1).

There is another example to illustrate how universities act on their relationship with professional bodies. PU had a provisionally accredited planning course subject to amendments and fulfilment of certain recommendations. One of the recommendations suggested an introduction of the climate change theme. The School, therefore, “bolted on a couple of hours of climate change into a module that it didn’t really fit into” simply to fulfil this demand. Further, this person added that this was “rather cosmetic” since (CSP4) refused to do this on the basis that it was not within (CSP4) expertise, and the staff member who did run the class, (CSP4) regarded as inexperienced and “superficially covering a random literature”. What is clear here is that a definitive change was made to a syllabus solely because of the demands of RTPI “despite the fact that there were more RICS students on the course than RTPI.”

5.5. Universities as centres for innovation

As mentioned, universities are or should be, centres for innovation. This opinion is supported by all representatives of all professional associations interviewed.

“I would hope universities do some original thinking because they should be research active, they should be very much in touch with both the research community and the practice community and they should be identifying research gaps and starting to think about how their research programmes, you know interface and feed into their courses” (PB1).

Universities are centres for innovation so by definition they are pioneers in developing new theories. There may be an argument that this state of affairs may be hindered by professional associations which may not yet recognise the importance of such novelty. Of course, it is not likely as professional associations consist of a mixture of professionals in practice and academics (for example Carr-Saunders and Wilson, 1964) so they should be specially sensitive to innovatory changes.

The position of universities as centres of innovation entitles them to lead the process of creating curricula. It means that it is up to universities to come up with a certain university degree and approach and a professional body for its accreditation. According to the interviewees (PB2) it is never other way around – professional associations do not dictate what should be taught at universities:

“If the university has got a course on architecture (...) it approaches us. We never chase work, they always come to us. (...) So we then say ‘well look, can you provide us with some documentation which tells us what you want to do?’ That’s templated so any new course would have to provide the same documentation in terms of volume and type and then that goes to the New Courses and Course Changes Group and if that group is happy then we do what’s known as an exploratory visit, so that’s a small board and we go and talk to students, we go and talk to staff, we go and look at work and if we are happy that things look as if they are going well, that course gets given what is known as ‘candidate course status’” (PB2).

This opinion was supported by another interviewee:

“we don’t have a policy where we say – you have to develop a new course – I mean it’s very much generated by the university. The university might say that there is a market for this and the Partnership Board might well have been discussing this a year ago because the Partnership Board might sort of say ‘look you’ve been delivering planning education as well, you’ve got loads of synergies with colleagues in the business school and there seems to be an emerging market for planners with more sort of management skills. Have you thought about actually developing something in

collaboration with your colleagues?’ So new courses emerge from different ways, sometimes out of the Partnership Boards, sometimes through the RTPi itself saying ‘we want to promote and support courses which are say, access courses or apprenticeships which feed into universities’. So it might come also from the universities or it might come from for example the CLG [Communities and Local Government] saying ‘we think there’s not enough spatial planning skills’ (...) So the drivers for new courses do come from different areas with the RTPi provided that the RTPi sort of overall education philosophy is met, we will support, encourage in different ways for new courses to emerge” (PB1).

However, as will be shown in Chapter 6 there is a situation described by one of academics where a professional association approach the university and suggest to them developing a course in Art Market:

“The Art Market undergraduate course is being very much pushed by the RICS for us to have that course (...)The partnership meeting is a mixture of things where information is filtering or requests are filtering down from within the RICS and obviously we are feeding into that system what we’re proposing and the example of the Arts Market was that there was a big, big push by the RICS Faculty related to chattels and those sorts of things, that they wanted a course. Now we’re in a position where we’re now the only provider, undergraduate and post graduate for Art Market and we’re not getting the numbers” (CSP2).

According to professional associations they do not suggest themes for a new course. But academics say that, contrary, professional bodies may have very specific needs and on the development of a new course and they expect universities to agree with them. Possibly, professional association just try to direct academics’ attention into certain areas where may be potential market:

“there was a real feeling that if we don’t do it now then we’re going to miss the opportunity. So in fairness to the RICS, yes they were pushing us but I think we had to take the strategic decision that if we’re not involved with it, we may lose that potential market, whether there’s a market for it now” (CSP2).

Apparently, there was no penalty involved in case the rejection of the course, however it was “wiser for political reasons” (CSP2) to fulfil RICS’s wishes.

Analysing the above examples, it is clear that the role of associations is polarised. On the one hand, they claim to be non-intrusive but on the other hand, they can ‘push’

universities to develop specific courses. This duality was acknowledged by only one interviewee who said:

“We would expect them [Schools] to make the moves because our role basically is as a kind of monitor. We have two roles and they might be seen as being quite polarised. One is making sure that nobody falls below a threshold standard of achievement but more importantly our mission is to promote excellence in the education offer, to promote innovation, to promote experimentation. (...) So see that as being a headline role, actually making sure that the schools are on the edge of what’s current, that’s our mission” (PB2).

This suggests that professional associations realise that their role is not so straightforward ‘non-prescriptive’ as they would like to see themselves because they also serve as guardians of quality. However, the process still begins with universities. They need to create and present a coherent degree programme that is up to academic quality standards:

“The universities are going to sit down in their academic planning sessions, they’re going to say ‘look we may have put too much emphasis on the idea of craft in technology and not enough emphasis on say digital fabrication as a way of constructing buildings. (...) So the academic drivers are always going to be the sort of curiosity of the academic community. So it’s the university schools, the tutors, the teachers and the lecturers who will be making those changes. If they think that a change in their curriculum is sufficiently fundamental they then refer it back to us. So they say ‘look we are changing all our technology lecture series here to reflect the changes in contemporary practice because we want to essentially modernise our curriculum. (...) So we have committee mechanisms that look at that kind of course revision so that we are constantly monitoring those academic changes” (PB2).

Co-operation between professional bodies and universities is a constantly evolving process. Whilst professional associations traditionally ran their own examinations, it was accepted that was in some way inferior (for example Carr-Saunders and Wilson, 1964). Universities were accepted as the experts in this field (RICS, 1978 for example). This is also a requirement by the Privy Council, who demand chartered associations operate degree-only entry processes (Privy Council, 2008). That said, the practical reality of how to train within universities, whilst exercising control through the professional association, has remained a contentious issue. There is also a wide literature on the general issue of widening participation programs and the resulting

quality of new professionals (see for example Muzio and Ackroyd 2005, 2008 concerning lawyers).

Conceptually, all the associations have moved towards accrediting centres rather than individual courses and removing themselves from directly controlling how and what to teach. “RICS has introduced a new way of working with higher education institutions which deliver its accredited courses” (PB3). This is called ‘Partnership’. It represents the coming together of a university and RICS to establish common goals and then to work together to achieve those goals. A traditional accreditation where the process was controlled centrally changed its form to a series of individual partnerships with its accredited universities which affects development of new and existing courses (RICSCourses, undated). This was introduced to increase standards in surveying (PB3). At the same time, RICS’ Agenda for Change is a good example of the horror and consternation felt within the associations when universities were almost completely deregulated (see Chapter 3). The result is a gradual tinkering with the system in order to balance economy with control, quality and content with student and market choice. For example, in interview a representative of RICS quoted four characteristics of the accreditation process which are:

- Entry requirements
- Quality of teaching
- Research innovation
- Employability of graduates.

However, since then RICS Courses website refers to five thresholds:

- Student Selection, where internationally respected standards are applied. The minimum level is broadly the average level of students’ achievements in the particular country.
- Innovation, where students are exposed to new ideas and high quality research. One (of many) description of the excellence in research is its outcome in Research Assessment Exercise (RAE).
- Teaching Quality, where students should enjoy the highest quality teaching environment. Standards are broader than the quality of teachers and address the

overall teaching and learning environment. One of the descriptors of the quality of teaching is the review of Quality Assurance Agency (QAA).

-Curriculum. This should be highly relevant to professional practice. The overall programme should prepare graduates for the profession.

-Graduate Output. RICS requires access to high calibre graduate output. Quantifiable and measurable standards to meet the quality principles have been developed in each country that has adopted partnerships. The data is taken as far as possible from existing sources within the public domain (RICSCourses, undated).

These thresholds appear to be laying greater stress upon the control of curricula and teaching quality, and moving away from simplistic employment statistics towards "graduate output". One or two respondents in the case studies did discuss the need (or lack thereof) for staff to be both professionals and hold doctorates, and the difficulties in obtaining this prior to, say, reaching 40. This tended, then, to create an older teacher. Similarly, RICS is currently consulting on how to measure employability and "graduate output" in a meaningful way. Such tinkering is not preferring either extreme, but it does show that professional associations continuously evolve their actions in response to how they perceive the deregulated accreditation system to work. At times this can be still be very prescriptive, such as in PU's example of the RTPI requirement upon them to include climate change.

5.6. Learning and Teaching

Professional associations do not have any position with regards to the teaching and learning methods used on accredited courses. However, they do require specification of what methods are going to be used with relation to specific modules. This is because they believe that teaching methods should reflect learning outcomes demanded by professional associations. This appears potentially prescriptive.

“We ask universities to provide evidence of how they’ve done this, how they’ve constructed this and how the learning outcomes that they’re saying their course is delivering has been shaped by their teaching, learning and assessment strategies and you know, trying to close that loop between all of those things because actually you know, its easy to say you’re delivering learning outcomes but it has to be very much

built in right at the front end of a course because it has to be part of how you teach, how students learn and how you assess your students as well” (PB1).

As a body monitoring quality standards on professionally validated course, a professional association is able to discipline Schools for using non-appropriate learning and teaching methods. This means that whilst not suggesting what L&T methods are appropriate, the Board may reject L&T methods which they find inappropriate. This puts them in a position of actively shaping curricula:

“if we’re doing accreditation, we often have conditions which have to be met and recommendations which we would expect universities to seriously consider and they could cover a range of different things. Some of them might be to do with teaching and learning and assessment, there’s a requirement to have another member of staff to actually support the team. So it varies and of course Partnership Boards say that we recommend this or this needs to be now embedded in the course and so it’s an evolutionary thing, it’s going away from sort of hitting people with a big stick and saying ‘you must do this’ (...) to actually having a mature conversation and getting a much better understanding of what the needs are and actually saying that these are the different options of how you can meet those needs but you will need to meet them and it’s up to you to then demonstrate how you’re going about this” (PB1).

5.7. Constant evolution

University programmes reflect different aspects of changing reality and programmes change continually. Professional associations’ role is also keeping up to date with those changes or to set them. This is necessary to monitor whether university curricula are also up to date.

“Our education review has posed a number of questions which has been out to consultation about the future of planning education and that will be embedded in a revised Education Policy statement. So you’ve got a longer term review process going on plus a shorter term which is around the feedback from the practice or business community into the Partnership Boards and then into the education system as well” (PB1).

It seems that there are two competing aims of a professionally validated curriculum. Universities are centres for innovation so they are or suppose to be leaders of educational processes. At the same time, apparently, a curriculum of a professionally accredited course needs to be fit for practice:

“the RTPI’s approach to planning education is always testing the curriculum against, is it still fit for practice, is it covering the key issues and recognising that there is such a diversity of things that no course can possibly absolutely everything. (...) But it is seeing it in a three stage approach, that you continuously carry on learning and whether you get that in your initial education or whether you get that in your lifelong learning, there is this continuous process that needs to be evolved and I think (...) we actually do try and have a way of working that brings these all together(...) So we actually try and be innovative all the time so that new ideas get incorporated as quickly and as feasibly as they can be” (PB1).

According to this argument all interested parties such as academia, professional practice and professional associations, should be the same time innovative and receptive to changes. So they should initiate changes and incorporated changes triggered by another party.

5.8. The issue of Green Infrastructure

The focus of this thesis is the incorporation of Green Infrastructure into university curricula. Because professional associations see themselves as non-prescriptive the concept of GI is no different from any other theory. It may be incorporated on the decision of the university but there is no requirement by a professional body as long as learning outcomes are achieved. There is, however, a slight suggestion that GI (in case of architecture) may be taught as a part of the heading of urban design in the cultural context (RIBA, 2003a). Introduction of GI really depends on the profile of the School or individuals involved in the creation of the degree programme: “providing that it makes the course still coherent, that you weren’t sort of just completely substituting it for everything else and that it had relevancy, that it was appropriate, that there was a proper sort of research underpinning that and that there was development of some intellectual depth within that area as well” (PB1).

PB4 and PB5 proved Landscape Institute is more authoritative than other professional bodies with regards to the concept of GI. LI developed its own notion of GI on the basis that this is core to the landscape architecture profession. So LI’s concept derives from its own perspective where planners and landscape architects “should work

together but on other things” (PB4). The idea behind is that different professions should bring their different perspective and skills to work on GI.

All LI members work on GI as it is a focal point for the landscape architecture discipline, which makes GI uniquely important. LI consulted all members how to formulate the Policy Statement on Green Infrastructure. They were asked in 2008 to provide case – studies to illustrate their work with regards to GI. When the Policy Statement was produced “the Council had to sign it off” (PB4). So GI is the basis of the work of landscape architects and LI as a professional body acknowledges it. The Policy Statement when ready is to be forwarded to every university accredited by LI as GI is fairly fundamental for landscape architecture. LI defines it as a core of the teaching. So it should be present in the whole course (PB5) (PB4).

RTPI’s approach, in contrast, is consistent with its earlier statements – non-prescriptive:

“the different planning schools will talk about the green infrastructure in different ways. There might be a module that is talking about environmental planning or it might be a module around sustainability generally [or] the role of open space for example, or it might come out through dissertation topics. (...)It’s very rarely labelled a module on green infrastructure, it seems to be embedded in different ways across the different curriculum (...). It tends to be embedded across different modules, sometimes more explicitly in some modules than others.(...) we say that providing that you meet the learning outcomes, it’s up to the university to decide whether they are going to want to specialise in these areas or (...)because some universities will have a specialism in environmental planning and I would expect issues around green infrastructure to be much, much stronger than if another university specialises in another aspect. So there is a baseline of information always there and some universities will probably extend that further than others” (PB1).

Whilst the LI’s approach is quite unusual compared to the other professional bodies, they can be equally prescriptive within their core occupational areas of work. All professional associations can be very prescriptive in terms of technical cores, but in areas of new knowledge there is less tradition and bias to overcome. This allows a university more flexibility.

“where you’ve got to merge in topics coming through, you know whether it’s the green infrastructure or any other sort of issues, how universities handle that and how

they actually incorporate that into their curriculum is probably a number of ways that they can approach it. One would be that they have a member of staff who has that particular expertise and so naturally gets embedded. Another way would be actually recognising that this is important but they don't think that they have the necessary expertise within the staff so they buy in a part time lecturer to come and deliver some courses. The other way also (...) is to get practitioners to come in and do guest lectures around particular topics" (PB1).

The introduction of GI depends also on a type of students coming to the courses.

Young people become more aware of their choice of study and environmental issues:

"students are naturally much more sophisticated about all the green and environmental issues. I think they regard it as a sort of moral imperative that they understand these things. (...) People pick things up through osmosis and the whole environmental agenda has been so prominent in the way that political news is talked about even. It's embedded in current affairs programmes, it's been seen as having a dimension about the world economy so people worry about these things don't they?" (PB2).

This says that students' needs for environmental programmes and content of their studies may be a fashion which reflects a public debate on such subjects. So, assuming that it may be a temporary fashion, it does not matter very much what is a detailed programme of studies as long as it equips graduates with skills necessary in their future professional career:

"you have to equip students with simple practical skills, simple practical principles that the green building which you sell to a client at an early stage as saving 'x' hundreds of thousands of Pounds off energy bills over the next twenty years is probably going to persuade that client to accept more architecture than you not mentioning maintenance and energy consumption." (PB2).

5.9. Conclusions

Planning education is unusual in that validated courses offer entry and a 'licence to practice' into the profession with relatively little postgraduate examination by the institutes. This makes the accreditation process very important and ensures that professions have a dominant authority over the content, but not teaching methods, of

courses. Universities seek accreditation as it gives courses status and employer credibility.

Professional bodies accredit a whole range of courses within a discipline. This is because professional associations perceive themselves as non-prescriptive and there is no list of 'issues' to implement into curricula. This allows for some degree of flexibility for universities. They can develop courses based on their own strengths, such as staff expertise or research interests. Rather than being prescriptive, professional associations set learning outcomes that are far broader in scope than subject syllabi. Universities are to fulfil those learning outcomes in order to have their courses accredited. Hence, no examined documents issued by professional associations specifically require the introduction of GI, with the exception of LI. LI states that GI is core to landscape architecture and all accredited courses should include it in the curricula. LI also utilises learning outcomes, but GI is so pervasive to the occupation, that it is included within their wording of these objectives.

After the initial accreditation, professional bodies award universities with a full accreditation but still monitor course standards. It is at this point that teaching modes and student learning receive greater scrutiny. If the university does not fulfil requirements from the professional body or is judged ineffective, the university might be sanctioned or have accreditation removed. This is a determining force, especially when data illustrates how professional bodies do, on occasion, require universities to include specific issues within syllabi or even run specific courses. Whether an issue is important enough to be included in the curriculum is ultimately judged by the professional association. GI fell into this category at LI after a consultation of its members.

Professional bodies are sometimes - contrary to their self-perception - prescriptive and intrusive. This is because, as esoteric societies, they claim ownership of knowledge and seek to protect such 'mysteries' from outsiders. Part of this involves controlling what and how their future members are taught. Chapter 4 described the

divided and contradictory construction of meaning to GI. This chapter presents a much more coherent view. Obviously, professions aggregate views from their members, a peer group, and are able to present these in a form that universities can more easily engage with. That the professionals in chapter 4 were not interested in educational issues and the content of curricula does not necessarily contradict the clear views of educational officers in this chapter. However, it does point to the potential dangers of a 'corporate' professional association whose officers are divorced from the peer society. Institutes, however, exhibit the occupational authority to drive knowledge, and how this interacts with universities will be the subject of the next four chapters, each a separate case study of a university.

Chapter 6: Process University (PU)

6.0. Introduction

The title Process University (PU) is used here because the university places emphasis on ‘process’ rather than result, having established centralised management system to run its courses. It is the first academic institution to achieve a nationally recognised Phase 3 of the IEMA Acorn Scheme for BS8555 standard for environmental management systems (PU, 2010). This shows how PU seeks external validation as a means of proving its standards and creates centralised system to achieve it. The whole institution is ‘proven’ engaged in green initiatives because they have certification to prove it.

Analysis of PU’s engagement in environmental issues presents clear evidence of a managed response to external demands concerning implementing wider environmental imperatives, if not specific directly to the aspects of Green Infrastructure. The award discussed above is not for teaching but programmes to reduce carbon footprint, improve waste management, recycling and biodiversity as well as raise awareness of their staff, students and the local community (PU, 2010).

This centralised response is exemplified by the main structure within PU for dealing with green issues, its Sustainability Team, later replaced by the Sustainability Hub (with few personnel changes). Thus, there is little doubting the organisational response to sustainability. What is less evident is whether this impacts directly upon new courses, syllabi or teaching and learning. Whilst there is no evidence that these institutional responses are simply a legitimacy response, that is that they are created to *appear* to do something, it is evident that there is a decoupling of the central response with that of individual departments, courses and lecturing staff. The Sustainability Hub is responsible for introducing “sustainability ideas, concepts, awareness and understanding” to every PU student through what it lists as:

- PU’s management of its estates

- its own activities
- work placements and shadowing, both paid and voluntary
- open lectures by guest speakers
- overseas exchange opportunities
- teaching that is directed by research and consultancy work by PU staff (PU, undated).

The university management decided that these activities are so important that they needed a special structure within the institution, currently referred to as the Hub, to coordinate and originate efforts within this field. Again, reflecting the subtext of 'process' within the case study, the decision was made to establish a standardised procedure with a unified approach through this unit, rather than allow individual departments to develop courses on an ad hoc basis. Whilst its stated achievements are substantial, on closer inspection all of the courses that have been impacted upon are the direct responsibility of those staff working in the Hub. Whilst this might suggest that active staff have been grouped into this Hub, a more persuasive inference is that the Hub is actively decoupled from individual departments, who prefer a more organic approach that management is attempting to routinise. The Hub has been in existence, in various forms, for over two years and there is no evidence of any greening of curricula through the Hub, except by its own members. Respondents did not refer to the Hub, except one who remarked that the approach of the Hub towards engaging with staff was to email them and "they asked if anyone had any good ideas, would they please hand them over to us. I mean that's not collaborative or helpful or engendering environmental change. It's just stealing ideas and getting paid top-management salary for that, what other people are doing". No other respondent even mentioned this group. There was also no suggestion in the secondary material, particularly course documents and the paperwork surrounding them, of input from the Hub into greening courses.

One of the objectives of the Hub is embedding sustainability in courses across the university (PU, 2009). Further reading shows that 'greening' is happening only in

'pure' environmental courses, for example undergraduate studies in Environmental Management, and in one more which is a Master's course in Planning and Sustainability. The Hub states that they interfere with all courses at the university. This proves to be not true because in reality the Hub is only 'greening' the courses which are environmental subjects anyway. The basic mission of the Hub is unsuccessful, suggesting that everybody is decoupled from the centre. However, the Hub serves as a legitimacy exercise, and allows PU to prove how green it is.

Decentralisation of design is further evidenced by the fact that one academic at PU in an associated School is a "lead campaigner for green design" (PU, undated) and yet none of the interviewees mentioned that academic.

Departments taking part in this research are placed close, but are divided into two separate campuses. This means that books with environmental contents are spread into different libraries. Also not all initiatives, for example recycling facilities, are implemented away from the main campus. Again, this suggests a loose coupling of departments from each other and the centre.

6.1. Where does the knowledge originate?

At PU there are four built environment disciplines (surveying, planning, architecture and landscape architecture) taught in the same faculty. This should provide the same framework and approach to teaching and learning. However, within the same faculty there are two separate schools. One of them focuses on architecture and landscape architecture and the other on planning and surveying. This split in the organisation of the courses has also an impact on their teaching. This can be illustrated by quotations from senior representatives of the School of Surveying and Planning, and the School of Architecture and Landscape. The first one said that courses come into being "through a validation process" (CSP1). For the second one "their [courses'] actual identities are generated by the staff (...) Ideas are drawn from their experience and their imagination and the professional context in which they operate (...)I think that

we are creative people and we have an aspiration to generate new things” (CSP5). These are not singular statements. The first opinion is shared by the interviewees CSP3, CSP2, CSP8, all from the School of Surveying and Planning. The second approach is supported by the staff from the School of Architecture and Landscape such as interviewees CSP6 and CSP5. These opinions reflect different approaches to issues of teaching and learning. However, this distinction might also be related to discipline rather than university organisation. These opinions may reflect a general approach within the professional gestalt. Architects regard themselves as thinkers (Brawne, 1992; St John Wilson, 1992). Where surveyors may just be realistic about their professional requirements, they realise demands from their professional bodies and are able to operate within the professional body’s framework. Also it may indicate a general approach towards generating university courses. In order to create courses, surveying gives priority to professional associations and their demands, over their staff’s interests and ideas and needs of the market. This was suggested by the interviewee CSP6: “it [generating courses] seems to be initiated from the interests of the staff and maybe the market, the recognition that there is a market for a particular course” (CSP6).

As discussed earlier, although these Schools are in the same Faculty, their approaches and educational philosophies are radically different. These two approaches to education philosophy, in consequence, impact learning and teaching. It is tempting to assign the cause for this to the characteristics of the professions of a surveyor and an architect. However, further analysis of interviews with staff of respective School proves that this is also originated by the type of management in the particular department.

The first School places emphasis upon professional validation of its courses. Basically professional bodies are the main drivers for accepting changes in the curricula. The School’s staff are responsible for making changes, however their opinion is less important than suggestions from professional bodies. Individual staff have their own areas of interest and research, but, ultimately, it is still up to

professional bodies whether to accept or decline these ideas. So, professional associations lead, taking on the role of drivers of university curricula. In the second School emphasised by all interviewees, creating or changing curricula happens as a result of staff creativity, imagination and experience. Academics are the most important factor in the process. Also they try to sense the current needs of the market. For example:

“I think in the best of circumstances courses, programmes might be generated from consultation widely, with existing students, amongst your staff, full time and visiting, with your professional acquaintances outside of the university (...) that way you are more likely to be sensitised to the market requirements” (CSP5).

So in order to run a successful, intellectually challenging course for both students and academics, there is a need for wider consultations among all interested parties without necessary prioritising any one opinion. Respondents between the two also differed markedly in their views on the role. Surveying and Planning academics focused upon qualifying students; Architecture and Landscape staff were more vocal about stimulating and challenging them.

Courses should be a result of the consensus between engaged sides so that the market needs could be fully fulfilled. This approach is clear contradiction to the first School's approach where one party, namely a professional association has the most important say. For example one interviewee reflecting on the drivers leading to the creation of a new course said: “It could have been a conversation say between the RICS and here and the School at one of those annual accreditation type meetings” (CSP7). Of course it would be naïve to think that merely a suggestion for a professional body is enough for a School to go through all trouble and expense and develop a new course. In that School at the time was a particularly conducive atmosphere because the School was already planning an expansion: “*Managerial academic* was already into expansion so that frame of mind was already there” (CSP7). However for the creation of a new course necessary were also factors such as market demand (it was responding to the economic climate CSP7) and ability to achieve a professional accreditation.

Planning courses were introduced at PU only after the approval of the RTPI. Another example offered was the case Building Surveying which was directly induced by the professional association. "If you look at the RICS numbers within each faculty as they are now [...] Real Estate was the largest and the next largest is Building Surveying (...) There were subject areas that would be needed by both Quantity Surveyors and Real Estate so there's an element of crossover" (CSP7). The RICS also gave a final opinion on the content of the course. The School thought to give the constructed course a distinctive feature of 'design'. The RICS agreed with that idea but suggested to expand the part of the course involving design: "RICS said if that's your speciality then we want to see more of it" (CSP7). One person designed the new programme and then the *managerial academics* incorporated their ideas. At the end, the programme was checked by professionals in practice to test its coherency with what was perceived as the needs of the profession. However, rather than CSP7 necessarily having the ideas, what this shows is the importance of RICS, and the centralised nature of course creation here. CSP7 is at managerial level and only the three School managers developed the course, based initially upon a conversation with RICS.

It proved to be a good decision as the course became popular with students: "It seemed to kick off quite well actually" (CSP7). It means that the expansion of the School caused inflow of additional funds in form of tuition fees. "So in that sense it was successful, that the numbers kept coming through so it made it a viable course" (CSP7).

This course proved to be a success, where developing a new course within a subject area 'suggested' by a professional association has proven popular with students and in consequence provided funds for the further development of the School. However, relying on one party whilst creating a new course may not be always that successful. One interviewee gave an example of another course initiated by a professional body:

“for example, we’ve just undertaken and got accredited a Masters in Building Surveying, a conversion and also an undergraduate Art Market course. Now they are actually two good examples of where the Art Market undergraduate course is being very much pushed by the RICS for us to have that course (...) we have partnership meetings with the RICS every single year and that partnership meeting is to discuss how the year has gone, to confirm the data that we have to provide to them every year, so that they reaffirm our accredited courses. They also discuss what we are proposing and also identify what they believe is a need within the market” (CSP2).

Here the interviewee for the first time said openly that it was the professional association who prompted School to develop a specific programme. It is an interesting issue as professional associations would like to see themselves as non-prescriptive. Yet universities present professional bodies as somewhat dictatorial with regards to professionally accredited courses. None of the interviewees could tell exactly what would happen if suggestions from professional bodies to create a new course were not taken into consideration. After all a professional association cannot withdraw its accreditation for a course that does not yet exist.

“I think there was a real feeling that if we don’t do it now then we’re going to miss the opportunity. So in fairness to the RICS, yes they were pushing us but I think we had to take the strategic decision that if we’re not involved with it, we may lose that potential market, whether there’s a market for it now” (CSP2).

It seems that it was a political decision to keep a professional association on the School’s side and whilst there was no penalty or reward suggested, it was important to pursue the wishes of RICS.

As discussed in Chapter 5, the relationship between the RICS and an accredited School is called a partnership. However, it looks like rather one-dimensional partnership if one side seems to require more than the other side. The need for new courses came through the partnership with RICS:

“partnership meeting is a mixture of things where information is filtering or requests are filtering down from within the RICS and obviously we are feeding into that system what we’re proposing and the example of the Arts Market was that there was a big, big push by the RICS Faculty related to chattels and those sorts of things, that they wanted a course” (CSP2).

So a professional association suggested a course due its own strategy and the School developed this. However the course proved to be unsuccessful as there is not enough recruitment.

“Now we’re in a position where we’re now the only provider, undergraduate and post graduate for Arts Market and we’re not getting the numbers. So we’re being.... not necessarily forced but we’re being pushed to do a particular course where in fact there may not be a large market for it” (CSP2).

On the other hand, running a Master’s course in Building Surveying based on the market recognition turned out to be a huge success. So the School has to face the consequences of the creation of courses just for the sake of ‘good’ relationships with its main accrediting body whether these are positive or negative outcomes. “It’s quite interesting in terms of those two different courses, one which is not necessarily being pushed upon us but we felt politically that we had to do it and whereas the other one we felt market driven, that there was a need” (CSP2). So the relationship between a professional body and an educational institution is not such straightforward as it was described by RICS (see Chapter 5).

Ostensibly there should be a similar situation when it comes to the School of Architecture and Landscape. However, in that case, the situation is more complicated as there are two bodies, Architects Registration Board (ARB) and the Royal Institute of British Architects (RIBA), claiming occupational control over the field of architecture. This inevitably leads to conflicts, especially where it comes to the validation of courses. Where the secondary literature (see for example Rashleigh, 2001a, 2001b) would lead to an expected conflict between RIBA and ARB, there were actually no problems within this department. Respondents did not mention ARB at all and there was little reference to RIBA. The School’s website makes very little reference to RIBA or to its accreditation of their courses and there is no acknowledgement of ARB at all. This supports the earlier discussion on the importance of individual staff.

By and large two sides engaged in the partnership i.e. an educational institution and a professional body, are supposed to be complementary. The partnership between the RICS and a School works within this theoretical framework. In this study that with RIBA and LI is less clear. Additionally comments from the industry are taken into consideration:

“generally the way we try and work it is an understanding of the hurdles that the students will have to take once they’ve left here, for example the RICS APC programme, so we have to have an understanding of the competencies that they will need to meet. Also the links that we have with industry, we do meet them quite often and we are formalising that link more now with an employer’s forum but generally we find that they do feed what they believe the course is weak in or what their strengths are and what else we need to incorporate within those particular courses (...)we are also asked to attend a number of sessions that the employers organise, where they get in a lot of education people and talk through what they’re doing and what they believe is missing in terms of the courses or weaknesses in terms of students. (...) It is sharing best practice” (CSP2).

This opinion was supported by academics from the top management. They agree that generally, drivers for developing university curricula include the government, individual champions, cooperation with the industry, students, employers’ engagement and demand and relationship with professional bodies (CSP1). However, the earlier discussion proves that in this particular case the most important are demands from a professional body and the way they are received and interpreted by top-management academics.

Perhaps one explanation is that the whole university seems to be reactive to emerging ideas. The university does not come up with new ideas, it does not initiate changes but responds to them: “it is reactive to market development but it is proactive in terms of guarding its financial security status and productivity” (CSP5). Thus, it is easier for Schools of this university to allow an external party to direct educational processes. In return it provides a constant flux of students which means that a steady state of affairs is preserved. Such conclusions were supported by an academic on the management level. According to this interviewee this university is a conservative institution. It protects its resources but it is not likely to be innovative, be at the forefront of educational processes. For this university the most important strategic

objective is its student numbers because it preserves its financial liquidity. Research is not so high on the agenda because it does not bring monetary outcomes (CSP5). According to (CSP6) there is nothing surprising in that situation because it just reflects a general state of higher education institutions in the UK, where “increasingly universities are seen as a business model so people who are astute with business, they will recognise courses before there is a need for them” (CSP6). It means that this particular university has found its niche in the market and simply tries to keep itself afloat. This conforms to what Giddens (1991) portrays as Late Modernity and selling small packages of knowledge which leads to commercialisation of universities.

One might assume that change is also the responsibility of academics, not only ‘management’. However, *managerial academics* at PU expressed some doubts. Sometimes academics are resistant to any changes as they feel secure and comfortable in their areas of competence. Also academics can be resistant to changes because they perceive that it means more work for them (CSP1). “People will often want to do what they want to do rather than what suits other people. You only get a course by bringing a group of people together. You need people to be engaged with the process but individuals are often reluctant to act as team players” (CSP1). However, it may be too easy to say that academics are not willing to change. Perhaps they do not have a chance to change anything due to the inertia of their colleagues and superiors, they may be overloaded with work, they may feel unacknowledged (if not punished) for their efforts and every initiative may disappear in a multitude of bureaucratic procedures. The statement is also interesting from the *managerial academic* of the more centralised School. Architecture and Landscape seems to actually implement what CSP1 sees only as an ideal.

In summary, at PU there are several overlapping factors which affect the departments and cause the current state of affair. These are the strong position of professional associations, the general ‘static’ approach of the university and academics incapable of change. Still, the situation where in the same Faculty there are two Schools operating within the same environment to very different forms is rather interesting.

6.2. How do ideas take a particular social form?

6.2.1. Sustainability issues

There are coexisting contradictory approaches towards sustainability issues within PU. One was discussed earlier, which consists mostly of bureaucratic processes arranged among the same group of people in 'the Hub'. But at the same time there are other manifestations of the introduction of sustainability issues. These are less apparent to an external observer, especially since they are not publicised and/or advertised by the university. This was confirmed by one top-management academic:

“sustainability, without question, exists in almost every single element of every single module at every single level on our programmes because it's implicit in our subject area (...) and in a single decision. (...) It lies at the very heart of what we do which is about the relationship between people and the land” (CSP5).

This vision is delivered to students on an every-day basis, without giving it new brand names and forming new structures within the institution. It is pervasive in every module of a degree programme, and it is derived from a true passion and belief about a need for it.

In both cases, the motivation is that departments need to find a market for their prospective courses. So the approach of the first School seems to be more sensible as they identify potential needs of the market. Sustainability is

“one of the things that we've tried to identify is what the market place perceives. Also what research that we're doing within the school, how that feeds into courses (...) We also have in terms of staff interest but sustainability is something that the government has identified as very, very important and to make our course live and make our course relevant, then we would take on board much of what the government is trying to push. (...) the principle being is that it will affect the property industry; it will affect development appraisals etc. Therefore, even though it may not be something that every individual feels is right, it's relevant and that's the determining factor that once the students need to be aware of it because (...) employers think it's important because they believe clients think it's important.” (CSP2).

This seems to be a very 'cold' approach. But in order to run a successful School, the approach where sustainability is not treated as something special but as a demand of the occupation, may be more effective. After all the staff do not deny the importance of sustainability, nor its prevalence within the profession. Rather the School's management makes a conscious decision over whether this is a feature that will bring more students, 'better' students and more income. This reasoning supports the previous discussion of the nature of the whole university: "I think poor institutions, they are more responsive to the market and they will aim to...use the term 'bums on seats', you know create courses to fill spaces" (CSP6).

This ideology stands in contradiction with an opinion from a *managerial academic* who thinks that the introduction of sustainability into university curricula "has been very much a bottom up process here" (CSP1). This seem to present a picture where the top management level academics think that sustainability is introduced by lecturers, while lecturers indicate that these are institutional initiatives. Perhaps sustainability issues are introduced on different levels for different content? Either way there are problems with communication between the management and ordinary lecturers, and neither party knows exactly what the other side is doing and what are their aspirations.

That struggle between interested parties influencing curricula was described by the interviewee (CSP6):

"If it is an individual module it does come a lot from my sort of philosophy or theories in the profession and teaching. If it's on a course basis or in a field basis on something like sustainability, I think that almost comes at different levels. The Dean might say that every course is to have a new perspective, it might be the Heads of School, it might be the Course Director or it might just be the Module Leader and you know we see in our situation here when we have a change of Head of School, there are things which are perceived to be important and things which are perceived to be less important" (CSP6).

According to the interviewee, on the executive level, senior management designs and determines what should be included in a course but there may be discrepancies amongst the senior level staff with regards to the crucial content of the curriculum.

However, on the practical level it is up to individual lecturers to judge what areas are more important for students at any particular moment. Also lecturers can interpret recommendations from university managers in order to implement their own agenda.

Sustainability is not the central theme in courses offered by the School of Surveying and Planning stated one of the *managerial academic* of the School. It happened to be the most ‘visible’ element because it provides an additional good selling point. According to CSP2 a graduate surveyor or planner needs to be aware of these issues in order to provide the best possible advice to a client:

“What we are trying to do is to make it relevant to them by the time they graduate in that they have evolved and understood that it’s a core element of what being a surveyor is all about and what I try and get my students to understand is that they have to have this wider radar. The wider radar allows them to know that when they are discussing things with the client, they can pick up very important issues with which they may not be an expert on but they can provide a consultancy service to that client where they generate that information or generate the issues that the client needs to be aware of” (CSP2).

Education of future planners and surveyors consists of elements such as legislation, competencies in terms of understanding construction, and a specialism within each of the particular routes that students undertake. Students need common core knowledge of technical competency which prepares them for work and which then prepares them for qualifying in professional ‘practice’. Including sustainability into curricula makes graduates more employable. The School staff is trying to develop general skills in students, such as research – an ability to find information which is up to date and relevant, analyse it, and then produce independent thought from it. These skills can be applied to any subject area including ‘green issues’. Again, the point of it is to equip students with a full range of skills necessary for their future employment. It depends upon the students and their future employers whether they want to specialise later on. Only one specific planning course has sustainability as its landmark:

“Planning Property and Development route has chosen sustainability as its flag (...)So it is special in terms of a particular focus of one route but it does integrate lots of what we do in practice, which therefore means its taught in different ways within other modules”(CSP2).

However, it also involves different teaching from other routes. This point of view stands in a contradiction to the vision of a *managerial academic* who claims that sustainability is an issue underpinning all modules. CSP1 is also involved in teaching so his opinion reflects his part of involvement in the School activities. However, it also means that the *managerial academic* does not have a full picture of teaching in the School, nor cannot impose his point of view on other (including senior) members of staff. According to CSP1 'green issues':

"are incorporated explicitly and in other cases they are incorporated implicitly. Some lecturers don't incorporate it at all. Most do and it's an embedded process (...) Sustainability, Context of Sustainability, Sustainable Development – that's what I mean by being explicit. At a lower level or at a higher level we have a course with the title, with the name sustainability in the title that is fairly explicit. We also have modules where it is not within the name of the module so you won't necessarily pick it up but it comes in within the curriculum. For example Commercial Property Market Analysis which I take, it doesn't even mention it, I think it might mention it in one learning outcome but nevertheless it is very explicit when you look at the lecture programme. Others may not even be explicit at the level of the lecture programme but the material that is introduced or the manner in which it is developed will actually encourage students to engage with the debate." (CSP1).

For example:

"I did a teaching session today (...) and the examples of the relevance of research to their discipline I demonstrated in relation to social environmental...I didn't mention the word sustainability, I mentioned carbon, I mentioned government's policy, I mentioned population, I mentioned change in working practices, all those issues are explicit issues to anybody versed in sustainability. So I cast it to encourage them to think about what projects they will choose within a sustainability context, without saying 'and you should be thinking about sustainability as you choose your topic'. Now that does not appear anywhere until you actually get down to the level of looking at the PowerPoint but it is still part of the teaching and will then become, by osmosis, part of the process of their learning" (CSP1).

Whilst the concepts used by the interviewee (CSP1) indicate that there is a discussion on sustainable development within classes, at the same time (CSP1) could not give concrete examples of the incorporation of 'green issues' into university programmes carried out by other members of staff. This suggests that sustainability is not as centrally embedded as the 'process' identity of the case might suggest. It seems that

widespread adoption is aspirational in School management, but has yet to be widely resourced or disseminated.

Further existence of all sorts of discrepancies with regards to sustainability issues is provided by another senior member of staff (CSP7) who claims that sustainability issues do not constitute a separate module. They are introduced under the name of “Contemporary Issues” which covers all sorts of current events and debates. This shows that within one School there are members of staff who think that sustainability is in every module or even the whole ethos of the School. Another point of view is that sustainability is one of the competencies required by a professional association and it is being taught in that capacity. Whilst yet another interviewee thinks that sustainability issues are included in a single module (which no-one else mentioned). Again, this situation may illustrate poor communication between members of staff with regards to the content of degree programmes or lack of information and/or understanding of what colleagues are doing. Certainly, it suggests that both legitimacy and de-coupling are useful concepts in examining the case. What is clear is that the School can clearly point to a ‘green agenda’ should any demand it – university management, prospective student, professional association or employer. At the same time, individual lecturers and course managers are variably loosely coupled to the concept when teaching and operating individual modules.

Issues of sustainability are treated as one of the course aspects so it is taught like any other aspect of the course because for some members of staff they are just “fashionable buzz words” (CSP8). Still sustainability is an issue left for the consideration of students. (CSP1) said:

“no, I don’t like to be too didactic. (...) one of the most important things on sustainability is to have a debate about what it actually is and what its relevance is. (...) you can impose it to a level but the normal interpretation that myself and most of my colleagues take is an interpretation of an integrated triple bottom line. We don’t, most of us go on to five pillars. But there are many different definitions but the convenient and easy way for students getting to grips with it is to...I’ve seen in many of my colleague’s PowerPoints, use the simple Venn diagrams and that sort of thing and most people go back to the good old definition as per Brundtland because it’s the one that’s been picked up by UK government and by European governments. So it

therefore provides a sensible framework for people going out into professions. It's also fairly adaptable" (CSP1).

However discussing issues of sustainability (CSP1) stressed a particular aspect: "for me one of the debates about sustainability is the rights and roles and responsibilities of the internal against the external stakeholder, the economic stakeholder and the non-economic stakeholder". For (CSP1) one of the unresolved aspects of sustainability is the economic repercussion of change. Where one group – environmentalists - make changes upon another - the world of business. Then they are not directly affecting themselves, but, rather, making potentially devastating consequences on a second group - say an industry. Therefore the cost of sustainability is not borne by those protecting the environment but by those who lose their jobs, profits and businesses in areas deemed to be destroying the environment. Of course, for professions whose prime aim is 'development' then this can be a particular problem. The very concept of 'the built environment' is unnatural, unsustainable and environmentally unfriendly. Without specifically stating this, (CSP1) appears to be describing Green Infrastructure, with its emphasis upon 'greening the city'. In any event, it seems to be accepted that sustainable development involves development at some point. What is discussed is mitigating this environmental destruction.

6.2.2. Changes in curricula

The current situation is surprising, especially in the context of a won bid resulting in a Centre for Excellence in Teaching & Learning (CETL) being funded. Part of this was that the School would revalidate thirty percent of courses to explicitly incorporate sustainability:

"Actually say it out loud in writing. (...) We rewrote them [modules] so that they actually had the words and phrases of things that would cover (...)it's not that you had to write a new module called Sustainability in Business, you kept the same module and you emphasised within the writing so that should a different module leader come along they would realise that that still had to be taught rather than just business ethics" (CSP7).

This is interesting. CSP7 is explaining that the CETL was to draw out what was already there, to put it into specific terms, to legitimise it. This is not suggesting that no change took place, but it is emphasising a particular process – module documents – rather than changes in teaching and delivery. There is, therefore, a danger that attempts to satisfy the requirements of funding bodies were not correlated with actual changes in the university programmes. It seems that the core of the module remains exactly the same, only wording related to the content of the course is changing. This situation shows an interesting situation: educational institutions are influenced by external bodies such as professional associations or funding bodies. But the level of this influence may vary quite significantly as university staff can interpret the requirements from them. Universities may take on board comments of external bodies and reorganise or create courses or the change may consist of the alteration of paperwork. This depends then on an external body whether it accepts changes in a form of ‘deep reforms’ or shallow amendments. This again points to themes of legitimacy and loose coupling. In the case study here, the emphasis is placed upon *process* again, that constructing syllabi to stress a particular feature provides staff with the direction to more fully enact the sustainability issues that they were previously only skirting around.

This struggle between diverse influences on the university curricula proves that it may be extremely difficult to identify one, determining factor. For example “professions like to think they are at the forefront of things” (CSPI). Even at PU, they are not determinant authorities. Also, interviewee CSPI stresses that a professional association is not a single entity, but a

“professional community. [It consists of] mainly professionals, mainly practitioners. There are academics who are members but they form very much a small minority within the profession. The profession is a pragmatic profession, it has had many arguments over 30 years as to whether it is a learned profession or a pragmatic profession and it needs to constantly evolve. It is at the moment, it considers itself to be a market profession. It looks to the market and if the market is considering sustainability so does it. That may be flawed but that’s the model we work with. As a member of the Governing Council I see precisely how the decision making is taken and the decision making is related a lot to the market because it is a perception that

we service the market and the perception of the practitioners is that their main job is to produce wealth”(CSP1).

This statement that professional bodies are led mostly by practitioners appears contradictory, especially when it comes from a member of a professional association who is an academic and additionally sits on the Governing Council of the RICS. Indeed, academics have an unrepresentative degree of authority within professions when one considers that the driving force behind the community is that they create and control a body of knowledge. How is this body of knowledge generated and renewed and given meaning if not by academics? For example within RICS itself, the Agenda for Change placed great weight upon recreating the institution as a knowledgeable and intellectual community and establishing a more academic orientation (see Chapter 3). All of this adds extra level of complexity to the influences on syllabi.

Changes in the courses do not depend only on external bodies. The evolution of a School affects its teaching. In this case, student numbers are increasing and everything seems very positive including new classrooms, library facilities and staff members. When the number of students increases, the quality of the course changes too. However, the assumption that the quality decreases would be an oversimplification:

“it seemed to change quite a lot, the atmosphere changes with the size of group that you are teaching (...) the quality can change absolutely but it doesn’t automatically assume its going to go downhill. (...) You just try to adapt your teaching to maintain a good high level of quality of teaching” (CSP7) and “you need to treat them [students] as individuals and that is a challenge if you’ve got a large group (...) So the trick of a good teacher would be to try and be able to identify those who aren’t succeeding and supply them with extra help before they get to the turned off stage and that comes back, partly that comes back to resourcing, partly it comes back to commitment and follow through, but it does often come back to resourcing, people being too darn busy” (CSP1).

There is an acceptance here that staff should multiply their efforts when demand is rising and resources are at the same level. Apart from that there was no specific detail as for how the course is adjusted in order to deal with growing student numbers.

Whether resources contain some slack that allows for this was unclear, but seemed unlikely. Some assignment briefs did contain remarks on staff marking levels, which suggest that more students lead to less feedback. When queried that was described as “different rather less” and included more general comments and something called feed forward prior to the assignment. Perhaps, it is the same situation as with funding bodies. Any demands from a professional body may be fulfilled by reorganising School’s structures without adding new resources. That would satisfy both – a professional association because its requirements were fulfilled and the School because any changes did not involve additional costs.

Changes in curricula at PU remain a top-down process. It is the senior university staff who decide about possible (formal) changes:

“we base it on our professional experience, our analysis of the results, having looked at the results we identify which routes were more likely to fail that module and also looking at the APC requirements, the competencies. So we’ve now devised a module that matches more of the APC competencies for Real Estate and also comments back from students in terms of the student committee meetings and complaints, basically, outside those forums” (CSP2).

This suggests that senior staff, the management of the School, take the responsibility for the changes in the curricula, however deep or shallow they may be. Whilst bottom-up student feedback has a place, no student respondents felt that their input initiated such changes. This might be a visibility issue since it was unclear if student committee meetings receive feedback on the issues they raise. CSP7, a senior member of staff, described such co-operation as the: “the RICS model of deciding what is a good education for surveyors”. If true RICS is endorsing a market orientated focus from non-members (students and customers) in the hope that they become future colleagues. However, there was no evidence at PU of student-led change.

6.3. How do the university staff teach?

Going to university means changing completely the previous learning environment with all its habits and requirements. Thus, one of the roles of the university is to break down the old style of learning and introduce students to other methods. Interviewee (CSP2) described it as:

“breaking the mould in terms of how they’ve learnt before. When you get to year two and year three you’re developing that independent thought because everything they do as a surveyor you have to be able to justify it and stand up in Court (...) So it’s all about justification and justification requires you to have evidence and that evidence has to be robust and the methodology by which you obtained that and you interpreted it and you collated all that information and analysed it has to be robust and that’s what we are trying to do with them in year two and year three at different levels. (...) So there’s changing their methodology in year one, getting them to develop that in terms of their understanding of literature, reviews and also secondary research generally and then in the third year there’s this push, beside all the technical competencies, because what they can do with the primary research is they can draw upon their technical competencies and may have a subject area which is very, very technical” (CSP2).

Particularly with professions such as surveyors, planners, architects and landscape architects, where the consequences of their actions may have legal repercussions, it is extremely important to teach students to make independent decisions and to be able to prove the rightness of it. That is why the key thing is to enable students to search for information themselves, make them analyse data, and formulate justifiable conclusions based on evidence. The structure given by PU for this kind of teaching is that students accumulate new skills for three years and are able to use them when writing their dissertation.

Of course, in order to keep the course up to date it is necessary that it needs to be kept up to date with changes to legislation, technology etc:

“There are certain obvious things like you have to be up to date with legislation, so you just have to be up to date with legislation. For something like a professionally accredited course you have to have a good relationship with industry, from the employers (...) they do come up with comments even if they’re not quite as sure how to phrase it” (CSP7).

This is also what makes up a good teacher – the ability to catch up with important changes in practice and delivering it to students so they are well prepared for their professional career.

Some academics like (CSP9) or (CSP5) stressed the importance of a lecturer's involvement with their teaching:

“I think every academic will have their personal agenda or their own theories on how their profession should be represented or taught and I'm sure I bring part of that to it but its primarily what I feel is important for them to be good at what they do and I think I'm keen for the students to enjoy the profession they're in and to be good at it and if my teaching allows them to do that I then think I've succeeded” (CSP9).

This appears rather idealistic considering the wide requirements from professional bodies which are required in order to receive a professional accreditation and the general emphasis at PU on process. Better, though, is to view this as a loose coupling of the teacher from management. Individual lecturers choose to interpret how and what to teach:

“I'm taking the module descriptors and using my own experience, my own interests and what I feel is important for the students to guide that. I'm also in the lucky position that they allow me to...they don't just give me a lecture and say 'give this lecture'. I write my own project briefs, I choose whichever reading, whichever theoretical context to work in. If I want to teach in the studio or I want to teach in central London or do it at different times of the day or night, it's quite flexible” (CSP6).

Still, whilst the contents and methods of the delivery of a particular module may be originated by a lecturer, it needs a confirmation from a superior of this academic. If one of these elements (contents, modes of delivery) was contradictory to wider departmental strategy or requirements from a professional body, perhaps the interference of management would be more visible.

Whilst that may explain the lecturers' interpretation, managers also did not expressly state that they monitor content. Provided no complaint is received, individual interpretation of the specifics is allowed, if not encouraged.

6.3.1. Does ESD impinge upon teaching?

As discussed in Chapter 3, education for sustainable development lays emphasis on several factors such as: understanding of interrelations within the environment, raising awareness of students, developing attitudes and values, affirming validity of different approaches towards a subject. These qualities also, according to (CSP1) describe an effective, 'good' teacher:

"the essence of a good teacher is someone who services the needs of the person or group who are being taught and that may mean swanky PowerPoint, it may mean just an ability to communicate effectively. It's an ability to inspire, enthuse, empower, all those sorts of words and there is no one set recipe. There are a number of techniques which you can use which maybe enhance success and clearly someone who knows their subject and who is willing and open to give their knowledge is really important.(...) The more enthusiastic and knowledgeable you are, the more likely you are to evoke an emotional response in your students" (CSP1).

However, some like (CSP5) and (CSP8) think that good teaching is more about enabling people to do whatever they decide to do: "Good teaching consists of empowerment. It is to help people see that they have the capacity to do things and that their knowledge and opportunity does not lie with other people but with themselves" (CSP5). This was supported by another interviewee: "a good education I think requires sufficient stimulation in the subject matter for the students that they will want to carry on learning after they leave us" (CSP7). Another similarity between teaching at the university and ESD is that in order to achieve an intellectual response from students, it is necessary to associate values with discussed material which in consequence accelerate an emotional response in students:

"If you're talking about the philosophy or talking about whether firms are going to go down the CSR route in the economic climate, it's a question of debate, its less fact. So I don't think there's anything particularly difficult about teaching green except if you're in technology trying to keep up with the technology. In many ways it's an easy area to teach because a lot of the students have strong views one way or the other. It's easy to evoke, in my experience it's been very easy to evoke an emotional response out of students and once you've got an emotional response you tend to get an intellectual response. (...)Once somebody is emotionally engaged in what they are doing then they will work harder because they care and if you can get a student to actually care about their studies and think that this is the most important part of their course, then they will work harder, they will give more time to it" (CSP1).

This means that although there was no mention about issues of Green Infrastructure as such, staff at this university implement on an every-day basis what is referred to as education for sustainable development. Interestingly, there was little discussion of technical competencies or the need for students to know ‘facts’.

Most people (CSP5) (CSP1) (CSP3) (CSP8) agree that learning through practice is the most effective. However, there are several barriers against implementing this method of teaching. These include:

- “-lectures are easier to do for lecturers;
- this method is particularly difficult and time-consuming for lecturers;
- students don’t want to attend those sessions;
- student groups are too large;
- students don’t do dictated reading week per week;
- lecturers have been doing lectures for a long time and they got used to this method;
- lecturers are too busy with other activities such as research or administration;
- there is no appreciation from the management” (CSP3).

Whilst these barriers might reduce the potential number,

“we do inter-disciplinary projects and our students are very sensitised to the very inter disciplinary nature of their subject area, so would understand that in the professional environment, that their projects are more likely to be collaborative rather than individually generated by one profession (...)Around fifty percent of our programmes are projects, practical work. (...) This is the most effective way of teaching students” (CSP5).

This difference in views is reflected by students to staff ratio (as it was indicated by interviewees (CSP3) (CSP4)) of 40 to 1 in the School of Surveying and Planning and 20 to 1 in the School of Architecture and Landscape. This also reinforces the earlier point about staff not being able to cope with increasing number of students within the same resources. Also the School of Surveying and Planning recognises that not all of its students have the same intellectual potential.

“I think there are students who have potential from day one, but there are a lot of students who blossom by the time they graduate and that’s a reassuring thing. So we don’t necessarily write people off and because of that historical understanding that

students will blossom and they just need some environment sometimes to make them blossom, that we do accept people that perhaps don't necessarily shine in terms of their personality or their skills from day one, but meet the academic requirement to get into the course because we believe everyone can generate a potential within the course and that's shown itself" (CSP1).

Assuming that students who are less intellectually able take more time and attention of lecturers, it becomes difficult to perform any practical exercises with the whole class, especially with larger classes.

6.4. How do students learn?

There is a large group of students in both schools who are already employed. CSP2 says: "for example the Quantity Surveying course, two-thirds of them throughout each year, are already employed, they're already part-time. From Building Surveying one third is already employed part-time". The course attracts employers to send their employees for a course but respondents generally agreed that they sought a license to practice, not a rounded education. Employment also proved problematic in regard to the full-time students as well. CSP4 claimed that officially the School do not encourage full time students to seek employment. However in the current economic situation where students pay fees for studying, it is accepted reality that students do work and the School staff need to take it into consideration with regards to timetable and administrative matters. CSP2 was more supportive, and saw this as a part of a student's desire to obtain a professional status in their professional practice. Thus students choose very carefully their future employment because this could be a starting point leading to passing an Assessment of Professional Competence. This then is carried through to their final year:

"generally most of them have organised themselves either a job before they graduate because the key hurdle next is the APC. So most of them, I would say 95 – 98% of them want to become chartered surveyors so there is a motivation in terms of them getting the right placement to enable them to get through the APC" (CSP2).

As was true in other professionally-orientated universities, students who are already in business treat higher education as another investment so they expect certain values for the money they pay: "they want value for money, they don't want lectures

cancelled or postponed, and they want certainty in their delivery” (CSP1). This seems to be reasonable, however it becomes more difficult when students question the content of modules or teaching methods where it does not match their expectations (CSP4). Whilst student complaints that subjects taught are irrelevant, teaching methods are boring and lecturers are unapproachable (Wolffram et al, 2009) are not new, today they are paying customers. Thus, universities are trying to generate a culture for independent learning, but they are also required to react to claims of little value for their money when emphasis is placed on the students to self-learn. Because, even though students may not prepare for lectures and may not read assigned materials, they are the customer after all. A number of respondents suggested that students wanted to be ‘taught’ rather than left to independent study. In one student meeting the researcher attended, students complained about the use of a video, having to work in class rather than be taught, about ‘losing’ contact time when a lecturer took two fifteen minutes breaks in a three hours class.

As part of its ‘process’ functions, PU increasingly used all sorts of electronic devices and schemes in order to reach students and make course materials easily available. This also served to validate value for money by providing students with ‘added value’. Among all learning and teaching methods PowerPoint presentations are the most common (CSP9) (CSP8).

“I frequently use PowerPoint because it’s a very good frame and it gives them something to work from. I will use conversation, I use debate, I use seminar when I can if it’s a large group, I use exercises for students to do that will ensure that they get support from each other as well as from the lecturer, a range of things” (CSP1).

Using a PowerPoint presentation satisfies student needs for easily reachable materials. They feel that a lecturer is prepared for the lecture and these are ready-made studying notes. Some staff did feel that PowerPoint was restrictive and boring. CSP4 felt under some pressure because of his basic skills, and also that there were increasing requirements for students with learning issues “One thing that does gall me is that I have to release slides prior to the class. So, they all download them, print them off and fall asleep. There’s also the attitude that if they have the slides, they

don't have to attend" (CSP4). The similar issue is with the learning system called BlackBoard:

"[BlackBoard] helps with the communication but it's still something you need to do because the students expect it as part of their overall experience of being here, in terms of what you put on the screen, the fact that we don't just use overheads now, the fact that there's a computer in each teaching room and I can get stuff up from the internet and show them a video online or stuff ...while I'm in the middle of a PowerPoint I can show something that comes off the Net that I wouldn't have been able to do if I was just relying on acetate on an overhead projector. So you have to think about, well the students are expecting something more polished, it helps keep their attention span" (CSP7).

As can be seen CSP4 and CSP7 view the use of technology very differently. Where they do agree, is its necessity in the modern classroom. The presence of those demands and the response from the university prove that students can shape university programmes. This modelling involves not only modes of delivery but also, to some extent, the content of the curricula:

"Just to give you an example, in the second year of the undergraduate programme the Building Surveying students and the Quantity Surveying students as of last year, took a combined module in procurement and financial management and what we found was that the Building Surveyors were not really benefiting from it because it had too much of a focus on the Quantity Surveyors. As a consequence we've now split the group so that only the Quantity Surveyors do that particular module and we've enhanced another one of the other modules. So they do influence in terms of they feedback through student evaluation, feedback through student committee meetings" (CSP2).

So students do have an input in shaping up the courses. However, it is a very managerialised process. They become involved, their opinions are taken into consideration, only when something does not work. University staff are afraid of students complaining so when it happens the university take immediate action to prove its care of students. When processes run smoothly from a university staff's point of view students proposals remain unfulfilled. It happens because students' requirements may be very difficult to satisfy (for example students complained about an odour from toilets) or those are too difficult for the university staff to deal with (for example more field trips). It is worth noting that student feedback is not always taken seriously (for example students asked for pole-dancing girls in the classroom in

order to improve the quality of the lectures) or reflects personal experiences of a student (for example poor exam results) (examples given by CSP4). Also only the most confident, the strongest students can express their opinions: "So we do get feedback from some of the stronger students who's influence has meant that we've changed some of the modules" (CSP2). Another problem is that students are more willing to criticise and they do not express their satisfaction about the School and its processes. It is difficult to hear a positive opinion from students because they tend to focus, remember and report only negative experiences: "you will always find someone will fill in a form who's happier to moan than someone who is happier to congratulate (...) Anyway it's difficult but that would be a reflective process in terms of how they felt about the course" (CSP2). So it may present the picture of the School unfairly slanted. On the other hand formalised students' feedback has a tendency to be uniformly positive. Students in Staff Student Consultative Committees and in interview with External Examiners are reported as praising both staff and courses. Respondents tended to regard this as a more reflective overview by the students rather than a knee-jerk reaction to immediate problems; however interviewees also recognised that more formal situations might also intimidate students into acquiescence. Whilst interviewee CSP2 felt that formal student feedback better reflected the positive aspects of the School, interviewee CSP4 did remark that he sometimes attended Consultative Committees in order to ensure that students there would not make any critical comments. Interviewee CSP1 suggested that this was also a management device to curtail criticism. Where CSP1 became aware of discontent students, they were called in for a face-to-face discussion of a problem; the Interviewee felt that criticism was much harder to present rationally 'in the flesh'. It is not entirely clear whether this is meant to stifle complaints or as a genuine attempt to flesh out and resolve them. Either way there is a clear strategy of placing emphasis on formalised feedback that is well managed, and that this does sometimes reflect how students feel they should learn.

There is also a feeling amongst respondents that students do not have the knowledge in order to allow them to be critical of the course (for example CSP8, CSP4). An

average eighteen year old has no serious comprehension of what chartered surveying is all about, how the construction market operates, what skills they actually need and what employers seek from new graduates. How then can they make informed criticism of the courses they are studying? This does contradict a wider managerial approach to the students as consumers (as discussed in Chapter 3). First year students tend not to comprehend what higher education entails in terms of knowledge and ethos. Immaturity in some students has also become a problem. That is why the last year there was introduced a scheme for students which requires students to sign a 'contract' regarding a 'proper' code of behaviour: "this year we've actually introduced something new, a student agreement, a student charter whereby they sign that they understand that they've got to be quiet and not be late and all these sort of things" (CSP2).

In contrast there are positive aspects in the presence of mature students. They take ideas such as sustainability more seriously and with much more consideration:

"I think mature students get it as an idea more readily than eighteen, nineteen, twenty year olds do. At the moment those guys coming out of school where they might have learnt to recycle stuff at school, sustainability means recycling and using low energy light bulbs and that's as far as it's got. (...) It takes a while, it's a learning curve" (CSP7).

6.5. Green Infrastructure in the courses

Sustainability issues have been a constant leitmotif thorough the whole chapter but only extremely rarely associated with the notion of Green Infrastructure. That was because either this concept is not perceived as one of the sustainability issues or rather because it is not embedded strongly into the teaching of both Schools. Interviewees such as (CSP9) (CSP8) (CSP5) indeed showed interest in teaching GI but only when they were directly asked about it. (CSP9) made a remark that "it's been a mistake not to include more of GI in the course. Cities are not only about housing. GI is necessary to preserve and sustain cities thus it is important to include GI in the curricula". But this interviewee was not included in the development of the

course programme so was not able to include GI. An ‘active’ response was received in the School of Architecture and Landscape. This may have to do with a fact that the Landscape Institute treats Green Infrastructure as the core of the landscape architecture (see Chapter 5)

“I gave a lecture last year about public space taking over industrial infrastructure in New York and it is something which I am very interested in, the idea of what we do with landscape architecture which is not always green (...)my work is always public space as in infrastructure element within the urban environment so there are elements of that which are included in the teaching, particularly when we’re looking at a sort of regional or urban scale where we can understand the context that we’re working in rather than just dealing with individual sort of spatial components like a square or a street. As soon as you go beyond that and look at the context that it is in, it can become part of the green infrastructure” (CSP6).

Another landscape architect was more laconic describing details of teaching about GI: “Green Infrastructure is in project modules and in management modules” (CSP5).

Teaching Green Infrastructure at this university depends upon occupational interests because PU relies on the professional validation of its courses. So if there is no direct demand from a professional association for implementing this kind of knowledge, then there is a little chance to find GI in the university programmes, regardless of the personal interests of the staff. Individual staff might introduce it, but few do it at PU.

6.6. Conclusions

This case study was described as ‘processes’ because of the reliance upon process. Systems have been created since these are seen as an essential management tool to standardise and centralise the creation of courses, the provision of those courses and the overall quality of the student learning experience. This can then be subjected to quality assurance procedures, which provides two advantages. First, this ensures that professional associations are provided with a clear picture of how the university is providing courses, that they comply with any requirements and that both parties have a legitimised provision of a quality education service. Second, this process can then be certified, validated and branded to appropriate external groups, specifically with the intention of marketing the courses. A particular example of this is the IMEA

recognition discussed at the start of the chapter. The university and its departments are focussed upon the need to provide students with a certified and approved professional course with maximised employment opportunities.

One driver for this situation is probably the image and status of the University. In Russell Group terms, it is of 'low quality' and is in the bottom third of the various league tables produced on university standards. This requires the University to use the status of third parties to increase its status. Certainly, this is successful inasmuch as both departments are well regarded by the professions, and are certainly better regarded than the overall University status would imply. The relationship between the departments and RICS, RIBA, LI and RTPI might be seen as parasitic from this perspective, but the genuinely obvious quality that the research here has uncovered suggests a more symbiotic relationship. However, the need for third party branding to improve corporate status is evident. Where symbiosis takes place is with the work that is *actually* carried out within the departments.

The concept of loose coupling is useful in examining the extent to which departments, courses and individual lecturers are actively decoupled from this centralised process. There is also the question of degrees of separation. Whilst processes are seen as establishing benchmark, no respondent suggested these should determine delivery, but, rather, that they should guide it. Most respondents, especially those in the School of Architecture and Landscape, regarded deviancy as a requirement of their job. Lecturers are expected to question dominant theories, to research new ideas and to pass these on to their students. Process does not seek to actively destroy this. However, this subversiveness did distort the processes on occasion. Some respondents discuss teaching what they consider necessary, regardless of what formal documentation might require. Equally, some lecturers particularly in the School of Landscape and Architecture, were a key part of creating those syllabi. However, the School of Surveying and Planning did rely on its senior management to create courses and there was a looser coupling within the behaviour of some staff where they had not been consulted in the creation of syllabi. Some

managers also questioned whether academics were willing to pursue new ideas. However, everyone agreed in the ultimate focus on the 'employability' of graduates.

In the literature's portrayal of ESD, there is no expectation that constructs like the Hub will enforce greening, but rather that syllabi will evolve naturally. However this might be naïve since there is also a wide literature that suggests that environmental behaviour will only change through coercion, especially legislation. The result at PU is that it can show 'green courses', on which the Hub is successful at portraying. It also presents non-green courses, where the desire to install sustainable 'elements' does not seem to be successful. This was particularly true with the issue of Green Infrastructure. In the School of Surveying and Planning the most enthusiastic supporter of the concept had not been asked to input into syllabi, and so felt that those creating them simply did not have the knowledge to include it. This left staff to develop the formal wording of syllabi as they saw fit on an ad hoc basis. However, this seemed to be accepted, provided that students did not complain. Once problems came into existence, then the School investigated whether managers felt that syllabi were being correctly interpreted, or whether the syllabi were wrong. This suggests that Green Infrastructure will only come into existence where either a management change takes place, and an advocate of GI joins, or where student complaints lead to its adoption.

It is also difficult to perceive a particular 'green' teaching style or learning process here. Whilst projects are seen as useful, this as much because of the vocational nature of built environment education as it is with Green Infrastructure requirements. Otherwise, resources and university management protocols seem to drive teaching and learning techniques.

Chapter 7: Balance University (BU)

7.0. Introduction

The city of Balance University was recently elected European Capital of Culture. Major regeneration projects and business investment resulting from this award have meant that the economy is thriving and Government figures show the fastest growing jobs rate of any English city (BU, 2009a). Investment and regeneration schemes in the city are constantly supported resulting in a thriving economy and job opportunities for graduates (*ibidem*). Within HE, increasing costs of living and scarce job prospects make this attractive; students also choose a local university in order to make studying affordable (Patiniotis and Holdsworth, undated). University staff promoted other factors in choosing BU: “this place has got lots of affordable accommodation, it’s quite a lively city, it’s not particularly violent, there’s a whole raft of things that makes them choose to come here but they decide they want to do an RICS accredited course in ‘x’ and then they look at where those courses are delivered and then they make a decision about where it is they want to actually go and study” (CSB6). So although higher education is expensive and students might choose a local university, one of the most important factors in choosing a course in the built environment area remains an accreditation from a professional body. Selection of occupation is still a determinant, and this drives BU.

The University is proud of being a “modern” university, in which its heart and soul is the learning and advancement of its students (BU, 2009b). Buildings are clean, modern and spacious providing a good learning and teaching environment. However, neither staff nor students commented on L&T space and its links with pedagogy issues. BU’s website claims its focus is on students’ learning and their progress but this slogan does not reflect the approach of particular Schools of this university as will be explained later.

A BU special feature is sustainability (BU, 2007). The University claims that its targets include reducing consumption of natural resources and the amount of produced wastes, promoting environmentally-friendly means of transport and encouraging staff to become more sustainability conscious. Additionally, the University complies with all legislation that has an impact on the sustainability of the university, and their buildings are built in accordance to new building regulations (BU, 2007). University buildings have facilities for recycling. There are graphs uploaded on the University website (BU, 2007) showing costs of the energy and gas use in 2005 and 2006 but no definite conclusion can be drawn from these diagrams with regards to sustainability as they do not show consumption in the wider period of time. Oddly there are no light-saving facilities. Also, there are no signs of any special policy for sustainable transport (biking facilities, bus data etc.). Since building regulations apply to all new buildings (Communities and Local Government, 2009), it is difficult to treat applying legally binding regulations to buildings as notably sustainable. The rest of the 'sustainable' plan is too vague to analyse its impact on staff. This proves that although the University claims to be a sustainable university, this aspect seems to be superficial, not deeply considered or just badly presented. Certainly, there is no connection with teaching and learning methods used here. There is a Sustainability Unit, but this is a separate entity with its own manager. Like PU (Chapter 6) this seems decoupled from other activities. There is no visible link between sustainability presented as a feature of the university and 'green' university programmes run by Schools. This was emphasised by members of staff by saying that sustainable development has been introduced in the university curricula because of "the government's spatial planning approach is the creation of sustainable communities" (CSB5). There is no indication that the university leads. As much as BU would like to present itself as a 'sustainable university' this is not driving its departments and courses run by them. This points to these centralised features serving legitimacy functions decoupled from actual practices within the courses.

7.1. Where does knowledge originate?

The School of the Built Environment is the biggest in the Faculty of the Science and Environment. “We run courses that range from Urban Planning right the way through to Civil Engineering and so we’re quite a big school. We’ve got nearly 2000 students. (...)We wanted every discipline in the Built Environment [in BU county], to be available” (CSB6). The total number of students in the Faculty is 3000 (BU, 2007), the School recruits twice as many students as the rest of the Faculty.

The School claims to fulfil the various needs of government, industry, local communities and professional practice by providing courses in: Building Design Technology and Management, Building Surveying, Civil Engineering, Construction Management, Environmental Engineering, Facilities Management, Housing, Planning, Quantity Surveying, Real Estate Management and Urban Renewal (BU, 2008). The School does not have a focus on any specific subject areas within the built environment discipline. This raises a question about whether there are enough resources for teaching such variety of courses? It also questions whether the same learning and teaching methods are used regardless of the focus of a course?

Whilst the School might be satisfying the needs of different parties such as government, industry and local communities, this is not the only reason for providing such numbers of courses. It is also caused by a considerable pressure from within the university as other schools within the Faculty have had problems recruiting students. The variety of programmes is aimed at attracting increasing numbers of prospective students and in consequence develop the School. This might suggest that the School’s authority as the largest unit in the Faculty should be the determining one. But in reality the School’s task is to make up the number of students in the Faculty as others Schools under-recruit students. CSB6 claims that there is a “pressure from the university because the university has to hit targets and other schools have under recruited so that means that they put pressure on us to over recruit to maintain overall university numbers”. The most important goal for the University is to reach targets with less consideration given to educational quality. Interviewees stressed the ‘pushy’ role of the university administration in increasing the number of students. But nobody

mentioned resources necessary to facilitate growing numbers of students. The conclusion is that the Faculty management is happy to accept large numbers of students but the required resources do not necessarily follow it. All of this points away from questions concerning the origins of knowledge, and more at issues of resourcing. Hence 'knowledge' originates with those who will pay for it.

This is possible because built environment courses are currently popular. "We're recruiting at the moment because Built Environment is flavour of the month at the moment" (CSB6). Other Schools within the Faculty may be forced to recruit more students when the construction industry is experiencing a downfall which in consequence will decrease the number of students in the School of the Built Environment. But in the current circumstances it means that the School is under continuous pressure to recruit more students. Thus they need to constantly update their 'product' in order to attract potential customers. An example of this strategy is development of an Architectural Technology course in order to bring a wider clientele. "We know from other universities that Architectural Technology is one that maintains its recruitment" (CSB6). So the proximate driver for changing syllabi and introducing new courses is the need to fulfil university targets concerning student numbers. This might result from more disparate drivers such as the needs of local community (to send their children to the university), industry (for high quality employees) or the government (its wider socio-political policies), but these are remote from the immediate pressures on the department.

The construction industry is sensitive to changes in the economy and numbers taking courses reflects market trends. This fact impinges on the way the School is organised and their approach to teaching. As a consequence of this and other factors, the School widened their offer of provided courses and re-organised the old structure. CSB6 stated

"In Construction education student numbers follow recessions. So when the economy goes into recession, so do the construction and property industries and then student numbers drop off. Then we have a problem and in the past we had no students on these programmes, so let's develop some new ones where we think there's a market.

(...) The ones that never recruited well, we just shut them down. The ones that had been recruiting, we kept on. (...) So Construction Management, recruitment will drop off, Property and Real Estate Management will drop off but we also know that historically Quantity Surveying and Building Surveying retain their numbers. So they are our big programmes (...) So the development of the titles of programmes is very much linked to student demand and student numbers and maintenance of student numbers”.

Again, the most important thing at BU is to maintain or increase student numbers. Courses are not linked specifically to research interests of staff or with developing a special ‘brand’ of the School. It is simply a method of surviving for the whole faculty. This is rather interesting because it ensures that staff really cannot care much about what kind of subjects they are going to teach. They just assume that the primary aim is to retain or increase student numbers. So the Department offers all sorts of courses but none of them is particularly developed on staff’s research interests and expertise.

However it is not clear what part of the income goes to the School itself and to its management. Therefore the School is dealing with these issues directly whilst the resources and the wider social benefits either lag behind or are decoupled from the actual practice of teaching such students. The School is also trying to diversify methods of securing funds to ensure its success.

The School has a strategy for a situation when student numbers decrease dramatically. Such a situation threatens the existence of the School and is why other methods of generating income were developed. These include research, Knowledge Transfer Partnership (KTP) activity, enterprise, and collaborative programmes with FE Colleges. The School has been building up those activities with their partners over the years to help to survive if the student numbers drop off.

“We’ve got a local FE College that ran HNCs in Building Services Engineering and they wanted to run a foundation degree but they couldn’t validate a foundation degree so they came to us and we helped them validate it. Now that’s a collaborative programme. They then wanted a route way developing for those students to go on to a degree so we then validated a top up to BSc and we actually appointed staff to deliver that because we wanted to be in the situation to be able to deal with Building Services because that was another gap in our provision.” (CSB6).

The range of courses offered by the School therefore is determined also by external opportunities for collaboration.

CSB6 mentioned research as one way of generating income but no details were disclosed. The conclusion is that if staff's research really contributes to generating income or development of courses, it is a marginal role. Much more important is providing a wide range of courses that attract students or collaboration with external partners with the intention of creating new courses to be accredited by a professional body. But accreditations from professional associations are not unconditional. There are external pressures from professional bodies on the School. Professional associations do not suggest introducing a particular course or a change in the curricula. Their role is to monitor whether quality has been maintained. This was confirmed by CSB6 that professional bodies do influence the courses. However their task is "not to create courses but to maintain the quality of the courses that we've got now. (...) they don't say 'oh we want you to develop this'. That's up to us, what we develop and also what we put forward for accreditation" (CSB6).

Professional associations do not determine direction of change in education; they see their role as an agent for checking the quality of a course and its compliance with their own requirements. However, professional bodies through their accreditation are one of factors leading change in university curricula. At BU this is primarily one of using quality as a controlling device to restrict growth that might otherwise not be contained. BU balances offering courses with the need for professional accreditation in order to be able to fill them.

7.2. How do ideas take a particular social form?

The implementation of the knowledge discussed in section 7.1 into particular syllabi and courses involves a number of components. These include the curricula themselves and how they are changed, learning and teaching issues and the various stakeholders involved in giving them a particular form. Finally, there are specific Green Infrastructure issues within these wider concerns. This section analyses the social construction and reconstruction of knowledge at BU.

7.2.1. Changes in curricula

One of the primary reasons for re-thinking the content of the curricula is market changes: “Certainly updates in market changes, specifically within the areas that we teach in” (CSB1). Although it is easy to define the motivation, it proved extremely difficult for the interviewees to actually define what these changes consist of. Generally it is thought to be a ‘current situation’ that led the School’s staff to collectively review their courses:

“we mooted the idea with all the staff in the School and (...) then we went through a process of around about twelve months looking at what each programme needed in it from a professional body perspective, how the curriculum had moved on and how we needed to modernise, which things were obsolete, where there was commonality between programmes. So it was really a sort of grass roots review of everything that we did in the undergraduate suite” (CSB2).

The problem was that the programmes were too massive, modules repeated and different people were effectively teaching the same subjects. So teaching was not effective

“(…) over time our courses evolved and people would make changes every five years and periodic reviews, they’d make changes to their courses. We ended up with a massive module portfolio (...) and a lot of them were actually repeats, there were lots of similarities between those modules with lots of different people teaching them. So two years ago we decided to do a complete review of all of our undergraduate programmes and we called it the ‘big bang’ because it was like starting from scratch. (...) After twelve months development of what was actually going to be in the programmes, we then looked at putting the programmes together and we got them revalidated” CSB6.

Certainly those changes in the market drove the School to completely rethink their courses to make teaching more effective and more attractive for students. After the review there were substantial changes introduced in offered programmes.

“We culled a few programmes so our Housing course went, we had some courses like Environmental Management that went, we had Real Estate Management and the Environment, that went, so we chopped quite a lot of courses. The only new programme that we introduced was Architectural Technology” CSB6.

Note that a number of environmental courses were culled. However, a clear driver to such deep reform was unclear; interviewees describe it only as: “there was a feeling” CSB6.

Other factors discussed generating changes in the curricula, including requirements from professional associations, QAA benchmarks, School strategy and, to some extent, staff’s interests and expertise.

“We are accredited by the professional organisation, the Royal Town Planning Institute and that provides our framework really. So we have a look at the requirements of RTPI for an accredited course and there’s also a benchmark statement for Town and Country Planning. So there are certain things which we have to conform with and that provides the starting point. Then there’s other constraints as well (...) such as staff, who you’ve got, what their areas of expertise are and constraints within the School as well because you can’t just start a new module in what you’re interested in because it might not fit in with the strategy for the School. (...) So you have a visiting panel and in the case of Planning we have a panel that comes once a year and they may make recommendations to include some issues” (CSB5).

Whilst the School is trying to balance various influences over university curricula, the most important are requirements from professional bodies. Also subject benchmark statements are mentioned as one of the factors shaping curricula. This is rather surprising since: “they provide general guidance for articulating the learning outcomes associated with the programme but are not a specification of a detailed curriculum in the subject” (QAA, 2008).

As discussed before, graduation from a professionally accredited course which provides entry to a profession is the most attractive factor for students choosing this university. So in order to maintain students’ interest it is crucial to keep the content of modules up with requirements of a professional body because this guarantees their accreditation. Although the School is trying to balance different factors, including the School’s own strategy requirements, professional bodies take priority and staff’s research interests are least important. This is not because academics at this institution are undervalued but according to university league tables (Timesonline, 2010) and Research Assessment Exercise (RAE, 2008) their research is not top quality.

Curricula are driven by 'the Market' whilst individual research interests are not. It is beyond the remit of this thesis to analyse the relationship between staff research and the wider educational context. It is also problematic to determine whether lower quality research derives from a concentration on teaching or whether it is a response to it. Evidence here simply shows a de-coupling of research and taught courses. The profession dominates.

"Generally it's speaking to the profession, looking at what employers are wanting in the profession, looking at what's being written in academic papers and commercial activity in the profession. I run a course which is based on a lot of professional practice (...) and that course is based on things that have been said to me by people in employment, by practitioners saying 'we need students to have these skills, we need students to have these abilities. So I've taken their issues on board and I've developed a module which is basically a professional practice market-orientated module which brings in all elements of things that they're likely to hit as soon as they go out into practice (...) I discuss it with professional practice, I look in journals and articles and I look to see what's relevant at this time, what's pertinent to the profession and I adopt those and I make modules which have a purpose (...) and will take them further into employment as well. I try to giving them the education (...) but also which will assist them to go into the profession as well (...) So it's a blending of academic principles into practical know how and application" (CSB3).

There is one significant issue here – personal engagement and lecturers' individual input in the creation of the course. This interviewee proves that every aspect influencing creation of a course is filtered through personal experiences of a person responsible for a programme. Whilst professional associations, professional practice or the school's strategy may provide a framework, it is a lecturer who chooses specific elements of a course and how to interpret dominant drivers.

All academics recognise the impact of professional bodies on the curricula. However, they acknowledge also other factors influencing university courses such as current legislation or emerging contemporary issues like climate change.

"The first reason [for changes in curricula] is because it is in the RICS template. The second reason is that as a coming issue it's one thing that our students can go out with an expertise in (...) so it's a very good selling point for students. So that's the second reason, for job reasons. The third reason is that for legislative and economic reasons it's growing in importance, it's growing in public concern, it's growing in people's perceptions of buildings and perceptions of users of buildings and (...) then obviously it needs to go into what we teach. So it's not only in the course design but also almost

on a week by week basis as new bits of legislation come out or a new report comes out like the Stern Report or the Pitt Report (...)” (CSB4).

This point of view of a lecturer may not be shared by the School’s management, of course. The School does not market itself as a school with a focus on sustainability. Courses are advertised as “they are market led, have industry input, that they’re all professional body accredited [...] we just say they are current, they are up to date, they are influenced by academic staff research” CSB6. It is happening because according to staff, focusing on a particular issue such as sustainability will not recruit enough students:

“(...)actually what you find when you go to a lot of New Universities, the people who are actually teaching and managing the schools and teaching in the schools, a lot of them have come from a professional background. What they do have is more PhD students and more research assistants that are teaching on the programmes but the core staff are all very much out of industry. [...] but recruiting staff is difficult, especially from industry because industry pays more than we do” (CSB6).

Both professions and individuals appear to drive change, one overt and the other covertly within a context of maximising the profitability of courses. Both will be separately examined.

7.2.2. Professional Associations

The department places great value on professionally accredited courses. This seems to be the strongest asset to attract potential students. The most important thing is that these courses are validated by professional associations providing a first step to enter the profession. “The main thing is that they’re professional body accredited because, to be honest, if you say that you’ve got a course that’s interesting and innovative and cutting edge, it’s environmentally themed, if it’s not professional body accredited, the students won’t come” (CSB6). Although the course contains sustainability issues they are not emphasized while marketing the course. A general view of the staff is that courses are not orientated around a specific issue because this would only interest a

small number of students. Students coming to study at this department have a defined vision of their future education, and are less concerned with general education. They focus on courses which are specified as 'professional'. This is because the financial imperative dominates. Students' choice of university is influenced by proximity to home and the number of students working full time during their course of study is increasing (Hong, 2002). Thus it is cheaper to stay at home and choose a local university, and BU has to stress vocational influence and employability.

The input from professional bodies is valued by all members of staff. They see it as a very strong aspect of the creation of the curricula. Whilst professional associations may see themselves as non-prescriptive with regards to the content of curricula (see Chapter 5), BU perceive it slightly differently. According to BU (and others in this thesis) professional associations have a very well defined educational framework. Their expectations towards universities are pretty strict, although this varies between professional bodies for example between CIOB and RICS emphasised by BU staff:

"CIOB they have an educational framework that you have to map against and it's very tightly constrained. So pretty much, the whole course was already designed by them (...) For the RICS accredited courses it's a little bit more open than that and so what we used as guide were the APC competencies for the different routes of surveying, quantity surveying, real estate management and building surveying but we also tried to bring in some of our research specialisms. (...) For the surveying courses I would say it's more like fifty-fifty. It's about fifty percent of the modules are linked to the core competencies of the discipline and the other fifty percent would be more about what the staff believed is relevant here, locally and also building on staff specialisms" (CSB6).

Again, professional associations may see themselves as non-prescriptive (see for example RTPI, 2004) but universities see them as even dictatorial in their approach to curricula. Professional bodies make requirements and recommendations. However, as was said before, academics can interpret particular requirements to fit them to their 'local' needs.

For students it is important to study on the course which is accredited by a professional body. A professional accreditation is a confirmation of a quality of a

course. Of course it also is a first step to entering the profession which could be associated with greater possibility of finding a future employment. Similarly students appreciate lecturers with a professional background because they could provide a very practical approach required in professional practice the same time increase chance for potential employment (CSB3).

This opinion is shared by academics (for example CSB6, CS11) in the built environment area. Professional background is highly regarded as lecturers working in practice had a chance to work on real-life projects, they have a very practical approach towards teaching and they know what is demanded in practice, thus they can prepare more fully to the future work environment. This seems to be a common situation among New Universities (ex-polytechnics) as they were created to link academia with industry.

Although the main idea behind the re-organisation of the courses was to make them more consistent and effective so in consequence easier to run for the School, professional associations seem to have a profound control over the content of BU programmes. After all professional associations publish a list of requirements and all programmes at the end were re-validated by them. However, details were drawn from staff's personal experience. Lecturers interpret the requirements of a professional body, considering potential gaps and emerging issues that are crucial to implement in the curriculum. The most influential party in enacting the process then are academics. They started the process of re-organisation to make their teaching more efficient. They were mapping gaps in the curricula albeit against requirements from professional associations. So they effectively decided what to include in the curricula.

7.2.3. Individuals

Whilst BU attempts to balance different factors influencing curricula, there are groups which have more potential for changes than others. One of these groups consists of professional associations. The other one is individual academics. This is rather surprising as it was discussed earlier that staff's research interests were of

lower priority when generating a course. However, they make choices based on their own judgement about the content of the modules:

“the module leaders for that particular module would be responsible for making sure that they’re happy with the most up to date material possible. So if I’m assigned a module and it is maybe an existing module, I’ll probably look back at what they’ve incorporated and then have a look to see if there is anything else needs to be(...) if it is updated enough. (...)it’s the own initiative of the module leader to know that changes need to be implemented into the material, whether its new legislation, whether there are particular changes in the market that they are aware of” (CSB1).

Academics interpret each requirement beginning with demands from professional associations, current socio-political agenda, changing market or legislation. They execute these formal requirements but filtered through their own perception of the world.

Whilst academics engage with change in university courses, they might also be resistant to changes. One group of academics at BU oppose introducing sustainability issues in their course:

“(...) there was only one group of staff that were really resistant to change in that whole group - Real Estate Management staff (...)They feel that the flavour of the course is valuations but there was an argument that the level of valuations they were doing was too high, we looked at other courses at other universities and we said ‘yes, we are doing too much valuation’ but the programme team were adamant that they wanted to keep this in and because it was their academic judgement and they are all general practitioners by profession (...) we said ‘okay, we’ll leave this in but you’ve got to change your things’. They weren’t all as keen on it as others. The only team that doesn’t have sustainability in their curriculum, this Environmental Studies module in their curriculum is the quantity surveyors, which is quite disappointing really (...)if we could have convinced the quantity surveyors of the benefits of sustainability that may have had quite a big impact. (...) They weren’t resistant to the idea, they were just more convinced of needing other things in the level 2 curriculum (...)the whole Quantity Surveying team they’re not interested in it, their interests and their research are in all sorts of things to do with costs and contracts and they’re not interested in sustainability at all” (CSB6).

This group were willing to change the curricula but only within their subject area. They did not want to introduce elements from other disciplines, especially sustainability issues. The rationale behind it was that the programme is already too full of ‘core’ issues to include other ‘peripheral’ issues. Quantity surveyors think that

courses programmes are already fully packed and there is not enough time even to deepen the knowledge about quantity surveying. This suggests that for them green issues are not of high priority. Those lecturers came from professional practice. The group of quantity surveyors draw from their own experiences designing their modules and teaching vocational courses. For them sustainability was not an important issue when they were in professional practice and they will not include it into their teaching. Because this is a vocational course, lecturers with a background in practice are extremely valuable. They are familiar with needs of a practice, thus they can prepare better students to their future careers. They have a very strong position within the department. They refused to include sustainability issues within their teaching against the advice of senior staff and they managed to maintain their position without any apparent consequences – to themselves, BU, the market position of their courses, in student enrolment.

Individual staff then influence curricula both conservatively opposing changes and deviantly sneaking them through – by interpreting official requirements flexibly.

7.2.4. Greening of the curricula

As discussed earlier the university's central approach of being 'sustainable' has no reflection in its courses. The way of dealing with sustainability issues depends on a particular school whether they implement sustainability issues into their programmes and in what capacity. For example this School always had green issues included in its courses:

"we already had sustainability in the programmes but our overriding thought in the past was that sustainability should be embedded within all the other modules and then I did my PhD and actually found that what you needed was a combination of both because the feedback from students was that they didn't have enough core knowledge to be able to apply it in the other subjects" (CSB6).

The reason why this School is engaged with the implementation of sustainability issues is because they were already implemented in curricula, but in a limited extent. Then a member of staff whose personal interests focused on sustainability conducted

research and developed a model of more efficiently implementing green issues into curricula. This member of staff managed to persuade other academics about the necessity of greening courses. Implementation is based directly on the findings of his PhD research. Individuals, or in this case an individual, are not very influential in BU when it comes to designing curricula. However, CSB6 mixed academic credibility (one of the team) with managerial authority (his role was to develop and manage teaching and learning) and did achieve change.

Sustainability is only one subject of many within the courses offered by the School. This is because academics creating curricula did not want to focus on a particular issue as this would narrow their market to environmental students. BU is about balance. However, CSB6's research gave him the evidence to champion sustainability as a dominant theme within this 'balance'.

"there were two aims really. The first one was to ensure that all the disciplines knew what the potential was for other disciplines to act in a more sustainable way. So the aim of this was to do this series of lectures on twelve different issues of sustainability, some of which will be more relevant to some subjects or groups than others. We increase their knowledge of all the professions in the Built Environment and what they can do about sustainability (...)The second aim was to try and change attitudes and make them really think about the impact of their own environmental behaviour and then hopefully that will then translate into their work behaviour when they graduate and that was why we put the workshops in" (CSB6).

Again, this individual conducted a research on sustainability because he felt that this is an important part of the built environment courses. Based on the outcome of the research, the whole programme was changed in order to include green issues. A single person managed to make amendments to the curricula and to influence other academics to acknowledge the changes. CSB6 is a Green Champion.

The approach taken was that there should be both a specific module dedicated to sustainability issues together, but also that sustainability should be embedded across the curriculum:

"We have a separate module [for sustainability issues] and we still embed it in the core modules as well. If you do construction technology, the students that do the Construction Technology module, sustainability is a theme that goes right the way

through that module. So they're still doing it in the other modules. So what we've got not an integrated approach or a fragmented approach. We've got a combination of the two." (CSB7).

The idea behind designing such a model was to create the most effective way of learning about green issues. The new approach has been introduced because the old one did not bring results. Students were not exposed to green issues from a perspective of other disciplines and did not have a deep understanding of sustainability issues.

"So this was a way to get them to expose them to sustainability from the perspective of other disciplines which they weren't getting in the previous model. We've got now a combination of the two. It's integrated throughout but we've got this one-off module that enables them to learn about each other's professions and also to hopefully change attitudes and get them really thinking about their behaviour" (CSB7).

This is an integrated approach based on the research of an academic. As said earlier the School's official strategy states that courses are not orientated around any particular issue as this narrows the educational offer. Still, here one academic conducts research that deals with embedding sustainability issues and devises a specific model based on this research. It means that academics do have a real impact on the creation of the curriculum and learning and teaching methods. But this is an individual example of designing a specific module based on research and already in a managerial position. It suggests that this academic has to have a special position within the university hierarchy or some other values that allow that degree of independence.

"I managed to sell it to the rest of the staff because they know that sustainability is important and that's why we developed this Environmental Studies module at level two, to introduce, to give them as wide a ranging knowledge of sustainability from the perspective of every discipline so that when they go to the final year they'll be able to apply that in their project work. But I had to sell that to the staff to be honest" (CSB6).

It is not known whether other members of staff would be equally successful. Other academics, as proved by the example of the quantity surveyors, may be only successful in preventing changes and not actively trying to introduce them.

Previous discussions about an individual leading changes in curricula, especially introducing sustainability issues leads to a conclusion that the way to introduce any major changes, especially with regards to sustainability issues, is to have a dedicated person – a green champion. This was confirmed while talking to interviewees:

“first of all, from my personal experience and also from the research that I’ve undertaken, you have to have a champion, you have to have somebody who is fighting the corner for it because unless people have done any research themselves into the field they are very reluctant to bring that into their modules and what it needs is somebody to tell them, somebody on the staff to tell them how they can actually do that (...)You’ve got to have done enough research in it to know what you’re talking about and be able to back what you’re saying up with facts. You have got to be a fairly strong and forceful personality and you’ve got to be someone that’s in a position to actually facilitate the change. That would be my experience, because I was leading up the group I could sort of push my ideas forward with each team but if I hadn’t been as interested in it or if my focus had been on something else, I tend to think it might not have gone as far as it has gone.” (CSB6).

To introduce substantial change, incorporated within structures of an organisation and not only as a separate piece of teaching, it is necessary to have a special kind of person. This individual needs to take keen interest in sustainability issues, be very passionate about them and see the need for incorporating them in degree programmes. This inspires other people to follow in the sustainability-engaged colleagues’ footsteps. This engagement preferably should be supported by research as this gives much needed credibility and allows for an academic discussion about benefits and disadvantages of introducing sustainability issues in the curricula. The green champion must be persistent enough to pursue attempts to make a change not only in programmes but also change colleagues’ perception of sustainability issues. But being passionate and well educated may be not enough to change a degree programme. A green champion needs to hold a senior management position. Senior managers tend to have a stronger position within a department, they tend to be more independent and, what is most important, they are able to make institutional changes within the organisation. The case of CSB6 suggests also that being a kind and pleasant person makes other people like and trust the green champion so they want to work with him or her and fills them with confidence regarding the green champion’s decisions. Still, the green champion at this institution must be very persuasive as he

managed to convince a majority of staff even though they were reluctant to the idea of incorporating sustainability in courses. Still, the green champion *was* supported by other members of staff such as CSB3: “I see green issues on a wider basis and therefore I see it interacting in every aspect, I mean even down to a basic rent review (...)I see green is an everyday part of the life in which we lead and the professional practice which we struggle to get through and I think green slots in to all areas of our profession, all aspects of property and therefore integrate it into your existing” (CSB3). However, a majority of staff remain sceptical to an idea of teaching about sustainability:

“there’s forty-six members of staff (...)forty people - they’re the ones that need convincing because there are some people that, if you ask them what the term sustainability means they say ‘I don’t know, it’s got nothing to do with me’. There are lots of the others that will just say ‘okay we’ll put it in if we need to but...’” (CSB7).

CSB6 has put a lot of effort into introducing sustainability issues in curricula but he acknowledges that there are other institutions which are far more successful in introducing sustainability in the curricula. CSB6 encountered a lot of resistance towards introducing ‘green’ issues into university programmes, thus green issues are incorporated only to a limited extent. The situation has improved because of CSB6’s direct involvement but still there is much to do, not least that GI is excluded from this green dialogue. Interestingly, this state of affairs is a result of a struggle between individuals. There is one green champion who is really interested in introducing sustainability in the curricula who triggers and leads the process. But there is a group of people resistant to change and despite the green champion’s engagement and senior management position, nothing can persuade this group to include green issues in their teaching. Both parties – the green champion and the resistant group - accept requirements from professional bodies as the most important factor leading changes in the curricula. But where there is no direct ‘demand’ from a professional body, interested parties feel that they can force their opinions on the shape of courses. External factors such as requirements from professional associations give a framework for shaping programmes and where this excludes GI it makes it more difficult to consider GI as occupationally important. Further design of courses is

staff's responsibility and they may have a very strong position when it comes to making changes in curricula. At BU, no one supports the adoption of GI in its given form.

As discussed earlier, one group resistant to changes was quantity surveyors. Another, planning staff, was very supportive of including sustainability in degree programmes: "sustainable communities agenda in theory is pervading all elements of the planning curriculum (...) So there are the wider global issues which the students will pick up on in what you might call more general environmental modules and there's also a specific Sustainable Communities module which deals with specifically with the Planning Policy implication and the spatial planning implications of the sustainable communities agenda" (CSB5). Here again is the problem. Where GI is seen as core, then it is implemented. However, where it is not, then teaching GI involves removing something that is the core. CSB6 might persuade some that GI is core within the occupation, but until the professional association endorses this, it can only be one view – even if evidence-led through research.

The same partition was visible whilst talking to the students. Only planners agreed to talk to the interviewer about sustainability issues. The others, including students of quantity surveying, refused to take part in the research arguing that 'green' issues have very little to do with their course of study and they are not interested in them. Despite participation in the research, planning students proved to have superficial knowledge about sustainability and they could not relate these problems to their own future professional practice. It is difficult to decide definitely what the reason is for this problem. Students have an introduction to environmental issues in a separate module, and, especially, planning students are being taught 'green' issues across their programme of study. Additionally the University claims to be a sustainable university. It appears that none of these methods work effectively. Perhaps students were too shy, too anxious or did not understand the questions properly to show off their all potential? Or maybe the message is so diluted it becomes bland and generalised and they cannot think about specifics?

7.2.5. Green Infrastructure

Sustainability issues play an important role for some members of staff. However, this does not include a Green Infrastructure concept. This idea is completely omitted in the curriculum. None of the interviewed academics were aware of the concept and what it means. Furthermore, even planners were not familiar with the concept of Green Infrastructure. This problem originates with BU's dependence upon a green champion. Only what the green champion is aware of can be introduced, and this is from a disinterested starting point of no sustainability interest. The lack of landscape architects also reinforce this, since the omission of LI validation prevents any professional drive for the introduction.

7.3. How do university staff teach?

Despite the lack of GI content, teaching of green and non-green issues can still yield interesting analysis on ESD and teaching issues.

The Department's method of introducing sustainability in the curricula is based on the PhD research of a manager of the School. The key issue is to provide a theoretical introduction, general knowledge, and then let students use it in their research projects:

“you have to give them some core knowledge but then the way they really learn about it and it really goes in, is when they apply that knowledge in a project. So projects are really, really important but there's no point in giving them a project to do if they don't have the underpinning knowledge to undertake the project. [...] So one of the reasons I like the idea of this Environmental Studies module is that we're actually giving them that underpinning knowledge. (...) That's the way they will learn about it. So the lecture, the exam, the module and then application of that module in a project module, that's the way that they'll get the best learning” (CSB6).

Students at BU are given a solid theoretical basis provided by a lecturer in order to be able to work on an assigned project. Unfortunately students are unused to

independent work, unlike students at QU (see Chapter 8). They need the support of their teachers so programmes are designed to provide the necessary theoretical basis and after that students are expected work on their own projects. Lecturers realise that sustainability is too broad disciplined to rely on just a single module. Thus the best method is to make students familiar with the main problems and then ask them to apply this knowledge in their own individual projects. This suggests that teaching methods are determined by student's prior learning abilities. BU students are used to, or need, more guidance.

Students of the School are sensitive to the 'green' content of their course. They can pinpoint modules such as Environmental Studies and Introduction to Built Environment as directly dealing with sustainability issues. Students were aware that sustainability issues in those modules were presented from the point of view of the construction industry: "generally looking at the industry as a whole and all the different roles within that industry...and the different parts that make up the Built Environment. [In the environmental Studies module] Sustainability, green buildings..." (CSBFG 1).

The basic teaching method is a lecture providing a theoretical framework. Lecturers try to make them interesting and appealing to students:

"I find that teaching subjects, you bring them to life with issues, stories, ideas, concepts(...) If you give them the reality of a situation, the practical reality and say – how do you do it - and then they can apply the knowledge that they've gained from the academic side into that practical scenarios for me are a way to gain interest, to get them into the subject and to keep them there and to get them an understanding and appreciation. [These are] Case studies, life examples, bringing people in to talk about issues that they're dealing with, taking them out to look" (CSB3).

In particular, lecturers try to maximise real-life examples in order to make lectures interesting. The same reasoning is behind setting assignments for students as this involves their immediate attention:

"combination of material delivered in lectures and then opportunities for students to work on real-life projects to try and perhaps bring maybe some of the dry material to life and for students to experience visiting different places and carrying out their own

survey work. Again in the case of planning we do lots of project work, a lot of it...not all of it, but a lot of it based in [local area] which involves students visiting places and undertaking research and doing surveys and obviously analysing the information gathered” (CSB5).

Another teaching method preferred by academics is site visits but this relates mostly to planners as their teaching is based also on the real-life projects. There is no obvious difference at BU in teaching ‘green’ and other subjects, although the nature of the material allows easier use of more interesting visits, real life examples etc.

So running courses in the built environment area which are professionally accredited impinges in two ways upon the Learning and Teaching methods used in a department. Firstly, professional association have a precise view (although they may not think that) of what should be included in the university curricula. So a School will try to match L&T methods with expectations from a professional body and their own capabilities. Secondly, academic teachers in the built environment area are often from professional background. They may use L&T methods which do not match expectations of ‘academia’ but at the same time they are highly regarded by students and peers as people having a deep insight in needs of professional in practice which means that they may transfer to students more ‘employability’ skills. In practice, there is a reliance on lecture, balanced by site visit.

Students value teachers with a professional background. They are willing even to forgive shortcomings in their teaching techniques as links with industry is far more important than education as such.

“All they [students] know is that if someone has got a professional qualification they have worked in industry because it’s very hard to get in a professional body with an academic background, so they know that if they’ve got the professional body qualification they have actually worked in industry and that seems to mean a lot to them. They prefer that, they will forgive a lot in teaching style because they appreciate the link with industry” (CSB6).

7.4. How do students learn?

Lecturers' preferred teaching model is that of a lecture which provides a theoretical basis for the further work followed by students projects as this gives students an opportunity to deepen their knowledge on the subject. However, students' opinions relating to their preferred learning methods were not consistent with lecturers' answers. Students like interactive method of learning as this engages them in the process. They do not like "being talk at them" (CSBFG 1). An example of their preferred learning methods may be "pictures and videos (...)Because that's where you will be shown videos and pictures and it's interactive rather than just being one way of being talked to. You can actually see what they're talking about as well. Sometimes it's hard to see what they're talking about and when you see a picture you think – oh yeah, that's it" (CSBFG 1).

Students were aware also that not everybody learns the same way. Learning methods should vary:

"it can depend on what type of learner you are as well. I'm a visual learner, I look at things and prefer to see it and to do it. Others like to write things down or do spider diagrams. Yes, I prefer to write things down, I like to make a good set of notes to look back over" (CSBFG 1).

This means that academics and students do not have similar learning and teaching methods. Lecturers prefer to give lecture as this is a structured way of providing a theoretical basis while students like interactive learning methods as this helps them to focus their attention on the discussed subject. Also none of the lecturers acknowledged that students' preferences of their learning methods may vary as they have different learning styles and do not use a variety of teaching techniques. This may relate to the fact that a lot of lecturers at this institution teaching on the vocational courses come from practice and they may not have adequate pedagogical background to support their teaching. However, as discussed earlier, practitioners are much more valuable at the vocational course even at the expense of their teaching styles, a point supported by students even when complaining about teaching styles (CSBFG 1).

7.5. Conclusions

BU attempts to acknowledge the requirements of every party when it comes to designing curricula. That is why this case study was called 'balance'. The parties which have an influence over creating and changing courses include: professional associations, QAA benchmarks, a School's strategy and staff's interests and expertise. However, further analysis of drivers for change in university programmes proves that the most important factor are professional associations as courses validated by professional bodies attract prospective students. However, a green champion leads the way in interpreting these. The importance of the professional associations is that they help make courses popular and the Faculty drives the School into increasing numbers. Balancing resources and quality, the profession and BU's demand for growth in numbers are key drivers for how the School creates courses and deliver them.

Programmes are developed in response to economic imperatives for BU management. This means more students within the same learning and teaching resources. The driving force behind the School achieving this is the professional association since they provide a 'license to practice' that students seek. Validated courses offer employability. However, individual academics staff still have room to introduce subjects and influence change. At BU is less obvious because it is not research led - analysis of the university league tables and results of 2008 RAE suggests that it is not of top quality. Rather, many staff come from professional practice and are aware of the needs of profession. This is what they try to include in courses. If marketability and professional associations dictate syllabi, the individual academics interpret these into practice. Thus practitioner-academics have a strong position within a department which makes them an influential group. For them sustainability is not necessary and they are resistant to include this issue in the curricula. Quantity surveyors are especially resistant to changes. However their motivation is that the programme is already overloaded and there is not enough space for technical requirements of the

profession, and that these should drive syllabi. Once professional bodies endorse GI, one would expect their position to shift.

There is a green champion in the department who is engaged in introducing sustainability in the courses. This green champion is passionate about the subject, has done some research in the field and holds a senior position in the department. The green champion recognises that the majority of staff were reluctant to introduce green issues in degree programmes. However, after a big review of the courses only one group – quantity surveyors - does not cover sustainability in the curriculum which proves the green champion as persuasive and efficient. The green champion engaged with the ‘balancing’ drivers to create a cogent argument for greening courses. Whilst he as an individual has achieved this, other individuals seem less successful in enacting overt change. Only where a group – quantity surveyors- have formed an alliance, based upon claims to professional core competencies, have they resisted a centralised drive for change.

Green issues are not the major theme around which courses are orientated but sustainability plays an important role for some members of staff who lead its incorporation in courses. However, even among planning staff there was no recognition of the Green Infrastructure issue and a need to include it in the programmes.

Because some members of staff come from the professional practice, they do not have an extensive pedagogical background. The most preferred teaching method is a lecture which provides a theoretical basis for further students’ work. However, this is not a preferred learning method for students who favour more interactive methods of learning. They also stressed that there are different types of learners and different ways of teaching should be used for various kinds of learners. Both groups agreed on the usefulness of site visits to reinforce the vocational side of their education.

Chapter 8: Quality University (QU)

8.0. Introduction

The city of Quality University (QU) is described as a 'green city' (City Council, 2004; QU, 2007). One third of the Metropolitan District lies in a National Park (Attwell *et al*, 2002) and it has more trees per person than any other city in Europe (City Council, 2007). The city emphasises the importance of its green spaces. This may be deliberate detachment from its post-industrial image, but for example, QU's Landscape Department stresses that the city's many urban parks and extensive green infrastructure provide the inspiration for much of their project work, as well as being places for more informal experience and enjoyment of the landscape (QU, 2009a). QU also offers specific examples of how it utilises and engages with these spaces. For the purposes of anonymity these cannot be directly referred to but, for example, QU refers to a particular forest in which the city has been engaged on a programme of land reclamation. This has utilised newly planted sites with existing woodlands to reinforce the extensive 'green structure' of the city and its region (QU, 2009b; QU, 2009c). Thus the extensive green structure of the city has a direct impact on teaching of landscape architecture, and it is as an issue for consideration in other courses (discussed later).

This suggests that sustainability issues, especially green infrastructure, have a major impact on the university. However, further reading on the university policy on sustainability proves that it does not have much impact or, perhaps, has impact only on particular departments. The university states that it is committed to managing its environmental impacts and takes environmental issues into consideration in planning its activities (QU, 2010), but there are very few proofs that this is actually happening.

QU (2010) offers particular examples of good practice of management, including:

- 75 per cent base load reduction in consumption derived from a water conservation project;
- Recycling of common waste items, as well as mobile phones and similar equipment;
- Sustainable travel encouraged through a formal Travel Plan;
- Using “sustainable sources” for electricity.

However, there are no other details with regards to those projects – whether they were completed, what types of schemes were introduced, what sustainable resources were used etc. Evidence was lacking; recycling facilities were not in evidence, for example. There is no official strategy (at least in the public domain) which proves that QU cares about its green credentials. This suggests that sustainability issues are not a priority for this institution. The university acknowledges that there is much to be done yet, and QU (2010) assures that its Energy and Environment team is working alongside QU’s “senior management” and its “partner organisations” within the city to create innovations that will safeguard and enhance the environment. But the content of this statement only proves the earlier point.

In the university environment there are no obvious signs of engagement into sustainability. At the visited sites there were not any recycling facilities or water and energy saving solutions. Buildings were old and run down. This does not mean directly that sustainability issues are not important at this university. But it is reasonable, considering Maslow’s (1954) Hierarchy of Needs, to assume that if basic needs of students such as heating and proper lighting were not satisfied, green aspects of functioning of the university are also neglected.

8.1. Where does the knowledge originate?

At QU, the educational philosophy of each department is clearly defined and provides a framework for the functioning of the unit and developing knowledge. This

philosophy is about 'education' and drives ideas, courses, syllabi and their approach to Learning and Teaching issues.

The most significant feature of the philosophy, as defined by interviewees, is a "delivery of quality education" (CSQ4, CSQ6). This declaration consists of two elements. First, this particular institution aims in providing general education, not technical training for future professionals. The department's approach is to provide a general understanding and critical, independent thinking that can be applied in diverse situations as opposed to narrow technical training.

"Our mission is about education. It's about encouraging people to think critically, provide them with general skills and knowledge and applying it in a different context.[...] As a department we believe we need to deliver programmes that are of good quality, stimulating, interesting, diverse, offering a flexible access to the chosen career path. We need to do this by using different modes of delivery, different methods of assessment, by being innovative" (CSQ4).

This approach may lack technical precision and graduates may not be familiar with specific detailed requirements for their future profession, but it allows graduates greater flexibility in the labour market and an ability to adapt to various situations. The department's position is that employers should provide sufficient training, especially in the period preceding an Assessment of Professional Competency examination as it is their responsibility in shaping a future professional. Education does not end with graduation from a university but lasts through the whole period of professional life as it helps to develop and master skills required for the profession. This is where, according to CSQ4, employers should take part: "There are a lot of employers who think that graduates are inadequately trained. They don't see it as their responsibility in a two-year training". Hence, the examined departments see education and training as two necessary components to produce a successful professional.

"Education provided at the university is not the end of their education. We don't produce ready-made planners ready to do whatever in planning. They need to be trained. We provide foundations they can start their career with. And then they can

ask critical questions that allow them to develop their career through APC, taking new jobs, pushing themselves” (CSQ6).

This gives a basis for rounded education – first students receive general, high quality education and later on specialist training for their future profession.

Secondly, as mentioned earlier, the education provided needs to be of an excellent quality. This includes prospective students having an intellectual capability for studying at the university, the quality of offered courses must be outstanding and graduates are employable. The first requirement is to introduce high entry requirements. The rationale behind this is that graduates will be successful whichever professional path they choose as they are already flexible and motivated. “[...] we had to set up our entry requirements high. It means that we will have good, flexible people who will always be successful” (CSQ4). “We’re trying to build up generic, transferable skills to allow them to be flexible in their future work [but] we need to ensure that all our students have a particular calibre in terms of intellectual ability. How we assess that, is absolutely critical for us” (CSQ6). In confirmation, students interviewed were articulate, they had been trained how to learn, which was visible especially when compared with BU where interviewee CSB6 described their students as: “at better universities if you give your students an assignment they will get on with it, here students will demand solutions for you claiming that they paid money for the course”. So academics at QU can ‘afford’ quality education because their students are already used to independent learning. It is not seen as a university’s role to indoctrinate students into this learning ethos here unlike other universities where students are introduced from the beginning to new type of learning – ‘independent learning’. QU students are used to that straight from the beginning.

This process constitutes a circle, which can be illustrated following diagram:



Figure 8.1 The Benefits of Quality

QU accepts already ‘good’ students. Academics can challenge them intellectually because the students have high academic capabilities. This, together with a quality education, helps students achieve success in their professional career. At the end, positive feedback about QU received from employers and alumni attracts more students with great intellectual potential.

This also may raise a discussion whether courses are designed only for people with privileged backgrounds. Apparently this is not the case and the only demand is one’s dedication to study. CSQ6 expressed it saying:

“Part of my job is to ensure that all people with intellectual capabilities and motivation have chance to study at Planning and Property. We interview students. We talk to them at the open days. Hopefully it brings the variety of students. They need to be able to express their intellectual ability. We don’t express any particular cognate subjects at PG level [...] the only criterion is their commitment to study Planning.”

As discussed in Chapter 3, a currently dominating trend in higher education is widening participation. Whilst visually the proportion of students from ethnic minorities is far less representative when comparing to other cases, there is no evidence that QU is discriminating – the university simply accepts top students from

all backgrounds. All the same, other university's student respondents were more varied in class, social, racial, and economic-but not gender-characteristics than QU.

Another important element characteristic of courses at QU is the quality of the offered courses. These are checked in various ways. For example QU is a part of the Russell Group which consists of the twenty highest quality, research-intensive universities of the United Kingdom (The Russell Group, 2010). Also the university "puts a lot of pressure on league tables and National Students' Survey" (CSQ4). This is reflected in a position in university league tables – QU is one of the top universities in the UK (Timesonline, 2010). Courses are checked by external examiners and academics receive "a positive feedback about the courses" (CSQ7).

Also there is a body within the department, Learning & Teaching Committee, which is responsible for the management of quality assurance. "L&T is responsible for the strategic development of the programme. So the Committee considers things like the market, employers, graduates we are seeking to develop.[...] L&T Committee is responsible for the management of quality assurance in the department" (CSQ4). Each of these 'validation points' was created in order to construct and maintain a consistent philosophy. "It's about maintaining and delivering our education philosophy" (CSQ4).

QU expects a lot from students – only students with intellectual capital are accepted, then students are exposed to constant challenging and they are expected to work independently. At the same time, the university maintains the quality of its courses in various ways. The university requires a lot but also provides a lot in terms of quality of education. And all of this reinforces the principle that knowledge originates in this concept of 'quality education'.

The mission stated by another department within the built environment area is to place landscape as the centre for the creation, regeneration and conservation of urban and rural environments so that the landscape discipline is integral to all stages of

creating and conserving both rural and urban spaces (QU, 2009d). It emphasises a subject area, rather than overall provided quality of education. This suggests that in departments within the same institution, which are dealing with a common subject area of the built environment, educational philosophies can differentiate significantly. And this has a tremendous impact on the way these departments work. One department wants to provide generally educated flexible candidates which are able to work in various changing environments, while the other unit aims to create graduates which are specifically prepared to work in a defined subject area. The first department focuses on attracting the best future students which are going to be successful in any job.

“The only way to make reputation is to make sure that all your graduates are up for the job. I had to make sure that our graduates would be good enough. We’ve been doing it for 4 years. Employment exceeds ninety percent. Graduates go to the large companies” (CSQ4).

The other department concentrates on potential students deeply interested in the subject of study. This, however, does not mean that the second department provides ‘unquality’ education. They do, but their focus is not so much on ‘rounded education’ which consists a basis for any job, as on a very specialised area.

Despite this difference, ‘knowledge’ at QU is embedded within a clear philosophy of quality education and this drives all decision. This stresses the individual as a self-learner and thus allows these individuals (staff and students) to determine knowledge needs.

8.2. How do ideas take a particular social form?

As discussed earlier, this university is one of the top universities in the UK also because of the quality of its research. Course themes depend upon whether there are any specialists in a certain area: “Modules depend on staff availability and current issues. They should lead to research interests. They are research-led” (CSQ5). “When we want to develop a new course we need to think what as a department we can bring to a particular field in terms of expertise of the staff, what approach needs to be to a

particular course” (CSQ6). This adds to the overall quality of the courses discussed university. Academics (for example CSQ1) who are recognised experts in an area trigger the development of a new course. Courses are directly linked to their research interests which means that not only are they of excellent quality but also at the forefront of the current agenda. It also suggests that if lecturers are drivers for creating a new course, they are responsible as well for choosing learning and teaching methods to fit the overall character of the course. For example, CSQ1 suggested developing a new course on Green Infrastructure. He believes that such a course needs a lot of practical studies, site visits etc and so those methods are used on the finished course. This provides strong decentralisation of both the course creation and the teaching process. A lecturer suggests a theme for a new course and devises teaching methods which are going to be used. Whilst this needs approval from managers, they seem to trust the academics as experts in the field.

Of course, the development of university courses is an iterative process. It is transforming constantly. If there are any gaps, changes to curricula are incorporated, then curricula are evaluated whether they are up to date and provide a good quality, and the process starts from the beginning. This is carried out by individual staff as experts in these areas. Also modules are established in order to develop new programmes “Over last few years every new program has been associated with an introduction of a new module specially designed for this programme” stressed CSQ6. So changes are not only superficial consisting of for example only re-arranging previously developed modules (as discussed in the other Case Studies) but they involve ‘deep’ thinking and constructing completely new items.

A major course review which serves as a basis for major changing curricula, takes place every five years (CSQ4, CSQ5, CSQ46, CSQ7). It happens because:

- “-there is a need to identify new markets;
- new specialisms in the department have been emerging;
- there are changing requirements from approving bodies such as RTPI and RICS;

-talking to students what courses would be appropriate (there was a students' survey done)" (CSQ6).

This is another aspect of providing quality courses – the staff is matching them to changing market requirements, new areas of specialism and, demands from students: "there are regular meeting with groups of students" (CSQ7). Whilst taking into consideration student opinion was also mentioned in other case studies, there it was more of a managerial process. Changes verbalised by students were incorporated only if there was any malfunction in relations between students and lecturers. At QU, students seem to have real influence over the creation of curricula. All over the university buildings there were posters encouraging students to share their opinions about courses. Representatives of the Students' Committee who took part in the focus group confirmed that they "feel like [their] opinions are listened to" (CSQFG 1).

Managerially, there exists a specific body within the department, the Learning and Teaching Committee, which aims to respond formally to suggested changes. However, this is mostly about oversight. Lecturers and students initiate changes for subject based reasons. The Committee then enable them organisationally.

"In the Committee we have under and postgraduate studies directors, people responsible for the development of portfolio. These strategic things can be driven for example from departmental meetings. At micro level content can be changed by lecturers. (...) So small changes can happen every week and bigger changes are subject to the formal approval. (...) Any substantial changes are consulted with the RTPI and RICS partnership boards. Also they need to be accepted by the university if it has any impact on regulation. Before we go to the university we go to our Learning and Teaching Committee and we can go also to the Students' Committee. So there is a lot of external and internal committees that we consult.(...) We debate how we can enhance learning and teaching experience, how other people teach, about introducing different learning methods like workshops etc. It is disseminated through these regular sessions but mainly it is done informally (...) Sometimes we respond to what came up out of the RTPI/RICS partnership or independent evaluation of teaching or general changes within professions." (CSQ4).

Small changes are done informally by lecturers themselves. Those changes can happen all the time. There is however a dedicated body to encompass and react to the

major changes such as changing demands from professional bodies or legislation. Still, 'ordinary' academics are involved in every part of the process through departmental meetings which means that this is a very bottom-up approach. This is confirmed by other interviewees:

"Development of new courses and modules is through aligning with our expertise. We need to keep an eye on what students want and what are the market requirements. We also are trying to find our niche in the market to distinguish our courses from others to prove that what we're doing is different (...) We periodically review our programmes through strategic bodies. The Executive Committee of the department, our *managerial academic*, L&T Committee, they provide review of these courses where are the areas of concern (...) So we had to look at what we want to retain and what we want to get rid of. A lot of it is just making a coherent programme" (CSQ6).

Changes in the curricula may be also associated with development of new programmes. This aspect was stressed by CSQ6:

"[...] gaps are identified and the whole module can be changed. Over last few years every new program has been associated with an introduction of a new module specially design for this programme". A key driver at QU is those who are researching and developing the subject; lecturers and, to lesser extent, students.

Whilst the incorporation of specific issues into university curricula is organised, it is not a simple structure. There are a number of academic determinants, and sometimes these might be contradictory or involve departments looser coupled to the university or the profession than others. As a vocational course, there are some detailed requirements from a professional body, for example Landscape Institute, which identify the main demands of landscape architecture. However, whilst the framework that LI provides stays unchanged for a number of years, the content of modules changes significantly. This is a result of the professional experiences of lecturers, research projects, introducing more examples etc. Here then, the individual academic has an important role in what is actually taught however this might be more widely conceptualised managerially. Also even within the same institution there may be substantial differences between departments as it derives from different educational philosophies. "A new course needs to comply with our department's education philosophy like critical thinking, not taking for granted the assumptions, research

driven model of teaching” (CSQ6). In contrast, the Landscape Department felt looser coupled to other QU departments and more strongly bonded to LI.

All those strategies have two purposes – knowledge takes forms that create a thriving department and produce a successful graduate. In order to create a flexible successful graduate, the university aims to teach wider, general ideas as opposite to detailed issues. The reason behind this is that academic staff want to develop a critically thinking graduate who can analyse problems, formulate conclusions and make their own judgement. Any detailed information may be quickly forgotten, but at QU the key developed ability is to build up a consistent argument and draw conclusion based upon it. Also there is not enough time to introduce every element of a course, especially in the case of Master’s courses, and soon the content may need replacing with up-to-date information. Another issue is who would be responsible for designing and delivering such a detailed course. It was reinforced by an interviewee: “You don’t have to put a particular topic into everything. It will be soon out of date.” (CSQ5). The more effective option is introducing broad ideas and intellectually challenging students to make them think critically. Academic staff tend to refer to problems as ‘ideas’ not ‘issues’ to emphasise the distinction between general and detailed: “the way the department approaches its research design, is that it organises thematic courses. These are our own ideas rather than issues. (...) The students get something that is more holistic. They see how things should join up.” (CSQ4). “We hope for the conceptual understanding. It’s more about understanding the concept than knowing a module” (CSQ7). Also it gives more flexibility to the staff as they do not have a detailed programme of what to teach. It is up to them to keep an eye on any changes. Also it allows individual lecturers to approach the subject in the most comfortable from them manner: “we trust members of staff to update on important issues. So we don’t have to teach this and that. Update is due to staff and to teach in an up-to-date manner” (CSQ6).

The consequence of this approach is that the academic staff determines the intellectual agenda of the department and the form given to knowledge, albeit within

a wider educational ideology. “Intellectual agenda in the department is formed largely by the staff. The staff changes over the time. There is new staff coming with new expertise” (CSQ6). This contrasts with the other Case Studies where programmes fit really tightly within professional associations’ framework. Here the process is de-centralised and academics have great freedom in what they want to teach, which means that “there is some space to develop your own teaching” (CSQ5). Also “there is flexibility for modules to come at ad-hoc basis” (CSQ7).

The focus of this PhD project is how GI is given particular form in university curricula. At QU this concept takes a special place within its courses, and is one core research area in the Landscape Department. This research includes:

- an application of ecological theory to landscape practice to improve sustainability whilst meeting human aesthetic and functional needs like the role and nature of sustainable planting design in urban environments and green roof ecology and technology;
- holistic and environmentally friendly approaches to planning and designing urban space green structure;
- role of urban green infrastructure in urban regeneration (QU, 2009f).

The Landscape Department may run a postgraduate course where Green Infrastructure would be the main subject. Even the name of the prospective course may include the name of GI. Again, reliance is placed upon individual academic expertise in creating this particular form. There was no official market research, but “there is a feeling that there is an international market for that particular course” (CSQ3). The staff of the Landscape Department chose this subject as appropriate for the whole course from various other options. Some academics in the department are already recognised specialists in the broad subject of Green Infrastructure. “So that area is already strength of the department but that alone may be too narrow” (CSQ3). So it is necessary to put it in a wider context of landscape design. Even though the notion of GI is not mutually exclusive for different subject areas like for example spatial planning or civil engineering, the Department of Landscape is prepared to

tackle it (possibly with input of other departments) because it would give a “specific flavour that is distinctive to the host department which would be a landscape design” (CSQ3).

8.3. Relation with stakeholders

QU as an ‘old’ university has an ambivalent attitude towards professional associations and their educational and accreditation requirements. However the examined departments do reflect the interests of the profession, because the courses are accredited by professional associations such as Landscape Institute, Royal Town Planning Institute and Royal Institution of Chartered Surveyors. But these are not determining drivers.

“We as a Department, we don’t want everything accredited. Courses with accreditation will be distinctive. Many universities want to accredit everything but they don’t prepare adequately to enter the profession. They give a wrong message to employers.” (CSQ4). QU takes responsibility for its image as one of top education institutions in the country providing quality education. Professional associations add to this in certain cases, but are not a driver.

QU’s Landscape Department states that its courses meet the needs of the profession by a creative and imaginative approach to design that is coupled with comprehension of social and environmental contexts (QU, 2009b). The department’s webpage equally stresses the importance of the profession. This stands in contrast to the approach of other university departments. On the one hand, this particular university may be cautious of the relationship with professional bodies. The university feels that a connection with professional associations is very useful in terms of proving the quality of the courses. On the other hand, it is not the only way to provide the aforementioned quality of the courses. So there needs to be some kind of balance between working within a framework set by a professional association and developing its own intellectual agenda.

For example, when QU were considering a prospective course that is just now about to be implemented, according to the School's Senior Management, there was no need for an accreditation from the Landscape Institute because the course is intended mostly for international students and they have no reason to join the British professional body (CSQ3). However, the course still retains elements that are core to a professionally accredited course. QU simply is disinterested an actual accreditation (CSQ1).

The issue of what accreditation actually meant to curricula design was dual layered. On the one hand, "RTPI accredited course, the curriculum is heavily prescribed by the Department with the agreement of RTPI" (CSQ4) pointing to a highly centralised discourse between two corporate bodies removed from the individual. However, CSQ4 then went on to discuss how this worked through in practice.

"Disciplines are so broad that now you can have a specialist course, providing specialist training and specialist route to a profession. So we have accreditation for the core programmes and we don't have accreditation for specialist courses" (CSQ4).

This allowed individuals to develop specialisms, especially in emerging fields such as Green Infrastructure. CSQ5 added that "RICS is not that prescriptive", describing a more relaxed acceptance of this need to develop specialist knowledge from the 'bottom up'. Whilst it appears that a formal and prescriptive determination by the professional association exists, this is not a true reflection of what is happening. In the case of RICS, this seems to be more openly accepted. However, the associations do still play a driving role in creating syllabi in certain circumstances. For example,

"if there is a gap somewhere, they [professional associations] may encourage the university to fill that gap. We're not forced to do that but professional bodies keep us on our toes that we need to at least consider a possibility to review our courses. It happened for example with Urban Studies course because some staff left, new staff appeared" (CSQ6).

Therefore, creating syllabi is a collaborative process, with each party assuming a more dominating authority within different scenarios. Still, the overall opinion is that academic staff drive the intellectual agenda of the university and whilst there might be a discourse between corporate bodies, it is down to individuals to create and make changes in courses. Whilst universities might be presumed to be leaders in creating

knowledge, there is a general acceptance that there is a vocational side to occupational knowledge. “Professions need to know that we are a part of this process. It’s down to professions how they inculcate in their professional members. It’s a part of their job. It is Lifelong Learning to encourage members to develop their knowledge through their career” (CSQ6). However, at Quality University, there is a belief that the university is the dominant authority in understanding knowledge, especially in new forms such as Green Infrastructure. “We are ahead of professional associations” (CSQ7).

This belief is given particular emphasis in the attitude of staff towards employers. Again, there is a duality here since it is recognised that “employers have a minimum standard of expectation of the core knowledge, especially when it comes to the conversion courses.” (CSQ6). However, it is the staff within the university, not the professional association or even their own management hierarchy, that primarily determines how this is achieved. There is an acceptance that students need to find employers, but this is seen as the department educating the market, rather than reacting to perceived market drivers. Academics acknowledge that “we also are trying to find our niche in the market to distinguish our courses from others to prove that what we’re doing is different.” (CSQ6). But it does not mean that they are going to develop courses which are dictated by employers. Rather this stresses the importance of the development of their own distinctive courses which will be recognised by employers. Such attitudes allow the department to create graduates that are unique, distinctive and attractive for employers.

Considering relations among different stakeholders it is useful to discuss the relation between individual departments and the university management as CSQ4, CSQ6 and CSQ7 stated that there is considerable pressure from the university management. This pressure means that there is considerable emphasis on increasing student numbers: “we’ve constant pressure to expand (particularly PG courses) and to identify new markets” (CSQ6). That is why postgraduate courses are being developed as they give a possibility of bringing an additional income: “it’s only the postgraduate area where

the department can grow its income. The money comes back to the department. It's better to (...) develop a new postgraduate course, than to add new undergraduate modules" (CSQ4). In theory this gives an extraordinary opportunity to develop new courses based on specialisms within members of staff. In reality,

"it is almost impossible to maintain growth within the university because we don't have resources. (...) The department has been growing but facilities not. The university cannot catch-up with the expansion of the postgraduate studies. We can control things within the department but not within the university like for example resources" (CSQ4).

So the university requires the development of new courses but at the same time does not provide enough facilities to accommodate new students. It is a good example of the growing managerialism in higher education: "in higher education there is a very managerial system. [...] It formalises how we should respond to teaching" (CSQ4) but at the same time the interviewee states that the described departments attempt to be as independent as possible, especially when it comes to creation of courses and syllabi. Here at QU, they appear to possess that authority.

8.4. Greening of the curricula

Greening of the university curricula is an example of a curriculum development process. Introducing green elements to the courses takes place in this university in exactly the same way as any other issue. It is originated by particular academics. It is a bottom-up approach: "people working on green issues will change the content of their courses depending on contemporary issues" (CSQ4). It is an individual decision which is made by an academic considering his or her personal interests and the changing socio-political agenda. "Greening of curricula happens in our department in an iterative manner. We don't sit down and say we need to green the agenda. It's incorporated implicitly. Greening the agenda touches upon other issues for example how we understand economy, political development etc. We become more aware that these things are a part of a social discourse. It is important - that's why it fits in our teaching" (CSQ6). This also means that there does not have to be one dedicated

module for green issues as green elements may be introduced while discussing other matters: “we don’t have a separate module. It should be in everything we teach” (CSQ6). As discussed earlier, lecturers do not teach specific issues. They suggest analysing problems, or ‘ideas’ in a holistic way taking into consideration multitude of factors. This is confirmed by students, that green issues appear in every module but implicitly (CSQFG 1).

However, there are some dedicated modules for sustainability subjects. This happens when there is a need to overcome occupational barriers between departments. Collaborating with other departments resulted in the development of a unique, interdisciplinary module on sustainable development: “we won a prize within the university for a module in sustainable development. That involved inter-department collaboration with Engineering and Landscape. It’s a cross university module. So those things are disseminated formally. Other are disseminated informally. [...] We share experiences informally” (CSQ4). This module is well remembered by students. They agree that this module was well designed (CSQFG 1). The conclusion is that within the same department it is possible to teach certain issues implicitly, however if there is a possibility to work with other departments there has to be a ‘solid’ outcome in form of (for example) a new module.

8.5. How do university staff teach?

It has already been discussed above that the most distinctive feature of this university is quality of teaching. ‘Good’ teaching is defined as providing an education that allows students to develop themselves: “good teaching allows students to develop their intellectual ability so they can develop and understand knowledge in a particular field effectively. In our case use this knowledge in particular circumstances” (CSQ6). The overall aim is to broaden students’ horizons so they can perceive a problem from different angles and can find a better solution to a problem. “The aim is to challenge students’ perception of what they can do and what the world is like. They need to test what they’ve learnt against the real world. You need to become somebody else. You

need to apply knowledge in a different way” (CSQ7). Thus, good teaching is not only about providing information but also making use of and analysing it from different view points. Also good teaching has to make students interested in the world. As a result students are open to all sorts of opinions but they can make up their own mind. “[Our aim is] to develop critical and conceptual thinking” (CSQ7). Also good teaching is about making students enthusiastic about what they are learning about. Their learning does not consist of obligatory reading but they are trying to understand politics, a socio-economic situation and the world in general: “good teaching consists of engaging students to think independently, understand politics, opening students up, sharing enthusiasm. We’re doing it collectively. This is what we’re looking for” (CSQ7). Interviewees also emphasised that teaching involves evoking a positive response, by stimulating and motivating students: “good teaching is about clarity of explaining, stimulating and motivating” (CSQ4).

So good teaching basically consists of two elements. One of them is an ability to broaden students’ horizons, to make them think from other perspectives and in consequence make them find non-standard effective solutions. The second element of a good teaching is encouraging, motivating and stimulating students to learn. This is equally important as the first aspect since this makes students want to study and widen their horizons. Both rely on a strong admissions policy.

There is one more aspect of good teaching but it was mentioned only by one interviewee - CSQ7. He noticed that “employability is one of the study skills”, an extremely important one for students and necessary as a part of good teaching. The other respondents implicitly agreed with interviewee CSQ7. It seemed that they consider “employability skill” as something obvious and present in their teaching, that is why they did not mention it explicitly.

Interviewed staff (CSQ1, CSQ4, CSQ5, CSQ7) considered mixed styles of learning and teaching methods as the most effective. These include:

- lectures

- simulations exercises
- group projects
- seminars.

The Landscape Department claims to use diverse learning and teaching methods such as lectures, seminars, tutorials, digital design studios, workshops and field trips, which are to support individual self-directed projects (QU, 2009b). Teaching is focussed upon design studios providing facilities for drawing, IT training and discussions. Students can use GIS (geographical information systems) and CAD (computer aided design) software, and present their proposals to a professional standard. The choice of the computer programs which can be studied by students reflects the current needs of the landscape architecture profession (QU, 2009). Great emphasis is placed upon field trips by respondents as these illustrate theoretical concepts. Whilst impressive, these facilities appeared to be supporting the teaching rather than leading it. Respondents believed that creating motivated students is paramount; good facilities simply make this easier.

Using a variety of teaching methods ensures that students are stimulated in different ways (CSQ7). An important part of effective teaching constitutes hands-on experience as this gives students a chance to develop practical skills. According to CSQ4 and CSQ6 there is no difference between teaching green issues and any other problem, especially since sustainability issues are embedded in all teaching. As discussed earlier there are no special modules for sustainability issues (except for one created in collaboration with different departments). They are treated as any other concept which students should be aware of. Still, everybody agrees that they should be a part of good teaching because they enrich students' knowledge and awareness. If green issues are a part of a programme, they are presented during formal lectures, seminars, workshops and field trips. But the most effective way of learning these issues is through the individual project supported by one-to-one tuition. It gives a student a possibility to do independent in-depth research, ability to analyse material and present conclusions.

The question appears whether this can be treated as education for sustainable development. Interviewees agreed that sustainability issues are as important as any other problem. It means that green issues do not take priority in teaching. However, themes of UNESCO's Decade of Education for Sustainable Development consist of:

- Interdisciplinary and holistic learning rather than subject-based learning
- Values-based learning
- Critical thinking rather than memorizing
- Multi-method approaches
- Participatory decision-making
- Locally relevant information (UNESCO, 2009).

All those themes are consistent with teaching at QU. Academics at this institution actively support holistic learning where students are encouraged in critical thinking and problem-solving. Local problems have a direct impact on teaching which means that students get to know their local environment and take part in the decision-making process. Also the variety of approaches used suggests that teaching at this university is consistent with education for sustainable development.

8.6. How do students learn?

Lecturers stated that for them the most effective is a mix of learning methods. This was confronted with students' opinions (CSQFG 1). They also agreed that for them the best is a variety of methods such as:

- workshops
- role playing
- reading
- discussions
- seminars.

These methods have some elements in common. They involve students' engagement in the studied subject. Students stressed that they feel the most comfortable if they can read or listen about the subject first and then discuss it with peers and teachers. It gives them confidence that they have necessary knowledge but also allows them to bounce ideas off each other. Also, according to CSQ1 and CSQ2, people from different backgrounds would like to be taught using different styles. Students did not confirm this theory but lecturers have a broader perspective to make that judgement – they have worked with many students from various backgrounds whilst students talked about their own individual experiences.

In the Department of Landscape there is a strong emphasis on problem-based learning. Most of the issues are delivered through projects which provide students with real life problems. This takes the form of collaborative studio working. Other used learning methods which lay emphasis on problem solving are: group work, presentations, and mini-conferences with invited guest speakers. The researcher took part in student presentations. Students were articulate, they could draw conclusions from evidence and they were able to present and explain their independent work which proved that this approach works effectively as a learning method.

The city of the QU is presented as a green city stressing this fact as an important asset (City Council, 2004; QU, 2007). Teaching in the department is based on the solving of real-life problems usually based in the local area. This means that students need to take into account this aspect of the local area, and in practical terms, they need to work on Green Infrastructure. This model works very well for the students. The students seemed to understand the site and associated problems; they could apply their theoretical knowledge to practical tasks (CSQFG 1).

According to CSQ3, there also may be benefits from taking a more systematic approach to teaching through lectures for issues like social justice, environmental economics or ecological aesthetics. But lectures, in spite of being one of the most available teaching methods for lecturers, are used by students merely for guidance.

Contrary to lectures, individual projects help to develop, understand and memorise all sorts of information which students find really useful. So according to the students of the Landscape Department, the most effective method of learning and teaching is an individual project supported by individual guidance (CSQFG 1).

8.7. Green Infrastructure in curricula

Although some departments treat green issues holistically as a part of a wider agenda, the Green Infrastructure concept has a special place in courses of this university. Introduction of GI in the curricula has not been an ad hoc process. Because landscape architecture revolves around the notion of GI, it has always been present in the academic practice of the department (CSQ1), although under different names. University courses have been changing parallel to changes in understanding the GI concept:

“when modules change, they do not change in content but how people understand it. (...) Nearly every landscape architecture course has been teaching [GI] for thirty-four years. Five years ago it was green networks, green links, green corridors, green fingers or greenways. It is exactly the same concept. It just has a different name.” (CSQ1).

So even though the name has changed, the content of the course remains relevant. All teaching in the Department of Landscape involves some elements of GI. It may not be named as GI but essentially it is the same concept. Whilst some members of staff might be more focused on the issue, it depends on research interests and academic specialisation whether this is seen specifically as GI.

This is caused, as explained by CSQ1, because staff regard the entire landscape architecture discipline as about Green Infrastructure. This vision is consistent with the vision of the Landscape Institute which claims that “green infrastructure is in the core of the landscape planning profession” (PB4) and that “landscape practitioners are engaged in every stage of the GI approach and are leading a revolution in the way in which GI is developed” (LI, 2009). This suggests that university courses may have a

lot in common with professional requirements of a discipline, despite an ambivalent formal relationship towards professional associations. However, it may just be a sign that courses are reflecting current market needs. As discussed earlier, there is considerable pressure from the university on the development of departments. One way of progressing this is creating new postgraduate courses that attract new clients. Thus, Green Infrastructure was chosen of a possible leading theme of a course because it encompasses and emphasises all benefits provided to the environment and it is reflective of the professional practice. “It’s a much more useful phrase [...] It makes link between ecology and services and processes in an ecosystem. It makes it fitted into planning framework” (CSQ1). According to the same interviewee, this name is currently used in literature, government sponsored reports, planning guidance and American textbooks (CSQ1). The name of GI has also been introduced into teaching in order to be up to date with current issues and validate the authenticity and modernity of the courses. In some ways this reflects the importance of occupational definition described within professional respondents in Chapter 4. The evolution of a name of a module in order to reflect government policy is equivalent to the naming of a professional service to client expectations. However, here the department seems to be driving the evolution of GI, rather than simply accepting a new label. These staff are writing journal articles and books that are driving change.

It was confirmed by the CSQ3 that the rationale behind choosing GI as a main subject for a course is that there is a sharp rise of interest in the subject area in the UK. For example there are more conferences on sustainable settlements, ‘green’ communities and other components of Green Infrastructure suggesting that there could be a need among governmental agencies or local authorities to deepen their knowledge on the subject. Also this Department claims to have a large proportion of international students. The level of interest in GI as a subject of dissertation suggests that there is an international market as well. “The idea [of Green Infrastructure] is getting a lot of international credibility. [...] And to make a course viable you need to make it available for the international market” (CSQ3). Again, there is a balance of what the Department does with the interests and expertise of its staff. Many give lectures and

research abroad. Hence, whilst individual interests might change, and even though existing courses in landscape architecture are well established and developed, a new course on Green Infrastructure can bring additional benefits as a means of expansion of the department and attract an international clientele. Also it means that the department is not reliant on the only one type of market. By increasing the number of students there will be a possibility to employ new staff and expand the Department. However, these developments are not forced upon staff by managerial or professional drivers. They are more organic. Whilst the university might demand more students, the staff have the skills to utilise GI to help drive such a response internationally or as an occupational specialism.

A possible course on Green Infrastructure would be easy in terms of allocating resources. As mentioned before, GI lies in the centre of the landscape architecture profession but also some existing modules could be used as a generic context such as general landscape architecture, research and dissertation modules. Additionally there would be some more specialist modules on GI planning for example

“How do planning authorities get about designating connected structures through development framework and how to deliver them through the contribution. That could be one module. Another area would be around landscape multifunctionality. And then there would be more specialised modules that would drawn on the more components of GI such as green roofs, sustainable drainage systems, urban meadows” (CSQ3).

The idea behind constructing such content in the course is to make it efficient. It is obvious to say that every institution would like to progress itself at minimal cost. According to CSQ3, running Master’s programmes can be really efficient providing there is a pool of modules allowing flexibility and leading to different specialisations. This set of modules is based on staff’s research interests and on existing courses, and is led by staff at the forefront of developing GI as a concept in occupational environments.

Different specialisations can be developed into the field of Green Infrastructure in this way. The intention of the degree programme would be introducing

“a set of generic skills with regards to Green Infrastructure (...) because the understanding of GI, what it consists of varies quite significantly between America between the UK, between continental Europe between Eastern Europe, between China and the rest of Asia. There are different conceptions so it would have to be quite open interpretation in order to be meaningful for the international market.” (CSQ3).

So the course needs to be both specific and open to other points of view. “We would like to unpack what the world understands of Green Infrastructure because it may be everything from regional networks down to a few parks in the city. It would be important to cover the emerging meanings of GI both internationally and within the UK” (CSQ3). These skills may include three broad areas:

- “making sense of it (land-use planning) so one can design a coherent system which would withstand the chance to be delivered through various development and management mechanisms
- knowing how to engineer details of landscape architecture like rain gardens, green roofs etc.
- understanding of connectiveness of environmental systems such as idea of ecological corridors that join up ecological networks that join up hydrological networks and the way that this idea ties up to the environmental multifunctionality” (CSQ3).

This establishes what QU thinks of the skill set for GI, with its focus on landscape architecture with elements of ecology and planning. However, those three areas of interests are very broad and without analysis on the *actual* content of the course, it is difficult to say what *in fact* it would consist of. This returns to QU’s overall emphasis upon the individual to establish learning needs and how to provide them.

8.8. Conclusions

Quality is a dominant characteristic of the ethos of this university. The educational philosophy of examined departments can be summarised as ‘delivery of quality rounded education’. It suggests that the university provides general education as opposed to technical training, with the aim to produce independent, critical-thinking graduates. It also means that this ‘rounded’ education needs to be of excellent quality.

This relates to teaching which is based on the research specialisms of the staff, construction of the curricula which is a participative process for all members of staff and setting high entry requirements which ensures that only the best students are accepted to the university. 'Rounded' education prevails over technical training at QU. It means that graduates of this university are successful in any job they wish to undertake. Their education provides jobs in more than one profession.

QU's quality is confirmed by external parties. The university is a part of the Russell Group, the institution achieved a high position in university league tables and was highly judged in the RAE. This means that this institution does not have to seek any validation or confirmation of good standards in teaching and research from professional associations. Contrary, the feeling is that because of the excellence in research, the university is ahead of professional bodies. There was even a situation where a professional body wanted to accredit a course but the department refused explaining that "we didn't think that students graduating this course would have enough knowledge to become chartered surveyors [...] it would send a wrong message to employers" (CSQ4). This proves that the university can effectively monitor a standard for its courses. Also university staff feel responsible for their graduates, which suggests that a relationship with employers is far more important as high employment rates attract more 'good' students to the university.

Despite its highly regarded status there are still internal, managerial forces leading developments. Creating postgraduate courses is one way of securing funds, which then leads to further expansion. Two approaches are adopted within the same institution. Whilst the overall idea is to provide a rounded education, there are certain courses which lay emphasis on specific concepts such as Green Infrastructure. This is dictated by growing occupational needs for issues such as Green Infrastructure. However, creating specific courses designed fulfil emerging needs does not mean that only the market leads educational processes. These courses are developed because the research interests of the university staff cover such areas and they have been involved in driving this occupational change through the impact of their research. Growing

clientele is a bonus rather than an aim. At QU academics are the group that drive changes to the curriculum by their own research.

As mentioned, creating and changing of the curricula is a participative process. The procedure is decentralised. Courses are kept up to date by lecturers themselves. Small amendments are introduced informally, on the individual level, at the discretion of an academic. It needs to be emphasised that this is not a usual situation, that academics here have a lot of freedom compared to the other cases in developing courses, and choosing learning and teaching methods. This suggests that the academics are trusted by university managers to determine curricula and to keep high standards. Bigger changes are introduced more formally through the relevant committee. Still, everyone's point of view is taken into consideration: staff's, students' and university managers'.

Chapter 9: Industry University (IU)

9.0. Introduction

Analysis of the content of IU's website (IU, undated a) does not provide any evidence that sustainability is a highly regarded issue on the university's agenda. Also the introduction provided by the Vice-Chancellor of the university does not mention sustainability issues as an area of primary concern (IU, undated b). However in the mission and values of the university there is a short note stating that IU is committed to "excellence" in both "adherence" and "provision" of sustainability and that IU is "positioned" to generate a "significant" contribution to national and international efforts in embedding sustainability (IU, undated c). This is a surprisingly poor manifesto of the university's approach towards sustainability. During the visits to the institution there were observed multiple 'green' solutions applied to the buildings and everyday activities. For example toilets are supplied in energy and water saving mechanisms, recycling facilities are widely spread and even exhibitions tend to concentrate on sustainable materials, techniques and subjects. Sustainability aspects are one of the landmarks of the university and yet university managers do not seem to stress and advertise the importance and uniqueness of this approach. Observed phenomena are not referred to within the available literature.

The university offers courses which directly engage with sustainability as a distinctive part of the programme including: BSc (Hons) Building Surveying and the Environment, BSc (Hons) Construction Management & the Environment, BSc (Hons) Environmental Construction Surveying (IU, undated d). These courses promote sustainability and the environment as their "focus" pointing to the "huge impact" buildings have with regard to energy use, waste, pollution and habitat disruption (IU, undated e). IU (*ibidem*) also emphasises that the courses are devised from the premise that business has been slow to recognise both this direct involvement and the "new realities" that are "now – not in the future" driving business direction, including legislation and taxation. Sustainability is a "core issue"

rather than an ancillary non-technical one. A key selling point is that businesses “need” environmentally aware graduates to help them. IU boasts that it “predicted” this need and courses have environmental themes “embedded” throughout (IU, undated e). There is also a course BA (Hons) Architectural Technology and the Environment run by another school in the same university. This course also highlights the need to be “environmentally responsible” and stresses how it balances this with being “technically competent”. The course syllabus “fuses” the two concepts of environmentalism and “architectural design” (IU, undated f).

The link between the courses and sustainability is strongly emphasised on the School’s websites; sustainability is their marketing point. So the catchphrase “sustainability” is present in all possible information instruments available for prospective students at the School level so they know what they can expect from studying the chosen program.

9.1. Where does knowledge originate?

The basic philosophy of the School providing the majority of sustainability-orientated programs is to provide students with, knowledge and skills that are useful in their professional careers. The construction industry drives what knowledge is. It is not up to academics to influence in any way the values and beliefs of learners. Students can be influenced or persuaded only if they choose to be, but it is not a role of academics to directly influence.

“Teaching is about saying ‘look this is information, knowledge, skill, whatever, we think you need or you should acquire’. You can’t do that when you’re talking about a person’s inner thinking and their personalities. You can try but I think a lot of academics would object and definitely a lot of learners would object but what you can do, which is what we’re trying to pioneer is to get people to do it for themselves and that is influencing of course (...)it’s provoking thought and that’s the intention” (CS11).

This opinion is also supported by Interviewees CS11, CS12 and CS16 from a different School of the university. A fundamental rule here is that any student’s opinion is equally valid as an opinion of a member of staff. If true, it must be difficult for

academics to carry out assessment since students' opinions are equally valid. Whilst interviewees described this approach, it is not clear how they follow their own rules in such practical situations. Whilst it is true that everyone's opinion is equally valid, this is only as long as everyone shares the same principle: "That's actually one of our fundamental belief systems that everybody in the group has, that the environment and sustainability is very important" (CS11). Thus, it *is* true that academics and students have equally valid opinions but this is because this School attracts people with already defined, sustainability orientated point of view. The basic ideology of the School is egalitarian providing that everyone accepts the same principles.

Environmental Construction courses were developed at this university in the early 1990s. Nowadays "there's a few others [universities] around the country now which are trying to embed environment and sustainability" (CS11) but at the time it was a brave initiative to start sustainability-orientated courses because there was no proof that they would be attractive to students. People working in practice were employed for the development of these courses and here again, is the role of industry in originating knowledge. So the courses have a very strong input from practice as they were developed by professionals.

"Before I came there were no building courses available in the South West (...)they employed me from business (...)So it was market led (...)it was recognition of a gap, so they took me on because I had a very clear vision on what we might do and from the outset it was always going to be, as far as I was concerned, a suite of environmentally focused construction degrees because there weren't any in the world and there were lots of extremely good courses available around the country and if this place right down the end of the country was going to start one, it probably wasn't going to succeed unless it had a niche, a unique point. So it was both because I thought it was important and without it I didn't think we would have a success anyway" (CS11).

According to the interviewee CS11, it was extremely important to focus on a specific subject area because it distinguished the course from any other in the UK. Thus, it provides a unique selling point for students who had a specific interest in sustainability, especially for those interested in studying construction. It needs to be stressed that a primary reason for developing a 'green' course was personal interest of

the people involved. However, universities, especially in the construction area which is very professionally orientated, try to respond to needs of practice. This may end the role of universities as centres for innovation as there is no room for academic deviancy.

“Most universities in my area, which is very vocationally and professionally orientated are scared to take the lead, which I understand but is mistaken. So they want to be industry led rather than academically led because students are going to become graduates who are going into industry so they want to provide what industry says it wants, which is good but industry only tends to look short term whereas in universities we have the wonderful capability of looking long term” (CSII).

In the light of this comment, designing an environmental construction degree was unusual and the university took up a leading role in creating such a programme but one led by ‘industry’. Market research was done to answer the question what the industry thought about the proposed degree but the degree was not created to fulfil directly the needs of professional practice. Rather the university provided a new and innovative programme to challenge the industry. The Interviewee CSII described the situation as follows:

“It was a case of us taking the lead, not saying to industry ‘what do you want, we’ll provide it’ but ‘this is what we want to provide, what’s your reaction to it’? So as a result of that the degrees got off the ground, they were paying for themselves from the first day and have always been very profitable for the university and you know, in a modest way have been very successful” (CSII).

So IU’s relationship with industry is two-way. It can be explained by the fact that the programme was created in the early nineties when environmental issues were not yet so upfront on the political and educational agenda. Currently most HE institutions have environmental programmes on offer and in the situation of abundance of similar degrees, they have to actively search for clientele. Thus, their programmes are more focused on specific needs of the industry. In this case, the success of the programme was due to the person responsible for its development. His great interest in sustainability issues helped him to rise quickly to the position of a green champion in the faculty. However it was his experience in practice supporting his innovative thinking, that was responsible for the success in the development of the ‘green’ construction degree. His status also gave him the authority to negotiate with the

university administration for a slow but constant progress of the programme. So at the beginning the intake of students was thirty students to reach up to two hundreds after a decade of running the degree.

“Within one year we had sixty students and the second year we had ninety students. So within two years we had ninety students and ninety students would pay [enough to survive] (...)We’ve just published a vision which our Vice Chancellor has got to increase our capacities. We had a student intake this year it will be seventy and within five years we’re looking for about ninety intake on the undergraduate courses. We don’t really want more than that, the university might but we don’t.” (CSI1).

Because of the industry forum, the School has a strong position within the faculty and the university administration allowing it to pursue its own goals and targets even though they might be different from university’s goals.

Courses according to CSI2 may also be started by a group of academics sharing a common interest in the subject area who would like to deliver that knowledge. Usually courses created in that way are postgraduate degrees:

“MSc programmes would actually be driven by the academic group that want to deliver the same material but at a higher level. So you’ve already got an established academic group teaching a particular subject area and through their research interests they gather higher level material than undergraduates (...)Then that becomes part of an academic drive to actually develop that higher level of learning and the research” (CSI2).

Postgraduate level academics are able to create a course and fit its programme to satisfy their research interests and needs. The balance here between desire and market needs can be problematic, because CSI2 could not provide a practical example. It may be an additional factor but the primary factors are usually connected with an economic development. Rather the view seems to be a plausible explanation of another situation, where existing modules are run by academics who feel comfortable teaching them and take ownership of them. And on that basis there may be attempts to create another course using previously developed modules: “degree programmes have got a certain number of modules on them and it might be that some of them could be used to provide a different degree programme” (CSI2). Apparently, also there are programmes created with a huge input of the industry but they usually are

not very successful as they cannot attract a sufficient number of students to make them affordable to run (CSI2). ‘Industry’ is a determinant authority. That said, such unsuccessful courses had been run, even if they were dropped later.

In this School degree programmes were created as a method of expanding and increasing the number of students.

“Here in nineties it was decided that Construction Management and Building Surveying degree programmes would be a useful way of getting more student numbers from a pure economic point of view. So it didn’t come about because of a perceived professional need, it just came about from an economic driver” (CSI2).

The primary motivation was an economic reason. Then the School’s staff compared requirements from various professional bodies from the construction field and they decided that the easiest thing would be running courses in Building Surveying (CSI2). Apparently it did not matter which professional association would accredit the course as long as it was a professional association from the construction area; requirements were easy to meet and fitted to the existing profile of the School. Currently programmes are being re-designed to link them more with the profession:

“we’re redesigning the MSc, because the existing MSc programmes are not really recruiting as well as we’d hoped in terms of numbers. And that’s another reason why we’ve redesigned it...but the redesign is actually to align ourselves more directly with the profession but actually also to create that higher level of research sort of activity as well” (CSI1).

However valuable professional input into a course may be, the form of the course takes a form which is optimal for individuals. This shows the importance of other drivers, too.

9.2. Changes in curricula

Changes in curricula happen in two ways. The first is the formal route when there are emerging changes in legislation, regulations, demands from professional associations, wider perceived ‘industry’ needs and requirements from bodies such as the Quality Assurance Agency. The second manner is less formal. It consists of all changes which

are introduced by a particular academic in order to keep the content of the course up to date.

“There’s two aspects to the changing legislation etc. There’s one that is actually directly related to your professional area, things like changing codes of practices, health and safety changes or whatever. (...) So that would automatically be taken on board by the relevant people. It’s generally the individual academic in the particular area that will see the changes that take place and they will just automatically include that change within the module content. Formally they also have a sort of minor correction, minor changes process that you go through to formally let the centre know as it were that you’ve made a slight change in the module content. On bigger more strategic issues then it starts off being a formal thing but it would be something we might discuss in the team and we do have team meetings where we actually talk about, like the overall content of the whole degree programme (...) So we do actually mean that, we will be having another meeting after the exams to actually challenge all that there’s no formal process to actually pick up on all the changes” (CS12).

Thus regardless of whether it is a formal or less formal process, individual academics are responsible for changes to the curricula. They need to monitor current trends, policies and legislation, determining what should be taught and how. But this stems from their links with industry. There are formal processes to initiate or discuss possible changes but at the end of the day it is down to individuals to interpret requirements, decide the programme and construct lectures.

Although there is substantial input into university curricula from external institutions such as professional bodies, this relationship can be complicated. On the one hand accreditation from a professional body is extremely important to run a course in built environment vocational courses. Arguably, this is the most valuable input that a professional association can provide. Such accreditation is one of the crucial things that attracts students and gives a course credibility (CS11). CS12 reinforced this, stressing that it is essential to keep accreditation because that is crucial for any built environment School to attract students.

However, even though professional association produce a set of learning outcomes which are expected to be achieved a result of an accredited course, the actual interaction between them and Schools is not excessive.

“I’ve got experience of two or three professional bodies and the relationship between us and them is a very small relationship. We need them because they recognise our courses and we wouldn’t be able to seriously run them without that recognition, so we design our courses to whatever they suggest. I’ve been both closely involved and now much more removed because I don’t see any benefit for me in my work being closely involved because it’s a bit of a one way relationship. They seem to want a lot and don’t offer a lot. (...) We accredit with the Royal Institution of Chartered Surveyors. They’ve never expressed any interest in what we actually do, what we teach, they don’t know what we teach” (CS11).

Even evaluation visits of RICS panels were referred to as an exercise of collecting papers with no practical result (CS11). This is an extreme opinion. Whilst other academics expressed sceptical opinions on the relationship between professional bodies and universities (for example CS12, CS13 or CS14), only one person expressed such dismissive views.

Others experience greater involvement by professional bodies.

“I worked principally within Architecture and the Architecture Technology. They are accredited courses. So we have a very tight set of requirements that are set up both by the QAA benchmark and in fact the internal requirements of each of the professional bodies. So there are fairly strict expectations (...) in practice it’s a very dangerous line for any institution to take on its own in terms of setting up a programme which does not meet the learning outcomes that are set out by the QAA and the professional institutes. Certainly when programmes mature there is an opportunity to have discussions about changes to programmes, there’s some flexibility in doing that(...). I mean we can all have our accreditation removed and we have regular RIBA and other visits to ensure that we are actually matching the requirements of the professional body. So I think it’s fine and okay for the professional bodies to say ‘oh yes, of course we’re only giving an outline’ but we have had someone in an RIBA visit here saying ‘right show me where in this portfolio of work this particular learning outcome is actually evidenced’? So in the end we have to be able to respond to that kind of enquiry from a visiting board as well” (CS16).

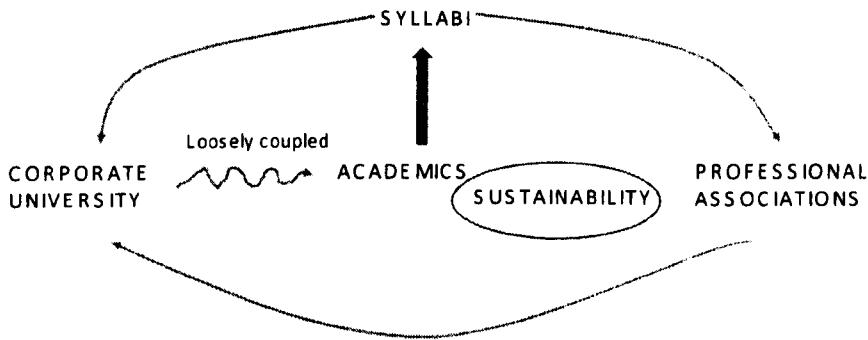
Here was emphasised the danger of not following the strict regulation of professional bodies, the removal of accreditation from a School. All respondents recognise this would result in a drastic decrease in the number of students. At IU the relationship with accrediting bodies is very strong. Professional bodies take a keen interest in the content and methods of a delivery of an accredited course. CS16 stressed that although professional bodies may see themselves as non-prescriptive, Schools

perceive the situation from a different angle. Professional associations have certain requirements which can be discussed and interpreted by academics but those demands need to be achieved, proved and confirmed by representatives of a professional association. Otherwise Schools may be penalised by removing accreditation. This opinion was supported by another interviewee saying that:

“they [professional associations in the built environment area] are fairly prescriptive(...) they do set down a series of things that you should be doing at each stage, they would call it stages one, two and three We’ve just gone through a CIOB accreditation earlier this year and they mapped out certain things and said ‘well you should do a bit more of this at this level’ so they are fairly prescriptive, it’s not totally free” (CS12).

Within the same university there exist two completely different approaches towards professional bodies. It is very interesting as in September 2008 and May 2009, when the university was visited for the purpose of this PhD, there were informal talks about merging two Schools in the built environment area. Apparently, these Schools already work together on a number of projects, especially in the discipline of education for sustainable development in the built environment (CS11, CS16). Thus, a decision was taken (although still not an official position of IU) that these departments should join together as it would allow them to work more closely for a benefit of students and staff. So in this situation it is interesting which approach with regards to links with professional associations will prevail. Nevertheless, there is a commonly shared opinion that universities are ahead of professional associations at least in sustainability issues “in terms of sustainability initiatives here we’ve interpreted that far in advance of what is expected of us from the professional bodies” (CS16). This was also confirmed by CS11.

Figure 9.1 Key Drivers for Introducing Sustainability into the Curricula



Academics in this particular example claim to be leading changes in the area of sustainability although they are driven by their experience and contacts in 'industry'. Universities have been introducing environmental issues on a far advanced level than requirements from professional associations. However, now universities must teach sustainability issues because it is one of the demands from professional bodies. So the process looks like a circle: sustainability issues have been led by universities and this made an impact on professional associations which in turn now demand from universities to implement sustainability issues. This process is illustrated by Figure 9.1.

9.3. How do ideas take a particular social form?

At IU the development of 'environmental' programmes was the responsibility of one person.

"Modules and degrees and programmes come into being here relies on firstly having a person there who will champion the idea. So I actually was specifically employed to do it, so I became a natural champion if you like and who's got the energy to sort of steer and make a success out of that idea" (CS11).

He was employed because of his business experience and to bring courses in line with 'market' needs: hence, *industry* university. His view was that sustainability was the key industry issue. He took the lead in designing courses, working together with an academic counterpart and quickly became a green champion on the School, if not the whole Faculty. Also he perceived his business connections as an important element of a vocational course in the built environment area.

"We were going to design environmentally focused surveying and construction degrees. I'd been involved in both surveying and construction for fifteen years and environment for about five because in my practice we tried to do all this. So I had a very clear vision and I had to put the two together" (CS11).

So, one person who strongly supported introducing sustainability issues in the university curricula had a lot of impact on designing the whole course and on appointing new staff. This green champion has been responsible for creating specifically orientated courses based upon his 'industry' background.

"He [the green champion] had a genuine wish and concern to do something about the environment that they [the university administration] agreed that he could do that. I don't think the existing heads of School would have expected his enthusiasm to develop such a very specific and focused set of degree programmes. So of course it started off with him and then he had to appoint a couple more people and then it's grown since then. He had a big lead, especially to start with in appointing new staff joining him so he would only appoint people that had the same sort of philosophy of life (...). It's just something that he [the green champion] felt strongly about, you know it's his own personal view on life" (CS12).

This means that a green champion needs to have a persistent personality to be able to persuade other people or force ideas upon them. However, the green champion sees it in a slightly different way:

"if you don't have a champion who is willing to put their head above the parapet, to be honest you're not going to get very far. But it's not about telling people what to do, it's about getting them on board with you somehow and working with the people who want to do it first, not worrying about people who aren't interested" (CS11).

So it is possible to make a significant change as long as there is a team of people sharing a common set of values and beliefs. A strong team leader and a group of engaged people create a basis for introducing 'green' elements in the curricula. Of course, students select courses, so this might be regarded as persuading those already convinced of the need for sustainability. But the overall aims are to expose students

to sustainability issues and possibly make an institutional change by changing curricula. It is not primarily meant to alter attitudes of peers.

Clearly there was a deliberate policy to employ a person to take a lead and create an innovative programme. This 'green champion' is still in a senior managerial position, suggesting that he has been successful. Based on this example, a person interested in sustainability issues should have a certain set of attributes in order to be named as a green champion. This includes being brave, innovative, persistent, passionate and enthusiastic. These values are necessary for developing and introducing new, sometimes controversial, ideas which may be opposed by peers or other within the organisation. A green champion needs to be able to work smoothly with people, be a friendly person so people want to work with him or her. However, it is essential for a green champion to be in a managerial position so he or she can start not only a change in individuals but also institutionally. In the case of this School, the green champion proves to be a very strong minded person. He says:

"whether or not we're successful with that course, there's absolutely no doubt that sustainability and green issues are here to stay, no doubt about that and that is coming through all the schools (...) full stop, no debate" (CS11).

Of course it raises a question whether it is possible to preserve the profile of the School even in a situation where it was not economically feasible. But it shows that the green champion is very committed and he has got a very clear, defined vision of the School and its functioning.

As was mentioned, the 'green champion' came from practice. Additional to this, there is a lot of interaction between the School and the industry. For example a former *managerial academic* claims that:

"I'm a member on the Constructing Excellence Board and I'm also a committee member of the Constructing Excellence Industry Best Practice Club (..) and the Industry Best Practice Group Committee. We also have an Industrial Liaison Committee. But because we have so many close links and our newly joined colleagues have obviously got very close, still very good links back to where they came from and across the region and in London as well" (CS12).

This link with 'industry' is also developed through the employment of new members of staff whose background is in professional practice: "we've got four new staff this year, two of them are from two of the biggest practices in the country at a very senior level, totally committed to the idea of environment, sustainability and making that work, we've got two part timers, exactly the same" (CS11). These people have not had any input in creating university degree programmes. Their contribution is to provide practical perspective in academic teaching.

This interaction with professionals in academic practice in the classroom provides the most immediate impact of the profession on students. Students are assessed by groups of academics and professionals from practice which means that students have an insight in professional requirements:

"They [students] get visited three times and these teams are made up of one academic and two outside industrialist people and each year does that. Because we're in Building Programmes you know that includes contractors, designers, consultants, architects, Building Control, Planning Authority, all that rich mix of people" (CS12).

So the links with industry consist of employing practitioners for teaching and the development of the university programmes, including professionals in the assessment of students and membership in professional groups. For students the most important fact is that their teachers are former or still active professionals and that they have a chance to discuss their projects with professionals (CSIFG 1). This gives students a feeling that they deal with real-life projects; they are being prepared for working in a professional environment. Knowledge is given in an 'industrial' form. The variety of professionals also provide opinions from different viewpoints: "for example that lecture, we had engineers in there and their viewpoint is completely different to our viewpoint because we're construction managers and also in the class there are building surveyors so the way you see it is a lot different" (CSIFG 2). This develops an understanding of the complexity of problems and prevents potential weaknesses in learning how to create solutions. However, as much as students appreciate contributions from professionals in practice, they also see it in a slightly cynical way as a method of advertising:

“about contaminated land, we have had a gentleman from actually in the industry come and give us a lecture and that’s really good because you’re able to actually see what its going to be like in the real world (...) It seems to be like once every six weeks or something which is quite good. There’s always room for more as well because they are really good. I think they like doing it and it’s also a bit of advertisement for them” (CSIFG 2).

Practitioners bring their expertise, knowledge and skills into the academic environment. This way they enrich students’ experience and give knowledge a specific flavour.

According to the interviewees, programmes are actually inspired, if not created by, professionals in practice. Professionals employed by the School describe teaching as: “continuing role basically trying to get that practical approach across, making sure that when they go into this industry that they are useful to their employers and they feel they are useful to their employers” (CSI4), “we’ll just split up amongst ourselves bearing in mind experience, past practice and we’ll try and give them an interesting talk. But we will be an integrated team, we there’s a consistent view rather than everyone being full of academic freedom” (CSI3). Practitioners attempt to introduce issues emerging in professional practice, even though these problems may not be fully understood by academics:

“we have a good industrial linkage, we have a lot of contact with industry so anything that comes along and it might be stuff that they [lecturers] don’t understand or appreciate or need support to - that gets fed through (...) Professionals will be aware of the changes that they have to abide with so that’s another way of how we keep up to date [with the course]” (CSI2).

This suggests that among academics there is a group of people with conservative views. These people are not likely to adapt new ideas, perhaps even actively opposing them because they do not understand them and they feel that their area of expertise is under threat.

There is however a paradox. On one hand there may be a group of academics who actively oppose any changes. They have a conservative views when comes to new ideas, techniques and content of the curricula. But on the other hand it seems that

there is another group that comes up with new ideas. Then these ideas are adopted and transformed by other parties such as industry or the government. Practitioners admit that

“As a practitioner, if you want to be at the forefront of your practice, your area of business, you have to be aware of things that are coming up (...) And a client will soon pick up if you are not at the forefront of your industry. He will turn round and say, you know if you tend to stagnate and not take on new ideas he will not want to use you basically” (CS14).

The same interviewee argues that universities are centres of innovation. This view is supported by another interviewee who said: “I think it’s very appropriate for universities to look ahead and do that and businesses will catch up, as they are doing and it’s not just construction” (CS11). Considering changes in the university curricula the most influential actors are academics teaching in the particular institution and demands from professional bodies (CS16). Practitioners and academics think that it is not industry’s place to come up with new ideas. Professionals in practice follow trends. They are reactors in educational processes yet also teach. A measure of effectiveness of this approach is that “some students have been headhunted in their first jobs because they’ve got that slightly better awareness or slightly more knowledge and skills than perhaps graduates from elsewhere” (CS11).

“We’re trying to produce sustainability literate, construction graduates to organisations who aren’t ready for it and that’s been the case for the last ten years but actually it’s a bonus, its not a problem because the attributes that we introduce, we put a label of sustainability, but actually they’re all mainstream now. (...) So industry is catching up all the time and the skills the students have, the confidence and interest they’ve got, make them even more employable. So it’s not been a problem at all.” (CS11).

So the School’s success can be explained that the courses are innovative and thus attractive for the industry or attractive to employable students. And the industry is able to adopt quickly emerging ideas which may be of interest in the future.

It was mentioned at the beginning of the chapter that a basis for running sustainability orientated courses at IU, is that everyone shares a common philosophy. It is important because it is down to individuals to make things happen. Hence if (almost) every

member of staff shares the same interest in sustainability the School thrives, achieving its targets. In this School, the running of the sustainability orientated courses started from employing very committed individuals who designed 'green' courses. Since then this trend has been continued by sustainability-engaged people. So if a course is meant to include sustainability, it needs a green design and then committed people. That is why it is crucial to employ people who are committed in a subject area, otherwise courses will not progress. For example some people who had been employed before the green champion arrived are not so keen on sustainability and they do not agree on the School's strategy:

"My Civil Engineering colleagues at the same school won't do this [sustainability courses] and I've always been really disappointed. (...) In fact there are some members of the staff who actively campaign against it. [For them] It's a waste of time, they just don't see it" (CS11).

Actually, it seems that people not interested may oppose to introducing sustainability issues in an active way: "people here who are really interested and managed to get a bit of funding to sort of start putting it in the curriculum and they've been blocked" (CS11). Reasons for such behaviour are not clear, but, by inference, it is because sustainability is not viewed as a core occupational skill.

The example of IU proves a thesis that engaged individuals are responsible for changes in the curricula as they effectively decide what, how and in what range certain issues are taught. So sustainability, in order to be introduced into curricula, needs to be of interest for academics. At IU there are industry-orientated academics. The issue of sustainability seems to be very important for individuals at this institution:

"I can only give you a personal thing, I would be interested in what all of our team would say, firstly because I think it's important.. This isn't a marketing tool, quite simply for us to gain students although we do have to have students but it's important and our industry to me has so much to contribute over time. So it's a message worth getting out because I believe in it personally" (CS11).

Students coming to study this course also are passionately engaged in environmental issues. That is why their aim is to obtain:

“something that you can go on to actually make a difference with and I feel with the knowledge that the course has given you, you could go on to kind of make a difference to a company that you work for, like if they’re not that sustainability focused, you could change people’s attitudes” (CSIFG 1). “I chose this university because it was the only university that does Building Surveying that has got the sustainability criteria in it. [other] haven’t got the environmental focus like this university has” (CSIFG 1). “I was on placement last year, the whole sort of sustainable agenda is becoming a lot more...I mean next year with the new regulations coming out it’s a very big thing to keep on top of and I think the environment part of this, that’s offered on this course gives us an advantage to anyone else coming out of university really” (CSIFG 2).

So they made an informed choice and one of the features that persuaded them to come to this university was sustainability orientated courses.

In this example greening of new curricula is not a difficult task “So we started off, year one, and we designed a sort of normal course and then look at it and thought now where are we going to feed in all this practical and background stuff on environment. So we found it quite easy, very easy actually to map in to virtually every module, areas of environment” (CS11). The essential thing is to create a separate general module in order to introduce every student to environmental issues. Then it is possible to introduce all technical aspects connected with the discipline and environment

“So if we were doing domestic construction technology we would look at energy efficient design for housing, eco construction. (...)We realised that that’s all very well but people need to understand what the problems are, global warming, ozone and all that sort of stuff (...). So every student who joined the course had to do a one term module on(...)essentially it’s Environmental Studies and they saw what the problems are” (CS11).

But another crucial element proved to be another module dedicated to sustainability and construction because it allows students to deepen their knowledge. “Then in the final year we put in another specialist module on Sustainable Construction or Environmental Impact of Buildings we called it actually then, so to sort of really go into more depth” (CS11). However, the problem may be with old courses which are re-designed to contain sustainability issues.

“Designing a new programme (...) is much easier than converting an old one to be really efficient. So that’s the real trick and what sets us apart is that we’ve only ever had programmes which have had this at the heart of it so its all been natural progression for us” (CS11).

It can be effectively progressed when sustainability is in the core of teaching. Also changing a previously developed programme may be difficult because of the opposition of reactionary academics who are not willing to give up their methods of teaching and the content of a module which they feel comfortable about.

Because the courses were developed from scratch the sustainability issue was incorporated as the very core of the course:

“environment sustainability comes into all the modules that we teach. It’s at the background, its part of, it’s within, so you know you might have a particular theme or aspect that you talk about (...) it’s sort of within all the modules we teach apart from those modules that are outside our remit” (CS12).

Students confirm this is happening:

“especially in the first year we just get a big overview of it really and we talk about a lot building integrated renewal energy sources and sustainable drainage systems and things like that (...) I think it’s just by this stage of the second year, you should have like a general understanding of, for instance like sustainability, things you can have integrated into design and then you just need to go more in depth and read about it yourself and like use it in this big project that we’re doing now” (CSIFG1).

Students were aware of the environmental content of their courses and could point exact courses containing such issues:

“in the first year we have the Building in the Environment module which is just all focused about the environmental issues and sort of the impact the buildings have and people have on the environment. Then we have a Domestic Construction module where they teach us about different methods to cope with the environment and sustainability and different methods you can put into the buildings and then in our Law modules we focused on the Environmental Protection Laws. In our Constructions, Applications and Management modules we focused on the new construction regulations to do with sustainability issues” (CSIFG1). see also (CSIFG2). And: “Safe and Sustainable Construction” (CSIFG2).

Apparently education for sustainable development is a far more important part of the curriculum, than traditional academic requirements, for example, of writing an essay. CSI2 proved his opinion by showing few pieces of students' work which contained 'environmental elements' and stating that they were "good pieces of work" (CSI2). Those essays indeed dealt with environmental issues in a detailed manner. However a closer inspection revealed that some of essays that were supposed to be very good, lacked important traditional details such as proper use of a Harvard system bibliography.

9.4. How do university staff teach?

Discussed earlier, the School's staff is trying to create sustainability-literate graduates. Academics are not only aware of the necessity of producing such graduates but also take pride in it making sustainability a label associated with courses they are running.

"We're trying to produce sustainability literate, construction graduates to organisations who aren't ready for it and that's been the case for the last ten years but actually it's a bonus, its not a problem because the attributes that we introduce you know we put a label of environment, sustainability, but actually they're all mainstream now" (CS11).

This is possible because they share a common point of view where 'green' issues play a pivotal role in contemporary times. Such a situation is possible because 'sustainable orientated' teachers have been employed by the School since its development of sustainability courses.

Because the School is strongly linked to industry, lecturers have a defined view of the kind of graduate they would like to create: "Graduates who understand the concept of sustainability, who understand what works and what doesn't work" (CS13) "We want them to have a practical approach (...)we want them to be quite clear as to the things which can be incorporated today in a specification and things they should be encouraging and researching and asking for further development because energy

prices might change, laws might change and so we don't want to rule out but they need to understand what works, what doesn't work and why" (CS114). There is a feedback circle here. The university developed the idea of 'sustainable' courses. Graduates of this university have no problem in finding employment. They change professional practice through their academic background. And at the end practitioners attempt, through their contribution into designing curriculum or teaching activities, to create a graduate which is likely to achieve a success in the professional practice. Teaching styles serve this perpetuating system.

It is not clear how links with 'industry' directly affect the teaching practice in the School. It looks like these links were established in order to raise a status of individuals, and not for the 'betterment' of courses. This means that despite a number of links with the industry it does not seem that they have a lot of impact on the teaching methods in the whole institution.

Apparently designing a curriculum with green elements is not a difficult task. The difficult part is to make other academics teach things that are included in the curriculum. At the end of the day individual academics are the most important in the process as they interpret the requirements of the course. So a course may look 'green' because on paper there is a lot of sustainability content but in reality particular lecturers do not teach these issues or teach them very superficially. However, other courses which do not look 'green' at all, may contain lots of environmental content because it is within an area of expertise or interest of a lecturer. "Greening a new curriculum I found quite easy. Getting it taught to that curriculum was much less easy and still is" (CS11).

Measuring curricula 'green-ness' is ostensibly easy; course documents, modules descriptors, policies and strategies etc for words such as sustainability, green, environmental etc. It is an effective way of proving that a course contains 'green' elements. But does it reflect reality? The real challenge is to get academics to teach 'sustainability' content. Writing a programme is one thing. Making people teach

certain issues, whether they feel comfortable or not, is more difficult, sometimes impossible. Hence, the most effective strategy for the School to provide sustainability-orientated courses was to employ people who are interested in the subject because they would teach the programme described in official documents in the way that was intended.

As in the previous case studies the most obvious description of good teaching is when students learn. This is understandable, as this is one of the most basic targets of higher education. However, in this particular case, one of the attributes of good teaching is also the personal satisfaction of a lecturer. Here, good teaching is perceived as a mixture of good students' results together with a sense of fulfilment and satisfaction of an academic. So equally important are students' satisfaction with satisfaction of the tutor.

"in reality good teaching is when students are learning. (...) So really good teaching is about learning not about teaching, especially at the level we're at. I mean the older we are we do need some structure but we essentially learn on our own mainly. It is about enabling learning and motivating learning (...) The other flip side, the personal approach I take and I think it's a bit of a risky approach, is that if I get something out of it I immediately assume everybody else is and it's a bit dicey as a philosophy perhaps but it seems to work" (CS11).

A statement like that leads to the question about the effectiveness of that teaching. But the interviewee seemed to be very confident about the quality of his teaching:

"I'll definitely know it's going badly and I'm not going to enjoy it and if people are responding I enjoy it. So it's a bit risky but that is actually how I measure my own teaching and believe you me there are times when it doesn't go well" (CS11).

It was said that sustainability is an important feature for students of this courses. Lecturers feel more satisfied teachings subjects which are important for them and students who are interested in the subject. So employing sustainability interested lecturers and attracting this kind of students brings benefits of 'real' greening the curricula and increasing teachers' satisfaction.

Professionals employed by the School feel that their contribution is connected with bringing elements of professional practice into teaching. They are still unsure in their

role as academics: “We both come from outside [from industry] so we’re still relatively new to academia” (CS14). However, they are determined to further introduce sustainability issues adding to the original design of the course.

“We’ve come into the university where modules are already established and are quite pleased to see the amount of sustainability already, through his [the green champion’s] influence but wherever possible we will be adding in sustainability with economic justification. So what we will try to do, rather than put in theoretical sustainability we are adding in to the module, teaching what really can be achieved in the construction and the professional world, from our own experience because we both have tried to put that in as practitioners, so we have built headquarters with green measures and you know therefore what will work and what doesn’t” (CS13).

Teaching is continuously focussed upon sustainability issues. These courses are in the built environment subject area but with a green emphasis. All teaching references sustainability issues but in order to familiarise students with basic concepts and problems there is also a specially designed module for environmental issues.

“Building in the Environment is where we start off talking about things like climate change and what it is in terms of science and how it occurs, population, pollution, waste and all that and then because I designed the actual assessment of this, it’s a group presentation and these are the groups here but each group makes a presentation about a particular theme (...)each of the students within that group has to write a report on one particular, if you like variable, within the global warming, climate change, relationship between global warming and western lifestyles, renewal energies, is it this, how significant is deforestation on this, oil and energy, global energy use, people and energy needs (CS12)”.

Teaching reflects that module themes change on a regular basis depending on the current social debate. This way, students have a chance to get to know or deepen their knowledge and understanding of the present developments in the environmental field. It is a sign that this module is up to date and academics responsible for this module attempt to discuss state of the art environmental issues. Therefore the most effective teaching method for environmental problems is a mixture of techniques as they stimulate students in numerous ways and transfer knowledge using various presentation techniques. The opinion on teaching methods is similar to those of academics from other institutions that the best way of delivering environmental programmes is through a mix of methods: “it’s a mix, I sort of have a mix really (CS11)”. Case studies are particularly useful solving environmental problems:

“They previously have also sat down and down a group activity looking at a particular project and actually trying to consider how it works (...)looked at it [case study] from a different point of view because I got each group to think that you’re a group of government ministers, you’re a group of feasibility designers, you’re a group of detail designers, you’re a group of contractors, you’re a group of engineers, now think of your input to making this project sustainable” (CS12).

It stimulates students to think about the complexity of factors affecting the environment and supports their creativity and innovative thinking. Particularly useful is using real-life examples because students are exposed to real problems and they need to find solutions using available materials and techniques and within constraints such as time or money. Students recognise efforts to make their learning experience close to real life.

“One of our lecturers who teaches the actual Building Surveying module [CS11] he’s like very kind of hands on and he will give you like say a scenario where there will be a problem with a building (...) and you’ve got to solve it but not only solve it, solve it in a sustainable way. (...) And then other teachers are more like theory based but they use like PowerPoint slides or examples of buildings and different methods for different natural resources” (CS1FG 1).

However, there is also a group of academics using mostly PowerPoint presentations as their main teaching technique.

Lecturers methods also change with time. Less experienced, younger students need a more formal approach and more personal care than older students, who know what is demanded from them and, who, having acquired some knowledge, are able to gather and analyse facts in a more effective way.

“In the final year it can be much more of an open discussion. Whereas in first year they’re all new and it’s a big thing, as it should be. But because of that many can be overawed by the thought of being at university and so you have to provide a bit more of a structured environment for them so that you can actually help them realise their responsibilities actually as a student as well, in the sense of coursework and deadlines and turning up to lectures and being polite to everybody and you know their responsibilities to the rest of the group, you know when they work in groups” (CS12).

Lecturers are trying to introduce students to the work ethic as a way of socialising them into the future work environment, but do students agree?

Professional associations affect indirectly learning and teaching practices prevailing in a particular place by setting learning outcomes. In turn, universities see learning outcomes as a solid base of a course and modules and how to give knowledge form. This vision does not agree with an opinion of professional bodies which all claim that are not prescriptive and expect certain learning outcomes, they do not demand specific ways to achieve them (see Chapter 5).

9.5. How do students learn?

It was agreed by all respondent that students need to want to learn in order to create effective teaching: “I always assume that a student wants to be there because they want to be there and basically all you’ve got to do is enable them to learn” (CS12). Students thus play an active role in learning processes. They are not passive receivers of a stream of information but they listen, read, and think about problems they are exposed to. So the role of the students is not to demand that teachers provide information, not to learn in order to pass an assignment but, rather, study to understand the modern world and broaden their horizons. The role of a teacher is to support them. This is a common approach within the built environment department at IU. The key thing is to engage students in their learning, making it personal and so making them passionate about it. In that way students can relate to their own experiences and try to better understand a subject.

“The thing about education generally is that it is not a simple process, it’s a complex process of actually allowing people to get themselves to a position where they can then see what the questions are and they can then understand what the issues are and the themes are that perhaps you’re trying to raise for them but in the end they’ve got to recognise them themselves (...)I think the things that I’ve found most enjoyable and that seemed to have worked well with students are to do with just what I have been talking about, allowing them to take ownership of the experience” (CS16).

Data collected confirms that students are mature. They have a defined vision of what they would like to get from the School:

“I work in heritage restoration and things like that and I’m very interested in how you can make those old buildings work in a more ecological manner but more importantly, an economical way” (CSIFG1).

They are also confident how they want to be taught:

“I learn from working and from actual experience and doing things and when you actually experience and see the issues and can almost touch them, I find that’s the most educational way rather than sitting and reading a book in the library and you become quite detached from the issues.” (CSIFG1).

Some lecturers use only PowerPoint presentations, which makes lectures less interesting for students, contrary to the case-study method (CSIFG1; CSIFG2). Students thus have preferences on learning methods, although they referred to the ‘interesting’ nature of presentations, rather than to its effectiveness.

As discussed earlier, some academics are trying to provide a learning environment where the emphasis is placed on the practical experience. This is highly valued by students as they think that this is one of the most effective learning methods. However, students feel that they are not exposed to enough to this kind of teaching. Also a very important part of their learning experience is interaction with peers, which gives a chance to share ideas and problems.

“I’d probably say like the practical methods as well and the design projects that you do in a group, it gives you a chance to share your knowledge and hear other people’s opinions and knowledge on how to complete the project and you know you’re learning from four or five other people so you’re throwing in what you know” (CSIFG 1).

For these students, effective teaching is when they have a chance to practice realistic problems in various ways. Hence there is a discrepancy between students’ understanding of effective teaching and academics’ perspective of the same notion. Effective teaching for lecturers is about engaging students.

“[This is] the most effective way and you can’t manufacture it. to engage that audience, is your own passion. If you believe in what you’re doing and what you’re saying, then that is going to come through to your audience.” (CS11). “I think there is learning that you can do by remembering stuff and repeating it in an exam but I think real learning happens when students engage with something in a way that’s meaningful to them directly (...)I suppose it’s partly to do with the experiential learning ideas about that that if you can make things relevant at an immediate level

for a student or help them to engage with things at that kind of level, there's more chance of them actually retaining that sense of what they've learned" (CS16).

However, if academics are very passionate about their research, they sometimes can get carried away trying to explain them to students. It is very important not to forget about capabilities of listeners. Students are able to concentrate on a lecture only for a limited period of time: "Now nobody is going to sit there and listen to me for three hours (CS11)". Students remain focused for only short periods so the whole lecture should be split into small parts of intensive teaching with time to rest. That is why it is important to plan lectures in order to allow students for time for focusing attention and for relaxation. The teacher should carefully design a lecture in order to gather and maximise students' attention:

"I try to plan it so I don't talk for more than twenty-five minutes at a time and even when I do, to ask questions, it might be shows of hands or something but to split it up and to get them to do something (...) you've got them to read something and pick out some key words or any sort of little activity and then you move on. (...) So planning is really important and splitting it up into chunks of activity. So you're talking and giving a sort of traditional lecture if it's a subject you're really interested in, the passion does come out in most people(...)" (CS11).

That approach allows not only for breaking the monotony of a lecture but also makes students part of the teaching experience and improves learning. They actively take part in the process. For CS11 this approach is much more efficient when students receive passively knowledge from a teacher during a formal lecture. Also this, together with differencing teaching and learning methods, is a way for dealing with large groups of students when formal lectures become difficult:

"my students there's about eighty-five of them and I used to run it because it's funny, I teach the first six weeks and then they teach the second six weeks by doing seminars and stuff but to vary it, rather than just have seminar to seminar which everybody gets really bored with eventually, we will have different methods of dissemination" (CS11).

Since CS11 is the green champion, these ideas on learning are included into planning the delivery of the material, including timetabling.

Interestingly, none of the students drew any distinction between the quality or style of the lecture given by academics or practitioners. This might have been because of the high number of ex-practitioners in the teaching team.

AT IU students have a real influence on the curriculum. All examined universities claim that students can influence education processes through official procedures of complaining, annual feedback, participating in works of the Students Committee. Here staff gave students an opportunity to take part in additional lectures. These workshops on sustainability were not obligatory but they proved to be very popular among students. And it was students who actually persuaded staff to include these workshops into the curriculum.

“That’s where the motivation stuff came in because if only we could prime the students to be interested enough to pick up the paper and read it when they see a headline and that led to these, what were initially voluntary workshops, these six hour workshops, voluntary and about a third of the students volunteered for them. Bearing in mind we’re a small unit, so that was about sixty - seventy students volunteered to do it in small groups and they all said “make this part of the curriculum”, all of them, so we did, so now it is” (CS11).

This approach seems to be a ‘positive’ approach where students can choose something that they enjoy promoting ‘good teaching’ and preserving it in the curriculum. A much more common approach is that described in Case Studies PU and BU is a ‘negative’ approach where students can change something that they do not like and what they complain about. The negative approach is also present at this university. Students complain if they do not enjoy their course and their comments can create changes in how their learning needs are met:

“the feedback from students is always something that does drive things to some extent or certainly gives some emphasis to things that perhaps the staff are not particularly raising. The students will complain about things they think they’re not getting and the feedback systems within the university certainly ensure that those voices come up” (CS16).

Whilst students are able make a real change, it may be very slow and difficult to notice at first. “I think that the students do have an influence and very gently perhaps and over a long period of time actually pushing things, but I think there’s certainly some

influence coming from that” (CSI6). However, students serve as a very influential group especially with regards to environmental issues. Students interested in ‘green’ issues may become very passionate about the subject and may provoke and lead debates in directions which are unrecognised by academics:

“The individual students and groups of students can actually open up areas of debate, discussions, in a way that is perhaps not always predicted by the staff. (...) increasingly students are passionate about environmental issues and determined to explore those issues within their own project work. They may actually quite deliberately pick up directions that again the staff might not have suggested, that take whatever project they are working on in a direction that is perhaps slightly oblique in terms of the main objective but still meets that objective but exposes a whole set of other things on the way there” (CSI6).

This attributes to students another role that of initiator of changes in the curricula based upon their learning requirements. In this role students are not limited to the influencing of a managerial process by signalling through various formal structures such as Staff Student Liaison Committee or module feedbacks that there are some problems. Here students take part in an intellectual process of learning and teaching as acquiring knowledge, skills and attitudes: “students can have quite an impact in that way, in terms of their individual work and again with the visibility of that in a school, can begin to set a tone for what is possible for other students to do” (CSI6). One possible explanation of this phenomenon is that life experiences of the university students and university staff are completely different especially with regards to sustainability: “increasingly staff are realising that in fact we cannot predict exactly what it’s going to be like and in a way the students are in a very strong position and beginning to be more flexible about what the future is and not just thinking its just a repeat of the past” (CSI6). And students will have to deal with those issues in the future so they see it in a different perspective, may be more passionate about it, and understand what they need to learn.

9.6. Green Infrastructure

Green Infrastructure is taught at this university in a limited range. There is a small number of people interested in this particular issue, mostly connected with

architectural courses. It is not clear why Green Infrastructure is perceived as a part of the Architecture School and not other aspects of the built environment area.

The issue of Green Infrastructure is discussed with mature students:

“particularly with the diploma students, as I say we’ve had several students who have done quite interesting work this year particularly looking at food production and other uses of green spaces in addition to social and other uses but certainly I give lectures on that to the fourth year students” (CS11).

GI is seen as better aimed at mature students, who have some previous knowledge, and can grasp the complexity of the problem. However, this approach proves to be successful as those diploma students show in their assessment a deep understanding of the GI (CS11).

9.7. Conclusions

This is ‘industry’ university because of its focus on the needs of practice. However, this ‘need’ is given form by a green champion. Academics with strong links to business and with many years in practice take the lead in developing new courses and teaching on them. Through these people IU balances employer, professional and academic interests but with emphasis on their experiences of what the market needs.

Sustainability is a major theme for all the Schools investigated, and permeates the university from its website, libraries, general infrastructure as well as course details. That said, there is less focus at the higher levels, such as University compared with School website. Environmentalism is dealt with on a small ‘departmental’ scale; not on a general ‘university’ level. There is an obvious message here that environmentalism attracts ‘better’ staff and students, making it a clear marketing tool for the institution, and creating a virtuous circle of a motivated learning environment. Success breeds power, for individuals leading this, ultimately in the guise of a ‘green champion’, but also to faculties and the whole institution. This is proved by the ‘strong’ position of the green champion within his own School and outside it. Also an

informal conversation with a IU academic made clear that the School, its strategy and policy is regarded highly in the university administration which allows the School for a certain level of independence.

However, there is minimal evidence of a distinct Green Infrastructure theme, perhaps because of the reliance upon the 'champion's' view of environmentalism. What GI exists is found in a separate School. The 'green champion' approach tends to the view that getting motivated individuals is the key to introducing environmental subjects, and this will encourage a degree of individualism within the departments and how things are actually done. Getting 'green people' in place is how this University's courses have been established. None of these systems have triggered a specific GI response.

There is some contradiction over the rationale behind courses and modules. It is generally accepted that the University is market-led, both by industry as an employer and students as clients. Unusually, students help create courses through adding to ideas, as well as the more usual 'negative' of complaining. However, it is also believed that universities help create a worldview, especially within the field of environmentalism. Academics do not see themselves as directly determining curricula, but accept that they must respond to market demands. However, they felt that they can both predict and organise nascent demand for the 'new', such as trends within environmental theory. More pragmatically, they do evolve module curricula. Professional associations are viewed as neither innovating like universities nor directly influencing courses through employment of the finished graduates. However, this median position puts them in place to determine practical issues such as learning outcomes, which the University then delivers to.

Students and industry are also seen to disagree on what is a 'good' course. Students view teaching and learning as an analysis in whether they find methods "interesting". This promotes the use of 'practical' learning methods. However, quite how these are designed in implementation and whether they actually provide better learning

outcomes is unclear. 'Industry' seems to view a good course more traditionally: students criticised visiting lecturers as boring. A reliance on 'professionals' in teaching, bringing their 'real life' experiences is, however, a central part of the Green Champion's strategy, and links to the promotion of 'green people'. Generally, teaching is described as passive, in that students are already motivated and the focus is on allowing them to access data for themselves. Reinforcing this is therefore a core teaching objective. Students are encouraged to a relativist view that their ideas are equally valid to their lecturers. At the same time, assignments reviewed by the researcher showed no practical evidence of this; 'wrong' ideas were still criticised and marked down.

Chapter 10 - Conclusions

10.0. Introduction

In deriving conclusions from the evidence presented here, it is important to draw upon the methodological concerns within Chapter 2 in regard to how representative and reliable the data is, together with the ability to replicate it. The particular issue for this thesis is that within higher education whilst government refers to HEIs, the universities themselves do not. There is a clear distinction between the so-called 'new' and 'old' universities. Nineteen years has done little to repair the segregation of Polytechnics from Universities. This is most obvious within the Russell Group, who politically agitate against other parts of the sector on behalf of its own members, which they refer to as the "leading" and "gold plate universities" (Russell Group, 2010). The 'new' universities have the equivalent Million+, which describes itself as a "university think tank" (Million +, 2011). Whilst this division can be overplayed, it is one that all respondents identified with. It is also reinforced by current discussions of a potential government division between 'research' and 'teaching' institutions and the concentration of research into centres of excellence (see, for example, Rayner, 2011). This makes representation much more difficult, since there is no universal agreement on what a 'university' is. Rather there are varying interpretations of what a HEI actually is. This is further complicated by the issue of built environment education. A number of respondents discussed the traditional apathy of the 'leading' universities towards vocational education, and their reluctance to engage with professional education in what they regarded as inferior professions. This was most colourfully described by CSP4 on his experience with LSE, who run law and accounting courses, but when discussing surveying, was asked "why on Earth would LSE want estate agents around the place". He described how RICS had to "go down on bended knee to get LSE to run anything, and then they just cobbled something together from existing courses". Whilst emotive, it represents similar experiences of many respondents. Hence, the sector in general, and built environment education in

particular, is set up to oppose attempts at representing the whole sector. However, the four case studies do represent a fair sample of HEIs engaged in operating courses, whilst other data enrich the study with a wider examination of all the parties including professional associations, employers and academics from other HEIs.

10.1. Summary of findings

The focus of this PhD work is original because it deals with a unique field of education, that of professionally-accredited vocational courses that grant direct entry into a profession. Entry to the professions such as law and accountancy is granted solely by passing exams set by appropriate professional bodies themselves (ACCA, undated; The Law Society, 2008). These professions are directly involved with the process of determining entry into their associations, whereas within the planning professions much of this control is transferred to the authority of universities. Whilst there remains an in-practice pre-qualification test of professional competence in order to obtain membership, and even though these courses are validated, this still makes professions less directly involved because they are not directly examining entrants. At the same time, this creates a different relationship between universities and occupational groups. Graduation from the university provides entry (though not full membership) into the profession without any proximate examination or control by the professional association. As part of giving up this exclusivity of control, associations have obtained some authority within university departments. In addition to controlling entry standards onto courses, and validating content and how this is taught, they also encourage the employment of a different type of academic, and lay greater emphasis upon practical experience and professional, rather than academic, qualification. Wider occupational interests, especially employers, reinforce this preference. Academics are also expected to join the profession. This creates a very different learning environment, since vocational teachers tend to rely upon their experiences from professional practice in providing both subject content and learning methods. Less emphasis is placed upon research or pedagogic training.

The reliance upon accreditation also creates a very different strategic approach by universities. Without an academic ‘tradition’, ‘New Universities’ rely on professional bodies’ accreditations as a means to attract students/clients and to provide formal evaluation of their quality. ‘Old Universities’ are not so concerned with the ‘professional’ badge, even when they provide the same courses. ‘Old Universities’ are far less likely to provide these courses, however, and where they do, greater reliance is placed upon providing a quality education rather than approved training.

The relationship between the main actors in educational processes is depicted in Figure 10.1. Education is constantly evolving, advancing towards the ‘new’. This ‘new’ is determined not simply by one actor, but by constant interaction between parties, influencing each other and, in turn, being influenced. The result is shifting goals and adaptive processes to achieve these.

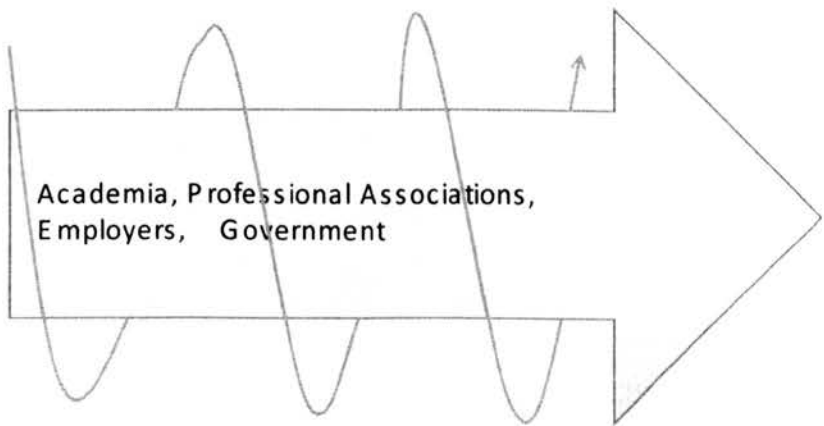


Figure 10.1 Change in the Educational Process

Green infrastructure is not yet clearly established as a core discipline for professional associations, and this presents problems for its implementation in these

circumstances. The research finds that GI is established most strongly in ‘Old Universities’ where there is less reliance upon professions to dictate subject matter, and in landscape architecture departments because the Landscape Institute has taken up GI as a core discipline. This suggests that professional associations are far more important in determining curriculum content than they perceive. The research also proves that the incorporation of Green Infrastructure *is* led by individuals. There is a complex constellation of drivers, since both individuals and associations are found to drive change. ‘Informality’ still exists in driving change and introducing subjects, influencing both universities and professions in how they come to formalise their decisions about what knowledge, and in what forms, should be taught to their potential members (students).

Teaching methods are remarkably similar across universities, disciplines and subjects. GI is not taught in any particular unique method. Resources are a far more likely determinant. Students recognise their own differences in abilities and preferred styles, corporate universities and individual staff do not. It is this that students believe should drive teaching, rather than subject matter. Students much prefer a teaching method whereby a lecturer provides an introduction and then structures a learning experience that is centred upon their own work. This is true even where staff expressed dismay at what they perceived as the inability – or unwillingness - of students to work independently.

10.2. Proving the hypothesis

The hypothesis constructed for this PhD was that the introduction of Green Infrastructure into university courses in the Late Modern environment is driven by employers. As discussed in Chapter 4 employers describe GI as part of competing, occupational services rather than as a discrete subject in its own right. There is no legal definition of Green Infrastructure so its meaning is open to these individual interpretations. By examining a group of employers, it was intended to develop a set

of skills that could be used to define GI in the marketplace. This proved to be inconclusive as employers provide massive themes such as ecology, landscape architecture, project management or engineering. Rather, employers admitted that they would be satisfied with an intelligent, flexible graduate who is able to learn new things. Thus, the evidence shows that employers do not lead educational processes and thus the hypothesis is to be rejected. It cannot be confirmed as a general theory on how ideas originate and are given a unique form.

Key drivers for change in syllabi are widely recognised: 'the market', universities as centres for innovation, professional associations as owners of a discrete body of knowledge, government as paymaster, and students as 'clients' or 'customers'. However, the relationships between these, and their relative importance, are undeveloped points within this understanding. These drivers are a constellation of forces, each with couplings and linkages to each other, and other events. At any one time a particular driver might be in the ascendant or in a position of determining authority, but these moments are temporary. Other drivers will become more powerful, or the events that led to the pre-eminence of one will fade. Even these forces are not permanent, and new ones may arise.

Profession concerns the control of an occupation (see sections 3.4.3 and 5.0, for example). This requires control of knowledge. Professions through their associations are thus engaged with creating, controlling and defending the creation of knowledge and the social forms that it is given. This involves the control of universities, how knowledge is actually implemented and how clients are able to purchase it. It requires them to exercise authority; they must have dominant control of the occupation. However, professional associations' point of view (analysed in Chapter 5) is that they do not lead educational processes. Professional bodies claim to be non-prescriptive and that their validation requirements simply reflect wider changes in their occupational environment. Professional associations previously determined the exact requirements of entry to the profession by setting their own examinations (RICS, 1970; RICS, 1971; RICS, 1978). Those in the planning occupations gave away this

authority and currently universities run courses providing direct entry into the professional associations. However, professional associations have claimed back their authority by providing a list of learning outcomes and in consequence granting (or not) professional accreditation of a course. Respondents were keen to stress that this is not as prescriptive as the old direct examination system. Learning outcomes are not a detailed list of issues, which students need to achieve. Schools can interpret learning outcomes. However, Schools can be penalised for not reaching those standards established by professional bodies. By setting requirements that need to be fulfilled in order to achieve professional accreditation, professional associations directly influence university curricula and are key drivers.

Both the literature (see Chapter 3) and respondents in all the case studies discuss an environment in which universities would like to provide quality education and be centres of innovation in the global competitive economy but also they need to be financially solvent. For this they are dependent upon the government, but government has its own goals. These in turn are dependent upon the current socio-economic situation (for example Watt et al., 2010) but generally government aims for the betterment of people; for example, encouraging universities to widen participation. The government can initiate and introduce new policies by simply offering additional funding or threatening to cut it. Thus universities, being dependent to some extent upon governmental funding, are under huge influence from it. Universities are also under pressure from students, who want cheap education, balanced by value for money, together with secure future jobs.

Each of those drivers is valid but their influence over a particular institution varies. Universities interpret these competing forces, creating a delicate balance. Each university faces different dominating forces, and in different strengths.

Of those universities studied in this thesis, the government's influence is clear at PU. PU subscribes to schemes such as IEMA Acorn which is linked to DEFRA (IEMA, undated) and has fully adopted the widening participation policy, which CSP8

described as a strategic decision to raise the university's place in the university league tables, specifically that of the Guardian. Engagement with government directives provides PU with status and serves routinisation and legitimacy functions. PU is a 'good' university because the government validates it as such.

BU, IU and PU are New Universities. They place great emphasis on their relationship with professional bodies which validate quality through accrediting the universities. The influence of professional bodies on those universities is significant force.

BU, IU and QU each claimed that students have a role in creating syllabi. However, their influence is not heavy. They are customers but most of them do not know what a professional career entails so they cannot determine the creation of curricula. However, as customers, all the universities seek to minimise their complaints, and students can create change through complaints.

As for the influence of employers, all universities stated that employers are partly engaged in creating syllabi, although BU failed to give any practical examples on how the cooperation between universities and employers works.

QU runs programmes based on staff research, and so the impact of staff on curricula is enormous. In two institutions – BU and IU - there are green champions who lead changes. Only PU is resistant to changes initiated by its staff, perhaps because of the huge pressure that university management places on the individual departments. Routinisation was certainly more prevalent at PU. BU also faced very strong centralised control, especially with regard to increasing student numbers. Other institutions have large degree of independence and the influence of the university management on their programmes is not significant. This points to a loose coupling between the departments and the centre. IU was refusing demands from their management to increase numbers.

	Government	Professional Bodies	Students	Employers	Staff	Corporate University
PU	BIG	BIG	NONE	BIG	NONE	BIG
BU	NONE	BIG	NONE	SMALL	CHAMPION	BIG
QU	NONE	SMALL	SMALL	BIG	BIG	SMALL
IU	NONE	BIG	SMALL	BIG	CHAMPION	SMALL

Table10.1 Drivers for change and their impact on universities

The conclusion is that the same set of drivers is influencing all educational institutions but to different extents as illustrated in Table 10.1. However, it is not possible to distinguish one dominant driver leading to changes in curricula. Rather, these drivers have a collective influence on syllabi. Some of drivers have a small influence on curricula because universities choose to *ignore* them. Whilst in other occasions universities *allow* drivers to take over control. So it is down to universities to interpret a set of drivers influencing its curricula in order to secure maintenance and development of the institution. This places great authority within the universities since they can strategically select and deflect drivers of change. QU is quality, and all drivers can be subjugated to this fact. Each university utilises their characteristic to enable them to do more than simply respond to drivers and they are able to engage with some drivers to deflect away others. This does not place them in a determining situation, but it does make them powerful and dominant authorities within the wider field of how occupational knowledge is given particular form.

10.2.1. Fulfilling the objectives

This section is presented to illustrate the evolution of the argument within the thesis, and why Green Infrastructure needs to be examined in the context of a number of authorities competing for control over when and how it should be interpreted within planning courses. What follows is an explanation of how the objectives presented in section 1.2 were implemented and developed into the final thesis. A short synopsis of where each point took the research is provided and how each relates to each other.

1. *Establish that Green Infrastructure exists/is emerging within spatial planning as a discrete body of knowledge in respect to employers, academics, professional bodies, students, universities.*

A literature review ascertained that Green Infrastructure was defined by competing groups in different ways: the planning profession as a whole, and sections within it, view the discipline in contradictory terms. Whilst there is one PPS reference, this was not recognised by respondents to the research and each group perceives the concept of GI in their own way. This emphasises the importance of the ‘form’ that GI has been given, and why. Indeed, the most persuasive part of the literature is that GI is not inherently new, but a ‘rebranding’ of other knowledge into a particular package that has been taken up by certain authorities – Davies at al. (undated) “old wine in a new bottle”. This interpretation ties in with objective 2 and its establishment of who these authorities are.

2. *Examine the late modern environment and the emerging authorities within professional education generally, and with regard to introducing new knowledge such as Green Infrastructure specifically.*

Late Modernity stresses the contingent nature of knowledge and the lack of a single, determinant authority. This reflects the evidence on the disputed nature of green infrastructure. The competing dominant authorities recognised in Late Modernity fits with the drivers recognised by this thesis. Together with objective 1, these two aspects are then brought together by objective 3.

3. *Establish the relative authoritative dominance of the authorities within objective 2 concerning the concepts of Green Infrastructure analysed in objective 1: how does Late Modernity determine the form of Green Infrastructure?*

The thesis proposes that universities are the current dominant authority, and examines the nature of UK higher education, pointing out the diverse authorities that in their turn determine the actions of universities. This sets the scene for the four case studies as the focus for much of the thesis. Whilst Green Infrastructure remains the subject of the thesis, this competition for authority establishes the importance of studying it within a context. GI is not idealised knowledge, but is created to serve a particular function by these authoritative drivers of it. Each has a different need of GI, and interprets it differently, fighting to create its own view as the dominant one.

- 4. From this, construct a theoretical framework modelling the fields of professional education and Green Infrastructure in order to provide skeletal models for analysing the empirical data and explaining how Green Infrastructure is given form within universities.*

A number of models were developed. These include: Green Championship, Loose Coupling, Legitimacy, Routinisation, ESD and Co-habiting authorities.

- 5. Using the models developed in objective 4, identify the drivers that introduce Green Infrastructure into lectures, syllabi and courses and how this is achieved and prove or disprove the hypothesis with regard to employers being the dominant authority.*

A number of drivers were identified and these are then applied to the case studies through the models. The research places the Champion as a key driver for introducing GI into syllabi and the Maverick as informally introducing knowledge into lecture material. This latter might reflect also loose coupling from managerialised course management. Both emphasise the importance of individual academics in developing Green Infrastructure as new knowledge within universities. However, professions also play their role in creating expectations and will generate both legitimacy responses by organisations and influence other individuals, especially the Technocrat,

to introduce GI. Indeed, the thesis argues that there is a strong link between academics and their profession; most respondents are members of at least one professional association, and many are ex-practitioners who are bringing this experience into education.

There remains diversity within higher education. Three of the case studies are 'new' universities and the fourth is an 'old' one. Whilst the findings are generally applicable, some difference is apparent. The most notable finding is the reliance of 'new' universities on the professions to provide accreditation as a source of 'branding' and quality assurance. This emphasises the relative dominance of the authority of professions over some of the case studies, and sees legitimacy as a possible driver of change. More plausibly, the authority generated by professional authorities is utilised managerially in developing quality assured processes (routinisation) to guarantee uniformity in the student learning experience and conformity in the graduate ready to enter the workplace.

6. Identify and analyse the preferable teaching and learning methods for Green Infrastructure.

Views on 'preferable' teaching methods differ between staff and students, but resources seem to play an authoritative role in determining teaching forms. The wider socio-economic context seems to pressure lecturers into large group lectures. The importance of the profession in creating expectations is also important. Many respondents emphasise the 'technical' nature of subjects and the need to avoid 'woolly' or insubstantial types of knowledge and forms of delivering it. Again, individuals, specifically Champions, are important at confronting this and encouraging change. The nature of academic staff, i.e. that they are mostly ex-practitioners, might drive this orthodoxy. Students enjoy various methods and 'practical' or 'hands on' teaching methods. Whilst there is a dialogue of including students in decisions, there is little evidence that this generates change in the learning

environment. However, the lack of resources to provide innovative, especially smaller class sizes, might be simply too powerful to accommodate this.

10.3. Theoretical models

In Chapter 3 various models were presented in order to provide an explanation of phenomena examined in this PhD thesis. These models were described under following themes:

- Green Championship
- Loose Coupling
- Legitimacy
- Routinisation
- ESD
- Co-habiting authorities

Each of them will be now discussed with regards to the empirical data of this research.

10.3.1. Green Ideal Types (championship)

Whilst only directly present in two cases, green champions as drivers of GI into syllabi are a key finding, and deeper study finds a number of archetypes within different settings. The types of this engagement in green issues can be explained by drawing upon Weber's ideal type to flesh out the Championship model developed in Chapter 3. An ideal type is "formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct" (Weber, 1904/1949, p.90). The ideal type concept is used here to add archetypes to the Champion and further complexity to the discussion in Chapter 3.

10.3.1.1. Green Champion/ GI Champion

One of the characteristics of a green champion is permanent employment. They are in a position of authority and this allows them to initiate, encourage, persuade, support and co-ordinate the greening of courses, syllabi and teaching methods. Within built environment education, the question of the permanence of employment is intriguing because part-time lecturing is far from unusual. However, the need for authority would tend to preclude non-permanent staff to be able to take on the role of Green Champion. This points to certain staff being more important than others in driving change within syllabi. Certainly within this study, all senior managerial staff are permanent full-time employees.

The question for the Green Champion in higher education is which characteristic best describes how this greening takes place: subject expertise or managerial authority? Do these Champions simply begin new courses and introduce changes to existing syllabi, or do they encourage lecturers to green their own interests? Is their role authoritative or persuasive? How do they interact with the drivers of change discussed? This perhaps relates to a wider question of how one individual becomes a Green Champion, and another does not. However, this is not an issue considered by this research, which examined the staff in situ rather than analysing their nature, environment, career or influences. That said, respondents did discuss their backgrounds. The most obvious is CS11, who described having met the Dalai Llama.

Academics such as CS11, CSB6 and CSQ1 are examples of green champions, because they were selected and described by their own colleagues as green champions. Such external validation needs to be added to the characteristics of championship. The first green champion CS11 at IU was described by his colleague:

“[The School] actually invited CS11 to come in and he agreed.(...) There’s loads of [construction and surveying] degree programmes out there and he said ‘I am personally concerned about the environment so if I’m going to put my heart and soul into developing degree programmes I actually want them all to be environmentally focused, have the theme background philosophy of a concern for the environment as

part of the natural part of that degree, the underlying philosophy for each of the degree programmes' and that was agreed by the university" (CS12).

This green champion actually came to the institution with a strong belief in sustainability and the possibility of developing of degree programmes with a focus on sustainability made him accept the job. His main task was to design a course drawing out the importance of sustainability issues in this newly created course. This green champion has passion for green issues but he is in a position of authority. This means that he can affect a wider group people like his colleagues and students.

The second described green champion – CSB6 at BU - was portrayed as:

"He's very engaged and he is actually trying to make our courses green. Besides he did his own research on the subject so he has a very substantial base for introducing sustainability into our courses" (CSB7).

Again, the same pattern appears - the green champion is somebody who has genuine passion for sustainability matters and additionally he or she has the authority to change institutional structures which increases the way green champions influence their own environment.

In organisation studies literature (for example Weber, 1947; Conger and Kanungo, 1987) a commonly used attribute for a leader is charisma. This characterises a leader who "by the force of their personal abilities are capable of having a profound and extraordinary effect on followers" (House and Baetz, 1979, p.399). Drawing from the thesis data charismatic means extremely passionate and enthusiastic, engaged and with a keen interest in environmental issues but also has a power to make structural changes in university processes. Weber described the problems of charismatic legitimacy claims in a rational social environment. To be called a green champion, it is not enough to be passionate about environment but also it is crucial to be a senior manager in a university administration and to engage with what Weber refers to as 'rational-instrumental modes of action'. Weber suggested that a charismatic leader derives his or her legitimacy not from rules, positions, or traditions, but from a "devotion to the specific and exceptional sanctity, heroism, or exemplary character of

an individual person, and of the normative patterns or order revealed or ordained by him” (Eisenstadt, 1968, p. 46). Whilst this messianic legitimacy claim does mirror the passion of green leaders, for a green champion it is not enough. In Late Modernity such claims to authority have no force. A green leader needs to create legal-rational legitimacy claims, to operate as what Weber refers to as a functional superior within a bureaucratic system, and be ‘embedded’ in the organisation before attempting to make any changes.

An interesting aspect is the source where the green champion’s engagement comes from. The first green champion admits that his engagement was spiritually influenced: “I’ve been influenced really strongly by the Dalai Lama. I went to see him not long ago when he was in London and he had a profound influence on me, there’s no question” (CS11). It may not be a positive thing as interviewees described CS11 and his work as “too evangelistic” (CSP7), and “contentless” (CSP4). Contrary to that, a green champion from another institution (CSB6) highly valued his opinions. This academic relationship with another green champion, his own engagement and the influential post within the department, proves his position as green champion. His ‘green’ beliefs were also supported by his own research:

“our [School’s] overriding thought in the past was that sustainability should be embedded within all the other modules and then I did my PhD and actually found that what you needed was a combination of both because the feedback from students was that they didn’t have enough core knowledge to be able to apply it in the other subjects. (...)I managed to sell it to the rest of the staff because they know that sustainability is important. So that’s why we developed this Environmental Studies module (...) But I had to sell that to the staff to be honest” (CSB6).

So this green champion not only encourages colleagues to become greener but also takes their point of view into consideration. Attempting to persuade colleagues to give him their support, this green champion is supporting himself with research, which might suggest that either he wants to add credibility to his stand or his authority is not enough to make colleagues greener.

Does it matter where the 'green' engagement comes from? Institutional inspiration may suggest a tendency to changing a set of processes for example in a workplace as an effect of demands from a third party. So spiritual engagement makes greening of the curricula an independent reflective decision, a small part leading to change in a personal life, while the other approach is reacting to institutional requirements without affecting somebody's life. Nevertheless, it is difficult to draw definite conclusions because there is not enough material to prove such theories.

In this section an ideal type of a green champion has been analysed. However, this project focuses on the introduction of the green infrastructure concept to university curricula. Whilst discussing with these green champions at different institutions the concept of green infrastructure never appeared. None of those champions mentioned it, either because they were not familiar with the concept or they did not think that this idea was worth discussing. Apparently it is possible to be a green champion whilst excluding GI from courses, syllabi and overall ethos of a department.

It is possible though to find GI green champions. Interviewee CSQ1 was chosen by his colleagues as a green infrastructure champion: "He [CSQ1] is the best person to talk to in the Department of Landscape. He deals directly with green infrastructure" (CSQ2). This green champion possesses the same qualities as 'normal' green champions which are passion for the environmental work, managerial position, own research but what makes him different from other green champions is his focus on the introduction of the green infrastructure concept in the courses run by the department.

The conclusions from these examples are that Green Champions are in positions of a dominating authority. Whilst not a scientific judgement, they are 'pleasant people' and this encourages others to take on board their ideas. Persuasion rather than coercion dominates. They are not authoritative and whilst they have a vision for their courses, they are open to other viewpoints. All were multidisciplinary, specifically working outside built environment traditions and interacting with environmental specialists and departments. They do research directly connected with environmental

issues. Despite their successes none of these champions were in the top managerial position within their universities, and one might speculate whether the attributes of a champion are seen as detrimental at this level. Still, whilst not at top managerial positions, all green champions have great deal of freedom in their activities. They have the reputation of being trustworthy and their managers let them lead the departmental agenda.

10.3.1.2. Green Technocrat

Considering PU's green champion is more problematic. This person was highlighted as an individual who has been very engaged in sustainability issues: "CSP1 and CSP2 [they] then looked at the content of the course. They took a lot of what had already been done and put their own ideas on. (...)CSP1 was involved by then; said [about introducing green issues into a university course] 'yeah wouldn't this be a lovely idea, great' (CSP7). According to interviewees (CSP2), (CSP4), (CSP8), who have been working with (CSP1) managerially for a number of years, the development of his engagement with green issues can be directly associated with the introduction of a green agenda in professional associations. This resulted in introducing green elements into curricula via a suggestion or a demand from a professional association; for example introducing climate change issues into a newly accredited Planning and Sustainability course.

This suggests another 'ideal type'; that of green technocrat. This is a person who is engaged in sustainability issues, (however it is) not because of passion for them but because it was determined by some other authority. Green technocrat acknowledges the value of sustainability issues as long as it is useful to gain credibility. Whilst a green champion has real passion and is concerned about the state of the environment, for a green technocrat it is conforming with a newly emerging aspect of knowledge.

Drivers for change which affect the creation and development of university curricula can affect people in a way that they become green technocrats. The difference between a green champion and a green technocrat is that the former is already 'indoctrinated in the sustainability ethos' whilst the latter becomes one as the result of some external requirements. Green technocrat does not 'believe', but rather engages in a wider occupational acceptance of the change, and looks to introduce it as efficiently as possible.

There is no GI technocrat within this research as GI is not yet required by professional associations to include it in curricula. When GI is endorsed by a determinant authority, it can be expected that a GI technocrat will emerge. The landscape Institute is closest to this, and GI the technocrat can be expected to evolve in this field as the association formalises its views on GI as a core discipline.

10.3.1.3. Green Maverick

A majority of academics interviewed for this thesis are people who are deeply engaged with and concerned about sustainability issues. This however does not make them green champions. What makes a distinction between a green champion and an engaged lecturer?

An academic who is passionate about sustainability issues can affect only his own span of control. Academics can interpret the learning outcomes which he or she is expected to achieve. They can fit module content to their own interests, capabilities and the potential of the students. Thus they can effectively change the content of the module and influence and inspire their students and colleagues. They can spread examples of good practice and make their colleagues interested in the subject. By teaching and inspiring students they actually shape future professionals, which means that inspired academics are able to have a huge impact on what is happening in practice. Grint (2000) describes a leader as someone who can create a 'myth', using this to inspire people to follow him. A green champion is a 'green myth maker'

possessing the power of its authority. A maverick can be someone very similar, however the lack of managerial support makes them unable to create a green myth. The maverick makes people follow him but only in his closed environment and for a short term. Even if mavericks are full of passion and initiative, their activities do not have visible traceable outcomes. As discussed in Chapter 3 education is becoming bureaucratised. Processes and outcomes need to have comparable measures in order to preserve the quality of education. Mavericks do not have the authority to create this permanence. A passionate engaged lecturer can influence people in a direct way but will not create a formal process which then can be continued by a completely different person. This seems to be the biggest difference between an engaged lecturer and a green champion, that the latter one is passionately interested into a subject area but also can create processes leading to a formal change in the curricula.

GI maverick is someone who is passionate and engaged about the issue, however does not have a sufficiently prominent managerial position to promote and implement GI on the wider, permanent scale. This is the case with PU. There is an academic - CSP9 - very engaged in sustainability issues, who is interested and actively promoting the inclusion of GI in courses. However, this person has relatively little power when it comes to setting module content. Despite the fact that he teaches about GI and would like to permanently include it in courses, managers do not see the need for it. CSP9 is implicitly allowed to teach GI. It is treated as his interpretation of requirements of the professional body accrediting the course; however GI is not going to be permanently included into the course programme. The maverick engages in academic deviancy, teaching GI through reinterpreting syllabi requirements, introducing the subject secretly and generally avoiding any managerial oversight.

The focus of this PhD project is the introduction of green issues in university courses so its very nature suggests that groups examined for this research will be those engaged in sustainability issues. However, there are other ideal types that were discovered during research. These are the green antagonist and the green ignorant.

10.3.1.4. Green Antagonist

The green antagonist is a person who may be familiar with sustainability issues but does not include it in his programme of teaching. Within this category, it is possible to draw out certain nuances. On the one hand, respondent PA5 suggested that he had difficulty in distinguishing ‘good management’ from ‘environmental management’. He described one project that he was working on, ‘the well-managed building’. Once it was called ‘the sustainably managed building’, then “people were interested”; yet everything that they put into the term ‘sustainable’, he simply regarded as efficient. “For example, an efficient energy system is one that saves money, reduces maintenance etc. The fact that it is also sustainable is missing the point. It’s good management.” The problem for the Antagonist is not that these issues are of little importance to their discipline, although this might also be an issue, but that it is more concerned with the discrete nature of the packaging and presentation of the material. This might lead to an almost anti-Green bias, although it is more a case of recognising the relative importance of the green issues, and how it is taught in courses. An example of this ideal type is represented by CSP4:

“Oddly enough, I used to teach ‘green stuff’, but my boss, who is now fervently ‘green’, said it was a waste of time. And he was probably right. I mean it isn’t the job of technical courses like this to teach waffly rubbish like values and whatnot that ESD waffles on about. I went to one lecture, talking about developing environmental education, and it consisted of us looking at starving people. I mean, it’s terrible. But is it the place of a surveying course to teach that? Architects like to talk about ‘green’ this and that, but ultimately if their client wants them to burn the world, they’ll fight each other to get the work”.

Green antagonists follow the technical competencies of their occupation. They acknowledge the presence or even importance of sustainability issues, but only within their technical and professional subjects. GI might matter to them, but it is subsumed into a traditional, occupational description of knowledge. Unimportant to the Antagonist is the ‘green image’ of the institution; rather he ranks employability through creating competent graduates as their focus. Antagonists want to prepare their students as well as they can for the technical obligations of their future careers in limited time. This may include sustainable elements, but should not be driven by it.

Green antagonists do not refute the principles of sustainability, rather they oppose particular forms in specific places where “it does not fit” (CSP4). Certainly, this form of Antagonist is found only within a Green Antagonist form; there was far less antipathy to the specific concept of Green Infrastructure. Those that understood the concept saw it as a very useful packaging of concepts to present as a syllabus to students. To this extent, Green Infrastructure Mavericks might agree with Green Antagonists since they present GI as a useful means of creating a technical discipline that can be taught to students within a vocational degree.

10.3.1.5. Green Ignorant

The last category of an ideal type is constituted by a green ignorant. This is somebody who does not know anything about green issues, is not engaged by them and is not interested in deepening knowledge and/or engagement in this matter. Because it may have some derogatory connotations, interviewees do not name their colleagues even where colleagues are considered as green ignorants by the rest of the group. Thus the example in this study of the type of a green ignorant is a group of people:

“The only team that doesn’t have sustainability in their curriculum (...) is the quantity surveyors (...) So actually if we could have convinced the quantity surveyors of the benefits of sustainability, that may have had quite a big impact, but the quantity surveying team felt that it was too much because with the module system you can only fit in so much” (CSB6).

Here, the example of a green ignorant is a group of quantity surveyors. Quantity surveying is a very technical discipline. It is regulated by technical competences produced by a professional body. The fact that quantity surveyors do not want sustainability in their curriculum can be explained that they focus on technical elements of the occupation and there is no place for any *additional* components. This example is similar to the Green Antagonist ideal type, but here the quantity surveyors did not comprehend the ‘green’ issues. With the green antagonist, they find the packaging unhelpful and the subjects irrelevant in the way they are treated as ‘green’ issues.

10.3.1.6. Interrelationship between green ideal types

Table 10.2 summarises the presence of each green ideal type at the examined institutions. Interestingly, there is only one green champion in each university. This argues that is not possible to have two leaders with a similar passion working in the same place, or at least in the same field – this thesis did not examine entire universities, only those departments that involved planning-related disciplines. Two leading personalities suggests a constant clash of personalities. If two champions were present, it would be difficult to introduce new elements in the curricula or change courses, as there would be too many issues to include and one champion could undermine decisions by the other one.

Similarly, co-existence of a green champion and a green technocrat is not evident. One is driven by real passion for sustainability, whilst the other perceives it as a necessary concept because it was determined by some other authority. Since both have authority characteristics, only one style of imposing greening on courses can exist. However, it is possible to have both a green technocrat and a green maverick working together, wherein the maverick is constantly pushing for change and enacting ideas individually whilst the technocrat acknowledges the driving need for change to the curricula in a more systematic manner. PU exhibits all three types, technocrat, maverick and GI maverick suggesting that this degree of managerialism generates such intellectual deviancy.

University	PU	BU	QU	IU
Green Champion	Non-present	Present	Non-present	Present
GI Champion	Non-present	Non-present	Present	Non-present
Green Maverick	Present	Non-present	Non-present	Non-present
GI Maverick	Present	Non-present	Non-present	Non-present

Green Technocrat	Present	Non-present	Non-present	Non-present
Green Antagonist	Present	Present	Non-present	Non-present
Green Ignorant	Present	Present	Non-present	Non-present

Table 10.2 Interrelationship between green ideal types

Green antagonist and green ignorant ideal types only become evident where either the green champion is managerially restricted or where there is a contested interpretation of the need for syllabi change. For example, at QU each lecturer is loosely coupled to other lecturers and each chooses their own syllabus based upon their own expertise. Therefore, antagonists or ignorants would not appear since there is no clash between groups as to which syllabus should be taught. Each teaches their own. Interestingly, this system is the only one to produce a specifically GI champion. Alternatively, at PU, syllabi are centrally generated and this creates the potential of discord where antagonist and ignorant ideal types dispute the place of green changes. The difference between BU and IU, is that at IU the green champion has the authority to appoint staff and creates a green staff in his own image, whilst at BU the champion is restricted to engaging in change with an existing pool of staff interests.

Because the Case Study method used does not provide longitudinal data, it is difficult to discuss the evolution of these ideal types. The evidence on green mavericks offers opportunity for speculation, but it is unclear whether they transform into other forms of ideal type. CS11 was, in effect, brought into IU as a ‘ready-made’ champion, whereas CSB6 was not and became one when already there. Whether he might have initially been a maverick (or even a technocrat), it is not possible to say. Because the ‘greening’ of courses is now widely accepted, it is difficult to see the green maverick today as different or radical in any way. Prior to this situation, CSP4 offers one example of someone who might have been a maverick at one point, but became disillusioned by institutional obstruction to his deviancy and became an antagonist. Rather more interesting is the GI maverick (CSP9) at PU. Since GI is not well

embedded and is one of competing areas of knowledge for inclusion in syllabi, then a GI maverick provides deviancy from the more generally accepted views on what teaching forms 'green' knowledge should take. Without a specific GI maverick BU points to how unsuccessful its implementation is, especially where antagonists and ignorants are a powerful force even when faced by a green champion.

Whilst green champions and mavericks might provide fertile ground for the concept of GI, it seems that there is still need for a GI-specific champion, technocrat or maverick. Given its lack of recognition, one would only expect a technocrat to arise on LI-validated courses. Otherwise, GI relies upon an individual to push its value and the success depends upon whether it is a champion, with managerial authority, or a maverick, who can lead by example and agitate for change.

10.3.1.7. Green Leadership in organisations

The notion of a leader in organisation was analysed in section 3.8.1. The same rules apply to the green leader. In order to successfully introduce green issues in curricula, he or she needs to create a community of followers 'selling' them an image of themselves as a group of academics who are able to make a difference, and who are able to create and shape curriculum. Grint (2000) refers to this as a myth, and to the leader as a myth-builder. Steyrer (2009) refers to a saviour who is characterised by persuasive behaviour, messianic and visionary. Academics need to believe that they are responsible for students and in consequence, for the whole community.

The green leader has a strategic vision of a world becoming a better place as a result of introducing, embedding and progressing green issues in the curricula. A green leader creates a myth, and shares with its followers the strong belief that green curricula are an issue worth developing. Leaders believe that introducing green issues to students will bring huge benefits and they share this passion with people around them. The green champion of IU is a good illustration of this visionary characteristic

of a leader. CS11 was employed specifically to advocate and disseminate the idea of sustainability among his colleagues. He was chosen not only because of his technical competencies i.e. appropriate qualification and broad experience in the field but also because his sheer passion. He feels that promoting sustainability is the right thing to do, although some may call it arrogance. It is the zealous passion which makes CS11 a perfect example of a green leader.

The green leader needs to evaluate organisational forms and propose a solution to achieve the assumed goals. Thus, as argued in this thesis, a green leader is in a position of authority within the institution that gives him or her opportunities for action. QU offers an example of a leader possessing such qualities. CSQ1 is in a position of authority. This enables him to fulfil objectives with regard to green issues. He is not only creative but his position also gives him a chance to create practical permanent solutions within his institution in order to achieve his goals. CSQ1 is very committed to green issues, especially to the concept of GI but the fact that he is a senior manager in the department enables him to create a lasting difference in the structure of a course, or perhaps, in the department.

The last thing which characterises a leader is an ability to persuade people. This involves effective communication between members of a group. So a green leader not only has a 'dream' but can effectively translate this dream to people and persuade them to adopt it as theirs. That was the case with CSB6 at BU who said: "I push my ideas forward with each team". CSB6 was hugely responsible for introducing sustainability issues in module content because he was able to communicate with his colleagues, translate those ideas so others could understand and adopt them. CSB6 was able to reach out to other people and persuade them of the need for the green content in their courses.

10.3.2. Loose coupling

The loose coupling model explains why Green Infrastructure appears in university courses despite the fact that it is not an essential piece of technical training. Embedding GI in courses is triggered by 'bottom-up' initiatives of curious staff or through interactions with business. GI staff are not necessarily research-active in the traditional meaning of the term, but are inquisitive and open to new challenges. A good example of this was PU where several members of staff such as CSP5, CSP6, and CSP9 introduced GI in their courses. These academics are not widely published, however they are willing to take up new challenges and problems such as, GI and teach them despite the lack of any direct requirements from university managers or professional bodies. This model looks at how there is a place for Green Infrastructure at universities, even though universities have so many other goals to achieve.

Central to the concept of loose coupling is whether universities have their own gestalt. Loose coupling presumes a decoupling of individual or a department from the central core of the organisation. It therefore explains why differences may exist between what the core expects and what the said individual or department does. This may explain why there are discrepancies between theoretical and practical course content within particular institutions. The question therefore to examine in order to test whether loose coupling exists and explains observed behaviour, is whether such a central form exists and what form it takes. So does a university have a single worldview? This seems unlikely, in that 'deviancy' seems to be regarded by many respondents as a requirement of a lecturer. Yet this tends to be an intellectual deviancy, rather than social delinquency. Universities have common buildings, committees, social rules, language. Do they, however, have a common objective? Managerially, universities are required to conform to their funding government's requirements of employability. They produce corporate documentation expressing common aims. PU provides a good example of this. Its Vice Chancellor runs continual 'open meetings' where staff are invited to contribute towards corporate discussions. However, on the evidence of the researcher's own attendance, few take advantage of this. It shows that there exists a discrepancy between, at least, the vision of university managers and the view of 'ordinary' staff. The university, through its

managers, is constructing an image of an open, democratic institution. Lecturers reject this image either because they lack of time (for example CSP3 discussed a problem of overloaded academics) or because they know that it is just a façade, and at the end their opinion will not be taken into consideration. This proves that the university has an image but it also has the practicality of how it actually works. The official line may say one thing, whilst its functioning proves something completely different. Thus, it would be helpful to provide some theory in order to differentiate between notions such as gestalt and image.

Gestalt is a configuration or pattern of elements so unified as a whole that its properties cannot be derived from a simple summation of its parts. Image is the character projected to the public, by a person or institution. Gestalt is persuasive as an idea when discussing any occupational group, as gestalt is a coherent whole with its own laws, seen as a construct of the perceiving mind and eye, not as given in reality (see for example Bosk, 1979). Bosk's (1979) description of doctors working co-operatively to save lives is mirrored here in teaching groups seeking to educate bright young minds and provide them with a means of entry to the professions. Similarly, higher education would appear to follow similar systems of social control that establish this unity. The means by which Bosk's doctors construct failure is reciprocated by lecturers. Of course there are limits to the notion of gestalt. There are some fissures within the thesis data which lend support to the concept of 'loose coupling' away from this gestalt. There appears to be a contradiction between concepts of the university gestalt and de-coupling of 'ordinary' employees away from university managers. Gestalt suggests some form of 'wholeness' describing a structure. It embodies all actions, images, opinions and aspirations of a discussed unit. This stands in a contradiction to the de-coupling idea. As discussed in Chapter 2, within the organisation, managers, employees, owners and clients have individual interests that are only loosely coupled to those of the company with "some evidence of its physical or logical separateness" (Weick, 1976, p.3). This means that it is difficult to talk about an organisational gestalt if its own employees or at least part of them pursue their own targets, only loosely connected with the whole institution. That

is why lecturers are willing to teach the Green Infrastructure concept if they perceive it as a useful element of professional practice regardless of whether it appears in syllabi.

However, staff that are loosely coupled remain part of the institution. They make and belong to the distinctive character, spirit, and attitudes of this particular group of people, creating a specific gestalt. Bosk (1979) also discusses this, examining where social control by fellow doctors clashes with managerial control by the hospital authorities. PU offers an example of these coexisting competing phenomena: loose coupling and overall gestalt. Chapter 6 discussed distinctive features of this university including:

- Hierarchical structure of the institution;
- Organisation is process-driven;
- Quality assurance, ‘managerialism’ are introduced to achieve consistency and clarity;
- There is a focus on ‘removing academic judgement’;
- This institution is strongly coupled to professional bodies.

These characteristics constitute a base for describing the university’s gestalt as ‘Process’. However, as discussed earlier many lecturers, especially in School of Architecture and Landscape, showed their engagement into sustainability issues without being linked to any university centres. They do it out of sheer passion and their strong beliefs. They do it because they have greater academic freedom than other departments. It means that these academics are decoupled from the ‘managerial centre of the university’. However, they are still a part of the university gestalt.

Another example of decoupling at PU is described by lecturers such as CSP2, CSP3 or CSP4. They work for the university and are a part of the gestalt, however they do not care very much about university managerial processes. As long as they are done, no matter good or bad, the university accepts it. So those academics do not think that this is very useful teaching process but only a ‘legitimacy’ exercise. Administration

must be done, but only as an end in itself. At PU loose coupling describes university lecturers with a longer work experience in higher education. For younger staff these processes are the norm, this is how higher education should be. However, for older (in terms of years in higher education) teachers, this is an example of decoupling because they know the difference of how it was before the introduction of managerialism into higher education. They achieve the same ends (gestalt) but are less worried about the process itself and are only loosely coupled to these ends.

BU offers evidence that loose coupling requires active disagreement to exist. A leader, in this case a Green Champion, can generate strong coupling links. At BU all drivers influencing creating and shaping university curricula are carefully stabilised. There is no prevailing factor that 'adds a specific flavour' to the whole gestalt of the university. This can be summarised as:

- There is no distinctive educational philosophy;
- Every factor influencing curricula such as professional associations, industry, university management, staff research/interests is included in the educational framework.

In the case of this university, there is no discrepancy between the university gestalt and its staff, no evidence of de-coupling. However, BU clearly had suffered an example of delinquency in the past, that of its green champion who had created a new gestalt. Interviews with staff proved that each driver including influence of professional associations, interests and beliefs of academics, interactions with industry, the wider strategies of the department and the whole university, is equally valid in constructing degree programmes. This appears to suggest that in this particular institution the attempt to satisfy the needs of every party prevents it developing a specific character to the department. However, 'balance' is actually a carefully crafted idea, a means of providing for this department a specific place in the higher education hierarchy. BU creates a happy middle ground of planning education, one which all parties can accept. This state of affairs is so obvious for the employees that they do not consider it as something specific. For them, this is a 'normal'

situation in which they operate. They are not trying to protest or ignore this ethos. They function perfectly in this framework and are not only strongly coupled to 'balance' but actively cooperate in strengthening it.

Case Study 3 offers another example of how to prevent de-coupling. In this case, the gestalt involves a university approved ideal, that of 'quality'. There are several factors which contribute to the brand such as:

- The university is research led;
- Main philosophy is to stimulate students critical thinking;
- The most important is 'rounded education';
- Employment of graduates is not limited to the built environment sector.

QU has very distinctive features which make this university a brand of its own. This university employs staff with outstanding records of academic achievement. These leading academics influence degree programmes run by the university through their research interests. They lead the educational processes as they initiate changes and introduce new ideas and stimulate students' critical thinking. Programmes run by the university are intellectually challenging and the aim of them is to enable students to discover and analyse facts and make independent conclusions. This is not limited to the built environment discipline. Graduates from this university easily find jobs in different sectors because their flexibility and critical thinking make them good employees in many areas. Also the staff of this university such as CSQ4 and CSQ5 do not consider finding jobs outside the built environment sector a failure. They see themselves as guides to the overall intellectual development of students, not restraining them within the framework of one discipline. All staff believe in the same educational philosophy. Managers give their academic colleagues a lot of freedom in fulfilling the task of providing quality education. There is a very coherent articulation of their aims and values that produce a gestalt confirming academic aspirations.

The final case study represents a third approach to avoid loose coupling. IU hires only staff that endorse its industry focus. In particular, IU, and CSII its champion, employ

ex-practitioners and part-time staff that are fully supportive of its gestalt. IU is described by one of the interviewees – CSI2: “we do have a lot of links with industry”. Its characteristics include:

- Strong links with the built environment industry: market research, staff with professional background (practical approach);
- Development of graduates wanted by professionals in practice;
- Great number of students already with a professional background.

The staff of this university believes strongly in linking vocational degrees and industry. Prior to the development of any vocational degree programmes, market research is carried out to confirm that course content matches the expectations of practitioners. The university takes the lead and develops courses, but it does seek confirmation from industry about the proposals and will amend accordingly. The university remains the driver and determines the overall direction, but will accept route changes from practitioners. However, the department’s involvement with industry is far more organic and natural than simply checking courses. Practice is seen as a key source for staff and those who help generate the ideas in the first place. So, professionals in practice are invited to lecture, and retired professionals are being employed as staff members. These individuals become academic colleagues, and have great impact on the creation of, and changes in, curricula. They have considerable experience in professional practice so they tend to have a practical approach towards university education. Professionals include in the curricula what they think would be needed for graduates in future practice. This, according to CSI2 and CSII, makes graduates well prepared for their professional career.

Three of the examined case studies prove the concept gestalt to be useful and disprove loose coupling as a useful model. They have very carefully developed qualities and values which give a ‘character’ to the whole university. One is about balance between different factors influencing higher education. Another university places emphasis on the quality of its teaching and research, which is shown by independent reviews such as table leagues (for example Timesonline, 2010) and

Russell Group membership. The gestalt of the fourth case study is concentrated around industry. This university is dealing with vocational degrees so the institution employs people from practice and for them the predominant idea is to 'work' well with industry. In all these three example of higher education institutions, the staff is coupled to their respective management because the staff believe and work within the university ethos. However, it can be interpreted in a different way. Staff of these universities seem to be coupled because there is not, at least transparently, a divisive goal to be achieved, which would divide managers and lecturers. Additionally, managers actively engage with staff to ensure the gestalt is appropriate. At IU, staff are also selected with this in mind.

The only one example of inconsistency between the concept of gestalt and coupling came up when describing PU as in that case there is a strong de-coupling of certain staff and its managers which leads to some fracture in the concept of gestalt. Therefore the model is useful, both in explaining deviancy and reorganising good management that is actively working to prevent decoupling.

The concept of loose coupling is also useful to discuss why GI is taught in courses, despite not being present in the course documents. As discussed earlier, universities have a distinctive character. However, academics can be de-coupled from the university as it is represented by its managers. These academics may find the concept of Green Infrastructure intellectually stimulating and useful for their graduates in the professional practice. Thus, although there are no direct requirements from professional bodies and the government, they decide to include GI in their teaching. It does not mean that they put evidence of it in the course documents and they might be actively discouraged from doing so. That was the case in the PU and IU – academics admitted to teaching GI but there was no sign of it in the course documents. Because teaching GI is not perceived as productive in terms of producing employable graduates, it is not seen as necessary to include in curriculum. However as long as it does not cause major problems and complaints from students, managers are willing not to notice it, pretending that it is a part of academic 'freedom'.

Loose coupling also explains the choice of teaching methods. Also because academics teaching GI are de-coupled from university managers, they tend to use lectures as a main teaching method. Managers would like to see a number of teaching methods being used as this would boost up the quantifiable ‘quality’ of the university. Academics would rather spend their time on administrative duties and research than on inventing interactive teaching methods.

10.3.3. Legitimacy

As discussed within Chapter 3, HEIs are expected to conform to certain directives, including financial and client-orientated, and prove quality through externally created measurement systems, such as newspaper league tables and government-led student satisfaction surveys. Whilst respondents did offer examples of where they were made to carry out tasks for “form’s sake”, produce ‘pieces of paper’ to ‘cover their backs’ and generally had to engage with managerialist processes behind their teaching, the concept of legitimacy allows other issues to be drawn out.

PU offers a particular study of legitimacy since it utilises formality and process as the means of establishing its educational processes. Process is not so much legitimacy as a part of the university’s approach to status creation. Take, for example, what might be seen as the legitimacy functions of its Hub, the IEEM award and the formal integration of professional associations into its educational provision systems. These are actually a directed management process aimed at creating certification that it can then use to validate itself. But this is not ‘true’ legitimacy since this is a genuine and rational adoption of processes in order to create and license quality.

Similarly QU does not need to introduce special processes as a means of validating value. Whilst this institution *could* be simply espousing research and teaching excellence as a means of certifying itself as a ‘quality university’, it does not need to do so. It is externally proven that its lecturers are top-quality academics since they are

published in peer-reviewed journals, are top-graded in the Research Assessment Exercise (RAE, 2008) and the whole university has a high position in the league tables (Timesonline, 2010). These are not engagements with legitimacy, but measurements after the fact. The quality of the university was also proven by this researcher's examining their work and taking part in their lectures/assessments. Students were active, engaged and showed critical thinking. They understood the aim of their task, expressed opinions derived from reading and analysis, and could logically defend their position. Also all of their assessed work, both essays and presentations, was of excellent quality (see Chapter 8).

As discussed in Chapter 3, the legitimacy model expects Green Infrastructure to be present in courses when its presence is expected by a dominant authority. However, the model also expects GI to be serving a purely legitimacy function, to satisfy these expectations rather than as a genuine discipline in its own right. It is in this form where the evidence shows little support for the model. For example, at QU there is a single, dominant authority, a GI leader. However, as an internal authority he is able to actually drive the discipline forward and introduce GI into their courses. This is not a legitimacy exercise. PU offers a similar critique of the model, but from a different perspective. GI is being taught at PU even though it is not required by professional associations or the government and so there is no external expectation to drive it into being. And, unlike QU, there is no GI leader at PU. Why does GI appear in courses then? De-coupling of academic staff from the managerialised university is a very powerful force in this case and a far more persuasive cause. Loose coupling allows for certain academic deviancy within teaching issues which are not directly expected by dominant authorities and so at PU a maverick is teaching GI. However, PU does show the importance of the legitimacy model, even if it also shows that it might be overstated. There is evidence at PU that wider sustainability subjects are being taught there because they are expected by third parties, especially professional associations. The difference is that GI is not – yet – expected by these observers. However, even here, sustainability is probably more than a simple legitimacy exercise. These observers are doing more than simply expecting sustainability, they are requiring

concrete evidence of it. For example, prospective employers often require sustainability-literate graduates and will employ these from courses that do actually teach sustainability, rather than those that are only seeking to teach sustainability as a legitimacy 'front'. Of course, this, too, can be overstated. Employer respondents for this thesis were not strongly tended to employ sustainable-literate graduates, even where they recognised sustainability as a key discipline. This offers evidence to support the model because legitimacy exercises might serve to satisfy such employers.

Therefore whilst it is expected that rational organisations engage in legitimacy to enact systems that conform to the expectations of external parties, the four case studies do not do this with GI. Whilst there might be some legitimacy function in their systems, these are primarily performing genuine services. For example, these systems help PU create syllabi and the teaching of those, whilst QU produces such material only as a required response by government for benchmarkable data. QU does not need legitimacy exercises because the whole functioning of this institution is about quality. PU produces routines that generate quality, rather than legitimise to external observers' expectations.

Legitimacy produces behaviour based upon external expectations. Whilst managerialism has generated this in all case studies, the majority of processes were directly used to control staff rather than to create appearances. At this time GI is not expected, so the model is of limited use for studying GI. However, it does offer useful insight into how GI might be dealt with in the future once it becomes better embedded in professional bodies of knowledge.

10.3.4. Routinisation

The notions of legitimacy and routinisation are somewhat confusing, especially that both of these phenomena may lead to the substantial growth of bureaucratisation in

educational institutions. It was discussed in Chapter 3 that the difference between legitimacy and routinisation consists mostly of the fact that legitimacy aims at satisfying expectations, doing something for 'form's sake', whilst routinisation is concerned with a new, effective style of management of scarce resources. The idea is that actors would disseminate 'best practice' which may turn into circulation of yet another set of rules and procedures.

As discussed throughout this thesis Green Infrastructure is a rather elusive, if not nebulous, concept which is difficult to 'pin down' on paper. GI cannot be perceived as a part of the routinisation phenomena - it hardly exists in official course documents. GI cannot be 'promoted' as another routine process validated by managers. Bits of GI 'belong' to different subject areas such as spatial planning and ecology. It is extremely hard to introduce GI into university courses in the routinised teaching environment where people are not willing to go beyond occupational boundaries. This is the case of PU and IU, where evidence of GI being taught in different courses is visible but there is hardly any trace of GI in the course documents.

The concept of routinisation also helps to explain why GI, despite the evidence that it should be taught using various methods, is introduced most of the time in the form of lectures. The use of varying teaching methods certainly looks good to anybody assessing or auditing a course. It means that this educational establishment uses creative and developmental teaching practices, cares about students and their overall development and is rich enough to afford it. This may be the managers' intention. However, as discussed before, a provision of unified, replicable teaching methods creates standardised processes as a part of quality assurance. So in order to achieve or maintain quantifiable quality to a course, most of teaching is done through lectures. This was clearly expressed by, for example, CSP3.

Routinisation, therefore, explains why GI is taught through lectures. The model also suggests that it will only appear in courses when there is agreement on exactly what

GI is and where it fits into existing forms of knowledge. This does seem to explain GI's difficulties in appearing in course documents and being treated consistently across disciplines and universities. It cannot be routinised and so is excluded – unless other forces can overcome the objections. These forces are either of leadership as an authority to enforce or of individual deviancy to evade.

10.3.5. Education for Sustainable Development

Education for sustainable development models all 'green' subjects as different from non-green subjects and expects them to be taught in different ways. GI should be treated similarly. As a separate field environmental education it is viewed as the domain of environmentalists. As discussed earlier in this thesis, ESD gathered some of the government's attention but there is no 'real' outcome out from it. It is mentioned in a number of official documents, however in a vague manner. There is a problem of a lack of respect by academics and professionals for ESD. Many professional bodies were not interested in working papers on ESD and interested parties were not obliged to incorporate and demonstrate changes connected with ESD. Professional associations claim that universities can interpret their requirements in order to include ESD in their courses if they are required. However, there is little concrete evidence that professional bodies and the government are especially concerned to include ESD in university programmes. Indeed, this thesis finds employers disinterested in the ESD agenda in curricula. This may explain a potential failure to include ESD and connected topics in university courses.

ESD should include:

- Interdisciplinary and holistic learning rather than subject-based learning
- Values-based learning
- Critical thinking rather than memorizing
- Multi-method approaches
- Participatory decision-making

- Locally relevant information (UNESCO, 2009).

None of these have been found, either at all or specifically and separately linked with GI or sustainability. For example, interdisciplinary learning and teaching is somewhat of a modern 'holy grail'- a lot of people try to reach it but nobody has seen it in reality. This was mentioned by several interviewees such as PP1, PP9, CSP8 or CSQ1. Teaching GI using interdisciplinary methods could be possibly more effective but occupational boundaries existing both at universities and among employers prevent such initiatives. This was the case for example at PU where GI was taught in two separate departments in two different ways and not communicating with each other, or sharing best practice. As for values-based learning, the case of BU proved that sustainability issues first need to be given a concrete form, like any other subject, to reach students. Perhaps later this could be tied up with values but time constraints and overfull syllabi makes this only rarely possible.

Applying critical thinking and multi-method approaches are useful to any subject matter, not only sustainability issues. However, because of scarce resources and budget constraints even critical subjects providing core technical knowledge at vocational courses are based on lectures at PU, BU and IU. Only QU prides itself in fulfilling all the above characteristics but it is not merely to produce a sustainability-literate graduate but to create thinking, if not opinionated, educated, bright graduates.

All respondents explained how extremely difficult it is to fulfil all the above-mentioned requirements of ESD, especially in the time of economical crisis and the need of efficient use of resources. Also the fact that ESD is based on interdisciplinary learning means that it cannot be ascribed to one process or subject. This causes some reluctance, if not animosity, towards ESD from university managers. All the case studies showed remarkably little inter-department and interdisciplinary teaching.

ESD does not reflect the evidence on how occupational knowledge is generated, given form or taught. Certainly it reflects ideals that formed part of a wider discourse

on how lecturers might like to teach, but the model cannot explain the reality uncovered by the data. Occupational identity is a far more powerful driver.

10.4. Co-habiting authorities

The thesis took Giddens' construct of Late Modernity as a central premise on the nature of society, and it is worth briefly reviewing how useful this was.

Late (High) Modernity offers a conceptual explanation of the nature of occupational knowledge, of the competing parties who lay claim to expertise and how learning takes particular social forms. Giddens (1991) discusses the nature of authority in the late modern environment. He argues that there is no determinant authority, but rather there exists a dilemma between authority and uncertainty. This encourages and creates many claimants to authority and the right to determine what should be done. Whereas in years gone by, one all-powerful expert group would determine what should and should not be taught, now there are competing interests trying to impose themselves and their view on how knowledge should be given form. These have been referred to as drivers in this thesis, and include government, universities, academics, professional associations, businesses, and students as clients.

This idea also explains the apparent decline in the status of professions, and their lack of dominance in how they lay claim to expertise and the ownership of knowledge, specifically GI. There are at least four claimants to authoritative expertise within the field of Green Infrastructure such as Royal Institution of Chartered Surveyors, Royal Town Planning Institute, Royal Institute of British Architects and Landscape Institute. This conforms with the model's expectations.

This theoretical model works particularly well with the data obtained in the study. It explains why there are so many claimants to expertise and that they all are able to co-exist within the same Late Modern environment. Each of them has an equal right to claim authority with regards to Green Infrastructure and every position is valid. Their

interaction has provided a structure in which to explain the data generated in the research.

10.5. Learning and teaching issues in Late Modernity

In this PhD project four university case studies have been analysed. Each one of them has, as discussed earlier, distinctive features, derived from different cultures and operating in various environments. A good example of different ethos at higher education institutions is shown by a comparison of learning outcomes between PU and IU. At PU students are often marked down because their inadequate referencing skills. Lecturers at PU teach referencing because of this is, according to university's regulations, one academic standard. This is one of the skills students need to obtain in order to graduate (it is easily measured by university managers whether this has been done). This is about 'processes'. However, IU gives high marks for students without proper referencing. Their argument is that an essay is about developing ideas. Also this is a vocational course and students are engaged in project work so academic traditions are not so important. QU requires both of these – developing ideas together with proper referencing and achieves both of these because the main concern of the university is about preserving quality.

However, at the same time, staff tend to function the same way in terms of teaching methods, and, where resources prevent this, they agree on what the 'best' methods are. There is also no discernible difference in the teaching of GI than any other subject within departments. Academics do not differentiate between ways of teaching 'green issues' and any other problem. Lectures tend to use their preferred methods regardless of the subject. So teaching Green Infrastructure is not different from any other topic. There are academics such as CSP9 who claim that using 'visual' methods is much more effective than using other teaching methods but this was not supported by the rest of interviewees. There are no special materials for teaching GI. They may consist of PowerPoint slides or illustrations of green spaces, however these are used

to keep students' attention in focus and to provide an 'aesthetic distraction' to dry lectures.

There are vast differences between universities – their ethos, educational philosophies etc. However, academics generally agree on how it is best to teach regardless of the university. In the built environment area a mixture of teaching methods is the most preferable for academics. Lecturers switch between certain types of methods depending upon how comfortable they feel, student numbers and available facilities.

Lectures tend to be the 'preferred' teaching method because they do not require a lot of preparation from lecturers, they cater for large groups of students and they provide a theoretical framework for students. However, students do not regard lectures as a satisfactory learning method. They prefer more interactive methods, which engage their attention. Students like to 'bounce' their ideas off their peers and lecturers because they want to be sure that they understand a problem completely. Another important aspect for students is 'hands-on-experience'. They prefer to 'totally immerse themselves' in a project as this allows them to understand a problem and memorise a solution.

These Case Studies are completely different environments and cultures and yet they use the same methods. It is an apparent contradiction. It may be explained through the analogy to the theory of convergent evolution. Different species evolve in a similar way as a result of the same selective pressures in order to acquire high specialisation (see for example Mooney and Dunn, 1970). The same thing has happened with universities. Various institutions, some deriving from old universities, some from ex-polytechnics evolved towards the same learning and teaching methods. Although those institutions are of different origins, modern pressures (see Chapter 3) made them evolve in the same direction. There appears an important question here: how have different universities agreed on these same teaching methods? A further complication is the fact that students within the cases did not agree on how they

would like to learn and how they learn best, which suggests that this agreement on teaching methods might be incorrect.

Academic respondents explained the answer quite consistently, assuming external pressures as the cause. Lecturers tend to accommodate teaching methods to increasing number of students and the lack of facilities. Additionally, lecturers cannot use only one method in the constantly changing environment. Thus academics regardless of their university, state that the most preferred method consists of mix of teaching techniques. However, it is resources – their time, staff numbers, student cohort size – that drive this flexibility. Some universities adopted routinisation to formalise and make visible the quantity and quality of teaching. These tended to place emphasis on lectures. Students, their parents, the profession, all could see a ‘full’ timetable, thus legitimising fees. QU was the most apparent in not doing this and relying more on a project and student self-learning. This shows how learning itself is also a function of the competing authorities and the interplay described in the models.

As discussed in Chapter 2, this thesis seeks to examine the social construction of teaching and learning methods, not their scientific value. It examines the approach of both parties – students and staff – to learning GI, and finds little appetite to accept any ESD differential. Indeed, there was even some outright opposition.

“It’s one of those things that isn’t easy to say and isn’t even necessarily true. It might be our own prejudices, but I think most colleagues would be very concerned if we had to adopt, what shall I say, less formal systems of teaching - the vaguer and less clear notions behind ESD. What our students need is structure and hierarchy. They need proper lectures. Most of our students come here not even knowing how to take notes, never mind self-learn or any supposedly higher learning ideals. We joke that we yearn for the days of the nice but dim middle class rugby players we used to get. I recall an argument with my *managerial academic* in which he was proposing that we need to befriend the students, be flexible, creative, that sort of thing. The stuff that ESD talks about. Aside from the fact that we don’t have the resources, in the last two years we’ve had a range of student problems, and I mean serious problems, like a rapist and three for kidnap and assault. Now, I am not saying that it’s representative, but that sort of thing doesn’t encourage co-operation, it doesn’t encourage sharing experiences and it understandably worries the majority of decent, hardworking

students, who are going to be rather leery of opening themselves up to the stranger next to them” (CSP4).

This view was corroborated by informal chatter in the coffee rooms and bars visited by the researcher. The student newspaper was also running a story about the shooting of a drug dealer, also a student at the university. Other respondents did not directly comment upon the point in this university, or at any of the other three case studies. However, as discussed in Chapter 2, this is not surprising. The researcher did not have the time or space to generate the level of trust or informality with respondents that discussing such issues would take.

Teaching methods are adopted and created by universities and lecturers as a result of the same interplay of authorities as knowledge itself. Whilst the nature of this knowledge might drive methods, there is no evidence that this holds true for GI.

10.6. Greening of the curricula

Academics from universities examined for this research project are engaged in sustainability issues, they do research focusing on sustainability and include them in university courses. Still there are barriers against introducing green issues in the curricula. There is a priori assumption that sustainability enriches university curricula. But is it true when it comes to vocational courses in the built environment area? Sustainability is one of the requirements from professional associations accrediting courses. But the extent to which it is introduced in degree programmes is a matter for individuals. For example since there is no obligatory definition of green infrastructure then there is conflict on what to include in the curricula. Perhaps the fact that the concept has no legal definition means that it is not very important despite a number of projects currently being worked on. This reinforces lecturers who do not want to include green infrastructure in the curricula because there are issues of higher priority to teach.

Certain academics at BU argue that there is simply not enough space in their existing programmes for the technical competencies of their profession. They teach a vocational course to prepare future professionals competent in their chosen profession. Students need to spend enough time learning skills which are absolutely obligatory for their future occupation. There is no time and space to waste, especially if some concepts are not even properly defined. Also ex-polytechnics are deemed to provide education of lower quality than 'old' universities. Inserting in courses some 'woolly', non-well defined project would further diminish the quality of provided education.

10.6.1. Green Infrastructure in Curricula

A basic educational model for implementing green issues in the university curricula is as follows:

- the inclusion of the coverage of some environmental issues and material in an existing course of the programme;
- having a separate course that deals specifically with environmental matters;
- integrating environmental issues and discussion into all courses so that environmental understanding is developed in the context of the discipline, the programme, and the course material (Thomas, 2004).

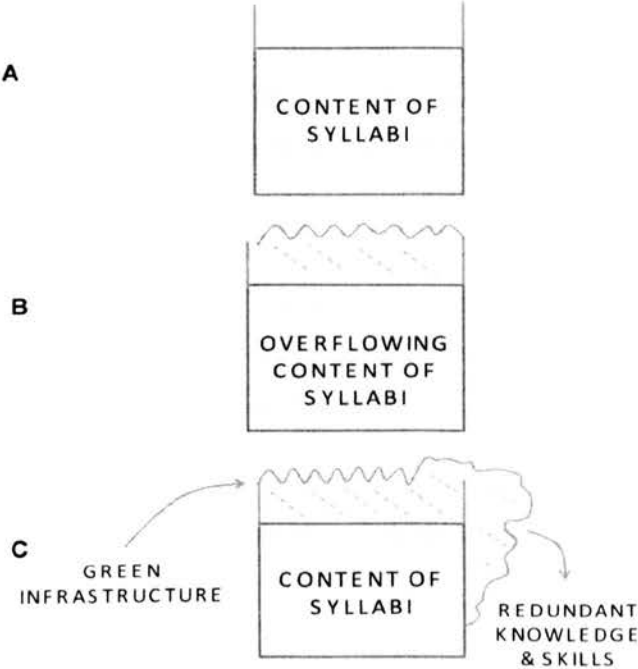
This thesis finds evidence of all three. However, it is not clear that the one naturally evolves into the next stage as is suggested by Thomas. One possible reason is the particular characteristics of GI. Incorporating GI in all courses is not rational as GI is only one of the elements of the green curricula. It may be even of a low priority and it would significantly reduce the value of a course.

Most clearly, the incorporation of GI depends on the presence of green ideal types. A green technocrat will only include GI in the courses when there will be a direct requirement from a professional body or any other authority. Green technocrat will not consider including GI in programmes as means of enriching courses. It will be simply a method to gain credibility.

GI champion and GI maverick will include GI in the courses because they think that this is an important issue to talk about. They feel students need to know about it because it may be intellectually challenging or because this is another skill necessary for their professional career. The difference is that a green champion can initiate a institutional change so GI will be a part of the curricula, where a green maverick will fit *only* the module content to include GI. But, and unlike Thomas, there is no evidence to suggest that a maverick evolves into a champion, or that a maverick's ideas evolve and are accepted.

One concern about the place of Green Infrastructure in syllabi is whether it can be included, as shown in Figure 10.2. The fear is that syllabi are already full with knowledge that is essential to the particular degree. Therefore including GI requires exclusion of something else, something that previously has been regarded as a fundamental occupational requirement. As the content of vocational courses has very strong occupational authorities controlling and supporting it, it means that in addition to champions and mavericks, other authorities dominate the issue of syllabus content. Vocational courses tend to be more conservative in changing because of the role of employers in generating and validating the content of courses. BU, IU and PU all placed great emphasis on the need for the whole profession to endorse their courses.

Figure 10.2 A Tank Called Syllabus



10.7. Towards a general theory

The four case studies provide discrete data on the specific context of each study. As discussed in Chapter 2, inductive reasoning depends upon generating such data and then allows the construction of a general theory. Since no work can take place in a void, a hypothesis and literature review provided a background to this work. However, the hypothesis is disproven and in its place the following two themes are proposed to explain the processes in which new knowledge is given particular form. Further work can expand this study on GI to replicate and test the theory.

10.7.1. Late Modernity and authority of key drivers

In Late Modernity where there is no determinant authority there are a series of competitive key drivers such as academia, employers, students, government and professional associations. Universities currently lead educational processes, as academia plays an essential role in creating and changing university degree programmes in order to engage with this Late Modern environment. However this is not permanent and should not be seen as a position of determinant authority. Rather, universities are currently adept at balancing other authorities. Most importantly, planning academics are intuitively vocationally-orientated and incorporate employers' dialogues within their own. At this time professions are also actively playing down their own authority on these issues.

10.7.2. The role of the individual (Green Champion)

The sustainability agenda is led by individuals at universities. These individuals take the role of leader in incorporating green issues in the university curricula. If they are in a position of authority, they not only enthuse and inspire colleagues but also have power to make substantial, permanent changes in curricula. Greening of the curricula is a bottom-up approach. Individuals can influence colleagues and make changes in curricula to include green issues, however they need to be in a position of a dominant authority. As shown by the loose coupling model, intellectual deviancy is also a key feature in creating new knowledge by academics surreptitiously teaching it without its formal acknowledgement in syllabi.

10.8. Further work

The research generated a general theory, through the use of a hypothesis, on the nature of educational processes and on the basis of the evidence gathered in four

university case studies. The value of this work is based, on the first instance, on the validity of this theory. The four studies were selected to include key variables (such as location and university type), but whether they are representative of all universities provides a rationale for repeating the same approach in other locations. This is undoubtedly a key area for further work. However, if a general theory is seen to fail, then the work also provides four detailed analyses of discrete studies; that is the specific. These also draw attention to a number of interesting avenues of further work.

The focus of this thesis is on the introduction of green issues within a form of 'Green Infrastructure' in university curricula. As discussed before, the main role in this process is played by individuals – green champions. A natural progression of the study would be an examination of the efficiency of different types of a green leader as a main agent for introducing green issues into curricula. A practical implication of the main findings of this thesis would be the re-thinking of the distribution of resources at universities between academics and 'centralised' managers. Green leaders and green mavericks work whilst organisational structures do not. However, such structures do legitimise and can offer quality assurance through routinisation.

Notwithstanding this, the institutional response to the problems of greening curricula relies upon special structures within universities which aim to introduce, embed and progress green issues in the curricula. Managers from such 'centres', contrary to academics, did not want to take part in this research. Perhaps academics felt obliged as a part of their remit to help out with the research whilst managers tend to be more pragmatic and did not see any practical outcomes of their participation in this doctoral research. However, this thesis provides a basis for developing practical solutions to greening curricula, and so university managers may be more willing to take part in this research. Consequently further work may focus on university managers and their role (actual and how they perceive it) in greening of university courses. This may offer new data on where university resources should be placed in developing new areas of knowledge such as Green Infrastructure.

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Appendices

Appendix 1: Schedule of Interviewees

The following schedule is created as a guide to the participants, whilst retaining anonymity. Chapter 2 discussed the approach of describing academics in order to allow the reader to judge the weight that might be given to individual s' comments. Whilst the descriptions are deliberately vague, the hierarchical ranking system described offers a check by the reader on the plausibility and appropriateness of use given to the data.

Initial interviewees (PA - Preliminary Academics)

Interviewee PA1- is a surveyor, managerial academic, involved both into teaching and learning and worked in commercial practice both in consultancy and in the corporate sector.

Interviewee PA2- is a managerial academic. He is Director of Research.

Interviewee PA3- is an architect, a member of RIBA, FRSA, managerial academic and Professional Studies Advisor. He is a member of the QAA Benchmark Group for Architecture, RIBA Examinations and Syllabus Development Committee.

Interviewee PA4- is a planner, a member of the RTPI Research and Knowledge Committee and a member of Universities Research Group for the Built Environment (URGBE).

Interviewee PA5 - is a managerial academic, previously worked for Metropolitan State College and the University of Gloucestershire, UK. His research interests include environmental accounting.

Professionals in the field (PP – Professional Practice)

Interviewee PP1 is a Biodiversity Officer in the south-east London Borough Council. He is an ecologist.

Interviewee PP2 is a Planning Officer in the south-east London Borough Council. He is a member of the RTPI.

Interviewee PP3 is a Principal Policy Officer in the Borough Council in Surrey. He is a landscape architect, member of the ILA.

Interviewee PP4 is a Project Development Officer in the local partnership organisation created to conserve, enhance and promote the Thames landscape. He is a landscape architect.

Interviewee PP5 is a Policy Manager in the large environmental regeneration charity. He is a chartered biologist working on regeneration projects.

Interviewee PP6 is a Regional Policy Officer in Non-Departmental Public Body for protecting and improving natural environment. He is an ecologist and member of IEEM.

Interviewee PP7 works for a real estate company operating principally in the retail sector. He is the Head of Sustainability in the company. He is a member of CIOBE.

Interviewee PP8 is an architect working in the international design and business consulting company. He is a member of The American Institute of Architects (AIA) and The US Green Building Council (US GBC).

Interviewee PP9 is a Landscape Regeneration Manager in a charitable housing trust and a registered housing association. He is an ecologist registered with IEEM.

Interviewee PP10 is a Principal Transport Planner in the London based planning consultancy. He is a member of an undisclosed professional body.

Interviewee PP11 is a Principal Planner in the planning consultancy. He also lectures at University College London. He is a member of the RTPI.

Interviewee PP12 is a director on a Board of Act Travel-wise working for the planning consultancy. He is a planner – member of RTPI.

Interviewee PP13 is a Senior Policy Manager in the large environmental regeneration charity. He is an ecologists/regeneration manager and a member of IEEM.

Interviewee PP14 is a developer and a Director of the company offering residential property management and consultancy services. He is a Director and Vice Chair of housing company established to manage Council dwellings. He is a Fellow of the Institute of Sales and Marketing Management.

Interviewees in Professional Bodies (PB - Professional Bodies)

Interviewee PB1 - is a planner, the RTPI's Director of Membership, Education and Lifelong Learning and was previously Head of Department of Urban, Environment and Leisure Studies in the Faculty of Arts and Human Sciences at London South Bank University.

Interviewee PB2 – is a Professor of Architecture and the Head of Education at RIBA

Interviewee PB3 – is a Higher Education Policy Manager at RICS

Interviewee PB4 – is a landscape architect and the Director of Education and Membership at LI

Interviewee PB5 - Policy and Public Affairs Officer at LI

University Case Studies

Interviewees in Case Study#1 – Processes (CSP)

Interviewee CSP1 – is a female, chartered surveyor, worked in commercial practice both in consultancy and in the corporate sector.

Interviewee CSP2 - chartered surveyor, a former partner in private practice. He has held a number of senior positions within large commercial client firms and consultancy based organisations.

Interviewee CSP3 - surveyor, member of RICS, has held a number of senior positions within large commercial client firms and consultancy based organisations

Interviewee CSP4 - chartered surveyor, a chartered builder and a corporate building engineer, worked in both public and private sector QS offices.

Interviewee CSP5 – MLI, managerial academic and a lecturer in Landscape Architecture.

Interviewee CSP6 – is a Senior Lecturer Landscape Architecture, MLI. He was trained in urban design and landscape. He was working for a private consultancy.

Interviewee CSP7- qualified as an architect and worked in private practice before becoming a lecturer.

Interviewee CSP8 - chartered town planner involved in curriculum development on the surveying, property development and housing management programmes.

Interviewee CSP9 – qualified as an architect with a special interest in sustainability issues.

Schedule of focus groups:

CSPFG 1

CSPFG 2

CSPFG 3

Schedule of participation observation research

Attended various activities including:

1. Debate about tax policies in the UK. Final year BSc students.
2. Students' presentations on regeneration schemes in the local area.
Postgraduate (MSc) students.
3. Lecture on research methods. Final year BSc students.

Date: 14.04.07 - 23.10.08

Interviewees in Case Study#2 – Balance (CSB)

Interviewee CSB1 – senior lecturer with a great interest in sustainability issues

Interviewee CSB2 – senior lecturer in Building Surveying

Interviewee CSB3 – chartered surveyor, senior lecturer and Programme Leader for undergrad REM, REM&B, P&FM

Interviewee CSB4 – chartered surveyor, senior lecturer in Building Surveying interested in sustainability

Interviewee CSB5 – senior lecturer and Programme Leader in Post Grad Planning courses

Interviewee CSB6 – member of CIOB and RICS, managerial academic

Interviewee CSB7 – senior lecturer, Programme Leader Civil Eng/Level 1 Civil Engineering Tutor

Schedule of focus groups

CSBFG 1

CSBFG 2

Schedule of participation research

Attended various activities including three lectures from the Module on Environment.

Date: 07.-09.10.2008

Interviewees in Case Study#3 – Quality (CSB)

Interviewee CSQ1 - Reader in Urban Horticulture and Director of the Graduate Research School

Interviewee CSQ2 - lecturer in Landscape Architecture

Interviewee CSQ3 – chartered planner, managerial academic

Interviewee CSQ4 - Professor of Town & Regional Planning, member of Learning and Teaching Committee

Interviewee CSQ5 – member of RICS and RTPI, Professor of Property Development Studies

Interviewee CSQ6 – chartered planner, Director of Postgraduate Programmes in the Department, member of Learning and Teaching Committee

Interviewee CSQ7 - Senior Lecturer in Town and Regional Planning, member of Learning and Teaching Committee

Schedule of focus group

CSQFG 1

CSQFG 2

Participation Research

Attended various activities including students presentations for the Green Infrastructure subject.

Date: 21.11.08-06.12.08

Interviewees in Case Study#4 – Industry (CSI)

Interviewee CSI1 - Fellow of the Royal Institution of Chartered Surveyors, Senior Lecturer with extensive practice as a building surveyor

Interviewee CSI2 - Member of ICE and CIOB, Professor in Environmental Building

Interviewee CSI3 - Lecturer in Building Services Engineering and Training Manager in the QS firm

Interviewee CSI4 - Lecturer in Building Services Engineering, Director for leading commercial property practice and real estate services adviser

Interviewee CSI5 – managerial academic in Building Science and Building Performance Simulation

Interviewee CSI6 – Architect and Landscape Architect, managerial academic

Schedule of focus group

CSIFG 1

CSIFG 2

Participation Research

Attended tutorial with students and examined student's coursework.

Date: 15-18.05.09

Schedule of ‘Loose’ Academics

Interviewee LA1 - Lecturer in Planning

Interviewee LA2 - Senior Lecturer in Planning and Director of Engagement

Interviewee LA3 – managerial academic and Professor of Urban Design

Interviewee LA4 - Senior Lecturer in Environmental Management

Interviewee LA5 – Senior Lecturer in Architecture

Total: 58 interviews

Appendix 2: Content of the Interview with ‘Preliminary Academics’

Name of the interviewee:

Academic Post:

Professional discipline:

- 1.1 What are the main actors in education processes?
- 1.2 What is the place of universities/professional associations/ employers?
- 1.3 Who leads curricula?
- 1.4 Who decided how new knowledge is incorporated into curricula?

Appendix 3: Content of the Interview with Professionals in Practice

Name of the interviewee:

Gender:

Company:

Job title:

Professional discipline:

Section 1: Knowledge of green infrastructure

- 1.1. Have you heard of the concept of Green Infrastructure?
- 1.2. What do you understand the term Green Infrastructure to mean?
- 1.3. Can you give examples of projects you work on relating to GI?
- 1.4. Why do you utilise the concept of Green Infrastructure?
- 1.5. Where do you get information about GI from?
- 1.6. What skills relating to the delivery of green settlements does your occupation need?
- 1.7. Do you think that the GI concept is /environmental issues are/ becoming more important in practice? Why?
- 1.8. Are your colleagues aware of the concept? Probe: Can you tell me why you think that is? Are you aware of any evidence in this area?

Section 2: Graduate skills

- 2.1 Do you need graduates with awareness /skills/ knowledge relating to the delivery of green settlements?
- 2.2 What skills/knowledge that your occupation needs, do your graduates lack of?
- 2.3 Should universities implement the concept of GI in their curricula?
- 2.4 What pedagogic approaches should be used to overcome these gaps?

Section 3: Other comments

3. Would you like to add any other comments or feedback?

Appendix 4: Content of the Interview with Representative of Professional Association

Name of the interviewee:

Gender:

Professional Association:

Section 1.Role of professional associations and their interactions with the government and business:

1.1 What is the role of a professional association in the education process of prospective professionals?

1.2 How does a professional association react to an emerging issue within practice?

Probes: Do members bring things to its attention, a sort of 'bottom up' approach, or does a critical mass of 'general' business opinion build up and engage with the senior executives of the association? Are these things member-led, or by yourselves as education officers?

1.3 And the same where issues are government-led, rather than 'business-led'?

Section 2.Validation of bits of knowledge:

2.1 What drives the creation of a new course? Probes: Does the university originate the proposal? Is there an upsurge of demand of particular qualifications? Do clients require a particular form of certification or does the professional association have a wish list or make proposals to universities – either in general or to a specific institution for some specific reason?

2.2 Do professional associations impose their ideas upon universities? Who drives what is taught, and how?

2.3 How is the particular proposal judged by a professional association? Does it judge the proposal itself, the institution, its staff? Does the association make any judgment on how a course is delivered?

2.4 What are the procedures for validating courses and/or incorporating syllabi changes? Probes: Are members of associations involved? Are education officers involved? At what point of any process does this involvement take place?

Section 3. Green issues within university curricula

3.1 My particular focus is on the issue of 'Green Infrastructure' can you give me any examples (anonymously of course) of the way in which GI itself or any issue of sustainability has been introduced? Probes: How this introduction come about? Who were the leaders? Who were the originators? And what problems arise out of creation such a new area of expertise?

3.2 Have you got other comments or questions?

Appendix 5: Content of the Interview with Academics

Section 1. Where does knowledge originate?

1.1 How in your experience do courses and/ or modules come into being?

Are the ideas the result of professional associations requesting them? Derived from the market? From student expectations? From central government's political agenda? Or do individual members of staff make proposals? Are courses market-driven? Student-driven? Occupation-driven? Intellectually-driven?

1.2 Are universities actors or reactors? Do they create the issues or react to emerging issues “out there”?

Are you a member of a professional association or similar peer group? Do you discuss these issues with fellow members? Do you lead or do they? How do academics interact with non-academic peers? How does professional validation work?

1.3 Are “sustainability”-style issues different in this regard? Can you give any specific examples, as well as the general?

Where does Green Infrastructure originate? How is it incorporated into degree programs? How is it set up/ taught?

Section 2. Greening of curricula

2.1 How does greening of curricula take place?

How does it take place – are all elements ‘greened’, or are certain ‘green’ elements taught as discrete issues? What green issues should be implemented, and why? Who decides what goes in, and what does not? How does “Green Infrastructure” fit into this?

2.2 In your opinion are there any critical skills associated with ‘green issues’ (for example with Green Infrastructure) that should be taught at universities?

How would you determine which of these skills are “critical”? With the agreement of who? Do you teach such skills? How?

Section 3. Teaching and Learning Issues

3.1 What does ‘good teaching’ consist of? How do students learn?

What are good teaching and learning experiences? What do you do, and why do you do it? Can you give me some examples of good practice that you are involved in? How do you decide how to teach a specific subject? How do you negotiate with the university and your managers on the resources to do this? And how do students respond? Can they select options? And if so, how do they do so?

3.2 Again, are ‘green issues’ different in any way to other disciplines or subject fields? Are they taught/ learnt in different ways?

Can you give me some specific examples of how you find students learn? How are different issues taught? And how are they assessed? And who determines the “how” of these – you, ‘the department’, the University, custom and practice, professional associations, employers, students?

Appendix 6: Content of Focus Groups with Students

Attendants:

Number of students:

1. Are you interested in sustainability issues? Why yes/ why not?
2. Have you been taught/ have you talked in your course about any sustainability issues?
3. If yes: what issues, what modules/ if no, is there any issue of sustainability that you would like to introduce in your course?
4. What way the sustainability issues were presented?
5. What methods of teaching would be the most effective to introduce sustainability issues?
6. What is the most effective way for you to learn new issues?