Blurred boundaries

Negotiating a common core subject in a multi-faculty Bachelor of Environments degree

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In 2008, the University of Melbourne rolled out its restructured undergraduate degree program offerings. Rather than offering a multitude of faculty-specific degrees, the University started to offer a limited number of generalist degrees that serve as developmental pathways to specialist masters programs as well as stand-alone employment preparation. While the other 'Melbourne Model' degrees in arts, science, commerce and biomedicine primarily aligned with their cognate faculty, one degree, the Bachelor of Environments, was taught across four faculties. Three reviews of this unusual undergraduate degree have been undertaken since 2009 with each recommending that the degree reduce the number of common core first year subjects to one. However, the decision to reduce to one core subject proved difficult within the blurred boundaries of cross-faculty management structures. This paper analyses the strategies being used to reach consensus following the most recent review.

Keywords: interdisciplinary degrees, curriculum reform, change management

The task of reaching a consensus among a diverse set of discipline-based academics spread across separate faculties is fundamentally one of amalgamating opinion from widely divergent areas of expertise within the constraints of time and institutional functional requirements. The emergent consensus needs to be pedagogically sound, both in terms of being student-focussed and learning-centred and as a fundamental element of a degree program that functions as preparation for both further study and entry into the workforce. This paper tracks a specific component of the change process precipitated by a review recommendation to change substantially the structure of a cross-faculty taught degree in a way that would likely have significant impact on content as well as student-fee distribution. It focuses on two main aspects: the pedagogy-based decision-making and the strategy-based decision-making. By the former we mean decisions that are made primarily on pedagogic grounds: improved student learning, retention, course satisfaction, curriculum development, course coherence and so on. By the latter we mean decisions that are based on maintaining or expanding academic territory, ensuring that staff retain their positions, decisions that maintain or increase influence and control and so on.

The calendars of most universities require changes to adhere to rigid timetables as well as due processes, most of which are based on quality assurance. In general, this means that decisions need to be made at predetermined times, in accordance with predetermined regulatory criteria. Whereas on the one hand, the structure can expedite change, it can also be used to delay change in circumstances, such as cross-faculty decision-making, where changes need to rely on consensus rather than authority. This paper analyses how the process maintained a purposeful trajectory towards change while accommodating input from all participants and complying with institutional requirements.

The context of change

As one of a small number of generalist undergraduate degrees at the University of Melbourne, the Bachelor

of Environments has ten majors which bring together disciplines that deal with the built, natural, social and virtual environments in professions such as architecture, civil systems, construction, environmental engineering systems, environmental geography, environmental science, surveying, landscape architecture, landscape management, property and urban design and planning. It is unusual in that it is taught by staff from disparate faculties. Four faculties were involved, reducing recently to three faculties with the amalgamation of two. The structural, economic and political divisions between these faculties have in the past tended to influence change processes, particularly as the custodial dean for the Bachelor of Environments is not empowered to make decisions that impact on the teaching staff and budgets of other contributing faculties.

In broad terms there were two aspects to be considered. First, three existing common core subjects were to be replaced by one alongside other modifications in response to student feedback. Second, the University has various processes in place to ensure that any major course change meets quality assurance requirements. Further, there was a limited timeframe in which to achieve structural changes to the course. Predicted propellants and retardants that had an impact on the process of engendering consensus included institutional factors, procedural factors and pedagogical factors. In terms of University processes and procedures, new subjects and curricular structure need to be approved, sanctioned and ratified at various levels.

A further time constraint is the date of publication of degree guides. Proposed changes, after consensus has been reached by the faculties, can be held up at each of the three committees involved. If progress of a proposed change is delayed for long enough, i.e., until after the due date for Handbook entries, the change cannot in theory go ahead. Most strategies to effect fundamental change aim to mitigate the impact of retardants by maximising the impact of propellants (Onsman & Barker, 2003). To that end, the approach adopted in this instance was to obtain expertise from participants; emphasise areas of agreement; and iteratively refer those propositions back to the participants with the aim of reducing extremes and reaching a workable consensus on how the proposed change can be enacted in a spirit of cooperation.

The expert participants

A key decision in the process was to seek the expertise of academic leaders from each discipline before assembling at plenary meetings, under the assumption that they would engage in dialogues within their specific schools and departments and bring a coherent perspective. This approach, it was envisaged, would allow a broad-based collaborative process to yield practical results in a relatively short time. Participants would not only bring their personal expertise to bear, they would also present the collected expertise from each school, department and faculty.

The success of the strategy depends on consensus being reached. To that end, the discipline experts invited to contribute to process were the academic leaders of each of the disciplinary majors represented in the degree. For some discipline leaders this was their first detailed insight into the undergraduate degree because more often than not they had a stronger teaching and learning presence at master's level rather than in the undergraduate degree. While on the one hand that meant that they were not always entirely sure about the degree's curriculum and purpose; on the other hand it meant that course conceptions were not limited to the undergraduate degree. By working primarily with academics not personally focussed on teaching in the current degree it was possible to think more strategically about the future.

The on-going nature of institutional change in higher education makes it difficult to discern a procedural starting point, particularly when change is driven by exogenous events as well as by endogenous processes (North, 1993). There is a case to be made that the process started when the University decided to adopt the 'Melbourne Model' that included a Bachelor of Environments with compulsory common core subjects. For the purposes of the current analysis we focus on the consultative process that occurred when the disciplinary leaders of the built environment majors of the degree were formally invited to respond to the recommendations within a 2013 university led review into the degree including the development of a new single compulsory common core subject instead of three extant compulsory common core subjects. More directly, participants were asked to provide expertise and subsequently to discuss the suggestions in small, discipline based groups, with results disseminated for further refinement. The invitation deliberately avoided any suggestion that the change over to a single subject was negotiable. Instead the endpoint of the process as well as the reasons for the change and the iterative aspect of the process were clearly articulated: to devise a single compulsory common core subject that articulated the purpose of the degree, introduced the elemental skills that could be further refined in any of the majors, and supported students in gaining an accurate understanding of what each of the majors entailed in order to make

an informed choice about study pathways. This was considered an essential aspect of the articulation – the multi-disciplinary nature of the undergraduate degree.

Multi-disciplinarity within a university context: the Melbourne Model

The emergence of multidisciplinary, interdisciplinary and transdisciplinary undergraduate degrees, while not a recent phenomenon *per se*, has become more evident over the last decade or two. The generally accepted understanding of a multidisciplinary curriculum is one that presents the disparate approaches to a topic of a number of disciplines with the aim of students gaining multiple perspectives. An interdisciplinary curriculum aims for students to integrate knowledge, skills and attitudes from multiple disciplines around a specific question, topic, problem or idea. A transdisciplinary curriculum aims to have students create capacity to transcend or disrupt the boundaries of disciplinary knowledge: 'Transdisciplinarity … involves a comprehensive framework that organises knowledge in a new way and is based on cooperation among various sectors of society and multiple stakeholders to address complex issues around a new discourse' (Aneas, 2014, p. 4).

The main reason why there is an increased demand for profession-tied degrees that move beyond the traditional disciplinary fields is the growing realisation that disciplinary knowledge has become unnaturally endogenous. As a result of disciplines setting their own boundaries on whatever pool of knowledge they claim expertise over, they are now increasingly corralled by the boundaries they have set (van Assche, 2003). As Einstein is reputed to have said, the problems of the world cannot be solved by the same mind-set that created them. The latter is particularly relevant to the disciplines that have relevance to the study of the environment (Henderson, 2012), some of which are those attempting to create interdisciplinary curricula: architecture (Comninos *et al.*, 2010), engineering (Olson, 2013; Tryggvason & Apelian, 2011) and surveying (Levin *et al.*, 2010). In the main however, discipline academics are reluctant to devolve professional authority, a stance that is problematic given transdisciplinary and interdisciplinary curricula require an acceptance that any of the participants' disciplinary authority might be contested.

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Discipline boundaries are made manifest within the physical, political and economic structures of universities, which traditionally are institutions that cluster knowledge, academics and budgets into faculties (Rich, 2013). But the resistance to research and teaching across discipline boundaries has traction within academia that cannot be solely explained by faculty-based structures. Discipline expertise, underpinning our understanding of knowledge from early in the nineteenth century, assumes that it is self-regulatory in terms of development and verification. This assumption has facilitated an ensconced demarcation of fields of knowledge: the so-called silos of disciplinary knowledge.

According to Weingart, 'the essence of discipline formation and evolution is self-referential communication' (2010, p. 8). Each discipline develops tools and language for researching and representing knowledge that tend to restrict effective communication across discipline boundaries. Universities generally remain places where disciplinary knowledge is highly valued and rewarded. Bolitho and McDonnell (2010) in their study on interdisciplinarity reported that interviewees spoke of the overarching pre-eminence of their own disciplines.

> All researchers referred repeatedly to issues with the University's faculty structure and excellence-based rationale, and all highlighted that the problem of publishing is acute. The pressure of the ERA [Excellence in Research for Australia] is unremitting and interdisciplinary work tends not to be associated with the highest impact journals (Bolitho & McDonnell, 2010, p. 5).

Newton (2010) argues that interdisciplinary research is hampered, not just by faculty structures resulting in, difficult to negotiate, social, political and financial divisions, but also by epistemological gaps. Conversations across discipline boundaries can be sites of confusion, blind spots and misinterpretation with embedded assumptions and knowledge getting in the way of communication (Wagner, 1993).

There is, however, an increasing acceptance that complex problems require transdisciplinary solutions and professional practice within the built and natural environments recognises the limitations of 'siloed' professional knowledge. Addressing issues such as global warming, urbanisation, accommodating ageing populations and poverty and starvation due to land degradation requires transdisciplinary collaboration.

Even smaller projects within the built environment normally require a complex negotiation between multiple professionals in order to be turned from a design idea into a built reality (Buchanan, 1992). To that end, the last decade or so has seen an increase in what might broadly be called transdisciplinary degrees. While there remains a good deal of contestation about the efficacy of such degrees amongst both employers (Shellenbarges, 2010) and academics (Berndtson, 2013), there is an apparent zeitgeist particularly in courses that deal with the natural, shaped and built environments (Winner & Champion, 2012; Tress, van der Valk & Fry, 2003) which sees transdisciplinary collaboration as increasingly inevitable.

Reflecting the circumjacent society, the University of Melbourne was the first in Australia to restructure its undergraduate degree programs as a small number of generalist degrees, each of which could lead to a range of postgraduate programs. Marketed by the University as the 'Next Generation' degree structure, it is more widely known as the 'Melbourne Model' (Devlin, 2008; Devlin & Davies, 2007). From 2012, the University of Western Australia likewise also transformed its degree structures.

The University of Melbourne's original restructuring proposal had only two undergraduate degrees – Arts and Science – but by the time the new structure was implemented in 2008 that number had, for pragmatic reasons, more than doubled. Nonetheless it was a radical shift: nearly one hundred undergraduate degrees were compressed into five: arts, biomedicine, commerce, environments, and science with four further specialist degrees remaining: agriculture, fine arts, music and oral health. Of relevance to the process of curricular development is that the model anticipated the main undergraduate degrees would be broad-based and interdisciplinary, designed to produce well-rounded graduates capable of both employment and further study.

The Bachelor of Environments

The Bachelor of Environments made the largest break with the traditional degree structure. While arts, science, commerce and even biomedicine are familiar entities to potential students, the Bachelor of Environments was an unusual grouping of disciplines from a seemingly disparate range of faculties, which may go some way to explaining why both anecdotal and survey evidence suggest that it was the least clearly understood of the undergraduate degrees. Often confused with environmentalism rather than the natural, the shaped and the built environments, there appeared to be a need to clearly articulate how and why its disciplinary majors of architecture, civil systems, construction, environmental engineering systems, environmental geographies, politics and culture, environmental science, geomatics, landscape architecture, landscape management, property and urban design and planning were gathered into a single program. One way in which the disparate disciplinary majors of the degree were to be made into a coherent and cohesive whole was to start with compulsory common core subjects, in which the philosophy and intent of the degree would be made clear to students.

According to the *Bachelor of Environments Report of First Year* Working Group (2006), the first year of the Bachelor of Environments was initially conceived as having two compulsory common core 'Environments' subjects: Natural and Reshaping, and four electives chosen from mapping, constructing, designing, governing and urban. To complete the first year of the degree, the remaining two subjects of the eight taken by first year students were to be 'breadth' subjects, i.e., subjects from other degrees. In essence this structure precluded majors from introducing disciplinary knowledge until second year, ensuring common breadth among all students. The degree began in 2008 with basically this structure. As is usual, the course was subject to on-going quality assurance and review processes.

The course review process

Review 1

The Bachelor of Environments was reviewed in 2009, with a focus on the first year of the degree. The review was led by three academics representing three of the four faculties teaching into the degree. It noted a perception amongst students, and academics teaching the later years, that first year subjects were largely irrelevant to their majors, which seemed to indicate that students were primarily concerned with their chosen major without understanding that the degree's breadth was intended to provide them with cognate skills and knowledge that complemented their major.

According to the *Report of the Bachelor of Environments Report of First Year* (2009), the panel recommended, among other things, that:

1. The first year of the degree should consist of one core subject, five electives and two breadth subjects.
2. Reshaping Environments should be developed as the sole core subject of the degree. It should be taught only (or primarily, depending on mid-year entries and repeats) in the first semester to capture the majority of students as they arrive at the university (p. 8).

These recommendations were not enacted, and the program continued unchanged with two compulsory common cores. That no changes were made at this time may seem surprising given the extent of feedback from the many stakeholders involved. Changes which have financial and pedagogical implications are difficult to negotiate through consensus and, at that time, it was decided keep the degree unchanged.

Review 2

The degree was internally reviewed for a second time in 2011. Reflecting on three years of operation, the report noted that the degree had seen a 45 per cent growth in student numbers since its inception, attracting both local and international students. It noted that nearly half of enrolled students had nominated architecture as their preferred major. It again noted a perception amongst students that first year subjects were irrelevant to second and third year study. Significantly, the report also again noted that no discernible cohesion among the first year subjects had been achieved.

The *Bachelor of Environments Curriculum Review Preliminary Report* (October 2011) suggested that the two compulsory common core subjects be amalgamated into one called Into Environments which was to be 'an impressive and highly stimulating portal subject to the degree' to be 'taught by authoritative, leading academics in relevant disciplines' and 'highly relevant, topical and sufficiently exciting to be a "must-do" subject' (p. 19). The reason for proposing a single compulsory common core subject was that the 'panel could not identify a subject that introduces the degree program to articulate the interdisciplinarity of all the first year subjects and their relationships to the subsequent majors' (p. 19). However, by the time the *Bachelor of Environments Curriculum Review Final Report* was presented in November 2011, the recommendation for a single core subject was removed, as a result of pressure from academic entities that stood to lose substantial intellectual and financial involvement in the degree if their input into the first year program was reduced. Instead the Final Report unexpectedly proposed adding the new subject Into Environments as a third compulsory common core subject to be taught alongside Reshaping and Natural Environments.

Further over-riding the initial recommendations, the proposed new subject, to be called Into Environments, was rejected in favour of an existing subject, Urban Environments, which became the third compulsory common core subject in 2013. This was a logistically easy change to accommodate as 80 per cent of students were already electing to take Urban Environments. According to student feedback the change did little to overcome the persistent perceptions that the degree lacked cohesion; that first year was fundamentally irrelevant to second and third years and that the common cores did not adequately prepare students for progress in the degree, regardless of which major they chose.

Review 3

A third review of the degree was conducted in 2013 (Bachelor of Environments Course Review Report, 2013) as part of a normal cycle of university-led review of undergraduate degrees. Rather than again being conducted by staff from within the faculties involved, the review was instigated by the University's Provost and chaired by a deputy vice-chancellor. In brief, the report again recognised the difficulties and recommended the development and articulation of a shared and cohesive vision for the degree; that the number of majors be reduced, and more by implication than decree, that the number of compulsory subjects be reduced.

The response to this review was significantly different from that to the previous two. With it effectively confirming the findings of the first two internal reviews, the Provost proactively encouraged the participants to overcome the stumbling blocks that were hindering changes and to that end proposed a development structure of two parallel 'discussions', one dealing with the natural environment and the other dealing with the built environments: the Dean of Science was invited to lead the natural environment review and the Dean of Architecture, Building and Planning to lead the built environment review with Engineering involved in both discussions. The intention was to merge the discussions at a later stage. Although the Provost, Deputy Vice-Chancellor (Academic) and custodial Dean were in agreement that changes were needed to improve the student experience of the Bachelor of Environments, this divided structure was adopted for strategic reasons to enable the Faculty of Science to focus on finding solutions to increase the number of students selecting physical sciences in preference to the biological sciences. As degrees have no quotas for their majors, science students have been tending to select majors that lead to medical professions.

In essence all three reviews highlighted areas for improvement particularly around clarity of purpose. One further administrative factor needs to be identified before an analysis of the change process can be accurately presented. By the middle of second year students have chosen one of ten majors. There are no quotas so students

are free to choose whichever major they prefer offered by three faculties – the Faculty of Architecture Building and Planning, the Faculty of Engineering and the Faculty of Science. Based on 2012 figures, 10 per cent elected the three majors currently led by Science and nearly 14 per cent selected Engineering majors. Three quarters selected majors offered by Architecture, Building and Planning (Architecture 45 per cent; Property 12 per cent, Urban Design and Planning 8 per cent). This is not surprising given students can choose pathways into the engineering and science majors through other degrees whereas the five majors offered by Architecture, Building and Planning can only be taken in the Bachelor of Environments.

What is perhaps surprising is that Architecture, Building and Planning academics were responsible for less than 10 per cent of the original two core subjects increasing to 25 per cent when three first year subjects became core. This imbalance partially explains student concerns regarding first year. In plain terms, when the Bachelor of Environments was instigated, academics from the Faculty of Architecture, Building and Planning were generally uninterested in taking up the coordination of first year core subjects. As a result, the core subjects have been primarily taught by staff from those of the degree's discipline majors that attract fewest students. In 2013, staff from disciplines that collectively accounted for around 10 per cent of the elected majors taught 65 per cent of the three required first year cohort. With over 2,000 students in the degree, the funding flows from student loads are substantial and any disturbance to the status quo is likely to lead to a significant reduction in income for some faculties and an increase for others.

In summary, the changes recommended by the University were based on pedagogic grounds, but could only be made manifest with significant impact to income distribution between faculties. The decision to separate the change process into a built environment stream and a natural environment stream helped (whether intentionally or accidentally) to ensure discussions continued to focus on curriculum and learning until an appropriate level of cohesion and clarity was reached.

Process and analysis

Institutional change is generally considered to occur in stages (Kezar & Eckel, 2002; Prochaska *et al.*, 2001; Prochaska, 2000). While there is ongoing disagreement about the exact number involved, at least three stages are discernible in the process (Kezar & Lester, 2009; Kezar & Elrod, 2012). The first stage, 'Mobilisation', is fundamentally a preparatory stage during which the need for change is articulated, support for change is mobilised and leadership functions in the change process are assigned. The second stage, 'Implementation', presents the change to the environment, seeking in situ support, gathering resources and suggesting restructured workflows. In the third stage, 'Institutionalisation', the change is normalised and integrated into the value system and culture of the organisation.

As outlined above, during the mobilisation stage the need for change was articulated in the context of the reviews and student commentary; leadership functions were assigned and support was garnered. However, agreement on the nature of the change was not reached. The draft *Project Plan for the Implementation of the 2013 Bachelor of Environments Review* (Huppatz, 2014) included amongst its goals 'reducing the number of core subjects', (Huppatz, 2014; p. 1). More specifically, another internal document, B.Envs Curriculum review – Discussion Paper, produced by the Bachelor of Environments Reference Group recommended the introduction of 'one foundation subject that all students undertake in their first semester instead of three required subjects across the first year' (Recommendation 4a). It described the subject in some detail:

> Students in the degree would undertake one 12.5 point compulsory foundation subject in the first semester. In addition to interdisciplinary academic content, the foundation subject will contain material relating to academic skills that will assist students in the transition from high school to university. (B.Envs Discussion Paper, p. 3)

The reasoning for the change is primarily pedagogy-based, both internal to the subject and in terms of the subject contributing to the whole degree. To make that clear, the paper goes on to state that the 'change to one foundation subject will free up elective options of the students' (p. 4) and argues that the consequent room in the first year of the degree would allow more disciplinary major input. The suggestion aims to address student feedback that indicated a perceived lack of academic relevance of the first year.

The paper follows the Built Environment stream of the process, which comprised subjects delivered by the Faculty of Architecture, Building and Planning and the Faculty of Engineering. In the first stage of the process, disciplinary experts and stakeholders involved in the degree were consulted. Their opinions were amalgamated into a discussion paper which was then debated and refined over a series of Steering Group meetings attended

by disciplinary leaders for each major. These meetings were designed to canvas opinion, amalgamate expertise and consolidate a purposeful progression to the manifestation of the agreed change. The evolving contributions were documented and discussed at the meetings, and consequent resolutions brought back to departments and schools, to be endorsed at subsequent meetings. In general terms, this is in Prochaska's terminology the Implementation stage.

Meeting 1/14 notes item 5a records that the recommendation to 'introduce one foundation subject that all students will undertake in their first semester instead of three required subjects across a year' was endorsed. Further definition of the subject was also suggested:

> … the core first year subject might use the city of Melbourne as a case study in order to introduce students to the big issues within our built, social, natural and virtual environments. The subject would help students understand the nature of each of the majors and how disciplines collaborate within industry. The subject would also introduce students to academic life and study.

The notes were ratified as an accurate record at Meeting 2/14. The notes from the second meeting record the Engineering Working Group questioning the timetable for the change; challenging the directive from the Provost that the change be implemented in time for the next academic year.

Meeting 3/14 notes record that the only item concerning the introduction of a single common core foundation subject, tentatively titled Making Melbourne, was that teaching into it will need to be 'negotiated across the faculties perhaps in rough proportion to majors. For example, teaching income and input might be split 20 per cent Science (two majors), 60 per cent APB [Architecture, Building and Planning] (five majors) and 20 per cent MSE [Melbourne School of Engineering] (two majors)' assuming the number of majors would drop from ten to nine. That such level of detail is recorded without contestation indicates that both parties – Architecture, Building and Planning and Engineering – had reached agreement that the change to one foundation subject would go ahead.

The approach to managing the change process seemed to have been proven effective and efficient for this particular sub-process of the broader process. However, the decision to split the process into two streams allowed two conflicting resolutions to develop, which ultimately were only reconciled through compromise at the decanal level of administration.

As noted by de la Harpe & Thomas (2009), securing fundamental change across diverse disciplinary approaches and pedagogical beliefs is a very challenging process because it relies heavily on participating academics being willing and able to do the work required in the context of their disciplines. Often the focus is placed on strategic change rather than pedagogic change (Blackmore & Kandiko, 2012), as was observed in the current process. Trowler (1998) argues that curriculum change is inevitably value-laden and in the case of interdisciplinary curriculum change, the process is likely to be, in Ball's (2003) terminology, 'ontologically' challenging. Hence it is extremely important to the process that participants understand and communicate the rationale for it (James & McPhee, 2012; Sykes *et al.*, 2012).

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Discussion

It was noticeable that most if not all participants used their discipline's practical and theoretical knowledge as primary references. Architects referred to the profession of architecture, engineers to the profession of engineering and so on. Until prompted, and often not even then, participants did not refer to the disciplinary knowledge of the profession of teaching. Yet each one of the participants was in terms of a profession, primarily a teaching academic rather than an architect, engineer or planner. The universal self-conceptualisation of the participants as professionals and disciplinary leaders rather than educators is understandable, and perhaps justifiable, as most see their role as preparing their students for work after study, as well as disconcerting in that less consideration was initially given to the role of the proposed new subject in the process of learning.

In the higher education sector, professional identification with a discipline other than Education can lead to barriers in adopting a collaborative approach to change (Clark, 2011). Rather than considering the pedagogic benefit of the proposed change, academics tend to focus on potential benefit and detriment to their individual disciplines, faculties, departments

or themselves (Amey & Brown, 2004; Clark, 2004). Nonetheless, the amount and depth of resistance was greater than was expected, and to some degree the resolution of a number of contentious issues was achieved by way of direct intervention by the University's top level of administration, specifically the Provost and the Dean of the custodial faculty, rather than through the consultation process having reached consensus. Three broad factors were identified. First, participants tended to see the proposed change as 'territorial', with a distinct possibility of loss. Second, participants referred to their fields of study/practice rather than pedagogy for argumentation. Third, reasoning based on pedagogy, both in terms of principles and research, was observed only after specific prompting.

Pedagogically the indecision reflects uncertainty about what the purpose of core is. Institutional records indicate a variety of conceptualisations of what compulsory common core subjects ought to achieve, ranging from remediating an assumed lack of capacity amongst commencing students to subverting an assumed dichotomy between natural and reshaped environments. At the heart of the uncertainty seems to be a lack of definition as to whether the transdisciplinarity championed by the degree is to be attained deductively or inductively.

In summary, although the terms of reference for the change process were predominantly pedagogy-based, the argumentation throughout the process was predominantly politically orientated. The decision to fragment and iteratively seek more nuanced input in order to reach consensus among the Built Environment discipline leaders was demonstrably successful even if that consensus subsequently proved to be at odds with the recommendations reached by discipline leaders within the Natural Environments. Consequently, the final resolution between both streams was resolved at Provost level in consultation with the participating Deans.

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