

The great universities of the world are, to a large extent, defined in the public imagination by their physical form: when people think of a university, they usually think of a distinctive place, rather than about, say, the teaching or the research that might go on there. This is understandable, both because universities usually stay rooted to the same spot over the centuries and because their physical forms may send powerful messages about the kind of places they are.

The physical form of the university, and how the spaces within it become transformed by their users into places which hold meanings for them, has become of increased interest recently from both academic and institutional management perspectives when trying to understand more about how universities work, and how they may be made more effective. Yet, despite its seemingly obvious importance, the available literature on space and place in higher education internationally is scant when compared to that dealing with, say, teaching and learning methods, or with evaluating quality or many other topics.

This book brings together a range of academic and professional perspectives on university spaces and places, and shows how technical matters of building design, maintenance and use interact with academic considerations on the goals of the university. Space issues are located at an intellectual crossroads, where widely differing conceptual and professional perspectives meet and need to be integrated, and this important book brings together perspectives from around the world to show design and use issues are changing higher education.

Globally, higher education is being required to do more – to teach more students, to be better at research, to engage more with business and communities and many other things. These pressures are leading universities to reconsider their management processes, as well as their academic structures: an often-quoted saying is that 'we make our buildings, and afterwards they make us'. At a time when universities and colleges are seeking competitive advantages, ideas and analysis about space design and use are much needed and will be well-received.

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The Physical University

Contours of space and place
in higher education

The Physical University

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Decoding University Ideals by Reading Campuses

Exploring Beyond the Democratic Mass University

PAUL BENNEWORTH

Introduction

How is the institution of the university evolving? There is a widespread sense among academics and managers that universities are changing, but there is little consensus about the particular form that this change takes (inter alia Barnett 2003, 2011; Delanty 2002). Although there is agreement that 'modernisation' and the rise of new public management have profoundly influenced the nature of universities, it has proved much harder to interpret what this means in the abstract. This chapter attempts to contribute to this debate by using the physical forms of universities as expressions of their underlying ideas. By exploring the campuses of two universities planned around a very strong ideal of an earlier age (the democratic university), we contribute to these debates about the changing idea of the university.

The physical form of a university is partly determined by the unique nature of the institution of university, reliant on both independence from direct material concerns, but at the same time dependent on sponsors willing to tolerate that independence. Universities have always, in their physical form, reflected the relationship back to the original sponsors. Early medieval universities resembled spiritual communities because of their sponsorship by the church, and their use of church assets to create semi-autonomous communities of scholars able to educate an expanding priesthood (Rüegg 1992). At the same time, universities have evolved in response to societal evolution and the changing nature of societal demands placed upon them. Bender (1988) traces at length the urbanisation of the university as cities became an organising principle of European societies. Each new pressure has both led to the creation of new institutional forms, but at the same time led to changing physical forms of existing universities.

Late capitalist society is immensely complex, and it is hard to discern at this point a 'grand narrative' for the changes currently under way, in contrast to the

societal upheavals of the 1960s. Universities are now subject to so many different societal pressures that it is hard to discern a narrative to the changing idea of a university. There have been many attempts – primarily coming from within institutions themselves – to define new kinds of universities in response to their own experienced pressures. But these purposefully defined institutional forms – the entrepreneurial university, the virtual university, the enterprising university, the engaged university – all carry a strongly normative sense of desirability rather than representing a considered analysis of how universities have evolved in response to this complex institutional environment.

This chapter approaches this challenge from the opposite direction, looking at the effects that all these pressures have had on the physical form of the university. The central question this chapter explores is, 'what explains the physical evolution of two 1960s campus universities in the last half-century?'. Studying how these university campuses have evolved provides a more measured understanding of how these new pressures are rebuilding universities, both visibly in their physical form, but also invisibly as a new form of organisation in late capitalism. Unsurprisingly, one can observe the intensification of the university, with a broader and more diverse internal community, growing closer to and interdependent with its host external communities and society and increasingly important wider network linkages: the university can be regarded as evolving into a form of societal 'entrepôt'. While the thrust of literature dealing with modernisation stresses the autonomy of universities as independent atomistic institutions, this chapter argues that universities are evolving into institutions more interwoven with the wider social fabric. This is used to speculate that a new model of university governance beyond new public management is required that takes account of the more collective and socialised uses of knowledge in society.

The Campus and the Idea of a University

This chapter seeks to understand the changing idea behind a university by interpreting its changing spatial form. In this chapter, we refer to this with the term 'campus', the estate belonging to an institution of higher education through which its core functions – teaching, research and engagement – are discharged. Central to our argument is that any kind of configuration of buildings can be understood in terms of two key characteristics, their function and their form. A campus is organised to facilitate particular activities – learning is a socialised process, and so university buildings may provide shared learning spaces. Likewise, their spatial arrangement will also constrain what can be achieved in terms of this function, and they will be managed to ensure that they can discharge this function. But a university campus will also have a

particular form, a configuration, an aesthetic or appearance that people experience and relate to in their experience of the university.

Studying form provides insights into function – geographers study scratches on rocks to obtain insights into glacial processes, and the compactness of settlements gives an indication of immediate reliance of residents on one another, for example in response to an external threat. Our argument in this chapter is that the function of the university has become so complex that looking at form provides a way of simplifying this picture. A careful reading of universities' form provides insights into their functions, and a careful reading of the evolution of their form provides insights into their evolving functions. In this chapter, we argue that this also provides an insight into the changing idea of a university.

The Campus as a Spatial Fix Between Universality and Particularity

The first step in our argument is that the campus of the university is sensitive to outside pressures: changing societal demands and expectations on universities result in a changing physical form, from which those changing – and invisible – social demands can be 'read off' and interpreted. Universities have, at their heart, a sponsor dependence that makes them dependent on securing the support of patrons:

No modern university has ever lived entirely from the sale of its services. Universities have received subsidies from the church, the state, and private philanthropists as individuals and as foundations.

(Shils 1988: 210)

Likewise, Biggar observes:

Right from their medieval beginnings, [universities] have served private purposes and practical public purposes as well as the sheer *amor scientiae* ['knowledge for knowledge's sake'] . . . popes and bishops needed educated pastors and they and kings needed educated administrators and lawyers capable of developing and embedding national systems.

(Biggar 2010: 77)

Universities have emerged because they are a response to a particular need of those sponsoring them, and that is for a universalist form of knowledge. Biggar's point was that the best way of training pastors, administrators and lawyers was in providing a very generalist form of education, initially derived from a classical knowledge canon. Universities were not established to train lawyers – rather, there was an appreciation that this canonical classical

The spatial form of universities reflects the outcome of the struggle between sponsor dependence and autonomy to create universalist knowledge. Therefore, it is possible to see, in time, a co-evolution between the physical form of the university, related to the discharge of its functions towards its sponsors, and the 'idea' of a university. This is related to a historical evolution of the institution of university, with each substantive change in the organisation of society leading to parallel changes in the nature of universities. When the Western European university emerged between the eleventh and thirteenth centuries, there was not a sharp distinction made between spiritual and temporal powers: the university existed at the interstices of that power, using ecclesiastical privileges to support scholarly communities able to educate elites for both these estates. The physical form of the university in this period was indistinguishable from the religious communities within which these universities were first incubated. The idea of a university acquired connotations associated with cloistered communities: removed from society, but with a societal role, delivered largely independently because that is commonly how independent communities outside noble courts were organised.

The next substantial shifts in societal organisation were the emergence of distinct temporal powers and cities, changing universities' sponsors' interests and dependencies. The emergence of 'free cities' (cities whose citizens were not tied through feudal obligations to their lords' lands) created a challenge for feudal lords seeking to capture via taxation the benefits of commerce (Ferruolo 1988). The university evolved in this period as an organisation away from its close ties to the established church, but the spatial form of the cloister continued as a form of organisation. Cities, with concentrations of wealth, potential students and sponsors provided a fertile ground for the establishment and expansion of new universities (Ernste 2007). Locating the university in the city changed the dynamic of university-society spatial relations. The University of Leuven was created as one of the first 'urban universities', supported in its creation by wool merchants who sought a new impulse to develop economic activities as the centre of gravity of their lucrative trade shifted northwards (Toback 2009).

The next main evolution in society was the university's emergence as a means of creating and reproducing elite cultures. Grafton (1988) charts the emergence of the University of Leiden created as part of the independence campaign against Spanish occupation by the northern Netherlands. This role acquired a distinctly nationalistic connotation after 1648, as universities became an increasingly common part of the repertoire of post-Westphalian nation-builders, creating universities as a means of supporting a strong national culture along with language standardisation (often through Bible Editions), the raising of professional armies and the standardisation of national canonical

education equipped students with a set of reasoning and judgement-forming skills that equipped them to be most effective in their tasks. Collini (2011) makes the point very eloquently that it would clearly be cheaper to set up vocational educational institutions, but the reason that the institution of university had emerged and then thrived was that the university as an institutional form was a means to partly insulate academics and teachers from patrons' direct pressures to be useful.

From its creation, the university as a social form emerged because it was capable of balancing between these two pressures. First, universities were capable of maintaining a position at a degree removed from society to avoid the pressures of becoming too close to sponsors, and therefore losing the universalism that sponsors actually valued. Second, universities were capable of maintaining sufficient connections into societies to ensure that they did not retreat into mysticism and self-referentiality. Collini (2011) points out that the most successful technical vocational institutions have been those that have evolved towards the universalist knowledge ideals of the university.

And Bender (1988) argues that this is why the campus form evolved what might be considered as a spatial fix that helps to embed this dualistic quality – the campus is a place that is, on the one hand, semi-protected from sponsor pressure but still close enough for social dynamics to be visible and perceptible to those in the university. Thus, our argument is that the spatial form of the campus can be read as emerging between two sets of tensions: on the one hand, providing sufficient connections into host societies, but at the same time, mediating and regulating these tensions.

Social Purposes and Spatial Forms – The Historical Evolution of the University

The campus provided the university with a spatial fix by giving an impermanent and shifting community of learning a physical form and permanent presence in a particular place. The functional demands of sponsors affected the ways that universities were able to organise their activities, their form. But it was the form rather than the functions that had an enduring permanence to them. While graduates and teachers might move, university buildings tended not to change. The result was that the buildings began to embody the idea of a university, and it has become difficult to think about particular kinds of universities without thinking about their spatial form: in the words of Churchill, 'We shape our buildings, and afterwards our buildings shape us'. When one thinks of University College London or the University of California at Berkeley, one immediately thinks of a building or campus, such as the Wilkins Building or the Campanile.

education (Harvie 1994). The post-Westphalian universities show a subtle evolution in their spatial form from being part of the 'city as a crossroads' to being part of the 'city as an assemblage and demonstration of temporal power'. Universities from this period, such as Lund and Copenhagen, started to resemble a royal court and palaces, rather than the more traditional cloisters.

The next main change in society was what Bauman described as the shift to the modern, progressive society, with the institutionalisation of manufacturing capitalism, and its capacity for generating efficiencies through innovations and improvement in a division of labour. This shift marked one of the great challenges for universities: in the UK, the ancient universities of Scotland and England failed in the late eighteenth century to respond adequately to the demands of industry, and were partly supplanted in Scotland by learned societies (Phillipson 1974, 1988). The saviour of the idea of the university from obsolescence was a series of innovations in Berlin, which institutionalised the idea of universities composed of professorial research groups also teaching students (McClelland 1988). In the UK, the relative lack of organisation of industrial capital slowed the response, but from the 1830s, led by University College London, a new set of technological universities, with innovative chairs in subjects such as engineering, began to respond to these challenges. These new industrially-oriented institutions had, for the first time, the requirement for a radically different form of space, the laboratory, both for the new research mission but also for the education of students, and this increased the space required by a university, and hence its relationship with the city. The rise of new disciplines and research activities led to a differentiation of the university estate and the possibility of universities starting to comprise coherent districts within cities. With the rise of the Land Grant universities in the late nineteenth-century US, separate urban communities with spaces for living, recreation, teaching, research and business engagement emerged: the campus as we know it today.

The final set of societal changes came in Western Europe and America in the course of the twentieth century with an increasing democratisation of capitalist society. Universities became an engine for emancipation, in different ways in different times, initially about creating new kinds of elite, and later a mass democratic system. In the Netherlands, universities were part of the consociational pillar system whereby each of the main cultural groups in society – Socialist, Calvinist, Lutheran, Liberal and Catholic – developed their own social institutions such as schools, political parties, unions and even leisure organisations (Pellings 1997), and the role of the new Catholic universities (Tilburg and Nijmegen) was educating an elite class for the Catholic pillar. In 1960s Europe, in the wake of the May 1968 protests in France, there was a shift towards universities providing increasing individual access to the

Table 12.1 The evolution of the idea of a university and its physical form.

Social change	Sponsor	Novel spatial form of university	Exemplar of a university
Agricultural revolution	Reproducing religious administrators	Cloister (eleventh-century Italy)	Bologna (eleventh-century Italy)
Emergence of nobility	Educating loyal administrators	Independent ('free') cloister	Paris (twelfth-century France)
Urbanisation	Educated administrative elite to manage trade	The university as a marketplace at the city crossroads	Catholic University of Leuven (fifteenth century)
Sustaining national communities	Validating the state by imagining the nation	The university as an expression of power	Lund University (seventeenth century)
Creating technical elite	Creating a technical elite besides admin elite	The university as a factory	Humboldt University, Berlin
Promoting progress	Creating economically useful knowledge	The campus as a partner	Land Grant universities (nineteenth- to twentieth-century USA)
Supporting democracy	Creating non-traditional elites	The campus as a microcosm of democracy	Dutch Catholic universities (twentieth-century Netherlands)
Creating mass democratic societies	Educating Habermasian deliberative citizens	The campus as a model of democratic society	UK 'plate glass' universities of Robbin era

Source: Author, after Pinheiro et al. (2012)

opportunities to participate in a democratic society via education (Daalder and Shils 1982). The classic urban form of these institutions was to continue the trend for the campus as an integrated community, and to emphasise through the spatial form the equality of community members (cf. Ossa-Richardson, this volume).

These changes are summarised in Table 12.1, which shows how changing societal demands on universities was reflected in their physical form, which has changed throughout their history. The physical form of universities provides their spatial frame, and a starting point from which they evolve in response to these changing societal demands and contexts. University campuses are located on sites that are not isolated land parcels, but exist within a wider set of relationships to geographical systems, and there is a clear materiality here – those wider geography systems shape what emerges. But at the same time, the act of building a university on a site affects the configuration and connectivity of those geographical systems, both physical and human, much as the development of a city is shaped by its physical landscape, but over time the urban landscape is shaped by human activity. This can be categorised as a landscape dialectic – with human activities being shaped by, but also shaping, those landscapes. It is possible, for example, in the current fabric of the University of Oxford, to see a range of different styles in the different colleges and central buildings reflecting both their creation and their modification over time.

The Evolving University in a Late Modernity of Decentred Metanarratives

It has proven extremely difficult to identify a new ideal type for the university in the later modern period, although many forms have been put forward, in part related to the absence of a clear meta-narrative for understanding the direction of societal development in late modernity. One might relate to a process of individualisation and fragmentation of communities of citizens into individualised consumers as suggested by Beck's Risk Society thesis. But at the same time, the idea of a knowledge society offers the potential for mobilising new online and virtual communities that are capable of innovating, creating new knowledge and offering new societal capacity, creating a post-political citizenry without completely fragmenting them. Benneworth (2011) argues, more generally, that there are three kinds of societal changes that are pulling universities in multiple directions: the decline of party politics has created demands for new kinds of accountability; increasing technological uncertainty is challenging scientists' 'license to practice'; and citizens are demanding more voice in directions of scientific progress. Universities are subject to many

demands on their resources, and face many pressures to respond, what Enders and De Boer have referred to as 'mission stretch', and others have referred to as 'mission overload' (Culum *et al.* 2013; Damme 2009; Enders and Boer 2009; Jongbloed *et al.* 2008).

Universities are expected to contribute to a much wider domain of societal problems, problems that are themselves becoming more complex, requiring coordination through networks of stakeholders and knowledge producers. Governments are also pushing for increased efficiency in universities through competitive mechanisms, with growing student numbers and falling overall funding, while at the same time encouraging excellence and concentration of research. The very nature of knowledge production has changed as new communications technologies have shifted in nature from bilateral to collective and social, facilitating new kinds of collective learning, but at the same time challenging the privileged positions of universities and academic scholars in these knowledge creation activities (Ruitten and Boekema 2012).

Barnett (2011) identifies what he calls, after Wyatt (1990), the four future possibilities of universities: the liquid, authentic, ecological and therapeutic. Benneworth *et al.* (2010: 1615), likewise, note that:

Various authors suggested archetypal forms, from the entrepreneurial university (Clark 1998), through the virtual university (Cornford and Pollock 2002), the engaged university (Watson 2003), the ethical university (Garlick 2005) and the useful university (Goddard 2007).

It seems risky directly to tie the idea of a new kind of university to an overarching social change. This suggests that the late modern idea of a university, rather than produced by a wave of change, is being produced by the intersection of these various societal tensions, fault lines and complexities. This suggests that the ideal type of the late modern university will be an emergent property of the way that these tensions play out on existing institutions, and can be seen in new institutions that are created. The heuristic from the preceding section of a dialectic evolution between university and location provides a means for us to continue the table forward beyond the mass democratic university of Daalder and Shils (1982) and Delanty (2002).

Taking our notion that a close reading of spatial form can provide insights into function, and that function evolves partly in response to societal pressures, looking at spatial form can, by implication, provide some insights into changing societal pressures. That is what we do in this chapter: we take two campus universities whose spatial form at the time of building reflected the ideas of the democratic mass university, being campuses built on greenfield sites at a similar time (the early 1960s), and explore how these changing tensions have

been reflected in their built environment. This provides the means to ask three sequential and related questions:

- How much remains of the original idealism of the campus?
- Is there an obvious new organising logic visible in the spatial form of the campus?
- What does this suggest regarding the ideal type late modern university?

The Case Studies and Method

To answer these questions, we use case studies taken from two universities created in the early 1960s as part of deliberate government attempts to expand higher education, both in terms of student numbers, but also geographically, socially and in terms of subject coverage. Both the case studies presented were created as single-site campus universities in regions without a tradition of substantial higher education, offering new subjects, novel pedagogic approaches and offering a progressive social mix and experience. The choice of the case studies is, to some degree, serendipitous – during a period as a guest researcher at the University of Twente in the Netherlands, studying spin-off companies, I had a chance conversation with an architectural researcher, Peter Timmerman, concerning the architectural logic of the University of Twente (UT). This led to two co-publications specifically concerned with the architectural ideas behind the UT campus (Benneworth and Timmerman 2005; Timmerman and Benneworth 2006).

It was natural to ask the question whether there were wider lessons that could be drawn, and a set of potential comparator institutions were identified. RCUK Academic Fellowship Funding provided the opportunity to undertake a much smaller case study of one of these comparators, at Lancaster University in the UK, which involved a series of site visits and a limited number of interviews in 2007, and the opportunity to acquire a number of publications concerning the university's history. I continued to develop both case studies during this period, in part as a side effect of the work on university spin-offs and was greatly helped by Timmerman's own *magnum opus* regarding the campus form, *Architecture with a Capital A* (Timmerman 2011). The two case studies are therefore, to some degree, exploratory and stylised, attempting to set out the original intentions and ideals embodied in the plans, exploring how these were implemented in the first instance in practice, and how these have evolved over time.

This has been done through a largely secondary method: luckily, both universities sought to capture various moments in their history and produced substantive and well-researched volumes. The original spatial philosophies of the two campuses are well described in *Een Experiment in het Bos*

(‘An experiment in the woods’, Sorgdrager 1981) and *Quest for Innovation* (McClintock 1974). The current status quo has been described, in UT's case, through a series of publications that appeared in 2011 for the Golden Anniversary, including Timmerman (2011), De Boer and Drukker (2011) and Krijnsen (2011). Likewise, in 2011, Lancaster University published *Shaping the Future* (McClintock 2011), which updated her 1974 volume; this has been augmented with material from the ‘History of the university’ website, produced as part of the university's ‘History in the community’ course (Vickers and Edwards 2006). The material from the shift is drawn from a mix of interviews, site visits, master plans produced at the point of change, the Shepheard Epstein Hunter website (Lancaster University's architects) and from the ex-post explanations offered in the Golden Anniversary material outlined above.

The first university studied is the University of Twente (UT), in the eastern Netherlands. UT was created as the Technische Hogeschool Twente (THT) in 1961 after lobbying at the national level by a group of regional industrialists. UT was created to provide technical skills in the growing engineering sector, which the two existing technical universities at Delft and Eindhoven had not been able to provide. The town of Enschede was chosen for the location because the municipality owned a well-suited site, the former country estate of a textile baron that had been expropriated because of his wartime collaboration (Gellekink 2001). The park location provided the ideal setting for what would be the first proper Dutch campus university, including substantial on-site residential accommodation. The university was created around a cluster of technical faculties, and attempted to offer an innovative curriculum, including a common first year for all students, and a short-cycle (three-year) technical degree, against a Dutch norm of five years (Sorgdrager 1981). Its creators were wary of the effects of bringing students to a strongly working-class town, and created the campus in a way that emphasised its isolation from the city, as a self-contained community at the city's edge. The main change in its campus form was that the estate reached the end of its planned 40-year life in 2002, and the university was ordered by the mayor in 1998 to completely rebuild the campus within 10 years for public safety reasons. The university has since used the rebuilding to integrate the campus into the neighbouring Business and Science Park to create a single knowledge space, Kennispark.

The second university studied is Lancaster University, in north-west England. Lancaster University was created at a time of expansion in the UK's higher education system at the behest of the University Grants Committee (McClintock 1974). Although created around the time of the 1963 Robbins report into higher education, and sometimes referred to as a Robbins-era expansion university, the decision to create a university for Lancashire predates the Robbins Committee. Lancaster was preferred over the other potential location, Blackpool, because Blackpool's most obvious land parcel was already

earmarked for development with a substantial entertainment complex, and Lancaster had the agreement of the owners of the Bailrigg Mansion to sell their estate for the development of a new campus. Lancaster was created as an experimental institution, with all students initially studying three subjects in their first year, including a science and arts subject, prior to later specialisation. A further innovation was the campus, whose original idea was – given the relief of the Bailrigg site – to have the characteristics of a Mediterranean hill village: compact, closed to the outside (and the prevailing westerly winds), with high functional integration, maximising internal interaction. The campus was developed with the idea of organising students into ‘colleges’ where they would be accommodated, and could walk within 15 minutes to any point of the campus. The main change to the campus came in the course of the 1990s, when Lancaster sought to expand, and therefore had to find a way to develop beyond the ‘village wall’ of the internal ring road. The university took the opportunity to create an internal functional differentiation on the new site, creating a new accommodation zone and converting original buildings towards academic functions.

The Spatial Organisation of Drienerlo and Bailrigg

‘The Experiment in the Forest’: UT as a Cloistered Academic Environment

The University of Twente was commissioned as a university with the power to experiment in a range of areas, from degree structure to organisation, through a 10-year derogation from the relevant clauses of the national Higher Education Law (Sorgdrager 1981). Arguably the most important of the experiments was the fact that the university was to be the Netherlands’ first campus university, which created an opportunity to offer a distinctive academic formation process. Student housing at that point in the Netherlands was organised through fraternities (‘student corps’), which, while providing an intense and formative experience, were also elitist and exclusive. The campus sought to democratise the benefits of corps life and make it accessible to all students, so that their experience would be both an educational and a socialising one (cf. Grit 2000). At the same time, the university used its experimental powers to make it compulsory for all students to spend their first two years on campus. Sorgdrager notes that university policymakers were aware of the risk that this raised, that isolation would breed insularity, but regarded it as a risk to be dealt with emergently rather than one to be designed-out of the campus. The development of the campus was placed in the hands of two architects, Van Embden and Van Tije, who chose, for a triple concentration, the concentration of activities on a single campus, functional concentration within three zones,

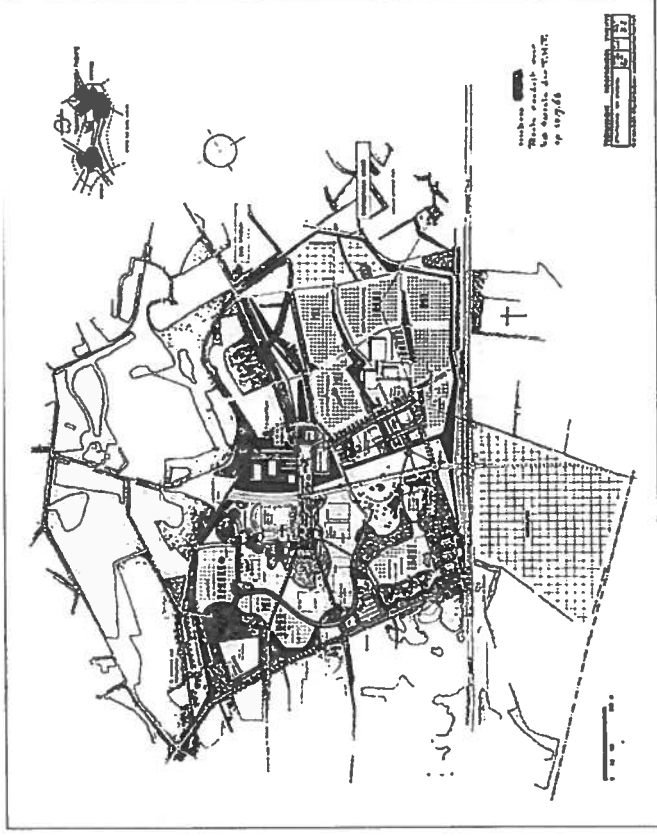


Figure 12.1 The original plans for the development of the Drienerlo site.

and faculty concentration within single tower block buildings (Timmerman 2011). Their plan was to create a campus to be eventually occupied by 4,000 students and 100 professors, with considerable numbers of the university community as campus residents.

The spatial form of the campus reflected the landscape character of the Drienerlo estate, to the east primarily farmlands and to the west the stately home and gardens. The campus was to be planned with a function division reflecting this: the functionality of the eastern side would provide a suitable seat for the professional community functions (the academic faculties), and the landscaped parkland on the western side suitable for residential areas. These would be linked by a central axis providing supporting services such as the library, shops, sports and cultural facilities (Groenendijk and Vollaard 2006; Sorgdrager 1981: 80). Housing in the western area was to be provided both for staff (houses) and students (flats), both out of the abstract desire to create an inward-looking community, as well as for the practical reason that there was very limited housing close to Enschede that would be acceptable to professors migrating from the west of the Netherlands. Academic spaces in the eastern campus were to be developed as separate buildings for each faculty, mixing classroom, lab and office space in one building, and with substantial

spacing between the buildings to recreate an element of 'park life'. A campus boulevard was created around a sports centre, canteen area and library in the central zone. A flyover was created along the south side of the campus to separate it from the north-western edge of the city of Enschede, while the northern border was formed by a reservoir network landscaped with forests.

Bailrigg and the Quest for Innovation: Lancaster as a Miniature Democratic Community

Lancaster University was created in the early 1960s as a response to an anticipated expansion in higher education, not only in the number of students, but also the types, their backgrounds, and the physical location of these universities (cf. Ossa-Richardson, this volume). Lancaster University opened in the city centre while the campus at the Bailrigg site was developed in the early 1960s. The site was naturally isolated from Lancaster, at a distance of some 5 kilometres, and bounded to the east by the main west coast motorway, the M6, and on its other sides by farmland. Its development was placed in the hands of the architect Shepheard Epstein (having a single site architect was a Ministry recommendation), who, according to McClintock (1974), proposed the essence of their design at their interview, the single spine plan, which formed the basis for the master plan. Shepheard Epstein's architectural principle for the site was to create a single coherent community; a key decision was to prohibit vehicular traffic from the site within a central ring road. The relief of the site, on a west-facing hill, suggested that the central spine arrangement should run from north to south, maximising the use of natural light while avoiding substantial height differences along the site, which would necessitate terracing, thereby breaking up natural circulation and interaction within the site. The plan also envisaged a cloistered design providing significant shelter from the elements, with the central spine being planned so it was possible to move between any two buildings within 10 minutes without being exposed to rain.

Within this idea of a cloistered, closed and isolated campus, there were two additional levels of integration provided, intended to help develop well-rounded students, comfortable in the social worlds of arts and sciences. The first was the adoption of the college system, which provided a layer between the university and the student, additional to the department. Colleges were halls of residence that mixed students from different departments, but also provided social opportunities and pastoral care via academic tutors. The intention was that these colleges would be the natural locus for student socialising, and preclude the risk that subject-based departments would be that basis, replicating the feared divide between arts and sciences. The second integration was provided in the individual buildings, which would provide 'a fruit salad of functions' (Peter Epstein, quoted in Vickers and Edwards 2006), including

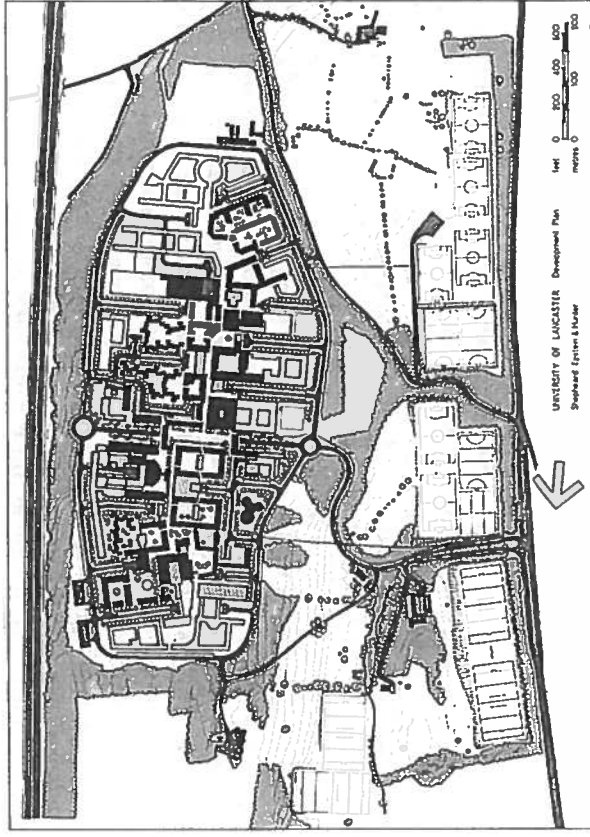


Figure 12.2 The original plans for the development of the Bailrigg site.

student residence, leisure and cultural facilities, teaching rooms, and office space. Sports facilities were to be provided at the western side of the campus, where the land was less even and unsuitable for building, separated from the core community area by general recreation land incorporating shelter belts, parkland gardens and courtyards (SHE website 2007, www.lancaster.ac.uk/unihistory).

Replanning the Democratic Campus in an Entrepreneurial Age

From Country Estate to Knowledge Campus: The Rise of Kennispark at UT

The original Van Embden and Van Tije master plan developed for the first 40 years of its life with a variety of modifications. In 1995, the university began a substantial renovation plan for its campus, the ownership of which had passed to the university from the government without corresponding resources. De Boer and Drukker (2011) document how the university came to a 10-year agreement with the municipality to completely renovate the campus by 2008, with a total estimated cost of around fl. 310 million (€150 million). The first step was the 2001 master plan revision (Hoogstad 2001a, 2001b), which abandoned the strict division lines in the campus, and intensified and integrated the professional buildings into an education and research area. However, these

plans were accelerated in 2002 when a fire destroyed half of the Cubicus building, forcing the university to hire space off campus to house the Social Sciences faculty. The question of campus redevelopment became a pressing issue for the university, and to find cost-sharing partners for the exercise, the university proposed to integrate the campus with the adjacent Business and Science Park, which had emerged beyond the viaduct (Benneworth and Hospers 2007; Benneworth *et al.* 2011). The 2001 spatial plan was recalibrated to plan the entire university campus and BSP as a single coherent entity, to be called Kennispark (Knowledge Park), a title that had emerged out of a series of late 1990s policy discussions.

The idea underpinning the first Kennispark master plan (2009) was to create a single functional integrated space stimulating interaction between its various elements. It was conceived of as a single space bringing two worlds together, business and science, to stimulate innovation and economic development, and with the concrete target of creating 10,000 new high-technology jobs by 2020 (cf. Benneworth *et al.* 2011). The focus on campus development shifted to upgrading the teaching buildings, creating a single teaching and research zone (called the O&O area, after the Dutch phrase Onderzoek en Onderwijs

meaning teaching and research), which physically connected a range of formerly separate teaching buildings and research laboratories. This was to be at the heart of a green crossroads, with its axes being the former flyover and the parkland area between the teaching and service campus areas. The southernmost campus building was to be developed as a business location (called the 'Gallery'). The flyover between the university and the business and science park was to be removed and made into a landscaped dual carriageway. Land reclaimed from the flyover was also to be developed with units where 'business could meet science', with the explicit intention of stimulating further innovation. The funds for these developments were to come not only from university capital investments, but also from local and regional government, as well as private real estate investors. Space already made available on campus for starting businesses was to be expanded within the laboratories, removing the strict functional distinction between research and entrepreneurship-building functions. Finally, the campus was to be rezoned as within the built-up area (affecting speed limits and parking in and around the Kennispark area).

*From Mediterranean Hill Village to Ivory Tower:
Lancaster's Revised Master Plan*

The master plan at Lancaster was revised in 1991 at a turning point in university policy, with a move towards a new massification. The early 1980s had been a difficult period for British universities, with budgets cut between 10 and 40 per cent, with student numbers frozen. Capital spend completely dried up in this period, but in 1986, with a reversal in government policy following the appointment of Kenneth Baker as Secretary of State, there were signs that universities, including Lancaster, could expand. The incoming vice-chancellor (Harry Hanham) decided in 1985 that the university should plan for a huge expansion, to encompass 20,000 students, and this would have impacts on the nature of the estate. Shephard Epstein were commissioned in 1991 to rework the master plan to allow for this expansion, by concentrating academic functions within the ring road, and creating a new accommodation area at the south side of the campus, which would form the new campus area, 'South West Campus'. This master plan therefore envisaged the introduction of a functional specialisation on campus between accommodation and academic facilities, alongside an expansion of the campus's overall spatial footprint.

Although the university never reached the anticipated target of 20,000 students, student numbers grew in this period relatively rapidly to 12,000, where they have stabilised. From 1991 to 1995, a large number of new building projects were begun inside the ring road, and as these new buildings came on stream, this led to the 'crisis of the spine', which was that, for 10 minutes every hour, the campus faced gridlock as much greater numbers tried to move

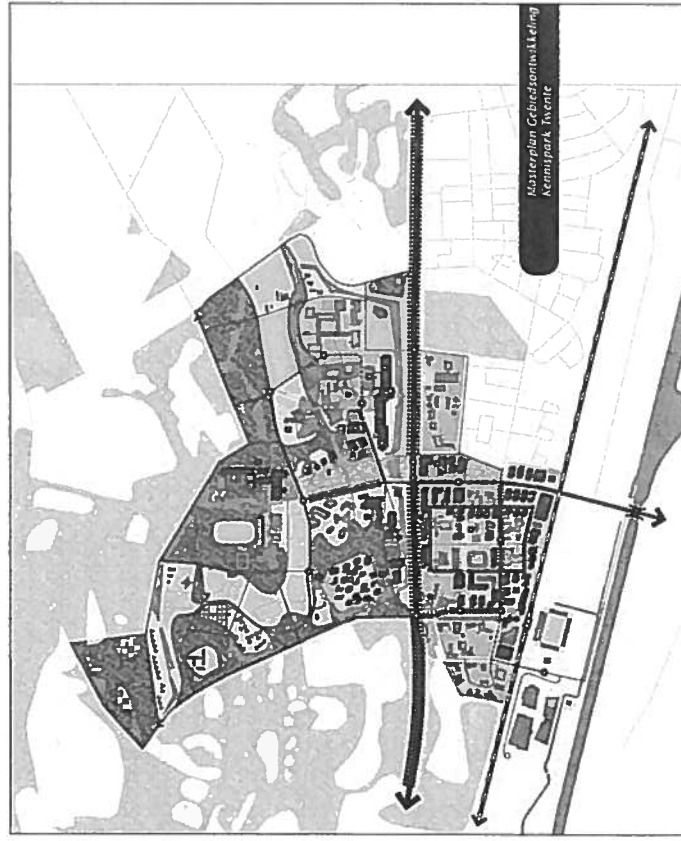


Figure 12.3 The master plan for Kennispark in 2009.

a science park on non-university land immediately to the north of the campus as a potential location for growing companies emerging from their knowledge exchange centres.

The Changing 'Spatial Philosophy' of Drienerlo and Bailrigg

When universities evolve in a particular place, they have a particular spatial dependence – they are framed and constrained by what already exists, and that is evident in the way both Drienerlo and Bailrigg have evolved. Both universities sought to evolve starting from a common 1960s ideal of universities as a site of academic identity formation. These campuses were to be model societies – with students granted space to develop their academic identities by enjoying a degree of remove from outside society. This was implemented in different ways on the two sites, reflecting the nature of the sites, as well as the architects' wishes: UT used a strict functional delineation reflecting the spatial form of the site, while Lancaster created a structure of mini-communities (colleges) mixing scholarly and social activities on the site. In both cases, campus created a separation and isolation of the university from society, both through a physical distance from the local cities, and minimising interactions between the university and city. The net effect was to realise, both physically and practically, isolated campuses as the sites of elite reproduction.

However, universities are, as we have previously noted, always dependent on patron support, and in the post-war era, from governments, who, in turn, are held electorally accountable. In both these cases, the isolation of the campus led to its partial abandonment by the lead sponsor, through estates ownership passing to universities in the Netherlands in 1991, and in the seven-year investment freeze in the UK (1979–86). It became clear at these points that the universities could not, through their own activities, maintain their estates in parallel with this privileged isolation, which drove two processes. The first was of gradual run-down of the physical estate, as the two universities could not afford to fund active maintenance out of their recurrent incomes, the magnitude in the case of the Netherlands signalled in 1998 by the mayor's threat to withdraw the university's public safety certificate (effectively its license to operate). The spatial effects of this degradation process could sometimes be dramatic, as with the Cubicus fire at the UT or the 2000 floods on the Lancaster campus, but at the same time permeated each campus with a feeling of abandonment rather than constructive isolation, which threatened to harm the students' learning experiences, and therefore demanding a constructive response.

The second effect was that the universities sought to address these problems by reconnecting with and replacing the universities within various circulation flows. There has, on the one hand, been an attempt to exploit the university

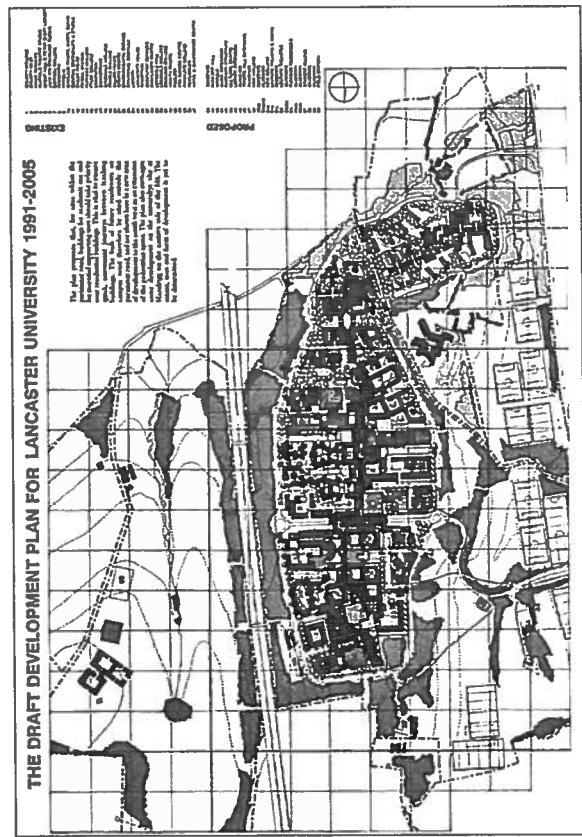


Figure 12.4 The 1991 master plan for the redevelopment of the Bailrigg campus.

between lectures along the single path. The architects proposed a new outer pedestrian road to create a more radial flow within the campus and diffuse this pressure. The expansion projects led to some financial issues for the university in the late 1990s, and therefore additional funding was sought for completion of the expansion project. The expansion of student housing was to come through the creation of new colleges, housing units organised around a single courtyard with shared collegiate leisure and support facilities, which also cohered into a specialised accommodation zone. This was achieved in association with private partners, who developed the accommodation and will receive an income stream for a fixed period, after which the facilities will revert to the university. In the early 2000s, Lancaster looked to its regional partners to help finance further campus developments, including the regional development agency and the Northern Way, a consortium of three northern RDAs working together to strengthen cross-regional linkages. Substantial grants were made from public sources into two facilities providing support for enterprise, the Infolab21 and Lancaster Environment Centre, to host a series of knowledge and business centres to stimulate business innovation. Located at the south and north ends of the old campus, respectively, these centres brought new functions on to the campus and introduced an additional level of functional differentiation into the formerly homogenous 'fruit salad' of the campus estate. The university also planned to develop, in conjunction with the city council,

assets on campus more intensively to generate surpluses to fund estate renovation. Lancaster was active in renting out its rooms to tourists and visitors during the summer vacation (I stayed there for three days in the summer of 1986) as a means of generating additional income to fund these developments. Both universities have hotels located on-site, and those hotels have been used by the university to expand their education provision towards (the more lucrative) post-initial education in business and management studies. But at the same time, both universities have, to an extent, invited new investors into the campus, and each of those groups of investors have their own interests in the spatial form and function of the campus. Some are commercial investors situated within wider capital networks, and this has exposed the campuses to these pressures (manifested, for example, in problems of build quality in phase 1 of the South West Campus (McClintock 2011)). Others are public investors seeking to leverage the university's knowledge assets through processes of innovation and entrepreneurship, demanding new kinds of hybrid university space for entrepreneurship, including Lancaster's Infolab21 and UT's Nanolab (cf. Lam 2010). These changes have also reconnected the campus to the wider outside world, and re-imposed external demands on universities, which, it can be argued, managed to shelter themselves from these demands in the early years, partly through their experimental status, but also through the isolated physical frames within which they operated.

The most obvious point about the spatial manifestation of these changes is that the campuses are bigger, and that growth has come in at least three dimensions. The first is in terms of campus spatial footprints. Lancaster has developed an additional campus zone for housing, and two new substantial knowledge exchange centres outside the boundary road. UT has been active in the creation of the Business and Science Park, now incorporated into the Kennispark idea. There has also been an intensification of activity – both campuses now accommodate more than twice the number of students originally planned for, without a doubling in the size of the campus's spatial envelope. This has been dealt with through a much stronger functional differentiation within the campus, including a functional difference of scholarship into teaching and research alongside a reduction of the space made available for individual activities. There has been an expansion in campus functions, and, in particular, the emergence of new kinds of business spaces, which provide a degree of connectivity back to innovative businesses, in part by creating a community of high-technology businesses in close proximity to, but also with strong functional linkages to, university research activities. There has also been an infrastructural reconnection of the university campus back into the city – much more clearly in UT, which has been formally rezoned as urban space, but Lancaster's senate debated in 1999 the possibility of relocating to an inner-

city site, and the university has continued to creep back towards the city with its new science park plans.

If the original campuses were a reflection of the idea of the formative university creating elites for a democratic society, how can these evolved campuses be understood, and indeed towards what kind of ideal type do they indicate? While universities have always been, in some sense, 'marketplaces of ideas' (cf. Harding *et al.* 2007), these campus evolutions involved the universities becoming places where non-university elements participated in knowledge exchange. UT has physically rearranged its original three-way division into creating the campus as a topological crossroads based around two physical axes. Lancaster has created new kinds of hybrid spaces at the edge of the campus that physically connect the university back into the economy, as well as bringing external interests, demands and pressures back into the campus. The campus still has some degree of isolation, but at the same time there are important hinges or membrane spaces mediating external pressures back into the university. Returning to the idea of an urban metaphor, this suggests a kind of 'entrepôt' city as a global hub, with a series of special zones and enclaves mediating local access to the privileges of the global space (cf. Budd 2006). Although I am wary of suggesting a new ideal type of university, the idea of an 'entrepôt university' provides a means of reflecting on the changing societal pressure.

Exploring the Idea of the 'Entrepôt' University

In putting forward the idea of the *entrepôt* university, there are clear resonances with Bathelt *et al.*'s (2004) idea of clusters as having global pipelines with local buzz: universities serve as entry points to wider global knowledge networks. It is important to highlight the negative sides of the *entrepôt* – they restricted entry to outsiders, and locals often did not benefit from those trading relationships. The *entrepôt* metaphor highlights the Faustian pact that a university brings – on the one hand, universities can provide access to wider circuits of knowledge that may stimulate local economic development. That knowledge penetrates, through the varieties of universities' local relationships and connections, into the wider region. But, on the other hand, there is a fuzziness in these universities' territorial relationships, and those universities may assume that they have a natural right to those privileges, without properly considering whether local actors are really able to derive benefits from the university presence. Although universities might not restrict local entry as did nineteenth-century colonial *entrepôts*, they remain exclusive institutions – that exclusivity serves a purpose, but at the same time is not a natural condition of the university. And a city that allows itself to be dominated by

entrepôt interests may itself weaken, as demonstrated by the UK's fiscal problems originating in entrepôt behaviour in the City of London.

The key issue facing the entrepôt university is in balancing between these local and global pressures and the apparent asymmetry of the question of who benefits. Local pressures may be 'small' and quotidian while 'global' pressures appear urgent and overwhelming. But if one assumes that the institution of the university will not dissolve into the ether of Web provision, then these campus evolutions sensitise us to the fact that universities retain a very strong local dependency for their spatial framework, and ultimately their capacities and functionalities. Both universities dealt with their spatial problems by building local coalitions of supporters, and these local supporters have, arguably, had a far greater impact on this spatial framework than global stakeholders. Managing these local dependencies as a set of duties deriving from dependencies, rather than as responsibilities deriving from rights, is necessary to avoid privileging the interests of these apparent global actors over those of more local, if less glamorous, actors.

It is this local dependency issue that has been lost in much of the discussions of the modern university. The idea of a world class university (Salmi 2009) has emerged as the apparent ideal type, promoted by a range of transparency tools and ranking instruments that emphasise only a few elements of what universities do, and completely omit any kind of local spatial dependence. Governments, universities and the media seem entranced by the idea of virtual competition between institutions in very different national and local contexts, and this has, in turn, led to real effects, shaping flows of students, research grants, additional national funding programmes, and, ultimately, the shape of national higher education systems. University governance is focused on making singular strategic choices, while managing the entrepôt university requires dealing with the hybridity, fuzziness and discordance of the entrepôt position, rather than chasing advantage in wider global networks. This is encouraged by higher education policy systems that provide simple steering mechanisms through competitive market systems. Indeed, governments have exacerbated this trend, creating neo-markets in chasing the world-class university ideal, through programmes such as Germany's Excellenzinitiative, France's Opération Campus and Finland's creation of Aalto University (Cremonini *et al.* 2013).

But at the same time, laying an accent on the idea of world class universities emphasises only one element important to the entrepôt university, that of the global networking and connectivity, and risks over-privileging the global dimension over the equally important local dimension. There seems to be a need to rethink approaches to higher education's governance to reflect the dissonance of the entrepôt university, locally dependent in a globally competitive world. Only then can it be managed to meet the needs of its societal stakeholders, and continue its sustainable evolution as a stable institutional form.

Acknowledgements

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