Managing the University Campus in an Urban Perspective: Theory, Challenges and Lessons from Dutch Practice
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Abstract

In the global knowledge economy countries need “engines” to create, attract and retain knowledge workers. Universities play a key role in keeping these engines running, educating the knowledge workers of the future, collaborating with industry in innovative research and creating economic clusters that generate employment. But with increasing mobility and ICT developments – making every place a possible workplace – students, professors and researchers can easily be tempted to go elsewhere.

In a time like this “building community” and “creating a sense of place” are on the agendas of many university boards. Paradoxically, place matters more than ever for relatively “place independent processes”. Campus planners are increasingly joining forces with city planners to align their planning processes to reach mutual goals. The physical campuses are changing from places to study in places to meet and are increasingly becoming very vital and essential parts of cities. Decision making on campus management is getting more complicated by all the stakeholders involved, but is becoming more challenging as well.

Beside the opportunities that put the university campus in a broader context, there are threats. Campus buildings are aging, both technically and functionally, in need of reinvestment, while many developments cause more uncertainty in future space demand, making flexibility a necessity on building and campus level. With input from Dutch practice and from theory on managing real estate this article describes the changing context and challenges for campus management of the future.

Introduction

University campuses are considered more strategic than ever. Not only university boards acknowledge their role in achieving institutional goals, city councillors are increasingly recognizing their value in the regional knowledge economy. Campus managers are faced with many challenges.

A Shift in Campus Management

Managing the university campus has gradually changed from monitoring the technical condition of campus buildings and reducing costs to effectively supporting education and research processes and adding value to university goals. In this cumulative development process functional and organisational aspects have been added to technical and financial aspects. For campus management in the Netherlands the shift has been accelerated by the transfer of economic ownership of the campus from the government to the universities, in 1995. Research for Dutch campus managers (Heijer 2002a; Heijer 2002b; Heijer and Vries 2004b; Heijer 2007a; Heijer 2007b) shows that since 1995 campus management shifted from operational to strategic level and from supply driven to demand driven. The cumulative nature of this shift has been recognised in many empirical studies on managing corporate real estate in general (Joroff, Louargand et al. 1993; Jonge 1997; Krumm 1999; Jonge, Arkesteijn et al. 2007; Vries 2007). These theories define corporate real estate management as a matching process between demand and supply, with activities from operational to strategic level and the overall goal to optimally attune real estate to an institution’s performance.

While research shows that Dutch campus managers all agree that adding value to institutional goals is the ultimate objective (Heijer and Vries 2004b; Heijer 2007a) – which is endorsed internationally (Kenney, Dumont et al. 2005) – it has made campus management much more complex. Not only does it add more variables to the comparative assessment for every campus decision, it also brings more stakeholders to the campus management process. Perspectives of technical managers and controllers, focusing on real estate, are connected with perspectives of users and policy makers focusing on the primary processes of the institution (see table 1). Those involved with respectively the physical campus and the costs, values and
available resources are not only confronted with changing goals from policy makers, but also with demands from students, academic and supporting staff. Figure 1 shows the basic framework for campus management, based on theories of corporate real estate management, connecting four types of stakeholders and the variables they represent in managing the university campus. Specific literature on campus planning confirms: “Those affected by planning outcomes should be involved in the planning process” (Dober 1963/1996).

![Figure 1: Basic framework for campus management, connecting four stakeholders and variables](image)

Accordingly, campus managers need to involve these stakeholders in various steps of the decision-making process, either passively, informing them about the consequences of various alternatives, or actively, making them participants in defining the brief and selecting solutions. But whatever participation form they choose, they will need more decision support information to weigh different alternatives on various variables.

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| The first challenge for campus managers is to develop methods and tools to support the collective process of campus decision making. The main goal is to emphasize the shared responsibility for campus management and to avoid that the different stakeholders will only focus on maximizing their own variables without considering the others. It is for instance important that users are aware of the financial consequences of their demand and the fact that these resources might alternatively be invested in their primary processes. Tools could give them incentives to find the optimal solution — balancing costs and benefits — instead of the maximum solution for just the functional aspects. |

Beside this challenge in the management process the context has become more dynamic and complex as well, influencing the campus in all its technical, functional, financial and organisational aspects. In the past ten years there have been many changes in the context of managing the Dutch university campus. Developments within and outside the universities have changed qualitative and quantitative demand for space: different processes and goals changed the places to learn and work and require a different campus in many functional aspects. At the same time a large part of the existing campus is aging; in the Netherlands more than 50% of all campus buildings was built in the sixties or seventies (Heijer 2007a). These and more buildings need reinvestment or at least reconsideration. Other research comparing
twenty-five new buildings (Heijer 2007b) shows that the current replacement values are very high – putting up the total costs of ownership – and the available resources for universities in general are decreasing. Policy makers are faced with decisions about either investing in education and research or in campus buildings, weighing the added value of both investments to the institutional goals.

The most influential developments are described in this article, illustrated with examples from Dutch practice and translated in opportunities and threats that are also relevant for campus management internationally. Basis for these findings is a series of research projects analysing all Dutch campuses, using a data collection format that covers technical, functional, financial and organisational aspects, and in-dept interviews with campus managers at Dutch universities (Heijer and Vries 2005; Heijer 2007a; Heijer 2007b). For the international context many publications were used of associations of campus planners and facilities managers – SCUP and APPA in the United States, ADE in the United Kingdom – and input from international conferences on (managing) the campus of the future.

Opportunities for the Campus in the Knowledge Economy

In many countries economy has changed its focus from agriculture and industry to services and knowledge (see figure 2). This macroeconomic development brings more uncertainties because of its relatively place independent processes. In the European context the Lisbon Agenda (2000) is the leading strategy: to become the most dynamic and successful knowledge economy in the world. But the competition is global. With the whole world as the labour market for knowledge workers, there are many alternatives. Globalization of individuals is the current trend after globalization of countries and companies (Friedman 2006). Research shows that young potentials – including the creative class – prefer to live and work in cities with a liberal political climate, extensive cultural facilities and other young potentials. Knowledge workers attract other knowledge workers (Florida 2002; Luijten 2005). The same goes for knowledge institutions and knowledge-intensive activity.

Literature about cities in the knowledge economy, based on nine case studies of European cities (Berg, Pol et al. 2005), emphasizes the role of knowledge institutions in attracting and retaining knowledge workers, in order to create knowledge, apply knowledge and develop growth clusters. A knowledge base is a required foundation, in addition to an economic base, quality of life, social equity, accessibility, urban diversity and urban scale. The presence of a university does not only strengthen the knowledge base, but the vitality of the student population and the employment that a university generates can also add value to other foundations, such as the economic base, the quality of life and the urban diversity. Research in the United States illustrates the economic spin-off of a university within a region and the benefits of university-community collaboration (Wiewel and Knaap 2005). This is confirmed by other sources focusing on the European context (Perry and Wiewel 2007). In the Netherlands many university cities increasingly acknowledge the value of the university and align their planning processes with campus planners. An example is the Economic Development Board Rotterdam (EDBR), including their programme “Knowledge city”, connecting goals and resources of the regional government, private institutions and higher education institutions.

Universities as Nodes in a Network

The network between universities, public parties and private parties is not the only network that universities are strengthening. Developments like globalization and technological change add to the mobility of students and staff, including the most promising students and the most excellent staff. This is of course a threat to any country, city and institution. On all of these levels there is a choice to be made between competition and collaboration. Scenarios for European higher education in 2020 (CHEPS 2004) distinguish three different types of coordination for universities: hierarchical from Brussels, in a network or from the market. To some extent a combination of all is also possible. While the higher education institutions with the top rankings are more likely to choose a competitive strategy many others are choosing to collaborate in a network, to join forces and to facilitate the mobility of students and staff. The so-called network university is the result (Wissema 2005).

For management of the university campus many challenges can be found in both types of networks: networks that connect partners on one location, from the scale of a community to the scale of a region and networks that connect partners with similar primary processes, both in education and research, and with opportunities to share resources, including facilities.
Opportunities for the Campus and the City

Over the years the university campus has had different forms in the urban context. Figure 3 shows the current locations of the university buildings and campuses in twelve Dutch “university cities”: cities with campuses of thirteen academic institutions. In the relation between the campus and the city there are three models: (1) the campus as a separate city, (2) the campus as a “gated community” in the city – with or without the actual gates – and (3) the campus integrated within the city. In the Netherlands all forms exist, but model (1) gradually disappears because many university cities have grown and enclosed the campuses. Enschede, Groningen (campus Zernike) and Utrecht (campus De Uithof) still represent this model, but in the Dutch context – with relatively high density and short distances – this model is not as extreme as it can be in other countries: students living on campus at these universities can still reach the city by bicycle.

Apart from the location there are differences in these campuses concerning the mix of functions they accommodate. The current university campus can be defined as a collection of different space types that facilitate a broad range of processes that are related to the university. The majority of the buildings are traditional university buildings that are directly used for educational and research purposes: lecture halls, class rooms, laboratories, libraries, etcetera. But there is more to a campus than these buildings.

Universities feel more and more responsible for housing their students and staff, especially with an increasing enrolment of international students and a considerable amount of guest professors. These visitors often need short stay housing and hotel facilities. The mobility among students and staff members is part of the current network university that has many links to other universities, both national and international, industry and other related businesses.

Knowledge park and science park development – a continuous trend resulting in the development of parks in many university cities – and accommodating entrepreneurs among students and alumni on the campus is increasingly part of campus master planning. All different users on the campus require retail and leisure functions and services, varying from restaurants and cafés to sports facilities, bookstores, copy shops, supermarkets, dry-cleaning facilities and day care centres. Additionally, campus management more and more includes responsibility for infrastructure, in accordance with the city policy: accessibility by public transport and by car, including parking areas.

A campus that contains buildings for education, research, housing, hotels, related businesses, retail and leisure – and is accessible by car and public transport – is a city itself. This could be a strong model for campuses in rural areas, but close to or within cities it is integrated. This model can be more synergistic. There can be different models for different functions, also dependent on preferences of users. Studies on student housing show that national and full-curriculum students preferably locate their universities and cities.

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“The café-library-lounge might become a popular place (Kenney, Dumont et al. 2005)”

In 2007 this indeed is a trend, but not necessarily on campus. Wireless internet is increasingly provided at popular public places in city centres, competing with the campus as the place to be. Recent questions among students in the Netherlands (sources) illustrate that Dutch students increasingly decide on the sense of place, assuming that the quality of the Dutch educational programs is more or less the same when choosing between two or more institutions. It is no secret that many students choose Amsterdam as their student city for more than just the quality of the programs. All the more reason why university and city planners should coordinate their strategies, also to brand their universities and cities.

No matter how convinced stakeholders within and outside the university are about the value of the university to the city, it is very hard to calculate the actual effect on the local and regional economy. And without information about the (potential) benefits it is hard to negotiate the (extra) investments. It is usually much easier to calculate the opportunity costs of the presence of the university, in terms of higher tax income or higher land value of commercial use compared to academic use.

In the greater Boston area in the USA this became an issue for the local communities, when expanding the campuses of both Harvard and MIT (Simha 2001). Another example is Columbia University’s 7 billion dollar expansion plan in the north of
Manhattan. There is resistance from the local community, even if it means the economic revitalization of the Harlem area in the long term (nine thousand extra jobs). What counts for the community is the rise of real estate prices and the current users that will be forced to move (Staps 2007). The direct negative effects for the local community in both examples could be compensated by the regional or national government, depending on the benefits.

In their latest book Wiewel and Perry state: “It is reasonable to expect that as universities grow in importance as part of the knowledge economy, their power and need for autonomy will grow; but as their physical and economic presence increases, the desire of local governments to exercise some measure of control will also grow. Thus, it seems likely that conflicts between universities and local governments will increase in the future (Perry and Wiewel 2007).” For university-community collaboration it is of great importance to calculate the economic spin-off, to put any conflicts and costs to make in perspective of the potential benefits. References of other cities and regions are indispensable.

Threats to the Campus – Higher Costs and Insufficient Resources

Beside the opportunities that put the university campus in a broader context – and emphasize the potential benefits – there are threats that mainly concern the higher costs in combination with insufficient resources. In the Netherlands the lack of resources is not just a problem for the campus, but for the whole university. Since 1995, state funding of education and research has declined and for education – with more than 200,000 students in the system – this means that simply keeping their funding stable has meant finding more than €160 million from other sources. For research this means covering a shortfall of approximately €500 million (vsnu 2006). At the same time the total costs of campus ownership have risen with three causes:

1. Benchmark research of new campus buildings and refurbishment of campus building (Heijer 2007b) showed higher costs per m2, related to different types of projects,

2. With the average Dutch campus having more than 50% of buildings dating from the sixties and seventies, there has been an substantial investment programme to refurbish or replace these buildings, ever since the universities became owner of their campuses in 1995, usually financing from their own funds. This was caused a massive growth in Dutch university education in the second half of the twentieth century.

3. Developments in society and a time of prosperity have increased (minimum) quality requirements: a healthy workplace is the basic requirement, but safety, security and sustainability were key words in the last 5 years; rising student and consumer expectations also apply to their learning and working environments and subsequently universities use their facilities to attract students.

The Dutch campus is not the only campus that needs reinvestment. This situation of the sharp rise in student enrolment in the sixties and seventies – from less than 50.000 students in 1960 to more than 150.000 in 1980 – was not unique for the Netherlands. University education had traditionally been confined to only a small group, but in the fifties the universities began gradually to expand. Government increased its spending on education and, between 1960 and 1975 in particular, the universities grew by leaps and bounds. The expansion of the student finance system helped to make a university education attainable for a much larger group of students (www.eurydice.org, 2005). As a consequence the campuses also expanded. The buildings from that period are now demanding British universities also have many buildings from that period, which is illustrated in a text from auDe’s website: “Many higher education institutions have a mixture of property in terms of age and type, from historic through to very modern. It is true to say that across the country, the majority of HEIs have a large number of buildings dating from the 1960’s and 70’s, which are now in need of major refurbishment or replacement (auDe 2006)”. auDe is currently conducting research on these types of buildings – refurbish or replace – providing tools and advise to campus planners (www.auDe.ac.uk, 2007).

In the United States the threats for the campus and – consequently – the university were described from a institutional perspective, almost twenty years ago, when two higher education organisations wrote the report “The Decaying American Campus: A Ticking Time Bomb” (Rush and Johnson 1989); these organisations were ANABCO and NABUCO. The purpose of this report was to alert higher education decision makers, state legislators and federal officials that action was required to arrest the decline in one of “the nation’s most important capital assets – its college and
university campuses”. Ever since many efforts have been put in gaining recognition of facilities as a higher education institution’s resource. “This resource is as vital to institutional success as is human capital or the steady growth in federally funded research grants. (...) In a capital-asset-intensive industry, such as higher education, the facilities and business officers bear the primary responsibility for ensuring that the institution’s strategic plan reflects strong alignment between goals and capital resources” (Chace 2003).

On top of everything many developments cause more uncertainty in future space demand, both quantitatively and qualitatively. Most important developments according to Dutch estate managers are mentioned below (Heijer 2002a; Heijer 2007a):

Student population is getting more diverse in terms of age, background, nationality and life phase. Universities have to accommodate a variety of groups and need to be aware of the different space requirements. Post-experience students at a business school – who pay a high tuition – expect a much higher quality of facilities than the 18-year-old doctoral students. And the international students have the highest – temporary – need for student housing.

ICT developments caused an enormous demand for workstations, for both students and staff, and changed educational and research processes and their physical requirements. In practice new ways of learning and researching did not replace the traditional methods, but added new methods. This has the same effect on space demand: it gets more complex and diverse. And it affects the occupancy rate in a negative way. This adds to the need to share facilities.

As public funding diminished, universities try to find other stakeholders to cooperate with – and share facilities with – like other universities, institutions for professional education, municipalities and corporations with similar goals or processes; in terms of real estate they can share land, location, buildings for primary processes and facilities like libraries and restaurants.

Including the developments above, there are many more uncertainties in predicting space demand for the next five years than (ever) before. Student enrolment is one of the most important variables influenced by the introducing a Bachelor-Master system, international exchange, less full-curriculum students, mobility between (inter)national institutions.

Uncertainty makes flexibility a necessity on building and campus level: technically in terms of adaptability, financially in a mix of owned, leased and rented space and organisationally in better use of the capacity. The goal is to make efficient use of existing buildings without hindering the institutional goals. A solution for the network university might be to lease and rent buildings from other knowledge institutions.

The Campus in a Knowledge Network – Efficiency and Effectiveness

The combination of insufficient financial resources and global competition urges the universities to join forces, in education and research and in the use of expensive facilities with low frequency and occupancy rates. Developments towards desk research and student work in small groups have made the campus a more office like environment for a large part: at least one third of assignable floor area at the Dutch campus is office space (Heijer 2007a). That still excludes meeting rooms, student project rooms and learning centres that could easily be transformed to staff workplaces. Large lecture halls and specific laboratories have low frequency and occupancy rates and can be shared with other education or research institutes.

On many levels choices have to be made between competition and collaboration. The two maps of the Netherlands (figure 4 and 5) show – on the left – how the student population in HEIs is spread over the country; this map includes students at institutes for higher professional education. The map on the right shows the types of universities, just the academic institutions. Nine universities teach and carry out research in a broad range of disciplines; the others are specialized in technology, agriculture or because of a (distant) learning concept. The relatively short distances between the institutions, especially in the West, the “Randstad”, should not be a problem. Even the European scale offers so many opportunities for sharing, not (just) for efficiency reasons, but as an effective solution for the global student that wants to make the learning experience a diverse and multicultural one. It is usually the culture of wanting – or rather “being used to” – exclusive use of the campus buildings that is an obstacle. But it is important to know what the opportunity costs of this culture are, considering investing the same resources in the primary processes.
One of the trends in Dutch campus management is finding innovative solutions for the academic workplace. This tackles the problem that most offices are empty for a considerable amount of the time. But it is not just about inefficiency, it is also designing a workplace concept that supports all activities – and does not forget concentrated work and archiving – and adds to an important goal: building community. Place matters, sense of place is important and accommodating the social and intellectual encounter is essential for a university in the knowledge economy.

Towards policy makers it is often hard to put campus matters high on the agenda. “Most of the challenges facing today’s institutions are not about place (…) but the campus mirrors the issues that an institution faces (Kenney, Dumont et al. 2005).” Based on their experience at over 250 institutions the authors connect mission and place, also stating that goals of cross-disciplinary communication, vitality on campus, recruitment and contributions to the neighbourhood and building community can all be hindered and supported with the campus.

Dutch practice shows that the added value of the campus to institutional goals has been higher on the agendas of policy makers (Heijer 2007a), supported with research results that link campus interventions to a rise in student enrolment and employee satisfaction. One example: “For many institutions, facilities factors, where provided to a high standard, are perceived as having an important influence on students’ choice of institution. Year-on-year comparisons show strong agreement at the global level and, where data could be gathered, at the institutional level. (Price, Matzdorf et al. 2003)”

Conclusions and Epilogue

Still, for decision making references of projects of other universities are essential. The scale and character of these projects can differ dependent on trends and topical matters. It is important to describe these references, not just on their physical aspects and initial costs, but also on operational costs, user satisfaction rates and the added value to organisational goals in time. This will give a complete assessment of a reference project, on all campus management variables: technical, functional, financial and organisational. In Dutch practice a start has been made with a database of all fourteen campuses (Heijer 2007a) and a database of twenty-six projects on these variables (Heijer 2007b). Given the developments on the knowledge city a database on urban level will be the next step.

It seems that a network university needs a network for campus management as well. Many challenges are not specific but global. Tools and lessons can easily be shared. But we should not forget that it is a competitive playing field in which collaboration is essential to reach critical mass and enough resources, for educational programmes, research agendas and campus management. The European advantage might very well be serving the global student that wants to make the learning experience a diverse and multicultural one, the “academic gypsy” that does not live to work and the campus managers that succeeds in integrating their campuses with the cultural heritage of some of the most beautiful cities in the world.

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benchmark twaalf recente projecten. Delft, tu Delft, Faculteit Bouwkunde, Real Estate & Housing.


