the campus of the future is a city
campus planning becomes urban planning

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Delft University of Technology (TU Delft), Netherlands

CONTENT
1. Vision on managing the university campus (THEORY)
2. The campus of the future: opportunities and threats (PRACTICE)
3. Guidelines for decision makers (STRATEGY)

PHYSICAL definition of “campus”

the “campus” is defined as the (collection of) buildings and land, used for university or university-related functions

FUNCTIONAL definition of “campus”

• ACADEMIC
  classrooms, library, offices, laboratories, lecture halls, ...
• RESIDENTIAL
  student housing, hotels, ...
• RELATED BUSINESS
  start-ups, incubators, industry, ...
• RETAIL & LEISURE
  sports, restaurants, cafes, ...
• INFRASTRUCTURE

more info: http://managingtheuniversitycampus.nl
The campus is a key asset in “the (global) Battle for Brains”

good facilities can attract talent
bad facilities can chase them away...

more info: http://managingtheuniversitycampus.nl

RESEARCH PERSPECTIVE

who (at universities) makes decisions about the campus?
what influences campus decisions? (context, variables)

focus / target group:
- university boards, campus managers/planners
- decisions about (new) buildings
- decisions about (locations of) campuses

14 Dutch universities, 800 European universities, campus management organisations

team: international references (Saudi Arabia, Iran, Colombia, China)

TU Delft - Faculty of Architecture

Architecture (A) – Urbanism (U) – Architectural Engineering + Technology (AE+T) – Real Estate & Housing (RE&H)

→ chair Real Estate Management
Why study abroad? Reasons (not) to go

<table>
<thead>
<tr>
<th>reasons to go</th>
<th>reasons not to go</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. academic reputation</td>
<td>1. academic reputation</td>
</tr>
<tr>
<td>- professors, programme,</td>
<td>- English language skills of staff,</td>
</tr>
<tr>
<td>- teaching method, rankings</td>
<td>- workload</td>
</tr>
<tr>
<td>2. country / city / culture</td>
<td>2. city / culture</td>
</tr>
<tr>
<td>24%</td>
<td>- lack of integration</td>
</tr>
<tr>
<td>3. career development</td>
<td>3. social life</td>
</tr>
<tr>
<td>18%</td>
<td>- lack of organized events</td>
</tr>
<tr>
<td>4. university services</td>
<td>4. university services</td>
</tr>
<tr>
<td>17%</td>
<td>5. social life</td>
</tr>
<tr>
<td>11%</td>
<td>- quality of life, friends, use</td>
</tr>
<tr>
<td>5. social life</td>
<td>5. quality of life, friends, use</td>
</tr>
</tbody>
</table>

UK research (HEDQF 2012) showed that 1/3 of all students admit to have rejected a university based on the (poor quality) of the physical environment.

"That does not necessarily mean "buildings in bad condition", but could also refer to an isolated campus or lack of social space.

Campus more important than we think...

Where to study? Students become tourists

If students could study anywhere, where would they go? My theory: they would select their learning environment the same way we select a tourist destination: places with unique qualities—usually cultural heritage—and attractive public spaces, densely populated areas that encourage social encounters or at least give a sense of place.

At the same time many universities in the world are adding new buildings to (could be) anywhere locations—usually isolated campuses—with not much attention for public space or public transport to the city. Of course, research that uses specialized labs that are only available on specific locations will still come, but more and more university activities become place-independent and flexible to accommodate. Periodically, more place independence makes (quality of place) more important. If students can go anywhere, why would they go to your campus or university? Or why should they stay in your university after graduation?

Rural campus

UPM/Politécnica

- subsidized by the EU
- computer sciences, biotech, chemistry, planetarium etc.
- incubators

our perception
- no sense of Madrid (accessible with an hourly bus service)
- no place to meet – distances between buildings do not encourage to share
- is there going to be enough demand for this campus?

Source: HOI study trip 2012
The campus is a key asset in “the Battle for Brains”

for global competition in attracting talent for productivity – workplace for future student / faculty / staff for profitability – financial sustainability, resource-efficiency for sustainable development – footprint – m² / user

The European campus is a key asset in “the (global) Battle for Brains”

*European campus as an enabler for Europe 2020*
*European campus as a disabler for Europe 2020*

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**performance criteria university**

<table>
<thead>
<tr>
<th>Output</th>
<th>Proportion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td></td>
</tr>
<tr>
<td>Financial Resources</td>
<td></td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td></td>
</tr>
<tr>
<td>Quality &amp; Quantity</td>
<td></td>
</tr>
</tbody>
</table>

Each campus decision about WORKPLACE, BUILDING, LOCATION positively or negatively affects these 4 performance criteria.

Goal of “managing the university campus”: find estate strategy that optimally contributes to all performance criteria.

**more info:**
http://managingtheuniversitycampus.nl
Managing the university campus → Managing the European campus

- book “Managing the university campus” (2011) + world tour (!)
- since 2012 focus on “Managing the European campus” (mission)
  → supporting campus decisions of EU member states
  → to prevent resource-inefficient campus strategies
- putting campus management on the education, research & innovation agenda (European Commission)
- gathering data in European network
- European campus as an enabler for Europe 2020
- European campus as a disabler for Europe 2020

Focus
- European Union
- 28 member states
- 28 Higher Education Systems
- Public HE Institutions
- Universities (doctoral education)

Looking for
- Information &
- Key Performance Indicators- KPIs
- From 4 perspectives
- On different levels
To develop 28 National profiles

from 4 perspectives

869 universities

Establishment date
Internationalisation & mobility

Financial capacity
Annual expenses
Expenses per student
Crisis impact

Students
Academic Staff
Administrative Staff
Student/staff ratios

Square meters of campus
Square meters per student
Case specific KPIs

Locations / campus types
Age of the campus
Condition of the campus

on different levels
- European level
- National level
- University level

more info: http://managingtheuniversitycampus.nl
869 universities
Available information

The European campus
Heritage and Challenges

869 universities
The European campus
Heritage and Challenges

35 in top-100 in the world

€80bn to €130bn

1 million non-EU

€8,000/student

67% of HE

136min m2

17 students per academic

13,6 million

10 m2/student

28 Member states

GFA m2/student

Conclusions so far, based on book and tour

tour: UK (7x), Germany (4x), Finland (3x), Sweden (2x), Czech Republic (2x), Spain (2x), Portugal, HUMANE.

in NL: France (2x), Ireland (2x), Poland, Denmark (2x), Belgium

numerous discussions at conferences, with European policy makers, campus managers

The European campus is a key asset in “the (global) Battle for Brains”

European campus as an enabler for Europe 2020

European campus as a disabler for Europe 2020

Heijer

George Tzovlas

Salome Benck

Naif Alghanmi

from left to right:

Flavia Curvelo Magdalé
(Colombia)

Alexandra den Heijer

George Tzovlas (Greece)

Salome Benck (Switzerland)

Naif Alghanmi

(Saudi Arabia)

more info: http://managingtheuniversitycampus.nl

03-09-14
The European campus is a key asset in “the (global) Battle for Brains”

European campus as an enabler for Europe 2020

Universities as urban growth engines

- Where technology campuses are located, innovation takes place
- Relation economic growth and presence (top-ranked) university

“Physical proximity allows social density and therefore, it increases the chances of intellectual and/or social interaction between people. Indeed, these chances depend not only on the type of activities allocated in a place and the people they involve, but also depends on the way both people and activities are accommodated in the built environment.”

From literature: what generates innovation?

1. Interaction
   - between academic ‘acquaintances’ from different scientific backgrounds
   - is better than ‘academic friends’ or ‘academic family’ (analogy: genetics)
2. Serendipity as innovation motor
   - new ideas by accident, unplanned interaction
3. The physical presence of people relevant to universities – ‘meeting of minds’
4. “No clicks without bricks” – no world-class university can be entirely virtual
5. Informal meetings: build trust (biology matters)
   - (espresso) bars, public space, social media contribute to that
6. Importance of place attachment → 2nd home for international community
   - ‘feeling at home’ will make knowledge workers stay (1st house, 1st child)
The European campus is a key asset in “the (global) Battle for Brains”

European campus as an enabler for Europe 2020

more info: http://managingtheuniversitycampus.nl
The European campus is a key asset in “the (global) Battle for Brains”

The campus of the future is a city - in Europe: THE city

- El campus del futuro es una ciudad.
- Le campus de l’avenir est une ville.
- Der Campus der Zukunft ist eine Stadt.
- Kampus budoucnosti je město.
- Framtids campus är en stad.
- De campus van de toekomst is een stad.

FUNCTIONAL definition of “campus”

- ACADEMIC: classrooms, library, offices, laboratories, lecture halls, ...
- RESIDENTIAL: student housing, hotels, ...
- RELATED BUSINESS: start-ups, incubators, industry, ...
- RETAIL & LEISURE: sports, restaurants, cafes, ...
- INFRASTRUCTURE

flexible workers will choose the most meaningful places

work becomes place independent, quality of place becomes more important

strategy: less quantity more quality

more info: http://managingtheuniversitycampus.nl
It was a revolution moving higher education from bricks to clicks... and now it's started to go back to bricks again.

Online university providers, which offered people the chance to study from home, are turning full circle by creating a network of learning centres where students can meet and study together.

Instead of demolishing the dusty old classrooms of academia, the online university revolution is responsible for opening some new ones.

Coursera, a major California-based provider of online courses, is creating an international network of "learning hubs", where students can follow these virtual courses in real-life, bricks and mortar settings.

They're scheduled and arranged online, with the only vital ingredients being a laptop, wi-fi and somewhere to talk.

"The typical completion rate for a MOOC is about 5% to 10%.

For MOOC students ("Moocers") attending learning hubs, the completion rates are between 30% and 100%.”

Source: Coursera (7 mln students)
The European campus is a key asset in “the (global) Battle for Brains”

Desolate

Campus e.g. Val-Benoît (IE), Liège
- 1950s
- Avant-Garde
- Super Campus

Space types on campus, example NL
more flexible for multi-functional use

Problems in space use
1. Territorial culture in general, from workplace and meeting rooms to libraries and labs
2. “Supply follows demand” – no incentives to adjust to scheduling rules
3. Gap: actual use versus scheduled use
4. No incentive to cancel reservations
5. No capacity adjustments (scheduling on maximum capacity for full course)

Quantity of space → Quality of space

more info: http://managingtheuniversitycampus.nl
The European campus is a key asset in “the (global) Battle for Brains”

Guidelines for decision makers (STRATEGY)
The campus of the future: opportunities and threats (PRACTICE)
Vision on managing the university campus (THEORY)

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Technical condition campus potential risk

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<thead>
<tr>
<th>Netherlands</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>30%</td>
<td>32%</td>
</tr>
<tr>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>37%</td>
<td>35%</td>
</tr>
<tr>
<td>11%</td>
<td>10%</td>
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</table>

37% * 6,4 mln = 3,7 mln m² requires reinvestment in NL
35% * 18,6 mln = 6,5 mln m² requires reinvestment in France

The European campus is a key asset in “the (global) Battle for Brains”

European campus as an enabler for Europe 2020
1. Universities as economic growth engines: “place matters”
2. Europe’s knowledge economy accommodated in cultural heritage buildings
3. European “university cities” are considered attractive places to live, work, be...

European campus as a disabler for Europe 2020
1. >50% from 1960s/70s
2. bad functional/technical state: reinvestments required
3. low utilization rates: high vacancy rates of offices, laboratories, classrooms
4. campus >15% of total costs
5. negatively affects “financial sustainability” of universities
Making a stress test “assessment tools”

Assessing European campus plans & strategies

to make sure that European / national / university resources are spend in a “smart” way

supporting community & innovation resource-efficiently

Strategic choices for campus of future

<table>
<thead>
<tr>
<th>Accommodate “exclusive” and “closed”</th>
<th>Accommodate “shared” and “open”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low % of resources spent on the campus</td>
<td>High % of resources spent on the campus</td>
</tr>
<tr>
<td>Only public funding</td>
<td>Allow private funding</td>
</tr>
<tr>
<td>Low space use per student or employee</td>
<td>High space use per student or employee</td>
</tr>
<tr>
<td>Focus on individual needs</td>
<td>Focus on collective needs</td>
</tr>
<tr>
<td>Small(er) ecological footprint</td>
<td>Large(r) ecological footprint</td>
</tr>
</tbody>
</table>

Campus brief in the UniverCity: “To share or not to be…”

<table>
<thead>
<tr>
<th>Academic Functions: Education &amp; Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail &amp; Leisure Functions</td>
</tr>
<tr>
<td>Related Business Functions</td>
</tr>
<tr>
<td>Infrastructural Functions</td>
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</tbody>
</table>

models for shared use/management/ownership with internal partners on campus

Based on Den Heijer 2011

the campus of the future “models for campus - city”

60s/70s campus

<table>
<thead>
<tr>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>60s/70s campus</td>
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</table>

60s/70s campus

The campus of the future is a...the city

Der Campus der Zukunft ist eine...die Stadt.

more info: http://managingtheuniversitycampus.nl
Follow me on Twitter: @alexandra_dh

More about the book and research "Managing the university campus":
http://managingtheuniversitycampus.nl
(see DOWNLOADS for hand-out)

→ new book "The European campus" (okt 2014)

more info: http://managingtheuniversitycampus.nl