Campus of the future
Opportunities of a crisis

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Lisbon, Portugal – Instituto Superior Técnico (IST)
March 27, 2014

hand-out of this presentation:
http://managingtheuniversitycampus.nl/
downloads

TU Delft – campus
year of construction

TU Delft 172 years!
History & Mission

• TU Delft was established in 1842 by King William II
• TU Delft is the oldest and largest University of Technology in the Netherlands

With its unique technological infrastructure, broad knowledge base, worldwide reputation and successful alumni, TU Delft is contributing significantly to the development of responsible solutions to urgent societal problems in the Netherlands and the rest of the world.

Universities in the Netherlands
TU Delft largest university of technology

• 13 NL universities
• 3 universities of technology: XTU
• connected to Leiden and Rotterdam
• Programmes in science, design and engineering

CONTENT

1. Vision on managing the university campus (THEORY)
2. Trends that shape the campus of the future (REFERENCES)
3. Opportunities of a crisis – case BK city (PRACTICE)
4. Design guidelines (STRATEGY)

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CONTENT / Propositions

1. Each university goal can be frustrated by the physical campus.
2. The innovative and flexible knowledge economy can bring new life to obsolete industrial heritage buildings.
3. It takes a crisis – for example a fire – to change the academic workplace.
4. The campus of the future is a city.

CONTENT

1. Vision on managing the university campus (THEORY)

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

Why study abroad?
Reasons (not) to go

reasons to go reasons not to go
1. academic reputation 25% 1. academic reputation 58%
  - professors, programme, teaching method, rankings
2. country / city / culture 24% 2. city / culture 18%
  - English language skills of staff, workload
3. career development 18%
  - employability, learning the language, personal/intercultural relations
4. university services 17%
  - quality of life, friends, bus
5. social life 11%

source: European study choice platform “Study Portals” (2012)

The campus is a key asset in “the (global) Battle for Brains”
good facilities can attract talent
bad facilities can chase them away...

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The campus is a key asset in “the Battle for Brains”
for global competition in attracting talent
for productivity – workplace for student/staff of the future
for profitability – finding most effective way to spend budget
for sustainable development – m²/user

proposition (PhD defence)
Each university goal can be frustrated by the physical campus
As instalações do campus podem afetar os objectivos da universidade.

performance criteria university

- competitive advantage
- ranking
- market share

- productivity
- financial
- resources

- quality & quantity
- output

- sustainable
devvelopment
- resources (m², CO₂)

History of the campus and the city

1. - until 1900
   - small, elite universities
   - campus = city

2. - between 1950s and 1990s
   - explosive growth
   - safety laboratories
   - move to the edge of town

3. - around 2000
   - city has surrounded the campus
   - what’s next?

4. - 21st century
   - (a) merge campus and city?
   - (b) campus as new city?

source: Managing the university campus (Den Heijer, 2011)

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Problems internationally shared

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 "universities" 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 10-15% of total costs
5. Negatively affects "financial sustainability" of universities

Radical change working population in OECD countries

Universities as urban growth engines

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

Technical condition campus potential risk

CONTENT
1. Vision on managing the university campus (THEORY)
2. Trends that shape the campus of the future (REFERENCES)

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BRIEF for the campus of the future

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

Academic: education & research

<table>
<thead>
<tr>
<th>functions</th>
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<tbody>
<tr>
<td>ACADEMIC • EDUCATION &amp; RESEARCH</td>
</tr>
<tr>
<td>lecture halls (large groups)</td>
</tr>
<tr>
<td>office space faculty</td>
</tr>
<tr>
<td>laboratories</td>
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<tr>
<td>office space support staff</td>
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<tr>
<td>study places for individual use/ small groups</td>
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<tr>
<td>library</td>
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<tr>
<td>special places for ceremonies (graduations)</td>
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<tr>
<td>special conference facilities</td>
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<tr>
<td>special educational facilities (dance, media, arts)</td>
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<tr>
<td>academic, hospital</td>
</tr>
<tr>
<td>medical school</td>
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</tbody>
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Space types on campus, example NL

- specific incl. laboratories: 21%
- storage: 10%
- special storage: 2%
- education: 16%
- residential: 1%
- restaurant: 4%
- support: 10%
- office: 33%

Cellular office symbolic for cellular research

"on a busy day: less than 20% of the desks is occupied"

Campus of the future: changing the academic workplace

space use < 20% of workplaces used

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Campus of the future:
- transparency of processes to inspire and learn from each other

Campus of the future:
- transparency of processes: to support image of faculties and university

Campus of the future:
- sustainable solutions
- CO$_2$ neutral campus

Campus of the future:
- sharing laboratories and other expensive facilities

Campus of the future:
- intensive and flexible use of high quality facilities

Stimulate social interaction & intellectual interaction
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)

2. The innovative and flexible knowledge economy can bring new life to obsolete (industrial) heritage buildings.

* A economia de conhecimento que é inovadora e flexível pode trazer uma nova vida aos edifícios obsoletos de herança industrial
Campus of the future:
"univer-city"

(photo: Groningen)

Campus of the future:
- creating the place to meet

(photo: Delft)

RELATED BUSINESS
- incubators (academic spin-off)
- N&I departments (academic spin-off)
- related business (science spin-off)
- business who combine learning/working
- "breedplaatsen" / breeding places (artists)

INFRASTRUCTURE
- parking space
- transport on campus (trolleys)
- accessibility (by car)
- accessibility (by public transport)

Campussen of clusters

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3. It takes a crisis – for instance a fire – to change the academic workplace

É necessário uma crise - por exemplo um fogo – para alterar as instalações académicas.

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Dean & staff at Faculty of Applied Sciences

Found a 'new' building within 10 days

sustainable = re-use

http://www.managingtheuniversitycampus.nl
ASSIGNMENT: relocate 3300 students and > 800 employees
DEADLINE: renovate 32.000 m² < 6 months
+ new construction 4.000 m² < next 6 months

Phase 1 & EAST:
16.000 m² gfa
in use September 2008

Phase 2 & WEST:
16.000 m² gfa
in use November 2008

Phase 3 & GLASS HOUSES:
4.000 m² gfa
new
in use May 2009

Undergraduates < 4 months after fire
Project ready < 1 year

Challenge the future
Delft
University of Technology
Design the building as a city – reduce footprint (-15%), more shared / public space

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GOALS ORGANISATION
1. Community building
2. More effective support of education, research & management
3. Creating the place to meet
4. Stimulate social interaction & intellectual interaction
5. Flexible use of facilities
6. Sustainable

Private → Public space
Contextual Concept: Connectivity and variety

Reducing m2, but improving...
Quality of place (interior design)

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Reducing m2, but improving...
Quality of place (cultural heritage)

Reducing m2, but improving...
Quality of life (campus & city)

TRADE-OFF
one territorial office workplace → many non-territorial places

4. The campus of the future is a city
O campus do futuro é uma cidade.

“campus of the future”

- ACADEMIC
classrooms, library, offices, laboratories, lecture halls, ...
- RESIDENTIAL
student housing, hotels, ...
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incubators, industry, ...
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campus strategy
“to share or not to be…”

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Studio space

- student back at the faculty
- 6 m² usable per workplace
  → became less after decision process
- tables are assigned to groups of students per semester (no permanent territory)
- smart use of space (by smart scheduling)

CREATE "HOME AWAY FROM HOME"

Library: quiet place to study

Changing the academic office

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Office space
- no individual territory
- 12 m² usable per fte
- became more after design process
- activity related concept
a. SILENT ROOMS
b. LIVING ROOMS
c. MEETING ROOMS
- formal / informal
d. TEAM OFFICES

Public space
- usable space in corridors for informal meetings and work

Restaurants & bars

Public space:
design a building like in a city

Students and academic staff sharing workspace ➔ reducing the footprint, improving interaction

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Changing the academic workplace

- from private to more public space
- from office space to a multifunctional working environment
- from individual to shared - “to share or not to be…”
- is expanding from a workplace to the campus and the city
- trading quantity (per user) for quality of the working environment
- from one assigned workplace to many meaningful workplaces or to finding the most comfortable workplace in every season
- increasingly paperless (paper determines territory…)

The campus of the future is a city

The city of the future is a campus (univer-city)

1. use heritage for branding – students* become tourists
2. reduce the footprint – densely populated areas contribute to innovation
3. less private, more public use of space – showcase, open, 24/7 access
4. ‘urban meeting rooms’ – to merge urban and university communities
5. regional alignment – planning in a public-private network

Follow me on Twitter: @alexandra_dh

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

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THEORIES & FRAMEWORKS

1. Convince policy makers of role campus in performance university.

AFTER OUR FIRE: BK CITY

2. Never waste a good crisis.

NEW CONCEPTS TESTED

3. Use European heritage buildings as a competitive advantage.

STRATEGIC CHOICES

4. Use European historical inner cities and collective qualities as a competitive advantage – to share or not to be

SHARING KNOWLEDGE IN EUROPEAN NETWORKS

Movie 2 – “The making of BK city”