Aalto

THE IDEAL CAMPUS
IS BEING INVENTED TODAY

DIGITAL TECHNOLOGY HAS REVOLUTIONISED ACCESS TO KNOWLEDGE, WHICH IS NOW WIDELY DISSEMINATED. THIS COULD HAVE INDUCED A FEAR THAT THE SPACES KNOWN AS "CAMPUSES" WOULD BECOME VICTIMS OF PLANNED OBSOLESCENCE. HOWEVER, CAMPUSES HAVE SUCCEEDED IN REDEFINING THEIR ADDED VALUE BY BRINGING TOGETHER NEW AUDIENCES AND PROVIDING A GREATER VARIETY OF USES. FAR FROM TURNING INTO PARKS FILLED WITH UNIVERSITY BUILDINGS CUT OFF FROM THE URBAN ENVIRONMENT, THE CAMPUSES OF THE FUTURE WILL COMBINE PLACES OF STUDY, RESEARCH AND WORK, BUT ALSO PROVIDE LIVING SPACES OR EVEN BECOME URBAN NEIGHBOURHOODS.

The crucial challenge facing world cities is to attract, train and retain talented people. In France, recent trends have favoured the grouping of higher educational and research sites to help achieve their common objectives of excellence, multidisciplinarity, innovation and economic development. By becoming a natural point of convergence of such dynamic forces essential to the competitiveness of cities, the "campus" concept is undergoing profound change. True, in the past, the Sorbonne based its reputation on being a centre of excellence, but today knowledge is everywhere and beyond the walls of universities. Why should people go and study on campuses when knowledge is accessible online? Metropoles and universities have endeavoured to reinvent the campus concept by avoiding the pitfalls of the town-centre campus trapped in its historic heritage or, as in the case of the US model, of the campus cut off from the city. This Note launches a reflection on the purpose of the campus as a place of study, research and work conducive to creativity. It also reflects on the target audiences of the modern campus, i.e. students, researchers, teachers, companies and local government authorities. It sets out a vision of the ideal campus based on international best practices and capitalising on technological trends. Such a blend reveals a positive and realistic vision of the campus that we would like to see the birth of soon, thereby encouraging universities and local government authorities to deal with a key issue: campus planning and development.

A CAMPUS AT THE SERVICE OF A PROJECT
The ideal campus brings together the key stakeholders involved in higher education (universities and schools) and research, as well as in businesses, start-ups and support providers (incubators, nurseries, showrooms, fab and living labs, third places, etc.), not forgetting the non-profit sector. These

Aalto Design Factory

Prêt-à-Loger/pretaloger.nl

Cover page
The learning hub at Aalto University in Finland renews the concept of a university library by providing students with a comfortable study area as well as resources and services available on the spot or virtually, including advice, inter-university lending of publications, etc.

1. The Aalto Design Factory (ADF) on the Aalto Campus in Otaniemi (Finland) defines itself as an innovation hub and a centre for interdisciplinary learning, which brings together students, researchers and industrialists specialised in design. It has successfully adopted an approach based on intense multidisciplinary student involvement (in technology, trade, arts and design) inspired by design thinking or technology problem-solving. Today, the ADF is spreading its activities over several campuses across the world.

2. The Green Village, a 12,000 sq. m. living laboratory on the campus of Delft University (Netherlands), is developing innovative projects related to the ecological transition. It brings together researchers for technology, entrepreneurs for economic modelling, the general public for useful applications and institutional players for regulations. It is managed by a university foundation and co-financed by the public and private sectors. All the stakeholders involved are welcomed in innovative and environment-friendly buildings, which provide the campus with its architectural value-added.

stakeholders all share a joint strategic project that creates social and economic value for the local area. Thus, what defines a campus is not only its critical mass, but also the linkage of various functions at the service of a vision and of a particular local area. The drivers of this model are competition for high rankings in international academic league tables and the will to provide modular and flexible facilities that meet economic, social and territorial planning objectives.

A jointly defined strategy
Ideally, the stakeholders jointly decide on the identity of the campus, i.e. its focus on areas such as healthcare, sustainable development, digital technology, etc., in line with a systemic logic of innovation that frees the stakeholders from thinking in disciplinary silos, thereby enabling them to develop collaborative projects. The resulting bonds of trust ensure sustainable cross-fertilisation and encourage open innovation.

The vitality of campus life relies on academic and scientific excellence, but also on student entrepreneurship, the creation of start-ups, spin-offs from research laboratories as well as collaborative projects with civil society. The collaborative projects link complementary functions and stakeholders (R&D laboratories and businesses) housed within hybrid buildings. Such developments and ties with local stakeholders make it possible over time to retain these creators in the local areas concerned by organising their real estate/accommodation experience within the metropolitan area. Thus, the campus turns out to be a demonstrator of technologies and uses, featuring iconic buildings acting as showrooms for the innovations developed within the campus and presenting laboratory products to the general public. A campus may also be used as a living lab or as a space for art exhibitions. For example, the Technology University (TU) in Delft (see opposite) has adopted a societal strategy based on the concept of "Impact for a Better Society". This multidisciplinary approach is not restrictive: it clarifies the identity of the Delft UniverCity campus and fosters joint cross-cutting work.

Wider and shared governance
The governance of the ideal campus should be both decentralised and shared. Universities, businesses and non-profit organisations are partners in the overall project and participate in making decisions on equipment, capital goods and spatial planning. A campus is not a mere grouping of assorted stakeholders appointed as leaders by the management teams of the organisations concerned, but rather a place that fosters a form of decentralised governance more appropriate for choosing innovation demonstrators, desirable facilities and good community leaders. Numerous professional networks exist and many meetings are held both within and outside the campus in conjunction with the local and regional ecosystem. A campus is also an important virtual platform, notably for exchanges with former users and for making service offerings to neighbouring communities.

A site open to the outside world
The ideal campus is an integral part of the city and gives rise to a knowledge ecosystem which spurs innovation, social inclusion and economic development. Thus, scientific and economic relations with local areas are fostered.

The foot of buildings is accessible and designed to connect open spaces with secured closed spaces (R&D laboratories, corporate premises, etc.). Site footfall is dynamised by the existence of third places for schoolchildren, students or the general public. The green spaces are open to everybody and designed to allow the inhabitants and students to take initiatives that generate meetings and exchanges between them. Shared gardens, urban farms, sports activities and festivals are all conducive to making it easier for people to live together. Thus, the University of Columbia is helping to revitalise West Harlem through social and educational initiatives developed on its campus in Manhattan or in the urban district itself.

AN INCLUSIVE CAMPUS
The quality of life on the campus is a key prerequisite for the success of the project. The aim is to provide students and staff with working and living conditions

THE IDEAL CAMPUS

Campus

Heart of the campus where the main functions are consolidated

Urban or peri-urban space depending on the location of the campus

Functions an

High and

URBAN AREA

Office Buildings

Venture Capital

Hospital

Office Buildings

Data center

Co-working Spaces

Multi-Unit Dwellings

Charities

Living lab

High School

Shops

Detached Houses

Corporate Incubator

Research Laboratory

Technological Platform

Student Accommodation

Medical Centre

Shops

Hotel

Library & Learning Centre

Green Roof

Renewable Energies

Parking Lot

Shuttle Bus

Office Buildings

Student Support Centre

Administration Services

School 1

Swimming Pool

Station

Reception Area

Start-up

Office Buildings

R&D labs

Main Building of the University

School 2

Restaurant

Campus Entrance

CAMPUS

Showroom Exhibitions

Third Place

Bar

Bicycle-sharing system

Cycle Path

Classroom

Fab lab

Shared Classrooms

Auditorium

Bank

Bar

Pharmacy

Factory

School 3

University Building

Business Accelerator

Co-working

Shops

Student Accommodation

Restaurant

Shops

Tech Incubator

R&D labs

Shared Garden

University Restaurant

Elect Charg

Student Accommodation

Bar

Administration Services

Living Lab

Classroom

University Halls of Residence

Restaurant

Collaborative Learning Spaces (MOOCs, etc.)

Computer Room

R&D Laboratory

Scientific Equipment

Theatre Cinema

Gym

Modular Homes

Office Buildings

Sportground

Collaborative Farm

Shops

Campus Entrance

IAU

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100 à 200 m

nd stakeholders** present on the ideal campus:

er Education: several universities
colleges, multidisciplinarity

🔶 Research: public and private R&D laboratories,
scientific and technology facilities

🔵 Businesses, start-ups

🔵 Business support: nurseries, incubators, etc.

🔵 Demonstration: showrooms, living labs, etc.

🔴 Non-profit organisations: representing students,
local residents

🟣 Homes for students and guest researchers

🟣 Services: shops, restaurants,
medical practices, etc.

🔵 Sports and cultural facilities

🟡 Mobility solutions

🟡 Sustainable management

Metro
Station

Serviced
Offices

Multi-Unit
Dwellings

Large Company

Underground
Parking Lot

Car-Pooling

Detached
Houses

Green Spaces

ic Vehicle
ng Station

Beehives

Campus
Entrance

This drawing presents a compilation of existing or planned best
practices on campuses in France and abroad. It is not intended that this
ideal campus should be replicated everywhere in this way. The drawing
suggests ideas that need to be adapted to each local university context.

A **PROJECT-BASED** CAMPUS

🔴🔴🔵🔵🔴 All the campus **stakeholders** come together to implement a project
that adds value to the local area or territory.

The higher educational and research institutions, businesses,
non-profits and local authorities are all involved in the **governance**
of the project.

Dynamic professional communities organise meetings
and networking on and off the campus.

To demonstrate its technologies and applications,
the campus exhibits its innovations in a **showroom.**

Collaborative projects are a crossover point between
complementary functions (R&D and businesses) and become
drivers of economic development and innovation (factory, etc.)

The **real estate** offering should facilitate housing assistance
for business creators (from start-ups to SMEs) in the local area.

A **WELCOMING** CAMPUS

The **quality of life** is enhanced day and night all the year round
(even during university study breaks) by lively hubs.

Cultural and sports facilities are open round-the-clock.

A very active **community life** strengthens ties between students
and the local population.

The housing units are **flexible** and **modular.**

Local food supply networks and short food supply chains
are favoured.

Respect for biodiversity involves the management of flows
(district heating, waste, etc.)

Connectivity is available across the entire site.

AN **ACCESSIBLE** CAMPUS

Multiple **entrances** connect the campus to the city.

Public transport service hours are extended.

Traffic inside the campus is fluidified by cycle paths,
self-service transport and carpooling.

A dedicated **shuttle service** (Science bus) connects
various campus sites with the city.

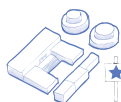The local population has **access** to the services on offer.

On-campus signage makes it easy for users to find their way
through the buildings and along the different footpaths.

A CAMPUS WITH A **HIGH INTERNATIONAL PROFILE**

An **iconic** building which attracts visitors and tourists.

The campus within the campus dedicated to a particular theme
such as healthcare, sustainable development, etc. acts as a driver
of **attractiveness**; its marked **identity** (brand name, logo) make it
possible to launch targeted marketing projects.

AN **URBAN** CAMPUS

Porosity between city and campus is a key urban planning priority.

The **housing** programmes **in and on the edges**
of the campus enhance its residential appeal.

The sports and cultural **facilities** are open to everybody.

The linkage between open/closed and **secured** spaces has received
special attention.

University Neighbourhoods Association, Brandon Perrett and Emily Lomax

M. O. Stevens

that favour their success and fulfilment while strengthening the ties between institutions involved. The campus is a lively learning community.

A well-considered reception from start to finish
The reception of newcomers has been entirely redesigned: as soon as they arrive, they are invited to visit the territory and benefit from various personalised support services (students, researchers, professors), as well as a one-stop shop for administrative procedures. These services are all provided in a single building in the centre of the campus. This building is much more than an administrative centre: it is a place for socialising, which is easily accessible to students with different specialities. Open all night, it is used both for studying and relaxing. The services provided on the spot by the local authorities make it easier for foreign graduates and post-doctoral students to settle in the territory by finding their first jobs or setting up their own businesses. Personal links with former graduates are cultivated because they are considered to be the international ambassadors of the campus.

A wealth of facilities and services
The ideal campus is a living space which provides onsite or local access to sports facilities (swimming pool, stadium), cultural amenities (library, cinema, theatre), shops and services, including restaurants, cafés, a bank, a pharmacy, medical services, etc. Suitable and innovative accommodation is on offer. Students, professors and visiting researchers have access to housing both on the campus and in town. On campus, the homes are flexible units based on needs (apartment hotels, modular homes, etc.) and seasons (homes rented to tourists in the summer). Students participate in the decision-making process, which includes decisions on the management of shared spaces that encourage meetings, exchanges and serendipity. Non-profit organisations are very active and are at the service of both students and local residents.

Great student involvement
The students are involved at an early stage ahead of the university courses. They can discuss the proposed content of the courses, participate in projects jointly developed by the various schools as well as in vocational integration initiatives. Factors that favour their involvement in campus life include the adoption of new technologies for teaching and disseminating knowledge, the opportunity to choose complementary courses and the greater importance attached to extra-curricular activities, as in the case of the Aalto Design Factory. Finally, by recognising that training is a life-long commitment, the campus is a place dedicated to the production and dissemination of knowledge for all, either on the spot or through digital content and MOOCs. This activity enables the campus to diversify its sources of financing and to function even when the university is closed. Thus, Cornell University (USA) proposes an offering of continuing education with summer and winter sessions, as well as social and educational activities for all kinds of audiences.

An ecologically exemplary campus
In terms of sustainable development, the ideal campus rises to the challenge of energy sobriety thanks to the circular economy, flow management (waste, biodiversity), low-impact modes of transport and reversible urban planning. The supply of foodstuffs is ensured primarily through local networks. Reducing food wastage and enhancing the quality of meals distributed are challenges dealt with collectively. The mutualisation of resources is facilitated by the development of the collaborative economy based on the sharing of vehicles and spaces and on the development of intermediation platforms such as the University Neighbourhoods Association (UNA) in Vancouver BC (see opposite).

AN ACCESSIBLE CAMPUS
The ideal campus benefits from good transport accessibility and multiple entrances visually signalled by the word "campus": for example, the names of buildings are clearly identified by the name and logo of the campus at each entrance, roadways and sidewalks thanks to a colour scheme. Priority is given to public transport and low-impact ("soft") modes of transport. A few underground parking lots remain, but most transport services are provided by

3. On the campus of British Columbia University (Vancouver, Canada) the University Neighbourhood Association (UNA) acts as a property condominium management body on behalf of the 8,000 residents. It manages the living space with a view to integrating the entire local population into day-to-day academic life. It manages the spaces and services (waste, composting, mobility planning, cultural activities, shared gardens) while at the same time reinforcing social bonds between residents.

4. The historic campus of Oregon Health & Science University (OHSU) in Portland (USA) is geographically constrained by being located on a hill. Thus, it has contributed 15% of the cost of an Aerial Tram built by the other landowners to link its two campuses. This means of transport is accessible to the population and is connected with the network of tramways, tram trains and free access bicycle services. The OHSU promotes the greater use of bicycles and better mobility through carpooling and car-sharing.

a metro network. Low-impact, pedestrian and public transport facilities are coordinated with those provided by the city, which are innovative and well adapted to the local context. Thus, the city of Zurich has set up a dedicated bus line called "The Link" which connects the two campuses of the Polytechnic university (ETH Zurich). The Oregon Health and Science University (OHSU) in Portland has jointly financed an aerial tram line which is integrated into the tramway, tram train and self-service bicycle networks. It also promotes mobility thanks to car-pooling and car-sharing services.

A CAMPUS WITH A HIGH INTERNATIONAL PROFILE

The reputation of a campus depends on the activities of the academic players who use it. Its profile is often enhanced by **an iconic building** which attracts visitors and even international tourists. Such a building fulfils several key functions: library, showroom, reception area, main auditorium, etc. It provides a good reason for an urban or architectural visit and therefore improves the image of a campus. Thus, the expansion of the EWHA women's university in Seoul has boosted the attractiveness of the surrounding neighbourhood. As a result, the site attracts numerous tourists who come to walk around, visit the university shop and take photos of this architecturally remarkable site.

The key elements of the attractiveness of a campus in the eyes of businesses, researchers and foreign students are the following: the upgrading of higher educational and research capabilities; better understanding of different cultures; diploma recognition; frequency of cooperative ventures; and the provision of services.

The ideal campus targets and attracts international talent by providing career opportunities for talented people and their partners. It relies on a local supply of schools suitable for these people's children. Thus, Aalto University, by regularly organising events, helps partners of talented foreigners recruited on campus to find jobs in the Helsinki metropolitan area.

International attractiveness does not necessarily depend on all the players and disciplines present on a university campus. **Targeted marketing** and the recruitment of famous major players may well turn out to be more effective tools for attracting talent and funding than any method of general communication, as illustrated by the GIANT (Grenoble Innovation for Advanced New Technologies) campus in Grenoble, France.

AN URBAN CAMPUS

The ideal campus also provides a combination of housing, offices, recreational, sports and cultural amenities that may benefit neighbouring residents. The porosity of campus limits in relation to the outside world is sought in order to allow the mutualisation of facilities and services, thereby blurring the boundary between the academic world and the general public. Certain major facilities that leverage local spatial development (a theatre, a swimming-pool, a third place, a business incubator) are the responsibility of the local urban authorities. By being open to the general public and wholly or partially funded by local government or even by the private sector, these facilities are better used, more profitable and easier to maintain. The financing modes of these facilities are being continually reinvented to keep up with changing usage. Thus, the Catholic University of Louvain (UCL) has implemented an ambitious cultural policy by developing La Ferme du Biéreau located on university land, which manages music events and a cultural programme for the campus and the city. Finally, a university is ideally placed to be an urban stakeholder that actively plans its campus and the surrounding area. Some universities own the land they occupy: thus, the university of British Columbia (UBC) has built homes on its campus and Louvain's UCL has developed its own independent urban services. In France, the Paris-Saclay Urban Development Corporation (EPA-PS) is responsible for planning the Paris-Saclay urban campus. In conclusion, the ideal campus should become a full-fledged urban neighbourhood with a strong academic identity. Whether geographically located in an urban or peri-urban area, it ensures the interpenetration of the campus with the city. Thus, the academic space is fully integrated into the city and, in this sense, contributes to its attractiveness by training talented people, promoting research and becoming a driver of social and economic development and innovation. ∎

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with Jessica Tessier, Director of Economic Development and Higher Education, Cergy-Pontoise Urban Community

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