24th International Conference on Urban Planning and Regional Development in the Information Society

2-4 April 2019 - Karlsruhe Institute of Technology

Perfect Smart Cities vs Real Emotional Cities

Keynote address

"Smart" and "Emotional" Cities: Key to urban Sustainability

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Abstract

1. "Smart cities" as a « functional » concept.

Smart cities are using information and communications technology – ICT's - to connect urban activities hitherto unconnected.

ICT's can help connect activities within buildings, neighbourhoods or cities, and help linking such activities as land use, heritage conservation, energy savings, telecommunications, commerce/banking and mobility.

This functional concept can serve multiple aims and objectives, among others the production of knowledge-based services making use of "big-data" collecting.

2. "Emotional cities" as a « cultural » concept.

Cities can appeal to their citizens and visitors by their quality of life. Beyond the Gross Development Product statistics, quality of life includes perceived quality of air, water and health.

The continuity of their urban landscapes invites to leisure activities ("green and blue" trails). It offers diversity of visual experiences by users of the public spaces ("views from the street" rather than "views from the road").

It offers squares, trees and gardens, fountains, and canopies, all designed for both walking and sitting users, and an overall urban density propitious to informal contacts between persons, as opposed to undefined urban spread.

3. Combining on the one hand the "smart cities" functionalities that enhance availability of urban services, safety and security for all citizens, and on the other hand the "emotional" qualitative appeal to their citizens and users, is perhaps a key to urban sustainability and adaptation to unavoidable economic, social and disruptive technical changes affecting cities.

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1. « Smart functional » cities features: linking activities through data exchange – five examples:

-case of banking / telephone linking

-exchange platforms between users & between users and rulers

-smart buildings

-smart mobility, including autonomous connected vehicles

-resource saving through circularity (recycling of used goods into new valuable goods

2. « Smart emotional » cities features: linking citizens
-emphasis on quality of life (public spaces, leisure activities and education)
-enhancement of citizen identity through social diversity and informal contacts
- emotional citizen involvement through community events (festivals, cultural events, folklore, supporter sports)

3. Global sustainability includes both functional and emotional features - three award-winning cases of cities/neighbourhoods -
- Zurich: smart mix of land-use and mobility – quality of life
- Bilbao: smart mix of urban renewal and transport – with emphasis on culture
- Louvain-la Neuve: high density-low rise – resource saving – with active citizen involvement

1) "SMART CITIES" AS FUNCTIONAL CONCEPT

« Smart cities » are using information and communications technology – ICT's - to connect urban functions and activities hitherto unconnected.

Information and communication technology can help connect activities within buildings, neighbourhoods or cities such as land use, heritage conservation, energy savings, telecommunications, commerce/banking and mobility.

This functional concept can serve multiple objectives and business interests, among others, the production of knowledge-based services making use of "big-data" collecting.

This will be illustrated by five examples.

1.1) Using data for money transfers: mobile phones as banks

A kiosk displays M-Pesa advertising in Nairobi, Kenya (2012).

M-Pesa (M for mobile, Pesa is Swahili for money) is a mobile phone-based money transfer, financing and microfinancing service, launched in 2007 by Vodafone in Kenya and Tanzania.

The service allows users to deposit money into an account stored on their own cell phones, to send balances using PIN-secured SMS text messages to other users, including sellers of goods and services, and to redeem deposits for regular cash money.

M-Pesa is thus a "smart" branchless banking service.

M-Pesa has spread quickly, and by 2010 had become the most successful mobile-phone-based financial service in the developing world. An estimated total of 17 million M-Pesa accounts have been opened in Kenya, and expanded to Tanzania, Ghana, Afghanistan, South Africa, India and in Eastern Europe.

The service has been lauded for giving millions of people access to the formal financial system and for reducing urban crime in an otherwise largely cash-based society.

1.2) Big-Data exchange platforms between users and between users and rulers

A postcard showing the interior of Stateville Correctional Centre, Illinois, modelled on Bentham's **Panopticon**.
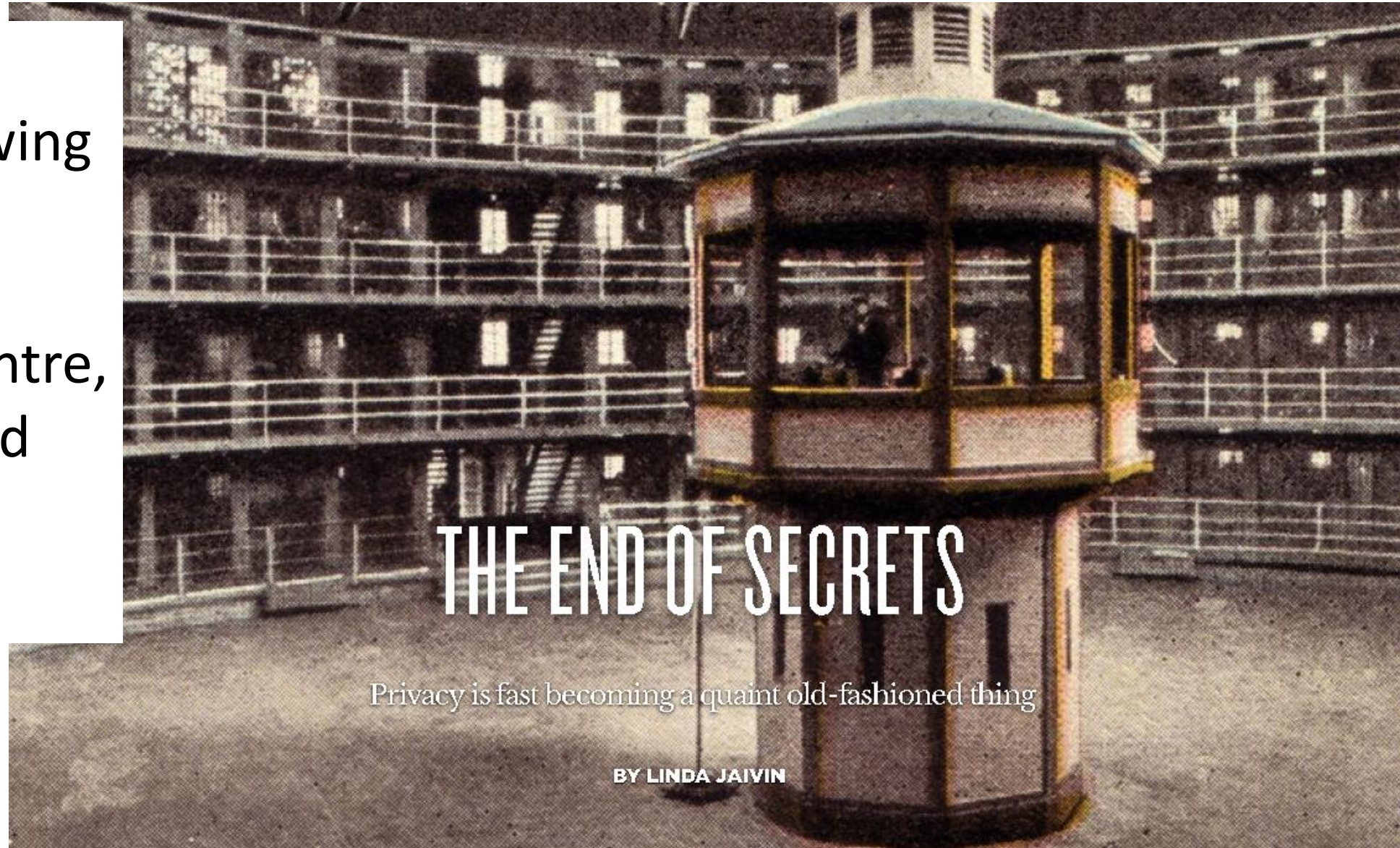
THE END OF SECRETS

Privacy is fast becoming a quaint old-fashioned thing

BY LINDA JAIVIN

Data exchanges has been multiplying the traditional merchant function by getting to know the profile of the buyers.

Beyond Orwell's « 1984 » and Huxley's « Brave New World » the data available on each citizen multiply the potential of citizen alienation by the masters of Big-data collection, including governments, the Government of China using big data for imposing its « Conformity policy » to all citizens. It is an « unbridled » toy for « unbridled » governments.

Today big data often take the form of value added information of **electronic platforms** in fields such as accommodation (Air-BNB), mobility (Uber), auctions (E-Bay) and collection of personal data (Facebook). The profiles so collected are a highly saleable product and tool for manipulation. This high value creation gives them easy access to international funding ("uberisation" of services).

Smart platforms however can very well be owned by independent cooperatives, as a modern extension of the 19th century cooperative movement (Manchester Co-op, cradle of the movement, Coop-Italia). Their profits would flow back to their members.

But in fact smart cities are most often the brainchild of smart big money.

1.3) Smart buildings as power plants and resource savers.

Smart buildings aim at optimising air, water, energy production (solar energy generated from both roofs and windows), batteries charging, etc., within a centralised system.

The multinational contractor Besix sees its Dutch headquarter "smart building" as an encyclopedia of smart building features:

A "Smart Building" integrates major building systems on a common network and shares information and functionality between systems to improve energy efficiency, operational effectiveness, and occupant satisfaction. *

View of BESIX new Netherlands Headquarters, Dordrecht

1.4) Smart mobility including management of autonomous connected vehicles.

Autonomous Vehicles (AV), or zero-occupancy-vehicles, have been described as a liberation from the driving chores.
However according to the International Transport Forum – ITF 2017 report.

Trucks without drivers should increase road congestion. The reduction of the employment cost may induce fleet owners to put half empty trucks on highways.

As to cars, AV's will in effect result in users acquiring greater tolerance for long distance commuting and therefore increase urban spread, unless public transport van fleets are used for short- distance driverless links to mass public transport (e.g. Keolis 2017).

Keolis
Lyon
2017

1.5) Saving resources through circularity.

The principle is to replace the linear production chain (produce, use and throw away) by a circular production chain (produce, use, reuse into a secondary product).
The latest news in building recycling is the Amsterdam CIRCL building, initiated by a bank.

"Circl", ABN AMRO's Amsterdam multi-purpose circular pavilion (2017).

All parts of the building are dismountable. Every resource used in the building is recycled. One may remember that the Eiffel Tower was to be dismantled after the Paris World Exhibition but was kept by popular demand.

Recycling in a wider context is only made possible by linking supply and demand for secundary products and certifying them. This may include recycling of CO_2 emissions instead of trying to store them underground.

2) "SMART EMOTIONAL" CITIES.

Combining on the one hand the "smart cities" functionalities that enhance availability of urban services, safety and security for all citizens, and on the other hand the "emotional" qualitative appeal to their citizens and users.

2.1) Emphasis on quality of life, leisure activities and education.

"Medellin Ciudad Intelligente" emphasizes popular IT education, including a network of large and small libraries, even in Metro stations.

España Library of Medellin. A strong statement in favour of "knowledge city".

2.2) Enhancement of citizen satisfaction through places for informal contacts.

NY Times Square was clogged by traffic. Mayor Bloomberg made pedestrianisation acceptable by introducing a trial period, during which traffic flows were analysed and showed it took less time for taxis to take other routes. This was a smart combination of smart data to enhance citizen satisfaction.

New York city Times Square.

Rome's Piazza Navona is a living symbol of emotional city as the God Neptune of Bernini's fountain is spewing towards the facade of his rival Borromini Sant Agnese Church.

2.3) Emotional citizen involvement through community events (festivals, cultural events, folklore, supporter sports).

Oktoberfest, Munich (1,5 M. inhab.)

Carnaval des Gilles de Binche – on UNESCO's World Heritage list - (Binche, Belgium: 30.000 inhab.) – This carnaval involves the entire population.

3) Global urban sustainability includes both functional and emotional features.

Selecting three award winning cities/neighboorhoods within the list of practices referenced in the literature assessing the sustainability performance of cities.

sustainable cities

Assessing the Performance and Practice of Urban Environments

Edited by
Pierre Laconte and
Chris Gossop

sustainable cities

Pierre Laconte and Chris Gossop

* **Zurich**: smart mix of land-use and mobility – quality of life
* **Bilbao:** smart mix of urban renewal and transport – emphasis on culture
* **Louvain-la Neuve**: high density-low rise – resource saving – intense citizen involvement.

3.1) ZÜRICH

Smart mix of land-use and mobility – quality of life (1985-)

Zurich's traffic management.

In Zurich, trams and buses enjoy absolute priority on-street. When approaching a traffic light the sensor (seen on the lower left) ensures they have a green light at any time of the day. The reliability of timetables makes public transport the city's fastest mode of transport. Modal split is around 80% in favour of public transport.

The political ingenuity however lies in the parking policy favouring local voters: the KISS Principle (Keep it Smart Simple).

Zurich's parking management.

Unrestricted on-street parking is exclusively reserved for Zurich-registered residents (the voters), while cars entering the city from other municipalities have a max. 90' parking time. This measure triggered a large-scale return of inhabitants to the city, benefited the public car parks and has been politically very rewarding for the city fathers, while suburban rail travel has been improved. This system could be applied in any city where commuters come from other electoral districts.

Emotional attachment to the city's way of life embodied by its attitude to mobility and relation between centre and periphery – see Bernd Scholl about Limnat Valley and the inclusionary approach to mobility illustrated by the Nissan automobile poster.
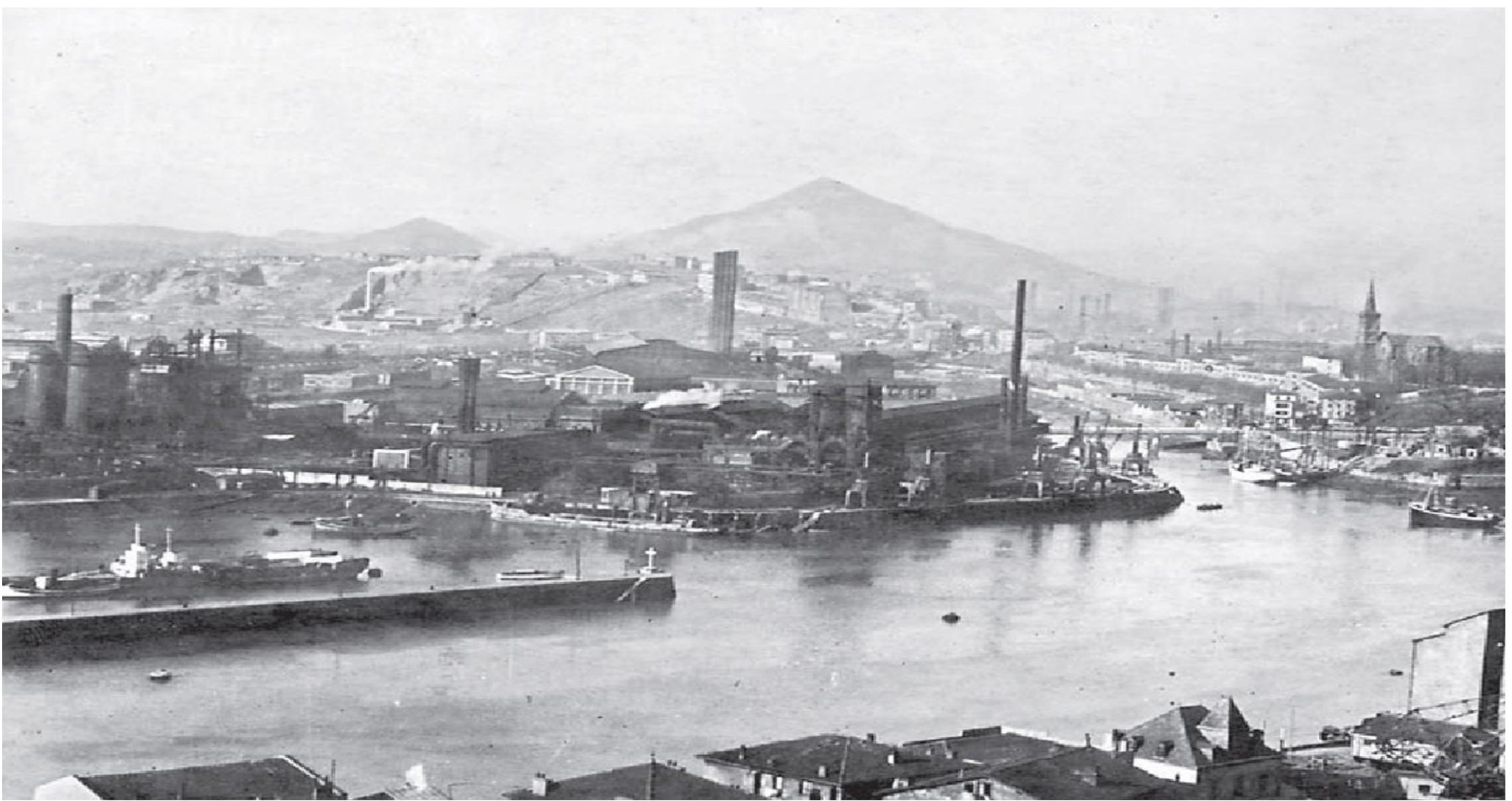
NISSAN
fährt auf den kombinierten Verkehr ab.

3.2) BILBAO

Bilbao: smart mix of urban regeneration and multimodal transport – emphasis on culture and meeting places (1989-2012)

The long time prosperous steel industry was wiped out by the 1989 crisis. Industrial land was re-used for new activities, based on services and culture, while preserving architectural heritage.

The derelict industrial area along the Ría, owned by several public bodies, from local to national, was unified by a public-public partnership embodied in a common public redevelopment corporation - Ría 2000. The two anchors for new development, at each end of the site, were the new Guggenheim museum and the congress and concert centre.

Smart growth in SPAIN

PIERRE LACONTE

50s Urban Land Europe · Autumn 2003
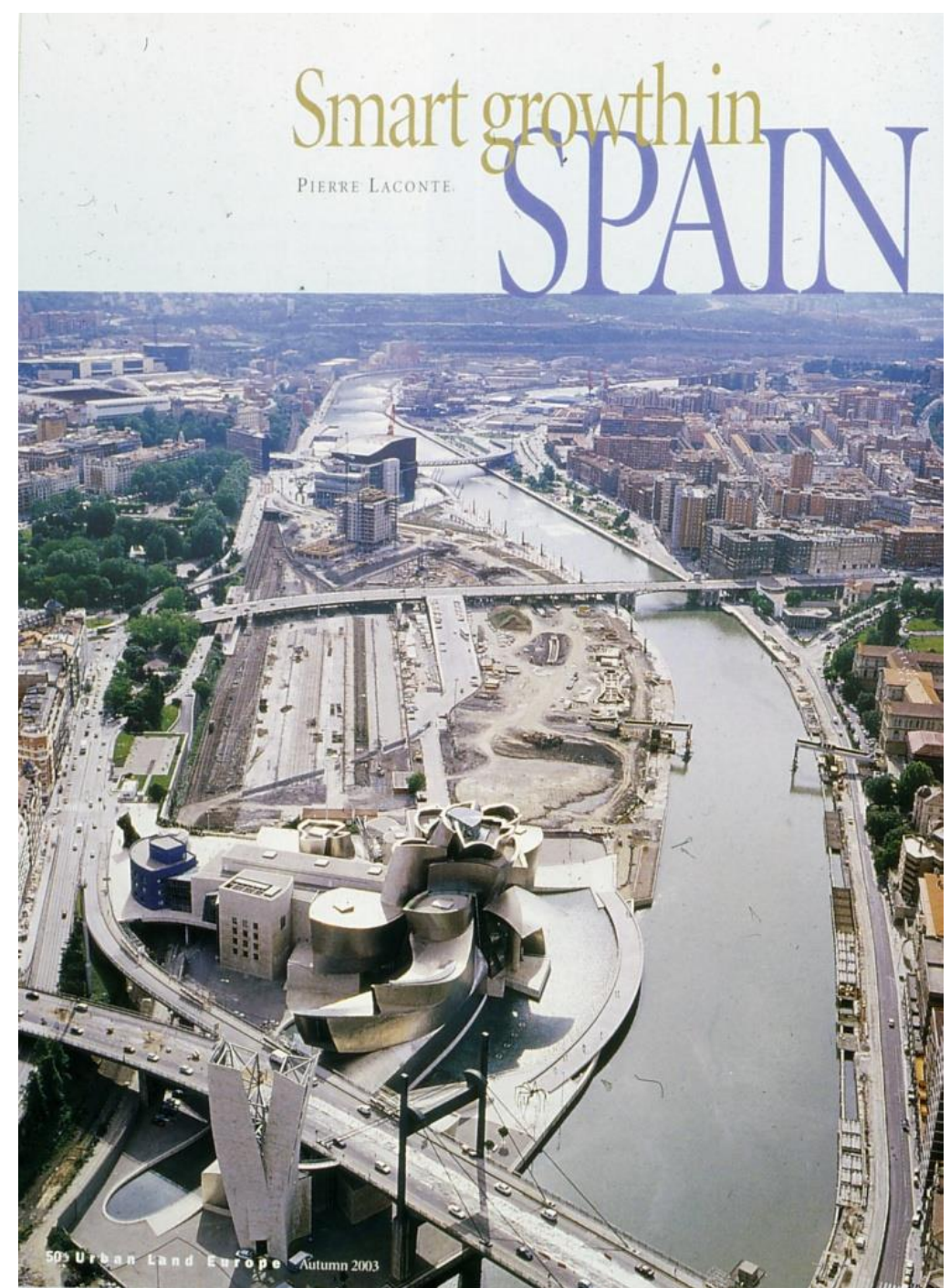
The valuable land situated between the two anchors and very close to the central business district was developed by Ria 2000, with an obligation to invest all of the proceeds in new public infrastructure along the same canal.

The huge surplus generated by the land sales was to be used exclusively to enhance connectivity and further urban regeneration.
The plan's implementation was completed in 2011.

Image 02. Tram stop

A new tram line serves the canal side in the urban centre, saving traffic and parking space and adding to the citizens' quality of life.

Bilbao Metro

Partly new (stations designed by Norman Foster) and partly reusing old industrial railways, it enhanced connectivity throughout the city and its region and attracted energy saving public transport.

3.3) LOUVAIN-LA-NEUVE (Brussels conurbation)

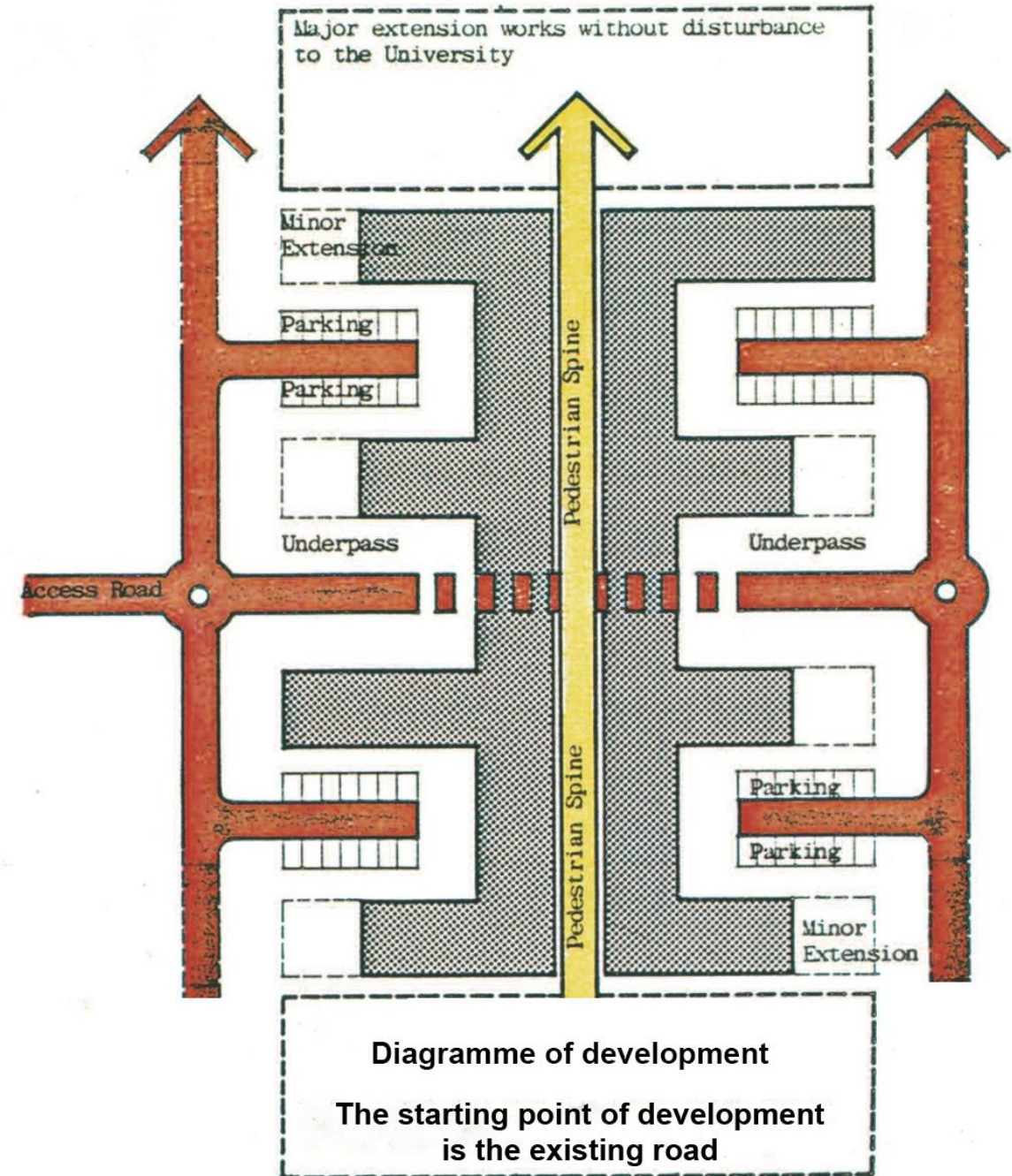High density-low rise land-use – Planning for resource saving – intense citizen involvement (1969/1972-)

The case of the new university town - The university bought ca 920 ha of agricultural and forest land in a rural area close to Brussels Namur road (N4): the central part was set aside for urban development; forest land in the North was preserved. The overall master plan and architectural coordination was entrusted to the Groupe Urbanisme-architecture (R. Lemaire, J-P. Blondel and P. Laconte).
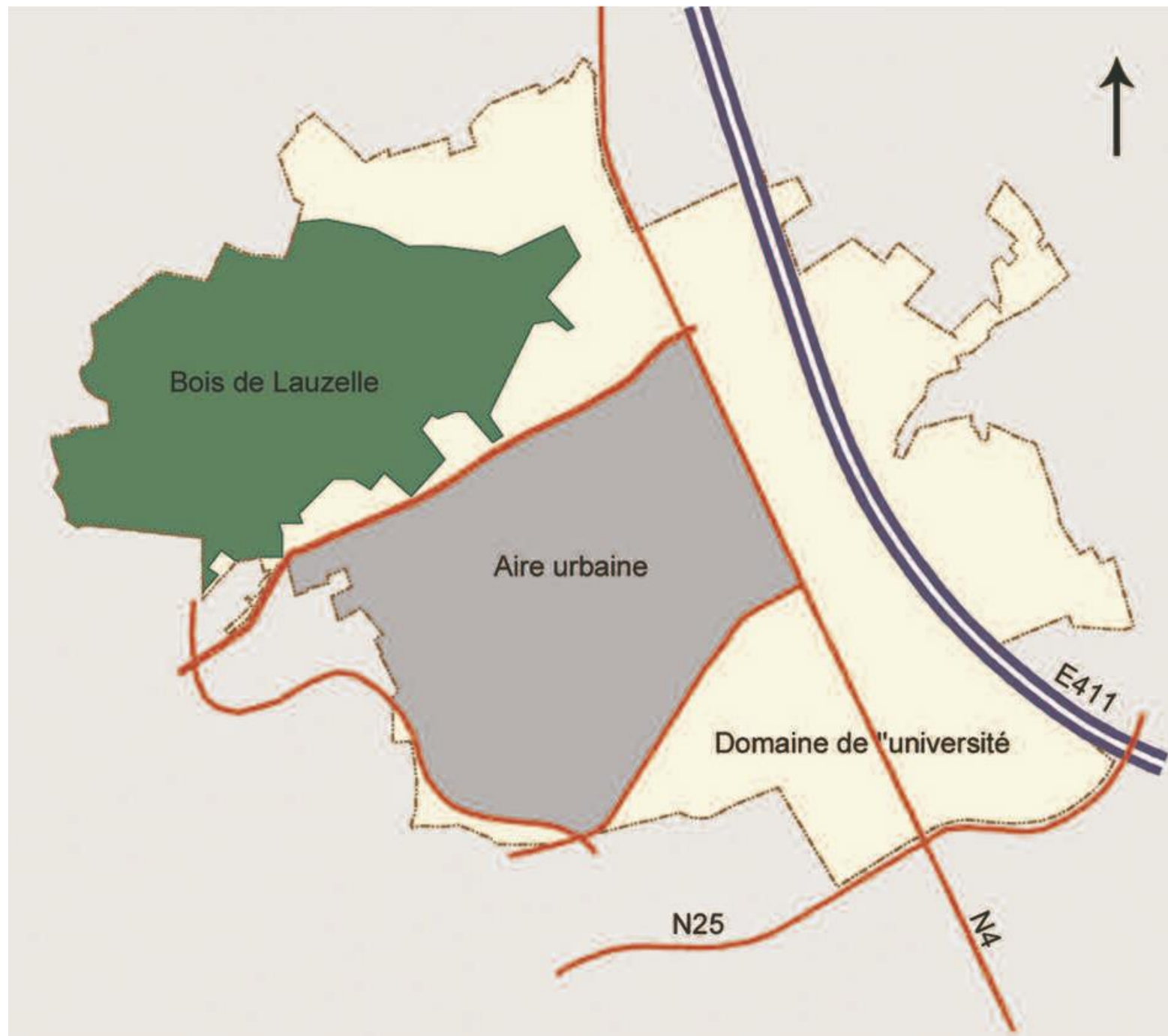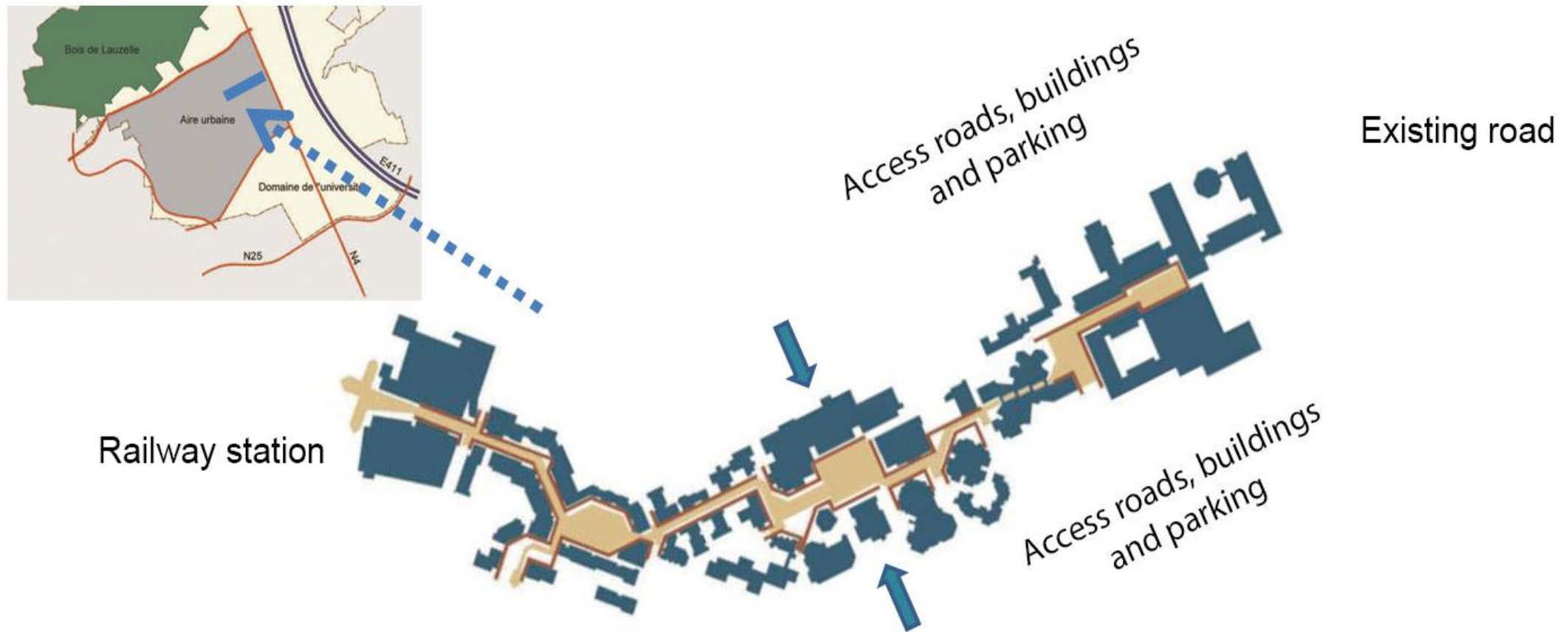
Planning for uncertainty.

A linear pedestrian central spine – in this case the University of Lancaster - allows a step by step mixed urban development, automobile access to buildings and parking being placed outside of the spine, with occasional underpasses.

Major extension works without disturbance to the University

Minor Extension

Parking

Parking

Pedestrian Spine

Underpass

Access Road

Underpass

Pedestrian Spine

Parking

Parking

Minor Extension

Diagramme of development

The starting point of development is the existing road

Labels on figure: Bois de Lauzelle, Aire urbaine, Domaine de l'université, E411, N25, N4, Access roads, buildings and parking, Existing road, Railway station, Access roads, buildings and parking

The pedestrian place-making. It was implemented in the main pedestrian street in the first phase, starting from the existing road east of the site, in 1972 (lower part of the picture), and later extended to the railway station opened in 1976 (upper part), the centre of the city, and the extension towards the western part of the site. Car access to buildings and parking is placed outside the spine, with some underpasses. Property development of the whole university-owned site (920 ha) is by long term leases (75 to 99 years).

A string a public spaces for movement or leisure.

The centre of the first phase (1972) was the Science Library, a huge concrete building seen as the cathedral of a university town with its plaza (parvis), above an automobile underpass. It is a social gathering place with university buildings, shops and restaurants (arch. A. Jacqmain).
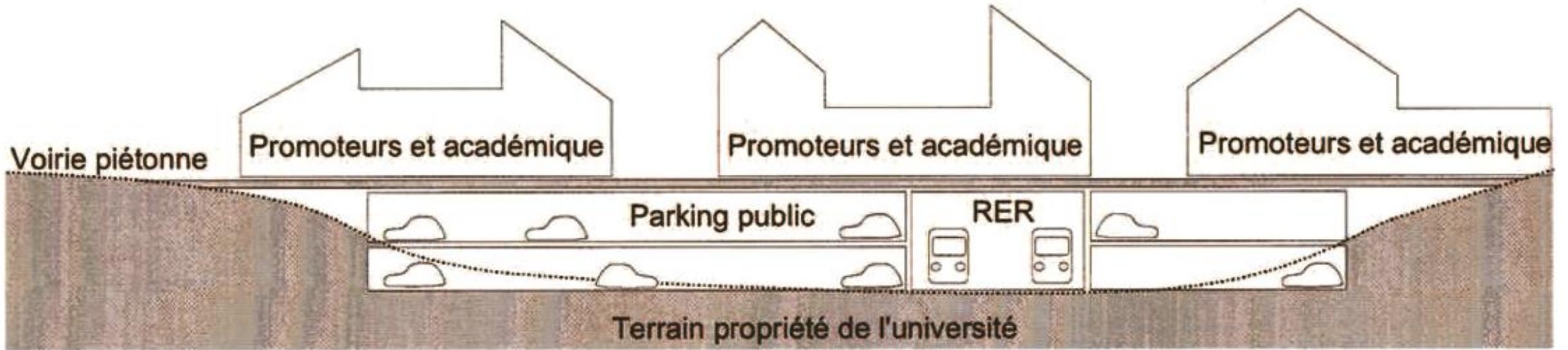
Street entrance to the railway station. All streets are pedestrian and combine university buildings, housing, retail and cultural services. Land remains the property of the University and is leased to investors. All motorised transport is located underground.

Voirie piétonne — Promoteurs et académique — Promoteurs et académique — Promoteurs et académique

Parking public — RER

Terrain propriété de l'université

The functioning of the slab. The diagram shows how the ground below – essential for long-term connectivity - remains the property of the university. The infrastructure and buildings are leased to public and private investors.

View of one the numerous small piazzas on the pedestrian street network. Trees are growing on the slab. Cars are parked underneath.
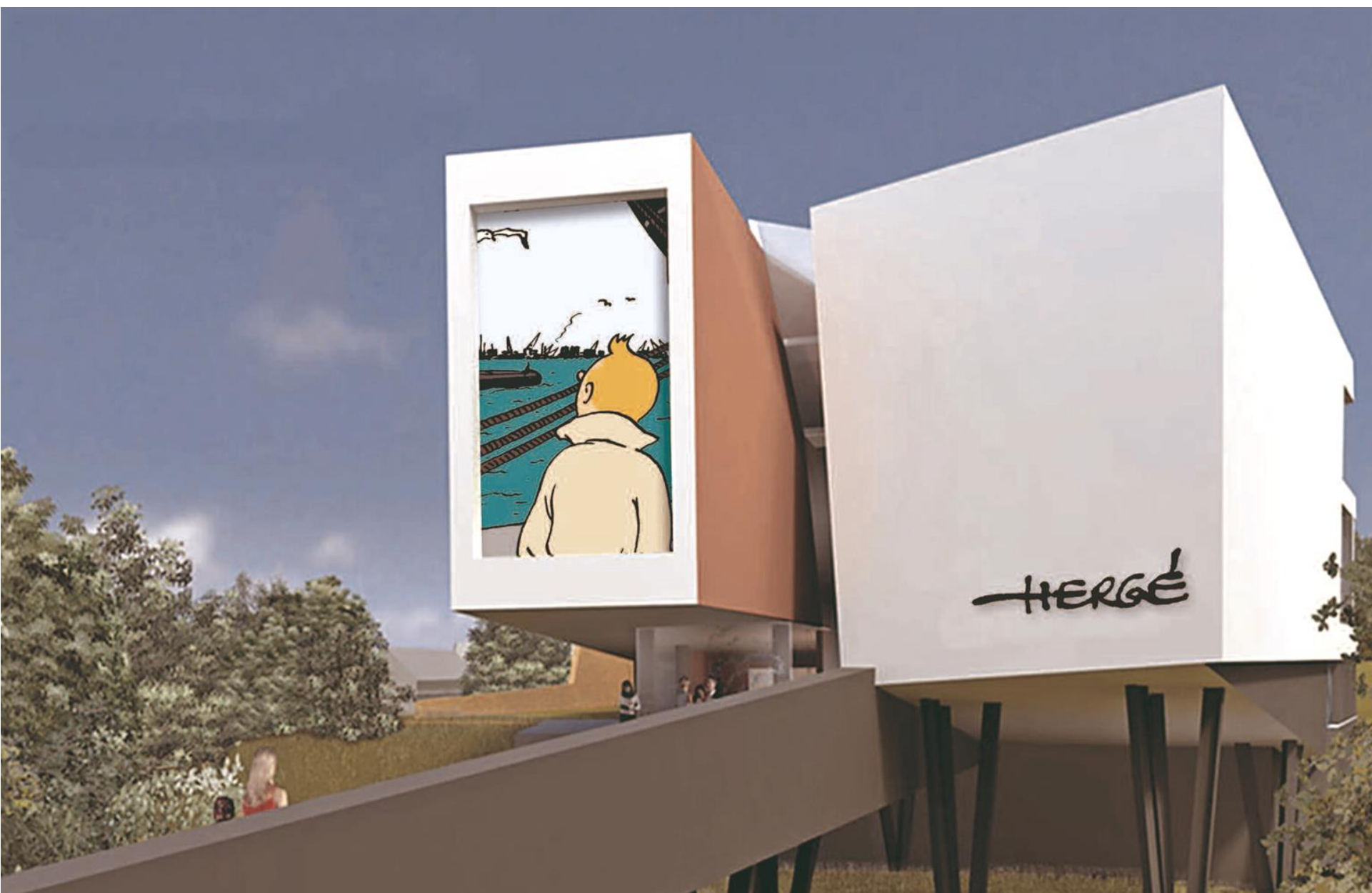
The shopping mall adjacent to the railway station (8 million visitors/year) and the private Hergé museum (arch. de Portzamparc, Paris) are all part of its high density development.

Louvain-la-Neuve: all storm water is led to a reservoir which is treated as a lake, which saves infrastructure costs and attracts residential investment.

The continuity of its planning and governance over 50 years was ensured to the combined strength of its mayors, the latest one over 18 years, and of its residents' council (Association des habitants de Louvain-la-Neuve), countervailing power to both the city authority and the university land lord.

Conclusion

Combining on the one hand the "smart cities" functionalities that enhance availability of urban services, safety and security for all citizens, and on the other hand the "emotional" qualitative appeal to their citizens and users, is perhaps a key to urban sustainability and adaptation to unavoidable economic, social and disruptive technical changes affecting cities.

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An artist illustration

Mobility and Liveable Cities – the transport network irrigating the city. Poster by Friedensreich Hundertwasser (1928-2000) for UITP (1991).
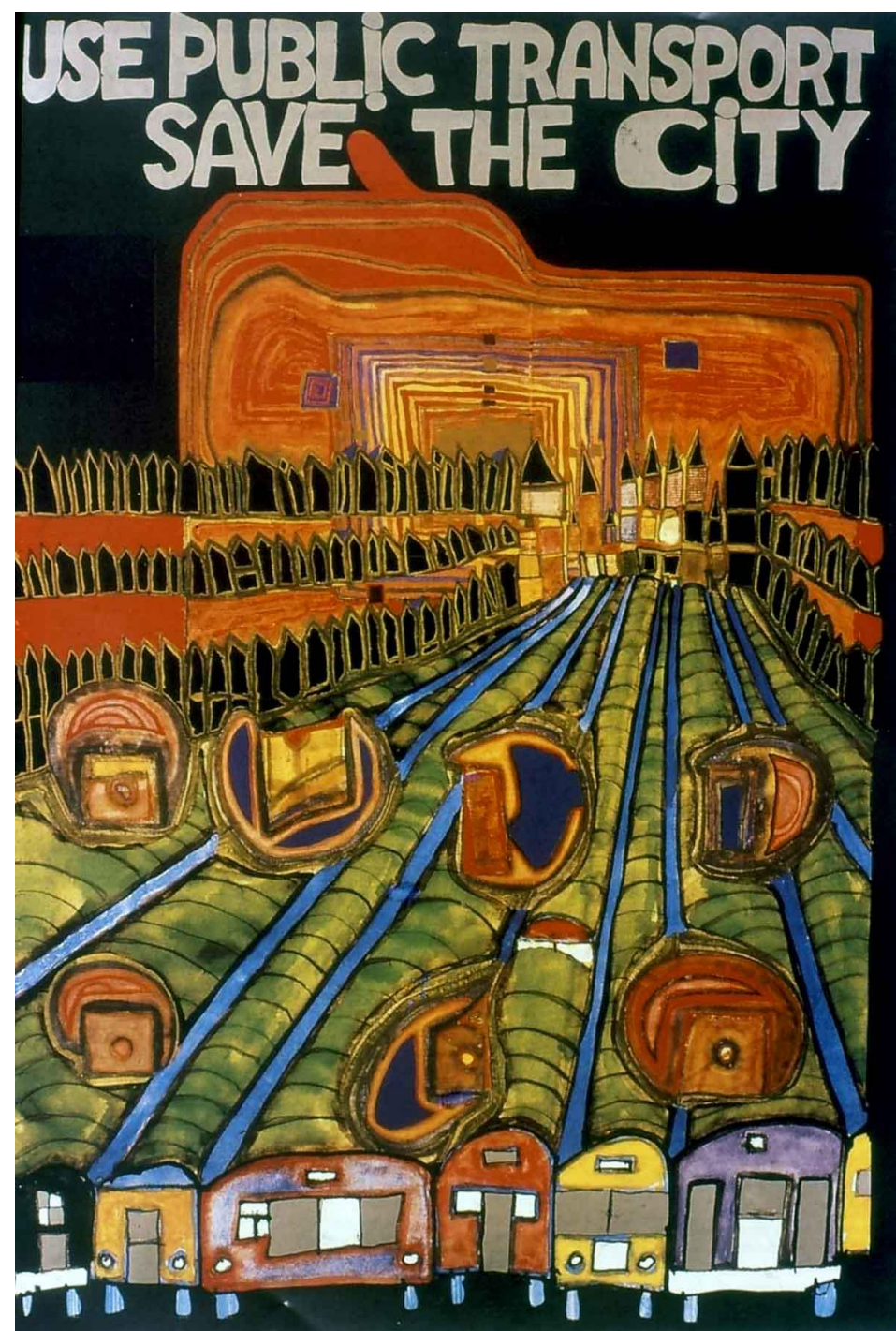
Mobility and Liveable Cities - the compact city – poster by Friedensreich Hundertwasser for UITP (1993).

Mobility and Liveable Cities - enjoyment as a key to liveability – poster by Friedensreich Hundertwasser for UITP (1995).