International Conference
The human factor in the energy transition

The role of human behaviour in urban energy saving

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Summary

The role of urban planning as an anticipatory tool for energy saving: three experiences.

1. Planning for low energy transport: the case of Zürich 1985-

2. Planning urban regeneration through public-public partnerships: the case of Bilbao 1989-2012

3. Planning for low energy growth: the case of the Louvain-la-Neuve new university town (Brussels) 1972-

I. ZÜRICH

Planning for low energy transport:
the case of Zürich 1985-

Bahnhofstrasse © Zürich Tourismus/Bruno Macor

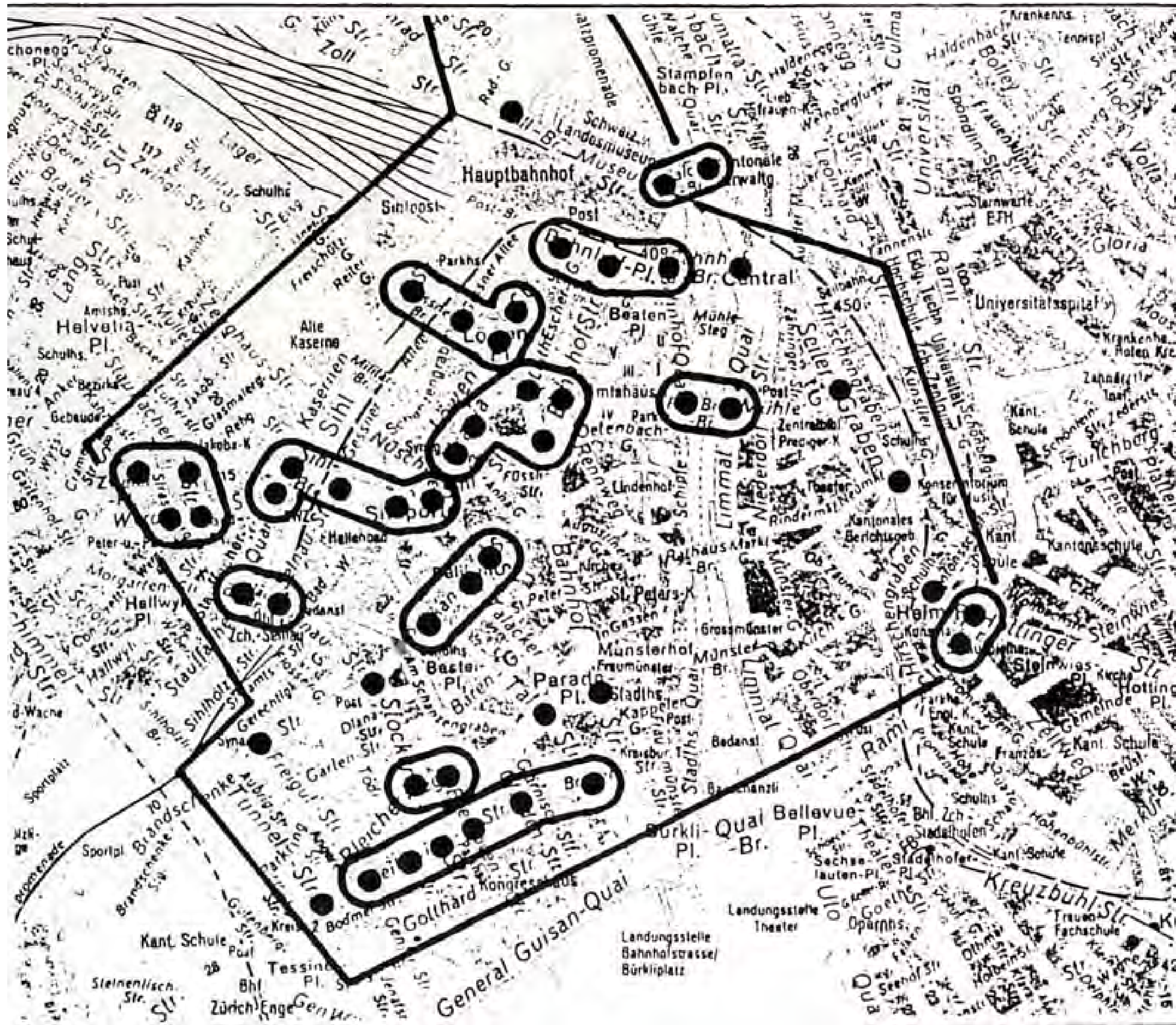
Zurich's traffic management.

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.

Zurich's motor traffic calming.

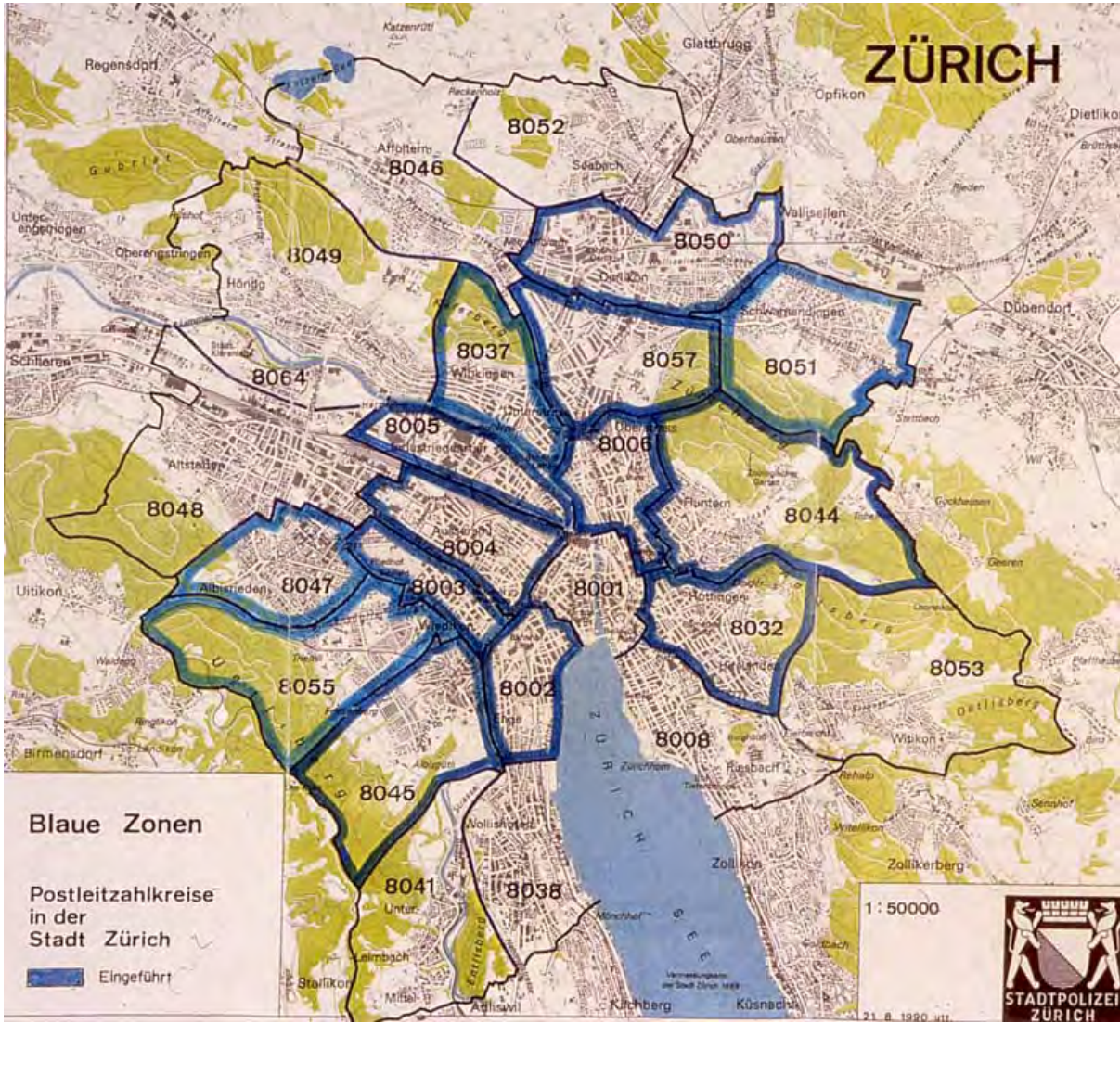
Traffic calming is ensured by adapting the traffic light system (a much shorter cycle favours pedestrians, cyclists and public transport – no "green waves"). *Source: City Police Department.*

The political ingenuity however lies in the parking policy favouring local voters.



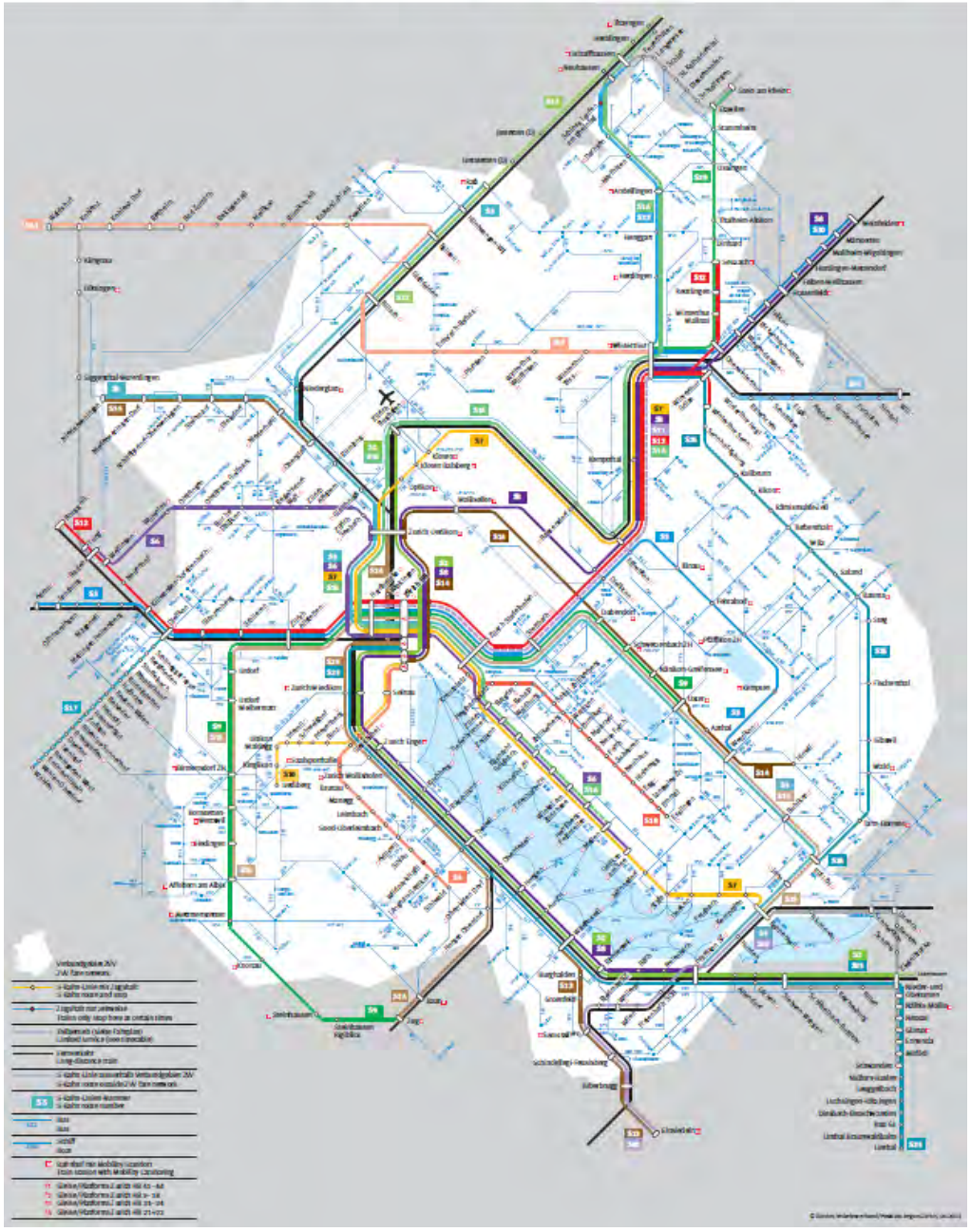
Zurich's parking management.

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.



NISSAN fährt auf den kombinierten Verkehr ab.

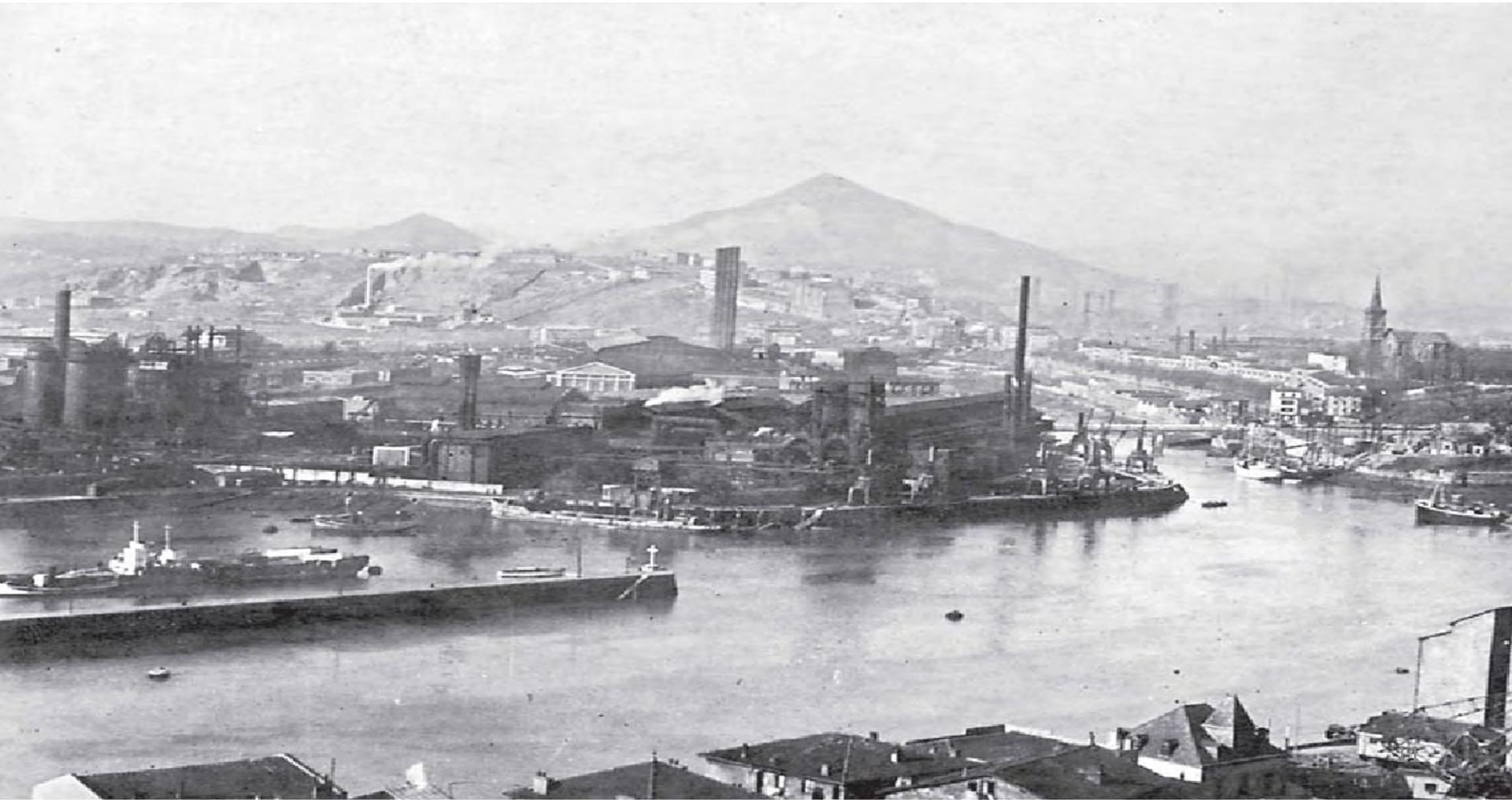
S-Bahnen, Busse und Schiffe
S-Bahn trains, buses and boats



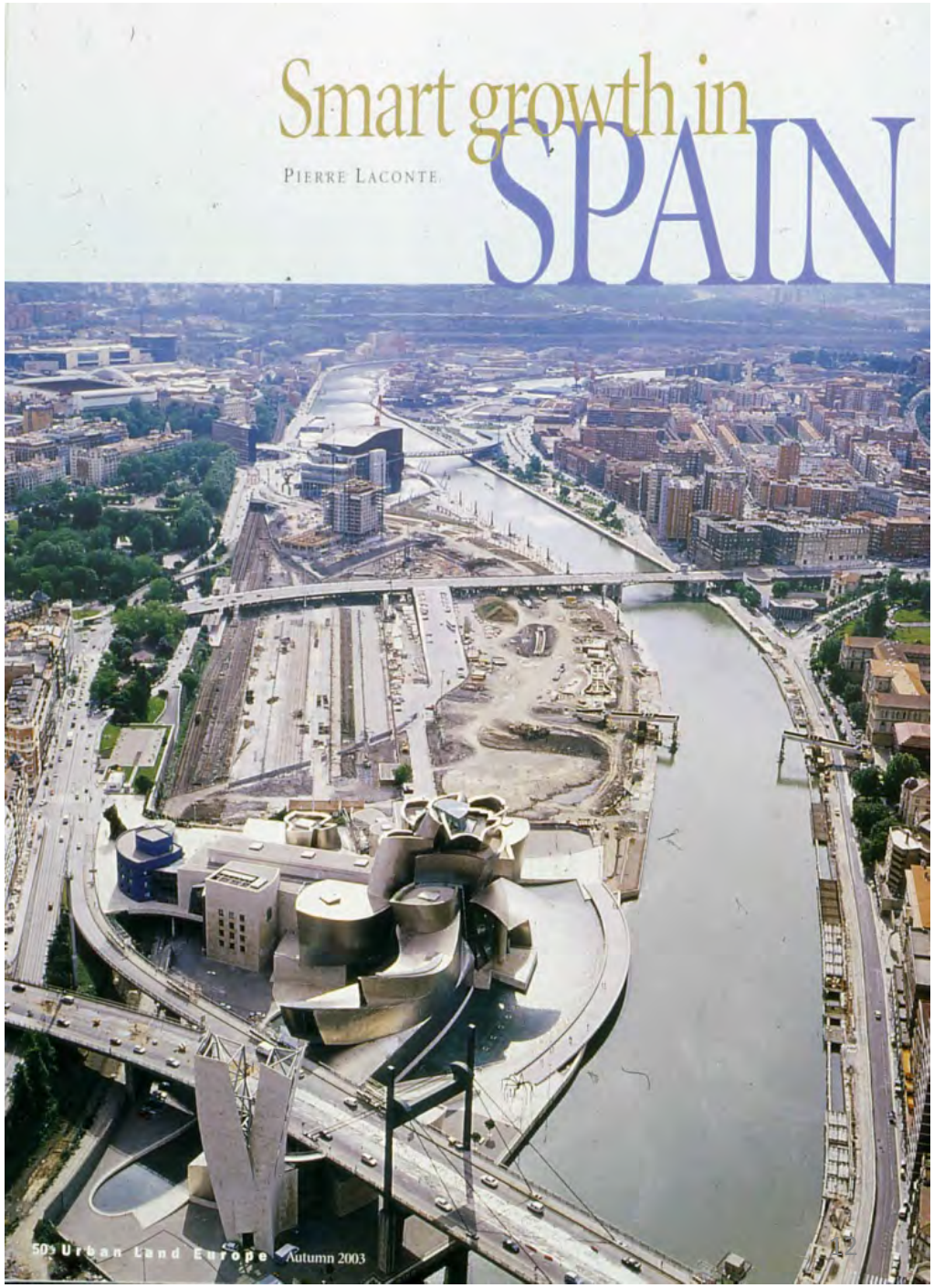
II. BILBAO

Planning urban regeneration through public-public partnerships: the case of Bilbao 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.



The valuable land situated between the two anchors and very close to the central business district was developed by Rià 2000, with an obligation to invest all of the proceeds in new public infrastructure along the same canal.

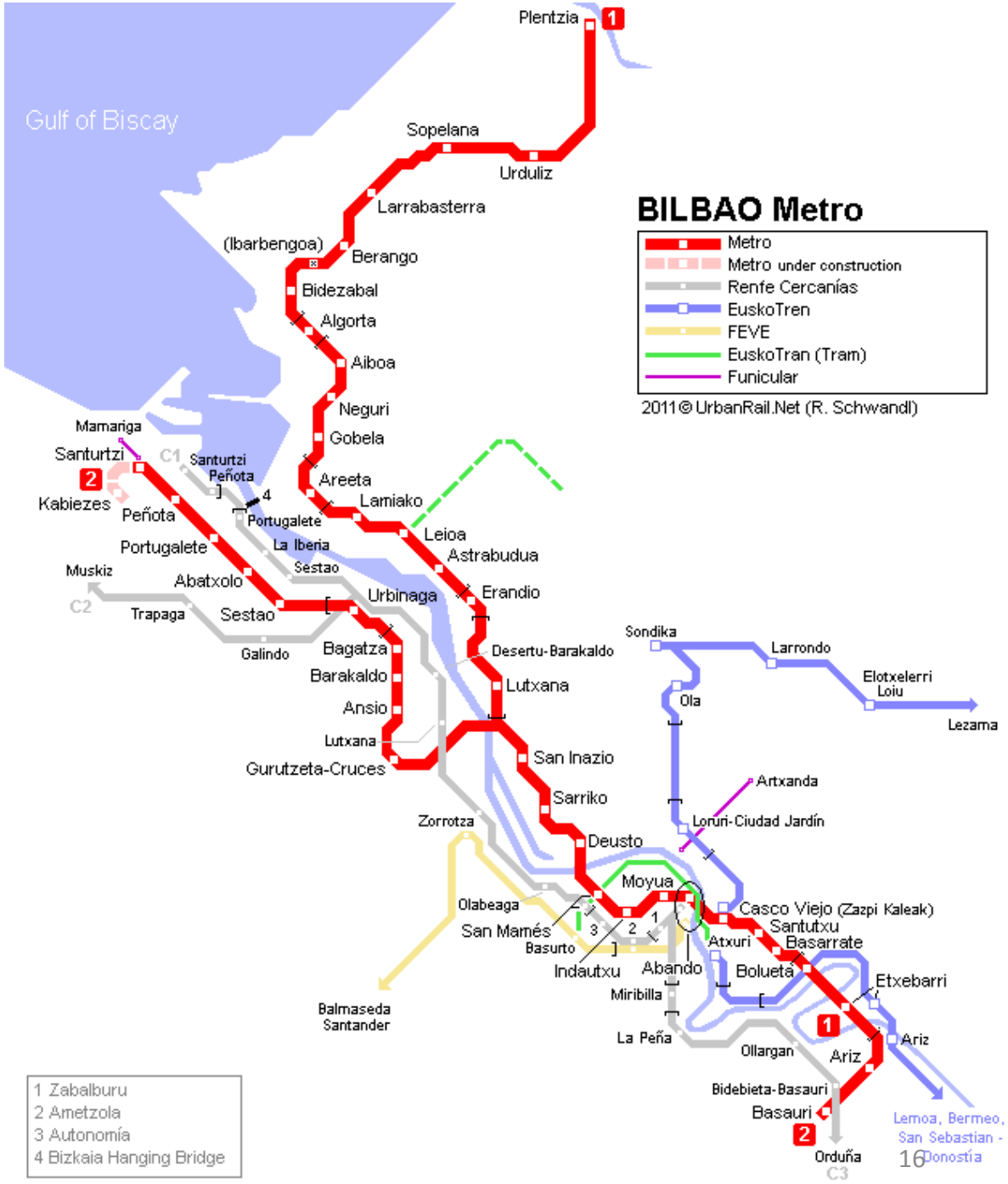
The huge surplus generated by the land sales was used exclusively to enhance connectivity and further urban regeneration.
The plan’s implementation was completed in 2011.

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

Image 02. Tram stop

Bilbao Metro

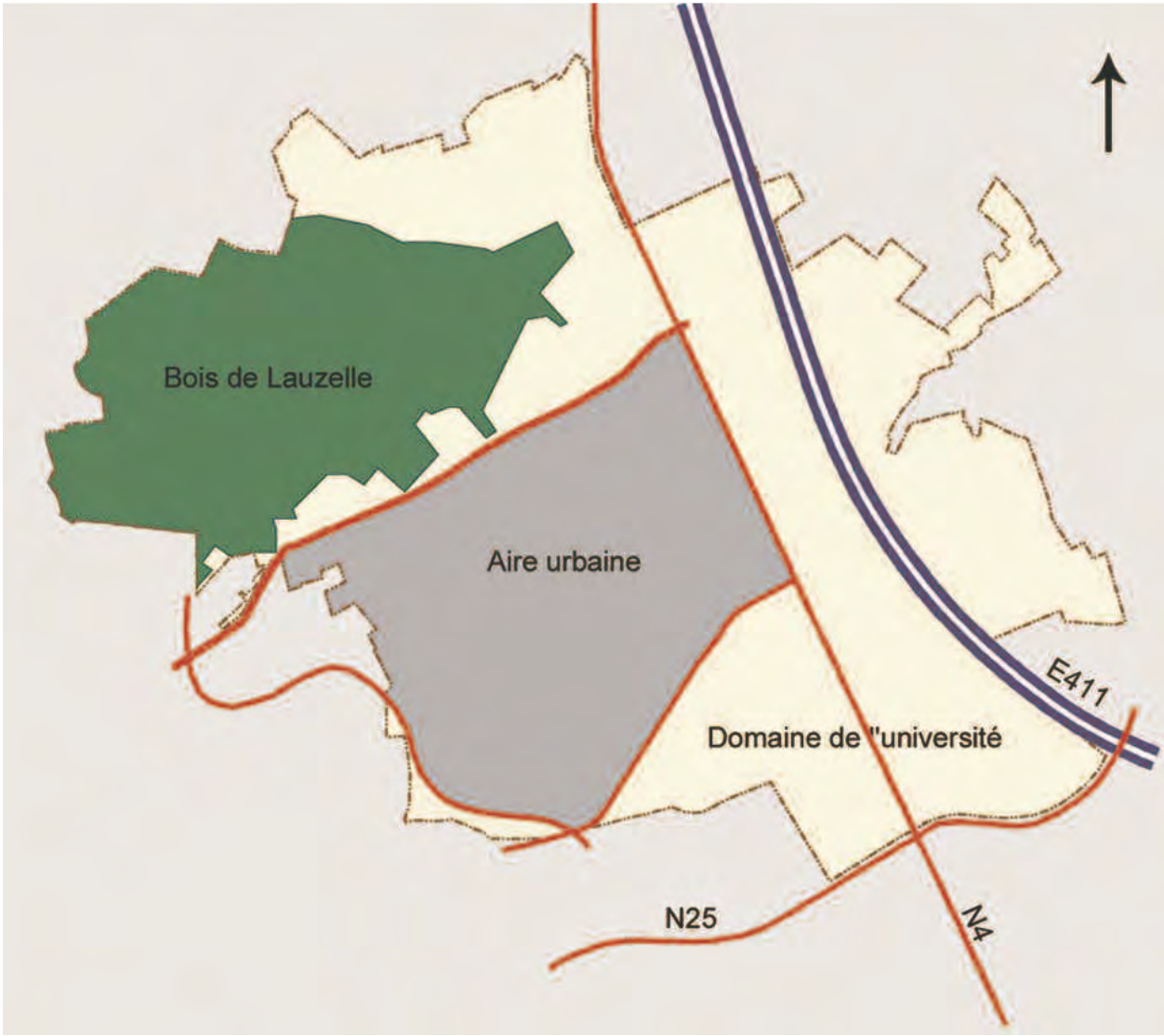
Partly new (stations designed by Norman Foster) and partly reusing old industrial railways, it enhanced connectivity throughout the city and its region and attracted energy saving public transport.



III. LOUVAIN-LA-NEUVE

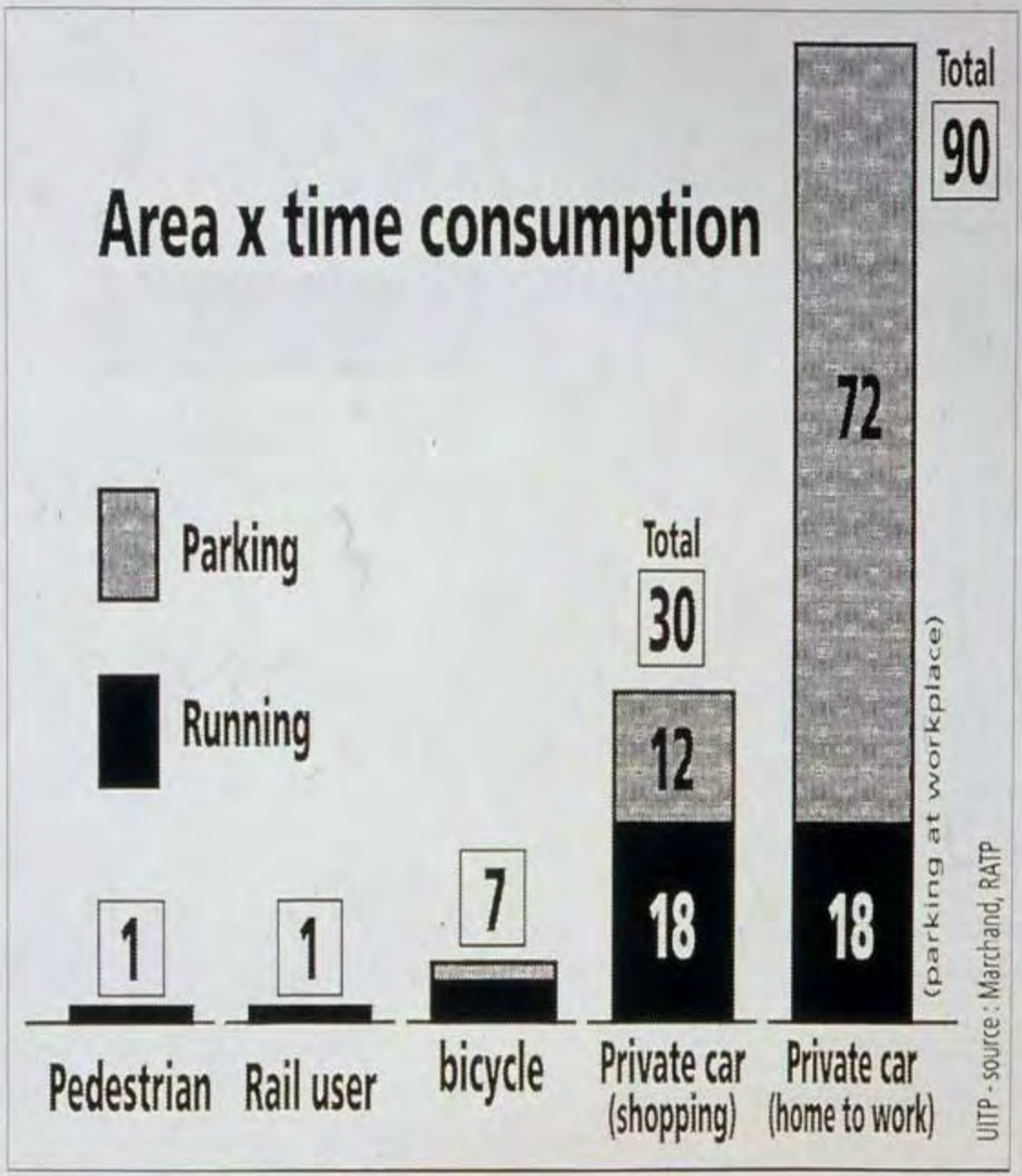
Planning for low energy - growth: the case of the Louvain-la-Neuve new university town (Brussels) 1972-

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).



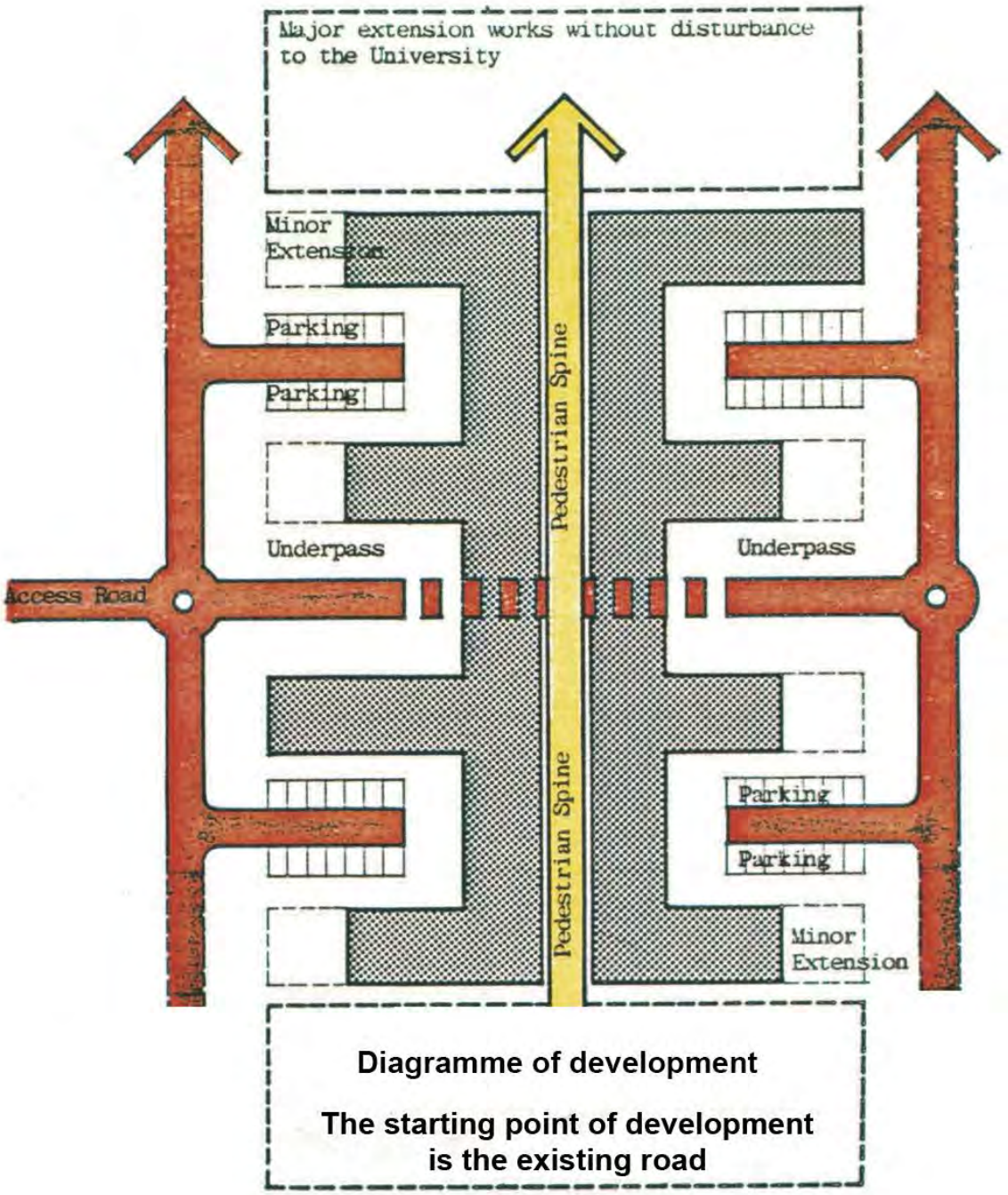
Planning for land saving.

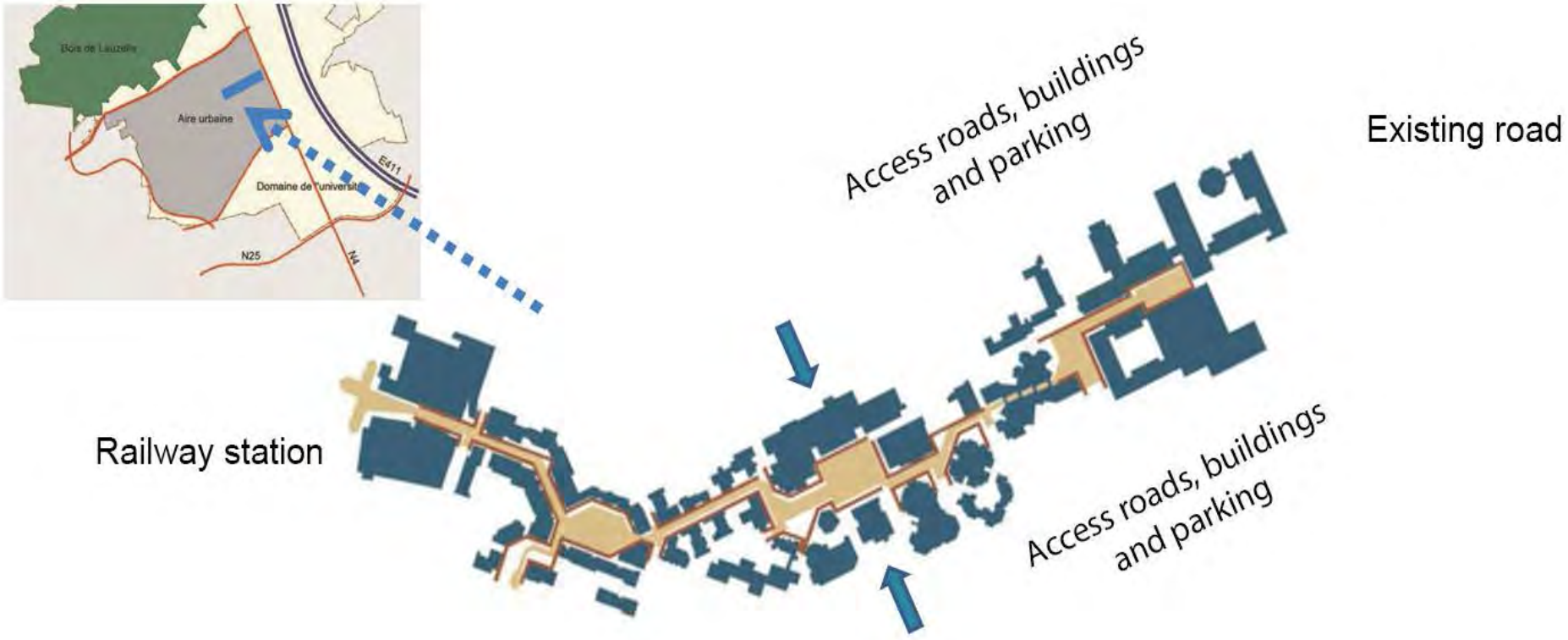
The pedestrian option allowed to save land and advance transport infrastructure investment.
The diagram shows the multiplier of land consumption generated by automobile transport and related parking.



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.



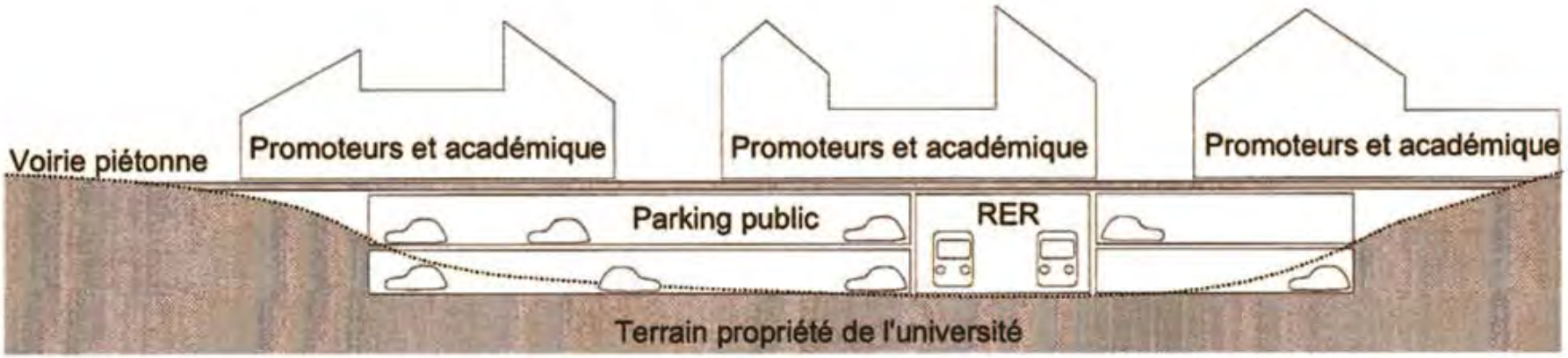


The pedestrian place-making. It was implemented in the main pedestrian street in the first phase, starting from the existing road east of the site, in 1972 (lower part of the picture), and later extended to the railway station opened in 1976 (upper part), the centre of the city, and the extension towards 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 of leisure. The centre of the first phase 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).

From 1976 the new railway station became the centre of the development. The tracks are to be covered by a shopping centre extension. This link ensures a maximal regional connectivity.

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.



The functioning of the slab. The diagram shows how the ground below – essential for long-term connectivity - remains the property of the university while 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) are parts as high density developments.

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