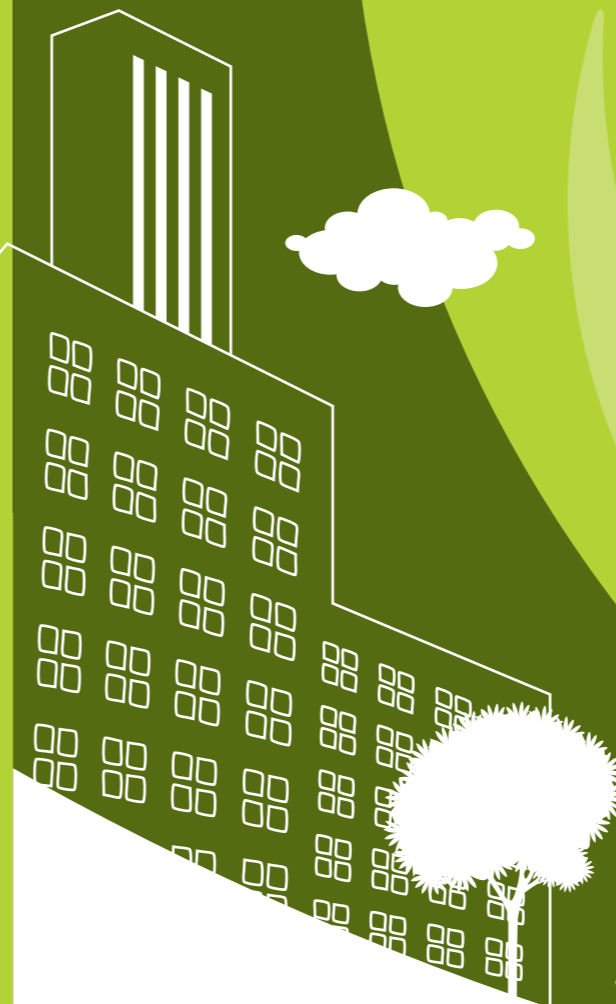


OVERVIEW
D'EXPÉRIENCES

Sustainable land-use planning and construction

ISLANDS OR TERRITORIES



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ARENE Île-de-France

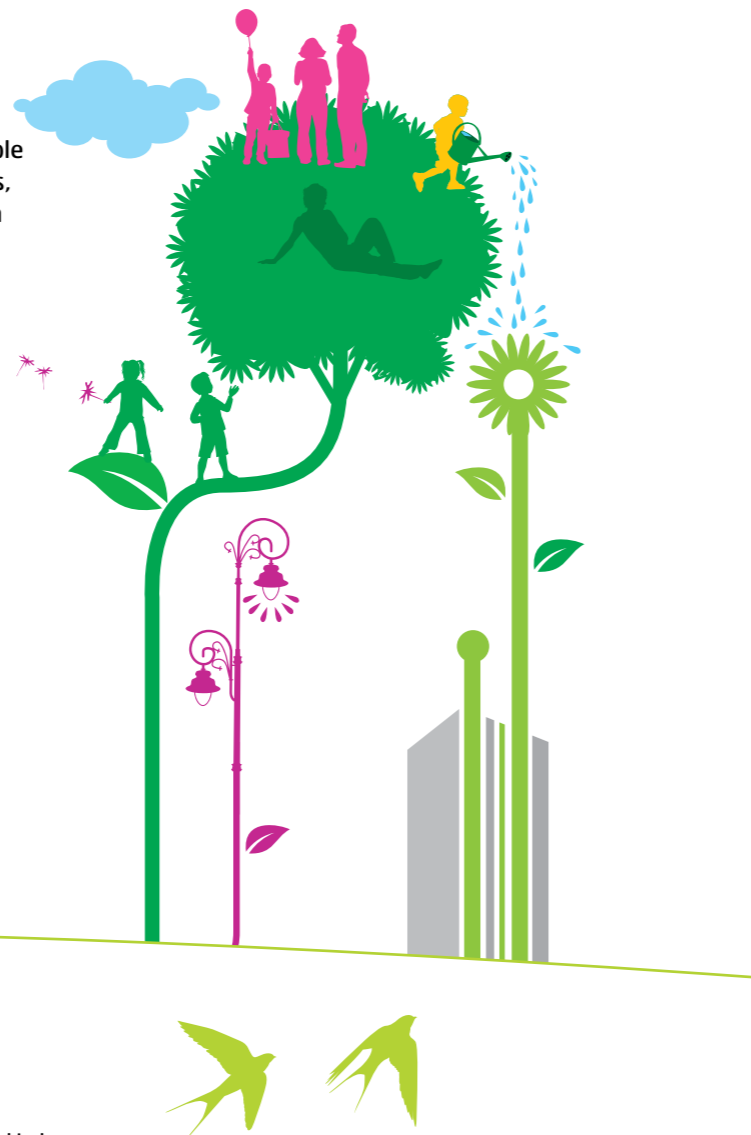
ARENE supports the integration of sustainable development in the Île-de-France region.

Our aim

To identify, generate and disseminate good practices with regard to ecological and social transition and sustainable development among stakeholders and at all territorial levels, especially in matters of energy and climate, in harmony with regional political priorities and the expectations of local authorities in the Île-de-France region.

Five core missions

- 1/ Support local authorities in Île-de-France in the development of local projects.
- 2/ Create and participate in networks of environmental and socio-economic stakeholders and promote communication among them.
- 3/ Identify, promote and disseminate information on innovative initiatives in Île-de-France.
- 4/ Produce and supply the necessary resources.
- 5/ Provide the region with resources and expert advice.



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This booklet supplements the document 'Sustainable Districts - A Handbook of European Experiences' published by ARENE in 2005. While the latter document examined pilot sustainable communities in England, Germany, Sweden and Denmark, in this booklet **projects were chosen in accordance with the types of situations that are likely to arise in Île-de-France**. The purpose of this new booklet is to provide regional stakeholders (local authorities, entrepreneurs, professionals and associations) with information on a set of achievements that are very different from one another, thus opening up a number of new areas for discussion and kindling imaginative responses to the wide range of current contexts.

A variety of unique communities, each with its own way of solving a complex problem.



Twelve communities, each representing a project of varying scope but all of which are striving towards the same ambition: improving life while balancing different environmental challenges. But this document is not intended to serve merely as an overview of achievements in sustainable urban development. It reflects a wider concern, which is shared by a certain number of large European cities, of addressing the challenges of urban concentration at a time when certain land-use planning models are being called into question. The discussions on urban planning that we hope to see emerge should be viewed against a backdrop of increasing awareness of ecological challenges as well as an economic and social crisis that have imposed a certain level of restraint in production and consumption habits. There is also a climate of unprecedented tension between urban environments, rural areas and suburban or mixed zones. Part of the solution lies in developing a **new relationship between these different spaces** and in an increased focus on new societal challenges.

SHARED SITUATIONS. UNIQUE EXPERIENCES.

Throughout Europe, there is a growing awareness that uncontrolled urban development is causing a number of land-use planning, social and environmental challenges. Each of these twelve projects is unique in its own right and each uses its own approach to solving a single complex problem, i.e. how to move forward while taking account of the interactions and overlaps between these different dimensions. Ways of thinking as well as regulatory, decision-making and operational processes in development and construction are confronted with the combined impacts of these issues at different spatial and temporal levels, both institutional and private.

The European Union is a driving force for fruitful discussions on these issues. The influence of these discussions is felt strongly on the ground. Similarities at the European level make it possible to replicate certain situations and exchange ideas on the essence and goals of sustainability as well as the methods and tools for developing and designing projects. **Large-scale regional planning and projects have a strategic place in this approach**, as demonstrated by the recognition shown by large cities and the development of inter-territorial cooperation. But at the same time, **the local or even micro-local scale is essential** to supporting social and economic momentum and to re-examining existing best practices.

THE UNIQUE CHALLENGES FACING PARIS

French cities and regions are not immune to the effects of these tensions and changes, and the Paris region is at particular risk. The spatial planning landscape in **Île-de-France is a particularly fragmented one**: the entire region is affected by urban concentration and the development of business zones (geographic concentrations of industries, shops and offices). Some of the older business zones are falling into disrepair. How should these changing zones be managed? How can rundown zones be brought back to life? Should they be torn down, rebuilt or re-used? Should we reduce density or, conversely, accept

The local or even micro-local level is crucial to sustaining social and economic momentum and to re-examining existing best practices.

it while striving to reduce it? Opinions are, obviously, still divided. This publication will attempt to shine a different light on situations as they currently exist. Paris is at the heart of these challenges and has been marked

by recent discussions on the 'Greater Paris' initiative and by the concept of Paris as a 'metropolis'. The idea is not a new one: there is a clear need to continue to discuss these concepts and move in this direction. However, this initiative is not a catch-all solution, because this enormous region is made up of territorial units that will also need to be taken into account. There are multiple factors that will need to be weighed carefully, which will require a considered approach. In any event, talking about 'urban development' means taking into account this notion of the 'Greater metropolitan area' in all its opportunities and imperfections.

A tool to inform and guide reflection.

STRUCTURE OF THE DOCUMENT

The twelve operations discussed in this document are presented in three chapters: New Cities and Districts, Urban Wasteland and Brownfield Sites, and Urban Renovation. They cover a series of different situations (dense city centre, urban outskirts, suburban regions, small towns and rural communities) and refer to various scales of implementation and interaction (housing block, district, city and region).

Each operation is presented in two parts:

- the first part is presented in the form of an ID card that provides the characteristics of the operation, information on the scale and type of site, the stakeholders, temporal points of reference and programming strategies and sustainable or innovative characteristics;
- the second part is descriptive and analytic (available online). It provides an overview of the context and objectives, the land-use planning strategy, specific details on the advancement of the project and overall project process, the concepts that have been developed, construction projects and any economic and social solidarity aspects.

Whatever the degree of similarity between certain areas in the Île-de-France region, this booklet is not meant to deliver a solution or solutions that are turn-key or can be reproduced elsewhere. **It is designed to serve as a tool to inform and guide reflection by sharing different experiences that may provide practical support for stakeholders in the region.**





Through their urban and economic ‘onward march’, Western societies have generated a form of land-use planning that is characterised by heterogeneous spaces that are dense yet spread-out and fragmented. The social, economic and environmental impacts of this type of land-use planning are significant and range from greenhouse gas emissions to resource depletion, accumulation of waste, light, sound and odour pollution, excessive artificiality, wasted space, architectural impoverishment, housing crises, and more. In some areas the natural soil and water cycles are disturbed, while in other places people are confronted with increasing socio-spatial segregation and a worsening quality of life. All of these factors contribute to human and environmental stress, forcing us to find a different approach to land-use planning.

Over the past twenty years, concepts of social, democratic, cultural and technical interaction have begun to be integrated into land-use planning and construction projects via initiatives that were once called alternative or experimental but which are now known as ‘sustainable’. However overused the term may be, there is no denying that trends have the power to spread these concepts on a broader scale, allowing us to take advantage of the influence of such terms to promote ideas that have not yet been taken on board to a great extent. These ideas may be propelled by a climate of insecurity, by the desire for independent management and regulation or by a commitment to a lifestyle and values that promote the greater good. Sometimes, spending a short amount of time discussing a project, consulting with others about it or even handling opposition to a project is all it takes to transform the project sponsor’s original vision of said project. **This tension between different challenges, scales and stakeholders gives rise to a cultural and societal dynamic** that is in sync with modern-day concerns and that can serve as a benchmark for a changing society.



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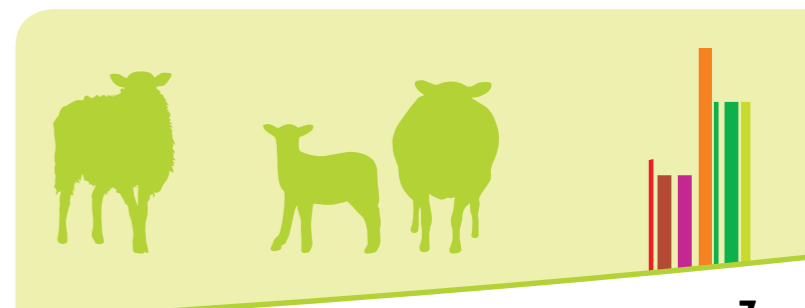
City of Tübingen - French district

WE ARE ALL IN THIS TOGETHER!

The problems are manifold, but it is essential to place them within a broader framework, which this booklet attempts to do in order to give local stakeholders—in particular elected officials—an understanding of how others have addressed them and, having realised what was at stake (sometimes after being pushed to do so by citizens themselves), how they reacted and took action. **The initiatives presented in this document provide an overview of several proposals for districts and cities that are rooted in the nature of each area as well as in the local culture and practices.** They demonstrate a range of approaches that have been used to identify a number of concepts in relation to various development models:

- the ‘intensive’ city: solidarity-based, diverse, inclusive, connected;
- the ‘low-carbon’ city’ integrating public transport, urbanism, energy efficiency and low energy consumption;
- the ‘low-impact’ city or development (low-impact landscaping and water management);
- the ‘green and blue’ city, the urban metabolism model;
- the ‘compact’ city with diverse or multi-use public spaces. The topography of the area is centred on these open spaces.

We cannot modify our relationship to the environment without taking into account expectations in terms of quality of life for everyone, or without offering concrete choices and support for accepting change and promoting citizen engagement for more sustainable, community-based ways of life. The movements and concepts in favour of sustainable land-use planning, construction and management developed over the past few years take into account the historical, human and cultural baggage of a given population as well as advances in disciplines relevant to human beings, land use and construction. Projects that claim to be ‘sustainable districts’, while referring to the principles of sustainable development, do not necessarily heed these fundamentals. Rather than pointing the finger at them, and without simply giving them predetermined solutions, it is therefore appropriate instead to offer some perspective for consideration in order to better integrate these dimensions.



SUSTAINING A VISION TO ADDRESS THIS REALITY

In the face of significant challenges in terms of housing and transportation in these times of economic, environmental and social crisis...

of housing and transportation in these times of economic, environmental and social crisis, these areas are forced to address issues that are a reflection of those currently facing the Île-de-France region as a whole.

These twelve examples illustrate **the different relations between dense cities that anchor their surrounding region and the outlying suburbs and communities.** They also represent different spatial forms (urban, suburban or rural situations), reflecting the various ways that rural, agricultural or heterogeneous spaces can be transformed. Finally, they represent different ways of modelling an area: dense or spread-out, islands or connected territories that are dense but also fluid and open. The benefit of this type of diversity is that it enables each stakeholder to find its place within an interconnected whole.

Two major conclusions can be drawn from these experiences:

- First, **there is no such thing as a perfect solution.** We can only work with what we already have, even if such a solution does not seem ideal at first glance. Rather than throwing out everything that has been done in the past, it is better to reuse as much as possible. This requires collective intelligence and the sharing of expertise, while leaving room for any doubts.
- Secondly, **the problems that have been identified are much broader than—and sometimes different from—the simplified clichés to which they are reduced.** It is therefore essential to consider and address them in their entirety. The phenomenon of urban concentration and its spread to peripheral areas is still a serious and increasingly complex problem, especially in the case of a city like Paris. It should be understood, integrated and addressed in all its complexity. The purpose of bringing together a variety of situations in this booklet (dense cities, agricultural areas and brownfield sites) is to address this complexity.

This study also teaches us that, beyond the somewhat restrictive notion of 'project', it is essential to sustain a vision of what a place can become. From this starting point, it is important to gather together all the parameters to be taken into account and then to create enthusiasm, **because everything depends on the meetings and talks between stakeholders, no matter which stakeholder initiates them.** Moving away from the idea of a 'project' is one way of recognising that some changes should not be rushed—even if we sometimes would prefer to move more quickly and efficiently. Project teams should be allowed to express themselves and their creativity and curiosity should be encouraged in order to foster a culturally and intellectually stimulating environment among stakeholders from various backgrounds. Such was the case in Puchenau, Austria, where an architect, a property developer willing to embark on an adventure and a mayor needing to create new housing while preserving farmland came together to share their ideas, resources and sense of commitment. This pilot project was launched in 1962. While it does not refer to the principles of 'sustainable development', it nonetheless can be seen as a precursor to the movement with its sustainable and smart designs.

...it is essential to sustain a vision of what a place can become.

LESSONS THAT SHOULD BE SHARED

A number of observations have emerged from these different experiences, which can serve as key starting points for these types of initiatives.

Alternative forms of organisation

Coordination of stakeholders

Coordination among private stakeholders (financial and operational stakeholders; experts) institutions (elected officials; services) and citizens (associations, groups) is necessary from the outset. This can be difficult to implement in practice because political forces are often heterogeneous and/or weakened by overlapping jurisdictions and territories and by the priority given to technical and financial operators. What is called for, then, is a step-by-step approach. Investors seek to reduce risks. Early action must be taken to convince them and/or manage land use. Competition in the local, national and international markets must also be taken into account.

Outstanding projects are a result of experimental and alternative policies and methods as well as successful synergy between confident stakeholders, within a favourable framework (reflection, research, experimentation and funding). The operation carried out in Puchenau, Austria, is a good example of this: it was spearheaded by a farmer-mayor, a researcher-architect, a low-income housing developer and the Ministry of Construction. In the GWL Terrein project (Amsterdam, Netherlands), an open call to residents revealed the existence of a market for dense housing of high agricultural quality, despite the fact that the site was not very promising at the start. In the Sulzer Areal district (Winterthur, Switzerland), temporary occupancies and investments made in stages and in response to opportunities supported the improvement of sites as they continued to be developed. For the southern suburbs of Tübingen, Germany, the self-development of

housing represented an alternative way of launching the operation in line with local needs and

Outstanding projects are a result of experimental or alternative policies and methods as well as successful synergy between confident stakeholders.

By linking together issues of water, air, landscape, nature, open spaces and transportation, we create a potential for integrated development.

By linking together issues of water, air, landscape, nature, open spaces and transportation, we create a potential for integrated development. This approach allows for addressing problems related to resources, micro-climate and creating comfortable and attractive living and working spaces. In Munich, this was expressed through an integrated approach to urbanisation and transport designed to limit urban sprawl, with a focus on spatial concentration and short transportation distances, all while creating environmentally attractive living conditions. This makes it possible to take into account issues related to water, recreational activities and the interconnection between housing and large-scale infrastructure and between housing and nature.



Organisational methods and governance

The governance structure is deployed in advance and is intended to support the project. It must include **representatives from institutions, private sector stakeholders, citizens and all other relevant stakeholders** in order to break down the barriers that usually exist. It brings together the management and coordination teams, specialised multidisciplinary teams, experts from administrative departments, private experts and citizens. The challenges include:

- the upstream integration of stakeholders and the various relevant disciplines;
- building their capacity to develop proposals and make a commitment to project quality and sustainable development (partnership and contractual agreements);
- the expression of institutional and private expertise;
- bringing together the stakeholders and bodies needed for decision-making and management.

In Leidsche Rijn (Utrecht, Netherlands), an upstream consultation was held with institutions, private players, experts, owners and residents. The consultation was made possible thanks to the extensive coordination work carried out by a consensus-building and monitoring organisation. This preliminary phase must include studies to examine the concrete issues faced by each area. Tools for dialogue, investigation, sharing and decision-making (methods, lists and reference documents) can be used to develop a framework for, track and assess sustainability in terms of ecological optimisation, physical and social fragmentation, resources and quality of life. However, these tools must be used in ways that are in line with the substantive and creative development of the project as well as the different project phases from planning to design, execution and management.

Participatory democracy

Experience from past infrastructure projects shows that the most viable projects and those that work best are those with public input. Participatory democracy is based on col-



City of Tübingen

laborative, participatory work that must be carried out prior to a project, and which begins with identifying stakeholders and the issues that are causing a problem. It represents a new form of decision-making and project leadership and is one of the strategic components of a successful project outcome. Building on the principle of collective interest, it focuses on moving in the direction of shared decision-making and promotes the sharing of values. During land development operations, participatory democracy allows for performing scenario testing as well as co-definition and co-construction throughout the entire territory under consideration. It also allows the public to provide input on ‘micro-choices’ (those which have a very small impact on the project but which may be important to local residents, such as choosing between two species of trees).

This work requires patience, which must be viewed as something positive. It requires tools for engaging others, fostering discussions, collecting data, gathering expert advice from a variety of sources, assessing and monitoring. The scale, focus, time and locations involved in each project are crucial. **The links between the various scales and different timeframes must be respected, and the positioning and focus of the collaborative work must be suitable for the challenges and issues at stake.** The collaborative work must be carried out throughout the entire project. The pre-design and design phases (initial assessment, development of objectives, concepts, criteria, scenarios, feasibility, studies and reports, and the project itself) must not be underestimated. These aspects must be well-designed and allow for:

- defining a process for decision-making and project management, a system for communicating objectives, references, performance targets and data on the various disciplines;
- providing a means for back-and-forth communication as well as a system for managing collaborative work;
- amending the initial objectives in response to expert advice;
- sharing and analysing scenarios in order to guide decision-making (location, integrated planning, and integrated urbanism) and developing concepts;
- defining the conceptual and planning master plan and comparing it to the performance criteria and requirements;
- analysing the progress that has been made and comparing it to the initial analysis
- fostering local initiatives and supporting the integration of these initiatives.

Experience from past infrastructure projects shows that the most viable projects are those with public input.

Multiple sources of advice should be brought in from different fields. For example, the expertise acquired by residents and users provides insight into local conditions and ways of living, while citizens can provide feedback on the timeliness of the project and its impact on quality of life.

Understanding and awareness of challenges

Context and background

This dimension is essential for verifying the timeliness and location of the operation and for obtaining an assessment of the site and its requirements, constraints and potential. **The shared assessment is especially useful for analysing the existing environment.**

As each site is often subject to real estate speculation and shifting regulations and laws (and thus shifting economic conditions), the acquisition of the land will be facilitated if the local community implements land management tools for purchasing and regulation as well as the monitoring of transformations. The potential for transforming and converting urban wasteland and brownfield sites must be evaluated by taking into account issues related to access to light and views and the relationship with outdoor and public spaces. Planning should take into account the economic, social and cultural vitality of the site, with care paid to the relationship between jobs, transportation and housing, to the development of on-site activities, to the creation of local business and to the capacity for social integration and inclusiveness.

This preliminary stage includes:

- a land assessment followed by ongoing monitoring, taking into account the site’s advantages and constraints in accordance with the project’s strategic vision;
- the optimisation of existing facilities in terms of transportation and the morphology of the built-up space as well as water, energy, quality and responses to the challenges of sustainable development and climate change;

The collaborative work must be carried out throughout the entire project.

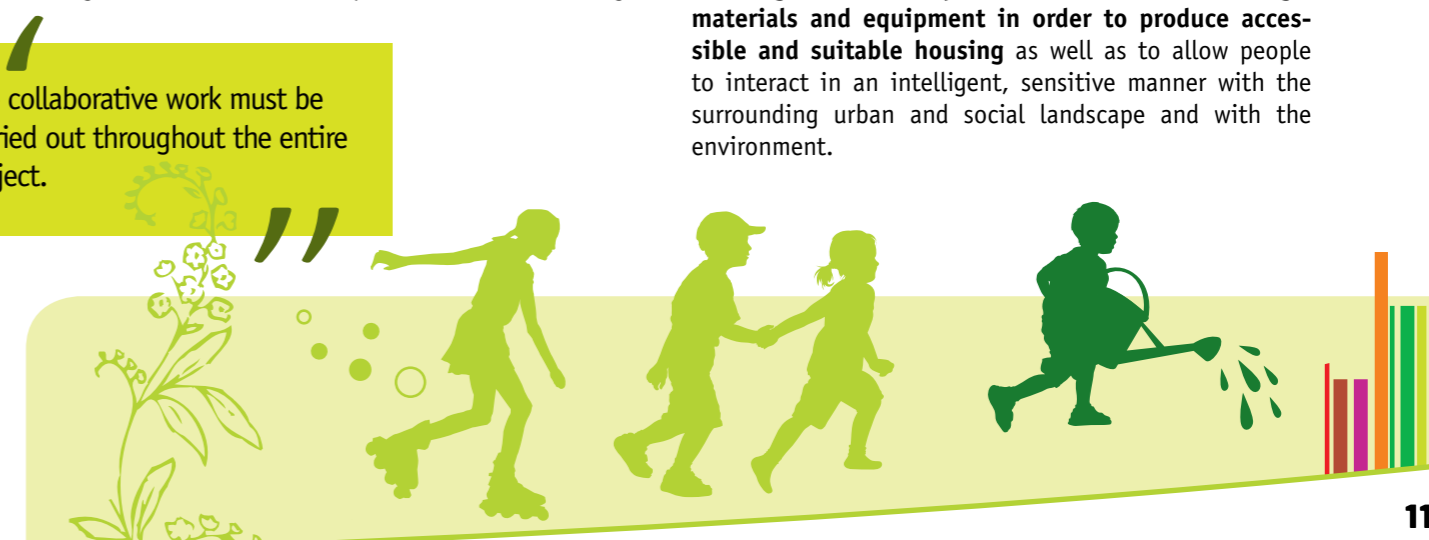
There is a form of paralysis that needs to be overcome among financial and operational stakeholders, which are still focused on economic and technical scenarios involving mass-produced real estate products.

- an evaluation of the context and implementation of changes so as to support the optimisation of infrastructures and existing buildings. This requires the introduction of innovative mechanisms for renovation or temporary occupation, the conversion of unoccupied buildings or annexes, and the construction of gaps, open spaces, raised structures or extensions, as in the example of the land management project in Munich or the renewal management project in Tübingen.

The construction of objectives in accordance with climate, human and sustainability challenges

One of the main challenges to construction, renovation and land-use planning is to maintain a **focus on residents and their environment as a central concern**. This touches on issues related to the protection of privacy, physical and mental fulfilment and well-being, protection from climatic fluctuations and hazards, environmental protection, the relationship between people and nature, the balance between production and consumption, urban, economic and social vitality and access to housing, services and amenities while promoting an environment that is both natural and urban.

However, there is a form of paralysis that needs to be overcome among financial and operational stakeholders, which are still focused on economic and technical scenarios involving mass-produced real estate products that are contrary to the goals of openness and urban vitality and leave little room for innovation and creativity. **The challenge is to develop innovative forms of buildings, materials and equipment in order to produce accessible and suitable housing** as well as to allow people to interact in an intelligent, sensitive manner with the surrounding urban and social landscape and with the environment.



The architecture of contemporary housing for all

Housing cannot be seen as a ready-made product. It must take into account current ways of life and climate issues and integrate issues related to quality, risks, regulations and indoor climate control.

Starting from the building pre-design phase, the project owner must take into consideration climate and sustainable development issues as well as the concrete problems experienced by residents. From a social standpoint, they need to take into account the integration of the poorest, most fragile populations. In particular, the buildings must provide a comfortable environment and comfort of use, both inside and outside.

In addition, healthy construction means choosing healthy and natural materials and providing suitable ventilation. Likewise, questions regarding density and compact development give rise to a need to follow an approach focusing on thermal, hydrological, olfactory, air-flow and acoustic quality.

Moving in this direction will require:

- developing bioclimatic and climatic building design;
- supporting the development of architecture that accommodates various urban functions, responsible architecture (energy-efficient, shade-generating and non-polluting), landscape architecture and ‘oasis’ architecture;
- encouraging ethical, cooperative and participatory architecture and do-it-yourself building;
- supporting residential mobility and ensuring a greater diversity of supply.

“ Taking into consideration climate and sustainable development issues as well as the concrete problems experienced by residents. ”

respect for people and places

Rehabilitation and conversion

This issue is fundamental due to the phenomenon of obsolescence (office buildings, business zones, infrastructure and ruins) or vacant plots (urban wasteland, gap sites and brownfield sites), whether in cities, suburbs or rural areas.

Questions surrounding the shape of metropolitan space, the manner of occupying sites, consumption modes, and the capacity for resilience and adaptation have transformed the issues of urban and social renovation and the conversion of wasteland as well as the rehabilitation of built spaces into the prime concerns of the project and the focus of decision-making. Such initiatives are, of course, affected by a context of climate change, which raises questions related to indoor climate, air and material quality, social and human issues, space-saving and waste reduction, and the management of water, soil and air. But the efforts to ensure a coherent use of open spaces have, more than elsewhere, effects on existing spaces and on the potential for construction. And it is important to leave room for flexibility and agree to take a step back when the situation calls for it. In these kinds of operations, a less conventional approach to land assessment is also required.

“ It is important to leave room for flexibility and agree to take a step back when the situation calls for it. ”



© SEMAPA

Rungis Train Station - Paris 13th arrondissement

A dynamic, well-informed interpretation of the landscape of the site will be useful for any restoration works. This approach has been used for the restoration and revitalisation of damaged industrial sites such as the mining valleys in the Ruhr region.

This consists of:

- restoring the water cycle, resources and biodiversity, reducing runoff, and treating water pollution;
- interweaving landscaping and plant life with architecture and the city by providing access to and views of the water (bodies of water, waterscapes and aquatic environments)
- providing access to and views of the land, water, natural elements, sky and horizon;
- opening buildings to the natural elements and surrounding landscape;
- the development and diversification of green spaces;
- striking a balance between humans and nature for a better quality of life;
- sustainable waste management (wastewater, waste sorting, recycling and composting).

These operations—more than others—involve local residents, who are often underprivileged, and require participatory democracy and capacity-building among stakeholders.

Reducing greenhouse gases and pollution

The ‘zero carbon’ concept has been integrated through the morphology of buildings, the use of local and/or renewable energy, urban networks, energy efficiency, sustainable mobility and materials. Land-use planning policies should incorporate these concepts as well as the reduction of pollution and climate change. This implies the need for regulation of the planning as well as the preparation of development and implementation plans (rules regarding space occupation, objectives and concepts, equipment, infrastructure and resources).

This involves:

- low-carbon renovations;
- energy efficiency and the use of renewable energies;
- the creation of pedestrian neighbourhoods;
- locating buildings along transport corridors and near public transport;
- the development of short circuits and ‘soft’ modes of transport (Puchenau and Linz-Pichling in Austria);
- the development of urban functions and services (jobs, shops, production sites, recreational facilities, etc.).

Tübingen is an especially successful example of this, combining vitality, density, custom-built housing and the interlinking of social and economic life while providing **support for a sustainable way of living organised around a diversity of public spaces and landscapes.**

Taking climate change into account requires implementing measures at the regional, city and district levels to improve air quality, regulate indoor temperatures according to the season and manage risks.

This may include:

- designing low-energy bioclimatic buildings and producing positive energy, reducing heat islands and making good use of the urban morphology (Sarriguren-Ecocity, eastern Pamplona, Spain);
- designing comfortable buildings that are protected from extreme climate conditions (protection, ventilation and air and water cooling);
- transforming and adapting train stations, public transport and public spaces;
- promoting systems with a low environmental and economic impact (sustainable and environmentally friendly water management, bringing nature into the city and waste management);
- creating ecological networks (incorporating waterways, framework and network of green spaces connected to natural habitats, continuity within neighbourhoods);
- restoring and rehabilitating soils, diversifying ecosystems in urban areas, supporting biodiversity;
- restoring and respecting coherent agricultural practices and floodplains;
- collecting, storing and reusing the heat generated by certain activities (traffic, air conditioning, wastewater, heat from shops, etc.).



The relationship with places, bodies of water and open spaces

The fragmentation and deterioration of natural spaces, resources and ecosystems caused by spatial concentration, infrastructure, artificialisation and urban metabolism are detrimental to farming areas, natural cycles and natural environments.

Building in harmony with the environment in the current context of urban concentration and climate change brings the issues of urban sprawl, the morphology of spaces and the scale and quality of projects to the forefront of this challenge. **A comprehensive, holistic approach to balancing different uses, resources, natural environments, soils, water, nature, society, materials and waste must be developed.** Making the landscape a focal point of these projects (Sarriguren-Ecocity, eastern Pamplona) and a highly visible representation of natural cycles and urban metabolism, as well as the integration of geographic, topographic and historic landmarks (Leidsche Rijn, Utrecht), makes it possible for all stakeholders to recognise and take ownership of these issues.

To that end, the following is required:

- studying the impact of the developments on ecosystems and systems at the early stages;
- reducing urban sprawl and the consumption of land;
- striking a balance between catchments and production areas;
- respecting an urban morphology that includes open spaces and agricultural land;
- promoting the diversity of environments and biodiversity;
- improving soil quality and improving its absorptive capacity;
- adapting to each site rather than adapting the site or starting from scratch;
- developing/creating spaces that are in harmony with their environment;
- protecting the soil and environments, natural cycles, air and water by using their characteristics to preserve biodiversity and promote quality of life.

“ Making the landscape a focal point of these projects. ”



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Munich

TOO GOOD TO BE TRUE?

Several consistent patterns emerge clearly from these European experiences. In particular, we have seen that low consumption requirements give rise to integrated and interdisciplinary development projects that affect water management, biodiversity, food and resource production and waste removal. These projects are also integrated and interdisciplinary in terms of their geomorphological and social environments.

These efforts to improve quality of life take on their full significance in a context of major constraints, and specific attention must be paid to underprivileged populations in order to get them into the workforce and to empower them. Any approach to addressing real social issues based on an iterative assessment of institutions and the population must also verify the timeliness of the operations and contribute to developing strategies and scenarios. A good method consists of bringing stakeholders together and taking the specific characteristics of each project into account.

“ Integrated and interdisciplinary development projects ”

The shared vision of ‘possibility’ that prevailed in Messes-tadt Riem (Munich), the spatial vision that was developed and the discussions held in Leidsche Rijn (Utrecht) demonstrate the strength and value of rooting each project in its physical and social environment. It seems that these conditions are ideal for tackling climate change at the local and regional levels.

These twelve examples certainly can be viewed as innovative and relevant, but not necessarily capable of inspiring a broader movement and therefore fated to remain one-off cases. However, in the current context of urban concentration—set against a backdrop of environmental, economic and social crises—a number of alternative approaches in the land-use planning and construction sectors (among others) have flourished. We can expect that these twelve projects, without intending to serve as a magic formula, will inspire others to tackle new projects that may, in turn, invent their own unique ways of thinking and acting.

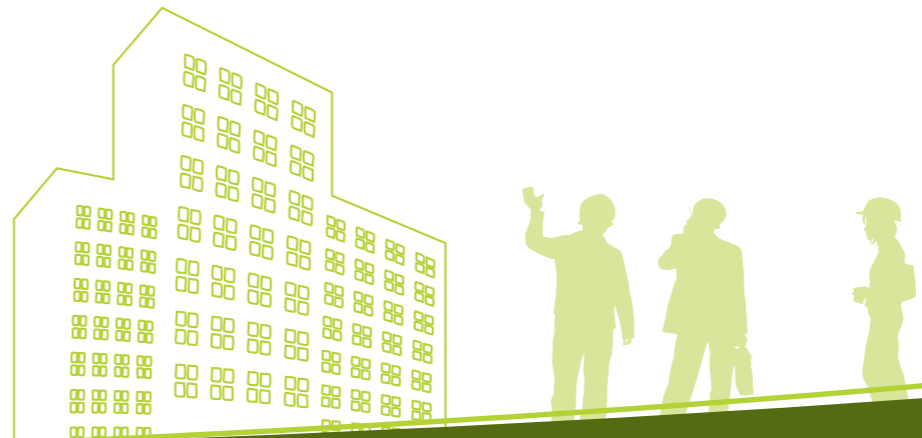


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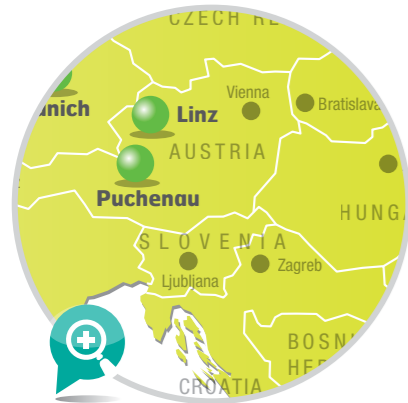
- Sustainable districts
A Handbook of European Experiences' ARENE 2005 Sustainable land-use planning and construction
- Islands or territories overview of experiences ARENE - 2013



	Built-up density	Connection to the city	Energy	Conversion	Rehabilitation	Local scale	Car-free district	Consultation	Project management	Public space	Water management	Diversity	Ecological optimisation	Bioclimatic architecture	Open and multi-use spaces
Puchenau		●								●	●				
Solar City		●	●								●			●	●
Sarriguren											●	●	●	●	
Leidsche Rijn						●		●	●	●	●				
Messestadt Riem		●									●				●
Südstadt					●			●	●	●			●		●
Sulzer Areal				●			●	●	●			●			
Île-Saint-Denis								●	●	●					●
Trinitat Nova		●			●			●	●	●					
Trilport								●	●	●					●
GWL Terrain	●			●			●								●
Rungis train station									●		●	●			



Puchenau



UPPER AUSTRIA
3 KM NORTHWEST OF LINZ
AUSTRIA

MAIN STAKEHOLDERS

Project owners

- City of Puchenau
- Neue Heimat, low-income housing developer (Linz)

Initiative

- City
- Neue Heimat
- Roland Rainer, architecture/urban planning

Operators and contractors

- Neue Heimat
- Ministry of Construction

Partners

- Ministry of Construction
- Upper Austria
- City
- Roland Rainer
- Neue Heimat

KEY DATES

- Emergence of the project: 1962
- Start of work: 1965
- Project duration: project not closed



KEY FIGURES

1,040 housing units
2,400 residents
30 units/ha
36.5 hectares

Changing rural areas: from suburbs to a Garden City

A garden city has sprung up amid the farmland, forests and recreational areas along the Danube river three kilometres from Linz. This project was designed to curb the spread of single-family houses at the expense of local farms.

The seeds of the project were planted in the 1960s when the Austrian Ministry of Construction and Technology sought to develop more affordable, denser family dwellings while maintaining the attributes of the single-family homes preferred by the Austrian population.

Sustainability and innovation

The garden city of Puchenau is made up of compact, low-rise (from one to three stories), semi-detached housing units that are built around private and public spaces that are designed to promote interaction and social diversity among residents.

It is intended to serve as an alternative to the spread of subdivisions filled with single-family homes that require excessive amounts of space and infrastructure.

The real innovation of this project lies in its ability to reverse the traditional viewpoint of rural and open spaces and of single-family housing units. The term 'garden city' represents a desire to preserve the natural landscaping, parks and open spaces while limiting property speculation and excessive land use. In order to support this ambition, it was decided to build single-storey or low-rise homes, to focus on the efficiency of infrastructures, networks and services, and to reduce the environmental footprint, in particular by limiting soil sealing.

Finally, the project will promote an interactive, participatory lifestyle for the residents of this garden city.



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Density and individual housing units

The programme and its characteristics

CONSTRUCTION

- Number of residents: 2,400
- Final total surface area: 36.5 hectares

1,040 housing units
50% owner-occupied
50% rental units

- Themes: low-rise construction, energy-efficient and compact single-family homes, residential units

PUBLIC AND COMMUNAL SPACES

- Orthogonal grid of pathways and outdoor spaces around the buildings
- A 500 sq. m community centre with services (city hall, doctor's office and banks) and shops
- Schools, library, music school, religious centre
- Sport facilities
- Neighbourhood management scheme

ENERGY, RESOURCES, WASTE

ENERGY

- District energy system and individual units; passive energy gain
- Puchenau II solar systems (70% of domestic hot water)

LANDSCAPE AND WATER

- Protection of natural spaces, riparian woodlands, banks of the Danube and water resources
- Ecological and landscaped environment
- Water management, infiltration through soil, natural drainage (2 dry riverbeds), temporary retention ponds

WASTE

- Waste sorting, composting, recovery of organic waste

MOBILITY

- Reduced car traffic
- Public transport
- Train station
- Pedestrian and bike paths



Site map



© H. Thielmann

The site is a narrow strip of land between the mountains and the banks of the Danube



FIND OUT MORE



Solar City Linz-Pichling



UPPER AUSTRIA
15 KM SOUTH OF LINZ
AUSTRIA

MAIN STAKEHOLDERS

Project owner
• City of Linz

Initiative
• City

Operators
• 12 low-income housing construction companies, including 4 at the start of the project: GWG, Neue Heimat, WAG, WSG

Partners
• City
• Architectural and urban planning experts: Roland Rainer and the READ architect group
• Linz AG (energy, transport, telecommunications)

KEY DATES
• Emergence of the project: 1991
• Start of work: 1999
• Project duration: 14 years



KEY FIGURES

1,900 housing units
4,000 residents
55 units/hectare
35 hectares

Changing rural and suburban areas - Ecocity



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The urban centre: tram stop, services, shops

Despite a declining steel industry, the city of Linz (the capital of Upper Austria) has remained a major economic and urban site. However, its dynamic job market is hampered by a lack of housing options and high property prices. Faced with severe environmental problems caused by its industrial activity, and bearing in mind the ecological changes to be made in order to protect the planet, the municipal government decided to invest in concrete, large-scale demonstration project. In order to respond to housing needs, the city decided in 1991 to launch a project to convert city-owned farmland into a model ecological city.

Sustainability/innovation

The main innovation lies in the willingness to develop a new concept of the city by giving a central role

to environmentalism, environmental quality and nature, by providing access to housing for everyone and by reducing the distance workers have to travel between their workplace and home. The project also aims to reduce the impact of greenhouse gas emissions from transportation and energy use. With support from European aid programmes and from Upper Austria, Linz has worked to implement a comprehensive, sustainable and coherent plan for 130 hectares of farmland south of the city. The alluvial prairies along the Danube and Traun rivers are included in the project. As its name suggests, Solar City falls within the framework of the European Charter for Solar Energy of 1996 by using passive and active energy systems without excluding other forms of renewable energy.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 4,000
- Final total surface area: 35 hectares

1,900 housing units
10% owner-occupied
90% rental units, including 40% hire-purchase units
• Themes: seniors, children, cultural diversity

ECONOMIC ACTIVITIES

- Urban centre with services, shops, offices and businesses

PUBLIC AND COMMUNAL SPACES

- Grid of pathways and outdoor spaces around the buildings
- Neighbourhood centre: cultural activities, services, shops, town hall annex
- Childcare centre, schools, centre for women and young people
- Sports centre
- Religious centre

ENERGY, RESOURCES, WASTE

ENERGY
• Network of heating and solar installations
• Energy-efficient housing: no more than 44 kWh/m² per year, operations reaching 20kWh/m² per year

LANDSCAPE AND WATER
• Protection of natural spaces and water resources
• Ecological and landscaped environment
• Water management: infiltration through soil, retention ponds, greywater treatment system

WASTE
• Composting

MOBILITY

- Limited car traffic
- Public transport
- Railway stations, tramway through the centre of Linz
- Pedestrian footpaths
- Network of bike paths connected to existing core areas and the centre of Linz



Site map

A system of footpaths around open space areas



© H. Thielmann

FIND OUT MORE



Sarriguren

Valle de Egües



NORTHEAST OF PAMPLONA
6 KM EAST OF PAMPLONA
SPAIN

MAIN STAKEHOLDERS

Project owners

- Nasursa (Navarra de suelo residencial) Government of Navarre

Initiative and participation

- Government of Navarre, pilot sustainable development project

Operators

- Vinsa

Contractors

- Foundation Metropoli / Alfonso Vegara

KEY DATES

- Emergence of the project: 1998
- Start of work: 2003
- Project duration: 10 years (finished in 2008)
- Mobility plan: 2008



Changing rural and suburban areas - Ecocity



Integrated ecological corridors

In response to the local housing shortage and high property prices, the government of Navarre began construction in 1998 on the first neighbourhood with reasonably priced homes on the outskirts of the city of Pamplona in the municipality of Valle de Egües, which is made up of a collection of villages and sits on an agricultural plain. The project was designed from the start as a pilot operation from an environmental and economic standpoint. Home and offices were built on the 150 hectare site, with a central focus on green spaces.

KEY FIGURES

- 5,577 housing units
- 10,000 residents
- 33 units/ha
- 150 hectares

Sustainability/innovation
The government of Navarre chose to build reasonably priced homes, with 98% of them available at fixed or reduced prices. The building designs were based on the principles of bioclimatic architecture, taking into account climate and environmental criteria and adapting them to an urban environment with a variety of terrains while maintaining the site's natural environment and green spaces. The energy concept of the project centred on three main objectives: passive energy, the integration of renewable energy and the construction of green buildings.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 10,000
- Final total surface area: 150 hectares
- Buildable area: 628,147 m²
- Floor area ratio (FAR): 12% (estimate from a 2010 study)

5,577 housing units

- Low-income housing units: 2,879
- Fixed-price units: 2,476
- Available units: 120

Offices/Activities

- Innovation Centre: 16.9 hectares
- Ground floor office space: 30,000 m²

MOBILITY

Public transport

- 2 lines with stops near the Innovation Centre
- Number 18 bus line (Sarriguren-Pamplona) night bus

'Green' transport methods

- Length of bicycle paths: 5.8 km
- Bike path network: 7.8 km

ENERGY, RESOURCES, WASTE

ENERGY

- Bioclimatic architecture and urban planning
- Passive solar energy
- Renewable energy: solar (photovoltaic, heat)

WASTE

- Waste sorting/underground containers

PUBLIC AND COMMUNAL SPACES

Green spaces

- 42 hectares of green space, including:
 - 15.9 hectares of lakes
 - 9.8 hectares of parkland
 - 24 hectares of natural reserves
- Swales/water management: 3,225 ml

Facilities

- 4 childcare centres, 3 schools, play areas
- Civic centre, town hall, music school, health centre, social centre
- Cultural facilities, sport facilities (multisport complex, indoor and outdoor football pitches, covered and open-air swimming pools, tennis courts), running track

Water management

- 1 lake: 1.4 hectares/8,100 m³
- Sprinkler system using river water



Site map

Bioclimatic terraces



FIND OUT MORE



Leidsche Rijn

Vleuten-De Meern
Utrecht



RANDSTAD
6 KM WEST OF UTRECHT
NETHERLANDS

MAIN STAKEHOLDERS

Project owner

- Private

Initiative

- Government

Operators and contractors

- Coordinators: BVR (urban planning) and the 'project office'
- Developers

Partners

- Ministries
- The province of Utrecht
- The regional transport service
- Cities of Utrecht and Vleuten-De Meern

KEY DATES

- Emergence of the project: 1993
- Start of work: 1997
- Project duration: 20 years



Site map



Regional metropolisation



Compact town in a 'green and blue' environment

As both a university city and the home of a number of companies that employ qualified workers, the city of Utrecht, located in the urban ring around Randstad, is a strategic economic and urban hub.

In the interest of boosting Randstad's economy to bring it on par with other international cities, land-use planning was included as part of the national strategy laid down in the 4th planning act of 1989. Given its central position at the intersection of road and rail networks, Utrecht was one of the sites chosen as a home for the next generation of business and industry hubs. For a city that already had 230,000 residents, this development meant that 100,000 additional residents would be arriving by 2015. A blueprint needed to be drawn up for a new district made up of 21 diverse neighbourhoods interspersed with parks and open spaces.

KEY FIGURES

- 30,000 housing units
- 30,000 jobs
- 100,000 residents
- 37 units/hectare
- 2,560 hectare

Sustainability/ innovation

The main innovation lies in the development of a planning model in which the city is organised around multiple social and spatial centres rather than a single city centre separated from the rest of the city. Tensions between the aims of this project and local trends in terms of expansion and demographic and infrastructure concentration have resulted in a new model that combines urban density with open spaces and parks.

At the local level, most land was in the hands of private owners, giving weight to the interactions between stakeholders and to public debates. The scale and duration of the project as well as the areas earmarked for water management are the key issues to be addressed in integrated land-use planning.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 100,000 by 2015
- Total surface area: 2,560 hectares
- Residential surface area: 800 hectares

30,000 units

- 30% low-income housing units
- 30% owner-occupied and 30% high-density housing
- 700,000 m2 of office space
- 7 business parks
- One 280-hectare industrial zone

PUBLIC AND COMMUNAL SPACES

- A 300-hectare central park with recreational and sports facilities, play areas and green spaces
- 175 hectares of water
- Health care facilities and schools
- Shops

ENERGY, RESOURCES, WASTE

ENERGY

- Heat network - cogeneration
- Energy-efficient housing: 25 to 40% less energy use than standard designs
- Low-energy lighting in offices and shops
- Reduced energy consumption for public lighting

WATER

- Retention ponds, rainwater infiltration (dry canals with filtration - permeable soil)
- Rainwater collection and use (outdoor pools or reservoirs)
- Natural materials, categories 1 and 2. In the Netherlands, the scale ranges from 1 to 5 (prohibited)

WASTE

- Waste sorting and underground containers

MOBILITY

Public transport

- High-speed buses, new stations, development of a regional network ('Randstadspoor')

Parking

- Number of spaces per housing unit: initial number = 1.2 /actual number = 1.45 to 1.75
- Bicycle path network: 168 km

Natural landmarks have been preserved



© Eranthis

FIND OUT MORE



Messestadt Riem

Munich Riem



BAVARIA
7 KM SOUTH OF CENTRAL MUNICH
GERMANY

MAIN STAKEHOLDERS

Project owner

- City of Munich

Initiative

- The City

Operators

- The City
- The GBW AG company

Partners

- The City
- Frauenfeld, architecture-urban planning
- D.C. Valentien and Latitude Nord (landscaping)

KEY DATES

- Emergence of the project: 1991
- Start of work : 1999
- Project duration: 14 years



Conversion of an abandoned airfield

In 1992, 560 hectares of land at the Munich-Riem airfield were converted as part of an integrated urban planning project reflecting the city's policies and metropolitan vision. In response to issues of urban sprawl, mobility, land use and agriculture, the region developed a new concept of compact, eco-friendly development. The project featured a polycentric community set in a grid of large parks and open farmland, reflecting the region's focus on densification and urban renewal.

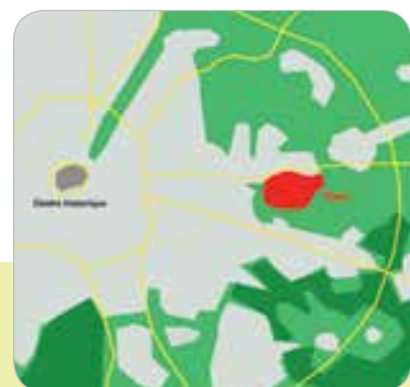
The need for more housing at affordable prices led the city to develop a stronger policy on assisted housing. This new community—in addition to being developed on an already built-up site—is a perfect reflection of the city's new housing policy. Within the metropolitan area, the project includes facilities of international and regional repute as well as housing, businesses, major infrastructure networks and extensive green spaces.

KEY FIGURES

- 6,300 housing units
- 13,000 jobs
- 15,000 residents
- 80 units/hectare (excluding the park)
- 560 hectares

Sustainability/innovation

The innovative dimension of this project is reflected in the comprehensive approach used in 'recycling' this site, with a focus on economic stimulation, large-scale urban facilities and improved mobility. Everything from the construction of housing to the development of parks and recreational areas was carried out with a view to creating an attractive, eco-friendly community. When redesigning this abandoned airfield, the project team took into account the impact on the existing environment (soil status, etc.) while striving to take advantage of the site's best assets, preserve natural spaces and reduce the environmental impact of the new buildings and facilities. The location and compact nature of the buildings and heavy infrastructure will allow for flexibility in the site's future development. Cultural and social events (concerts, tree-planting projects, regional garden shows, and inaugurations) are held to reinforce community ties and are another example of successful urban renewal.



Site map



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Residents enjoy access to the many parks and green spaces at their doorsteps



The programme and its characteristics

CONSTRUCTION

- Number of residents: 15,000
- Total surface area: 560 hectares

6,345 housing units

- Average FAR: 1.2

Economic activities

- 2 industrial zones and 3 business zones (68 hectares, 60 jobs/hectare)
- Exhibition centre: 73 ha (13% of surface area), with 20 ha of exhibition space, 13 ha of green spaces
- International conference centre (7,000 parking spaces) and 7,000 m² of space for 20 to 3,000 people
- 1 mixed district with shops and a business centre

PUBLIC AND COMMUNAL SPACES

- Green spaces 279 hectares (49% of the total area), including a 210 hectare park
- Cultural centre
- Schools (1,100 pupils in primary school) and recreational facilities
- Community centre with facilities and services for seniors
- Indoor and outdoor sports facilities
- Civic forum

Local shops and services



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ENERGY, RESOURCES, WASTE

ENERGY

- Heating network (gas/geothermal)
- Photovoltaic solar installations
- Energy-efficient housing

LANDSCAPE AND WATER

- Landscaped, eco-friendly environment that complements the buildings around it
- Organic farmland
- Water management: infiltration through soil, retention ponds, treatment of greywater
- Information on eco-friendly practices (water, energy, waste, travel and healthy eating)

WASTE

- Composting

MOBILITY

Traffic

- Less traffic congestion through urban mobility management

Public transport

- Underground/bus lines
- Freight station

Parking

- Parking shared by the exhibition centre/neighbourhood (1,150 spaces) and by the shopping centre/businesses/central plaza (3,000 spaces)
- Housing: 0.7 spaces/unit, revised to 1 space/unit following protests by residents
- Seamless network of bicycle paths

FIND OUT MORE



Südstadt Tübingen



LAND BADE-WURTEMBERG
SOUTH BANK OF THE NECKAR RIVER
40 KM FROM STUTTGART
GERMANY

MAIN STAKEHOLDERS

Project owner

- Initially private

Initiative

- The City

Operators

- Primarily private construction firms

Partners

- The City
- Private individuals
- Self-development groups

KEY DATE

- Emergence of the project: 1990
- Start of work: 1996
- Project duration: 25 years (multiple sites)



Site map



Converting wasteland for a more sustainable city



Last changing of the guard - French district

Tübingen is a historic university city (founded in 1477) as well as a former military camp. In the 1980s, it was faced with a limited property market with very few options available for low-income households.

Homes located in the city centre (on a hillside and along the banks of the Neckar river) are highly sought-after, while the southern suburbs located near the train station, military camps and informal settlements attract few tenants and buyers.

A significant proportion of the population has moved to the countryside. The predominant model is a large, single-family home built on a large plot of land, leading to urban sprawl and longer travel distances.

The Südstadt project consists of developing five abandoned urban, military and industrial sites in order to transform the suburbs south of Tübingen into a socially and functionally diverse community with a diverse range of affordable housing units.

KEY FIGURES

- 55 housing units/ha
- 2,000 jobs
- 7,000 residents
- 60 hectares

Sustainability/innovation

The innovative aspect of this project is that it created an abundance of affordable housing while ensuring social and economic synergies through a wide range of local businesses and services. The aim was to show residents the benefits of living in multi-storey buildings, each with a ground floor that is accessible directly from the street and a pleasant inner courtyard. The project was developed with input from residents in order to maintain a high level of diversity and to promote interactions between residents. The first development to be completed was located in the Französisches Viertel district and transformed the way the following sites were built by emphasising an economically, socially and environmentally integrated approach.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 7,000
- Total surface area: 60 hectares
- **Französisches Viertel:** 13.3 ha – estimated FAR: 0.8 (2010 ARENE study)
- **Loretto:** 6.5 ha – estimated FAR: 0.8 (2010 ARENE study)
- **Mülhenviertel:** 4.45 ha
Alexanderplatz – Wurster and Dietz: unknown

7,000 units
Primarily self-developed

Economic activities

- Average of 38 jobs/100 residents
- Small businesses on the ground level (400 to 550 m² units)
- Cottage-industry units

ENERGY, RESOURCES, WASTE

ENERGY

- Heating network/District heat production plants/Solar and geothermal installations
- Energy-efficient housing
- Reduced energy consumption for public lighting

WATER

- Protection and enhancement of the Blaulach and Mühlbach rivers
- Water quality and stormwater management
- Experimental harvesting and use of rainwater and greywater; production of biogas from waste water

WASTE

- Composting

MOBILITY

Traffic

- 30 km/h zone throughout the entire district
- 15 and 7 km/h zones

Public transport

- Bus lines

Parking

- Off-street parking, except for visitor parking or short-term parking
- Number of spaces per unit: 0.6
- Network of bicycle paths connected to an extensive urban network

PUBLIC AND COMMUNAL SPACES

- Restricted vehicle traffic
- Multi-use spaces
- Semi-enclosed city blocks accessible to foot traffic

Französisches Viertel:

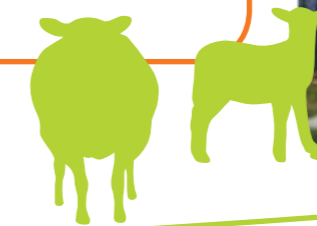
- 22 m² of open space per resident; estimated FAR: 0.4 (2010 ARENE study)
- **Loretto:** 17 m² of open space per resident; estimated FAR: 0.35 (2010 ARENE study)
- **Mülhenviertel:** 0.32 hectares of public green space per 4.45 hectares

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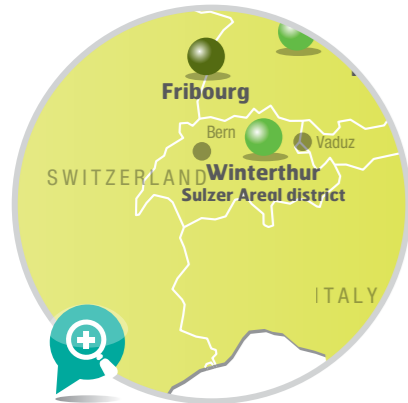
Units in the French district are nestled on the hillside

FIND OUT MORE



Sulzer Areal

West of Winterthur



ZURICH METROPOLITAN AREA
SWITZERLAND

MAIN STAKEHOLDERS

Project owner
• Sulzer real estate company

Initiative
• Sulzer company
• Associations

Operators
• Sulzer real estate company
• Investors

KEY DATES
• Emergence of the project: 1989
• Start of work: 1998
• Project duration: ongoing



Site map



Economic and urban renovation of a brownfield site



Natural landscaping blends in among the sleek lines of the architecture

The decline in smelting operations and in the construction of steam and diesel-powered machines led the Sulzer company to abandon a number of production sites, including the company headquarters in Winterthur in 1988. As it did with other sites, the company founded a subsidiary in order to conduct a building operation on its 22 hectares. It presented the City of Winterthur with a radical proposal for converting the site, known as Winti Nova. It proposed developing the site from the ground up, ignoring the existing urban and metropolitan environment and creating a brand-new neighbourhood. Support was sought from investors, but the project strategy was out of touch with local needs and with institutional and civic stakeholders. Complaints from a number of architects, associations and residents as well as the economic feasibility of the initial projects pushed Sulzer to implement a long-term overhaul of its project by taking into account broader urban sustainability objectives.

KEY FIGURES

- 900 housing units
- 5,000 jobs
- 22 hectares

Sustainability/innovation
The innovative aspect of this project is reflected in the strategy that ultimately was adopted in order to define and develop the project over the long-term into a scalable site by unlocking its full potential and selectively preserving existing buildings. The project's strengths include the adaptation of the site's constraints and assets to create an economically sustainable community and the progressive implementation of a policy of collaboration with political institutions and their administrative and technical departments, with residents and with professionals. The project's hallmark is the careful preparation of project phases, provisional scenarios and testing in order to address the challenges at hand and produce a high-quality, airy development that offers a flexible use of space.

The programme and its characteristic

CONSTRUCTION

- Number of residents: 900
- Total surface area: 22 hectares

Housing

- 35% owner-occupied
- 47,500 m² in 2007

Services (as of 2007)

- Offices: 50,000 m²
- Culture/education: 32,000 m²
- Recreational facilities: 13,000 m²
- Shops: 3,500 m²

ENERGY, RESOURCES, WASTE

- Urban micro-climate: dry climate landscape design, selective placement of vegetation
- Solar energy
- Greywater reuse
- Selective waste sorting

PUBLIC AND COMMUNAL SPACES

- **Open public space**
Adapted to suit the characteristics of the site
- **Inspired by minimalist land art**
A variety of public facilities
23% of the building programme

MOBILITY

Pedestrian-only district

Public transport

- Central station; bus lines

Bicycle path network

Parking

- Ratio:
1 space for every 100 m² of housing and for every 150 m² of commercial space



Industrial activity at the site



FIND OUT MORE



Île-Saint-Denis

Abandoned warehouse site
Seine-Saint-Denis



ÎLE-DE-FRANCE
10 KM FROM PARIS (PLAINE COMMUNE)
FRANCE

MAIN STAKEHOLDERS

Project owners

- General Council of Seine-Saint-Denis
- Plaine Commune urban community
- City of Île-Saint-Denis

Initiative

- Private and institutional

Operators

- Printemps site: ING-BREMOND/West 8/Mutabilis
- Galeries Lafayette site: BNP Paribas Immobilier/Brenac Gonzalez/Saison Menu

Partners

- The City
- Plaine Commune urban community
- SEM Plaine Commune Développement
- General Council of Seine-Saint-Denis
- Region
- French government
- Europe

KEY DATES

- Emergence of the project: 2008
- Start of work: 2012
- Project duration: two sites in progress



Urban transformation and ecological conversion



Site map



The industrial site along the river

Located between two branches of the Seine river west of Saint-Denis, Île-Saint-Denis—a long, narrow island—has long been home to industrial sites and warehouses, a short distance from both the river and the region's major infrastructure. The 22-hectare warehouse site, once used by Parisian department stores, created a sharp division between the northern and southern parts of the island and is crisscrossed by the A86 motorway and high-voltage power lines.

The city decided to transform the warehouse site as part of its ecological conversion of the island, with the aim of addressing the needs of urban and economic development while promoting the area's links to the river, the 'unity' of the island itself and new ways of interacting with the water.

The project consists of developing the brownfield site into a diverse district made up of residential buildings, schools, cultural facilities, services, tourist amenities and residences for students and researchers.

KEY FIGURES

- 1,074 residential units
- 1,000 jobs
- 7,000 residents
- 150 units/hectare
- 22 hectares

Sustainability/innovation

This innovative project makes good use of this island site by implementing an economic and environmentally friendly transformation that represents a new form of urban planning. The environmental challenges of this project were addressed in an integrated fashion. From risk and noise management to the quality of stormwater and the reduction of energy consumption and automobile traffic, the aim of the project was to overhaul the site with a view to sustainable urban development. Given that the land was owned privately and that decontamination needed to be carried out in certain areas, a specific mode of governance was implemented to foster interaction between the different stakeholders. Despite the constraints involved in working with an island site, the desire to achieve sustainable mobility and work with local residents to transform these ideas into action remained a core focus of the project.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 7,000
- Surface area: 22 ha of brownfield land
- Housing**
- 1,074 + students + researchers
- Low-income housing (owner- and tenant-occupied): 30%
- Homes purchased with interest-free loans: 20%
- Owner-occupied: 50%
- Economic activities**
- 55,400 m² net floor area; 38 jobs/100 residents
- 1,000 jobs (often eco-friendly)
- 8,200 m² of local businesses

MOBILITY

- Traffic**
- Development of alternative modes of transport and multimodal transport, creation of a mobility centre
- Public transport**
- Improved access to public transport via a pedestrian bridge to the Saint-Denis/Pleyel district
- Parking**
- Limited to 0.6 spaces/unit, 1 for every 150 m² of net floor area for offices and businesses, 1 for every 130 m² of shops
- Car-sharing (0.1 spaces/unit)
- 1 bicycle parking space for every 50 m² of residential net floor area, 1 for every 200 m² of commercial net floor area
- Target: 20% modal share of cars (versus 44% before the project)
- Target: 40% modal share of public transport through the creation of a new bus line
- Additional support from a river shuttle

ENERGY, RESOURCES, WASTE

- ENERGY**
- Heating network
- Energy-efficient housing: 50% low-energy buildings, 30% Passivhaus, 20% positive-energy buildings
- LANDSCAPING AND WATER**
- Recovery of the fluvial ecosystem, reclamation of the river banks, biotic continuity
- Attention paid to the constraints caused by flooding
- On-site rainwater management: zero discharge, 50% water-permeable soils
- WASTE AND POLLUTION**
- Decontamination
- Noise management
- Precautions taken for high-voltage power lines

PUBLIC AND COMMUNAL SPACES

- Espaces**
- Shared public space (streets and various public areas): 7.7 hectares of public space out of 13.3 hectares (i.e. 59% of the site, broken down as follows: 26% roads, 31% public parks and 2% child-friendly spaces)
- Public facilities**
- 7,600 m² net floor area
- Private facilities**
- 16,100 m² net floor area



A connected island

FIND OUT MORE



Trinitat Nova

Nou Barris district



EASTERN BARCELONA
ON THE CORNER OF RONDA
DE DALT AND AVENIDA
MERIDIANA ESPAGNE

MAIN STAKEHOLDERS

Project owners

- Government representatives
- City of Barcelona
- Generalitat de Catalunya

Initiative and participation

- AAVV neighbourhood association
- Residents of the community

Operators

- Government technical department and public service
- INCASOL (Catalan Soil Institute)

KEY DATES

- Emergence of the project: 1991
- Start of work: 2003
- Project duration: ongoing



Site map



Urban and social renovation of a district



© Eranthis

Solar panels installed on a concrete slab over train tracks

The renovation of the Trinitat Nova district has been affected by the period of democratic transition following the disappearance of the Franco regime. Citizens' demands with regard to the urban development process, demolition and construction brought to light the lack of public oversight and the urban and architectural deficiencies of the local facilities and infrastructure that were built between 1950 and 1970. Faced with worsening urban, architectural, economic and social problems, and following repeated calls for better facilities and infrastructure, the Trinitat Nova neighbourhood association took the lead in organising a community-driven project without institutional support.

Sustainability/innovation

Residents displayed an innovative capacity for assessing the situation themselves, proposing solutions and, above all, defining a framework for their participation, learning from their mistakes and engaging in constructive self-criticism. The project's strengths include an effective analysis of the district, a commitment to ensuring long-term social vibrancy, the fostering of social innovation and participatory democracy and the capacity to implement and create added value as the project advanced, thus ensuring flexibility and expanding the project scope to include environmental issues.

KEY FIGURES

3,200 housing units
7,700 residents
55 hectares

The programme and its characteristics

CONSTRUCTION

- Number of residents affected by the programme: 3,720 out of 7,700
- Total surface area affected by the programme: 35.8 out of 55 hectares

A total of 1,590 housing units will be affected

- Renovation and new construction
- 70% owner-occupied
- 860 units will be demolished
- 1,009 new units will be built

Offices, businesses, facilities

- Commercial premises located on the ground floor of buildings

PUBLIC AND COMMUNAL SPACES

- Parks and open spaces
- Urban landscaping and connection with the city
- Play areas for children
- Local mountain park (Serra de Collserola regional park)

ENERGY, RESOURCES, WASTE

- Bioclimatic housing
- Solar energy
- Reuse of greywater
- Selective waste sorting

MOBILITY

Public transport

- Two metro lines
- Bus lines
- Bicycle path network
- Parking: creation of 1,000 parking spaces under the demolition and reconstruction plans



Pedestrian bridge over the highway leading to the southern districts

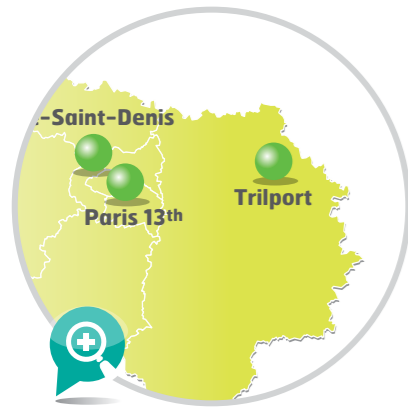


FIND OUT MORE



Trilport

Seine-et-Marne



ÎLE-DE-FRANCE
45 KM EAST OF PARIS
PAYS DE MAUX
FRANCE

MAIN STAKEHOLDERS

Project owner

- City of Trilport

Initiative and participation

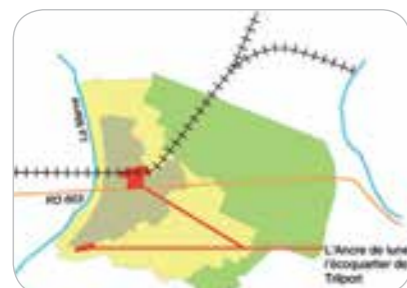
- Residents and City
- Social stakeholders
- French government
- Île-de-France region
- Pays de Meaux urban community
- Seine-et-Marne General Council
- ADEME, ARENE Île-de-France, CAUE 77, Comité 21

Operators

- City
- Île-de-France public land-management corporation (EPFIF)
- Low-income housing landlords
- Multimodal transport hub: Île-de-France region, STIF, SNCF, Réseau Ferré de France, Seine-et-Marne General Council, local transport firms, Pays de Meaux urban community

KEY DATES

- Emergence of the project: 2008
- Start of work: 2013
- Project duration: 22 years



Site map



Transformation of rural and suburban areas - Ecocity



© City of Trilport

The Trilport site at a crossing point on the Marne river

With support from the City, the residents of Trilport (a community of almost 5,000 people in the Pays de Meaux area) initiated a project to transform several agricultural and industrial brownfield sites located in the city centre. The City then took over operations by implementing a Structural and Sustainable Development Plan (PADD) and preparing a comprehensive strategy to limit land consumption, promote public transport, reduce environmental damage, support social cohesion and improve social and economic amenities. Faced with a wide range of issues and significant costs, the City decided to call upon institutional, political, technical and social stakeholders and to develop a network of skilled experts. Five sites were chosen to be included in a coherent urban renewal project. These 12 hectares of land are crisscrossed by waterways and green spaces and will be used to develop housing, facilities and a multimodal transport hub.

KEY FIGURES

1,240 residents
500 housing units
80 jobs
69 units/year

Sustainability/innovation

Local elected officials refused to allow private stakeholders to take over the project, meaning that this small community with limited resources needed to take on the role of project owner. Public ownership of the project ensured the coherence of all actions taken. The development of land-use planning projects covering the full range of themes (from spatial to environmental, economic and qualitative planning) made it possible to incorporate the specific geographic characteristics of this site (a rural area under urban influence). The strengths of this project include the creation of a city centre with public space and a multimodal transport hub, the conversion of brownfield sites and the preservation of resources (management of water, energy, waste and materials) for a new form of urban-rural interaction promoting social and intergenerational cohesion.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 1,240
- Total surface area: 12 hectares
- Multi-site mixed development zone (Saint-Fiacre/Verdun, Berlioz/Fublaines): 8 hectares
- La Talmouze: 0.6 hectares

Housing

- 510 units; 41,000 m² of net surface area
- Private units: 300 (25% owner-occupied)
- Low-income rental housing: 210, including housing for seniors and a residence for young adults

Economic activities

- 1,200 m² of offices, including a telecentre

Facilities

- Community centre (250 m² net surface area)
- Early childhood centre (400 m² net surface area)
- Medical centre (500 m² net surface area)
- 2 pre-school classrooms and 5 elementary school classrooms
- Social and cultural centre (300 m² net surface area)

MOBILITY

Public transport

- Train station: Paris Château-Thierry and Paris La Ferté-Milon lines
- 3 inter-municipal bus lines
- Reconfiguration of a bus network with a feeder line to the train station
- Planned site for the RD 603 national road (Pays de Meaux urban community)

Parking

- 80 spaces at the train station, spaces for motorcycles, bicycles and delivery vehicles
- No more than 1 or 2 spaces per housing unit (according to size)

ENERGY, RESOURCES, WASTE

ENERGIY

- 50% of all heating energy is generated by renewable sources, 10% of all electricity is generated by photovoltaic solar panels
- Threshold of 40 kWh/m² net surface area per year
- Domestic hot water station: < 25 kWh/m² per year
- Grey energy assessment
- Low-consumption buildings (BBC Effinergie); positive-energy buildings

WATER

- Water conservation
- Filtration by sector, rainwater retention ponds, 3.96 hectares of swales and basins and treatment of stream water at the Berlioz/Fublaines site)

PUBLIC AND COMMUNAL SPACES

Train station

- Qualification of the multimodal
- Transport hub (Île-de-France urban mobility plan)

Kitchen gardens/orchards: 2 hectares

Public parks and green spaces

- 5,445 m² (Saint-Fiacre/Verdun: 3,545 m² and Talmouze: 1,900 m²)

Private gardens: 1.53 hectares



FIND OUT MORE



GWL Terrein

Westerpark district



WESTERN AMSTERDAM
3 KM FROM THE CENTRE OF AMSTERDAM
INTERSECTION OF VAN HALLSTRAAT
AND HARLEMMERWEG STREETS
NETHERLANDS

MAIN STAKEHOLDERS

Project management

- Westerpark district
- City of Amsterdam - transport service

Initiative and participation

- Residents

Operators

- 5 low-income housing associations (members of an environmental foundation)
- Eco-plan

Contractors

- Urban planning and housing: KCAP
- Landscaping: West 8
- Architecture: Vroom Architecten, Meyer and Van Schooten Architecten, Atelier Zeinstra, Neutelings Riedijk Architecten, Casa Architecten and I. Van Exel

KEY DATES

- Emergence of the project: 1989
- Start of work: 1995
- Project duration: 8 years



Site map



KEY FIGURES

591 housing units
216 jobs
1,400 residents
6 hectares

Rehabilitation of an urban industrial site



© Eranthis

A dense district with a mix of businesses and houses

In 1989, residents developed plans for an **environmentally friendly housing estate** to be built on six hectares of industrial brownfield located in the Westerpark district in Amsterdam. These unclaimed plots are located on the edge of the city centre in a working class, post-industrial neighbourhood and were vacated by the Amsterdam Water Company. The local authorities launched the project in 1990. The operation consisted of developing a land use and landscape plan, the construction of 17 housing units and the rehabilitation of industrial buildings. After an assessment by the Environment Institute (1991) and a local referendum (1992), the city decided that the operation should form part of a European experiment known as the 'car-free housing' experiment.

Sustainability/innovation

This innovative project integrated several key principles of sustainable

development and applied them to the land use management and construction projects in real time. Residents were involved in every stage of the project and in tracking the sustainability targets. The strengths of the project include the choice of a car-free district, its compact size, the decision to include landscaping and gardens on each parcel and the wide variety of uses. Without vehicle traffic, the inner public space is open to pedestrians and is dotted with oases of greenery. A network of footpaths and bicycle paths allow people to move around easily while maintaining the privacy of residents. The built-up density is 100 spacious units per hectare. Some units are adapted to meet the needs of seniors or people with disabilities. The buildings were designed to reduce water and energy consumption. The materials used were certified as environmentally friendly by the City of Amsterdam.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 1,400
- Built-up area: 1.83 hectares (estimate)
- Land-use ratio: 0.25 (estimate)

591 housing units

- 273 low-income units
- 318 owner-occupied units

1,200 m² of office space

- A café/restaurant (rehabilitation)
- Guest houses (cooperative of 10 residents)
- Meeting rooms
- Custodian's office

PUBLIC AND COMMUNAL SPACES

Parks and green spaces

- Surface area: 8.3 m² /resident (estimate)
- Small rented gardens: 85
- Community gardens and fruit trees
- Play areas for children

Water management

- One retention pond, infiltration

ENERGY, RESOURCES, WASTE

- Cogeneration
- Low consumption (1995)
- Water-saving materials
- Retention, infiltration of rainwater
- Collection and reuse of rainwater
- Healthy materials
- Waste sorting

MOBILITY

Public transport

- Terminus of the tram line on the edge of the neighbourhood
- Two bus lines

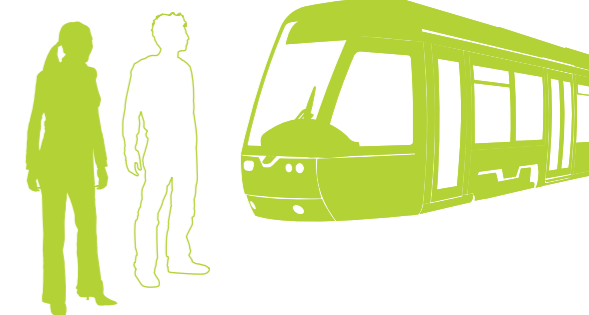
Parking

- 0.2 spaces per housing unit
- 129 aboveground spaces, including 5 for car-sharing and 2 for people with reduced mobility
- 110 spaces reserved for residents
- Daily or monthly parking spaces nearby

The water tower has long been a recognisable neighbourhood landmark



© Eranthis



FIND OUT MORE



Rungis Station

Southern Paris, 13th arrondissement



7 KM FROM THE CENTRE OF PARIS
PLACE DE RUNGIS
FRANCE

MAIN STAKEHOLDERS

Project owners

- City of Paris
- The town hall of the 13th arrondissement of Paris

Initiative and participation

- Council of Paris, Arrondissement Council, City of Paris operational branches, Réseau Ferré de France, SNCF, associations, ARENE Île-de-France

Operators

- SEMAPA, semi-public company, Espacil Habitat, Icade, City of Paris (CCAS)

Contractors

- P. Riboulet / Atelier Choiseul / Arpentère
- B. Fortier / D. Elalouf / J.-C. Hardy

KEY DATES

- Emergence of the project: 2002
- Start of work: 2008
- Project duration: 11 years



Urban conversion of an abandoned railway station



© SEMAPA

Integration of the housing block into the surrounding areas

KEY FIGURES

- 270 housing units
- 1,000 jobs
- 500 residents
- 100 units/hectare
- 3.8 hectares

The Council of Paris launched an urban and environmental conversion project for the Rungis Station site, a 3.8-hectare abandoned railway station located in southern Paris and owned by Réseau Ferré de France (RFF).

The project launched a number of debates between institutions and citizens regarding the future of the 'petite ceinture' (an abandoned rail line) and the opening of a number of parcels of land to urban and residential development. The City of Paris will use this project as an opportunity to incorporate the principles of sustainable development in order to improve urban cohesion and develop pilot projects as part of its Agenda 21 and its Climate Plan. The Council of Paris endorsed the major land management principles in 2003 and the sustainable district policy in 2005 on the basis of a mixed building project with housing, offices and public facilities for seniors and children.

Sustainability/innovation

As this project progressed, issues related to sustainable development were incorporated 'on the fly' by urban planners and construction companies as well as residents. This approach radically altered the way the project was managed and its goals, while remaining within the framework of the validated masterplan.

The involvement of residents, associations, political representatives and technical and administrative services as well as the specific support provided by ARENE with regard to sustainable development throughout the entire project were key factors in slowly but successfully changing the existing operational modes.

The strengths of the project include the progress made in listening to citizens and the incorporation of sustainable principles at a time when the City of Paris was defining its own sustainability policies.

The programme and its characteristics

CONSTRUCTION

- Number of residents: 500
- Total surface area: 3.8 hectares
- Built-up area: 40,000 m² net surface area

270 units/13,000 m² net surface area

- Family housing units: 65 to 70
- Student/researcher housing units:
 - assisted housing: 50 units
 - unassisted housing: 150 units

Economic activities

- 20,000 m² of office space
- 1,000 m² of shops
- Neighbourhood facilities

ENERGY, RESOURCES, WASTE

ENERGY

- District heating system and solar energy
- Water and energy savings

LANDSCAPE AND WATER

- Infiltration by sector, retention of rainwater
- Collection and reuse of rainwater

WASTE

- Waste sorting

MOBILITY

TRAFFIC

- Zone limited to 15 km/h

PUBLIC TRANSPORT

- Tram line (L3) on the edge of the neighbourhood; two bus lines (67, 47), one local minibus, metro L7 and RER B lines located nearby

PARKING

- Limited aboveground parking (except motorcycles, bicycles, delivery vehicles, vehicles for people with reduced mobility, emergency vehicles)
- Ratio: 1 space/unit and 0.25 spaces/100 m² of office space
- Close to a bicycle path network (at Boulevards des Maréchaux), connected to the urban mobility network
- Vélib station (bike-share scheme sponsored by the City of Paris)

PUBLIC AND COMMUNAL SPACES

Parks and green spaces

- 5,000 m² of gardens

Extension of the 'petite ceinture' walking path

- Seniors' residence: 100 beds
- Childcare centre, drop-in childcare centre: 70 cribs



The historic 'petite ceinture' railway tracks have been preserved

© SEMAPA



Site map



Amenities > The concept of amenities refers to the notion of leisure and a feeling of well-being. In the context of urban planning, this may include actions in support of recreational, cultural or sport activities practised in outdoor spaces. The demand for amenities can also be extended to 'ordinary' natural spaces if such spaces are geographically close to major urban centres.

Baubiologie (building biology) > Introduced in 1969 in Germany by Professor Anton Schneider, this term refers to the 'study of the relations between humans and their living and work environments'. It promotes 'ecological building and healthy living', in harmony with the environment, nature and society. Its 25 principles include choosing the right location, the use of natural materials, facilities, indoor climate control, the filtration of pollutants, etc.

BEPOS > Positive energy buildings. A positive energy building is one that produces more energy than it consumes. This is significant only if the building is already as energy-efficient as possible (one that is either passive or with near-zero energy consumption). The pilot BEPOS label, *effinergie 2013*, is based on the *effinergie+* label and incorporates assessments of grey energy and the potential for eco-mobility.

Carbon audit > A tool for measuring the greenhouse gas emissions of a product or human entity (individual, group or community).

Compactness > For a building, this consists of minimising the amount of surface area that exchanges heat with the external environment, thus limiting heat loss.

District > An administrative division or part of a city with its own characteristics and features and a certain degree of unity. A 'safe haven' for residents.

Ecological footprint > A measure of human demand on natural ecosystems. It evaluates the productive land necessary to supply a population's needs in terms of resources, food, heating, construction materials, clean air, drinking water and waste disposal.

Ecosystem > System formed by an environment (biotope) and by all species (biocenosis) that live, feed and reproduce in that environment.

EHPAD > Hospital for dependent elderly persons.

Floor area ratio > Defines the authorised construction density. This ratio expresses the number of square metres of floor area or the number of cubic metres likely to be constructed per square metre of surface area. It is used in the context of a local urban planning scheme.

Grey energy > The amount of energy consumed by a building consists of more than the visible amount consumed during use or by the property manager. It also includes grey energy, which takes into account all the phases of the life cycle of all the building's components, from raw materials to deconstruction. When using a comparative approach, it is important to delineate clearly the parameters being taken into consideration.

Interest-free loan > In particular the 'éco-PTZ', an interest-free housing loan used to promote energy savings.

Land-use ratio > Defines the surface area of built structures and the proportion of land that may be occupied by structures covered by a roof: homes, cabins, garages, swimming pools and certain terraces or ramps.

Life cycle analysis > Environmental analysis method used to quantify the impacts associated with a product throughout its entire life cycle, from the extraction of raw materials to distribution, use and disposal.

Local urban planning scheme > A municipal or inter-municipal document that sets out the regulations on land use. It includes the structural and sustainable development plan.

Low-consumption building ('BBC') > Low-energy consumption buildings adhere to the principles of energy savings and efficiency. These buildings must meet requirements in terms of absolute value for housing. The first French low-consumption building label was launched in 2007 for new buildings and in 2009 for renovated buildings. French thermal regulations (RT 2012) for new buildings are in line with the BBC label and the new *effinergie+* label will apply for positive-energy buildings (BEPOS).

Mixed development zone > An urban planning process initiated by a public body with the aim of carrying out construction. It is used to prepare sites, defines the spatial organisation and plot preparation arrangements and sets out the rules for land use and facilities at the site.

Net floor area > Net floor area of a building (SHON), used in French urban planning legislation. It is equal to the sum of the floor area of each level of a building minus anything that cannot be converted into living space (non-convertible basements and attics, rooftop terraces, balconies, mezzanines, non-enclosed areas on the ground level and in the garage).

Orthogonal > An orthogonal plan, in urban planning, is synonymous with a grid plan.

PASSIVHAUS > German energy performance label for buildings; also used in France. Very little energy is consumed due to the use of passive energy sources (solar energy, residents, facilities, etc.).

PRM > Person with reduced mobility.

PV > Photovoltaic.

REn > Renewable energies.

Riparian woodland > Vegetation located along the banks of a river.

Self-development > In the context of collective housing, a group of citizens can become a contracting authority in order to build or renovate a group of dwellings, from design to completion.

SEVESO > Directive on control of hazards linked to major accidents involving dangerous substances.

Structural and Sustainable Development Plan (PADD) > This plan sets out the key planning guidelines.

Swale > A large, low tract of land that captures water either to channel it off or to let it evaporate or infiltrate into the soil. Swales are used in alternative schemes (for quick and complete discharge into underground networks) to control flooding. They are an integral part of urban renewal and restoration as part of an integrated approach to developing bioclimatic cities.

Urban metabolism > An analysis of the flows within cities. This consists of all transformations and flows of materials and energy that take place within the life cycle of an urban zone. The city is represented as an ecosystem within this model.

Urban mobility plan > An urban planning document for public transport, vehicle traffic and parking. The Local Mobility Plan ('PLD') is the same as the Urban Mobility Plan but adapted to the local scale.



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