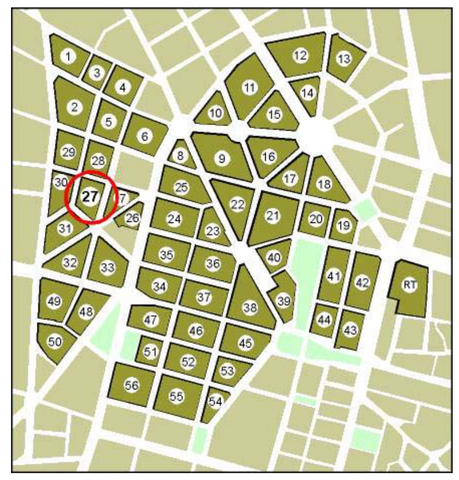
Renovation in Szczecin

methodology
local development
renewable energies
ressources management
materials
process

The city of Szczecin has many residential blocks built in the middle of the 19th century. The lack of maintenance during the last 50 years made it necessary to renovate most of these constructions in a fundamental way.
The goal is to realise an exemplary renovation of these appartments in a sustainable way while proposing different solutions for different environmental performances. The main aspects are the materials, the management of water and the energy.

La ville de Szczecin est propriétaire de plusieurs plots résidentiels qui datent du milieu du 19ème sciècle. L'absence de maintenance durant les 50 dernières années oblige de rénover la plupart de ces constructions de manière fondamentale.
L'objectif est de réaliser une rénovation exemplaire de ces appartements d'une manière durable en proposant différentes solutions pour diffférentes performances environnementales. L'accent a été porté sur les matériaux, le management de l'eau et de l'énergie.



A sustainable renovation

project

Function
124 appartments in one residential block

Building owner
The municipality of Sczecin

Type of property
Public property

Opening date
1999

Surface
≈ 7000 m²

process

Three levels
Since the beginning of the demonstrative project in 1994, three levels of energy and environmental quality have been distinguished. The base level is a standard renovation in the district of Turzyn, that is already relatively high in the Polish context.
Level A: applied on 100 apartments, the proposed solutions are directly and extensively applicable; the differences between this level and the reference level are not very meaningful. The cost of the solutions is just a little more higher and didn't change the Polish constructive practices. They should be recommended in all Polish standard renovations.
Level B: applied on 20 apartments, concern very efficient solutions in this demonstrative project, but limited applications. The reason for these limits can be of a technical and/or financial nature.
Level C: applied on 4 apartments, the highest level of renovation with experimental solutions.

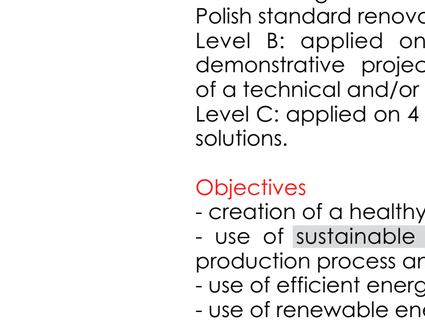
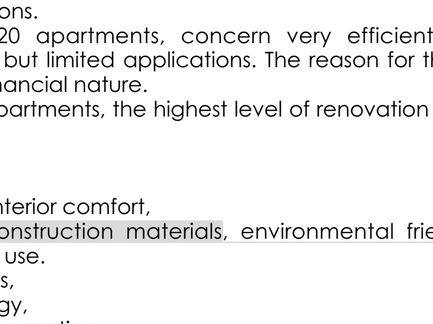
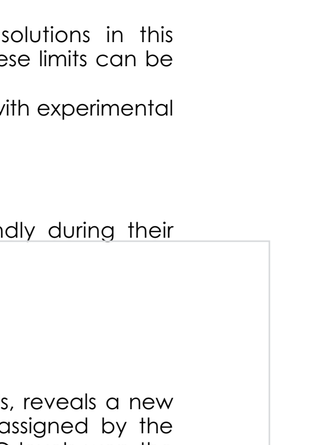
Objectives
- creation of a healthy interior comfort,
- use of sustainable construction materials, environmental friendly during their production process and use.
- use of efficient energies,
- use of renewable energy,
- reduction of water consumption.

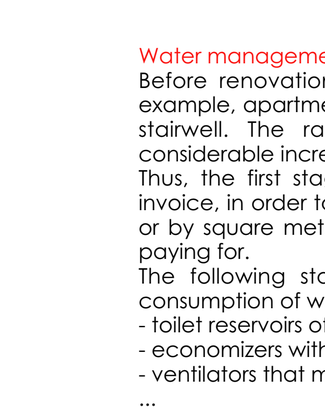
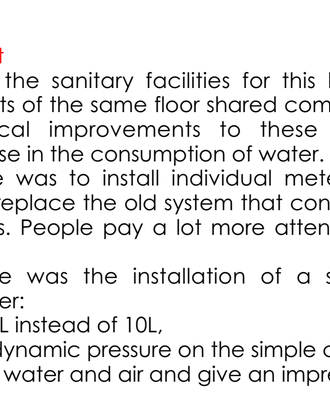
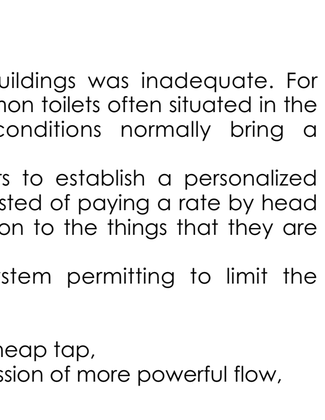
Main results
This exemplary project, which uses environmental friendly methods, reveals a new approach to renovation in Poland. It received different prizes assigned by the national office of housing. Buildings constructed with the B and C levels won the prize for the renovation of the year.
The role of this exemplary project was wide :
- The project of construction is real. It didn't remain at the stage of the design. One can visit the project and the realisation. Therefore, one learn from this example.
- All concerned actors (architects, construction compagny, investors, responsible for housing associations, municipal and ministerial departments) learned from this process of construction. In this project, the knowledge transfer from the Netherlands to Poland was a success: visits, discussions between experts, designers and authority.
- The follow-up and the assessment of this project are the basis of the next stage in the development of sustainble constructions.

Energy management
A strategy in four sustainable points has been adopted for the construction:
- limitation of the energy use by a better thermal insulation and a limitation of the thermal bridges,
- increase of the renewable energy, for example, solar energy,
- efficient use of fossil resources, for example, the installation of an effective heating system with condensation,
- efficient control of the energy consumption by the residents.

Water management
Before renovation, the sanitary facilities for this buildings was inadequate. For example, apartments of the same floor shared common toilets often situated in the stairwell. The radical improvements to these conditions normally bring a considerable increase in the consumption of water.
Thus, the first stage was to install individual meters to establish a personalized invoice, in order to replace the old system that consisted of paying a rate by head or by square meters. People pay a lot more attention to the things that they are paying for.
The following stage was the installation of a system permitting to limit the consumption of water:
- toilet reservoirs of 6L instead of 10L,
- economizers with dynamic pressure on the simple cheap tap,
- ventilators that mix water and air and give an impression of more powerful flow,
...

Materials
The following measures have been taken:
- use of recycled PVC,
- use of Polyethylene instead of PVC. PE is more environmental friendly at the production stage and is more resistant to exterior hazards.
- some environmental friendly products have been used for the interior finishes. For example, plaster plates for the walls, natural linoleum for soils…
- a rigorous selection of insulation materials. The cellulosic wool has been abandoned because of its too high cost,
- plastic has been used to cover metal avoiding the use of zinc, whose production is dangerous for the environment. Unfortunately, this process can't be used for the visible parts of the street for the conservation of historic heritage.

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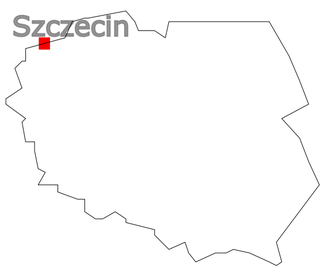

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