

10th EUROPEAN URBAN AND REGIONAL PLANNING AWARDS 2013-2014

European Council of Spatial Planners (ECTP)

Nieuw Zuid: a private project of public interest

The sustainability of a city transcends the sustainability of its buildings. **Urban sustainability** goes beyond the individual home and thus is more than the energy efficiency of individual buildings. Urban sustainability targets the collective scale of the city block, the neighbourhood, the city. The urban environment indeed facilitates building in sustainable manners, but it also offers opportunities to *live* sustainably. Achieving the full potential of the urban environment in this respect, necessitates a large scale approach.

The city of Antwerp consciously chooses to lead by example and already constructs to the passive house standard when she is in the position of owner, e.g. schools, cribs... A new aspect of this strategy is that the city also **steers the private market** towards high-ambition projects in terms of sustainability. By formulating preconditions and procurement criteria in competitions and contracts, the possibilities of the market are explored and the bar is raised.

Nieuw Zuid is the project name for a **new mixed residential quarter** in the south of the city. The realisation of this new residential quarter in between the Scheldt Quays and the palace of justice is in progress today and entails 2.000 dwellings, offices, amenities and a large park. A large part (ca 18 ha) of the former railway site was sold to a project developer 'Ontwikkeling Nieuw Zuid SA' in 2010. Nieuw Zuid is very strategically located as a hinge area between the city, suburbs, the River Scheldt, a number of important green structures and large traffic infrastructures.

With its **climate plan** (2011), the city of Antwerp has committed to using energy and resources sparingly and sustainably, and moreover to achieve CO₂-neutrality in 2050. It is clear that new large scale developments such as Nieuw Zuid have to aspire to and achieve a high level of ambition in terms of energy and environment in order to compensate for the limitations of existing buildings.

So even though Nieuw Zuid is a predominantly private development, the city considers Nieuw Zuid to be a **project of public interest**. The spatial development of this area is a lever for the sustainable development of its surroundings and of the city as a whole. The city and the developer signed a cooperation agreement with the purpose of realising all these ambitions.

The master plan as a framework for sustainable development

The master plan for Nieuw Zuid concerns a wider area than the private developer's terrains, partly because the plan has to give shape to the strategic Spatial Structure Plan for Antwerp's **metropolitan and ecological ambitions** for this area. But also because it has to establish **relationships with other large projects** on or near the site, such as the redevelopment of the Scheldt Quays, the reconfiguration of the southern 'spaghetti junction', the redevelopment and landscaping of the ring road area (Groene Singel) and the development of eco-effective industrial park Blue Gate Antwerp opposite to the motorway complex. These projects have had their own visions elaborated, but the master plan for Nieuw Zuid combines them into one coherent vision for a new type of urban fabric with a leverage effect on the sustainable development of the entire city.

The master plan has to formulate an integrated answer to a multi-faceted and complex issue. This explains the explicit choice of the city and the developer to look for a **multidisciplinary design team** with expertise in fields such as sustainability, energy, mobility, public space, greenery, environmental acoustics ... Italian urban designers Studio Associato Secchi-Viganò and their multidisciplinary team were selected out of 21 candidates in a contest organised by the city and the private developer in 2011.

Specifically, Nieuw Zuid is to become a new **residential quarter with a mixed programme** of:

- Ca. 2.000 dwellings
- 20.000 to 40.000 m² of local amenities (e.g. two schools, two cribs, a sport hall and a service centre)
- 40.000 to 70.000 m² of supra local amenities and/or offices
- Ca. 20.000 m² of neighbourhood commercial functions (shops, hotels, restaurants, cafés, bars)
- A ca. 15 hectare park (Konijnenwei)
- 5 hectares of neighbourhood greenery
- A green park strip on the Scheldt Quays

But the **social aspects of sustainability** are essential as well. A varied offer of housing in terms of size, type, budget and location will create a lively urban area for a very diverse public. Because the streets are arranged perpendicular to the River Scheldt, every dwelling offers panoramic views of the Scheldt, the city or the park. Social housing is spread and mixed into the quarter as an integral part of the development.

There is an important **focus on the liveability** of the quarter as well. This means that special attention is given to pedestrians and cyclists, green (playing) areas, public spaces and public amenities. Pedestrians and cyclists take up a prominent place in the public domain. Parking is clustered and organised underground. Another principle of the master plan is the preservation of the existing green structure and ecologically valuable areas. Building sites are 'pre-greened' awaiting future development.

The greater green structure is linked to **water management**, as the quarter is to become rainwater neutral. Water infiltrates the soil naturally via a wadi system that in turn is connected to the footpath network. This way the experience of the wadi system is optimised. Water from small wadi beds throughout the site, flows to large wadi beds in the park. Rainwater from rooftops is caught for reuse or infiltration. Air quality and noise are key concerns as well: mitigating measures have to guarantee the liveability of the new residential quarter.

Throughout the vision and design trajectory sustainability is maintained as an overall ambition entailing aspects of spatial, social, environmental and process quality. Working with a multidisciplinary design team has proven to be an important **accelerator in the thinking and decision making process**. Concepts such as clustered parking, rainwater neutrality and a heat network were concretised throughout the design process and, en route, gained wide support from the stakeholders.

The importance of a heat network for an energy neutral quarter

Heat networks provide essential infrastructure to **realise climate goals**, especially climate neutrality. The master plan for Nieuw Zuid is quite ambitious in terms of energy. All buildings have to be designed to have a maximum heating need of 15kWh/m² per year. This is the standard that the city and the developer have agreed on. The rest of the limited heating needs are met by means of a heat network.

Heat networks give higher yields and allow for a better use of residual heat streams. They have the advantage of **efficient heat production** at one central location within a quarter. Like the wadi system, the heat network in Nieuw Zuid is linked to the footpath network, so that it literally brings heat from doorstep to doorstep. This is an extremely productive and sustainable manner of generating heat.

Heat network are extremely productive in an urban environment and perform better with differentiated heating needs. Nieuw Zuid is the perfect starting point to develop a **city-wide heat network**. All spatial

parameters, such as density, a mixed programme and the proximity of large scale consumers, are favourable. This means for example that the heat network is flexible enough to adjust to future evolutions. As new buildings are obliged to connect to the heat network, the network systematically expands according to the phased north-south development of the site. A heat central in the north at the edges of the park will 'feed' the network. The system will produce and deliver warmth to heat rooms and sanitary water.

In time the city wants to **expand the heat network even further** by connecting other users and large scale consumers in the area: a college, the palace of justice, social housing ... The city also studies the possibilities of recuperating residual heat from or connecting to the future eco-effective industrial park Blue Gate Antwerp, and of energy coupling with the nearby Aquafin water treatment plant.

Implementing and managing energy networks are obviously not project developers' tasks. This transcends the level of individual buildings and private plots. Extra investments and efforts from the city are needed in order to push beyond classic energy systems. The city has signed a gentlemen's agreement with the developer is currently running a **public procurement procedure for the selection of a heat distributor**. The first heat requirements are expected mid-2015. A feasibility study led to a public concession of the design, build, maintenance and exploitation of the heat distribution network. The city expects to sign an agreement with a distributor in the first half of 2014.

The decision to develop a heat network for Nieuw Zuid is unique. Heat networks of a comparable size and serving a comparable mix of functions are nowhere to be found in Belgium. Nieuw Zuid is a pioneering project thanks to the explicit choice of the city and the developer to turn Nieuw Zuid into an exemplary 21st-century residential quarter. A **win-win situation**: the city gets to realise its climate goals and gradually develop a collective heat network, and the developer gets to market a product with added commercial and financial value in the short and long term.

Strategies and instruments for the planning process

The master plan for Nieuw Zuid is the **conceptual frame of reference** for the city in directing and monitoring the quality and coherence of the phased realisation of Nieuw Zuid. The guidelines and sustainability principles (rainwater neutrality, closed soil balance, mandatory connection to the heat network, mitigation of air and noise pollution, pre-greening ...) will be anchored in the spatial execution plan for Nieuw Zuid, which in turn forms the **legal framework** for the development together with the environmental impact report.

With a view to strong direction and coordination, a more **detailed development plan** is elaborated for each phase. This plan ensures a controlled, coherent and coordinated development, conform to the master plan. It provides insight into volumes, the programme, spatial accounting, the parking balance ...

Nieuw Zuid is also part of the **European PassREg-project** ('Passive House Regions with Renewable Energies'). This IEE-project (Intelligent Energy Europe) aims at an accelerated implementation of NZEB (Nearly Zero Energy Buildings). The central principle of the project is the passive house standard combined with renewable energy. So-called 'front runner regions' will be promoted as examples. Their acquired knowledge is accumulated in a success model. Antwerp is one of the aspiring regions with potential to become a front runner, with Nieuw Zuid as a 'beacon project'.

Co-production and participation

The master plan was commissioned by and elaborated with the developer, who is also the owner of a large part of the site. This collaboration is **anchored in a cooperation agreement** which includes the intense guidance of the design trajectory by city company AG Stadsplanning Antwerpen and arrangements regarding the sustainability ambitions.

The **project structure** was outlined together with the developer. Both parties have a project leader. There is a two-weekly working group in which the developer, AG Stadsplanning Antwerpen and the design team are represented. This working group is expanded with other partners depending on the agenda. Every three months a steering group with political representatives discusses progress and milestones in the project with the private partner and the designers.

Apart from the intense conceptual guidance and quality monitoring by AG Stadsplanning, there are **many city services involved** in this project. Having elaborated the Antwerp climate plan, the department for energy and the environment monitors the sustainability ambitions of Nieuw Zuid, while the departments for spatial planning and mobility monitor the vision and policies for space and mobility.

The city and the developer organise communication and participation together. The first **participation initiatives** were organised in 2011, when the design contest for the master plan was in preparation and when the selected design was revealed. Many residents expressed their concerns in terms of current levels of amenities and green shortages and many also conveyed their support for the sustainability ambitions and programme choices. In 2013 the residents were informed about the completed master plan and the integration of the results of the participation process.

In March-April 2014 the city will start a **trajectory of guidance** aimed at different target groups on 'learning' to live in an extremely energy-efficient neighbourhood. This trajectory is funded by the Flemish government and aims at behavioural changes towards 'correct' energy consumption by end users as well as building managers, commissioners and designers.

Monitoring energy-efficient buildings has taught us that **users' behaviour** has a considerable impact on the actual use of energy and thus on the success of the entire energy system. As an extremely energy efficient quarter, users' behaviour in Nieuw Zuid will not only affect the individual scale (dwelling, school ...) but the entire quarter (e.g. collective heating). This necessitates full commitment to sparing use of energy by everyone.

The trajectory of guidance gives a central role to participation and consultation with stakeholders and wants to contribute to a **Nieuw Zuid 'culture'** where residents, visitors and users subscribe to the sustainability ambitions (e.g. via local communities). In the end, the philosophy of sustainability has to be written into in their DNA, automatically making sustainability part of the local culture.

The Flemish subsidy can also help the city to reinforce and sharpen its role in the implementation of sustainability and to **share the acquired knowledge** with future projects in or outside of the city.