

## **ECOLOGY AND ECONOMY: A DURABLE MARRIAGE AT THE ITTERBEEK BUSINESS PARK IN DUFFEL**

IGEMO was commissioned by the municipal administration of Duffel to develop the SME zone 'Itterbeek' in a sustainable manner.

The SME zone consists of two parts. The first phase of the SME zone was realised in the late 1990s and covers an area of approximately 10 hectares, which provides space for 18 businesses.

Phase 2 of the SME zone also covers an area of approximately 8 hectares, and provides space for 28 businesses. This second phase of the SME zone is in development at this moment. The first businesses will be in operation at the end of 2008.

The Itterbeek SME zone, and especially the second phase of the implementation, is a good example of applying sustainability to the development of a business park. Economic development and creating room for businesses does not necessarily have to come at the expense of nature and the environment, these two aspects can actually co-exist in perfect harmony.

### **VISION, METHODOLOGY AND APPROACH**

Developing new sites is a complex process. Integrating sustainability and environmental-friendly aspects into the implementation of spatial planning projects requires considerably more effort than might be expected at first glance. Effective realisation of these objectives can only be achieved in practice if a carefully considered vision, methodology and manner of approach are present in advance.

Before formulation of a site plan for a future SME zone is started, IGEMO carries out an extensive study of **all** possible measures and/or techniques that could contribute to developing the site in a sustainable and environmentally friendly manner. That study is conducted along two lines. The first line is to study which measures can be taken in the public parts of the site, and the second line is to investigate which measures can be taken in the private parts of the site. Both lines focus on six topics: mobility, water, energy, nuisance, natural environment, water, and solid materials. As an example, consider the mobility cluster. At the level of public space, a possible measure would be for IGEMO to make the SME zone accessible for alternative modes of transport, such as cyclists and bus users. At the level of private lots, a possible measure would be for the business to install bicycle parking facilities or formulate a company travel plan. For each of the possible measures, a budget is estimated and the benefits and drawbacks are listed.

In the next step of the study, IGEMO conducts a detailed investigation of the feasibility of the various measures. Various questions are addressed during this step. Is the proposed measure financially achievable? Is the proposed measure socially acceptable? Can the measure be implemented legally? For example, can we obtain the permits necessary for installing a wind turbine? Another possible question that might arise is whether the proposed measures are mutually compatible. For example, does it make sense to compel businesses to install green roofs and at the same time oblige them to collect and re-use all of the rainwater? Based on the answers to all these questions, and in consultation with the client municipal administration, IGEMO finally selects a number of measures that collectively provide the best assurance of achieving a sustainable, environmentally friendly site in practice.

After the measures have been selected, IGEMO then focuses on implementing them in practice. The first measures to be considered are the ones that must be implemented in the public parts of the business park.

## **SUSTAINABILITY IN THE PUBLIC PARTS OF THE BUSINESS PARK**

IGEMO makes use of an external design and planning office, which is responsible for developing the site plan for the park. As a public administration, IGEMO follows an official procedure for tendering a contract for this purpose. IGEMO informs the prospective planners about the measures that have been selected and that we wish to carry out in the public space. The bidders are requested to indicate in their offers how they would implement these measures in the site plans they would develop. The extent to which each bidder succeeds in this, along with the price, is a decisive factor in awarding the contract. After a planner has been appointed, he must incorporate the specified measures in the site plan.

Implementation of the measures planned for the public space is thus assured, because IGEMO directly commissions the formulation of the site plan and acts as the client for implementation of the public space at a later stage.

In the development of the plan for phase 2 we looked if we could also improve the 1<sup>st</sup> phase where the following problems still existed:

1. The exit for phase 1 was dangerous for slow lorry traffic, because visibility in the direction of Lier is very limited. That has already caused several accidents in the past.
2. Employees who would like to cycle to work must cross the Oude Liersebaan, which is dangerous. As a result, many employees do not want to cycle to work.
3. The SME zone was not easily accessible by public transport. The existing bus stop was too far away.
4. Rainwater and wastewater were not separated. They both entered a mixed sewer system, and that system emptied directly into the Itterbeek without any treatment. It was not possible to connect the wastewater sewer to a regional water treatment plant.
5. There was no green buffer around the SME zone for visual screening.
6. The area of phase 2 was relatively limited, and the number of prospective businesses is very large.

IGEMO implements the following measures in the public space of phase 2, including also measures to remedy the existing problems in phase 1:

1. The exit located in the phase 1 area is closed, and a completely new access is provided in the phase 2 area. Traffic lights are installed at the intersection.
2. A bicycle path is constructed at the rear of the SME zone to create a direct connection between the centre of Duffel and the SME zone. Several safe bicycle crossings are provided on the Oude Liersebaan.
3. A central bus stop is provided, and a covered bicycle shelter is provided at the bus stop.
4. Rainwater and wastewater is completely separated in the second phase. Rainwater will be buffered as much as possible in a system of open ditches, and the water from these ditches will ultimately flow into a large basin where it can infiltrate into the ground.
5. Wastewater will not be discharged into the Itterbeek, but will instead be processed in a local water treatment plant. IGEMO is responsible for construction of the plant, which will be operated by an external company.
6. The businesses in phase 1 have the opportunity to connect to the local water treatment plant. Connecting both wastewater and rainwater to the purification plant was not legally possible, so IGEMO converted the sewer system instead. The mixed sewer is converted into a closed sewer, and for the businesses that participated in the water treatment programme, IGEMO looked after decoupling rainwater from the sewer system on the individual business lots at no charge.
7. An underground reservoir is constructed to collect rainwater. That will ensure that sufficient extinguishing water will always be available in case of an accident.
8. Common-wall construction will be used in phase 2, and stand-alone construction will be restricted. That will save a large amount of surface area.
9. A broad green buffer will be placed around the site.

IGEMO also takes social aspects into consideration. There are approximately ten houses, which do not comply with the designated zoning, located in phase 2 part of the SME zone. Mutual agreements have been made with each of the owners in order to make realisation of the SME acceptable to all parties.



## SUSTAINABILITY IN THE PRIVATE PARTS OF THE BUSINESS PARK

Besides the measures in the public space, the businesses are also expected to make their own contributions.

By contrast, the measures planned for the private lots are not implemented by IGEMO, but must instead be taken by the individual businesses.

In this regard, IGEMO distinguishes between measures that are obligatory and voluntary measures. The way it works is that the lots are sold to the individual businesses at previously determined prices, but IGEMO selects businesses according to strict criteria.

Besides the usual criteria such as the number of jobs, IGEMO also takes the environmental friendliness of the applicants into account. Businesses that make a commitment to implement some of the voluntary measures in addition to the obligatory measures receive a more positive rating and thus have a better chance of buying a lot.

The future businesses will be obliged to take the following measures, among others:

1. Connect to the local water treatment plant and share the operating costs
2. Construct the parking places for passenger vehicles using water-permeable paving
3. Install bicycle parking facilities to encourage the use of bicycles
4. Collect rainwater in a reservoir and use this water to flush the toilets and spray the garden
5. Zero-tolerance in the use of pesticides or herbicides

The future businesses can choose voluntary measures, among others:

1. Energy-efficient design: common-wall building, building with several floors, separation of zones with a different temperature, passive solar energy, sunblinds / use of natural sunlight
2. Insulation: high insulation of walls, roofs and ceilings, super insulating glass, optimum framework
3. Heating: high efficiency boiler, thermostatic valves, photovoltaic cells, heat pump
4. Ventilation: heat recovery ventilation
5. Building materials: use of sustainable raw materials (such as wood bearing the FSC label)
6. Water: rational water use, use of rainwater for several purposes
7. Electricity: energy-efficient lighting, purchase of green power
8. Waste-management

## IMPLEMENTATION OF THE SUSTAINABLE MEASURES

After the selection of the businesses based on several criteria, a gentlemen's agreement is signed with the elected businesses. During the time determined in the gentlemen's agreement the businesses make up the building plans of their company. IGEMO checks if all the specified sustainable measures are included in these plans.

As soon as the plans are approved, a separate contract of sale is concluded with each company. Each of these contracts includes a clause that states which actions the company in question will take. When the contract of sale is signed, each of the businesses also pays a guarantee that is not refunded until after the company has effectively carried out the specified actions.

In consultation with the municipal administration, IGEMO also ensures that the specified actions are further confirmed by the environmental and urban planning permits provided to the businesses.

Finally, even after the lots have been sold and the business premises have been built, IGEMO continues to stimulate the businesses to devote attention to doing business in a sustainable and environmentally friendly manner in their everyday operations. Generating awareness in businesses also belongs to the range of IGEMO's responsibilities.

Imposing sustainability requirements on individual lots is not new at IGEMO. It was already applied on an experimental basis in the first phase of the SME zone. Some of the measures were imposed as obligatory, while other measures were stimulated by IGEMO. The businesses that make the greatest efforts receive information signs that publicise their achievements among passers-by, customers, suppliers, etc. In that way, IGEMO hopes to increase the level of interest in sustainability measures among the general public. IGEMO can rely on financial support from Flanders and Europe for formulating methodology and conducting communication. In particular, IGEMO receives subsidies from the European Fund for Regional Development and the Flanders Programme for Innovative Actions.



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If you have any questions about the Itterbeek business park, please do not hesitate to contact us at [magali.bourdeau@igemo.be](mailto:magali.bourdeau@igemo.be).