Sustainable business parks
Strategies and actions
Veurne Industrieterrein I
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Introduction

Sustainability is not an end goal, but a journey that business park can take to improve their economic, spatial technologic, ecologic and social conditions.

This document is meant to provide guidance for current and future decision makers, business park managers and business association. It is the first step for the evolution of the Veurne Industrieterrein I towards a sustainable business park.

The strategies and actions proposed in this document define the bases for a Sustainable Business Park Management Plan. As such, they are not meant to be prescriptive, but rather an attempt to lay out a series of priorities and directions that will help Veurne Industrieterrein I to become more sustainable. The strategies and actions presented should be used and modified as innovation brings new technologies and as new practices are developed.

Sustainable business parks aim at exploiting technologic, economic, ecologic, social and spatial advantages that originate from local inter-firm cooperation in the field of facility and utility management, infrastructure and industrial processes (Van Eetvelde, Deridder, Segers, Maes, & Crivits, 2007). The guiding principle of this document is therefore that to improve sustainability performance of existing business parks companies have to work together, enabling inter-firm cooperation. More specifically, inter-firm cooperation may include collective organisation of energy and resource supply, waste water treatment, transport and green space maintenance, the collective use of equipment and facilities, the exchange of material or energy streams between companies or with the surrounding region.

This document has been developed in the frame of the SAFE-ICE INTERREG IVA 2 Seas cluster project – research, innovation and business support for a low carbon economy.
The LESTS approach

The LESTS approach is based on holistic sustainability definition and targets multi-disciplinary knowledge through activities involving several different disciplines. It consists of five different and interlinked perspectives: legal(L), economical(E), spatial(S), technical(T) and social(S). In more detail, according to the LESTS approach the following themes are covered:

Legal issues, e.g. liabilities, regulatory requirements, third party contracts, service agreements, IP rules

Economic issues, e.g. cost savings, waste/resource recovery value, funding mechanism, taxes & incentives, new business opportunities

Spatial issues, e.g. environmental issues, geographical companies proximity, planning rules

Technical issues, e.g. sharing and cascading resources, system stability, facilities

Social issues, e.g. with regard to workers (health & safety; employment relationship; training and education; work-life balance; job satisfaction and engagement); regarding consumers (health & safety; experienced well-being); as concerns local communities (health & safety, employment, community engagement, access to tangible resources, district heating, local capacity building).

Document structure

The document contains four sustainability strategies each of which is organised with a brief definition and a non-exclusive list of associated actions. For each strategies implementation opportunities for Veurne Industrieterrein I and steps to take are listed according to the LESTS approach.

The document includes also the description of the different steps of the sustainable business park management plan, in this way it is also a guidelines document for other business park in Flanders in moving towards sustainability.
Location. The Veurne Industrieterrein I business park is located in the municipality of Veurne in West Flanders. West Flanders is the most western province of the Belgian Flemish Region (Flanders), the region is one of the most important economic area in Belgium and in Europe. Different industries are located within the West Flanders province, most of them are concentrated around the city of Brugge, Oostende and Kortrijk.

Veurne is a city with a population of about 11,000 inhabitants. Two business parks are located within the municipality: Veurne Industrieterrein I and Veurne Industrieterrein II, of these Veurne Industrieterrein I is the biggest one.

Accessibility. The business park is located in a strategic area. The business park can be accessed from outside Veurne by using the N35 and the E40. The first one is a provincial road which connects the city of Veurne and the Business Park to the different centres of the province. The second is one of the most important highway in Belgium and allows the connection of the business park with the main Belgian cities, such as Brussels, Ghent and Liege, and with France, Germany and the Netherlands.

The business park has high potential for connection to the public transport system, however the current state of the transportation services lacks. The train station of Veurne is located in about 2 km away from the business park, but the train services from this station are not so good.
**Spatial planning and land use.** The business park is involved in a big upgrading process lead by the city of Veurne. Two new development areas are planned: the Suikerfabriek and the Proostdijkstraat.

The area of the Suikerfabriek with some 48 hectares will be redeveloped in a residential, a recreational, a green and a business zone. The residential area of 13.5 ha will be developed in two phases (5 ha in 2015 and 8.5 ha in 2017), with a minimum housing density of 25 houses per ha. The new business area will take up 8.6 ha, offering space to about 14 companies reserved for regional companies. This new business park will be developed in two equally sized phases in 2016 and 2020.

The Proostdijkstraat area with some 25 hectares, will be redeveloped as a mixed business zone with both small and large-scale retails enterprises. It will host activities such as storage, production and processing of goods, logistics, research and development. Specific area for waste, storage and recycling of building materials, handling and processing of raw materials will be also included.
Companies in the business park. The Veurne Industrieterrein I hosts 215 companies. The average size of the companies in the business park is medium-sized companies. Most companies are in the food sector, building/construction sector and logistic. Others significant sectors are: joinery, waste and recycling, energy services, textile, agriculture and car services.

Park Management. In Veurne Industrieterrein I a park management project stared in 2011. West-Vlaamse Intercommunale wvi is in charge of the site management for this business park.

Business Association. A non-profit organisation (wzv) has been created in the Veurne Industrieterrein I. The board of the business association accounts for 5 companies, in February 2015 a meeting has been held to include other 12 companies in the board.

The original aim of the business association has been that of working on different focus groups: management structure, communication, inter-firm cooperation, environment. The work of the association is still in the initial phase.

The business association is active in different communication activities. An open company day is organised regularly two times a year in the business park.
How to identify the business park

The business park identification is the first step in the sustainable business park management plan process.

In developing a business parks sustainable management plan it is important to focus on the resources of the region where the business park is located. Therefore, in this study the strengths or assets of a site, community and region are identified. The strengths of a region can include the geographical assets, availability of raw materials, labour, education, existing industry base, transportation, market access, governmental regulations, and quality of life.

Example of typical question to be answered when performing the identification of the business park.

Where is the business park situated?
How may hectares does it have?
How can the business park be accessed? (public transport and private transport)
Are there zoning and land-use plan for the business park?
Are there planning decisions for the business park upgrading/redevelopment?
Are sustainability principles included in the planning decisions?
How many companies are located at this business park?
How many employees?
What is the economic impact area?
Is there any park management structure? Who is responsible for Park Management?
Is there any business association? How many companies have joint the association?
What does the association do?
Vision

A sustainable business park management plan requires vision. The vision need to came from a multi-stakeholder involvement process which has to be set down from the initial phase.

The main aims of such process are:

- To create a specific idea of what you would want to accomplish unique to your area.
- To build awareness and commitment among the broad range of stakeholders.
- To set out a longer-term framework for a project that will take at least several years to unfold.
- To help provide specific items for action planning.
- To help create criteria for assessing the success of the effort.
- To motivate the general and business community.

(Deppe & Schlarb, 2001)
How to develop visions for sustainable business park

A visioning meeting is the first step towards a sustainable business park management plan. In the visioning meeting the different companies and stakeholders come together to discuss and define common problems and shared solutions.

The visioning process can include different groups, it can be a short one or two day meeting or it can be a series of meetings. The most important thing about visioning is that it is about looking forward and not get bogged down looking at the way things have been done before. Everyone needs to be committed to creating a vision for a project that works for the various interest groups present and for the larger community.

Practical tips:

Introduce yourselves to each other at the beginning of each meeting.
Select someone to lead the discussion and record items on newsprint.
Decide who will report back to the full group.
Make sure the recorder writes down what is said, without evaluation or debate.
Make sure everyone has a chance to speak.
In plenary presentation, give minority views as well as majority views.

(Depp & Schlarb, 2001)

Typical issues the park manager should be aware of before starting the process.

**Is there any sustainability vision for the city/region where the business park is located?**

The business park is part of the city/region, its sustainability vision for the future sustainable business park management has to be built according to the wider city/region vision.

**What are the common strategies for sustainable business park?**

Companies could be not aware of the potentially and possibility of sustainability measures. Before the meeting it could be useful to have a set of possible strategies to be used to inform the different participants and to start the discussion from.

**Are there companies with their own sustainability plan/ambitions?**

Single companies within the business park could have an internal sustainability plan. The presence of these companies could help be a driver for the process.

Typical task the park manager should fulfil during the process.

- Create consensus on sustainability strategies.
- Try to see which actors could lead the strategies implantation. Try to use them to guide and drive other companies to join the initiatives.
- Set priorities for the different strategies based on the consensus they have got.
- Definition of actions implementation plan.
Sustainability strategies and actions

Based on the experiences gained through the SAFE-ICE project sustainability strategies and actions to guide Veurne Industrieterrein I towards a sustainable business park management plan are defined.

The strategies are as follow:

**Strategy 1: moving towards a more efficient use of resources**

**Strategy 2: promoting sustainable mobility**

**Strategy 3: increase energy production from renewables**

**Strategy 4: sustainable living and working environment**

In the following each strategy is detailed into three parts: first a short description of what the strategy is about is presented, then a justification of the strategy is provided, and in the last part a list of actions useful for the strategy implementation is proposed.
Strategy 1
Moving towards a more efficient use of resources
What is this strategy about

Resource efficiency is about doing more and better with less. This concept applies to all kinds of resources; it becomes however particularly important in case of natural resources, such as clean air and water, land, minerals and metals, and resources with high pollutant emissions. One of the main approaches to ensure a more efficient use of resources is based on turning waste into a resource by exchanging materials or waste streams between companies.

Why this strategy

Improving resource efficiency provides an opportunity to keep costs under control by reducing material and energy consumption and thus to boost future competitiveness (European Commission, 2011).
How to implement this strategy

**Action 1. Heat exchange**

Within a business park heat exchange refers to the use of waste heat from industrial processes and excess heat from energy production installations in other companies via direct heat links or via heat networks. In addition, excess heat from the business park could be injected into the regional district heating network.

Total Site Analysis provides a practical tool to detect possibilities for energy integration at cluster or business park level, taking into account the existing heat network infrastructure (Timmerman, Deckmyn, Vandevelde, & Van Eetvelde, 2014).

A study (technical) to investigate the waste heat potential has been already carried out on the business park. Only two companies have available waste heat and only one of them has temperatures higher enough to feed a heat network. With the Suikerfabriek business park expansion (spatial) a heat network based on the use of the waste heat already detected could be realized. In this way the planned residential area could benefit from the geographical proximity to the business area. In order to implement this action a cost-benefits analysis (economic) needs to be carried out, and a formal agreement (legal) needs to be made among the different parties involved (business park and the municipality).

A comprehensive guide for heat exchange has been developed within the SAFE-ICE project (http://www.safe-ice.eu/community-heat-systems-and-heat-maps/).

**Action 2. Energy efficient light system**

Energy efficient light system refers to an increase use of natural light instead of lighting the business park buildings with artificial light during the daytime.

Increase use of natural light can be reach by having high windows and light coloured ceilings and walls which help to carry daylight deeper into the building. Lightcatchers in the roofs, daylight sensors and dimmers can also be installed.

Increase the use of natural light in office could increase the quality of the working places and in this regards the general workers satisfaction (social). In order to implement the action detailed studies (technical) for the single building units needs to be done to define the different technical possibilities for each unit. From the legal perspective regulatory requirements regarding the use of natural light in buildings can be integrated in permits for refurbishment and new buildings construction.
Action 3. Clustering of services related to energy

Clustering of services related to energy refers to the possibility of having joint purchase contract for energy, collective energy monitoring and energy management systems, but also joint contract for the maintenance of utilities.

Promotion campaigns should be made to ensure the participation of the different companies located at the business park (social). The promotion of this action can be part of the networking events organised by the business association. The presence of the business association is a great advantage for the legal aspects of this action. The association can subscribe joint contracts for energy services for the different companies at the business park. A detailed analysis of the cost savings possibilities and of the general economic advantages of this action needs to be carried out.
Strategy 2
Promoting sustainable mobility and transport
What is this strategy about

Sustainable mobility in business park means promotion of efficient use of transport, use of high quality (collective) passenger transport and encourage multimodal transport both for passengers and goods (Maes, 2007).

Why this strategy

Promoting sustainable mobility will reduce environmental impact of transport and at the same time will produce social and economic benefits. Working towards a sustainable mobility organisation of the Business Park will contribute to the goal of cutting by 60% the transport emissions set by the European Commission’s Transport 2050 strategy.
How to implement this strategy

Action 1. Bike mobility

Cycling is the cleanest and most efficient forms of transport which can be suitable for business park. It improves health, does not produce air or noise pollution and helps to reduce congestion.

Promotion of bike mobility for a business park means introducing and/or increasing cycling infrastructure such as bike lanes and bike parking and services as hiring schemes.

In order to implement this action the integration of the business park within the city cycling network is essential, this needs to be done together with the city administration of Veurne. In particular this can be achieved by building a cycling stairs between the bridge and the cycling path next to the river Lovaart (spatial). Active communication (social) between the local administration and the business park association is needed to ensure the realisation of the project.

Bike sharing schemes have been introduced in several cities in Flanders. The blue bikes initiatives is one of these. The concept is about to have a bike sharing station at the train station and to use these bikes to reach the working places.

A blue bikes system could be implemented at the Veurne train station and the business park employees could benefit from it. In order to implement such scheme formal agreement (legal) among the different parties involved (mainly the blue bike and the municipality) needs to be done. Active communication (social) among the business park association and the different parties is needed to ensure the realisation of the project. At the same time promotion campaigns to increase the number of workers using the bike to reach the business park needs to be done. Incentives or benefits can also be introduced for those who go to work by bike (economic).

Action 2. Sustainable use of cars

Different companies on business parks use companies owned cars. The use of a common company-car scheme based on hybrid/electric cars will reduce the number of owned cars and will produce less pollutant emissions, hence will promote a sustainable use of cars.

In order to implement this action a service agreement (legal) needs to be subscribed by the different companies for a common company-car (owned) scheme. Technical installation of the required equipment such as recharge points for electric cars and dedicated parking spots is needed. Promotion campaigns (social) needs to be done as well as incentives or benefits (economic) can be introduced to increase the number of employees using these system.

Car-sharing system based on electric car have been already implemented in Flanders. The Cambio car sharing system is one of these. In the case of Veurne Industrieterrein I no Cambio station is located nearby the business park. An agreement with Cambio (legal) could be made to have a station at the business park.
Action 3. Connection to public transport network

Connection to public transport network are very important, especially in view of young employees. Connection to public transport can be made by having bus stops in the business park, or by facilitating the way from the nearest train station to the business park by promotion of bike sharing.

The business park is located at the edge of the city of Veurne, possibilities to bring the city and regional bus connection into the park should be explored together with the local administration and the bus company De Lijn (social). Promotion campaigns and incentive to push employees in using public transport can be developed (economic).
Strategy 3
Increase energy production from renewables
What is this strategy about

Low carbon energy production is about creating an energy production system based on use of renewable energy sources and renewable energy conversion technologies (Timmerman et al., 2014).

Why this strategy

Increasing energy production from renewable is one of the main goal of the EU energy and climate policy. Moreover, by producing and using energy from renewable locally, companies energy security could be increased through reducing dependence on energy market prices (Maes et al., 2011).
How to implement this strategy

Action 1. Collective energy production

Collective energy production refers to collectively owned energy production installations. Collective energy production can be applied for a group of companies or for the entire business park and can even be extend to district level.

Collective energy production business models can involve companies but also third parties which participate by buying stocks or granting credits (Timmerman et al., 2014).

a) Solar energy

Solar energy production refers to energy production by means of solar photovoltaic technologies which turn solar irradiation into direct electricity or by solar thermal systems which turn solar irradiation into heat.

b) Wind energy

Wind energy refers to energy production by means of wind turbines. Three different classes of wind turbines exist in Belgium: small (<15m), medium (>15m, <300kW) and large wind turbines (>15m, >300kW).

From the legal perspective collective energy production scheme can be organised with contract between the business association and third parties. Analysis of the of regulatory requirements, limits for implementation based on legal prescriptions need to be carried out.

Through collective energy production low carbon energy technology too expensive on a company scale can be implemented with economic benefits for the whole business park. In order to implement this action an economic analysis of the cost-benefits also based on taxes and incentives available in Flanders needs to be done together with a technical analysis of the feasibility of the implementation of different low carbon technologies.

In particular for solar energy a study concerning the analysis of free surface and the possibilities of using free land according to the land use and the zoning plan (spatial) needs to be done. A Technical analysis of the roof surfaces orientation in order to assess the possibility of installing roof-mounted photovoltaic and thermal solar panels is also needed.
In order to implement wind energy production plants a legal, economic, spatial, and technical analysis of the possibilities of having small-medium wind turbines should be done. In this regard a useful tool has been co-developed by Ghent University (http://www.windkracht13.be/).
Strategy 4
Sustainable living and working environment
What is this strategy about
Sustainable living and working environment is about creating a nice and pleasant working environment where employees can work enthusiastically and can enjoy ever-increasing job satisfaction.

Why this strategy
Employees spend a large portion of their day at work. Creating a healthy, pleasant and nice work environment helps to promote productivity and create a culture of employees that value the companies and business park activities.
How to implement this strategy

**Action 1. Green areas**

Green areas within the business park increase the image quality of the site and create a more pleasant environment. Green areas can also be created with grass footpaths, in this way pedestrians can make their way through the business park in a safe manner.

In order to implement this action agreement (legal) for all companies can be subscribed to ensure the maintenance of existing green areas within the business park. For the new as well as for the redesign of existing green areas native plants should be preferred, in this way maintenance costs will be reduced (economic).

**Action 2. Common security system**

Common security systems can be implemented either via car surveillance and by cameras located in strategic point of the business park. By having a cameras system it is also possible to notify all members and the local communities if suspicious persons or vehicles are passing by the business park area.

In order to implement this action service agreement between the different companies and specialized security company, and a cooperation with the local police department need to be built (legal).

**Action 3. Shared facilities**

Shared facilities, such as for health care, children care and sport activities, can be realised within the business park. Shared facilities will generate cost saving for the single company, and will increase the general job satisfaction and employment relationship among the different employees.

In order to implement this action agreement (legal) among the different business park companies need to be made. Promotion and communication activities (social) to ensure that a high number of employees use the shared facilities are needed. Analysis of possible buildings to be used to host the shared activities (technical) needs to be carried out.
Further readings


SAFE-ICE

Research, Innovation and Business Support for a Low Carbon Economy