

SUSTAINABILITY FACTORY LEERPARK DORDRECHT



VISION and BUSINESS PLAN

3 December 2009

Contents

1	Introduction	3
2	Vision	4
2.1	Considerations	4
2.2	Sustainability factory answering to developments	5
3	The sustainability factory	6
3.1	Situation	6
3.2	Physical building	7
3.3	Concept	8
3.4	Positioning	10
4	Partners	12
4.1	Business	12
4.2	Education	12
4.3	Opportunities for participation	12
5	Growth model	15
5.1	Participation by education	15
5.2	Participation by business	16
5.3	Other institutions	17
6	Organisation and ownership	18
7	Exploitation	19
7.1	Rentable space	19
7.2	Potential participants	19
8	Financing	21
9	Possible subsidies	22
9.1	Situation as per 1 November 2009	22
9.2	Overview of subsidy schemes	22
	Annexes	
1	Overview of contacts between business and institutions as per November 2009	23
2	Declaration of intent Sustainability factory	24
3	Calculation of rental	26
4	Overview of subsidy schemes as per November 2009	27

Introduction

In 2011 the 'Sustainability factory' will be realised at the Leerpark, a prominent, appealing, innovative and technological centre where innovative and close collaboration between business and education in the field of sustainable development is taking shape.

In the Sustainability factory an attractive and inspiring learning and working environment is being realised utilising sustainable (innovative) technology for students and in-service training for workers, business performing part of the educational task in the centre's labs and production plants. We shall be organising meetings of designers, inventors, (starting) entrepreneurs, advisors (marketing, communication, finance), pupils and students. In other words, the Sustainability factory aims to profile itself as a centre of competence for sustainable development aimed at regional and national networks and coalitions.

In this business plan the vision will be elaborated in chapter 2 and the image of the Sustainability factory will be sketched in full operation in 2015. Chapter 3 will present a physical image of the factory and the activities that will take place, subsequently describing in chapter 4 how partners may participate. In chapter 5 we shall return to the here and now, explaining how and with which partners the foundations of the factory will be set up from the very first. Finally in chapters 6, 7 and 8 the organisation, exploitation and financing will be outlined.

2 Vision

2.1 Considerations

Not a day goes by without energy and climate problems featuring on the front pages of the media. Environmental experts who not so long ago wondered how to put the topic on a world-wide agenda, need worry no more: the topic will put itself on the agenda. Extreme climate conditions, varying from heat and drought to heavy rainfall and floods have been quite frequent lately. As experts have pointed out, human influence on the climate has been unmistakable. The ever-increasing trends of energy consumption and the increasing uncertainty concerning energy supply have caused great concern for the future. The impending energy and climate crises have made it necessary to act, for they are a threat to our safety, food supply, energy management, water management and biodiversity.

- In 2020 greenhouse-gas emission should be 30% lower than in 1990. This target includes both CO₂ released through burning fossil fuels and so called other greenhouse gases, such as nitrous oxide and methane. These gases may be produced in agriculture and some industrial processes.
- The speed of energy saving should rise to 2 per cent a year, the present level being 1 %
- In 2020 the share of sustainable, renewable energy in energy consumption should have risen to 20 %

The cabinet will meet its climate targets for 2011 in part due to the economic crisis which results in fewer commercial activities. The ambitions for 2020, however, will not be met, as was pointed out by the Planbureau voor de Leefomgeving (PBL) (Netherlands Environmental Assessment Agency) and the Energieonderzoek Centrum Nederland (ECN) (Energy Research Centre of The Netherlands) at the beginning of June 2009.

According to the spring agreement of 2008 energy consumption in new shops, houses and offices should be reduced by 50% in 2015 as compared to 2008. This is the core of the agreement on energy saving in new housing estates made by the Ministerie Wonen, Wijken en Integratie (Ministry of Housing, Spatial Planning and the Environment) and Ministerie voor Ruimte en Milieu (ministry of spatial planning and the environment) with the Vereniging van Nederlandse Projectontwikkelingsmaatschappijen (Association of Dutch Project Development Companies), de Vereniging voor Ontwikkelaars en Bouwondernemers (The Association for Developers and Building Contractors) en Bouwend Nederland (Dutch Construction and Infrastructure Federation) . In 6 years the most advanced techniques and materials in the field of energy saving and sustainable energy should be applicable and should be used in all phases of construction. Apart from this the government aims at climate-neutral building being the standard in 2030.

Fortunately the climate agendas of local authorities are becoming increasingly clear. Climate policy is expected to be an important issue in the 2010 spring municipal elections. The Dordrecht city council is working towards energy neutrality, so that total energy consumption in Dordrecht will be equal to the sustainable energy generated by the community, inclusive of the import of sustainable energy, if any. Actually, the municipality of Dordrecht aims for an annual saving of 3 per cent and to generate 5% of sustainable energy in 2012 and 50% of sustainable energy in 2025. (Nota Energiebeleid: Policy document for Energy Dordrecht, section 2009 – 2013). These ambitions have been documented in a council decision of 2 December 2009.

The Sustainability factory aims not only at contributing substantially towards the social challenges that have been described before. The region recognizes important economic and

educational tasks, as a basis for the creation of the sustainability factory. As a centre of excellence (Knowledge infrastructure Mainport Rotterdam; technology deltaplan) for sustainable development and education it will make an important contribution to the innovative capability of business, and through this to regional economic growth.

In present economically turbulent times it is difficult to predict if the great demand for technically-skilled workers will keep up in the short term, but there is structural tightness. Businesses in the region have indicated that they intend to fill one in three vacancies with newly graduated secondary and higher vocational students. (Techniek barometer Rijnmond 2008-2009, 31 March 2009: Technology barometer). The demand for more highly-skilled employees in sustainable development will certainly remain and is expected to increase. The replacement demand in the period following 2013 is still estimated at 1,000 to 1,500 workers. By connecting technology with sustainability an impulse will be given to attractive courses related to technical / technological professions and technology-related courses for the (innovative) manufacturing industry in particular. These developments are well aligned to the large population of students in vocational education in Dordrecht and Drechtsteden, now and in future.

The field of education recognizes the increasing importance and necessity of contributing towards educating the worker of the future. A worker should have learnt to take social responsibility with the intention of creating and controlling a sustainable world. The social isolation of vocational education may be breached by cooperating closely with business concerning sustainability and technology. This collaboration will lead to new mental and educational models generating more challenging learning assignments for the chain of pre-vocational and secondary vocational education, higher professional education and university, in the shape of the invention and construction of sustainable products and of products promoting sustainability.

2.2 Sustainability factory answering to developments

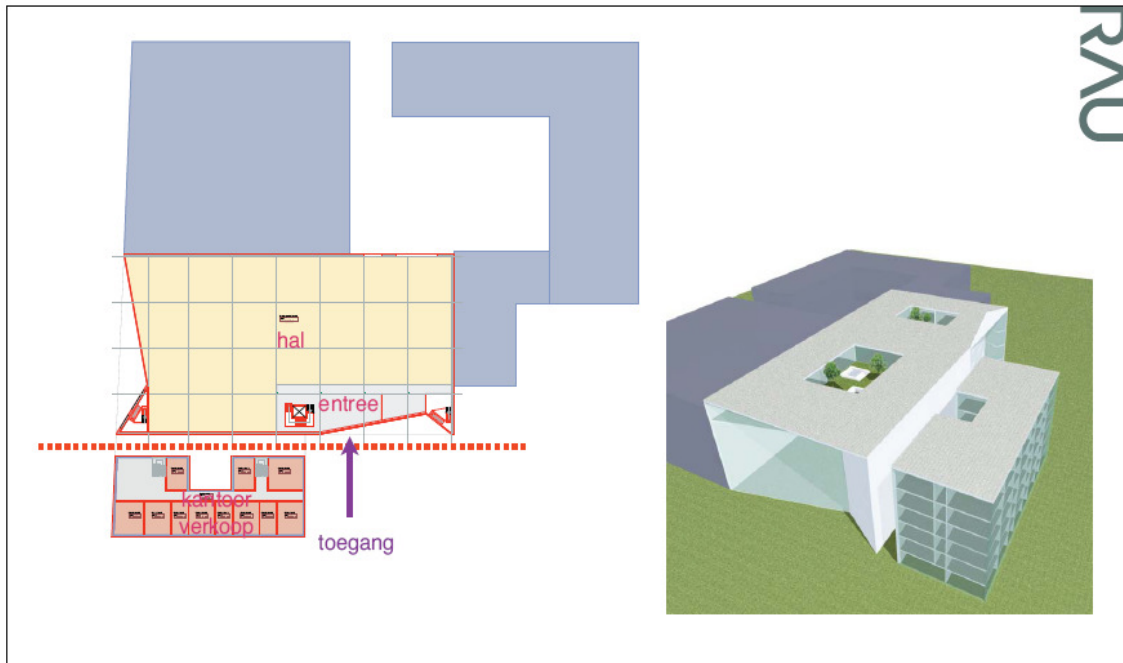
Sustainable development requires different visions, new ways of thinking and innovative technologies. Out-of-the-box conceptions may reinforce the viability of the cradle to cradle concept. The region is ambitious in finding answers to matters of sustainability. Business, educational institutes and regional and local authorities in Dordrecht / Drechtsteden intend to equip (young) people with the knowledge, skills and attitudes required to achieve this. Therefore they arrange challenging assignments in a fitting environment that teach the workers of tomorrow how to deal with the complexity of the questions of today. They learn how to consider matters in their cohesion, to think creatively, to deal with uncertainties and to calculate risks. In short, they learn how to deal with all the aspects pertaining to principles of sustainability.

The Sustainability factory will create an attractive and inspiring environment for learning and working by students and workers who do in-service training in sustainable (innovative) technology. Business will fulfil part of the educational assignment of the centre, which is a condition to allow them to set up accommodation in the Sustainability factory. Business may participate in different ways, creating a unique cross-fertilization between the expertise of business and the ardour of youth. Apart from vocational education at secondary and higher levels, students of pre-vocational education, general secondary education and pre-university education will be able to attend an educational programme of sustainable development. Through private – public partnership the Sustainability factory will be working towards an optimisation and innovation of the knowledge infrastructure (education and research) which is aligned to and grows with the needs of business involved. The Sustainability factory is also expected to provide an economic impulse to the regional economy as far as growth and innovation are concerned, in particular in small and medium-sized enterprises.

3.2 Physical building

The building will reflect the unique character of the Sustainability factory. Of course this will appear from the use of materials and energy supply, but it will be even more obvious from the way the building will be able to adapt itself to future developments.

In the statement of requirement there will naturally be great emphasis on a building that will meet high environmental targets. The development will at least have to be CO2 neutral, and it will be an energy-producing building. Flexibility is also an important characteristic of this building so that the exploitation may be adapted easily to any changes in the market.



All this should contribute towards an inspiring environment where education and business not only meet, but also reinforce each other. In order to create maximum flexibility for the eventual users, the building will be developed primarily as a hull.

This hull will be enveloped by an extremely sustainable 'shell'. Research will be done to enable the real estate to generate energy itself, so that in its exploitation it may be able to provide for its own energy needs.

As far as the internal structure is concerned we aim for halls with different floor heights of 16 and 8 metres, where office, meeting and educational activities will be realised. The final make up of the building will be realised together with business partners.

The flexibility of the building will enable users to switch places relatively easily. In the development an optimum alignment between cost and desired quality will be sought after, flexibility being regarded as an item of quality.

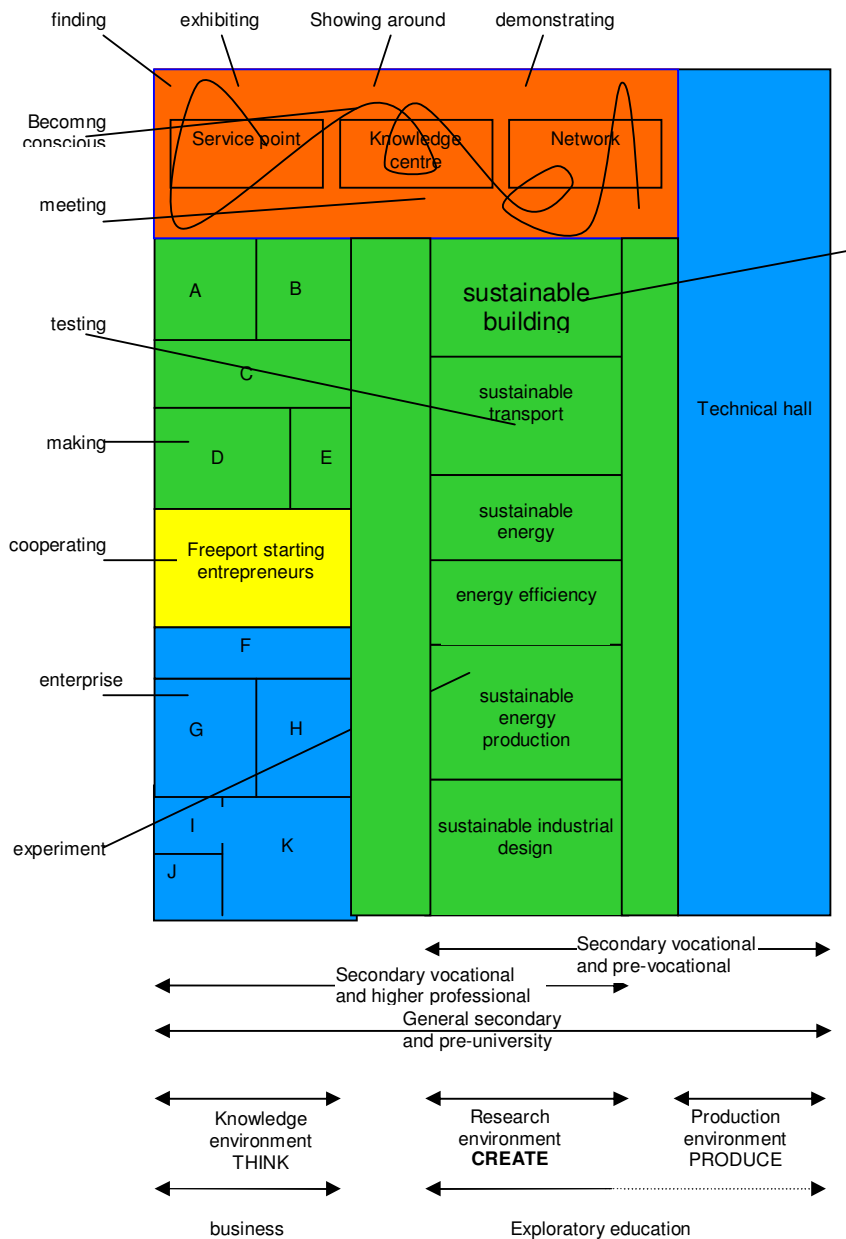
Thomas Rau has been engaged as an architect. In The Netherlands his agency has designed various school buildings and city halls, but also the main offices of Triodosbank and the World Wildlife Fund. Rau's projects are characterised by a great degree of sustainability and at times have even set new standards. The first sketches by his hand have yielded a building of about 5,700m² gross floor area.

3.3 Concept

In the advanced, partly transparent factory hall of over 16 metres high, flexible workrooms, studios, manufacturing and test rooms and resting spaces have been fitted out for explorative education, in cohesion. The various workspaces have been oriented on the central kernel of laboratories and facilities in which the `workhorses` of sustainability have become central: sustainable building, sustainable energy production and consumption, sustainable mobility and sustainable manufacturing and design. In this centre, parties will join in contributing towards the task we face as a society: combating climate change, making our energy management sustainable and adapting our country to changes.

The five components of the Sustainability factory are:

1. The kernel: labs (FabLab-concept, abbreviation for Fabrication Laboratory, of MIT professor Neil Gershenfeld); development of sustainable new prototypes, models and small series.
2. Around the labs: an assortment of (parts of) regional enterprises focusing on sustainable innovative products and manufacturing methods, and development of 'green organisations'.
3. Sustainable free port: for starting entrepreneurs
4. Manufacturing hall: making concrete the processes of thinking and designing by students of pre-vocational, secondary vocational education, and higher professional education in sustainable products and processes.
5. But also: network, knowledge centre for sustainable development, exposition rooms and service point (job placement, assignments for manufacturing and research and coaching of starting entrepreneurs in the fields of business development, marketing, finance and communication).



Scheme 1 Concept sustainability factory

The different labs will function as the kernel of the Sustainability factory, based on the FabLab-concept of MIT professor Neil Gershenfeld. These Labs will be easily accessible to develop new prototypes and produce small series based on the concept of sustainable development. In the centre, pupils and students will meet with representatives of business and institutions who work together, and also interested social partners wishing to turn their questions and ideas about sustainability into concrete (applications) of products. A FabLab will offer easy access to a public that is as differentiated as possible. In order to work with a varied public in the FabLab, it will also be open during the evenings, over the weekend and during the holidays.

The FabLab approach towards design and manufacturing is a powerful concept to enable learning from and with each other, or teach and generate innovative power. Advanced equipment for design and manufacturing will guarantee professional service. (Parts of) regional business focusing on sustainable innovative products and wishing to develop into green organisations will be concentrated around the Labs.

The business part of the Sustainability factory will also have a sustainable 'free port' for starting entrepreneurs, who may establish themselves at attractive rates and who will benefit from the expertise and network of the centre and who may also avail themselves of coaching. Adjacent to the Labs there will be a large Manufacturing hall, where students from pre-vocational, secondary and higher vocational education may work out the results of the thinking and designing processes in the Labs into (commercial) products that meet criteria of sustainability.

The Sustainability factory will be reinforced by and associated with *Leonardo Plaza*, a building equipped especially for the purpose, and FabLab which will be opened in the spring of 2011 at the Leerpark Dordrecht. As a forerunner of the Sustainability factory, Leonardo Plaza will have a clear pilot function. The entire process from idea to product will also comprise the educational areas of technology, information and communication technology, mathematics, physics, chemistry, economics and industrial design. Assignments from business and personal inventions have been produced at the present trial location with the aid of ultra-modern equipment. This method of learning has proved to be strongly motivational for students: they realise their own ideas, individually, but also in groups. Students from pre-vocational, secondary and higher vocational education, general secondary education and pre-university education, but also interested parties from society have each been involved in the design of Leonardo Experience at their own level (the pilot project for the Sustainability factory).

3.4 Positioning

In The Netherlands there have been a number of initiatives that may be comparable to a certain degree: The Practice Factory in Brielle, the initiative for a Climate Campus in Rotterdam and the Science Park in Eindhoven. The Eindhoven High Tech Campus is a technology centre offering accommodation to a great diversity of high-tech companies, that work together in the development of new technologies, from the idea and concept of prototyping and small-scale manufacturing. The campus is primarily aimed at crucial technological areas such as microsystems, semi-conductor products, embedded systems, signal processing and nano technology. The Practice factory in Brielle, an initiative of STC Group, Deltalinqs and KMR, is primarily aimed at the course of General Operational Techniques for re-training and in-service training. The Climate Campus is aimed at sustainable and climate delta development. Part of this is the newly-realised RDM campus. This site has been developed under the motto of Research, Design and Manufacturing as a centre for the creative and innovative manufacturing industry and for new energy carriers. Apart from this, there is space for the establishment of companies that wish to enter into knowledge relationships with educational institutes.

The Sustainability factory in Dordrecht distinguishes itself from the above initiatives by an innovative and close cooperation between business and education on six sustainable themes (see scheme 1), alignment to the specific regional economic structure of business (measurement and control engineering, maritime industry, process industry, mechanical engineering and construction) and the focus on material development (cradle-to-cradle), prototyping & testing and ICT.

As far as ICT is concerned optimum use is being made of the broadband network present in the region. Development towards house automation seems obvious.

It is an innovative technological centre of business, (vocational) education and the Leerpark Cooperative Society for explorative education, innovation, manufacturing and testing prototypes of sustainable technological innovations. The centre also aims to bring about mental change in the future generation. Appropriate education is required to accomplish this, teaching that taking social responsibility is of the essence and training (young) people to create and control a sustainable world. It seems obvious the present set of professional competencies is not sufficient for sustainable education. As a centre of excellence the Sustainability factory will therefore be active in re-formulating a new additional set of competencies.

4. Partners

4.1 Business

Businesses that have been involved in the Sustainability factory put sustainability at the centre of their company philosophy. They are actively pursuing sustainable technological development or making their products and processes sustainable in the fields of energy engineering, fitting techniques, monitoring techniques, mechanical engineering and design of their products and services. They combine customary techniques and methods with new innovative techniques. Business partners are actively building the content and quality of education, leading to better alignment to the future labour market of workers.

In an environment full of inspiration and opportunities renewal, innovation and do-ability are combined. The influence of the young reinforces out-of-the-box thinking.

The Sustainability factory is also the place to be for meeting and networking with other businesses and knowledge institutes. Smaller businesses too may elaborate their questions of innovation in a more efficient and effective way; matters of development may be better addressed.

4.2 Education

For educational institutes the Sustainability factory will provide an important incentive to increase the attractiveness of technical education (especially in the manufacturing industry).

By concentrating on sustainability in all its aspects, future workers are taught that taking social responsibility is essential. Far-reaching cooperation with business enables education to develop forms of education based on assignments. While doing so, teachers and pupils / students will learn how to develop sustainable thinking and acting, and to design matters in an inter-disciplinary way without organisational barriers between pre-vocational, secondary and higher vocational education.

There is a strong connection between creative and technical aspects (design) and productive assignments (manufacturing hall). However, it is not only technical and creative courses that will meet in the same context of explorative learning on the basis of assignments, but this will also apply to ICT-driven and economical courses (business). Making and designing prototypes and testing them are innovative activities for and by education.

The Sustainability factory challenges one to design competency-based education in the field of socially responsible thinking, functioning in an integral environmental arena and analysing manufacturing processes with respect to sustainability.

4.3 Opportunities for participation

Parties who

1. start from the concept of sustainable development and socially responsible entrepreneurship in their (future) actions and who
2. wish to take an active role in education and who
3. operate in the fields of energy engineering, fitting techniques, monitoring techniques, mechanical engineering, or who engage in sustainable design (Cradle to Cradle) may participate in the Sustainability factory in various ways .

Space

Businesses, schools, NGOs will find the breeding place, discovery point and place for development of their future management, but also for the issues of today. Moreover, they will meet people who have modern technology at their fingertips.

The simplest way to be part of this is by taking up accommodation in the Sustainability factory in and around the Labs (long-term, or temporarily for the duration of the innovation).

In the sustainability factory business will encounter a different context to educate the technical expert of the future. The manufacturing hall is the environment for such activities. The inspiration from the Labs and the focus on sustainability immediately place the worker of the future in a different context. Office space, meeting space and presentation facilities will also be available in the factory.

Educational assignment

The participating companies are supposed to make an active educational contribution. This may vary from setting up a learning company in the field of Research and Development (in one of the FabLabs) or operational techniques (business simulations), or by providing (guest) lectures and research assignments.

Labs

The kernel for the innovation process rests with the Labs. There will be different Labs for the various themes. Companies may operate their own Lab, but the driving force may be networks of companies. The availability of equipment for prototyping and testing and the participation of different partners, knowledge institutes and businesses are characteristics of the Labs. A number of Labs will be operational within the factory.

Spin-off / Starters

The sustainability factory will offer great opportunities for starting companies. Very often, innovative ideas may not reach full growth in a small company because the knowledge and means may be inadequate. Students may be able to bring such innovations into production with a lot of diligence and energy. The starter may be supported not only by a special offer for space, but also by commercial advisors and banks working from the philosophy of sustainability.

Arrangements

- Born to create

The Sustainability factory introduces new developments into its network and by means of its network aims to find out how these innovations may be utilised for sustainable solutions.

In order to achieve this, the factory will organise regular meetings that are well suited to one of its basic characteristics: 'Born to create'. The Factory has been set up in order to create new solutions bringing a sustainable world ever closer.

- Knowledge networks

Businesses and institutions may participate in knowledge networks. Themes for the networks to be started are: sustainable building, production, transport, energy and design.

- Giving Assignments

Assignments will be given to the Sustainability factory by businesses and institutions. Assignments will be concerned with the development, design and testing of a sustainable or more sustainable application of a process, product or service. The Sustainability factory will involve its partner knowledge institutes in the execution of such assignments. Together with the partners a development group will be set up and when actual production takes place they will set up a manufacturing team.

Development of relationships

- Liaising to the Sustainability factory

Being part of the Sustainability factory and being able to use the facilities without taking up accommodation there. Now may not be the proper moment for companies to establish themselves or to rent premises in the factory. Yet, one wishes to participate in the innovation, profiling the sustainability theme and to be involved in relationships of work and development with the future generation. For these partners there will be the opportunity of liaising to the Sustainability factory. They will be assigned a task in education or providing assignments.

- Partnership

Innovation and developing knowledge is a process focusing on collaboration. In the Sustainability factory several companies and small businesses operate together. The partners have consciously decided to be a part of innovation and knowledge development. If necessary, the circle of partners will approach specialists from outside the circle establishing development groups and production teams.

The opportunities for participation are being elaborated at the moment. Depending on the needs of partners and their contribution to development and programming of the Sustainability factory, arrangements for sustainability or innovation will be outlined.

5. Growth model

In the past few months the concept of the building has been elaborated and so have exploitation and funding. A number of important partners have meanwhile confirmed that they will participate actively in the Sustainability factory from the start, which is sufficient basis for starting construction in 2010. For first-time users it is essential and even conditional that they should be able to start executing their programmes in 2011.

In the next period there will be consultations with various parties about their participation in the Sustainability factory. A full survey of all pending and planned contacts with business and institutions will be provided in annex 1.

In chapters 2 and 3 the vision on the Sustainability factory in its completeness as aimed at in 2015 has been explained. With the following starting partners we shall prepare the foundations in 2011.

In the short period of planning development about half the Sustainability factory has been designed. In the scheme below the different aspects have been represented:

	Think	Create	Produce
Energy efficiency			
Sustainable energy			
Sustainable production			
Sustainable building			
Sustainable mobility			
Sustainable materials/ designs			

Scheme 2: domains in sustainability factory (as per November 2009)

In the next phases of development of the Sustainability factory further programming and execution will be implemented. Outside development funds and means for the realisation are required for this development. Talks with many institutions have been started for the purpose. An extensive reconnaissance of subsidy schemes is elementary to this.

5.1 Participation of education

Before new concepts of technical education can be provided in the Sustainability factory, educational content and concepts will be worked out and tested by all parties involved. The curricula of pre-secondary technological vocational education and the present secondary vocational courses in technology, ICT, construction and Art & Design will be the first to be adapted to socially responsible enterprise and sustainability, utilising the possibilities within the present structure of secondary qualifications (e.g. major – minor concepts, decomposing and arranging educational content in which direct uninterrupted learning tracks have been designed together with higher vocational education (both Associate Degree tracks and shorter tracks of pre-secondary and higher education)

Personnel management in educational institutes will also be adapted since it is necessary to form teams who are able to handle the new mental models with respect to sustainability and new types of education.

In the short term an extensive programme will be started for teachers and students in order to get acquainted with sustainable education and enterprise. There will be a programme of lectures and workshops, training and education in order to be well prepared for the moment when the Sustainability factory opens up its doors.

Da Vinci College will programme at least 600 m². Apart from this the opportunities to combine skills labs for electric, metal working and mechanical engineering together with pre-vocational education in the production hall of the sustainability factory will be explored.

5.2 Participation of business

After the summer of 2011 the Sustainability factory will open up for the first groups of innovative users.

- NMI and Krohne (Xcaliber)

Krohne Altometer, established in Dordrecht, and the Nederlands Meetinstituut (NMI) will realise Xcaliber as a 'Flow Center of Excellence'. X-Caliber is a simplified and small-scale version of Euroloop which will be realised on the so called Maasvlakte, which will be a testing and training ground for the calibration of industrial gas and oil-flow meters. It will be a European centre of excellence for metrology. Other large companies have shown interest to join in and talks have been initiated. (Siemens, ABB, Honeywell). Xcaliber ensures that education and business will be better aligned in the field of metrology. The participation of Krohne Altometer and NMI in the sustainability factory will create a greater contribution to form and substance of sustainable energy efficiency in the shape of prototyping and testing. In order to realise Xcaliber parties concerned will hire 300 m². Not only students from Da Vinci College will avail themselves of Xcaliber but so will students from two neighbouring regional further education colleges Zadkine and Albeda, students of the Shipping and Transport College and students of the Rotterdam University for Applied Sciences.

- IWZH

Installatie Werk Zuid-Holland (IWZH) has recently decided not to build anew but to set up accommodation in the Sustainability factory. They will create training facilities on 800 to 900m² for installation engineers and process technologists of the future where apart from traditional measuring and control techniques the ICT-driven techniques and sustainable integral design will take shape. Knowledge and skills concerning new sources of energy (wind, sun, water) and the installations and techniques going with it, will be central. Summer courses of process technology and integral design will be offered from the Sustainability factory.

- Deltametaal (SIOM i.o.)

Deltametaal in the region of Rijnmond and Drechtsteden has been a certified learning company for employees in among others metal Works, technology and logistics and has training facilities in different locations. In connection with the metal training courses of pre-vocational education and the regional college for secondary education in the production hall, Deltametaal has committed itself to providing and financing student positions in the sustainability factory. It has taken the initiative to found Samenwerkingsverband Instroom en Opleiden Metaal (SIOM), (Association for the intake of trainees and education for metal works) the final decision expected to be taken in December 2009. At first some 10 places will be involved, to grow to a future 30. It aims to create an attractive practice centre in the Sustainability factory. In relation to this it aims to explore to what degree the metal training may be connected to courses directed at innovative techniques.

- *Innovam and Amega*

The mobility branch, united in Innovam, together with Amega, a large regional centre of knowledge and training in the automotive branch, intends to create a demonstration room around the theme of sustainable mobility (car, bicycle, scooter). The actual building and reconstruction will take place in a learning company at the Leerpark, or outside it. Through Innovam the National Institute for Sustainable Mobility (IDM) (Instituut voor Duurzame Mobiliteit) will also contribute.

- *HVC*

HVC is a public utility in the field of waste and sustainable energy for 55 municipalities in North-Holland, Flevoland, South-Holland and Frisia. As a municipal association HVC strives to contribute towards the goals of the participating local authorities in the field of sustainable waste and energy control. From the very first, it has been involved in the development of the Sustainability factory. HVC also intend to realise a FabLab for energy efficiency and sustainable energy. At the moment, opportunities are being explored. HVC will establish the new-to-be-established municipal utility in the Sustainability factory. HVC will also employ its heat and cooling installation at the Leerpark as a learning company. The installation will provide heat and cooling for the present eight schools, houses, offices and fire station at Leerpark. Moreover, HVC will utilise control and maintenance of the sustainable energy installation of the new sustainable children's farm of Natuur- en Milieueducatiecentrum Weizigt (Weizigt centre for education on nature and environment) in Dordrecht. This is a wood-pellet oven combined with solar energy. HVC being the owner of this installation has realised this as a project for demonstration and learning. The heating network that will be conducted from the waste energy plant in Dordrecht to the N3 and the new housing estates in the inner city may be part of the learning company. This also applies to the possible heat production for Dupont by the waste energy plant at Baanhoekweg. Finally HVC will examine whether there are possibilities of creating a demo and training environment in the field of sustainable energy: heating and cooling (geothermia) combined with Xcaliber and/or a demonstration model of a digestion plant with which green gas may be produced. This will also depend on the possibilities of acquiring subsidies. At the moment we are preparing declarations of intent with the above mentioned partners. An example of this has been inserted as annex 2.

Apart from these original partners, talks are being held with other companies that may participate in the factory. It is important to adjust to the typical industry in the Drechtsteden, so that sustainability of the industry, products and services in the area will be a logical consequence.

5.3. Other institutions

In the Sustainability factory there will also be meeting rooms, assembly halls and office-like facilities. So far concrete interest has been expressed by a number of parties and service companies, Werkgevers Drechtsteden, ABN-Amro and IMC to mention but a few.

- *Pilot project Maritime Innovation*

Holland Marine Equipment and the Kennisalliantie (Knowledge Alliance) are working together in the development of the *Pilot project Maritime Innovation*. In three areas, viz. logistics, labour conditions and environment and Sustainability, there will be projects for the innovation of companies in the maritime branch. Collaboration between businesses, education (secondary and higher vocational education and university) and knowledge institutions will be the starting point.

Pilot project Maritime Innovation will start in 2010 and after the realisation will also be programming in the Sustainability factory.

- *Urgenda*

Urgenda has considered making the Leerpark including the Sustainability factory into one of its iconic projects. A decision will be taken in 2009.

6. Organisation and ownership

The Cooperative Society Leerpark is the principal for the development and construction of the Sustainability factory. ROC Da Vinci (secondary vocational education) and the municipality of Dordrecht together have formed the Cooperatie Ontwikkeling Leerpark. (Cooperative Society for the Development of the Leerpark)

As a matter of fact the Cooperative Society has acted as principal for the total development of the Leerpark quarter, including the learning companies, housing and public space. The Leerpark is an association of Da Vinci College (secondary vocational education), Wartburg College, Stedelijk Dalton Lyceum, Insula College (pre-vocational education) and the municipality of Dordrecht.

The Leerpark programme in figures

50,000 m2	Schools and sports complex
24,000 m2	Business premises, 9.000 m2 of which devoted to student learning companies.
11,000 m2	Office premises
2,000 m2	Retail trade
2,000 m2	Other facilities
40,000 m2	Public space
450 houses	Housing
175 million euros	Total investment

Under the management of the Director for the Development of the Leerpark a project group consisting of representatives of business, education and local authorities has been actively involved in the entire execution of the project. Strategic partners in the realisation of the Leerpark and the Sustainability factory have been participating in the development not excluding eventual ownership.

Momentarily an identification of development projects has been carried out together with a building society concerning the desired ownership, control and exploitation of the Sustainability factory.

In the short term a quartermaster / director for the Sustainability factory will be enlisted. Together with representatives from education and business he will further elaborate and realise the factory.

Since short-term realisation is required, among other things to bind a number of parties, the Cooperative Society Leerpark has decided to take the initiative in the development and realisation, in anticipation of the abovementioned explorations.

7. Exploitation

7.1 Rentable space

Confidential pending the outcome of negotiations.

7.2 Potential participants December 2009

A number of parties have committed themselves, and others have shown a concrete interest in establishing themselves in the Sustainability factory. In the survey below there is an overview of tenants and potential tenants.

potential tenants	hall in m² (height)	office/ education
IWZH	800 (8m)	50
Deltametaal*	600 (8m)	
Da Vinci College	600 (8m)	200
Xcaliber HVC/municipal power company automotive	300 (16m)	100
IMC		100
totaal	2,300	450

* The contribution by Deltametaal is made by way of student positions. This may be translated into m2

This shows that the demand for hall space with a height of 8 metres is already higher (2,000 vs 1,250 m2) than the sketched design renders possible, whereas the demand for hall space with a height of 16 meters is low (300m2). At the moment talks have been initiated with a number of large partners who may be interested. The outcome of the talks will be of influence on the m2 rentable floor space to be realised. It seems sensible for the hall space with a height of 16 meters to be reduced in favour of hall space with a height of 8 meters.

The rental contracts mentioned above will yield a rental of at least € 235,000 annually at the opening of the Sustainability factory. On the basis of 5,000 m2 floor space in a situation of full rental, the total yield will be €540,000,- annually. The calculation of the rental will be found in annex 3. It is self-evident that we strive to substantially increase the number of tenants before the opening of the Sustainability factory.

The setup of the Sustainability factory makes it possible to reduce the number of meters for the hall with a height of 16 meters, so that the number of meters for the 8 meter high hall may be increased. Such an adaptation will yield a better exploitation result and the rental per m2 may be lowered. A possible optimisation might be that a 16 meter high hall will only be

realised if there is a demand for it beforehand. It is also assumed in the exploitation that employees if any, reception etc. will have to be paid for by the partners themselves.

On the basis of the investment model, the business evaluation and the exploitation models it may be asserted that a balanced exploitation is a realistic starting point. Moreover, by calculating a maximum rental loss of 6% there will be enough cover for any risks. Half of the tenants will be long-term lessees.

8. Financing

Confidential pending the outcome of negotiations.

9. Possible subsidies

9.1 Situation as per November 2009

The Sustainability factory is aligned with national policy lines for themes such as sustainability, innovation of education, knowledge infrastructure, innovation and entrepreneurship. From the state budget for 2010 it may be concluded that a significant part of the national programmes for the stimulation and subsidy schemes are concerned with these themes in particular. With a detailed overview of applicable subsidy schemes to start off with, important steps have been taken to ensure the realisation of these subsidies. The following points of interest should be mentioned:

Financial model, ownership and constructional aspects

The final setup of the financing model of the Sustainability factory, the ownership position connected with this and the measure of sustainability of the building will have consequences for the way subsidies may be employed. Regular consultations are held with building advisors, the architect and SenterNovem about the development of this process, and the financial consequences are being translated into a business plan.

Growth model

The connection between the phases of investment and exploitation matters is essential for the utilisation of subsidy schemes. Subsidy schemes such as Pieken in de Delta (Peaks in the Delta) and Kansen voor West (Opportunities for the West) are characterised by an integral approach towards the cost per phase. For the application for Pieken in de Delta that has been planned for the Sustainability factory we have calculated a subsidy for € 1.5 million. In the application for a subsidy on the basis of Innovatiearrangement (Innovation Arrangement) of the Platform Beroepsonderwijs (Platform Vocational Education) we reckon with a subsidy of €1 mln.

Positioning Sustainability factory

The project has been carefully positioned towards other important subsidy providers such as the Ministry of Economic Affairs, SenterNovem, the Province of South Holland and many other stakeholders such as Urgenda, Stichting Kennis Alliantie (Knowledge Alliance Foundation). A joint presentation by the municipality of Dordrecht, Cooperative Society Leerpark and regional business is crucial.

9.2 Overview of subsidy schemes

The overview presented in annex 4 is a short summary of the actual arrangements as per November 2009. An inventory of new arrangements is constantly updated and confronted with the goals of the sustainability factory.