Agentschap NL
The Dutch Ministry of Infrastructure and the Environment

Future value now!

The power of multifunctionality

>>Focus on sustainability, innovation and international

Future value now!

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sustainable area development


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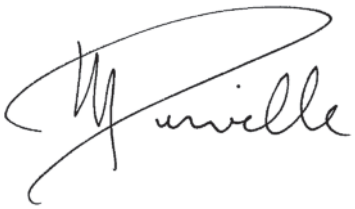
Foreword

At a time when space and money have never been so scarce, individuals, authorities and businesses are faced with new challenges. Professionals and users who are involved in area development, production chains and social services are looking for new earning models and cooperation. Working together on a development that is based on the finiteness of natural resources, resilience and money. The NL Agency is also looking for new partnerships and green development. The NL Agency is an agency of the Dutch Ministry of Economic Affairs, Agriculture and Innovation.
In practice, we want to see more value for less money. Business cases which are profitable. Sustainable development in a way that allows all parties to achieve their own interests better, faster or more cheaply. This publication demonstrates how we can begin with what is already there: people's qualities, areas, products and services. Through multifunctionality, we can reinforce the developmental power that already exists. We present a parade of practices and innovations from many different parties who have already embarked on the road to multifunctionality.

More and more people are opening the treasure chest and discovering that a new combination of functions is achievable socially. We are convinced, however, that there are still many more possibilities. To put it even more strongly, the failure to combine means missed opportunities. It is important to escape from compartmentalised structures, because we cannot feel the loss of an opportunity from within our own compartment. In this publication, we show that many ways have already been found, and we want to inspire and challenge people to seek new ways, by actually starting to practise multifunctionality.

NL Agency / Soil+ is a partner in the CityChlor project, co-funded by INTERREG IVB North-West Europe (NWE), a financial instrument of the European Union's Cohesion Policy which supports transnational cooperation. CityChlor works on sustainable inner-city redevelopment by means of an integrated approach to tackling the threats caused by contamination with chlorinated solvents.
The results of this report will provide tools for CityChlor partners to work on sustainable urban redevelopment.



Ir M.L.A. Durville

Director of Agentschap NL the Environment and Living Environment

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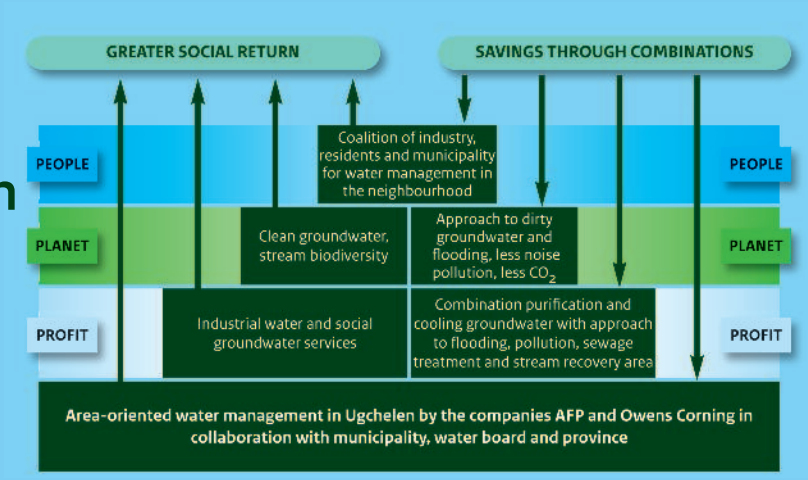
Photographer: Raymond Linssen

Sustainable groundwater management, Ugchelen

Cooling and process water for industry, clean groundwater, biodiversity, the approach to flooding and soil remediation reinforce one another



Municipality, water board, province and business sector come together

The local companies AFP Holland bv (wrapping film) and Owens Corning bv (fibreglass) have a great need for cooling/process water. AFP Holland currently uses three cooling towers in its business processes. At the same time, there are various cases of historical soil contamination in the vicinity and of too high groundwater levels locally. The contamination was caused a long time ago due to the use of solvents by chemical laundries, among others.
The high groundwater levels arose when the Van Gelder paper factory stopped pumping up groundwater for production. In the integrated 'Waterplan Apeldoorn', which was adopted in 2005, these and other diverse themes were linked together; not only the water management and the water needs of industry, but also the area-oriented approach to soil remediation, improving the ecology and the restoration of cultural-historical elements. Spurred on by the added desire to make things sustainable and the municipality of Apeldoorn's obligations with respect to housing, the municipality, water board and industry came together. A successful coalition of leaders, doers and administrators was formed.

Municipality of Apeldoorn and packaging company clean up groundwater and ensure recovery of stream

The municipality pumps up the contaminated groundwater and supplies it untreated to the packaging company. The company uses it as cooling water, purifies the water in the existing cooling towers and transports it to the stream. The removal of the water means that the excessively high groundwater level in Ugchelen remains limited. At the same time, in the company's cooling tower, the contamination from the groundwater in the subsoil is sanitised. The company therefore now uses cooling water originating from soil remediation. This makes a difference in terms of keeping two large cooling towers in operation. The cooling water from production is no longer discharged fully into the sewage system, but instead into the re-installed Eendrachtspreng (spring). This also results in ecological stream recovery whilst the water board receives lower volumes of waste water at its treatment plant, thereby yielding a better return.

Cost items become savings

Naturally, the construction of the pipework and the wells for extracting the contaminated groundwater, as well as the use and management of the treatment plant at the packaging company, form a cost centre. Other cost items are related to tackling the flooding in the area, the management and maintenance of the stream and the management and maintenance of the sewer and the sewage treatment plant. By tackling these issues in combination, the following mutually reinforcing savings are made:

- savings on the costs of cooling and quality improvement in the production process through the use of remediation water and the discharge of released cooling water into the stream (packaging company)
- savings on costs for treatment of contaminated groundwater and management of contaminated groundwater in the area (water manager and perpetrator)
- savings on costs for tackling flooding (municipality)
- savings on costs for the sewage treatment plant. Veluwe Water Board is now one of the cheapest water purifiers in Europe.

Moreover, it would not have been possible to realize the spring without the connection with the pumping up of cooling and process water by industry, because insufficient water flows naturally from the spring heads. It was possible to construct this ecological zone with a relatively small extra investment.
Ultimately, all partners profit from the project and there is an impressive list of benefits: clean groundwater, a clean and attractive spring with abundant water in a greener neighbourhood, clean and affordable energy, a more efficient sewage treatment plant, a clean company operating innovatively, jobs and a reduction in carbon emissions.

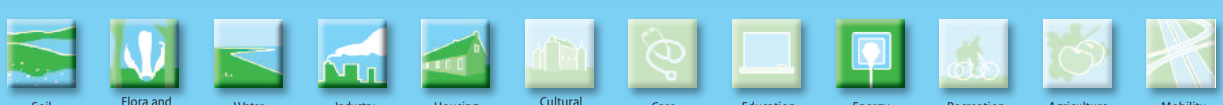
Parties involved

Municipality of Apeldoorn, Veluwe Water Board, Province of Gelderland, Owens Corning and AFP Holland bv.

Sources/more info

www.afpholland.com/duurzaam-ondernemen-afp.html
www.apeldoorn.nl/data/TER/docs/leven/milieu/pdf/water/beken/Eendrachtspreng.pdf
www.veluwe.nl, www.www.sprengenbeken.nl


Photo: A.H. Bongers, Stichting tot Behoud van de Veluwse Sprengen en Beken



1
The power of multifunctionality

1.1 Introduction

Combine and reduce costs with better results. That is what this publication is about. In it, we demonstrate the possibilities of sustainable area development based on multifunctionality.*
By combining functions you give rise to a new earning model, the essence of which is that it costs less whilst at the same time yielding a greater social return. By unlocking the value of what already exists, unexpected business cases suddenly become highly promising.
It is a question of how we work with such social functions as housing, health or education. By putting the focus on the user, it is possible to keep the flows of funds in the area and reinvest available euros in further quality improvements. Multifunctionality leads to new partnerships, which help in achieving interests and ambitions faster, more simply and more cheaply. A treasure chest of opportunities opens up.

Combining means bringing together social functions. Think of a library in a school, or a care institution that provides its services in people's homes. This institution no longer needs its own nursing home. This reduces the costs of care. At the same time, the quality increases because people heal better in their own home environment than in a nursing home. That is combining for reduced costs and with increased results.
A plaza that can be used for water storage or a roof that also generates energy are examples of new combinations. Yet multifunctionality is nothing new in itself; there are plenty of examples from history, such as a church that also serves as a defence, and dikes which not only hold back the water, but on which cattle also graze.
For a long time, however, combining was not topical. The current pursuit of sustainability, combined with the economic crisis that is necessitating cutbacks, means that it is now high time to reinvent multifunctionality. Multifunctionality provides opportunities to

NATUURMELKERIJ VARSEN

Restoration of the natural stream valley landscape
Along the Overijsselse Vecht, the parties involved want to preserve the semi-natural landscape that was created over the centuries. They want to return the landscape, vegetation and water-storing capacity to how they were before circa 1920. The solution they chose is management with the aid of dairy cows in combination with a few physical interventions in the landscape. A precondition for this is an economically profitable business system. In order to achieve this, added value is created from the products the area produces. All links in the chain, from management agency and primary producer right up to consumer are involved here. The basis is formed by the creation and reinforcement of a large uninterrupted wildlife area which can be managed sustainably and economically. The soil will have its natural functions restored, so that, in time, a sustainable form of agriculture will emerge, which will add value to the wildlife area. The area yields products with a "natural image", which is recognised and appreciated by the public/consumers. Increasing the ecological biodiversity on the one hand gives rise to a diverse range of products and, on the other, makes the area more attractive to visitors.

A reversal of thought: farming operations and ecosystem services are one
What is innovative about the project is the reversal of thought when it comes to nature management and dairy farming. Nature is the determining factor for business operations rather than the other way round. Keeping dairy cattle in combination with nature management is economically profitable because other parties in the chain are involved. By sharing knowledge and thinking up new concepts in collaboration with partners, a wide range of products for businesses and consumers is created. The new products, such as cheese, meat and grain products, but also canoeing, have their own logo and their own flavour.
Nature development and grassland development do not stand alone. For product development, it is necessary to know what the soil yields and how the vegetation responds to that. Knowledge of the interplay between soil, hydrology and vegetation is crucial if parties are to have an understanding of the possibilities an area offers in both the ecological and economic sense. Consumers are becoming increasingly aware that food production must be sustainable: demand for organic products is increasing. "Natuurmelkerij Varsen" therefore responds to the demand for produce in which no crop protectants or artificial fertilizers are used. For the processing of milk and meat and for the sale of produce, a large number of parties were willing to cooperate in the project "Vital and Sustainable". The project should achieve the following goals:

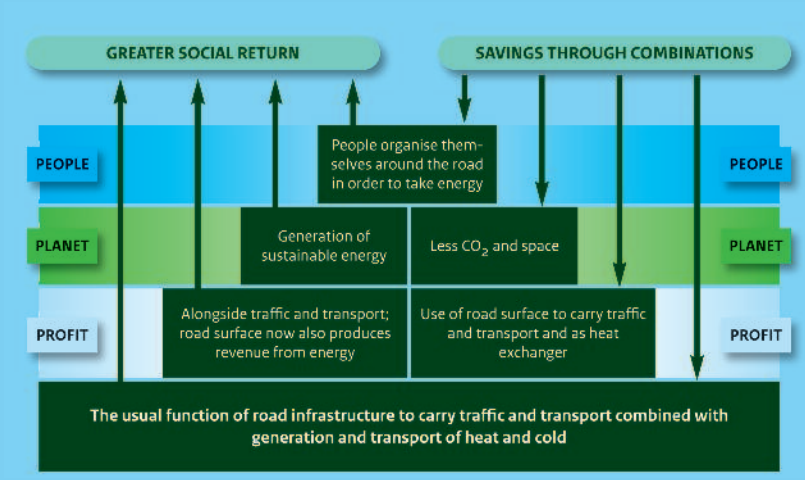
- Making a well-supported decision with the parties involved for the reconstruction of the area;
- An economically viable dairy business, based on pasture and arable land in a wildlife area, where management is a derivative of the nature-related goals to be achieved;
- Knowledge of the process from cultivation to consumption underpins marketing concepts for products from the natural dairy and ensures sales of the products;
- Parties in the chain support the concept and work together on its realization;
- Knowledge about the soil, soil processes, hydrology and vegetation provide support in realizing the concept.

More information: www.natuurmelkerijvarsen.nl

** This publication is a follow-up to "Toekomstwaarde Nu! Duurzaamheid verzilveren in gebiedsontwikkeling", only available in Dutch.*

Energy-generating road Avenhorn

Energy from asphalt can be used for heating and cooling buildings, and also for keeping the road itself ice free



Housing/care complex gets heat and cold from asphalt

The municipality of Koggenland was keen to create a sustainable and energy-efficient residential care complex. For its development, they sought collaboration with a housing corporation. This resulted in residential care complex Vijverstate, which was completed in 2005. The complex has a care and welfare component for the residents and consists of 67 owner-occupied and rented apartments. The municipality set three important conditions: sustainable energy management, a healthy and comfortable indoor climate and competitive purchase and rental prices. In connection with the sustainable and energy-efficient aspect, the Ooms Avenhorn Group was brought in. In the project, a so-called Road Energy System (RES) was laid in the road surface on the south-east side of the apartment complex, by means of which all areas can be heated and cooled sustainably. The most important sustainable advantage is the use of solar energy and heat & cold storage (TES). There is no gas connection and electricity is only used for equipment. The cooling in the summer, in particular, makes a considerable contribution towards reducing CO_2.

Energy performance measurements in the apartments show a reduction of 54% for heating and producing hot water, compared to conventional installations, whilst with cooling the reduction in carbon emissions is no less than 81%. The solar collector is 825 m² in size and it is located in the asphalt. The system works in combination with TES, which consists of two open wells with underground aquifers at a depth of 140 metres. The main contribution made by the RES is the regeneration of heat in the ground, which provides an optimum energy balance. This, in turn, helps to generate an optimum yield from the heat pumps.
Distribution to the apartments is via pipes and heat exchangers. In the winter, an individual heat pump per apartment provides the power for low-temperature floor and ceiling heating, combined with hot water production via a storage boiler. After use, the cooled water is stored in the underground cold well. This is used in the summer to cool the apartments with top cooling according to personal needs. As a result, overheating of the living and recreational areas is prevented in an efficient and sustainable way, without energy-guzzling air-conditioning systems.

Possibilities for large-scale use (1)

The project in the municipality of Koggenland demonstrates that 8 m² of road surface generates enough heat to meet the heating needs of a household for a whole year. Translated into, for example, the A2 near Utrecht (2 x 5 lanes), 100 metres of motorway would generate enough heat for more than 400 households.
For office premises, the cooling is particularly interesting, with a high reduction in CO_2. A simple formula that proved applicable to the results in the municipality of Koggenland is the law of 10%:

- A little less than 10% of the road surface in relation to the residential surface area is needed;
- A little less than 10% of investment is needed in relation to the sustainable system as a whole;
- The total costs of the sustainable system are a little more than 10% of the total building costs;
- The fixed costs for residents fall by about 10%.

Naturally, this law of 10% cannot simply be transferred to motorways and other buildings. A feasibility study will have to show what the potential savings are for all parties involved. It takes two weeks longer to install an energy system in the road surface. This can be done during the construction of the road, but also during widening or major maintenance work. Promising locations can be found where large-scale clusters of housing or utility buildings are located directly on a motorway or other road. An example is 'The Wall', a large shopping and office complex on the A2 in Utrecht. Not only does this cover a surface area of 50,000 m², but the length of this building (800 metres) is also interesting. This length also serves as a sound barrier (hence 'The Wall') for the residential area behind it. An important extra element of an energy-generating road is that safety on the road can be improved by using the heat stored to keep the road ice free. At the same time, the management costs are reduced dramatically.

Parties involved

Housing corporation Intermaris Hoeksteen, Wilgaerde care institution, Municipality of Koggenland, CO2 Service Point province of North Holland, Ooms Avenhorn Group, Schouten Techniek.

Source/more info

www.roadenergysystems.nl

progress with area development and achieve more sustainable quality in society despite the adverse economic conditions.

In Bakkum-, clients of a psychiatric hospital are growing organic vegetables, together with agriculture students. They were commissioned to do this by a restaurant that boasts two Michelin stars. Prior to this, clients grew vegetables on their own piece of land and so did students, and the restaurant bought its vegetables at the market. Now they share a piece of land, where the agriculture lecturers can make sure the restaurant receives the high quality it needs. By having to achieve this quality, the quality of the education improves, as does that of the therapy.
In the meantime, students, clients, lecturers, therapists and the owners of the restaurant get to meet each other, resulting in new contacts and also new ideas for subsequent products and methods. This represents the essence of combining.

Combining is a question of organisation, of money, of functions and their quality and of an integrated 'triple P' approach: people, planet, profit. Social, ecological and economic aspects are included as a matter of course. In this way, combinations bring people together in new configurations and they guarantee the economical use of space and other natural resources. Economic profit comes from reducing the costs and, at the same time, increasing the results. You cannot impose this from above. Combining can only occur in the right place, with a good knowledge of the physical environment and increasingly often with, for and by involved parties from the area itself. The power of the area is the starting point.

1.2 Reader's guide

On the left-hand pages of this publication you will find descriptions of a large number of practical examples, whilst the right-hand pages deal with the theoretical background of multifunctionality.
The examples on the left-hand pages can be divided roughly into three categories:
A: Perspective from different sectors
B: Perspective from examples of sustainable area development
C: Perspective from multifunctionality in physical and social development

All of the examples were constructed in a similar way. They consist of a description of the network of actors involved, which functions are combined and what that yields. The accompanying earning model, which contains both financial and social benefits, is continually clarified by means of a histogram. The explanation of this diagram can be found in section 3.1.
"App" symbols indicate which sectors are connected with each other. The table on page 4 makes it possible to search quickly for an example in a certain sector or a certain combination. The other examples, which are described in boxes between the text, can also be found in this table.

The thread running through the theoretical section is as follows. Chapter 2 provides the background to the phenomenon 'multifunctionality' on the basis of the relationship between area development, multifunctionality and sustainability. Chapter 3 looks at things in more depth and defines what multifunctionality is. Practical pointers are covered in Chapter 4, where we look at the question of how to achieve multifunctionality. We conclude with Chapter 5, which contains agenda points for further discussion and again briefly summarises how you can set about multifunctionality yourself.

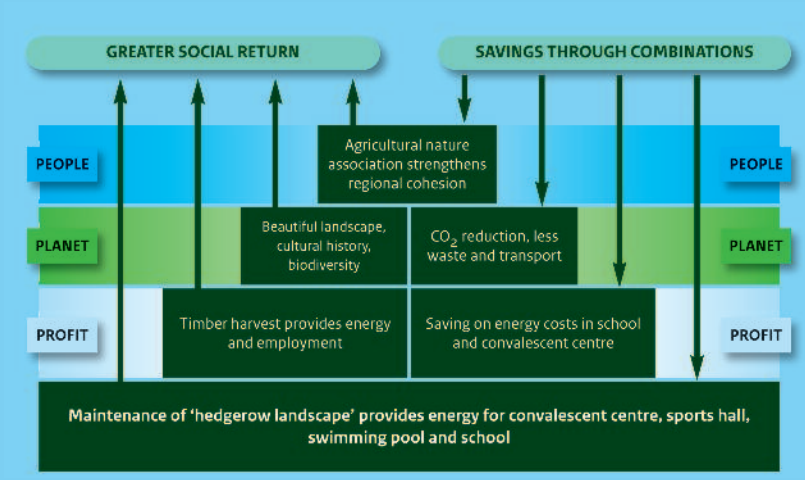
COMBINATIONS AROUND AND WITH ROADS

The road surface of the Tianjin Eye Bridge in China forms the base of an isosceles triangle and the apex of this triangle is the axis of a massive Ferris wheel! Perhaps not an optimum combination of functions, because road and Ferris wheel do not really serve to reinforce one another, but it is spectacular. There is mutual reinforcement however with the energy corridor. This requires sustainable energy sources around and close to roads, vehicles which use these sources and infrastructure to transport the energy to petrol stations and/or charging points. The roads themselves form the corridors for this. Many elements of this are already in place on and around our existing roads, as can be seen from the examples below. Examples which go further than just the energy corridor, because numerous combinations are being put into practice around and with roads:

- Motorway asphalt: asphalt as heat exchanger for heat and cold storage
- Rapeseed: exhaust gas purification and diesel production along the motorway
- Interstate energy farming on the central reservation
- Wind energy near motorway
- Wind turbine alongside motorway that provides lighting on the spot
- Parking in the shadow of solar panels and simultaneous charging
- Sound barrier with solar panels
- Sound abatement and building, for example DCRM office
- Sound abatement and housing
- Sound abatement with greenery
- Air-purifying acoustic barrier
- Sound abatement, greenery and capture of fine dust
- Noise-reducing road surface
- Air-purifying asphalt surfacing
- Air-purifying structures along the road
- Self-cleansing verge (road construction, storage and cleansing dredged material)
- Drainage through porous motorway: separate drainage systems no longer needed
- SMART tunnel: combination of tunnel and water exit in event of flooding
- Motorway junction combined with shopping centre
- Use of space under motorway
- Road corridor in combination with other corridors (train, tram, cycle, water, energy)
- Rest stops along the motorway in combination with regional culture

Biomass plant Beetsterzwaag

Generating energy from biomass helps to preserve a centuries-old cultural landscape



Mediaeval 'hedgerow landscape'
The windbreaks and wooded banks in Southeast Friesland date back to the late Middle Ages. Farmers built them to separate their plots and to meet their own needs for wood. The linear shape and depth effect of this planting gave rise to so-called 'hedgerow landscapes', which are very typical of this area. Wooded banks and windbreaks also form a rich ecosystem for plants and animals. The original function has now been lost and they are mainly of cultural-historical, scenic, ecological and tourist value. The necessary maintenance is laborious for the farmers and subsidies are no longer available. Alternative forms of income must therefore be sought. The installation of a bio-energy plant has opened up prospects in Beetsterzwaag.

Energy from the landscape
The agricultural nature association De Âlde Delte is in charge of running the biomass plant. It set up a company for the purpose. The BOOM foundation, which was also established by the nature association, ensures a continuous supply of wood chips from the area around Beetsterzwaag. To guarantee the operation of the plant, some 5000 cubic metres of wood chips a year are needed.
For this, the foundation must take around twenty-five kilometres of windbreak in hand.
The management area covers some 400 kilometres in total. This means that it is the turn of each windbreak once every 15 years.
The total investment for the 1-megawatt, wood-fired incineration plant, including the heat pipe to customers, is approximately € 800,000. To cover this, various subsidies have been granted, to supplement the farmers' contributions.
"Revalidatie Friesland" is a convalescent centre for children, young people and adults, with a 65-bed clinic and a large outpatient department. The convalescent centre has a fully adapted sports hall with paralympic level facilities and a swimming pool. Lyndensteyn School is a school for special and secondary special education. The students have a physical or multiple disability or are long-term sick. Annual consumption of natural gas for the two institutions was in the region of 400,000 m3. The wood-fired incineration plant can supply about 80% of the total demand for energy. This means that over 320,000 m3 of natural gas a year is saved.

Competitive price
The energy is supplied at a competitive price. The plant was built about 500 metres from the convalescent centre and the school. Via heat exchangers, the energy is transferred to the existing heating systems. The existing gas boilers in the convalescent centre and the school building have remained intact as back-up and are used to help out, if necessary, during cold winter days. For the plant, the storage bunker and storage of the wood chips, a hall was built measuring 15 x 30 metres. The wood chips are transported straight from the field to the storage area at the plant.
By producing energy from biomass, consumption of natural gas is reduced dramatically, carbon emissions are lowered, the quality of the landscape improved and new jobs created. In this way, the cycle of growth, maintenance and local production of sustainable energy, to yield, environmental quality and financial returns is set in motion in a sustainable way.

Parties involved
Dienst Landelijk Gebied (Government Service for Land and Water Use) region North, province of Friesland, municipality of Opsterland, nature association De Âlde Delte, Revalidatie Friesland, Lyndensteyn School

Source/more info
www.project.vrom.nl/doclib/203_Beetsterzwaag.pdf

2
Sustainable area development

2.1 Views on area development

When, some fifteen years ago, the term development planning made its breakthrough, a link was made between the significance of a project for the area as it was previously, is now and will be in the future[2]. At the same time, the term area development was emerging, with the underlying idea that the value of an area develops steadily through the projects and activities which occur there. Gradually, however, this term took on a different interpretation [3]. Area development increasingly took on the meaning of a one-off intervention, which had to yield the highest possible financial return as quickly as possible for the public and private investors in this development.
This form of area development is stagnating at the moment. Governments and developers are no longer able to prefinance large-scale developments. Until recently, new developments played a prominent role. However, the developers are increasingly switching their focus to existing neighbourhoods. In this way, using what is already there is becoming the economic motor of area development.

2.2 From 'planning by permission', via development planning, to 'planning by invitation'

During the final decades of the last century, 'planning by permission' was dominant. This means that an initiator is granted permission for a project that is profitable for him. This is not only a permit to build, but also permission to burden the area with negative side-effects, for example noise pollution. Positive side-effects also occur, which produce benefits for others, for example improved social safety due to homes being positioned so well that the public space can be monitored. Within the practice of planning by permission, little attention was paid, however, to positive side-effects, because the profit comes from realizing the permitted project as quickly as possible and not from side-effects which only yield a profit once the project is up and running.

With development planning, on the other hand, all effects matter. Every project is an integral part of the environment and is assessed and evaluated as such.

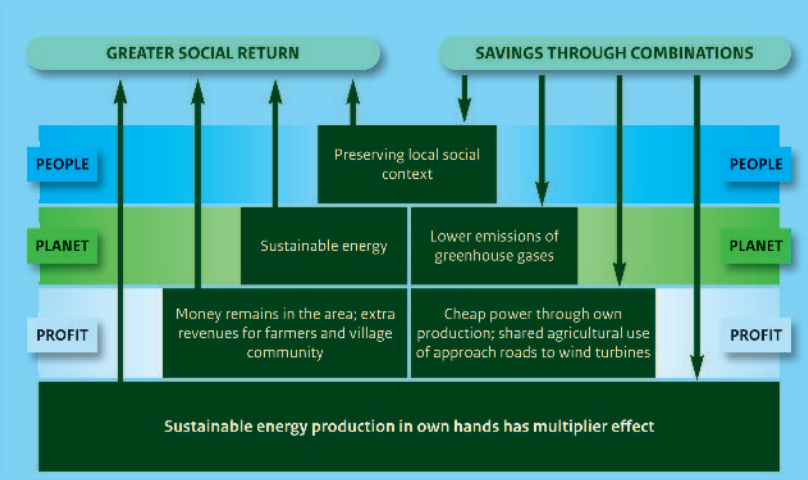
RESIDUAL HEAT FOR THE NEIGHBOURS: MOERDIJK AND BEILEN

Creative combinations on industrial estates or work locations often consists of energy solutions. An example is the smarter use of (residual) heat by supplying this to other businesses or facilities in the vicinity. For instance, the AZN waste incineration plant in Moerdijk supplies steam to the Essent CHP plant elsewhere on the port site. In turn, Essent supplies heat in the form of steam to Shell Moerdijk.
AZN and Essent have entered into a framework agreement for 20 years, with the possibility of extension. This period corresponds with the economic life of the plants. Essent has a contract with Shell to purchase a maximum of 150 tonnes of steam per hour. As owner, Essent manages and maintains the steam pipes of the CHP plant. They consult periodically with the other parties about business operations and maintenance. That frequent consultation is important, because the link between the different companies leads to strong mutual dependence. One of the things the three companies do is coordinate maintenance work, so that the plants are switched off at the same time for major repairs. Another example is the DOMO milk powder factory in Beilen, Drente. The local swimming pool and a primary school are heated completely using the residual heat from this factory. The residual heat is not only used for heating, but also to refresh the water in the swimming pool. For DOMO, there is a social motive for supplying residual heat: the factory has a long history in Beilen and it was keen to give something back to the community. When the municipality wanted to create an energy-efficient school and swimming pool, a win-win situation arose. The municipality financed the project: the extension of the network of pipes to the primary school, the installation of new pumps at DOMO and the extra costs of the installation in the swimming pool. To offset this, DOMO supplies the heat free of charge. In this example too, both parties are highly dependent on each other. The milk factory needs the swimming pool, because it has no installation for cooling down the process water again. And the swimming pool is dependent on DOMO for its heat supply. Due to this collective interest, there is a cooperative relationship between the municipality and the factory.

More examples of projects related to residual heat are described at www.agentschapnl.nl/sites/default/files/bijlagen/ Voorbeeld-projecten%20Restwarmte.pdf

Wind as social and economic motor

Wind energy can be used as an autonomous source of funding for improving the quality of the area



Farmers cooperate in scaling up wind energy production
Wind can be the starting point of an area development and create a link between area development, people who are interconnected and the products and services they produce. These products and services can then benefit the quality of the area, for example in an agricultural area and a village community.

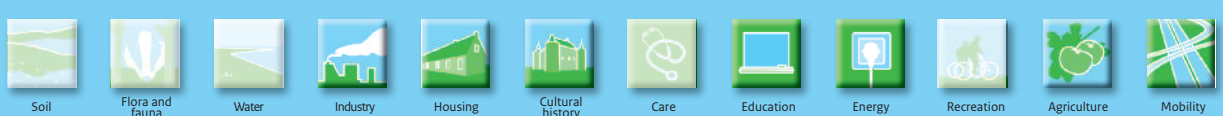
A wind turbine located on a farm provides extra income, so that the business remains solvent and can continue to fulfil its function as an agricultural concern and perhaps custodian of the area. In the Zuidlob of Flevoland, a lot of farmers have been making money from wind for years. A number of turbines needed renewing after the depreciation period. By scaling up, more power can be generated with a smaller number of larger turbines. At the express request of the municipality, the agricultural initiators united and drew up one joint wind plan for new wind turbines, partly to replace the old ones. The municipality subsequently approved the wind plan. The initiators ultimately chose Nuon as developer and receive a payment for this; their income is secured in this way. Sustainable energy generation and agricultural business operations can therefore connect in parallel excellently.

A village community can also do business in wind. The idea of the "Dorpsmolen" (Frisian: doarpsmûne) emerged in Friesland. Such a village turbine is operated by a foundation or association, often linked to an Association of Village Interests. A village turbine is characterised by its social character. The village community jointly contributes money to build a village turbine. The proceeds from the turbine benefit social and sustainable causes in the village community, such as the swimming pool or the school, and they are often reinvested sustainably in, for example, solar panels or heat pumps. A specially instigated Committee for Good Causes decides how the (surplus) proceeds are spent. Social facilities which public parties can often no longer fund are now paid for with some of the (surplus) proceeds from sustainable energy. The proceeds remain in the area and contribute towards the social fabric of a neighbourhood.

In this way, the generation of sustainable energy is linked to the increase in social cohesion and local economic development. Friesland currently has thirteen village turbines, which are largely united in the Feriening Fryske Doarpsmûnen. As in Flevoland, the driving force is the desire for continuity for the future, the removal of problems for the landscape of scattered turbines and desires to replace and scale up. The village turbine approach has now generated interest in fifty Frisian villages, which are considering introducing a comparable method.
It saves costs to cluster and scale up turbines. This concerns, among other things, the construction costs, road building and the connection costs to the mains, which are lower with several turbines. If the roads which are built to provide access to the wind turbines are also used for agricultural purposes, less infrastructure is needed.

Parties involved
Zuidlob Flevoland: initiators (farmers), NUON, landowners, province, municipality
Village turbine: Association of Frisian village turbines (Feriening Fryske Doarpsmûnen)

Source/more info
www.windenergie.nl, rapport *Participatiemodellen voor de realisatie van windenergie op land*[4].



Simply building a residential neighbourhood without thinking about social safety proves to be expensive in the long run, because an unsafe neighbourhood falls in value. A failure to take into account such facilities as schools, shopping centres or infrastructure is less sustainable than if you do so. Taking into account means that side-effects are coordinated with each other: for example, can the shopping centre withstand and absorb the noise from the infra-structure, can schools be made accessible easily by means of this infrastructure? This integrated approach, whereby a project adds value to the area, is an important feature of the original view of development planning.

With the introduction of development planning, people worked on the basis of the idea that an area combines functions, such as housing, work, recreation, water, nature and culture. However, they still thought in much the same way as old-fashioned planners, who could oversee these functions from above and attribute them to an area from the drawing board [5]. Nowadays, when the use of an area is the motor for developing it, the integration increasingly comes from below. It is mainly the users who see which functions can reinforce one another in an area. For instance, many parents and teachers have worked to set up community schools, because they realised that this would better enable them to retain such functions as education, library, childcare and a music school for their area.

A community school is also cheaper than a separate school and library. That means that this solution can help keep an area on its feet. It begins with the multiple use of space; the costs of space are shared. Two functions are preserved for less money. Due to the connection between the functions, their quality also improves, because the school gets a better library and the library is much more accessible to the students. This gives rise to new values and revenues from mutually reinforcing functions. This illustrates the fact that multifunctionality fits excellently with an integrated approach.

The multiple use of space and multifunctionality both constitute an earning model and together form the basis for integrated sustainable area development.

Integration from below

Integration from below is currently enjoying a lot of interest. People are producing more and more themselves, for example in their own vegetable patch, by means of a solar panel on their roof or through carpooling. Individuals can do this to an extent on their own, but a collective approach has many advantages. It is, for example, worthwhile to buy solar panels collectively and benefit from bulk discount.

Cooperation is therefore an important feature of this trend. The starting point here is that individuals produce, in the first place, for their own consumption at a lower cost, and that they also know it is smart to do this together. They sell surpluses, but it is not the aim to produce to sell or earn money.

That would mean investing too much time, and people are not willing

SUSTAINABLE HOONHORST 2050

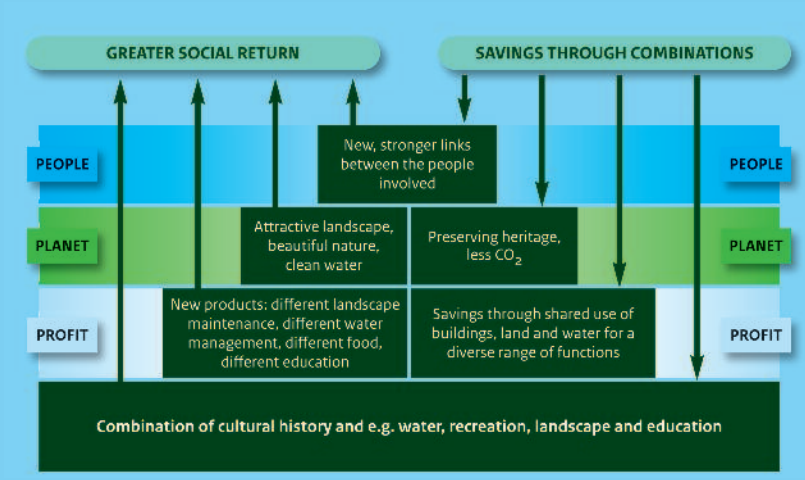
Hoonhorst is a village with about a thousand inhabitants, located in Salland, Overijssel. “Think broadly, act concretely” has been the community’s motto regarding sustainability since 2009. The aim is for the people of Hoonhorst to increase the control they have over their economy, society and ecology. The essence of self-sufficiency is that you make a start now and take the initiative yourself. However, Hoonhorst does not have enough manpower or financial resources to imple-ment all the projects. They are therefore looking for assistance from other parties. On the basis of the underly-ing principles of Green (care for the planet), Healthy (care for humans & future-oriented) and Communal (sharing fairly), they are working on the following ideas and projects, among others:

- “Kulturhus“ Village centre: existing buildings such as the school, playgroup, church, café, mill, parish hall and parsonage can be linked, made sustainable and enhanced with new functions such as a ‘home office’, library, info centre, meeting area, apartments for starters and/or senior citizens, care support, homework tutoring, (online) grocery collection service and/or the sale of regional produce.
- “Kulturhus” Potkamp: making sustainable, broadening the function of and bringing together the football club, the table tennis club and the gym.
- Shared broadband internet.
- Communal car for the village running on green gas.
- Village care: central body in the village coordinates voluntary and professional care so that residents are able to continue to live in Hoonhorst for as long as possible.
- Materials library: a management/ reservation system in combination with a central depot, maintenance and repair for existing materials which are only used incidentally, such as scaffolding, trailers, gazebos, bar tables, party lights, etc. Possibly combined with a social care/ sustainability farm and the collection/sale of “recyclable” material.
- Hoonhorst food chain: a more efficient approach to what Hoonhorst’s land produces (crops, timber, animals, etc.) (village oriented), for example through the joint management of allotments, fruit plantations and processing the yield.
- Village heating system: heating new homes and buildings, but also the sports centre due for renovation and other existing buildings sustainably by e.g. connection with composting company (residual heat), concrete core activation, use of local sawdust incinerators or micro CHP fuelled by biogas.
- Energy from animal manure in the existing ROVA Zwolle upgrading plant, which is located a short distance away (6 km) and/or refine manure locally so that methane and phosphate are captured.
- Grey water buffer system: research into the possibilities of combining one or more rainwater collecting areas with a grey water system.
- Reduction and recycling of waste flow: instead of collecting waste, it is taken to a central point in the village where the bringer sorts it. Savings and benefits (such as biomass) go back into the village community.

More information: h&p://duurzaamhoonhorst.blogspot.com

Combinations along the New Dutch Waterline

Historic defences form breeding ground for multifunctionality



Cultural history as starting point for combinations

The Nieuwe Hollandse Waterlinie (New Dutch Waterline) runs from Muiden (to the east of Amsterdam) to the Biesbosch, a national park that lies east of Rotterdam. It consists of forts, inundation areas and other elements such as locks and bunkers. From 1815 to about 1940, the Nieuwe Hollandse Waterlinie served as a line of defence. If the enemy reached it, strips of grazing land could be flooded. After the Second World War, the area lost its function. Most of the elements of this old defence system are cost centres. They do not produce returns, but running costs. Despite this, their preservation is considered important from a cultural-historical perspective. The loss incurred by managing these elements will therefore have to be compensated for as much as possible by profit centres. For example, forts are used as wedding and conference venues, for overnight stays, as museums or offices, or an inundation area is leased to a farmer. Very valuable contributions, because the 'Waterlinie' benefits financially.
More drastic combinations are also conceivable. For example, the use of an inundation area for water storage and water treatment. The costs are reduced by sharing the construction and management costs with the water board, and the profits increase by earning from storage and treatment. In another combination, students help with the maintenance and restoration of a fort. This reduces costs for the Nieuwe Hollandse Waterlinie and improves the quality of both the fort and the education. There is a comparable project around the 'Stelling van Amsterdam' (Defence Line of Amsterdam). Fruitful combinations with recreation authorities and landscape managers are also conceivable, whereby costs would be shared and it would help improve the quality of the Nieuwe Hollandse Waterlinie, recreation and landscape, perhaps even in a trilateral arrangement.

Appropriate and less appropriate combinations

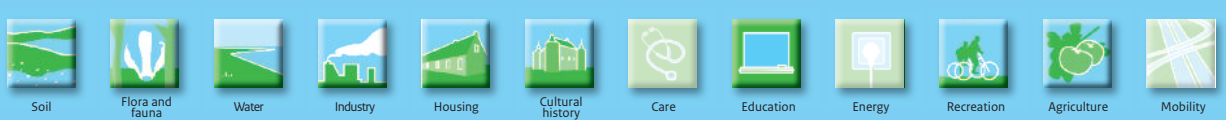
In a study, a list was made for the Nieuwe Hollandse Waterlinie of the services which the area on and around the waterline can provide. These include cultural history, biodiversity, housing, recreation and energy. A lot of research was carried out with regard to energy. The result was that, although energy might be a possible source of income, it does not yield many extras besides purely financial benefits. There is no mutual substantive reinforcement. With food, for example, things are different, because this is experienced much more than energy. Food from the region, sold at a unique spot, takes on extra quality as a result of its connection with the Nieuwe Hollandse Waterlinie and, the other way round, the Nieuwe Hollandse Waterlinie can also benefit from this. This also applies to recreation and housing, as long as it is done with moderation, but not to CO2 storage, for example. An interesting thing about the line is that the manager can learn from combinations and apply these lessons in other locations. In this way, some combinations can take on a sort of prefab character, as with water storage for instance. Another source of revenue is to allow developments within the line to run parallel with local area development. That was reasonably successful with the development of the Diefdijklinie, where water, cultural history, landscape and house building ran parallel locally, thereby generating a reinforcement factor for local area development. Water storage and landscape can reinforce one another at various places, and the same applies to, for example, energy and infrastructure, and cultural history and recreation.

Parties involved

NHW planning office (Dienst Landelijk Gebied, Region West), four ministries (Education, Culture & Science, Economic Affairs, Agriculture & Innovation, Infrastructure & the Environment and Defence), five provinces, municipalities, water boards, organisations and entrepreneurs in the field of cultural history, recreation and agriculture, among others.

Source/more info

www.hollandsewaterlinie.nl, www.herstelling.nl (a project involving the Stelling van Amsterdam, comparable to the Nieuwe Hollandse Waterlinie).



to do that. It is a question of activities which people often already undertake. Doing this collectively is more efficient, because this keeps the costs down.

Planning by invitation

Area development where the focus is on the user calls for accompanying spatial policy. The government no longer decides what is desirable, because it is unable to realize these desires. The funding must come from the area, through the intervention of users and local residents. They are the motor for development, in accordance with the old triad: interest, payment and say. If you, as government and market, want to take part in area developments, this is only possible on the basis of participation. A precondition for this is that you provide added value, for example if you help the users have their say. That calls for a following step in planning, as the government (and market) must actively seek partners in the area development: 'planning by invitation'.

With planning by invitation, governments roughly set out where spatial changes are and are not wanted with a view to long-term forecasts and the values to be protected. They do not impose these outlines on the area, however, because that would make the government itself an uninvited guest. It is a question of what the area itself seems to be asking for, on the grounds of the existing values and users.

The layered approach, which already played a prominent role in development planning, is an extremely appropriate starting point here. After all, it looks at the qualities of the base, the infrastructure and the occupation. The different layers in an area invite, and do not invite, certain forms of use. Alongside this layered approach, the government would be well advised to listen carefully to the existing and future users of the area. The desired direction of the development is then set down in an appropriate structural vision that is inviting to users. Initiators to whom this appeals see opportunities for realizing their ideas and dare to take risks. This releases mental energy and flows of funds for sustainable area development.
With their initiative, they develop the appeal of the area further and it subsequently increases in value. The cash released can be reinvested in new projects in the area.

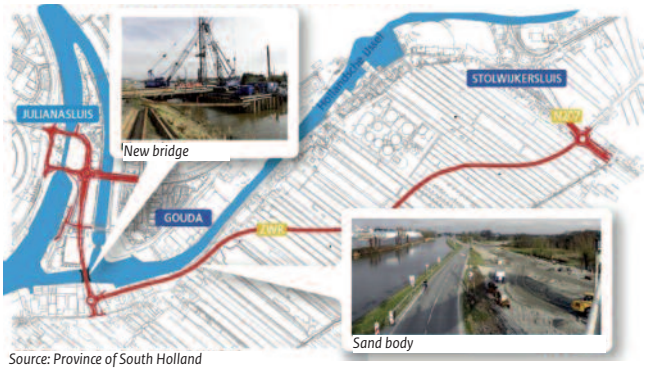
2.3 From 'Money seeks project' to 'Project seeks money'

In a fort that forms part of the Nieuwe Hollandse Waterlinie, a group of people manage a museum together. They run a small catering venture, which helps to keep the museum going. The museum and catering facility add to the recreational value of the surrounding area. This provides the motivation for a farmer to run a small camp site on his farm. It is in keeping with this to maintain a lot of greenery

DAMMING WATER AND COMBINING

Multifunctionality surrounding damming is enjoying increased attention, due to the added value and cost efficiency involved. At the same time, there is also some hesitation, because the damming function may not be adversely affected. Yet this is nothing new; we have been building roads on dikes for centuries, for example.
In Gouda, such a combination of dike and road makes an 80% difference to the costs: the Province of South Holland is preparing for the construction of the Zuidwestelijke Randweg Gouda (South West Ring Road Gouda). This road will cross the IJsseldijk and then run parallel to this dike. The dike does not comply with the standards of the flood protection programme at this spot. On the landside of the dike there is no room for reinforcement, whilst the road will be built outside the dike. There a large, wide earth body will be created, suitable for a two-lane dual carriageway with a service road. In consultation between the province and water board, the design of the road was modified in such a way that it will also serve as a dam over a length of half a kilometre. This will cost an extra €800,000. That is about 20% of what it would cost to reinforce the existing dike in the usual way.
Many different forms of multifunctionality have been practised in connection with damming:

Route of the Zuidwestelijke Randweg Gouda (South West Ring Road Gouda)

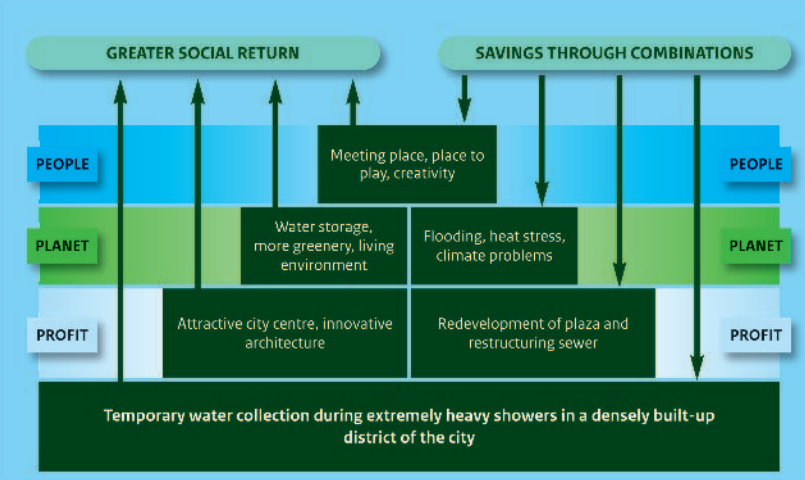


Source: Province of South Holland

- Roads, for example over the Afsluitdijk and the Eastern Scheldt storm surge barrier, and also railways
- Mooring points, the dike as a transfer point for people and goods
- Boulevards, the dike as a recreational area
- Car park in dike or dune reinforces damming function
- Living and working by the water, homes and offices integrated in the dike
- Retention basins in town, for example sports fields and plazas for water collection
- Wind turbines on the dike
- Solar cells on the dike
- Blue energy, osmosis plant integrated into dam and area
- Tidal power station is also dam
- Bio-energy crops help to reinforce dams or break the waves
- Agriculture: crops and, for example, also oysters reinforce dam, or break the waves; sheep maintain the dike
- Dam helps improve scenic quality, for example in the Betuwe
- Nature: dunes and forelands are valuable areas of nature
- Dams attract tourists due to the nature and cultural history
- Water storage area with damming function, for example dunes
- Water purification in area with damming function, such as dunes
- Lock as dam, for example in IJmuiden
- Inlet and outlet works which also play a role in water safety, for example Eastern Scheldt dam
- 'Baggerdijk': dredged material to reinforce dikes more sustainably and more cheaply

Water plazas in Rotterdam

A water plaza is a new way of providing temporary water collection in the densely built-up city during extremely heavy showers



Rotterdam solutions for a changing climate
Due to climate change, it will rain more often and harder. All that rainwater has to go somewhere. Now it disappears straight into the sewers or the canals. With very heavy showers, the sewers and canals are unable to cope with it all and this can result in flooding. In Rotterdam, extra storage for some 600 million litres of water will be needed in the coming five years. That is the equivalent of 100 football pitches 80 centimetres deep in water, or a surface area the size of Rotterdam's entire city centre.

Directing all that water to just one place is not the answer. The water boards and the municipality have therefore included a wide range of solutions in the Rotterdam adaptation programme 'Rotterdam Climate Proof'. These include creating more open water, creating underground water collection facilities, encouraging the creation of green roofs and the water plaza. The water plaza was the brainchild of the Rotterdam urban planner Florian Farmer and architect Marco Vermeulen. The first water plaza will be constructed at Bellamyplein in Spangen, in collaboration with the Water Board of Delfland.
A second water plaza will be created in Noord, at Benthemplein, whilst the central area of Kleinpolderplein in Overschie will also have a water storage function.

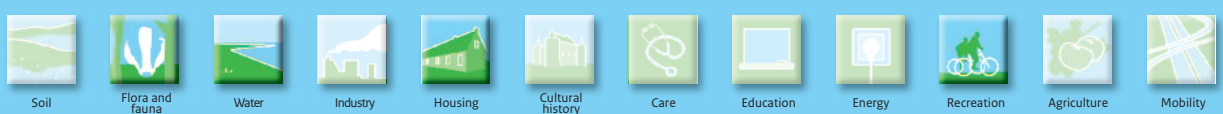
Combination of financial resources coupled with combining work with work
Spangen has a lot of metalled surfaces and virtually no open water, so it is difficult for rainwater to run away. Bellamyplein is one of the lowest-lying areas in Spangen. That is easy to see after a heavy shower, from all the mud in the plaza and in the gardens. As the municipal district of Delfshaven is going to redevelop Bellamyplein and the sewer around the plaza needs replacing, there are opportunities for solving part of the water challenge in the district right here. The possibility of building an attractive plaza in a green setting arose by combining financial resources and choosing a visible solution for (part of) the water challenge.

The water plaza at Bellamyplein looks like a small amphitheatre. During heavy rainfall, the rainwater is collected in the water plaza in phases and this ensures that there is less flooding in Spangen. However, the water plaza is empty for most of the year and then provides a unique meeting place. The water plaza at Bellamyplein is pentagonal and tiered downwards on one side. You can access the lower section via steps. Here there are small differences in height of about 5 centimetres; during a shower, it will therefore flood in phases. The plaza will be made using small, reddy-brown clinkers, so that it will have a bit of a 1930s' feel and will be very much in keeping with the ambience of the surroundings. The whole of Bellamyplein will also have a green feel, due to planting and a large container with flowers. In total, Bellamyplein covers 5000 m², the water plaza approximately 300 m2.

Only if there are real downpours will the water plaza be filled with water. According to expectations, there will be maximum 15 cm on average 15 times a year, more than 15 cm of water in the plaza 6 times a year and maximum 50 cm once a year. After one day on average, the water will be carried away again via the sewage system. Most of the year, there will be no water. The plaza can then be used as a meeting place, as people can sit on the steps. The water plaza is easy to identify, also for children, due to its shape.

Parties involved
Municipality of Rotterdam, Water Board of Delfland

Source/more info
www.waterpleinen.com



around the farm. In this way, the chain extends from the fort, to the farm, to nature and it can perhaps be extended even further by, for example, bringing in care clients to work on the farm and around the fort. Such activities add value to the area and make it more sustainable. This is an alternative to the old policy, in which a lot of money was spent on buying sustainability in the form of new nature. Now that those days seem to have gone, managers are looking eagerly in rural areas for alternative earning models so that they continue to have access to funds for maintaining the quality of water, nature, scenery and things of cultural value.

Sustainability increases when, in an existing area, people come together to undertake new activities together and, in this way, create added value on the basis of what is already there. Capital-extensive area development provides solutions for creating value even with less money. In urban areas, people are increasingly getting together in this way. In rural areas, the point of departure is different.
Less money is available there and, in addition, people often ask if there will be over-cropping or too many trees felled, too many houses built in the rural area and too much space devoted to recreation. All justified questions, which can be traced back to whether or not a sustainable balance is possible between earning from an area and maintaining the area on the basis of these earnings. The challenge is to 'harvest' (sustainably) from an area, generating sufficient returns to further develop the area, also in the long term. In other words: to make the area self-supporting or, even better, self-sustaining.

Can the urban area support the rural area and vice versa? Now that the development funds and subsidies have dried up, the question is whether or not flows of money can still be generated from the urban area to the nearby rural area. This rural area will have to be 'sellable' in some way to people from the urban area. Recreation, hospitality and regional produce are successful examples, but the question is whether or not the yield is high enough.
Another solution is to take the rural area to the built-up area. Managers of nature, landscape, water and culture know better than anyone how to nurture and maintain these qualities. In this way, they can enhance the urban area whilst putting the proceeds into in the rural area. Residents of the urban area can themselves take an active part in this, or be activated, in order to increase the value of their own area. The combination of functions plays a very important role in all

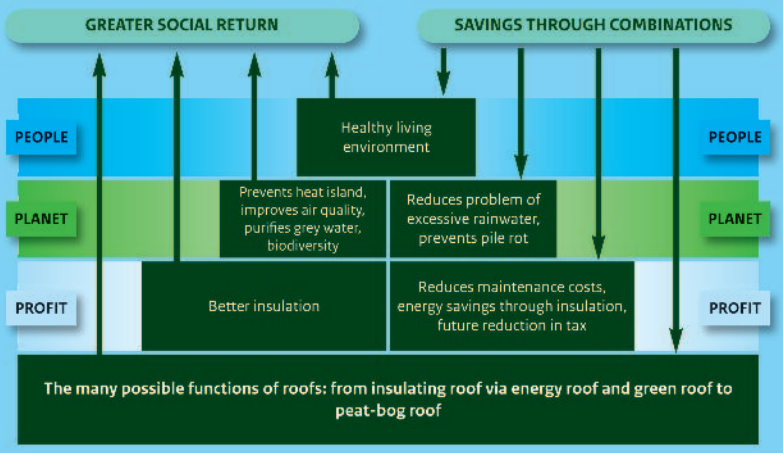
WATERHOUDERIJ (Water management area)

In the future, it will no longer be possible to take the unlimited availability of good quality fresh water, whether it be groundwater or surface water, for granted. In wet periods there will be surpluses, but in dry periods we will be faced with ever greater shortages. Demand will increase further, for agricultural production but also for cooling and generating energy. It is therefore becoming increasingly important to get the right water at the right time in the right place. In addition, there is a growing need for regional self-sufficiency. Area-specific, independent fresh water supplies are becoming more and more important throughout the Netherlands.
This calls for a different, integrated way of thinking: actively seeking possibilities for linking the water supply with projects in other policy fields, such as flooding, nature, the environment, spatial quality, the economy and recreation. It also calls for a reconsideration of the role played by the different actors. Farmers and other landowners must start to play a part in the independence of the fresh water supply in the Netherlands.
A concept that is based on this new approach is the Waterhouderij (water management area), which was developed by consultancy firm Aequator Groen&Ruimte, as commissioned by the Innovation Network and TransForum. In a Waterhouderij, functions and economic pillars (nature, recreation, food provision, drinking water, energy, housing, industry) in one area are linked together. The land users store rainwater and make it available for various purposes. With this area-oriented approach, diverse aims are achieved and new economic pillars can emerge. The water management area is an interesting concept for parties which want to connect landscape, water, energy and agriculture in one area approach. Water boards, municipalities, estate managers, water companies, provinces, nature managers and (agricultural) interest groups are showing an interest and want to investigate the concept in their own patch. On the former island of Walcheren, it is being looked at in practice. In the triangle of the villages Vrouwenpolder, Oostkapelle and Serooskerke, twelve farmers are investigating whether or not a Waterhouderij could be the solution for their future water supply. Every summer, the crops are damaged by a shortage of (fresh) water. But flooding is also a reason to take part. The organisations Deltares, Water Board De Zeeuwse Eilanden and the ZLTO are also involved. They get an idea of the state of the soil, the situation with respect to filtration and hydration and what the sprinkling and irrigation needs, water damage and drought damage are. The farm's crops and where fresh water can be obtained, as well as the watercourses, the environmental factors and the different ways of applying water are also taken into account. In this way, a good overview of the availability of and the need for water emerges, which possible applications exist and what investment would be cost effective.
At the request of the entrepreneurs, the water board makes modifications to groundwater levels, dams and watercourses. More radical modifications are included in the policy. The entrepreneurs have looked at level-controlled drainage in some depth. They spend more and more time together and can see the advantages of cooperating in the area. The following step is the economic translation of Waterhouderij for the farmers

More information:
www.innovatienetwerk.org/nl/concepten/view/108/ Waterhouderij.html

Multidak: the roof as a second ground level

A roof can do a lot more than keep out the cold and heat: for example, retain and purify water, generate energy and heat and, at the same time, cool and absorb carbon dioxide



The many possible functions of roofs: from insulating roof via energy roof and green roof to peat-bog roof

Accumulation of functions

Constructing a second ground level, or in other words a green roof, is a response to the desire to make the urban area greener, and can serve to prevent heat islands in the summer and improve the air quality by binding fine dust particles. The direct extra functions of a green roof are: capacity to retain water and possibly purify it, climate proofing and insulating ability. Secondary results are the reduced burden on the sewage system and the limited overflow into the surface water.

Added advantages are that the groundwater level is maintained through the infiltration of roof water, and the air quality is improved due to the capture of fine dust. That concludes, for the time being, the series of advantageous connecting interests of infiltration and the second ground level, apart from the fact that one benefit is still on the drawing board. That is to combat pile rot by keeping the water level under a dwelling high with the aid of roof water. Budgets are also available for combating pile rot, so this could definitely be a profitable coupling. It could be a question of a series connection between the second ground level and a healthy living environment. The municipality of Rotterdam also sees this advantage and, with the water boards, is putting € 25 to € 30 into every square metre of green roof realized.

Not all functions are reimbursed as yet

The owner can, in principle, recoup the costs of a green roof. In the first place, he spends less on energy, drinking water and roof maintenance. For a peat-bog roof, however, this is insufficient to recoup the costs. It is then desirable that some of the other savings are also passed on to the owner of the roof, for example if a link can be made between the budgets for air quality, pile rot and climate adaptation. The roof owner should be able to get discount on his water charges in exchange for his contribution to water storage and water purification. Carbon capture and counteracting heat stress can also be quantified and thus related to budgets.

In addition to this, a green roof can be combined well with solar panels, because green roofs have a temperature-reducing effect, so that the yield of PV panels increases. If the roof is extended as a recreational space, one could even think in terms of a (vegetable) garden. There are enormous possibilities: herbs, gardens or bogs on roofs. Praxis in Roosendaal, for example, has designed its roof ecologically, and it has become a real oasis for birds. The roof of the European Patent Office in Rijswijk measures no less than 25.000 m². Copijn Landscape Gardeners and Landscape Architects designed and executed a spectacular roof garden there. It is on two different levels and was projected onto the sunken multi-storey car park. The lower level has a tranquil, natural character, where ecological values can develop. The higher level contains different types of garden, such as a bee garden, pond garden, butterfly garden, peat-bog garden and an autumn garden. Thanks to the ever-changing ambiences, the site offers a wide range of possible uses for both staff and visitors.

Parties involved

Municipality, water board, housing associations, private home-owners, building owners

Source/more info

www.maxdak.nl; www.daklab.nl; www.rotterdam.nl/groenedaken

Photos: Copijn Landscape Gardeners and Landscape Architects

this. Green and blue in the city generate a lot of functions simultaneously, including purifying the air, retaining water and creating more tranquillity and shadow.

2.4 Finiteness of resilience, natural resources and money

Although the aim of 'planning by permission' was to protect social values such as safety, the environment and nature, the ultimate result was actually that standards were padded out. Many interventions in the physical environment occurred and still occur as if this environment had infinite resilience. An example is the emission of substances which are not cleaned up, or not adequately, by natural processes. Another example are wildlife areas which have become too fragmented to be able to maintain themselves. In the context of 'planning by permission', an infinite number of permits were issued, granting permission for people to use space to their own advantage, without any concern for the fact that the space as a whole might suffer in terms of quality as a result. Insofar as disadvantages are known and prohibited, an exemption can often be granted, whether or not followed by compensation. The environment suffers from this, but there is an assumption that the environment is so resilient globally that an extra disadvantage is no problem. In the meantime, it has become clear that this ability to bounce back has its limitations; the air quality is threatened and harmful substances are apparently finding their way to remote corners of our planet. The same applies to resources; space has been scarce in our country for years and fossil fuels are running out. For the time being the sun and wind are the only sources of energy which seem, to be infinite. Finally, the financial crisis demonstrates that money is not available in limitless quantities either.

There is a growing awareness that the resilience of the physical environment, natural resources and money are finite. Despite this, most human action is still organised as if resilience, natural resources and money were infinite. Even if we are faced with shortages, we do not perceive this as absolute. The assumption is that the shortages will disappear, because we live on an infinite planet or because technology will come up with a solution. This way of thinking is hard-wired into the profile of virtually every company and this often also applies to the government. The consequence of this assumption of inexhaustibility is that people and businesses act as if there can always be more, and faster. Now that the finiteness is becoming tangible, there is an increase in phenomena such as recycling, intensive utilisation and consumers becoming producers. None of these are new ideas, but one by one they ave been overshadowed by the idea of inexhaustibility.

The Cradle-to-Cradle concept gave recycling a new boost thanks to the principle 'waste = food'. Recycling is about re-using raw materials from old products for new products. Cradle-to-Cradle added extra meaning to this by putting the emphasis on design and building processes which make recycling possible later. After their life in one product, it must be possible to put all the materials concerned to a useful purpose in another product. This must not result in a loss of quality and it must be possible to re-use all residual products, or they must be environmentally neutral. The circle is then complete; the consequences can no longer be passed on to other places or future generations. The resilience of the system increases, because Cradle-to-Cradle not only meets our own needs, but also wants to provide future generations with more possibilities[6].

Intensive utilisation is not about raw materials, but about existing products, and it provides ideas on how to make better use of them, for example buildings or cars. A school building can also be used in the evenings, for choir practice, meals, meetings, even performances. In a comparable way, a car can be used for many more hours of the day by making it a shared car. Multifunctionality is a special form of the intensive utilisation of existing products. We have already mentioned the combination of school and library. In Akersloot, the Historical Society 'Oud Akersloot' has established itself in the building. This extends the library's collection and function, provides lessons for the schoolchildren and can, in this way, fulfil its own function for the whole community much better. All three users of the building share the costs and this is therefore more in keeping with a limited, or even shrinking, economy. Now that people are becoming more aware that resilience, natural resources and money are finite, recycling, intensive utilisation, including multifunctionality, and production by consumers are gaining in importance. A phenomenon like multifunctionality can only be really understood under circumstances of finiteness. We therefore argue in favour of a reversal in thinking based on inexhaustibility. That is to say, the starting point is that resilience, natural resources and money are finite. If that is the starting point, area development also changes.

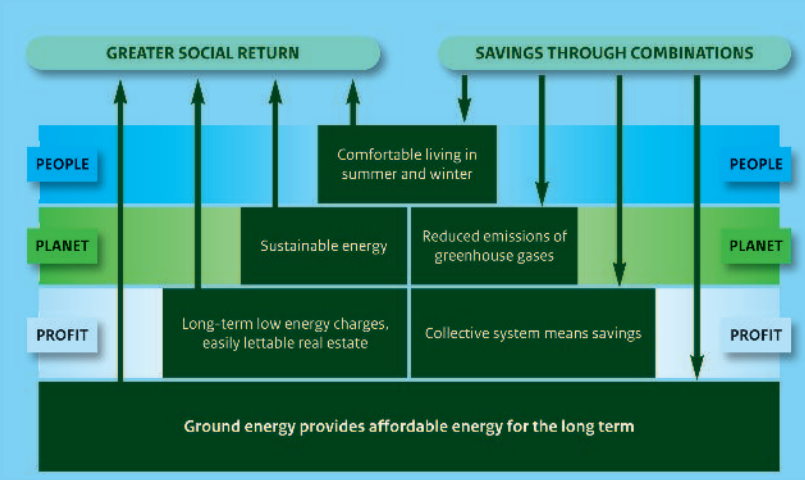
REPLACE ASBESTOS ON ROOFS WITH SOLAR PANELS

Asbestos will be banished by 2014. In 2011, farmers invested an estimated € 30 million in removing asbestos; an increase of 50% compared to the year before. A combination with the generation of sustainable energy is an obvious one, by choosing to use solar panels when renovating a roof.

The Ministry of Infrastructure and the Environment is going to encourage the replacement of asbestos roofs with solar panels by combining the existing tax regulations for the removal of asbestos roofs (Environmental investment allowance) and the installation of solar panels (Energy investment allowance). They are also looking into the possibility of speeding up the depreciation process of solar panels when asbestos is removed for them. A Green Deal between provinces, municipalities and the farmer's association LTO could also provide an incentive.
This combination also has a landscape-related component, because with the removal of asbestos it is very tempting to replace traditional barns with modern commercial buildings. Through smart combination, asbestos removal can be an incentive for preserving and enhancing the quality of the landscape.

Ground energy in Vleuterweide, Utrecht

Collective heat/cold storage offers multiple advantages



Management of sustainable energy-generating plants is new economic sector

In the centre of Vleuterweide in Vleuten-de Meern, Utrecht a complex has been built which encompasses some 300 dwellings, over 40 shops and 2500 m² of offices. For heating and cooling, use is made of a collective system that stores heat and also cold in the ground. Only in the event of an extreme demand for heat (for example during a severe winter) is natural gas used, but then only in collective, economical equipment. A communal system has many advantages because construction costs, equipment and pipework are shared. It is important with such a system that accurate measurements are made, so that economical behaviour by clients is rewarded. For this purpose, they use special energy meters, which can be read monthly via a wireless network, so that residents do not need to be home when the meter is read. In addition to being used for invoicing, the measurement data is checked and modelled. On the basis of the results, central generation is optimised. The users are also informed and advised if their consumption proves to be excessive. Management of such a sustainable energy-generating plant is not part of the core business of the traditional energy companies. This means that a new economic sector is emerging. In Vleuten, Vaanster Energy operates the plant, as they do at many other locations. The company is not an installer, but restricts itself to running projects. They contribute their knowledge and experience to a project, but leave the design and execution to the installer. After the construction phase, they take over the project as a turnkey operation.

The old-fashioned central heating boiler has had its day

Keeping energy costs for property affordable in the long term is a new challenge for developers. Energy costs are playing an increasingly important role in property valuation. As a result, the size of the additional investment in a sustainable energy plant becomes less important. Sustainability is allowed to come with a price tag nowadays. By considering the 'life cycle cost' of the energy supply, sustainable applications come more to the fore. The focus is increasingly on the energy consumer and the property investor. All parties involved must benefit from a sustainable energy supply. The financial aspect recedes further into the background as people realise that sustainable technologies have to be cost effective throughout the life cycle of a plant. The focus shifts to the various advantages of sustainable technologies. The tenant not only wants a healthy and constant indoor climate, but also affordable living costs. Vaanster currently supplies energy at fixed, competitive tariffs, which are index-linked on the basis of figures from Statistics Netherlands. The costs are therefore the same as those of a conventional plant. In time, however, the price of fossil fuel will increase sharply and thereby constitute an increasingly large proportion of living costs. This does not apply to ground energy. It is therefore a future-proof technology when it comes to affordable living costs. Big landlords also realise that energy costs will be making up an ever greater proportion of living costs. They are therefore working to make their housing stock sustainable. Firstly through insulation, secondly through sustainable energy systems and thirdly through generating the fossil energy then needed in an economic and efficient way. Housing corporation Vestia has, for example, announced that it will be installing only sustainable systems in new developments from 2015. Homes will then no longer be connected to the gas mains. Existing homes will also be taken in hand and their energy efficiency rating improved by at least two steps. In addition, they want to cut carbon emissions by 30% and keep living costs manageable.

Parties involved

Energy operating company, installer, property managers, home owners

Source/more info

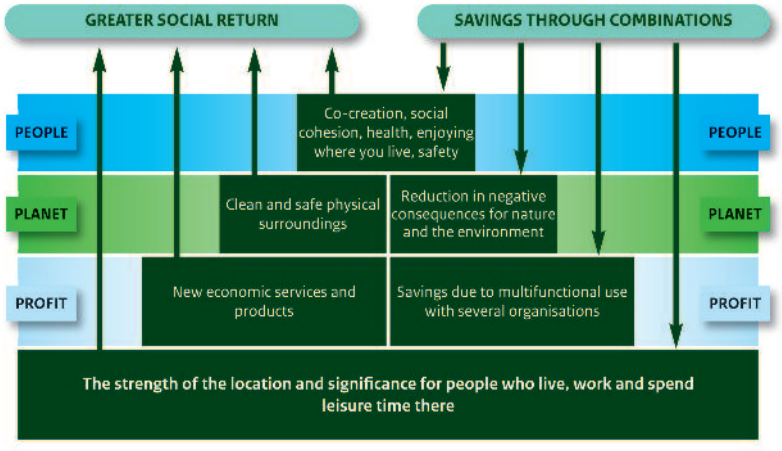
www.vaanster.nl, www.vleuterweide.com

3
How does multifunctionality work?

3.1 Mixed earning model

Multifunctionality is the best kept secret in the economy and society. The opportunities were there for the taking for a very long time, but were not profitable because it was more cost effective to set up a project quickly and without combining functions. The treasure chest of combinations is only opening slowly because the next combination becomes profitable due to the pressure of economic circumstances.
The main principle of multifunctionality is to get more value for lower costs. Most examples of multifunctionality are more or less natural combinations, they are things which fit 'logically' together, which are combined and reinforce one another in a natural way: costs are saved by using the same physical space. Solar panels can be installed on a sound barrier alongside a road and greenery can be planted on the other side, which in turn can collect fine dust. The slope can serve as a depot for excess dredged material. The greenery on the side of a neighbourhood can, for example, serve as a public garden. Moreover, the barrier means it is possible to use land nearer to the road for living or working, among other things. In Ede, a cinema has been set up in this way and along the A2 in Utrecht there are commercial premises in the form of an elongated sound barrier.

Multifunctionality is geared towards the sustainable advantages of a place and the opportunities to reinforce these. It makes the hard and soft values of a place visible. On the one hand, this gives rise 'naturally' to a greater social return and, on the other, multifunctionality produces savings. By using one place for several purposes at the same time and making smart combinations you can save a lot of money. We illustrate the coherence between the functions and the earning model by means of an 'up/down' diagram, which looks like this:



The starting point is always the strength of the area. With that as starting point, you can earn on different fronts. Purely economically, new products and services arise, which can be marketed.
By combining, savings are also made. Together, these form the profit side of the combination. When it comes to ecology, it can be a question of services for the benefit of the physical environment, for example greenery or water. More importantly on the planet side are often the savings, the negative environmental consequences that are avoided, which mean that (later) there is no need for expensive clean-up or compensation measures. At the top of the 'steps' are people: the services and facilities are geared towards them and it is they who determine the value, the importance they attach to them, their usefulness and the choices to be made. A well-functioning combination of functions always calls for cooperation and development. The users of an area play a key role. Physical combinations are often initiated and realized by public and private parties, and increasingly by users or residents themselves. The people-effects of multifunctionality are expressed by an increase in social cohesion, more pleasant living and working situations, improved health and increased happiness.

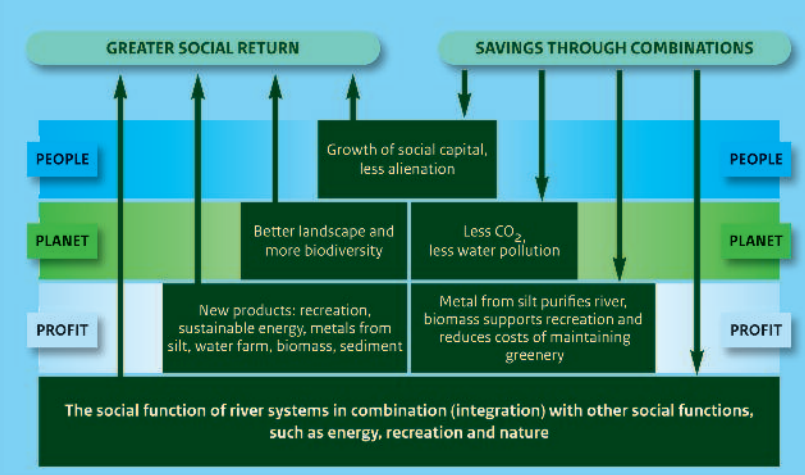
With multifunctionality, there is always evidence of a mixed earning model. By saving on set-up costs as a result of combining functions, you simultaneously avoid nuisance and clean-up costs for the protection of nature and the environment, and social cohesion increases. Often, this acts as a flywheel, because it forms a breeding ground for even smarter services, as a result of which it becomes an even more attractive place to live, work and undertake all kinds of activities. A few examples of this are TexelEnergie (page 28) and the districts of Kersentuin (page 45) and Eva-Lanxmeer (page 46), where new combinations are being sought and thought up all the time.

3.2 The principles of circuits

Multifunctionality consists of creating circuits between different physical and social sectors. Three different circuit principles can be identified here. The first is that costs are shared through the creation of simultaneous circuits. The costs fall by sharing the same land, infrastructure and equipment or using the same building for two or more purposes. When setting up a centre for housing, learning and care, the costs for the design, construction, financing and management of school, homes and care institution are shared. This is continued during the operation of the centre. In other words, these activities are started simultaneously.
BaLaDe in Waalwijk (page 33) is a good example of this. Simultaneous circuits always result in cost savings, but multifunctionality is also about creating new qualities, which can lead to profits.
Two other principles are at the heart of this. The first is that you do simultaneously what can be done simultaneously.

Self Supporting River System IJsseldelta

By coupling the maintenance and management of waterways with the possibilities of the surrounding area, you open up the way for opportunities and savings



Management and maintenance as guiding theme

The management of 'wet networks' is part of the core task of the Directorate General for Public Works and Water Management. As a result of retrenchment, this task is under pressure. Many other public sectors need to make severe cutbacks too. The method of across-the-board cuts is reaching its limits; things need to change. The concept of SSRS (Self Supporting River System) is based on the assumption that the existing management and the capital of the river acreage can provide the incentive for an affordable, reliable and sustainable river system with socially desirable earn-in opportunities. SSRS makes management and maintenance key. Management can generate enough action to make idle capital of the river system exploitable. Traditionally, construction always came first, with its management and maintenance following on. Construction comes and goes, but management always remains. With SSRS, they take a broad view, in terms of both time and space. Management and maintenance activities are normally only viewed in the longitudinal direction of the river. With SSRS, they look beyond the boundary of their own area. A better picture of capital, products and markets yields new opportunities for cooperation. Utilising the potential of the river area means an enterprising partnership between different parties in the river and canal acreage, the so-called alliances. SSRS 2021 makes it clear that there are lots of opportunities for organising the management and maintenance of rivers more smartly and utilising the capital. The first step towards achieving the ambition of SSRS 2021 was the selection of six concrete 'What-do-we-do?' themes:

1. Sediment management
2. Biomass
3. Recreation
4. Generating energy
5. Extracting metals from historically contaminated silt
6. Farmers with water and nature: the water farm

Safety, water management and shipping are linked with recreation, agriculture and energy

In practice, SSRS means organising the management and maintenance of the river system in such a way that these are minimised whilst, at the same time, possibilities for generating extra income arise. This is done by the clever positioning of longitudinal dams, so that dredging is no longer necessary and an ecological zone is created behind the longitudinal dam (not a hard-surfaced bank), and by creating more opportunities for recreation, for example by laying additional channels in old side branches. In this way, the safety in the main channel is improved and income is generated. SSRS is based on two principles: prevent maintenance costs and seek revenue. Revenue is generated by making the capital of the whole area exploitable, for example by:

- Granting concessions for the generation of electricity through a differential head or damming in the river and combining these concessions with maintenance work on structures;
- Granting concessions for crops of dry and wet biomass, naturally with due regard for the requirements regarding the prevention of hydraulic damming. This reduces the costs of the green maintenance. The concession can be combined with areas belonging to other parties, such as water boards and Staatsbosbeheer (national forest service);
- Changing the layout of the summer bed so that valuable sediment can be extracted, whereby the task of preventing subsidence is added;
- Extracting heavy metals from silt: the silt is cleansed and valuable raw materials extracted;
- Encouraging the setting up of 'water farms' for 'wet' agriculture, such as algae, duckweed and fish farming: optimum use of nutrient-rich water, particularly the phosphates present;
- Generating income from sustainable energy (sun and wind) by making space available.

The Self Supporting River System results in the affordable, reliable and sustainable management of rivers. The aim is to safeguard the three core areas of safety, adequate and clean water, and shipping for 40% lower costs by 2021. This form of management also yields the following "profits": 1. room for enterprise and innovation; 2. the potential of the acreage is utilised for a robustly organised system and social services; 3. use is made of what the delta offers us: 'maintaining & building with nature': raw materials, water, energy and social perception.

Parties involved

The Directorate General for Public Works and Water Management enters into alliances with the different parties in the river and canal acreage.

Source/more info

www.innoverenmetwater.nl/project.asp?id=3330

This is known as creating parallel circuits; revenues increase by offering two or more functions simultaneously. Examples are:

- Soil remediation, heat/cold storage (CHP) and water-level management by means of the same installation and infrastructure (Sustainable groundwater management in Ugchelen, page 6).
- Use a road surface for generating energy by capturing heat and cold and storing them in the subsoil (Energy-generating road, page 8).
- Combine several functions on a roof surface (Multi-roof, page 18).

The second principle for creating new qualities from which profits can follow relates to the order of combining. Some combinations are dependent on a sequence. This is known as creating serial circuits. In this case, revenues increase when two or more functions are offered after one another. Examples are:

- Various sports clubs offer students the combination of sport and homework. After practising their sport, they do their homework together. As a result, they improve both their health and their academic performance.
- Water plaza: a plaza that normally serves as a children's playground, among other things, but changes during flooding into a pond (Water plazas in Rotterdam, page 16).

	Parallel circuit	Serial circuit
Simultaneous circuit	Soil remediation and CHP make use of same pumps and groundwater abstraction pipes.	Water plaza serves as plaza and, if necessary, as pond and to collect water.

3.3 Multifunctionality as economic motor

The first examples of combined functions in recent times, involving housing and care, are already more than twenty years old, and those involving integrated centres for children (community schools) date back more than fifteen years. At the same time, there are also some highly physical combinations, such as the dual use of flood defences. Although the examples are extremely diverse, there is a consistent thread in the ascent of multifunctionality. Wherever the old method of production becomes too expensive, combinations crop up. For this reason, the many combinations in care and education come as no surprise, because these social sectors have been subject to cuts for decades now. Agriculture too is under increasing pressure and that explains the emergence of 'social care farms', village wind turbines and (organic) farm shops, among other things.

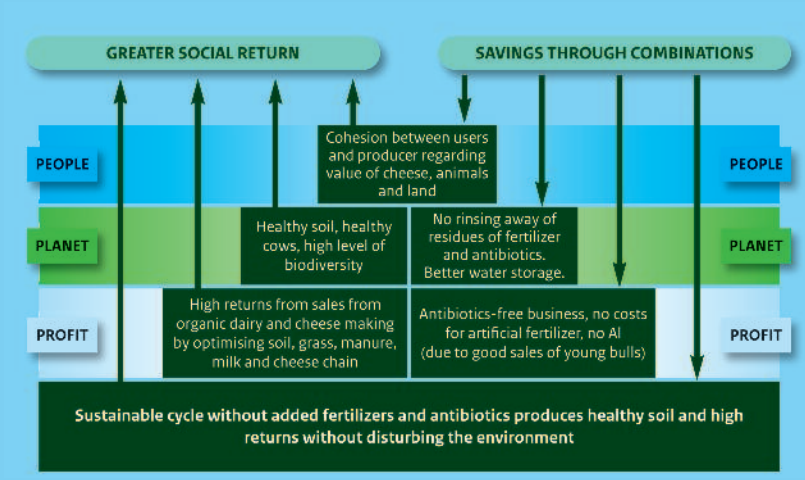
The fact that some sectors, such as water management, have traditionally had their own costing system seems to provide a good explanation for why the number of combinations involving such themes as water safety and quality is still limited, or at least of a more recent date. The project Building with Nature (see below) demonstrates how many possibilities there still are in this area. That not only applies to combinations in which water is an element. Every social function is eligible for combining and no single combination is inconceivable. The only restriction is related to whether a combination is profitable or not. That is a matter of research. The gradual profitability of one combination after another creates the impression that the rise of multifunctionality is an economic development. And so it is, but not exclusively. Naturally, a combination must be profitable, because otherwise there is a great chance of it not being realized. Profitable here, however, also means socially profitable, therefore not only financially lucrative but also

CLIMATE BUFFERS[7] AND BUILDING WITH NATURE

In the old days, rivers and streams flowed freely through the Netherlands, depositing sand and silt in the delta and forming new land. In the old days, the formation of peat bogs kept pace with the water level. By allowing the Netherlands to grow in line with the sea, rivers and peat bogs again wherever possible, our country's natural resilience will increase. Natural climate buffers can see to that. Along the coast and banks,layers of silt build up the land protecting it against high water levels. The termination of dewatering stops the settlement of the peat and results in the growth of bogs. As a result, the peat bed can grow again and the land will gradually rise. Just like ecosystem services, climate buffers automatically combine a series of functions. In wet periods, they reduce the peaks in rivers and polder drainage systems. They also make the coast safer. In drier periods, more good quality water remains available for agriculture, nature and urban areas. Bogs are also natural water purifiers and water reservoirs for dry periods. Nature benefits due to the preservation of biodiversity, as does safety, due to the prevention of further subsidence of peat polders and silting up of the bed. In order to use space efficiently, it is logical to further intensify the combining of functions within climate buffers. Some buffers closely resemble the ancient 'terps' and can provide space for living, working and recreation. The ultimate idea is for these sectors to also take on a sustainable and climate-proof character as a result. For example, a green neighbourhood with a lot of surface water can be up to six degrees cooler during hot summers than a neighbourhood without greenery. Also, the levels of fine dust are considerably lower in green neighbourhoods.
Just like climate buffers, Building with Nature (abbreviated to BwN) makes use of the natural processes which can serve as architects of the Dutch landscape. BwN seeks techniques to reinforce these processes, such as the 'sand motor' off the South-Holland coast and the creation of space for rivers to reduce the risks of flooding.
BwN sometimes involves one-sided intervention, but often also the combining of functions, such as a tidal power station or oysters. Both have a role to play in strengthening the coastal defences. The tidal power station also generates energy and the oysters provide water safety, water purification, nature development and food. BwN unites such things as coastal defences, water storage, land reclamation, nature development, economic use, recreation and energy generation. As with ecosystem services and climate buffers, that often leads automatically to combinations. BwN usually means building with green elements, which not only contributes to CO_2 binding, but also to CO2 reduction in the construction and maintenance. Making use of plants and animals/shellfish results in the capture of silt and the binding of nutrients and contaminants. In this way, building with nature contributes towards the quality of the surface water and towards combating climate change. There is also a relationship with agriculture and horticulture. Hydraulic solutions have an impact on groundwater levels, fresh water stocks, water supplies and the silting up of (agricultural) land.

Farm “De Groote Voort” in Lunteren

Enthusiastic family business makes distinctive organic produce



Own business system in which everything is connected

Since as far back as circa 1600, the land around the farm “De Groote Voort” has been managed by the Van de Voort family. The farm is situated on a centuries-old road right in the center of the Netherlands. The current farm was built in 1925.

Peter van de Voort headed the farm through the era of artificial fertilizers and milking machines. He introduced the Jersey cow to the business, which proved to be a great move. The industrial period has now ended and son Jan Dirk van de Voort made it into an organic business, re-introduced cheese making and, together with his wife Irene, developed Remeker cheese. ‘De Groote Voort’ encompasses eight meadows, which in total span over thirty hectares. The ground is the basis, the first living organism on the farm, and is cherished very dearly. By investing in the soil, for instance by using fermented stable manure, life in the soil flourishes and there is abundant grass. A large number of functions relating to soil, grass and manure are mutually reinforcing and form a cycle. Apart from grass, clover forms the basis for organic farming. As this binds nitrogen from the air in a natural way, there is no need for fertilizers. In addition to grass, the cows are given crushed grains, which are purchased elsewhere. On the farm, the deep stable has been re-introduced to enhance the manure. This generates savings in the supply of raw materials and fuels. In addition, the soil is used to retain, purify and guarantee water, so that no extra supply of water is needed. Thanks to the yield from living soil (and the available minerals present) and the specific dose of herbs in the feed, the cows do not need any antibiotics and mortality among the young animals is lower. The result is healthy cattle and a high yield of organic milk, cheese and meat, which can be sold at a good price. On the other hand, costs are low for fertilizers, minerals and antibiotics.

Organic farm utilises ecosystem services sustainably

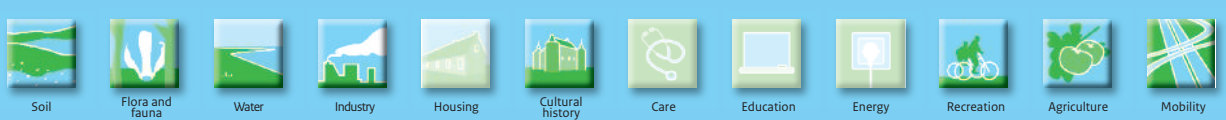
The budgets for fertilization and health are, in fact, combined. In other words, there is a simultaneous circuit in the production of food, manure, water and health, whilst in most cases manure, water and health have to be “imported”. Creating a simultaneous circuit of production all takes place on the same land and by one user, the farmer. He is the cost centre, but does not share any costs with others. In actual fact, the water board saves costs for water storage and water purification and the surrounding area spends less money on nature management and benefits from natural processes such as pollination. On the other hand, the changes on the farm, such as the more spacious cowshed, the feed and crushing machines and the cheese-making equipment call for heavy investments. In 2011, the sustainable working methods of De Groote Voort were rewarded with the EKOland innovation prize. The Agricultural Economics Research Institute (LEI) calculated(8) that organic farming generated more than € 10 million a year in social profit due to the avoidance of costs connected with water purification and climate change. Extrapolated for the total acreage of 47,000 ha (2007), this means a social service with a value of € 220 per hectare.

Parties involved

The cheese is sold direct from the farm to private individuals, health-food stores and specialist cheese shops, which supply the catering trade. There is also a sales network for the meat.
Farm ‘De Groote Voort’ forms part of a network of organic farmers.

Source/more info

www.remeker.nl



socially lucrative. This is because combinations are very often paid for (or partly paid for) by the government and it does not necessarily have to make a financial profit, but it does need to show a social profit and budget savings. Another important reason why more and more combinations are becoming profitable, both financially and socially, is related to the desire to make society more sustainable. This endeavour towards sustainability is very much related to economic reasons. This is because the costs of compensating for non-sustainable action are increasing further. It has not been possible to simply build without some form of compensation for a while now. Although combining functions is always customised, it is often easily possible to repeat or scale up a tried and tested concept elsewhere, or, if a coalition of enthusiastic parties has already been formed in an area, to diversify together and seek and implement new combinations of functions.

3.4 Cooperation is the basis

Multifunctionality means crossing sectoral boundaries and making connections. It means being curious about the other party, willing to learn each other's language, being open to critical questions and compromising to optimise other functions. It calls for courage to leave your own safe, compartmentalised cocoon and step over that boundary. But it is necessary, because only then can you take the step from "simply" fitting in and tweaking to actively seeking and finding synergy. The users of the area always play a key role here, because it is in their back yard that all of the functions come together. They have the necessary knowledge of the area. Only if they realise the advantages do function combinations get off the ground. But it also works the other way round: because the users are aware of the advantages, sectoral contrasts are overcome and new combinations are created.

It is not easy to just impose multifunctionality from above. A statement such as 'we must get that community school' is even dangerous and can actually result in the failure to achieve clever combinations. It is only possible to combine in the right place, with a good knowledge of the physical surroundings and with a support base. Integrated thinking and action are abstract concepts, whilst successful projects tend to have a concrete starting point. Seeking cooperation can be a way of retaining your company or possessions in changing times. In addition to holding on to what you have, it is enriching. A farmer who starts to produce organically and to cooperate with nature and water managers no longer utilises his freedom to continually produce more, ever faster, but trades this in for a new freedom: the freedom to work with partners. The water manager trades in his freedom to take increasingly technical measures for the freedom to cooperate with other parties who contribute towards making the system climate proof. It is growth, but growth that takes the preconditions set by those involved in the collaboration into account. It means a different way of working, very much attuned to the other party and designed on the basis of the situation of cooperation, resulting in better quality in the area for lower costs.

The change towards combining (social) functions is a radical one. The specific and sectoral development and utilisation of functions is deeply rooted in our country. Through the years, individual functions on a specialised basis have been further optimised, the only condition being that others would not suffer as a result. The consequence is that many functions became strictly separated.

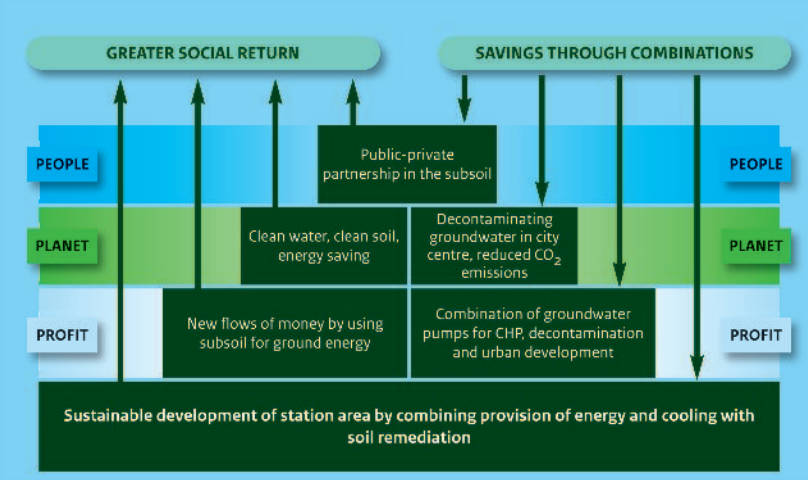
PEAT HELPS CLEAN UP VOLGERMEERPOLDER

The Volgermeerpolder is an area of more than a hundred hectares that was used by the municipality Amsterdam between 1927 and 1981 as a dump. In the 1950s and 1960s, a lot of industrial waste was dumped, including at least ten thousand barrels of chemical waste containing toxic substances, such as dioxin. Through its campaigns, the Volgermeer Citizens' Committee managed to get the dump closed in February 1981. A short time later, there were fears of a chemical time bomb. It was supposedly just a question of time before the poisons from the heavily polluted Volgermeer would spread uncontrollably into the environment. Thirty years later, the peat is providing natural and sustainable insulation and a technique has been developed to enable nature to repair itself. Following intensive research, a remediation plan was developed, based on the innovative remediation method "natural cap". The pollution is not removed, but packed in foil. Then, a layer of clean soil is applied on top of the foil. This soil in this case came largely from the construction of the North-South Metro Line in Amsterdam. The landscape is then arranged in paddy fields, which collect rainwater. In these paddy fields, peat forms. In this way, a layer of living, organic material gradually replaces the artificial capping structure. That makes the area ideally suited for visiting waterfowl, and the relatively rare vole and grass snake have also already been spotted in the polder. Cycle paths and footpaths have been created, so that the public can now enjoy the polder again. The project is a collaboration between the municipality of Amsterdam, the Water Department, private parties and the Centre for Wetlands Ecology, in which diverse research institutes and universities work together. The clean-up of one of the largest cases of soil contamination in the Netherlands has been completed after ten years, costing about € 100 million.

More information: www.volgermeer.nl

De Utrecht "biowasmachine"

Heat and cold storage in the ground is combined with biological soil washing



Heat/cold storage assists with soil remediation
In Utrecht's station area, a massive operation is under way. The busy thoroughfare will again become the ancient Catherijnesingel, with water. Vredenburg Music Centre and other buildings will be replaced with new developments. There is also a lot going on under the ground: an area-oriented soil remediation operation. Historical cases of contamination caused by, among other things, chemical laundries and metal companies using solvents like trichloroethylene and perchloroethylene, can no longer be cleaned up separately but are tackled as one whole. Here, there is a conscious effort to combine this with heat and cold storage (CHP). The concept has been given the name 'Biowasmachine' (biological washing machine). In the coming thirty years, the biological washing machine, in collaboration with surrounding CHP systems, including the now operational Rabobank and Jaarbeurs systems, must limit the pollution of this area, which covers more than six square kilometres. This unsuspected symbiosis was discovered whilst measurements were being taken of a solitary CHP system on the edge of the station area. During the clean-up of the well-known former Philips site in the Strijp S district of Eindhoven, a comparable principle was applied on a smaller scale. In this project, the soil serves two purposes. The groundwater flow carries plumes of contamination along with it in a natural way, but also provides cooling or heating for all kinds of urban functions. As CHP systems pump up groundwater, extract heat from it or emit heat into it, a blending and movement of the pollution occurs. As a result, bacteria can perform dechlorination better. On the scale of the city, the plumes remain in place in this way. The CHP systems are, as it were, the engine of the washing machine. When aligning the system, great care is taken to ensure that the polluted groundwater does not come into direct contact with the cooling water for the homes and offices. The extra mixing as a result of the pumping up and subsequent return of large flows of groundwater into the soil speeds up the degradation process of the pollution containing chlorine. Every new CHP system that starts to supply the homes and offices in the area with sustainable heat and cold makes the washing machine run faster.

Other flows of money needed for soil remediation in city centres
The Utrecht approach is part of the CityChlor project. This involves looking in different European city centres for an effective and integrated approach to chlorinated pollution. € 1 million is available for Utrecht. The project must result in a manual for the integrated approach to this type of pollution. Until recently, soil remediation was largely tackled via sectoral laws and flows of funds. The revenue from the investments then usually benefited property development in particular areas, often in the hands of private parties. This also happened in the other cities taking part in CityChlor. Moreover, the sectoral approach did not bring the broader aims of the sustainable development of the area (with values such as living environment, greenery, water and subsoil) any closer. Now that the government is withdrawing, powers are becoming decentralised and cuts are the order of the day, a new, integrated approach to remediation is needed. In the context of CityChlor, people are looking for ways of getting more money out of the market. The "Soil as opportunity" approach focuses here on the benefits for both public and private parties.

Parties involved
Municipality, project developers and installers, users, energy suppliers, managers of public space, groundwater managers.

Source/meer info
www.cu2030.nl/biowasmachine/biowasmachine.html
www.citychlor.eu

Soil | Flora and fauna | Water | Industry | Housing | Cultural history | Care | Education | Energy | Recreation | Agriculture | Mobility

When people start to combine, it calls for new competencies. A change is needed before people realise that they can achieve a mutual advantage by working together and hence ultimately even gain more freedom. This swing can be considered a paradigm change.

3.5 Paradigm change

Working with nature is more sustainable than working against nature (9). A good example is the Stadseiland in the river Waal in Nijmegen. Instead of raising the dike, they are digging a channel, which creates room for the water. An island is emerging between the channel and the river where there is room for a combination with urban development. Instead of being a threat, the water becomes an instrument which promotes safety. The Ecoshape Foundation encourages such solutions and, within the context of the innovation programme 'Building with Nature', researches if there is evidence of a paradigm shift, from strictly controlling the water system to embracing its natural dynamics. There is a paradigm shift if an old way of thinking and acting is replaced with a new one that is more in keeping with the changed circumstances. The new way of acting not only solves the problems, but also removes the old method's disadvantages. There seems to be evidence of this in hydraulic engineering, where the old, strictly controlled working method may well have solved safety problems while, at the same time, creating problems like the destruction of ecosystems. Building with nature resolves safety problems and strengthens ecosystems. Comparable examples of paradigm shifts can also be found in other fields. Topsoil and subsoil are examples where ecosystem services are emerging. At a young age, children in primary school are taught about the usefulness of leaves which fall to the ground, remain there and help create a fertile humus layer in the soil. More organic material gets into the soil and the positive consequences include an improved structure and the storage of water, nutrients and CO_2.
As a result, the biodiversity in the soil increases. This helps to increase food production, resistance to (climate) stress, the disease-fighting capacity, the binding of contaminants and the soil's self-cleansing ability. Such capabilities are also referred to as ecosystem services – in this case of the topsoil.

Ecosystem services [10,11,12]

Not only the soil provides these services, but for example also water, plants and animals. Ecosystem services are functions which the physical environment fulfils for society. This includes things like cleansing groundwater and providing biomass for food and energy. These services can reinforce one another. This means combining virtually continually, because intensification of one function has consequences for the other. An increase in the level of organic material, for example, leads to more biomass for harvesting and, at the same time, to an improved ability to retain CO_2. This is how ecosystem services work: they combine almost as matter of course, because one service reinforces the other very naturally. Combining functions is therefore an integral part of the ecosystem service concept. The table on the right shows a number of examples. The example of the "Biowasmachine" (see left-hand page) demonstrates how the soil itself can deal with contamination. By linking a capability of the soil with the solution to a problem, you create a business case. In contrast to the old method, which predominantly led to exhaustion of the soil, the resilience of the soil is increased. Such insights arise when finite conditions are used as starting point.

Ecosystem service	*Nature and scale of services*
Water regulation	• Halving surfacing leads to approx. 25% (clay) – 50% (sand) reduction in runoff. This water is absorbed by the soil. • The costs saved on drainage /sewerage in the city are an estimated € 5,000 per hectare of unmetalled ground a year. • With rainwater drainage via superficial infiltration, approx. 50% of the metalled surface is needed to allow water to infiltrate. • Via infiltration facilities ('wadi'), approx. 15% of the metalled surface is needed to allow water to infiltrate.
Regulating	• Unmetalled ground and greenery around buildings lead to energy savings of 50% maximum on air conditioning. • The surrounding land is 3-8 degrees cooler than the city; large parks cool the urban area up to a radius of 1-2 kilometres. • Cooling by a few degrees via small, green elements (0.1 ha) at regular distances requires approx. 1.5% of the urban surface area. • 10% increase in greenery on unmetalled ground results in a fall in temperature of a few degrees in urban areas
Greenery in the city	• Views of greenery increase the value of a house by 5 to 15%. • Greenery contributes towards the health and well-being of the people living in the neighbourhood. • Greenery on the ground is cheaper to manage than surfaced ground (€ 0.02 – 0.45 for green versus € 3.60 for paved public space).

REPAIR CAFÉ

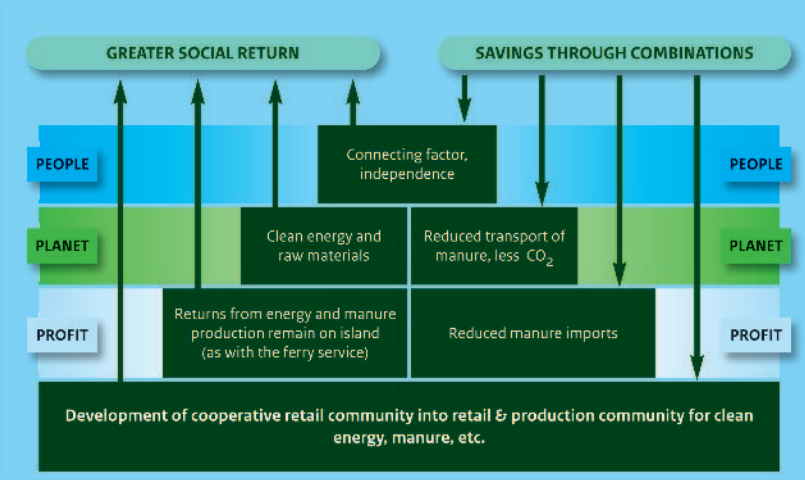
The Repair Café is a unique form of intensive use which revolves around repairing things. At the place where the Repair Café is held, there are tools and materials available for carrying out all manner of repairs, for example to clothing, furniture, electrical equipment, bicycles, crockery, utensils and toys. Expert help is also on hand, for example from an electrician, a seamstress, a carpenter and a cycle mender.
Visitors take their broken things with them from home. In the café, they do the work themselves. If necessary, assistance is available. People with nothing to repair can have a drink at the bar, help someone else with repairs or get some inspiration at the reading table, where there are books on doing repairs and odd jobs.

More information: www.repaircafe.nl

Repair Café
Weggooien? Mooi niet!

TexelEnergie Cooperative

The island as a productive landscape for sustainable energy



Customers are shareholders

In 2007, twelve residents of Texel got together to found their own energy company. Their prime motive was a desire to retain financial returns on the island. They took as their example the TESO ferry service, which is fully owned by the Texelers. The group calculated that some € 28 million worth of energy was consumed annually on the island (electricity 76 million KwH; gas 22 million m3) and the Texelers preferred to 'keep that on the island'.

The other motive was sustainability. In the words of founder and director Brendan de Graaf: "Regular energy companies only find a sustainable energy project interesting if they can generate a 15% return for their shareholders. You don't usually achieve that with sustainable energy sources and that's why so little is still done in that field. At TexelEnergie, we are satisfied with a lower percentage, which opens up a world of new possibilities."

TexelEnergie is geared towards the purchase, sale and production of sustainable electricity, gas and heat. They not only supply energy on the island, but also 'on the mainland'. Anyone in the Netherlands can join TexelEnergie and buy electricity and gas. Membership costs € 50 and you not only get discount on energy prices, but also 1 share in TexelEnergie. All members are invited to the annual members' meeting, where they can share in the policy-making process. Texel-Energie is a non-profit organisation.

TexelEnergie was set up to purchase green energy from other producers, but the aim right from the beginning was to start producing energy themselves on the island, together with existing and new local entrepreneurs. They are also working on:

- Solar energy. Texel has the most hours of sunshine in the Netherlands and there are already a few thousand m2 of PV panels on Texel's roofs
- Wind energy. A majority of the members voted to look into the implementation of wind energy on Texel in more detail.
- Generating energy from biomass. For example, the use of timber and pruning waste for the production of heat and electricity.

TexelEnergie is also involved with electric transport.

Bio-fermenter

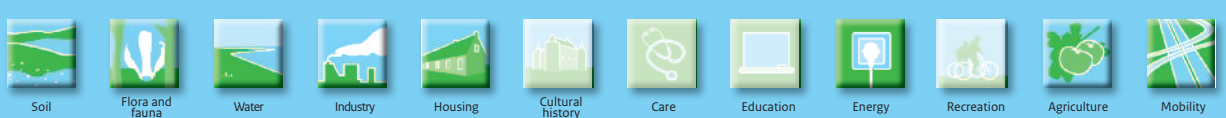
At the moment, plans are being hatched for a bio-fermenter, in which manure and organic residues from the island can be processed. The fermenter produces biogas and digestate (manure without gas). The biogas can be used as fuel to generate electricity and heat. In this way, manure fermentation prevents the emission of methane and, at the same time, a large amount of energy is produced. In principle, the digestate has a higher agricultural value than non-fermented slurry. This makes it attractive to arable farmers, cattle farmers and horticulturalists. By using digestate, less artificial fertilizer is needed. On Texel, 82,000 tonnes of manure a year is currently produced. In addition to this, an annual 46,000 tonnes of (pig slurry) manure is shipped in from the mainland (this is the equivalent of 1380 trucks a year). Texel has enough co-products to fuel the fermenter. Growing crops specifically for fermentation is restricted to a minimum, because it is expensive to grow crops and it takes up farming land. The bio-fermenter will consume 29,500 tonnes a year: 15,000 tonnes of (Texel) manure and 14,500 tonnes of (Texel) co-products. For this, the fermenter will produce an annual 4 million m3 of biogas, 12 million kWh of electricity for about 3700 households and approx. 28,000 tonnes of digestate (= 850 trucks). An (underground) biogas pipeline will transport the gas to Den Burg. There, the gas will be used to generate electricity and heat, close to the customers.

Parties involved

The residents of Texel; the share certificates are owned by the members of the cooperative.

Source/more info

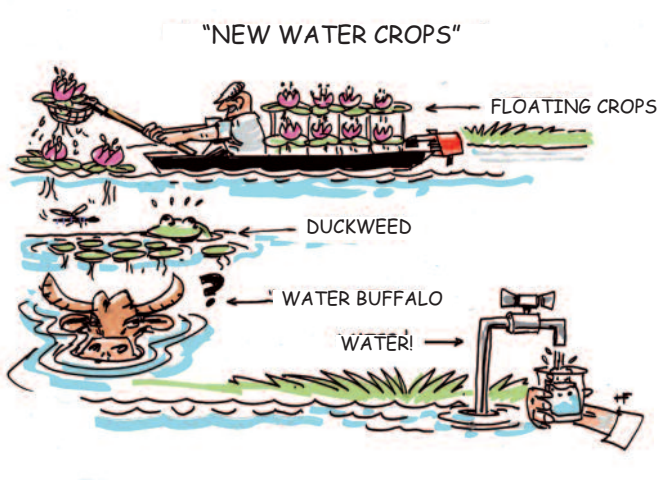
http://texelenergie.nl



More changes when people accept the fact that they are acting under finite conditions. Then they also take account of the depletion of raw materials(13) and realise the economy's limitations. People start to look for other modes of production, which are in keeping with an economy that has limits. This can rightly be called a paradigm shift.

Multifunctionality is an integral part of the concepts 'ecosystem services', 'climate buffers' and 'Building with Nature'.
All three concepts are based on the principle of finiteness. The examples in this book show that there is a change under way in many more, extremely diverse, social fields towards production and projects based on this. We note that such paradigm shifts are taking place in a large number of sectors, making use of new methods and concepts, and that this provides plenty of opportunities for sustainable area development. The nice thing here is that an economy based on finiteness is not itself finite. Based on the idea that resilience, natural resources and money are finite, there is in fact a great deal of 'economy' to be created.

WESTELIJKE VEENWEIDEN BREEDING GROUND FOR ECOSYSTEM SERVICES



Ecosystem services come into being on the interface, in the interaction between culture and nature. The culture of an area, or the style of individual farmers, local residents and users can be decisive when it comes to the assessment and, with it, the use of ecosystem services. Dairy farming has traditionally been an important source of income in the Westelijke Veenweiden, located to the south east of Amsterdam. The typical Dutch landscape that emerged as a result of this production function has considerable cultural-historical value for many people. For various reasons, agriculture is looking for other, additional revenues. Other parties too have their ambitions. Water boards want to combat (the consequences of) climate change and subsidence. Governments feel responsible for different aspects, such as agriculture, scenic quality, topsoil and (ground)water quality, and biodiversity. Nature managers are faced with dryer periods and reduced water quality. Local residents have an interest in the quality of the area in which they live. However, no single party is able to achieve all its ambitions. The parties need each other, and sometimes there are interests which are difficult to reconcile.

A lot is already going on in the Westelijke Veenweiden area. An inventory brought more than a hundred projects to light. As these are often implemented on the basis of sectoral interests and using sectoral funds, the lessons learned are largely 'left hanging' with those who carried out the project and they are not put to new use in the area. Thinking in terms of ecosystem services gave rise to new insights. New opportunities were identified for adding value to the area. Drinking water collection, water storage and reed cultivation are among the most important. It transpires that 30% of Amsterdam's drinking water comes from the Bethune polder in the Westelijke Veenweiden. If we take the price of 1 m3 of drinking water to be €1, the value of these services can be calculated at €25 million a year. Because the quality of the water is good, the purification costs are lower than in an urban area.
The area also provides ecosystem services which are paid for, although they are not referred to as such. Farmers receive a one-off € 5-7 per m² from the Water Board 'De Stichtse Rijnlanden' for ditch widening. The purpose of this is to increase water storage in the area. For the water board, this solution is evidently more attractive than increasing the pump capacity. Submerging a whole hectare under water would supposedly yield a one-off € 50,000 - 70,000.
This inspired Frans Lenssinck from trial farm Zegveld to think about other water services. "If I get paid for increasing the area of water on my farm, what else can I then do in, on, next to, with and over the water?" he has been wondering since. A possible service is, for example, reed cultivation.

THE ECOSYSTEM SERVICES OF REED

Production services
Production of biomass reed for fermentation or as a substitute for straw in cowsheds and stables. Straw is expensive nowadays. Good quality reed can also be used for house roofs.

Regulatory services
The capacity of reed to extract nutrients from the surface water is appropriate in a wet area. It reduces the need for water level drawdown and thereby reinforces the regulatory services (water storage and carbon capture).

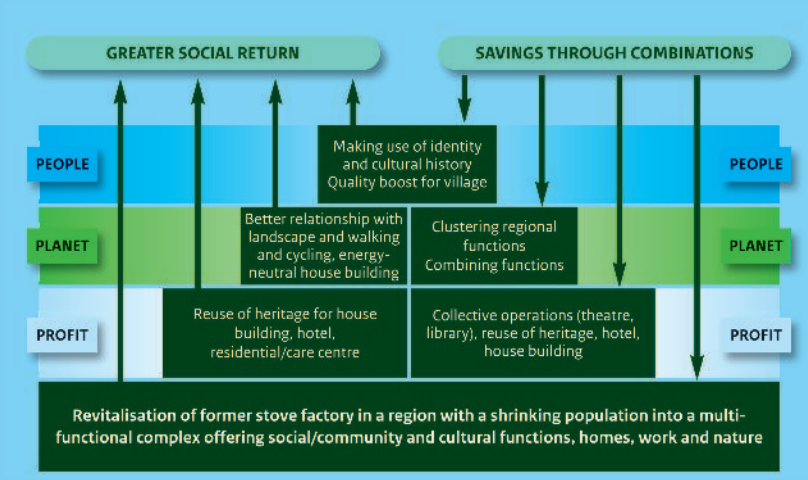
Cultural services
From a cultural perspective, reed as a crop is in keeping with the 'veenweide' (peat meadows) area. Depending on how reed fits into the landscape, it can make it more attractive to visitors.
In this way, reed can contribute towards the diversity of the landscape.

Support services
Provides a habitat for birds and other organisms.

More information:
www.groene-hart.nl/Projecten/Westelijke+Veenweiden/default.aspx

DRU Industrial Estate Ulft

A former ironworks is being transformed and growing organically into an area that provides space for culture, art, industry, education and public administration



Industrial heritage as motor for new entrepreneurship

How can the valuable industrial heritage of the DRU factory be preserved for a future generation? The former ironworks in Ulft, Gelderland, which closed in 2003, is an inspiring example of the appropriate redesignation of various public functions. The fourteen-hectare complex is located just to the north of Ulft's centre and borders the Oude IJssel river. It consists of seven monumental buildings, including the now restored and converted Porter's Lodge. This has been home to the DRU Culture Factory since September 2009. This is a complex with an auditorium that seats 350, a pop stage, a music school, a library, a grand café, social organisations and conference rooms. The Porter's Lodge also accommodates a council chamber for the municipality of Oude IJsselstreek. It contains some tangible reminders of the industrial past.

On the DRU Industrial Estate, you will also find the Boiler House and the Beltman Complex, among other things. The Boiler House is currently undergoing renovation so that it can accommodate a hotel, whilst the Beltman Complex - with its characteristic water tower – houses the office of the municipal housing cooperative. On the first floor of this building, the 'Ondernemersfabriek' (enterprise factory) provides flexible workplaces for independent entrepreneurs.

More combinations of functions are planned for the future. For example, in the 'Aèramerij', one of the seven other national monuments, a knowledge centre that unites the strengths of business, education, art and culture is to be created. The added value of industrial heritage for cultural and business applications makes such combinations successful. The costs of restoration and maintenance are compensated for by the added value for industry, including the hospitality industry, whilst the cultural history serves as a breeding ground for contemporary art and culture. Other examples are the Van Nelle Factory in Rotterdam, Strijp-S in Eindhoven and the Westergasfabriek site in Amsterdam.

Alderman as motivator

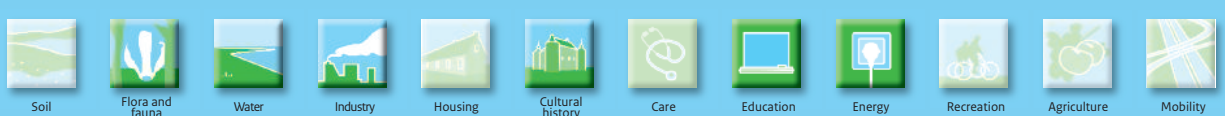
Alderman John Haverdil was the driving force from the very beginning for the revitalisation and redesignation of the DRU plant. He 'fell in love' with the industrial complex and was inspired by examples in the Ruhr of how you can re-use industrial heritage for public and cultural functions. In order to be able to set up a similar culture park in Ulft, the municipality sought to collaborate with experts and organisations, such as architects, firms of archaeologists, owners and managers of buildings and landscapes, and educational and research institutes. And, of course, with other municipalities, the province of Gelderland and the water board. One of the organisations that came onto the scene at this point is BOEi, the National Society for the Preservation, Development and Exploitation of Industrial Heritage. This non-profit organisation is concerned with the redesignation of industrial heritage. It does this from different perspectives: as developer, investor or adviser, whether or not in combination. For the DRU Industrial Estate area, a vision for the area was adopted in March 2011, in which it was described as one whole. This vision goes further than just the former factory site - the Cité Industrielle - but also covers the banks of the Oude IJssel. These were recently redesigned in a natural way. The municipality of Oude IJsselstreek consciously chose not to fill in all the details in advance, but to respond to social and economic developments as the process progressed. The main purpose of the vision for the area is to give direction, with space for the process, new impulses, ideas and designs.

Parties involved

Municipality of Oude IJsselstreek, National Society for the Preservation, Development and Exploitation of Industrial Heritage, social organisations and institutions, the business sector, other municipalities, province of Gelderland and the water board.

Source/more info

www.dru-industriepark.nl
www.boei.nl/projects/view/13/ijzergietrij_dru_portiersgebouw/view:list/city:Ulft/
http://gemeente.oude-ijsselstreek.nl/projecten_en_plannen/dru_ industriepark



4
Perspectives for action and instruments for multifunctionality

4.1 How do you achieve multifunctionality?

Successful multifunctionality is usually characterised by simplicity. As stated, the functions seem to have a sort of natural coherence. Despite this, it is often a long process to set up a new combination of functions. That is related to the transition from a sectoral to an integrated working method. The challenge lies in the process, in bringing together people who are willing to put effort into a combination and the accompanying area development.

Within one sector, everyone speaks the same language and production is optimised. There is a straightforward, closed system. You could say that the transaction costs between supplier and customer are low. With a combination of functions, different sectors are involved and there is virtually always a question of customisation. For this reason, some free space is needed at the start of the process. Freedom in which individuals can get to know one another so that they can better understand each other's products and activities. Freedom so that they can work out the practices and the areas within which these will take place. Freedom so that innovative ideas can arise on the interface between sectors. Free space is important. It is needed for there to be an exchange without this involving a negotiation situation[14]. All of this means that a relatively long process is needed. The parties involved are all required to invest a lot of time. One could say that the transaction costs are relatively high during this phase. They might well be recouped at a later stage, when the combination starts to bear fruit, but, because these costs always precede the benefits, tenacity and patience are required.

In search of a method for using multifunctionality as an instrument for area development, the question is which approach is most appropriate to help the parties involved realise that together they can take advantage of an unmissable opportunity. How can the parties acknowledge and capitalize on the (potential) benefits by entering into new coalitions? Multiple methods exist for this purpose[15]. We will not discuss these in any detail, but we will attempt to explain

DE NOORDELIJKE FRIESE WOUDEN

Multifunctionality in a rural area

The NFW (Noardlike Fryske Wâlden) Association is an umbrella organisation of six societies for nature and landscape management. The association represents some 850 farmers with 40,000 hectares of land and a growing number of members from the general public. The management area covers five adjacent municipalities in north-east Friesland. In addition to the high scenic value, the area is increasingly becoming known as a management area for meadow birds and a foraging area for geese.

The NFW Association strives to:

- strengthen the regional economy;
- protect and further develop the cultural-historical landscape and the natural values contained within it;
- improve the environmental qualities of the area;
- develop robust agriculture, which is as intertwined as possible with the regional economy and which makes discernible contributions to the landscape, nature and environment.

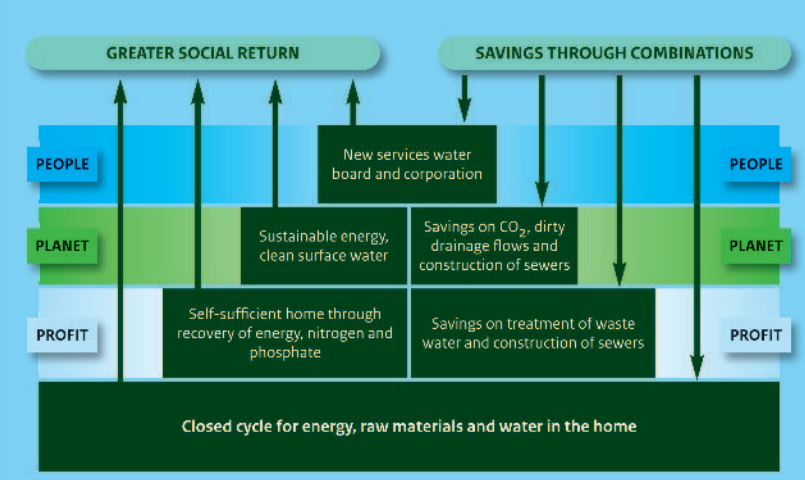
In the past fifteen years, a lot of experience has been gained in achieving these aims. This is expressed, among other things, in the association's own, well-founded 'environmental track' with substantial reductions in emissions, 10,500 ha of meadow bird management, 4,000 ha of foraging area for geese, management of 150 km of hedgerow and 1,500 km of alder avenues, hundreds of pingos and 'dobben' (pools) and 800 ha of botanic management. But the association also works for the preservation of cultural and archaeological heritage and the enhancement of regional tourism, in the form of overnight accommodation, cycle and walking routes, museums, attractions and water sports.

NFW is actively involved in expanding and combining functions. Examples include projects in the field of youth education, energy from pruning waste and asbestos abatement in combination with generating solar energy.

More information: www.noardlikefryskewalden.nl

Decentralised sanitation Noorderhoek Sneek

Decentralised sanitation combines waste water treatment, sustainability and the environment with 232 homes and a care centre in Sneek



New sanitation

In our country, there is an increasing surplus of nutrients (phosphorus, nitrogen and potassium compounds). As the Netherlands is importing more nutrients (in the form of food, animal feed and ores) and using fewer nutrients in the agricultural sector, this surplus is increasing every year. It is very expensive to purify the waste, sewage and surface water and to process manure. Elsewhere in the world, there is actually a need for nutrients (fertilizers) due to the increasing world population and emerging economies. In order to be able to meet the demand for raw materials, now and in the future, it is necessary to use raw materials more sustainably. That can be done, on the one hand, by ensuring that fewer raw materials are used and, on the other hand, by recycling what is used as much as possible. This starting point is one of the key elements of 'DeSaH' (decentralised sanitation and recycling). Noorderhoek is a demolition/newbuild project in Sneek. In total, 280 homes are being demolished and replaced with 232 new ones. The domestic waste water from these homes and a care centre will be collected separately and purified. All of the homes will therefore be fitted with vacuum toilets and a vacuum waste disposal system for fruit and vegetable waste. A central fermenter converts the two flows together into biogas, which is in turn used to heat the homes. The fermentation of the sewage water produces gas and also silt and liquid. The residues of medicine in this are purified and made into fertilizer, which can be used in farming. What you are ultimately left with is purified water, the quality of which is good enough to be discharged into the surface water.

Comfortable living goes hand in hand with environmental return

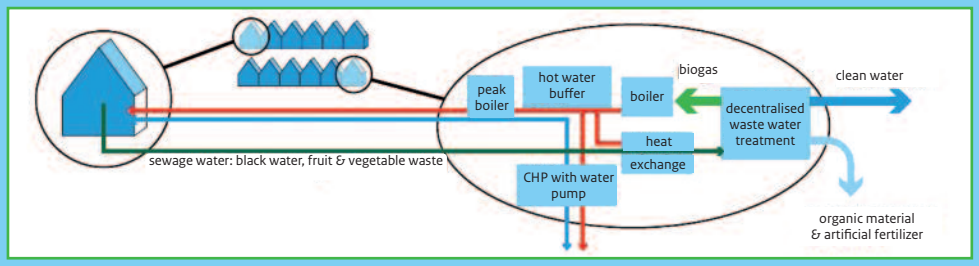
In Sneek, they already had some experience with decentralised sanitation on a small scale. At the time, this involved 32 homes, the toilet water from which was treated separately. The results of this project prompted them to roll out the concept in Noorderhoek on a larger and broader scale. This project provides the opportunity to gain experience with and insight into the costs and the environmental return of New Sanitation. Experience in Noorderhoek thereby forms an important assessment framework for its further application. The environmental return is made up of a large number of elements. For example, households can make 25-50% savings on water. Another important advantage is the removal of harmful substances from the waste water before it is discharged. These include nitrogen, phosphate and medicine residues (more than 90% removed). There is also a reduction in (contaminated) residual flows such as sewage sludge and carbon emissions. Heat is recovered from waste water, whilst the use of organic kitchen waste in the fermentation process generates more biogas. The conversion of raw materials like nitrogen and phosphate into fertilizer means that there is a closed cycle for energy, raw materials and water.
The DeSaH concept has a modular structure, as a result of which the investments which are needed for transport and sewage treatment run parallel with the phasing in the residential development. There are also advantages for residents. Water and energy costs are cut. There is more flexibility regarding the location of the bathroom and the toilet, due to the use of a vacuum toilet. The home is more comfortable. And there are no unpleasant smells in the kitchen now, because the kitchen disposal grinder obviates the need for a separate bin for fruit and vegetable waste.

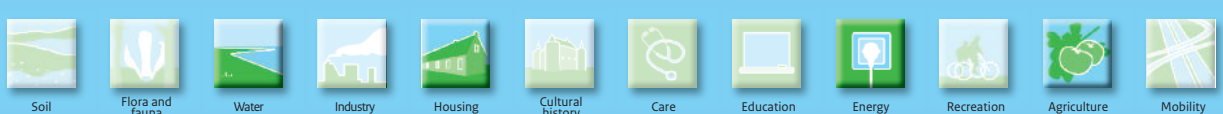
Parties involved

Housing foundation De Wieren, municipality of Sneek, DeSaH BV, province of Friesland, Wetterskip Fryslân and STOWA

Source/more info

www.waterschoon.nl
www.stowa.nl/Upload/nieuws/Flyer%20desah%20def..pdf





what the transition from sectoral to integrated working methods means for such instruments. We take inspiration from the mutual gains approach.

4.2 Stakeholders become shareholders

During the past decades, numerous methods have emerged, enabling people to find out what they can expect from one another when it comes to making joint social and economic profits. Or in other words: when it comes to reaching sustainable solutions. The preconditions with such processes have changed, however, due to the shift in area development from money that is looking for projects to projects which are looking for money. Parties with plenty of money, who want to develop and get a return quickly, approach the environment differently to parties who combine their funds to retain and gradually build up value. Virtually every method capable of inspiring multifunctionality was developed to facilitate capital-intensive project development that is linked with powerful public and private investors who want to implement big, often very big, projects. In such processes, stakeholders tend to play a subordinate role; they have no interest in the project (in either sense) and merely wish to safeguard their own interests with respect to the project.

That is not the case with multifunctionality. The disappearance of money from project development has changed the relationship between initiators and stakeholders. The stakeholders not only include people who reject the initiators' project, but also people who represent an interest that can combine well with the interests of the initiators[16].

BALADE WAALWIJK: MANY DIFFERENT PARTIES UNDER ONE ROOF

27 organisations under one roof

In 2000, a primary school and gym serving the Baardwijk, Laageinde and De Hoef (**BaLaDe**) districts were in need of major renovation. The adjacent day nursery and playgroup were also looking for suitable accommodation. The municipality decided to approach housing corporation Casade. At the same time, a project was under way to set up a residential care service zone for the three districts, with an accompanying structure of facilities, whilst two local schools wanted to merge to form a community school. Casade wanted to oblige the municipality, but concluded that newbuild would be the best solution, in terms of the objective, finances and sustainable quality. In their experience, combining different functions under one roof could result in cost savings and improvements in the level of service. The municipality and Casade then consulted all social organisations in the neighbourhood. Some were in need of new accommodation and many saw the advantages of combining functions under one roof. A complex was created covering a total surface area of 21,000 m2, containing 57 standard apartments, 30 units for 'assisted living', small-scale group living, a café and lounge, conference rooms, a reception and a shop, among other things. When it comes to welfare, there is a Social Support Act (WMO) counter, youth area and social workers, whilst various other areas of care are represented, including care for the elderly, care for people with an impairment and first-line care such as physiotherapy and a general practitioner. In total, 27 organisations are now involved, 12 of which are main tenants. This makes BaLaDe the biggest integrated, multifunctional housing complex in the Netherlands. Recently, the mission was summed up as: 'To increase the well-being of the local residents and to facilitate continued independent living'. The first financial advantages already emerged during the planning stage, because it was possible to combine different budgets. The building development aspect was complicated, but the combinations associated with the legal and tender costs yielded advantages. With the design, thought was given to sustainability and flexibility. For instance, the roof of the gym serves as a terrace for the elderly people suffering from dementia in the group accommodation. Account was also taken of a possible decline in student numbers. Classrooms which are no longer needed in the future can easily be converted into apartments or other facilities. By programming the functions well, it was possible to avoid things like double sets of pipes and costly constructions. Various areas are used by different parties. Catering facilities and conference rooms can be reserved by both internal and external clients.

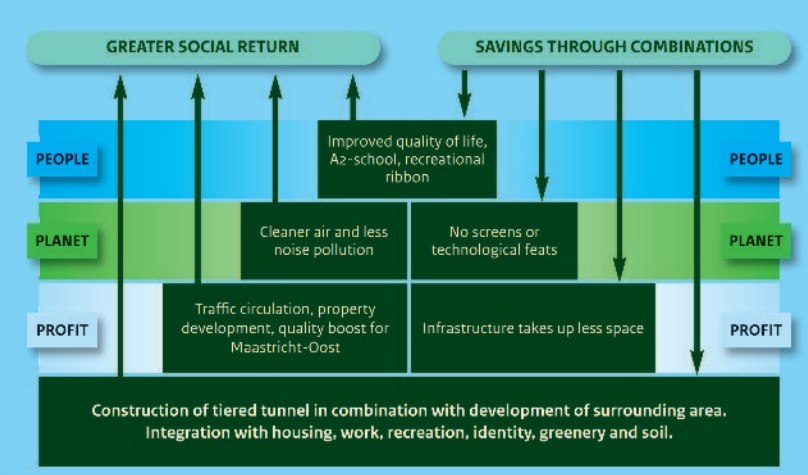
Being attuned to what clients want is truly sustainable

Experience from the first two years of operation showed that it can sometimes be difficult to organise 27 parties with twelve tenants. Some of the goals and the potential associated with several parties under one roof are not being fully realised as yet. The catering facility, for example, was designed as a meeting point for local residents and to provide work for people with a disability. However, no-one has yet come forward to operate this. In addition, there could be more activities and rental. Multifunctionality and multiple use are not coming into their own enough as autonomous aspects. BaLaDe is therefore drawing up a business plan at the moment, and they are thinking of appointing a manager who would be responsible for the broad objective: joint facilities and steering. Local residents, users and tenants must experience BaLaDe as one organisation and rate the brand as distinctive and positive. In addition to the already established social organisations, socially involved organisations are also being brought in. This is giving rise to a combination of 'profit' and 'people' that can contribute in a sustainable way towards the multifunctional building and the neighbourhood. The shared support services, both live and online, could be further improved. They are looking for ways of doing more collectively, for example at reception and with security. This also leads to savings, which is a good thing in times of cutbacks. The same applies to communication and online services, which are becoming increasingly independent of time and location. They are therefore looking at how social media and online services can help publicise the services which BaLaDe offers, but also help improve the coordination between programming and services. After all, being attuned to what clients want is truly sustainable.

More information:
www.balade.nl/diensten.asp, www.simpelcontact.nl, www.MFA-lab.nl

Avenue 2 / the Green Carpet Maastricht

Urban regeneration and improvements to the through-road infrastructure go hand in hand



Solution prompted by accumulation of problems

The A2 in Maastricht was built in the early 1970s as an urban boulevard. However, as the volume of traffic increased, it started to form an ever greater barrier between the centre and the eastern part of the city. Furthermore, traffic stagnated on this national highway increasingly often, causing traffic jams, which threatened the quality of life even more. The collaborating authorities (the Directorate-General for Public Works and water Management, the Municipality of Maastricht, the Province of Limburg and the Municipality of Meerssen) therefore decided to draw up one total plan for the city and motorway, for pedestrians, cyclists and car drivers, for residents and visitors, for infrastructure and urban development. Following a city-wide round of consultations, the plan "the Green Carpet" was chosen in 2009, to be realized by the Avenue2 consortium. The motorway will go underground, thereby improving the quality of life in Maastricht-Oost. The plan provides good access to Maastricht, a smooth flow of traffic on the A2 at the Geusselt and Europaplein junctions, and new opportunities for the development of the adjacent neighbourhoods through improved traffic safety and the urban regeneration of Maastricht-Oost. At the end of 2011, the planning procedures decree and the land-use plan became irrevocable.
In 2012, construction of the tunnel began. Completion of the traffic infrastructure is due at the end of 2016 and delivery of the last of the real estate in 2026.

Infrastructure and real estate reinforce one another and are connected with social and green goals

At the core of the project are two sets of double-decker tunnels. Separate tunnels have many advantages: the capacity is greater and there are more possibilities for maintenance and management. The traffic disappears under ground for 2.3 kilometres. The number of vehicles above ground is therefore reduced by 80%. The bottom two tunnels are for through traffic, the top two for regional and local traffic. On top of the tunnel, there will be a road for slow traffic and authorised vehicles. This will become a long tree-lined avenue with a wide strip for cyclists and pedestrians, and one driving lane in both directions for cars and public transport. Due to its green and recreational character, this avenue will connect the different neighbourhoods of Maastricht with each other. Along the avenue, there will be (partially) new housing, in keeping with Maastricht's cityscape. The characteristic Gemeenteflat (municipal apartment building) on Koningsplein will be preserved and renovated. Around the Geusselt and Europaplein junctions, the entrances to the city, city and motorway come together. The entrances are recognisable as two rolling, green, wooded areas, into which the tunnel mouths disappear. At the junctions, striking office villas and a residential tower will be created as landmarks.

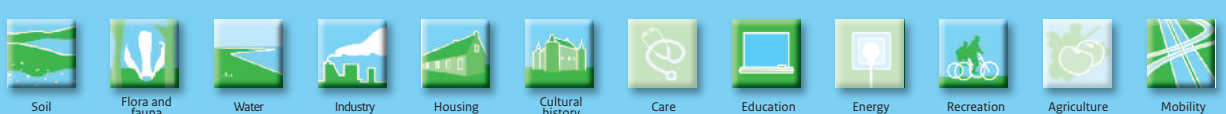
The Landgoederenzone to the north of Maastricht is of great ecological, cultural-historical and scenic value. This will be linked to the rest of the city via the Green Carpet: a ribbon of two thousand lime trees that will meander through the city. A cycle bridge over the A2 will provide a connection between the Landgoederenzone and Geusselt.
Nuisance during the construction phase will be limited because the tunnel building machine will pass by the neighbours just once 'like a caterpillar'. This will also guarantee accessibility. After the project has been completed, the air quality and noise nuisance will be kept within the standards in a sustainable manner, without annoying screens or vulnerable technology. The Green Carpet will contribute towards the renovation of Maastricht-Oost, which has already been embarked upon, for instance by building around 1,100 new homes and 30,000 m2 of commercial real estate. The real estate will keep pace with the development of the neighbourhoods. Avenue2, along with housing corporations, is also continually looking for added value, for example in the field of parking solutions. Finally, the Green Carpet will give local employment a boost. The A2-school, where the unemployed and school leavers from the region are trained for work in the construction industry, will guarantee this.

Parties involved

Directorate-General for Public Works and Water Management, the Municipality of Maastricht, the Province of Limburg, the Municipality of Meerssen and the Avenue2 Consortium, consisting of Strukton Civiel Projecten, Strukton Bouw & Vastgoed, Ballast Nedam Infra and Ballast Nedam Ontwikkelingsmaatschappij, regional contractors, South Limburg Municipal Health Service (GGD), A2-school.

Source/more info

www.a2maastricht.nl



However, the initiators often have no inclination to combine, due to the high transaction costs associated with this, and certainly if simply realizing their project quickly yields an adequate return. The advantages of combining are often only achieved once a project is up and running, whereas the initiator wants to restrict himself to the construction phase, and is often under pressure to complete this quickly.

Mutual gains approach

Interest in combining increases when less capital is available to simply push through a project. It then becomes interesting to combine. The mutual gains approach, which Lawrence Susskind introduced in 1987, is a method that can help in outlining multi-functionality as an instrument. Mutual gains is a feature that is also strongly associated with multifunctionality. After all, the social functions which are combined cost less and produce greater returns together. Despite this, the origins of the two concepts are very different. The mutual gains approach was part of the tradition of instruments devised for settling conflicts between the initiators of a project and the stakeholders with an interest that was affected by the project in question. The interesting thing about this approach is that it broke away from this tradition and focuses nowadays on the development of projects by a wide variety of involved parties[17]. By taking the business case as starting point, the conflict is not negated, because there will naturally always be disagreements with stake-holders. The change lies in the fact that the disadvantages and the conflict no longer form the starting point, but the advantages and the joint business case do. This places the disadvantages in a different light and some are also easier to resolve. The mutual gains approach made this switch and, in its wake, a diverse set of instruments has emerged, based on this approach. The key element is always to look for shareholders among the stakeholders. With them, you then seek mutual gains.
If these do not exist and conflict threatens, attempts are made to

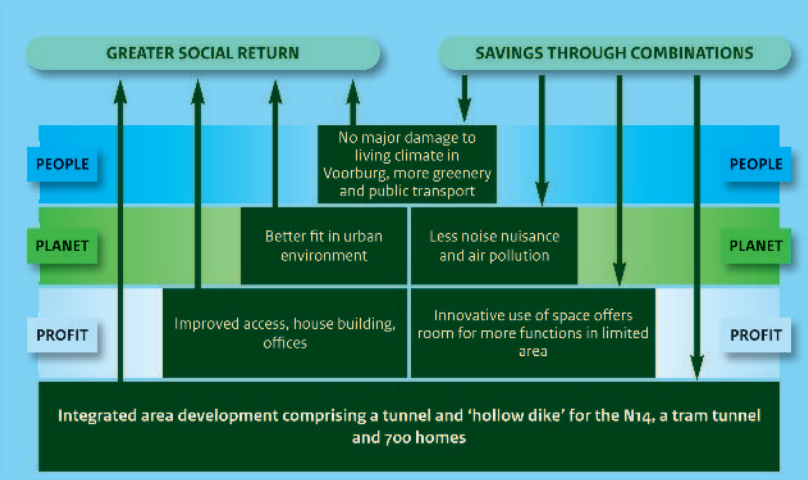
SMART COMBINATIONS OF HOUSING, CARE AND FACILITIES IN DE LAAK

Housing corporation Portaal wanted to set up a more differentiated house-building programme in De Laak, including for example care, than the original brief with just social rented housing. The St. Pieters and Bloklands Gasthuis (St. PBG) in Amersfoort was looking for a new location because the old care home was no longer fit for its purpose. The municipality brought them together. They were also joined by a senior citizens' initiative for group living and a large number of care providers. For the senior citizens, a housing complex that is as normal as possible was created. The comfortable 'life-cycle appropriate' apartments measuring approx. 80 m2 do have specific (domestic automation) applications and modifications, however, so that good care can be provided. Of the 98 units for assisted living, 79 are currently let to St. PBG as care home places, and the other 19 are used for (intensive) extramural care. Residents from the former care home now live in very spacious conditions compared to their old situation. Following consultation, a special rent structure was agreed upon. In the initial years, the rent is high, but it falls every year. With the introduction of the new care funding system, the rent drops dramatically. That makes it possible for St. PBG to run the building. Portaal's investment is not cost effective. The unprofitable part remains at an acceptable level, however, one of the reasons being that the adjacent medical centre is let commercially. The complex also has 24 places for psychogeriatric nursing care and 6 places for short-term admissions. In addition, there is a day centre for elderly people from the area. Near to the Gasthuis, Portaal has also created group living facilities for the over 55s. For them, the presence of the Gasthuis has added value in terms of possible future care needs. In addition, a few of them work as volunteers in the Gasthuis.
The Gasthuis collaborates with the adjacent health centre, which accommodates general practitioners, a pharmacy and a physiotherapy practice, among other things. In the medical centre, a number of treatments can be given for which people would normally have to visit hospital. As fourteen disciplines can be found under one roof here, the various care providers can quickly contact each other and refer clients more easily.
The brasserie, the grand café and the multifunctional areas of the Gasthuis were designed partly as a somewhere to meet and do activities with local residents and for letting to third parties. This generates extra revenue and provides added value for the residents and the neighbourhood. The grand café is run by De Kamers Foundation (www.dekamers.nl), which also organises cultural and social activities in the neighbourhood. Other examples of combined functions are the hairdresser's and the beautifully designed shop at the entrance to the Gasthuis, which also serves as reception.

More information: www.pietersenbloklands.nl, www.Portaal.nl, (Johan Franke) Simpel Contact & Concepts, www. Simpel Contact.nl (Annelies Lammers)

Sijtwende bypass Voorburg

Infrastructure is linked to house building, businesses and greenery



From collective stalemate to shared goal

They were already thinking about a ring road around the Hague region in 1938. However, it took 65 years before it was built. For decades, there was an impasse between the Directorate-General for Public Works and Water Management, the province and the municipalities. Voorburg in particular had major objections. Things changed when the province and the ministry threatened to make a designation order. Voorburg decided to cooperate, but only with the Sijtwende plan. That was because, by constructing the road in a tunnel, it was also possible to achieve the municipality's goals: no further negative impact on the spatial quality and room to build homes. Whilst Voorburg worked on the Sijtwende plan, the province and the Directorate-General for Public Works and Water Management were busy detailing a plan to build the road at ground level. Gradually, however, the Directorate-General for Public Works and Water Management also became increasingly enthusiastic about the Sijtwende variant. The plan aimed to construct the road in a different way than normal, by combining infrastructure with the functions of living and working. The road was laid in a 'hollow dike' and homes built against the body of the dike. This provided Voorburg with a multiple spatial solution, with qualitative added value compared to the classic solution.

Essential for generating commitment was the agreement to come up with a realistic alternative within the designation procedure. Due to the great pressure of time and growing enthusiasm, a joint focus emerged and a 'now or never' mentality.(18) Intensive, joint preparatory work had already laid a good basis for cooperation. Sijtwende Inc. played a multiple role in the whole process. During the development phase, the consortium encouraged and directed the process of collaboration between the public parties. Sijtwende Inc. subsequently took the initiative for the plan in the public-private agreement with the state, municipality and urban district, and developed it. A third role was played by the co-financer: the revenues from the houses and offices near to the route of the road made funding of the construction below ground level possible. Finally, Sijtwende Inc. also took over a number of tasks from the government, because it organised the permits and coordination with the immediate vicinity. For the Directorate-General for Public Works and Water Management, this meant a new role, more "remote supervision" and the consideration of an infrastructural project in a broader context, the road and its environs. For the first time, the state allowed a private party to build a national highway. Following construction, the road was transferred for maintenance and management to the Directorate-General for Public Works and Water Management.

Additional costs recouped through added value

Integrated area development formed the basis of Sijtwende. Infrastructure, living, working and leisure were linked. By broadening the scope (from road to environs), the road fitted in better, and there were possibilities for extra new homes, offices, a fire station and greenery. The plan consisted of a tunnel for the N14 (partly underground and partly above ground), a tunnel for High Grade Public Transport and 700 homes. In order to accommodate all of this spatially, they worked with dual land use. The budgets for road construction, house building, offices and greenery were connected with each other. The classic construction of a road at ground level or on the body of a dike would have meant seriously criss-crossing the landscape. This would have put restrictions on house building and caused a nuisance to neighbouring residential developments (noise, fine dust, barrier effect, fall in house prices). Investments would also have been necessary in extra noise-abatement measures. By constructing part of the road in a tunnel and part of it in a hollow dike, space was created for building on. The revenues from this real estate were used to cover the extra costs of building the road below ground level. Furthermore, the space was put to extra intensive use, because the hollow dike provides space for parking and greenery.

Parties involved

Developer Bohemen, tunnel builder Van Hattum & Blankevoort and Contractor v/h Boele & Van Eesteren. Also involved: municipalities of Voorburg/Leidschendam-Voorburg and The Hague, province of South Holland, urban district Haaglanden and the Directorate-General for Public Works and Water Management

Source/more info

www.bohemen.nl/project/2-sijtwende.html

resolve this. Stakeholders in the traditional sense do not seek mutual gains because, although they can exercise an influence, they are not usually invited to take part in a project. A good example is the Graafseweg in Alverna (see below), where the local residents were originally involved in the project as stakeholders, but became involved in the new approach as shareholders.

A few methods for seeking mutual gains

- ***Combining***: real estate, flows and use are linked together
- ***Green Steps***: integrated approach to sustainability
- ***Smart Coalitions***: by reducing red tape
- ***SCBA-arena***: multi-criteria analysis with interested parties around the table
- ***Sustainable return method***: direct and indirect returns
- ***Charrettes***: 'enquiry by design'
- ***Exploitation of flows***: keeps flows and revenues in the area
- ***Co-creation:*** closer bond between government and public
- ***Business-case approach***: provides insight into fundability of measures

Getting an area development started begins with recognising the (potential) benefits and capitalising on these by means of new financial arrangements and new coalitions between public and private parties.
A new term for this is the waardemakerij (value factory) [19, 20].
Here, new value chains are made by enterprising groups of various people on the basis of their involvement with a place. Value chains are links between the qualities of an area, people who are connected with each other and the products and services they produce.
The waardemakerij marks the introduction of an interesting new concept, in which multifunctionality fits extremely well. It is important here, however, to make sure that the chosen approach does not lapse into the old 'money seeks projects'.

Multifunctionality as an instrument for area development

The search for multifunctionality in area development begins by bringing together stakeholders in an open process with plenty of space. With the potential shareholders among these stakeholders, good, practical solutions for uniting diverse interests within the project are sought. Every interested party has a share in at least one (but usually several) function(s) within the area. Multifunctionality can, for example, be used as an instrument for area development.
The earning model of multifunctionality ('steps', Chapter 3) gives substance to a process that involves a search for mutual gains.
The underlying principles of the returns and savings on the social, ecological and economic front help in determining what these mutual gains are.

VEERWEGGEBIED CULEMBORG

Multifunctionality on the basis of ecosystem services

Culemborg's Veerweggebied has its back to the town and does not form an attractive entrance from the river Lek. Plans to do something about this, through newbuild, proved impracticable in these times of crisis, and they also met with resistance from the existing residents. They apparently really liked the area. The decision was therefore made to tackle the issue differently, according to the ecosystem service approach.
The question was: what contribution to the development of Culemborg is possible if we take the strength of the area as starting point?

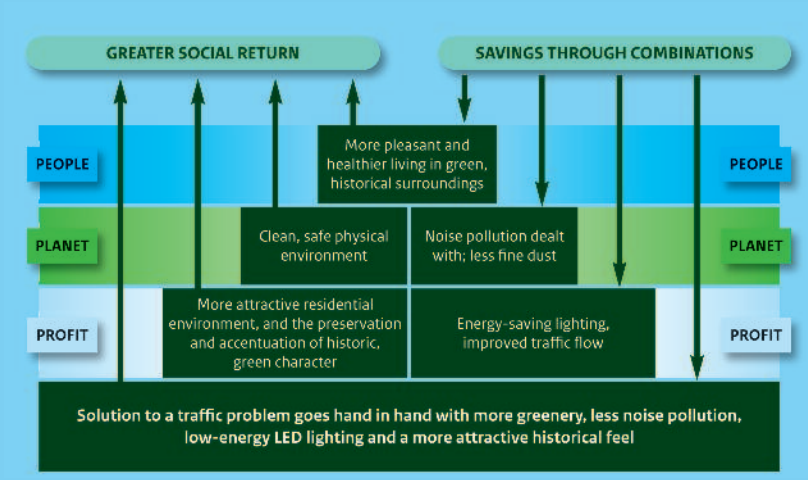
From conversations with people who know the area well, insight was gained into its features and character. The ground plays an important role in the area. Part of it lies naturally higher and that is where industry developed. This part of the area was raised further by humans, using rubble and silt. As a result, the lower-lying section was protected against deposits of (at the time contaminated) silt and therefore remained clean. The low-lying section is fed by seepage from the Lek and is therefore wet when the river is high.
The transition from high and dry to low and wet is very important in determining the character of the area. There is also a lot to experience in terms of cultural history; the low part contains an old harbour and the high part remains of the industrial revolution.

New plan based on existing qualities

Sketches were made of possible measures to strengthen existing and desired functions in the area: not only house building, but also recreation for example. On the basis of the possibilities of the area, the ecosystem services, the historical context and the wishes of local residents and other parties involved, a new plan unfolded: perhaps the individual character of the Veerweggebied could contribute towards the profitable exploitation of the adjacent harbour, by ensuring that people stay in the harbour longer and spend money in Culemborg.

Graafseweg Alverna Wijchen

The municipality of Wijchen and the province of Gelderland show that traffic nuisance can be tackled without ugly sound barriers



Involvement of residents results in integrated plan

The Graafseweg, which runs right through Alverna in the municipality of Wijchen, has been a connecting road to and from Nijmegen since Roman times. Nowadays, it is a busy traffic route: the N324. With around 25,000 vehicle movements a day, it caused serious noise and traffic nuisance. An initial solution proposed in 2004 was to erect four-metre high sound barriers. This idea was rejected categorically by the residents: not only would they lose their open views, but the community would also be cut in two. In order to come up with a better solution, residents and other interested parties were consulted. This led to the following list of starting points for the reconstruction:

1. Improve the quality of life, particularly in terms of traffic noise and air quality
2. Improve the traffic flow and reduce tailbacks
3. Accentuate the green character of the surrounding area
4. Preserve the historical character of Alverna
5. Preserve and preferably improve the appeal of Alverna as a residential environment

Dealing with noise pollution combined with a more attractive environment

On the basis of these criteria, the municipality and province drafted a design that covered the following concrete measures:

1. Lower the maximum speed to 50 km per hour
2. Narrow the road
3. Lower the road by half a metre
4. Apply 'silent' asphalt
5. Fit baffle boards (with a height of up to one metre above ground level); the boards have a stony texture on the road side, making a reference to the Roman road, and on the other side they have grass growing on them
6. Plant greenery (trees and bushes) to reduce fine dust
7. Low-energy LED street lighting

In addition to the primary goal, to reduce the noise nuisance suffered by ninety houses by over 10 dB, there are a number of other benefits. Alverna has become more attractive and the historical character is emphasised because the new road is in keeping with the historical and green surroundings. The way in which the residents were involved in the project brought them closer together and the end result does this too: despite the busy road, it has become pleasant to spend time outdoors, to walk, cycle or sit at a pavement cafe.

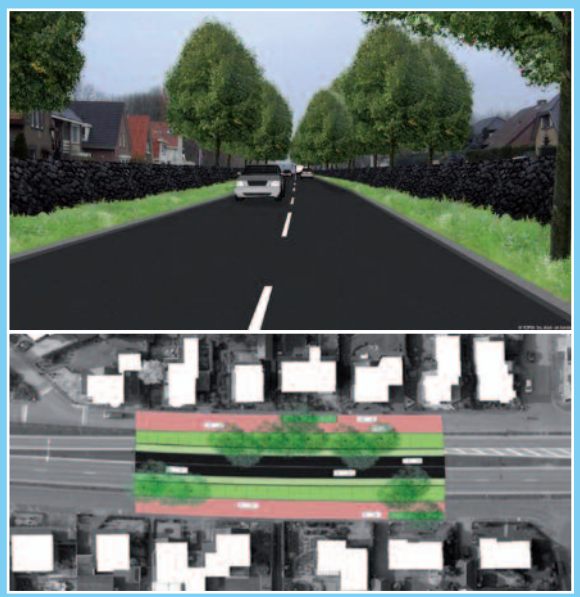
Although the new plan was more expensive than the original one, the chosen approach ensured that the necessary extra resources were made available. Broad support and enthusiasm meant that funds were freed up by the municipality, province, state and even the European Community. The new road was officially opened on 21 January 2012. For this integrated approach to improve the quality of life, the municipality of Wijchen and the province of Gelderland were presented with the European Soundscape Award 2011.

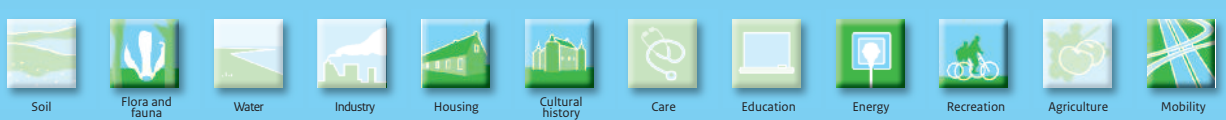
Parties involved

Ministry of Infrastructure and the Environment, municipality of Wijchen, province of Gelderland.

Source/more info

www.gelderland.nl/eCache/DEF/7/200.html





If the shareholders are also the residents and/or users of the area, you have positive involvement in the sense of mental ownership. The group of shareholders organises itself with the aim of realizing concrete area investments which generate social added value. Instruments inspired by mutual gains facilitate a coming together, provide the space for creativity, experimentation and risk, make adjustments and correct, and finally produce sustainable area investments.

4.3 Steering combined functions

Combined functions can emerge from the bottom up, but there will often be a policy-related wish to encourage certain developments. It is not easy to organise the combination of functions from above and, considering the characteristics of 'planning by invitation', perhaps not desirable either. But it is possible to stimulate them. A good example is the Manifesto of the Bodem steering group called: Krachtig in coalities (21).
The policy sector 'soil' explicitly chooses to link up with other sectors. On this topic, the manifesto has the following to say: "We want to form new coalitions and share what the soil has to offer. We also call on others to demolish sectoral walls, make use of integrated opportunities and in this way utilise what is in both the subsoil and topsoil.

The actual combination cannot be made from above. It must come about and start to function on the spot. You can compare it to the hockey association stimulating clubs to cooperate with day nurseries. This is also encouraged by day nursery headquarters. However, the actual cooperation takes placed between the day nursery and a local club. This example illustrates how (policy-related) steering must change if we want to make more combinations. It needs to function as an outline without precisely stipulated sectoral rules, standards, protocols and measures. This will provide the freedom needed to create specific, tailor-made solutions for an area.

Interim function

The transition from a developing government to a welcoming government (and market) calls for a different approach and accompanying competencies. Today's network society has other features, which make different demands on the government.
A concept that fits here is that of the interim function(22). Interim functions enable bureaucratic organisations to leave the existing organisation intact and not to seek the connections in structures, but in professionalism. This not only applies to the government, but also to big market parties. The interim function is an addition to the traditional steering and coordinating function of the bureaucracy. The connections which are created in interim functions are very different in nature to the traditional connection in the form of coordination. This therefore places the interim function between bureaucracy and network society.

The table on the next page presents a number of features of both, whereby it must be noted that they are neither opposite nor mutually exclusive.

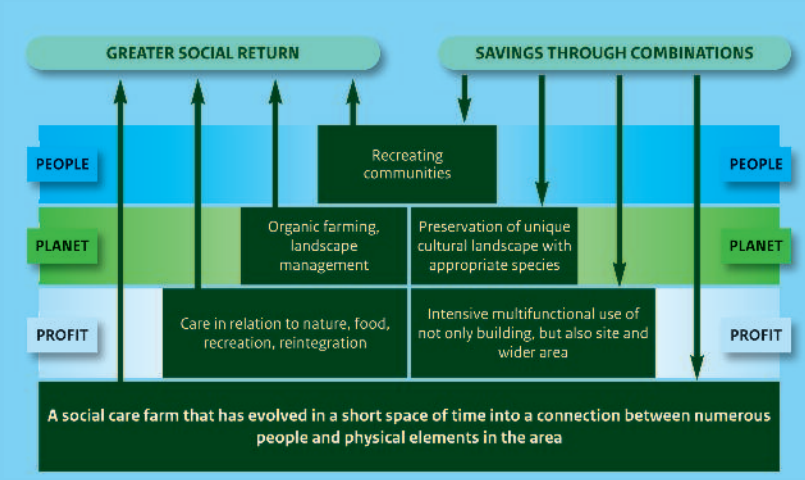
AMMUNITION SITE TRANSFORMING INTO COUNTRY ESTATE FOR SOCIAL CARE

Disused site put to new use
The former arsenal complex Stegerveld is situated between Ommen and Hardenberg and covers about thirteen hectares. On the site, there are large and small bunkers, storage sheds and other buildings. The location is largely overgrown with mixed woodland. Trees have been planted on the ammunition bunkers to hide the complex from view, from both the ground and the air, as much as possible. Stegerveld is in the provincial Ecological Main Structure (EHS). The disused site is to be put to new use as a country estate for social care. This project was made possible through cooperation between the province of Overijssel, the municipality of Ommen, care institution the Baalderborg Group and housing foundation De Veste, the Rijksvastgoed- en Ontwikkelingsbedrijf (State Property and Development Agency), and the Government Service for Land and Water Use (DLG). The outline for the country estate for social care was created in good consultation with those living in the immediate vicinity in the hamlet of Stegeren.

Housing group and care institution work together
The housing group and the care institution will make the complex into a place where autistic youngsters can live and work. Four of the seven large ammunition bunkers will be converted into accommodation for the youngsters. Two bunkers will be fitted for care-related functions. Here, day activities will be held. The wildlife area will remain partly accessible to the public and it will be managed by the care institution's clients and staff. The largest part of the site will be returned to its natural state, thanks to the demolition of various ammunition bunkers and the removal of the infrastructure. The motto of the estate is 'Care for green and green for care'. On the site, the privacy of the care institution's residents will be guaranteed via natural screening in the form of planting. The disabled group will have a quiet, structured environment, with lots of space and greenery. The design of the site includes the preservation of part of the military heritage. In the historic buildings there will be a tea house, as well as a museum about the Cold War.

Buurderij de Wilde Haan, Balloo

Social care farms are a successful form of multifunctionality; on estimate, there are currently more than 1,000 in the Netherlands



Housing and work for people with an impairment

'Buurderij de Wilde Haan' has been operating in Balloo, in the northern province of Drenthe since 2010. Started as a social care farm, the Buurderij soon developed into a connecting element for the local community. It is a place where people with an impairment live and work: young adults with autism or other (psychiatric) impairment. There are six apartments with their own and shared facilities which have been adapted to the specific requirements of the target group. There is also room for day activities. The Buurderij is a recognised work experience facility. By means of tailored programmes, the personal development of residents and day visitors is stimulated. Contact with nature and its rhythm is very important for the clients. This covers caring for the animals, working in the greenhouse or kitchen garden, landscape maintenance in the neighbourhood, but also working in the kitchen or serving in the restaurant.
Promoting social cohesion is an important goal; they try to create a small-scale commune in open contact with the neighbourhood. The group of residents take care of their own residential environment, so that it is welcoming and pleasant for both themselves and the neighbourhood. The recreational/tourist function of the Buurderij is also geared towards social cohesion: open premises where people from the neighbourhood and tourists can make a contribution or just enjoy the rural atmosphere. In this way, the residents can get to know the neighbourhood from their own safe environment and build up relations with their neighbours. When they are ready, the residents take an active part in the community, for example in (sports) clubs or for local entrepreneurs

Things like this just happen

In 2010, various functions were not part of the plan. For instance, the Buurderij has become an attraction and meeting place for tourists and for the neighbourhood. A petting farm, a rustic café serving drinks and snacks, and a shop selling organic produce are being created. In the meantime, the Buurderij has also become an important partner for the municipality, not only when it comes to landscape maintenance, but also in enabling people to gain work experience so that they can enter the labour market. You can devise such partnerships, but sometimes they just happen. How things develop in the coming years depends partly on new connections with people and the surrounding area, and which of these connections prove to be the most viable.

Organic and sustainable

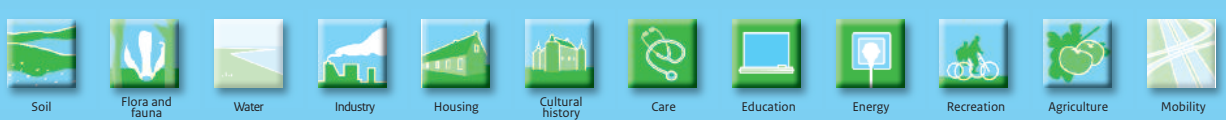
Organic vegetables and flowers are grown in the greenhouse. A herb garden will also be realised. Some of the produce is used by the residents and in the restaurant. The rest is sold in the shop and to restaurants in the vicinity. Management, maintenance and development of the Buurderij are all sustainable. Clients maintain a piece of woodland for the National Forest Service and in exchange for this the Buurderij gets wood for the heating plant. They make sure that the premises and the planting are in keeping with the natural environment and contribute towards the restoration of the local Ash landscape. On the basis of this function, the Buurderij has become an ambassador for the landscape of the 'Drentse Aa', and is allowed to promote this officially as 'host'. That makes the Buurderij a new economic pillar of the rural area, contributing towards the preservation and development of the landscape and how it is experienced. On the agenda is the extension of an adjacent cowshed to create a knowledge centre. It will provide education and a place for research relating to the care clients and how the environment can work for them whilst they work for the environment. It is in keeping with this philosophy and the growth pattern of the Buurderij that clients will, in time, also find work with cows in the neighbour's new cowshed or elsewhere.

Parties involved

Foundation 'Buurderij de Wilde Haan', care institutions, municipality, National Forest Service subsidy providers, volunteers, donors

Source/more info

www.zorgboeren.nl, www.landbouwzorg.nl, www.buurderijdewildehaan.nl



Bureaucracy	Network society
Closed system	Open system
Transparency	Variation
Uniformity	Flexibility
Clarity	Unknowable and unpredictable
Repetition	Equality
Separation of functions	Mixture of functions
Hierarchic responsibilities	

4.4 The treasure chest opens

Multifunctionality is the best kept secret in the economy and society. The opportunities have been there for the taking for a very long time, but the ambition, the necessity and the preconditions for realizing them were not yet present to an adequate degree. The treasure chest of combinations is only opening slowly because the next combination becomes profitable due to the pressure of economic and/or social circumstances. In this publication, we apply this idea to area development.
The trends in area development show how multifunctionality helps to shape the physical environment. Shareholders start working together and find out what they can expect from one another. That goes from project to project, with people discovering, for example, that sport and education go together, or water defences and generating energy.

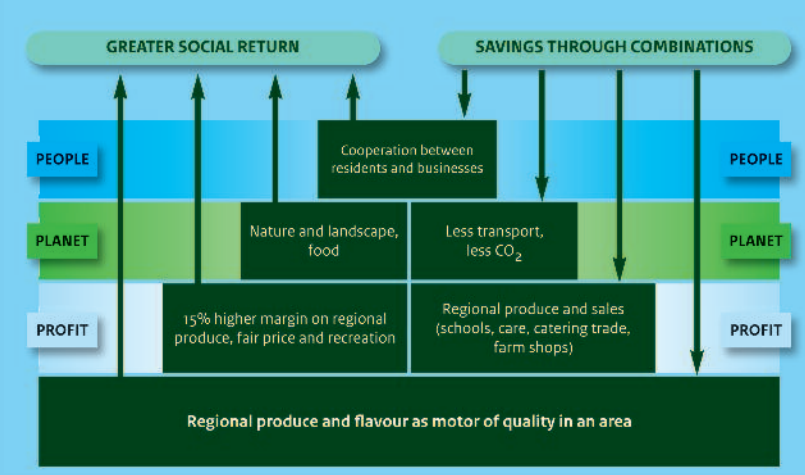
Once a new combination has been tried out, it is easier for people in other places to set up comparable combinations.

Multifunctionality checklist

- The main motto is: begin with the usage. Work on the basis of what and who is there.
- Step outside the sectoral compartment
- Work on raising awareness of finiteness
- Take the strength of the area as starting point: make an inventory of the area's features
- Do not first conduct an extensive desk study. Go into the area with an "open mind"
- Nurture initiatives from below
- Work on coalition forming (mutual gains)
- Create value chains
- Take account of the fact that costs come before benefits
- Practise what you preach: allow space for initiatives
- 'Planning by invitation' calls for a different working method on the part of the authorities and the developers
- Work on removing sectoral obstacles in regulations and institutions

Regional food cooperative 'Oregional'

Regional produce is available in farm shops, restaurants, supermarkets and at the market, but is increasingly being served in businesses and institutions



Farmers seek new sales channels

In the Nijmegen region, a group of farmers took the initiative, in 2009, to set up the area cooperative 'Oregional'. Oregional stands for original, regional and sustainable. The mission of the cooperative is to establish connections between producers and consumers, farmers and the public, town and countryside. This is done in order to contribute towards a sustainable and valuable countryside and offer sustainable prospects for farmers. The aim of the cooperative is to promote the regional, cross-boundary sale of products and services in a sustainable and economic way, under the brand name 'Oregional'. Vital to the area cooperative are fair prices for the farmers taking part and the involvement of consumers and the public.

The area cooperative Oregional is a new sales channel, aimed at achieving at least 15%higher margins, on a structural basis, for its members' products (rural businesses) compared to regular sales (auction, dairy cooperative, etc.). The area cooperative handles the purchase and sale of products, the processing and transport by farmers and third parties (cooperation), quality development, monitoring and certification, obtaining subsidies, approaching new market parties, developing new product and market combinations, marketing and PR, and the finances and internal organisation.

Regional produce boosts own region

Because the products are produced, processed and consumed in the region, little transport is needed to get the products to the right place. This means, among other things, less food kilometres and thus lower CO2 emissions. Moreover, the farmers get a fair price, so that they can continue to make their products whilst showing concern for the landscape and the welfare of their animals. Often, the public are allowed to visit the farm, so that they can see for themselves how the products come into being. In addition to the sale of produce to care institutions, the catering trade, schools, caterers and consumers, the cooperative puts a great emphasis on the development and promotion of (tourist) activities on and around farms. Both the producers and customers are within a 40-50 kilometre radius of Nijmegen. In this way, the money that the consumers spend on products from the region also remains in the region. The money goes into the preservation and development of nature and the landscape, among other things. Alongside healthy turnover for the farmer, there are the following social profit centres:

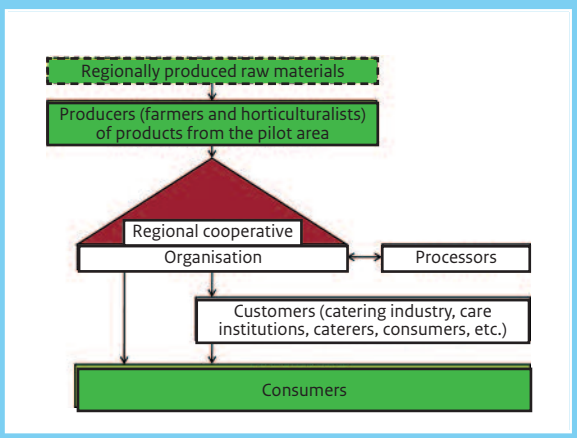
- A sustainable regional food chain leads to a substantial reduction in CO2 emissions
- The rural economy is stimulated
- Farmers start to invest more in an attractive landscape
- Consumers become more aware of the flavour, quality and origin of produce
- The public is tempted to spend more leisure time in their own region
- Market parties can differentiate themselves better from the competition with fresh, regional produce

Parties involved

The 'Landwaard' Foundation provided the start-up subsidy. Oregional started with 25 producers and is currently on its way to 100.

Source/more info

www.oregional.nl, www.lekkerutregs.nl (Utrecht), www.eemstadeten.nl (Amersfoort), www.goeieete.nl (Tilburg), www.versvoko.nl (Amsterdam)



Soil | Flora and fauna | Water | Industry | Housing | Cultural history | Care | Education | Energy | Recreation | Agriculture | Mobility

5 Epilogue: the power of multifunctionality

Multifunctionality means discovering the freedom to make lots of completely new combinations. Inspiration comes from the running through social functions such as housing, education, care, water, nature, agriculture, food, accessibility and industry, and thinking up ways of combining them. In this way, multifunctionality touches on the essence of sustainability. Through such a multiple approach (3 Ps), multifunctionality makes the flywheel for sustainable development bigger. It is a question of combinations which yield a profit and have a function for years, instead of designs which have already served their purpose after a few years.

Multifunctionality is a way of working for people who want to go beyond the boundaries of their sector, resulting in good, sustainable solutions. It is a question of logical combinations. This logic seems easy, but does not come about quickly. It is the result of a development process, which incorporates adequate quality in terms of people and areas. In a network society, people, authorities and businesses come together in new constellations and partnerships. They save money and improve the quality of their own environment by looking for more intensive and more efficient forms of use, by implementing cradle-to-cradle applications and through local production under their own management. New forms of area development emerge in this way. Area development that still has growth as its aim, but no longer at the expense of space and resilience. It is a question of sustainable, inner growth, of intensification and adding new qualities to the existing ones.

5.1 Food for discussion

Before we conclude, we would like to put a number of points on the agenda. Sustainable area development and multifunctionality are more topical than ever. But they are still a long way from being generally accepted and can still use plenty of support. Multifunctionality is an established, but at the same time, a relatively unknown phenomenon. There are plenty of examples, but many

URBAN AGRICULTURE [23,24]

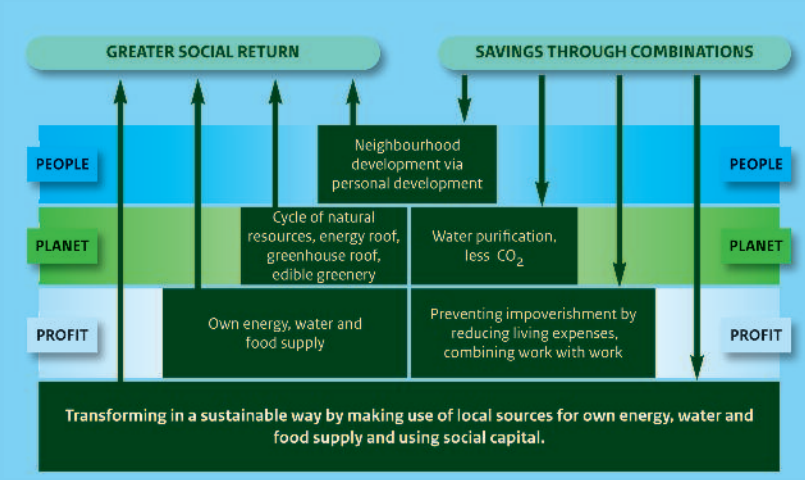
The connection between town and surrounding countryside is strengthened by taking knowledge about food production into the town. This can take the form of a city farm or, on a smaller scale, a community kitchen garden. More and more people are also growing their own food on waste ground, in small gardens, on balconies and on roofs. This is called urban agriculture.
It is a biological engine that can connect many things with each other, such as energy and food supply, education, recreation, welfare and local economic activities. Edible landscapes in the district fill up previously undeveloped patches of land and create a meaningful connection between residents and their natural environment. The age-old allotment is being rediscovered. Also, housing associations are showing an interest in urban agriculture, as can be read in the example about the Rotterdam district of Schiebroek (see page 44). Caetshage is an example of a city farm and is described in more detail in the example about the ecological residential district of Eva-Lanxmeer in Culemborg (see page 46). There are now urban agriculture initiatives and projects in many places, including Amsterdam, The Hague, Almere and Zwolle.

In recent years, we have also seen the emergence of many dozens of community kitchen gardens, where local residents grow their own vegetables, fruit and herbs. Knowledge is shared via the Internet, and a DIY Toolkit for Kitchen Gardens and a guide are available, both of which can easily be tailored to suit a specific location. People can also use their own garden for food production, for example by means of a Permablitz, when a group of people transform it into an edible garden in one day. The participants take it in turns to transform each other's gardens.

More information: www.buurtmoestuin.nl, http://stadslandbouw.blogspot.com, http://eetjetuin.nl, www.stadsboerin.nl, www.eetbaarrotterdam.nl

Tuinstad Schiebroek-Zuid, Rotterdam

Na-oorlogse wijk ondergaat duurzame transformatie: bottom-up droom over duurzaam wonen en leven



Flexible development strategy

Schiebroek-Zuid is a residential area with about 2,200 homes in Rotterdam-Noord. It is a typical post-war estate of flats. Many of the properties are old-fashioned, poorly insulated, too small for families and not accessible enough for the elderly or disabled. The neighbourhood is therefore on the municipality's list of redevelopment areas. Together with the three housing corporations, the municipality has drawn up a plan for the neighbourhood approach. Demolition is the solution for some of the housing complexes, and these will be replaced with newbuild. The canals and roads in the neighbourhood will be brought together and there will be restricted-traffic areas between the canals, with various functions, for example urban agriculture or a play area. The sub-plans will be detailed further in dialogue with residents. The whole will form a flexible development strategy for the area for the coming 10 to 25 years. Due to the economic crisis, the bigger plans have been put on hold for the time being. The modernisation can go ahead with the aid of a plan with a refreshing approach, which is based on sustainable transformation instead of demolition and on the use of local sources of energy, water and food. In addition to the technical analysis for energy, water, materials, nature and food, a socio-economic analysis of the neighbourhood was also carried out. The aim of this is to unlock the social capital in the neighbourhood (social mining) and give people the space to contribute towards realizing a sustainable Schiebroek-Zuid.

Urban Agriculture and Social Mining

It started with a pilot to experiment with collective urban agriculture in courtyard gardens. Under supervision, residents are given the opportunity to grow vegetables and other crops themselves. Initial experience is positive; people enjoy trying it, older migrants enthusiastically make a connection with the garden of the house where they grew up and, strikingly enough, there is hardly any vandalism. For Schiebroek, this is a possible step en route to a much more advanced form of urban agriculture, whereby connections are made with other local resources and products, for example biomass production and local sustainable energy. Locally, plant waste can be included efficiently in the energy and/or raw materials cycle, for example if sewage water is treated locally and the sludge digested. Energy is released and the residual products can be used as fertilizer. The plan that has been drawn up shows, among other things, images of greenhouses on the roofs of the current apartments and kitchen gardens in place of boring ornamental greenery.

Neighbourhood development company Doko10 sets up new commercial activity by bringing talent and drive together and guiding these combinations to become profitable business cases.

In this process of social mining, there is a double advantage: economic development for the neighbourhood and personal development for the people involved. Flexible 'studios' in the neighbourhood provide space for start-up entrepreneurs: from workshops to offices and from kitchens to retail units. Schiebroek-Zuid's own sustainable energy company is also a possibility. Due to the high density of homes, the number of potential clients (and roofs for PV panels) is high. Work can be combined with work: during major repairs, sustainable energy can be installed relatively cheaply. New sustainable energy technologies (such as central CHP storage with heat pumps) can be funded by lease arrangements via the energy company.

Parties involved

Except, housing corporations, municipality of Rotterdam, neighbourhood development company, residents of Schiebroek-Zuid

Source/more info

www.except.nl/design/Schiebroek-Zuid/index_nl.html
www.wijkaanpak-schiebroek.nl
www.agentschapnl.nl/programmas-regelingen/special-symposium-schiebroek-bottom-droom-over-duurzaam-wonen-en-leven

people do not recognise them as such. They only form the tip of the iceberg of possibilities. Which points spring out for inclusion now in the agenda for multifunctionality and sustainable area development? Which topics would be good ones for theoreticians and practitioners of area development to tackle?

• The finiteness of natural resources, resilience and money

To further strengthen multifunctionality and sustainable area development, it is a good idea to look in more depth at the terms finiteness and inexhaustibility. The finiteness of the planet seems fairly evident, but the notion of inexhaustibility is still firmly anchored in our actions. What is the reason for this, what does it signify that this is so deeply ingrained, what can we do about it? The idea of inexhaustibility is also deeply rooted in our legal system. To us, thinking about this in more depth seems relevant for the debate on sustainable area development, as is the question of whether there is more to consider than just natural resources, resilience and money. Are these three the right phenomena to look at in relation to (in)finiteness, or are there more relevant phenomena?

• Good spatial planning

The ideology of development planning might well have been embraced now, but its implementation often meets with resistance. Precursors in the field of multifunctionality are faced with a barrage of sectoral laws and regulations, all of which are well intended but miss the mark because they make an integrated approach impossible. Also, vested interests often make it difficult to get new coalitions off the ground. A compelling Dutch example is the energy transition. The system of laws and regulations at the local/rural level contains a number of important obstacles which make it difficult for consumers to produce energy themselves. It is also difficult to supply others or return energy to the system. Yet it transpires from the examples presented here that this failed to discourage a number of parties from setting up new trans-sector and sector-cutting combinations. It is therefore possible; good business cases can already be made.

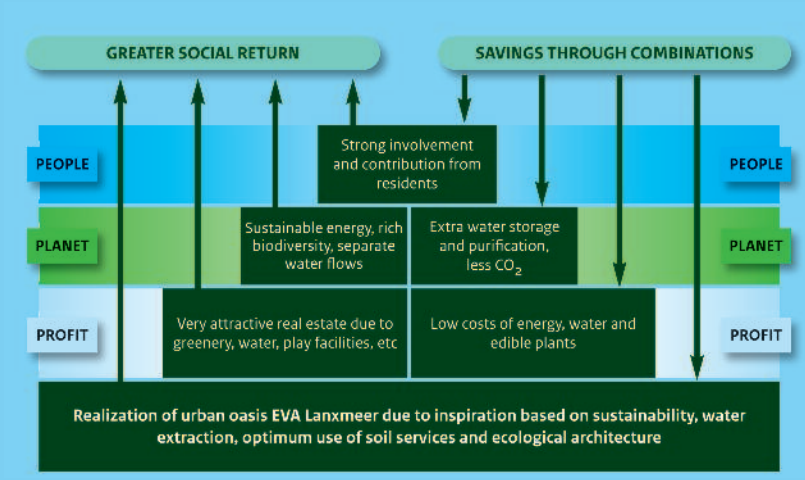
Environmental law is currently under fundamental revision. It could be in keeping with this review to allow the original idea behind development planning to provide the lead. This means re-establishing the requirement that a new development takes account of the integrated character of the environment. The principle of good spatial planning deserves to be tightened up here, by requiring that every action strengthens all elements of the area and their coherence as much as possible. This is not enough, however. In order to be able to make the step to 'planning by invitation' in practice, the modification of sectoral regulations is also required, so that it is easier to make integrated assessments. To stimulate multifunctionality, it is important to raise the issue of such obstacles so that they can be removed. Precursors in the field of multifunctionality prove that it helps to put things on the agenda. There are already some tentative developments in the right direction.

DE KERSENTUIN: RESIDENTS COME UP WITH IDEAS, PUT THINGS INTO PRACTICE

'De Kersentuin' is a residential development, realized by the residents, with 28 rental and 66 owner-occupied properties in Parkwijk Noord, located in Leidsche Rijn in the municipality of Utrecht. The residents themselves developed the plans for their estate, on the basis of a broad idea of (social and technogical) sustainability.
That is reflected in the housing: low-energy, flexible, compact, life-cycle appropriate and extendable. You can also see it from the neighbourhood: varied, with restricted traffic and a child-friendly design, with flowing transitions between public, semi-public and private areas. De Kersentuin proves that, when building and arranging (new) neighbourhoods, a lot of the initiative can be left to the (future) residents, and that this can result in an extremely liveable neighbourhood. The central element is De Kersentuin Association, the glue of the neighbourhood and important when keeping control of the residential climate.
That residential climate has three important pillars: the project house, the green surroundings and the fibre optic network. These three pillars are where the 'Kersentuiners' meet each other. This combination results in a rich social life and strong social cohesion: it is easy for people to find each other, develop ideas together, solve problems together, support and help one another, enjoy things together and also give each other some space.
Collectively, a climate is created in which a lot – a very lot – is developed and implemented by the members themselves. There is, for example, a car-sharing system, an amphitheatre, a system for collective heat supply, a system for separating and infiltrating rainwater, a separate drying area (for washing) and a covered cycle parking facility with communal bike trailers and hand carts. The multi-storey car park is combined with a garden, there are plants on the outside walls, nesting facilities and kitchen gardens. And new ideas are being added all the time.
More information: www.kersentuin.nl

EVA Lanxmeer, Culemborg

Residential development set up through participation is breeding ground for combined functions



Some twenty years ago, the EVA Foundation (Ecological Centre for Education, Information and Advice) was looking for somewhere to introduce a wide audience to new developments in the field of integrated and sustainable urban development. EVA wanted to demonstrate that the combination of sustainability in all its facets with ecological architecture and a natural living environment provided added value for residents. At the municipality of Culemborg, EVA not only found a willing ear, but also a place in which to shape the plans: the district Lanxmeer. In 2000, the first houses in the EVA-Lanxmeer project were completed. The district has become a lively residential and working area, with more than two hundred homes, various businesses, a city farm that offers social care farming, a care centre and a complete 'school island' at four locations for 2500 students. The development was realized in a water extraction area and the over thirty-metre high water tower, built in 1911, serves as a landmark.

Residents' association as motor of innovation

In the EVA concept, (future) residents play an important role, in both developing the plan and managing the district. EVA-Lanxmeer attracts residents and businesses with an above-average interest in personal growth and sustainable development. The residents are united in the EVA-Lanxmeer Residents' Association. All kinds of initiatives for combined functions emanated from this and new ones are being added all the time. For instance, car sharing is nothing new in Lanxmeer; they have been doing it since 2003.
The concept of sustainability is found in all aspects of the district. It is located in a water extraction area and the composition of the soil, archaeology and cultural history formed the departure point. Not only is attention paid to the use of sustainable building materials, but social, cultural, landscape-related and economic sustainability also play a vital role. Lanxmeer has a few immediately eye-catching features: it looks green, there are no cars in the district, only on the edges, and there are huge plots of reeds. Beyond immediate view, Lanxmeer also has a number of technically innovative neighbourhood systems. Due to a stringent energy standard, a lot has been invested in all the buildings to save and generate energy. There are many solar panels. The district energy company Thermo Bello provides sustainable energy. The energy working group looks for ways of further reducing energy consumption. The water system too is unique. There is a separate pipe system for domestic water. Waste water is kept separated in four flows: rainwater from the roof, rainwater on the ground, grey water and black water. The water from the roof is taken via a closed system to five retention ponds and is suitable for re-use in the vulnerable water extraction area in which the district lies. Rainwater on the street might be contaminated and is therefore kept away from the protection zones of the water extraction area by collecting it in wadis. The grey water (waste water from washing machines, bathroom and kitchen) is purified via helophyte filters. Black water (from toilets) is discharged into the town sewer, but in the future will go to a biogas plant and a Living Machine, a purification system in which the organic contaminants are broken down by water plants. The ultimate aim is to treat all the waste water in the district itself.

Greenery under own management

Management of the district is organised by the Terra Bella Foundation. Here, the residents share their ideas on the design of the public greenery and assist with its management. This saves money as the municipality spends less on management. Private gardens, communal gardens and public greenery form an organic whole. Part of the district is an old standard tree apple orchard. Here, the Caetshaghe Foundation has set up a complete city farm. Since 2002, Caetshage has evolved from a small experimental garden and pick-your-own garden into a 5.2 ha self-sufficient city farm. The site now consists of an attractive experimental garden, a yard, ecological park, café and 2.5 ha of farming land. This makes Caetshage a wonderful example of the multifunctionality of urban agriculture. In addition to supplying organic produce locally, the site is a place for meeting people, finding meaning, exchanging knowledge and the development of a biodiverse landscape.

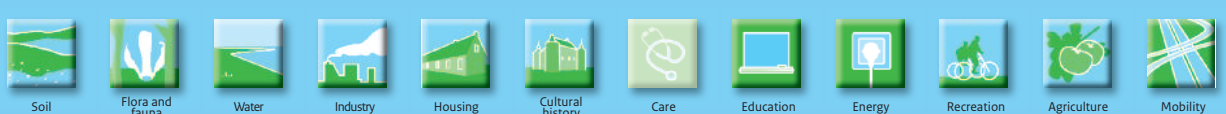
Parties involved

Residents' association, Terra Bella Foundation, Caetshaghe Foundation

Source/more info

www.eva-lanxmeer.nl, www.bel-lanxmeer.nl, www.caetshage.org,

www.stichtingterrabella.nl



This includes the umbrella of the Crisis and Recovery Act and in the City and Environment Interim Act. A municipality like Almere strives to impose as few rules as possible on private plot building in order to give its own builders as much freedom as possible.

• Opening the treasure chest

It is only really possible to achieve a combination of functions if it is socially profitable. When is that the case? When do the people in the project dare to make a combination? When are they convinced that a project will help them and is a real business case? More and more people are opening the treasure chest and discovering that a new combination is socially feasible. With this book, we aim to help this process along by providing an overview of examples. We are convinced, however, that there are still many more possibilities.
To put it even more strongly, the failure to combine means missed opportunities. It is therefore important to escape from the compartmentalised structure, because we cannot feel the loss of an opportunity from within our own compartment. What new methods can we devise to encourage people to combine more?

5.2 Down to work!

Naturally, it is important to work on creating the right preconditions, to look for better methods and to gather more knowledge about where and how we can put them into practice. The most important item on the agenda, however, is simply to get down to work. Make use of the new awareness of finiteness, study the specific qualities of the area, decide what your aim is and go in search of supporters and shareholders to capitalize on the existing qualities.
Multifunctionality creates a sense of freedom. You can turn around, step out of your 'box', make a difference. Give me some freedom. Enjoy your freedom. The cage is open. Where there's a will, there's always an appropriate way to be found for tackling a project. Open the treasure chest and discover the power of multifunctionality.

GO-WEST: TEMPORARY HOUSING IN AMSTERDAM

Student housing and cultural hotspot in empty office building
The ACTA building is an empty office building in Amsterdam, which is being converted into temporary accommodation for students. In this connection, the owner, housing corporation De Alliantie, has put the building in the hands of two managers: the foundation 'Temporary Wonen Amsterdam'(TW-A) and Urban Resort. TW-A will be responsible for the creation and management of 460 student rooms on the second to eighth floors. Urban Resort will create a cultural breeding ground in the form of business units with a café-restaurant, a reception hall and studios on the ground floor and first floor. There will also be an urban beach. A sensible solution still needs to be found for a large lecture hall. It will possibly become the venue for the return of a cinema to Nieuw-West. Alteration work will be kept to a minimum, although some expensive modifications are needed. The alteration and management costs will have to be recouped from the rental income. Everything is based on an operating period of ten years, anticipating an extension to the legal period for temporary redesignations from five to ten years. A unique aspect of the approach is the self-motivation of the residents. Management will be in the hands of the students and active 'handymen' will get discount on their rent. That makes the conversion of offices into living accommodation on the basis of temporary redesignation feasible. Communal bathrooms and kitchens will be located at places where pipes already exist. The rooms will be positioned around these, with the students assembling their own dividing walls. In this case, De Alliantie is responsible for pre-financing the conversion. De Alliantie has no tradition in student housing, but expects that Go-West will be able to give the neighbourhood and the further development of Nieuw-West a real boost.

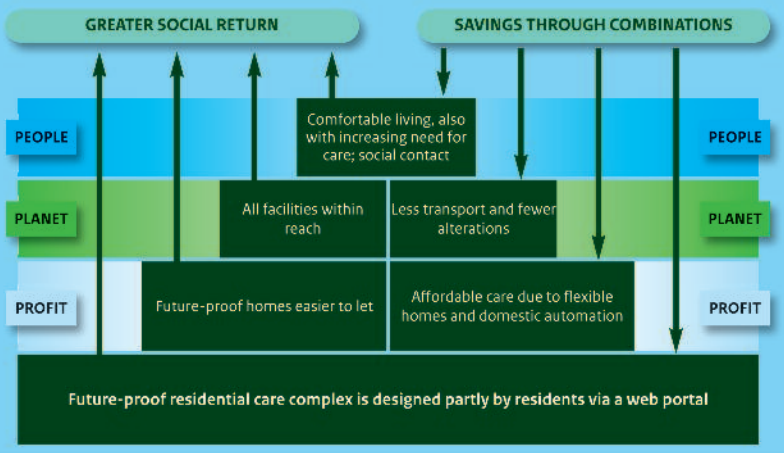
Urban renewal by increasing functional flexibility of office buildings
Naturally, a temporary redesignation is not the same thing as combining functions. But flexible use of a building does broaden the basis for combinations, certainly if various uses are permitted, as is the case with the ACTA building. There are plenty of opportunities for new functional combinations in the plans of the TW-A and Urban

Resort, because students and artists are excellent candidates when it comes to creating a cultural breeding ground in the form of business units with a café-restaurant, reception hall and studios. The aim here is that the 'vibes' from the various functions will radiate outwards and provide an impulse for the surrounding urban district of Amsterdam Nieuw-West. More flexibility when designating buildings or areas for a particular use means that they can grow with the times. An area can then develop on the basis of the needs which exist within the area. With redesignation plans for offices, the municipality of Amsterdam seeks to maximise the elasticity by allowing flexible use. This gives the initiator a lot of freedom, relatively speaking, which increases the feasibility of projects. The municipality hands over part of the control to market parties. This has many potential advantages, such as less chance of buildings being permanently unoccupied and deteriorating, the prospect of new investments, more rapid response to market demand, better chances of funding due to greater sales opportunities, more possibilities for temporary (living) accommodation and freedom for the end user to use the area as he wishes. A feature of ploughing social profits back into urban renewal is that at least one party earns (or saves) something from it, this being the one who also invests in the project. This can also be in kind.

More information:
www.go-west.nu, www.urbanresort.nl, www.transformatieteam.nl

Housing/care with web portal in De Coninckshoven, Utrecht

Co-creation with residents in flexible residential care complex, with support from web portal



Idea of 'residential service zone' as starting point for design

The VINEX district of Leidsche Rijn is not only designed for young families, but also offers attractive, future-proof housing for the elderly. Complex 'De Coninckshoven' is made up of 80 social rented apartments for the elderly with or without assessed care needs, 24 psychogeriatric places for small-scale group living, places for short-term care, a Petit Café and offices for the care provider. The design was based on the idea of the 'residential service zone'. Through collaboration between the housing corporation and care provider, the programming, location and relation with other facilities were coordinated. This results in a 'care point' with a delivery/collection function, not only for the complex itself, but also for the (in the future increasing) demand for care in the whole district. By prioritising residential quality when developing the plan, the operational stability is safeguarded better. The complex can continue to compete with other residential forms. Functions which were not considered necessary for the concept were converted into extra square metres of residential quality. A lot of variation was introduced into the homes and residents were able to make choices in the design of kitchens and bathrooms. As a result, the dwelling is more in line with the resident's personal wishes and unnecessary reconstruction is avoided.

By combining the flows of funds from the care provider and the housing corporation, it was possible to develop a large multifunctional area. This is used by the regular residents for card evenings, birthdays and resident committee meetings, and by the care provider as a staff area and for activities for clients in the communal accommodation. These functions are being expanded further. In care provision, the emphasis is on 'simply living'.

The functions and operation of the small-scale group living are organised differently from in a traditional nursing ward. Housing and care are largely separated, so that people with and without assessed care needs can live there. To prepare for an increasing demand for care, account was taken of mobility scooters and a preparatory domestic automation package was created.

Web portal makes it possible to live longer independently

One of the special things about De Coninckshoven is the pilot with a web portal/community. Portaal wants to help people live comfortably and for longer in their own home. Lack of social contact, unfamiliarity with the (new) surroundings and considerations relating to safety and care are possible obstacles to continuing to live independently. The experiment in question was set up on the basis that a portal/community, in co-creation with the residents themselves, could help remove these barriers. The user-friendly portal has an open public section for information and PR and a closed part with handy apps and information. There is, for example, information about the district and the complex, as well as reports of meetings and the calendar of activities. It also provides various contact options, such as e-newsletters, notice board, forum, chat and video contact. Not realized, but possible, are combinations with domestic automation functions such as video contact, camera surveillance or energy tools. The web portal is used by the resident committees, among others. It offers them the possibility of co-creating with residents, by informing and involving them.

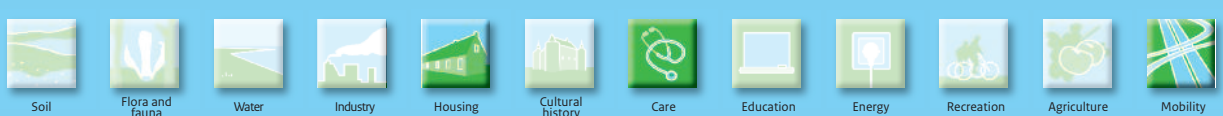
The functions of the portal are used to different degrees. For example, the residents are still too alert for telecare but the portal could play a role in this in the future, according to the residents and the care provider.Experience with this pilot provides a picture of the potential and preconditions of such a portal. The instrument can, for example, be deployed as early as the planning stage, for information about both the dwelling and the project as a whole. This would also make it possible to estimate the potential for care, domestic automation or (online) services better in advance. Potential applications of the portal, in combination with domestic automation or online services from a care provider, have been used with small-scale living, sheltered accommodation or a residential service zone. This can lead to new arrangements and to interesting business cases.

Parties involved

Housing corporation Portaal, care provider De Rijnhoven, Simpel Contact & Concepts, Province.

Bron/meer info

Portaal, Bart van der Laag, www.portaal.nl, Simpel Contact & Concepts, Annelies Lammers, www.simpelcontact.nl 06-34000 309



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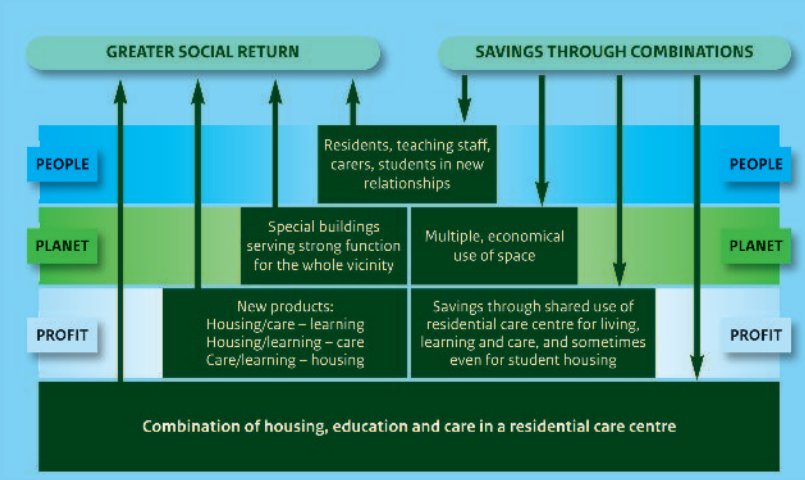
Living, learning and care in Gorinchem, Groningen and Zwolle

The combination of housing and care can be extended with an educational component



Care and education share property

In Gorinchem, you will find 'WLZ Het Gebouw', a unique multifunctional complex with lots of different functions. Housing and care reinforce one another as in every other housing/care combination, but here there are also a number of other functions, from which not only the residential care centre, but also the neighbourhood, benefits. 'Het Gebouw' is largely used as a school by the Camphusianum grammar school. In this case, there is no substantive relationship between the education and the housing and care functions. For a care institution, WLZ Het Gebouw serves as a base for the supply of care and welfare services to local residents. The complex also provides space for a dental surgery and a group practice for manual therapy and physiotherapy. Grand café 'De Lokaal' completes the range of facilities in this inspiring meeting place. The apartments in the adjacent Johan Frisoflat were renovated and 12 new 'life-cycle appropriate' homes were created above the complex's sports hall. A media library and conference facilities were also realized.

Wiel & Deal gewoon op kamers

In a unique project in Groningen, students perform a care function, although they are not training for the care sector. The Wiel & Deal Foundation enables students with a handicap to live in an adapted room in a standard student complex. At the moment, an apartment building for young people is being built in Groningen. Wiel & Deal is creating six units in this building, which will be completely suitable for students with an impairment. The other students not only provide round-the-clock care, but also organise it themselves. A regular care company serves as safety net and also arranges for the necessary specialist help. In this way, students with an impairment can live as ordinary a student life as possible.

Care courses benefit from practice and vice versa

verleende krachten

In Zwolle, the 'Ver(l)eende Krachten' Foundation is working on a small-scale concept with independent housing for people with a severe physical handicap, where they can get help and assistance 24 hours a day. In order to keep this affordable, these residents combine their budgets. They also let rooms to students who have taken training in care. In exchange for providing care, they can benefit from a low rent. Unlike regular students, such as Wiel & Deal, these students are more used to care duties and all that this entails than regular students. An additional idea here is that the complex could serve as a care centre for the surrounding district. A comparable initiative is Solink, in which the elderly let living space to students and the students provide services in exchange.

The following step is the integration of a care training course into a residential care centre. This has been incorporated into the plans for the new residential development Stadsoevers in Roosendaal. The students from the ROC Kellebeek College are trained partly in the district, which will be developed as a residential service zone. Kellebeek College will offer a number of care centre functions to the district. Various other Regional Training Centres (ROCs) already offer care training courses in partnership with residential care centres, including De Rietvinck residential care centre with De Rietvinck College in Amsterdam. By combining living, learning and care, three qualities emerge:

1. Housing/care – learning; learning what it is like to work in a residential care centre
2. Housing/learning – care; care in a residential care centre where students learn
3. Care/learning – living; living in a residential care centre in which there is also a care training course; this concerns care clients who live here, and in some cases students also live here.

Parties involved

Housing foundations, care institutions, educational institutions, municipalities

Source/more info

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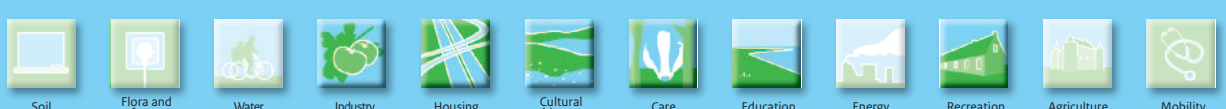

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Colofon

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