

Upside down, sustainable redevelopment of contaminated business estates



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Appendix 1 Soil contamination and soil remediation (Dutch)

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Foreword

Many towns and villages are plagued by undeveloped and considerably outdated business estates, often in centrally located areas. These are sites that are detrimental to the vitality of a town or village and, in extreme cases, can have a negative presence well beyond the boundaries of the site, the so-called 'brownfields'. The city stands to gain a lot with the redevelopment of these sites. Yet, this has happened only sporadically until now. To many, the soil and groundwater contamination on existing sites constitutes a large (financial) risk. It is easier, and more profitable for many parties, to develop new sites.

The potential value of sites in the city centre increases when there is scarcity. The unbridled development of new sites at the edge of built-up areas impedes the redevelopment of contaminated sites. We have come to a point where models based on continuous growth and the related organisational forms and forms of financing no longer function. The current context of the economic crisis and the changing demographics creates opportunities for an effective and sustainable development.

The former Ministry of Housing, Spatial Planning and the Environment (VROM) has asked us (BMC and TTE) to provide advice on the sustainable redevelopment of contaminated business estates. The key question is as follows:

How do we realise and organise a (new) process for the development and utilisation of undeveloped or outdated contaminated sites in an urban area?

Upside Down is not a manual and does not contain a turnkey and centrally directed plan. The report in front of you does outline the frameworks within which you can achieve an effective and responsible redevelopment based on local initiatives.



NLAgency/ 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.



Figure 1.1 Haarlem Gasworks. Soil contamination is the downside of the enormous industrial development experienced by the Netherlands.

1. Think differently, do differently

From the beginning of the soil remediation operation in the 80s of the previous century, we have been striving for multifunctional remediation. Despite an enormous investment in knowledge and the development of advanced techniques, the principle of 'everything must go' remains technically unfeasible for many sites. The remediation of soil and groundwater contamination is moreover so costly that the parties that caused it or the landowners do not want to pay for it or cannot pay for it.

More and more advisers and officials are realising that the soil has been irreversibly contaminated in many places. In 2008, the Soil Protection Act (*Wet bodembescherming*, Wbb) was amended and 'making soil suitable for the desired utilisation' is now the primary goal of soil remediation. Partially due to emotions ('the soil should be clean' and 'contamination makes you sick'), partially due to fear of claims ('will the government demand full removal in the future'), owners and investors proceed from much farther reaching objectives in practice. Herein lays a vicious circle:

- Emotional motives lead to remediation objectives that are environmentally unnecessarily stringent;
- The stringent objectives make remediation costly;
- Due to the high remediation costs, a large financial risk arises in redevelopment;
- Due to the financial and psychological risks, redevelopment is only justified after far reaching removal of the contamination.



The circle cannot be broken with technical knowledge or legislation alone. Significant changes must be made regarding the organisation and the financing of the restructuring of contaminated sites. In the following sections, we will outline the essence of our advice.

1.1 Redevelopment and soil contamination

Region-specific approach

An individual remediation of a few business locations is not effective for the redevelopment of old business estates. In order to provide a boost to an area, the focus must be on the potential of the entire area. The same goes for the remediation of multiple cases of soil contamination. These cases should not be dealt with individually, but in conjunction with the future utilisation of the area. After all, the latter determines which soil quality is desirable within the area. The owners and future users will then determine how to realise and finance this utilisation.

The user determines

For 'old' contaminations, the principle of 'the polluter pays' must be traded in for 'the user determines'. 'The polluter pays' does indeed fit in with the sense of justice, but not with reality and will in practice result in stagnation. Polluters are neither traceable nor are they able to pay the remediation costs. The future users pay, directly or indirectly, for the redevelopment and therefore also determine what should happen with the subsoil in an area.

Integration of subsoil and topsoil

Financial, functional, spatial, and environmental health qualities above and below the ground level determine the value of the site. This requires an integrated approach to subsoil and topsoil, in which creativity is needed in order to remain within the current laws and regulations which are mainly sector-oriented

and require that the competent authority and the legislator mandate or create room in that respect. An integrated vision on opportunities and ambitions for the subsoil and topsoil provides a foundation in this approach.

Local and tailor-made

Redevelopment of business estates by an umbrella organisation or by means of mandatory national enactments does not work. Generic measures fall short. Redevelopment requires tailor-made solutions at the local level, arrangements with local players, with a financing that ties in with the local interests and supported or initiated by local authorities.

Phasing

Even though the redevelopment of contaminated sites can be divided into 'standard' phases, it still remains tailor-made. The subsoil is complex and the collaboration between the various actors differs from case to case and changes in the course of the process. In order to prevent stagnation, it is important to conclude steps with a well-substantiated and supported decision.

1.2 Investments and revenues

Focus on increase in value

The perspective on value creation is guiding in the redevelopment of business estates. All partners must benefit from the new developments. Clearly, this concerns money, but also social, societal, cultural, and spatial gains in an area and its surroundings. The investment in increasing value must result for all partners in a positive contribution to their objectives.

Total value of ownership

Applying 'increase in value' as the guiding principle for area development implies a way of funding redevelopment and remediation that is fundamentally different from the current practice. The emphasis is not on the all-in costs of construction, but on the costs of building, utilisation, management, and maintenance over the entire lifespan ('total cost of ownership'). The 'total value of ownership' is important to value creation.

The business case

A balanced business case is a condition for area development. This means that economic principles constitute the basis for arrangements with realistic investment risks. It is important that all partners involved can apply longer-term value creation in their business model. Investments by public parties are a part of the business case and these parties balance the social benefits against the financial contributions.

Value units, investments, and revenues

Area development begins with a search for the specific value units of the site. The excess value of an effective redevelopment is intended for investors and risk-bearing partners. Some revenues can be expressed in euros. Direct revenues come from local energy generation, for instance, and indirect revenues can be expressed as an increase in the price per square metre, for instance. The revenues from social, societal, and cultural improvements are more difficult to quantify. The development of contaminated sites will only be successful if all partners subscribe to the investments and the distribution of the revenues. In 'think differently, do differently', the financial 'lifecycle' and consequently the search for the value units and the identity of an area, constitute an integral part of an urban design.

1.3 Collaborating in the market

Use the market

Collaboration is the key to a successful redevelopment of contaminated sites. In addition to an effective collaboration in the public domain, the redevelopment also requires an authority that collaborates with various public parties on the basis of equality. Through the use of the creativity and possibilities of the market parties, e.g. developers/builders, managers, energy companies, financiers/investors, users, and future users, opportunities arise for increasing value. The market parties determine the financial feasibility and know the demand for the various alternatives. The necessary collaboration means a change in culture for all actors.



Frameworks and freedom

An equal collaboration between public and private partners requires sound agreements about e.g. concrete results, ties and support, measurability and monitoring, risks, responsibility, and accountability. All partners are challenged to come up with inventive ideas and solutions. Important tasks for the authority are encouraging, facilitating, and offering confidence. Offer opportunities and be as little restrictive as possible. Strive for more freedom, combined with a solid offer of positive temptations and a keen eye for misuse and abuse. The authority clearly indicates in advance where the boundaries are while also enforcing them.

Make the risks clear

Private parties want certainty about what they are about to embark on and must be able to trust the other parties. Yet, cost control is also becoming increasingly more important for authorities. The risks of new arrangements and of the business case must therefore be clear before the parties make a decision about the redevelopment of an area.



Figure 1.2 Until the middle, dumping chemical waste was a customary and permitted form of waste treatment

2. Redeveloping brownfields

The current organisation of the remediation of brownfields can be compared with a *qwerty* (see frame). It was once an excellent solution to the problems prevailing at the time. Nowadays, it no longer matches the current problems and needs. The current protocolisation and laws and regulations regarding contaminated sites can be seen in a similar perspective. The policy once formulated in light of a single incident (Lekkerkerk) is still in effect, but is now obsolete and overtaken by the developments.

QWERTY

At the time of the old typewriters, the QWERTY layout was intentionally selected for the keys. The purpose was to incorporate an automatic inertia in the typing speed of the nimble-fingered typists, to prevent keys from touching each other or from getting damaged. The arrival of the PC has made this precaution redundant. Yet, the slower QWERTY remained in use.

2.1 Obstacles to redevelopment

In the last 30 years, the perception of companies and project developers that things are not that urgent, that remediation is meaningless, and that they do not have to pay for it in any case, has been confirmed time after time. Better consideration in planning new industrial estates and restructuring ageing estates can free up a great deal of space for new developments in the existing city. A major improvement in quality is sorely needed on many dilapidated estates. Together, the old business estates to be remediated amount to approximately 16,000 hectares within the existing city, often on good locations!



'administrative pressure', and 'excessive protocolisation'. Informal aspects such as perception, knowledge, and confidence have possibly an even bigger impact on the remediation of soil contamination.

2.2 Ambition and need for quality boost

The economic crisis and the changing demographics make the restructuring of business estates more relevant than ever. The impact of the economic crisis on public as well as private finances is considerable and has effects that cause long-term erosion of the resources of the public sector. In the next years, the government will considerably cut back in subsidies and the possibilities for tax incentives will be strongly reduced. The review procedure targeting the living environment and nature affects physical investments in urban and rural spatial development and in soil and groundwater quality, among other aspects. In the private sector, the economic crisis results in declining profitability, pressures on turnover, and demise of companies. The private sector's and citizens' demand for new projects is rapidly declining.

In addition to the financial crisis, many municipalities now also struggle with the consequences of changing demographics. This refers to e.g. a declining number of inhabitants, a declining number of households, a shrinking labour force, and less demand for companies, houses, facilities, etc. with as a result that the municipal development company is no longer an obvious source of income. As the entire economy (local, regional, national) is based on growth, the consequences of the shrinking population are dire. Fewer inhabitants means less income for a municipality. Less inhabitants also means less construction, less production, less pressure on space, and therefore less efficient use of space.

2.3 Exploiting opportunities

It is evident that the current spatial development model, based on principles of settlement via continuous growth of the urban area and increasing land prices, is no longer functional. This new scarcity also offers opportunities. More than ever, the quality of an area plays a role.



The contaminated sites in the city centre will gain more potential value by dealing astutely with 'scarcity', for instance by stopping the unbridled growth of new sites. In addition, the subsoil is a source of opportunities. By exploiting these opportunities, the subsoil contributes to the sustainable development of an area. From an environmental perspective, the risk of contamination is limited. After all, the Soil Protection Act provides that the most important objective for remediation is to enable the desired aboveground utilisation. The complete removal of contamination is almost never necessary for that purpose. In order to make the restructuring a success, it is essential that the focus is on the potential use of an area and not on the contamination itself. The time has come for a new approach.

3. Scope: area-oriented, integrated, and sustainable

Generic government measures are falling short. The restructuring of business estates will not be achieved by an umbrella organisation or by means of mandatory national enactments. Tailor-made solutions, matched to the undertaking, the vision, and the actors are necessary. It is a matter of area-oriented tailor-made solutions with local involved actors.



3.1 Area-oriented tailor-made solutions

The customary approach in soil remediation is 'case-oriented'. A case has an owner who has to resolve the problem, literally, within his own boundaries. The solution consists of replacing the case-oriented principle of 'the polluter pays' by 'the polluter is responsible for the value (increase) of the area'. By focusing on the area, the restructuring of business estates can occur in an effective and efficient manner. However, this requires local tailor-made solutions.

The first step towards area-oriented tailor-made solutions is to clearly mark the boundary of 'the area'. In the case of an integrated coordination of topsoil and subsoil, coordination takes place between spatially functional areas (the business estate, the city centre, the corridor) and system boundaries of groundwater flow, seepage, soil structure, etc. A usable delineation goes much further than the property boundaries of the land register and takes into account aboveground and underground factors. Thorough knowledge of the local situation, aboveground and underground, is essential.

An area-oriented approach literally breaks through boundaries and encourages innovative technical, financial, and organisational 'arrangements'. The result of a proper delineation of an area is that costs and revenues set off each other.

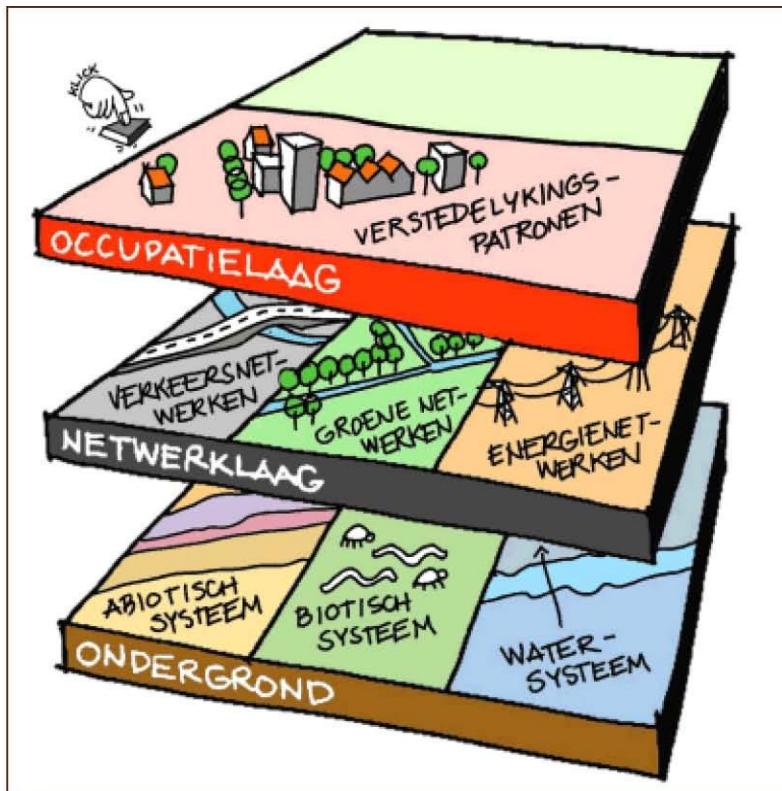
3.2 Integrated vision

Integrally involving the aboveground and underground themes and functions from the beginning of the planning process creates insights in bottlenecks and opportunities. Integrally means functionally, spatially, and technically. Policy objectives, ambitions, and interests of the actors also play a role in forming the vision.

Long-term choices from various angles offer future prospects for an area. Complementarity and balancing of various disciplines are key concepts in this case. Visions for the landscape are common, but a vision for the subsoil is not. A vision for the subsoil is a tool that sets out the ambitions, currently still too often insufficiently recognisable, for the subsoil in the spatial development process. The layer approach allows for the topsoil and subsoil to be considered as an integrated whole.

3.3 Sustainable area development

'Sustainability' as a balance between 'profit', 'people', and 'planet' is a useable assessment framework. The challenge resides in the acceptance of the idea that the economy, people, and nature strengthen each other. In the process, investments and revenues must be weighed against each other, e.g. an increase in the price per square meter, the improvement in the quality of living environment, and safeguarding ecological value.



UIT
UIT

Figure 3.1 In the layer approach (VROM, 2005), the former Ministry of Housing, Spatial Planning and the Environment makes a distinction between an occupation layer, a network layer, and a subsoil (source and more information (Dutch): www.ruimtexmilieu.nl).

4. Increase in value

Old ideals and perceptions appear to be no longer valid. The solution resides in the design of a structure in which reason trumps prejudices. A structure in which a long-term increase in value of an area is preferred over quick profits of individuals.

4.1 Tempted by the positive: a perspective on value creation

Encouraging, facilitating, and trusting are the key concepts of the temptation of the positive. No repression, but offering opportunities. More freedom, combined with a solid offer of positive temptations and a keen eye for misuse and abuse. Partners must benefit from the developments. Temptation can reside in anything that represents a certain value, such as financial, social, societal, cultural, and aesthetic qualities. The underlying principle is to encourage and develop a perspective on value creation.

We will have to think about the functions that can go underground. Which infrastructure in which activities will in any case be moved underground in the coming decades, which one will never go underground, and what are the consequences thereof for the soil? A generic framework must be developed for the weighting of specific value units. In this case, an obvious selection is sustainability in the sense of 'increase in value', a more pleasant living environment, and a better environment at lower costs.



4.2 Total values of ownership

Applying 'increase in value' as the guiding principle for area development implies a way of funding remediation operations that is fundamentally different from the current practice. The emphasis is not only on the all-in costs of construction, but on the total costs over the entire lifespan ('total cost of ownership'). Here, the costs of building, utilisation, management, and maintenance roughly amount to one-third of the total. A utilisation which includes the costs measured over the entire lifespan of a specific value or an area in its entirety enables co-financing by investors with a longer time horizon, such as pension funds.

In light of the desirability of value creation, we could also refer to the 'total value of ownership'. The value requires tailor-made solutions and sustainability, as the value (financial and societal) is the outcome of a collective perspective. As the value increases, this will be applauded by the owners of the area. If no one can substantiate that a certain remediation measure will yield an improvement (in quality) in the future, then it is literally a waste of money and thus not an investment in sustainability.

4.3 The business case and other arrangements

In a business case for area development, the value units of a location will emerge. Value units can be technical in nature, e.g. forms of local energy generation such as ATES. Aboveground interventions focused on strengthening the socio-economic climate, social interaction, and cultural activities also appeal to the interests of stakeholders. A business case makes the social and economic revenues and costs more explicit. Key questions include:

- Which social issue are we actually tackling and what are we willing to do for that?
- What are the figures and assumptions behind the project? What will happen if we fail to act?
- What are the anticipated social and economic costs and revenues? How do we ensure a healthy return on invested capital?
- How does this project contribute to the strategic objectives of the public and private parties involved?
- Which risks do we incur in this project and how can we manage them?
- What do the costs, revenues, and risks depend on and which parties have influence in that respect?



The business case is a structure that can be adapted to the needs of the situation. It can be a light and concise working method or a rigidly formalised and extensive research approach. It is a generic term for the creation of an arrangement with multiple partners, focused on value creation on the basis of healthy economic principles.

A business case requires the parties involved to have an entrepreneurial attitude, focused on exploiting opportunities and on the surplus value for the parties involved. Thinking in broader value concepts is necessary, certainly in these financially and economically uncertain times.



5. Organisation and financing

The creed of this Cabinet is 'vanquish or perish'. The choice was made for selectivity and strengthening the local implementation. This means more independence and responsibility for the provinces and municipalities and also more possibilities for acquiring their own revenues by applying the direct benefit principle. Market parties plays an important role in this respect.

5.1 Lead and convince

We will not make any progress by strictly complying with the rules and procedures. In a networked society, it comes down to a good collaboration between parties, authorities, and civil society and private organisations. That collaboration is necessary for an effective approach to social issues. In its role as a network player, the authority is visibly present in society and puts itself at the service of the local community. Characteristics of such an authority are: proactive and responsive, accessible, flexible, and accountable to all. The strength that a municipality or another authority succeeds in developing in that respect depends on the ability of the administration and of staff members to operate in networks.



Operating in the network requires a fundamentally different mission statement from the authority. The authority is now much more output-oriented in its actions (hence, more focused on a sustainable final result) than input-oriented via the use of coercive tax and legal measures. It can influence risks and facilitate and inspire other partners. 'Good governance' requires proper agreements, about e.g. concrete results (output), ties and support, measurability and monitoring, risks, responsibility, and accountability.

5.2 'The' market does not exist

The role of the market can be very diverse: from generating knowledge, expertise, and (innovative) ideas, and performing and applying research, to the design, building, financing, and managing of infrastructure. Depending on the characteristics and the size of the area development, the selection of possible private players and their respective 'roles' is in principle unlimited.

The market players are e.g.:

- Developers/builders;
- Administrators;
- Energy companies;
- Financiers/investors;
- Users and future users. They are not yet physically present, but their interests must be promoted. These interests are the interests of the users collectively, rather than of company. In this respect, there is a role for e.g. a park administrator or the municipality.

5.3 Distribution of income and expenses

Who profits from the income and who bears the expenses? The revenues of e.g. energy generation in the area logically revert to the area administrator. It is also imaginable that the authority will take measures that impact the values of capital goods or 'assets' in the area, in the positive as well as in the negative sense. Agreements with apportionment formulas will have to be made in advance in that respect. For that matter, just because of this complexity, it is recommended to make the authority a part of the consortium formed for the (re-)development of the area.

By offering consideration, an authority can convince parties to invest in the redevelopment of an area. That way, the authority can attract financing for the realisation of a broad social programme. In return for realising social housing in the development area, the local authority can make concessions to housing corporations to sell or upgrade existing social housing elsewhere in the region.



5.4 Risk management - guarantee

Risks constitute an obstacle to the redevelopment of a contaminated site. Due to the risks, insurance premiums become prohibitively expensive and insurers will not perceive the redevelopment as an opportunity. With a guarantee from the authority for the plumes in the soil, the owner of the land can buy off the risks. The purpose of this is not to remove the plume, but to influence and control the behaviour of the plume in an area, e.g. in relationship to drinking water extraction. The land remains the property of the original owner. Hence, the guarantee from an authority means a change in perception and approach, better control of risks, and improved insurability.

A non-negligible psychological effect of the guarantee is the restoration of the reliability of the authority. If the authority provides a guarantee, then the other parties will also dare to take more risk. The guarantee for risks in order to enable investments in an area will result in revenues in the future (including for the authority).

5.5 Public-private partnerships

The most far-reaching and most logical variant in area management is a concession on the basis of a PPP structure. The first forms of a PPP structure are now surfacing in the Netherlands, e.g. Food Center Amsterdam, Almere Hout, and the A15 MaVa. The concept of PPP (public-private partnership) more or less expresses an intention. However, the contract law elaboration of that intention can vary.

An area-oriented PPP focuses on the development of the value of an area in the longer term. This requires rethinking the classic budget structures and cycles in order to allow for other financing structures, joint ventures, and contractual forms. In PPP, the authority acts as the concession-granting entity and, depending on the undertaking, also as the risk bearing-party. In such a situation, the authority sets conditions and requirements in the negotiation, just like the other stakeholders.

It is crucial to recognise that multiple parties from the public, private, as well as semi-public sector are involved. Every location has its own stakeholders and shareholders with their own interests. In the case of an area-oriented PPP, the parties create a package of values and themes. An integrated approach requires a new type of arrangement that allows for and safeguards this collaboration. In this case, the parties do not negotiate on the basis of promoting their own interests, but they all strive collectively for a better and more sustainable solution. The challenge is to realise permanent collaboration that will continue after the start of the management phase. The conversion of industrial heritage is an example of inner-city redevelopment in which these principles are already being applied. What is new is that this variant does not just concern the development, but also the utilisation, because value creation during the contract period is necessary to ensure eligibility for financing and guarantee a return.

The fact that each location has its own stakeholders and shareholders means that there is always a different dynamic. In addition, the quality and professionalism of parties varies strongly. Dictating one concept or arrangement will mean that formal positions dominate, while informal arrangements increase the chances of a successful collaboration.



5.6 Phasing

It can be faster and better. This was also argued by the Elverding 1 Committee and the Vermeegen 2 Committee. The purpose of the 'Faster & Better' project is to halve the completion time of new infrastructure projects and spatial projects. It is also desirable to improve the planning and decision-making in complex area developments such as the redevelopment of contaminated business estates. Fundamental discussions continue to impede the progress here and the lack of focus also slows down the planning and decision-making. Due to the complex subject matter, the cultural differences of the development planning, and the normative environmental law, it is important for the progress in the decision-making to conclude the steps with a supported and well-substantiated decision. The start of the process is the time to lay down agreements, to determine the focus, and to express expectations.

¹ 'Sneller & Beter' over een Versnelling Besluitvorming Infrastructurele Projecten (Commissie Elverding, April 2008)
² Advies toepasbaarheid van Sneller & Beter (S&B) op ruimtelijke projecten (November 2010, commissie Vermeegen)

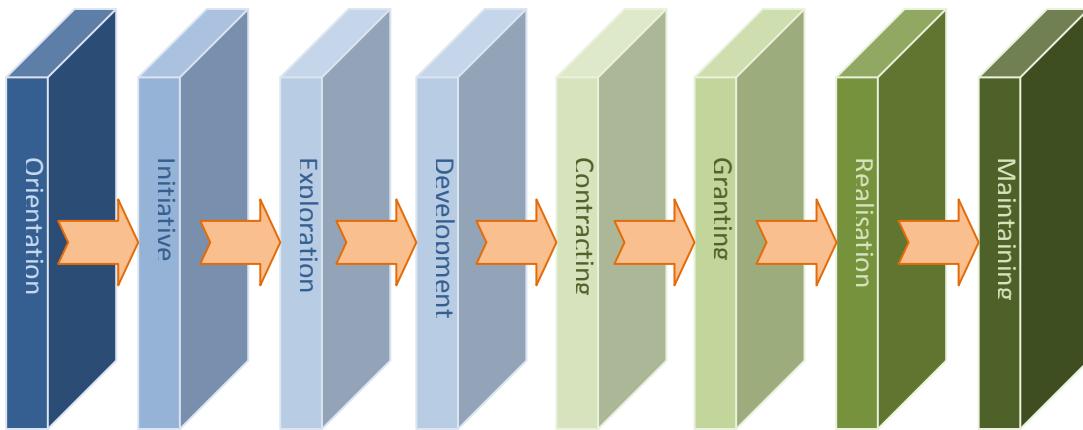


Figure 5.1 The phasing of complex projects such as the development of contaminated business estates. The roles of the various actors are listed per phase in Appendix 2.

TITLE

5.7 Tools

Development rights and ownership

The position of the owner is a crucial factor in the development and utilisation of an area, because the law of the Netherlands links the development rights to the property rights. As a result, every owner can become a developer. It is not always wise, but it is possible! Developers can acquire property through purchase or options. There are countries in which the developer will not be the owner, but the party with the best plan. This is more difficult under our laws.

The authorities do have the tools of expropriation and the Municipalities (Preferential Rights) Act (*Wet Voorkeursrecht Gemeenten*, WVG) at their disposal. Creating a preferential right enables the municipality, the province, or the state to be granted priority in acquiring the ownership of land and buildings in an area in which new spatial developments are planned, in order to prevent speculation. Expropriation of the contamination in the context of a more important public interest belongs to the toolkit of the authorities. In the case of *brownfields*, authorities can therefore make use of expropriation and the Municipalities (Preferential Rights) Act. This does not yet happen in current practice.

Contracting

In a DBFMO structure (Design, Build, Finance, Maintain, and Operate), the market party/consortium of market parties is not just responsible for the financing, the design, and the building of an object, but also for its maintenance and for providing the facilities services for a period of e.g. 25 or 30 years. For the authority, this means that it will no longer negotiate separately with architects, contractors, banks, cleaners, and security companies, but that all private parties will unite in a single consortium that is responsible for everything from design to maintenance, from the beginning to the end. It is essential in that respect that the building as well as the complete package of provisions and facilities services fulfil the requirements of the authority.

For that matter, the national government has in the meantime declared DBFMO to be the policy for local authorities on the basis of the 'Op de goede weg, op het juiste spoor' (On the right path, on the right track) report of the Ruding 3 Committee. With such a structure, the authority transfers the risks to multiple parties. Moreover, experience shows that the quality of the services improves when involvement and responsibility are distributed among the parties. Flexibility is an important condition in a DBFMO structure, but at the same time, so are both transparency and clarity.

Collective care

An area or project sustainable service company (*Duurzaam Dienstenbedrijf*, DDB) is an example of an existing structure that retains the created value in the area. Value units are present in the area not only at the moment of building, but also afterwards. An increase in the land value translates into the total value of the area. The supply of green electricity, thermal energy (ATES) or other infrastructural services also generates permanent income and thereby increases the value of the area. As a result, a DDB is a derivative of the Owners' Association who, as a collective, takes care of the 'management and maintenance' of the area and who can also pre-finance investments for e.g. sustainable energy systems.

Revolving fund

A revolving fund is a fund that has been created by the government and/or the market and that provides loans for the utilisation of the specific values of the area. The loans are paid back with interest, so that sustainable value creation is safeguarded. The fund has a considerable impact via a leveraged structure with private capital.

FES and MIRT

An important part of the proceeds of the natural gas exploitation end up in the Economic Structure Enhancement Fund (*Fonds Economische Structuurversterking*, FES). With FES, investments take place to strengthen the knowledge infrastructure, the physical infrastructure, and the urban area. The funds for the physical infrastructure and the urban area end up in the Multi-Year Programme for Infrastructure, Spatial Planning and Transport (*Meerjarenprogramma Infrastructuur, ruimte en transport*, MIRT)

BNG

When a municipality participates in a PPP consortium, financing from the Bank for Netherlands Municipalities (*Bank Nederlandse Gemeenten*, BNG) is an option. The risk for the area administrator is larger than in 'normal' government activities, which results in tighter guarantees and higher interest charges.



Leasehold

The problems of municipalities with reduced revenues from land utilisation can be converted into opportunities by means of leasehold structures. The owner (municipality/authority) remains the owner of the contaminated subsoil, but can allocate the land for redevelopment. Both parties record their agreements in a lease.

3 Advice from the Committee on private financing of infrastructure (*Commissie private financiering van infrastructuur*), May 2008.

External foundations

The comprehensive execution of a remediation has been implemented with success by 'Bodemcentrum'. The Soil Centre Foundation (*Stichting Bodemcentrum*) assumes the technical and financial risks for a fixed fee and provides security (including financial). If the final costs turn out to be lower than expected, the profit is for the Soil Centre. For the financing, Soil Centre has made agreements concerning the Industrial Sites Scheme with the former Ministry of Housing, Spatial Planning and the Environment (VROM). This approach cannot be applied in exactly the same way to business estates, but the concept of an institution which technically as well as financially unburdens site owners is worth the effort of further elaboration.

Conclusion

As already indicated in the foreword, Upside Down does not contain a turnkey plan. However, we hope that the preceding 15 pages have inspired you to make your own plan. After all, the remediation of a contaminated business estate is always a tailor-made solution. It begins with encouraging, generating enthusiasm, and facilitating the local parties involved.



ONDERSTEBOVEN

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ONDERSTEBOVEN

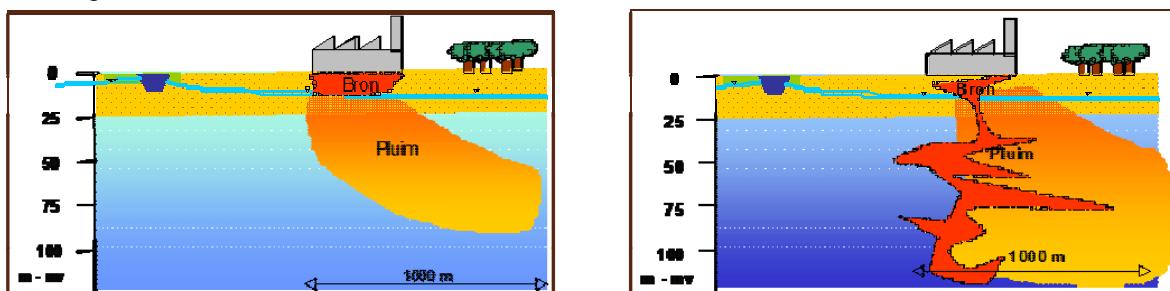


Bijlage 1 Bodemverontreiniging en bodemsanering

Waar mensen leven wordt de bodem verontreinigd. De Romeinse historie van veel Nederlandse steden uit zich ook in een verhoogd loodgehalte in de bodem. Met de komst van de gasfabrieken in Nederland halverwege de 19e eeuw start de grootscheepse industrialisatie. Het is ook de start van het fenomeen bodemverontreiniging. Om de problematiek rond grond- en grondwaterverontreiniging te kunnen begrijpen is het belangrijk dat men de basiskenmerken van grond- en grondwater kent.

Bron-pluim

Bij het beoordelen van een verontreinigingssituatie is het belangrijk onderscheid te maken tussen bron en pluim. De bron is de verontreiniging (olie, teer, oplosmiddelen) zoals die in de bodem is terechtgekomen.



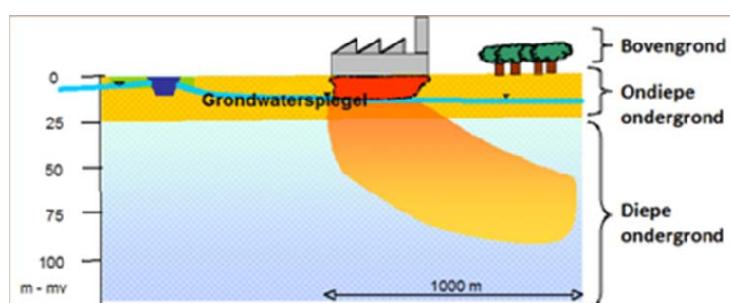
Links een voorbeeld van een bron lichter dan water (olie, benzine). Rechts een schematische weergave van een bron van een verontreiniging zwaarder dan water (chloorhoudende oplosmiddelen, teer).

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In de praktijk kan de bron vaak niet worden weggegraven: de verontreiniging bevindt zich onder bebouwing die niet kan worden gesloopt, of zit veel te diep (oplosmiddelen kunnen tot tientallen meters in de bodem ‘zinken’). Ook de zogenaamde ‘in-situ’ sanering (spoelen van de bodem en/of het laten afbreken van verontreiniging) werken lang niet altijd goed. Veel verontreinigingen komen terecht in slecht doorlatende bodemlagen en zijn daarmee vrijwel onbereikbaar voor de in-situ technieken. Het is niet uitzonderlijk dat er duizenden kilogrammen aan verontreinigingen in de bodem zijn terechtgekomen. Grondwater is al verontreinigd als het microgrammen per liter bevat (1 kg is $1000 \times 1000 \times 1000$ microgram). Een bron van bodemverontreiniging kan dus heel langdurig (>100 jaar) enorme volumes grondwater blijven verontreinigen die zich zowel in de diepte als in de lengte over grote afstanden verspreiden.

Boven- en ondergrond

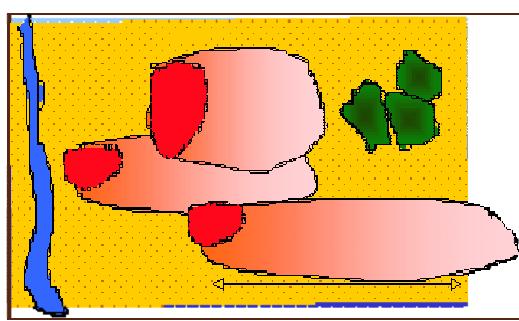
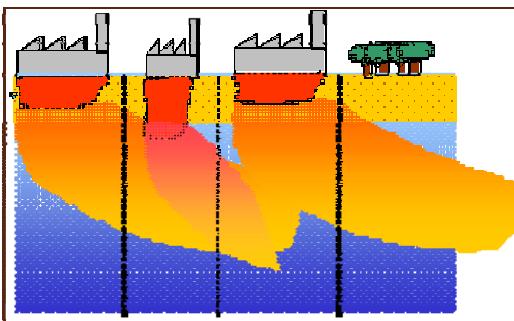
Voor het bepalen van de risico’s en het vaststellen van de aanpak van de verontreiniging is het belangrijk dat er onderscheid gemaakt wordt tussen het bovenste deel van de bodem en de diepere ondergrond. Het bovenste deel staat in directe relatie tot de bovengrond. Hier lopen de kabels en leidingen, spelen kinderen en verbouwt men gewassen. De relevante kenmerken zijn veelal locatiegebonden, verontreinigingen hebben een plek en een eigenaar. En die ziet vaak het nut en de noodzaak in om dit deel van de ondergrond aan te pakken.



De diepere ondergrond is veel zelfstandiger systeem. De processen hebben betrekking op veel grotere gebieden en ook de invloed van acties houden niet op bij de locatiegrenzen. Bij de aanpak van bijvoorbeeld een grondwaterpluim heeft men daarom vrijwel altijd te maken met meerdere partijen. Doordat die partijen bovendien vrijwel nooit direct last hebben van de diepere verontreiniging ontbreekt de drive om er iets aan te doen.

Door en over elkaar

Uit het bron-pluim verhaal volgt dat een relatief kleine bron (één enkele wasserij bijvoorbeeld) het grondwater binnen een groot gebied kan beïnvloeden. Binnenstedelijke gebieden en bedrijfsterreinen herbergen vaak meerdere bronnen, veroorzaakt door verschillende bedrijven op verschillende momenten. Verontreinigde grondwater stopt niet bij een perceelsgrens, een (bedrijfs)terrein is al snel een wirwar van in elkaar overlopende pluimen. De individuele verantwoordelijkheden bepalen is lastig, de verontreinigingen individueel aanpakken technisch onmogelijk. Een gebiedsgerichte benadering van de ondergrond is noodzakelijk.



Zijaanzicht (links) en bovenaanzicht (rechts) van de situatie in veel binnenstedelijke gebieden en bedrijfenterreinen. De pluimen van grondwaterverontreiniging overlappen elkaar en overschrijden de perceelsgrenzen. Het is niet mogelijk de verschillende gevallen individueel aan te pakken.

Bodemsanering

Dertig jaar geleden werd Nederland voor het eerst bewust geconfronteerd met het fenomeen bodemverontreiniging. De emoties van dat moment (bijna iedereen herinnert zich het beeld van graafmachines ónder de huizen van Lekkerkerk) hebben het beleid voor de decennia daarna bepaald. 'Alles moet weg' en 'De vervuiler betaalt'. Achteraf kan worden geconcludeerd dat deze ambitieuze doelstellingen de saneringsoperaties tot op heden ernstig hebben gefrustreerd.

In de jaren '80 wordt bodemsanering als een civieltechnische uitdaging benaderd: graven. Al snel blijkt dat multifunctioneel saneren op deze wijze niet alleen technisch erg lastig is, maar ook maatschappelijk ongewenst is (weer die graafmachines onder de huizen) en onbetaalbaar. Bovendien blijken er vél meer locaties verontreinigd dan verwacht.

De conclusie lag voor de hand: 'het moet anders'. De doelstellingen werden echter niet veranderd. Vervuilde locaties moesten en zouden worden gesaneerd. Vanaf het begin van de jaren '90 heeft een eindeloze stoet van technische innovaties de revue gepasseerd. Gestimuleerde biologische afbraak, stoominjectie, electroreclamatie, surfactant sanering, reactieve schermen, natuurlijke afbraak, en chemische oxidatie beloofden telkens goedkoper, beter en sneller te zijn. De doelstelling (bijna) 'alles moet weg' werd echter nooit gehaald, de kosten vielen steeds tegen en de vervuiler betaalde nog steeds niet.

Voor terreineigenaren gold in steeds sterker mate dat uitstel loonde, er werd niet of nauwelijks gehandhaafd. Ook de overheid zelf saneerde uitsluitend als het echt niet anders kon. De bodemsaneringsoperatie stagneerde. De aanpak is in de loop der jaren sterk in ontwikkeling geweest, maar na 30 jaar moeten we concluderen dat de resultaten mager zijn en dat het tijd is voor een nieuwe aanpak.



Bijlage 2 Rolverdeling bij complexe ontwikkelingsprojecten

ONDERSTEBOVEN

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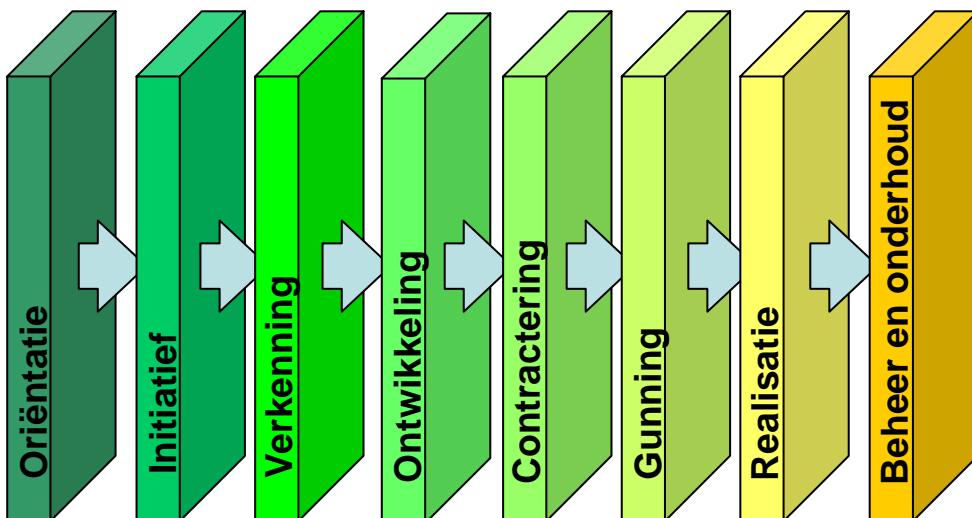
TITLE

ONDERSTEBOVEN

Inleiding

De fasering in werkzaamheden zoals gegeven in onderstaande figuur is in principe voor alle van verouderde bedrijventerreinen bruikbaar. De aanwezigheid van bodemverontreiniging vormt een extra uitdaging bij de herontwikkeling maar is niet allesbepalend.

De doorlooptijd van de verschillende fasen is afhankelijk van de complexiteit van het probleem. Voor de voortgang en de succesvolle afronding van het proces is het belangrijk dat iedere fase wordt afgesloten met een breed gedragen besluit. In de loop van het proces zullen de rollen van de initiatiefnemers veranderen. In deze bijlage beschrijven we welke bouwstenen worden ingezet, wie de beoogde initiatiefnemers daarbij zijn en wat het resultaat van hun inzet is.



De fasering van complexe projecten als de ontwikkeling van verontreinigde bedrijventerreinen.

Fase 1: oriëntatie.

De gemeente is initiatiefnemer: de aanpak van het bedrijventerrein is noodzakelijk om de gewenste (bovengrondse) ruimtelijke ontwikkelingen te realiseren. Belangrijk is dat de ondergrond vanaf het allereerste begin volwaardig wordt meegenomen. Wat zijn de kenmerken van de verontreiniging. Niets frustrert de herontwikkeling zo sterk als verontreinigingen die te laat in het proces worden meegenomen.

De oriëntatie staat echter vooral in het teken van kansen. Het gaat om het zoeken naar partners die geïnteresseerd zijn om te bezien of een locatie ontwikkelbaar is, en binnen welke randvoorwaarden. Vaak zijn er meerdere initiatiefnemers en nog meer partijen betrokken. Het is de fase van 'creatieve dialoog', waarin verschillende allianties samen ontdekken of in casu gebiedsontwikkeling (op termijn) interessant zou kunnen zijn. Contouren van ideeën, beelden, perspectieven en verwachtingen worden bespreekbaar gemaakt.

Deze fase sluit bij voorkeur af met een presentatie van het rapport aan de verschillende stakeholders in het gebied en het vaststellen van de mogelijke vervolgstappen met dezelfde stakeholders.

Initiatiefnemer : Overheid

Overige actoren : Bedrijven, parkmanagement,

Product : Oriëntatie op de ondergrond bedrijventerrein x

Doorlooptijd : 1-2 maanden



Fase 2: initiatief / visievorming.

In de initiatieffase gaan partijen concreet invulling gaan geven aan de ontwikkeling van het gebied. Het initiatief ontwikkeld zich langs twee lijnen: enerzijds gaat het om het denken in scenario's, varianten, alternatieven die uiteindelijk de scope van een project gaan bepalen. Tegelijkertijd tasten de betrokken partijen ook elkaars positie en inzet af: dialoog wordt consultatie. Het ligt voor de hand dat de overheid in deze fase (nog) de regierol vervult maar dat is niet noodzakelijk.

Belanghebbenden ontwikkelen in onderlinge afstemming een visie op een integrale benadering van de onder- en bovengrond van het gebied. Dit vraagt enerzijds een sterke inbreng van de actoren, maar vraagt ook om flexibiliteit om zich aan te passen aan de wensen en belangen van anderen. Een logisch gevolg is dat partijen kunnen toetreden en uit treden in deze fase van het proces en ook het plangebied kan worden aangepast.

Het samenspel van actoren, waarden en ambities is een dynamisch en iteratief proces dat resulteert in een nieuw evenwicht. Om tot een vruchtbare samenwerking te komen is ondernemerschap nodig: geloof in de baten van samenwerking, de durf om transparant te opereren. Het belangrijkste doel van deze fase is wellicht het creëren van onderling vertrouwen en een daarop gebaseerde besluitvorming bij de verschillende partijen.

Initiatiefnemer : Meestal overheid
Overige actoren : Bedrijven, parkmanagement, energiebedrijven,
Product : Visie ondergrond bedrijventerrein x
Doorlooptijd : 3-6 maanden

Fase 3: verkenning scenario's en samenwerkingsvormen

Nadat ideeën (fase 1) gekoppeld zijn aan 'eigenaren' (fase 2) wordt verkend welke waardecreatie mogelijk is bij de herontwikkeling. De scenario's worden door de betrokken actoren uitgewerkt tot business ideeën. Het verkennen en onderkennen van de risico's en het maken van afspraken over wie welke risico's voor zijn rekening neemt zijn nu heel belangrijk. Ook de mogelijke organisatievormen en rol daarin van de verschillende publieke en private actoren komen nu uitgebreid aan bod.

De veranderende rol van de overheid wordt in deze fase goed zichtbaar. Samenwerken is dynamisch, er moet voortdurend worden ingespeeld op actuele ontwikkelingen en signalen. De overheid moet risico's kunnen en durven nemen. Dit geldt bij uitstek in situaties waar een regierol van de lokale overheid van belang wordt geacht. De voortrekkersrol vraagt om ambtenaren met ondernemerskwaliteiten. Tijdens het proces ontstaan nieuwe ideeën en nieuwe kansen voor samenwerking die moeten worden benut. Het gemeenschappelijke belang wordt bestendigd, er ontstaat een permanente samenwerking.

Initiatiefnemer : Meestal overheid
Overige actoren : Bedrijven, parkmanagement, energiebedrijven,
Product : Business idee ondergrond bedrijventerrein x
Doorlooptijd : 3-6 maanden

Fase 4: ontwikkeling en business cases

Het opstellen van de business case is de zakelijke rechtvaardiging van een project. Niet alleen wordt uitgewerkt wat de beoogde gebiedsontwikkeling inhoudt. Er wordt ook vastgesteld welke waardecreaties door welke partijen over de hele periode (levensduur) van het project tot exploitatie zullen komen.

Het doel is de beste oplossing tegen de laagste inzet van middelen. De zoektocht naar een gezamenlijk oplossing vraagt durf, creativiteit en innovatiekracht van alle deelnemende partijen. Omdat individuele belangen van de partijen de samenwerking niet mogen frustreren en de opgave complex is, is het aan te bevelen een onafhankelijke bemiddelaar in te zetten die dit zoekproces faciliteert en vanuit zijn onafhankelijke rol partijen ondersteunt met adviezen en/of onderzoek, het uitvoeren van pilots en dergelijke. Om gelijkwaardig in het project te participeren is ook hier een ondernemende instelling van de overheid essentieel.

In Nederland wordt voorzichtig ervaring opgedaan met de business case bij infrastructurele werken, in het buitenland zijn veel meer projecten volgens een soortgelijke benadering tot stand gekomen. De business case als motor achter gebiedsontwikkeling is nieuw.

Initiatiefnemer : Overheid of bedrijfsleven

Overige actoren : Bedrijven, parkmanagement, energiebedrijven,

Product : Businessplan ondergrond bedrijventerrein x

Doorlooptijd : 3-6 maanden



Fase 5: contractering

De hiervoor geschatte fasen waren precompetitief. Met de contractering treed het mededingingsaspect binnen en start de feitelijke aanbestedingsprocedure. In deze fase krijgt de business case juridisch gestalte doordat partijen met elkaar een overeenkomst aangaan voor de ontwikkeling van het gebied.

Hier zijn diverse situaties denkbaar, afhankelijk van de positionering van de overheden. Vastgoedbeheerders in het gebied regelen hun eigen posities en de overheden toetsen de ontwikkelde plannen aan de ruimtelijke procedures. Het verschil met de huidige procedures is dat door de eerder geschatte fasen een dynamiek op gang gekomen is waardoor de onderlinge relaties zijn geactiveerd en nieuwe kansrijke gelegenheden kunnen worden verkend. De rol van de overheid is louter regisserend, stimulerend en toetsend op (ruimtelijke) convergentie. In veel gevallen zal de overheid ook zelf een positie moeten nemen. Dit kan zijn omdat men mede ontwikkelaar en beheerder wil zijn, of omdat de overheid positie kiest in bijvoorbeeld het risicoprofiel en als het ware het risico voor de pluimen afdekt, of een subsidie of vermogensbijdrage verleent in het financieringsmodel van de business case. In zo'n geval is de overheid als hoeder voor het 'level playing field' verplicht voor marktpartijen gelijke kansen te creëren. Dit zal veelal geschieden via een openbare aanbesteding of tender⁴. De inzet van de tender is het mogen ontwikkelen en beheren, met een nader te definiëren insteek van de overheid, van een gebied. Gezien de elders geschatte onderdelen van waardecreaties, levensduur en duurzaamheid is de figuur van een gebiedsconcessie op basis van functionele specificaties een optie. Het gaat hierbij om een arrangement tussen de concessiegever (veelal de overheid) en de concessienemer (het winnende consortium).

Initiatiefnemer : Verschillend

Overige actoren : Bedrijven, gemeente, parkmanagement, energiebedrijven,

Product : Aanbesteding

Doorlooptijd : 3-6 maanden

⁴ Een afwegingsprocedure voor het (in mededinging) verkrijgen van een dienst of product in het economische verkeer.

Fase 6: gunning

Uiteindelijk wordt de opdracht aan de inschrijver / combinatie die voldoet aan de inschrijvingsvereisten en/of de gunningscriteria gegund.

Van belang is nog de lengte van de concessie, een looptijd van 20 jaar is niet uitzonderlijk. Mag gedurende de concessie periode het contract worden opengebroken? En zo ja, onder welke voorwaarden? Het is goed hierover vooraf bindende juridische voorwaarden te stellen. Zo kan bijvoorbeeld de gemeente rondom het concessiegebied beleid formuleren waardoor bijvoorbeeld de exploitatiemogelijkheden verminderen of vermeerderen, denk aan aanleg van beter openbaar vervoer, en duurzaamheidsbeleid in aanpalende gebieden waardoor de waarde van het vastgoed stijgt. Maar ook, mag een partij in het winnende consortium haar belang vervreemden aan een andere partij? Het is zaak hierover vooraf een goed doordacht pakket op te stellen en daar afspraken over te maken.

De contracten die worden aangegaan gelden mogelijk voor zeer lange, dus er moet wel zekerheid zijn dat alle betrokken partijen de verplichtingen kunnen nakomen. Uit deze consortia kiest een tenderboard een samenwerkingsconstruct dat de opdracht krijgt om het brownfield te ontwikkelen.

Initiatiefnemer : Verschillend

Overige actoren : Bedrijven, gemeente, parkmanagement, energiebedrijven,

Product : Aanbesteding

Doorlooptijd : 3-6 maanden



Fase 7: realisatiefase

De laatste fase is uiteraard die van de realisatie.