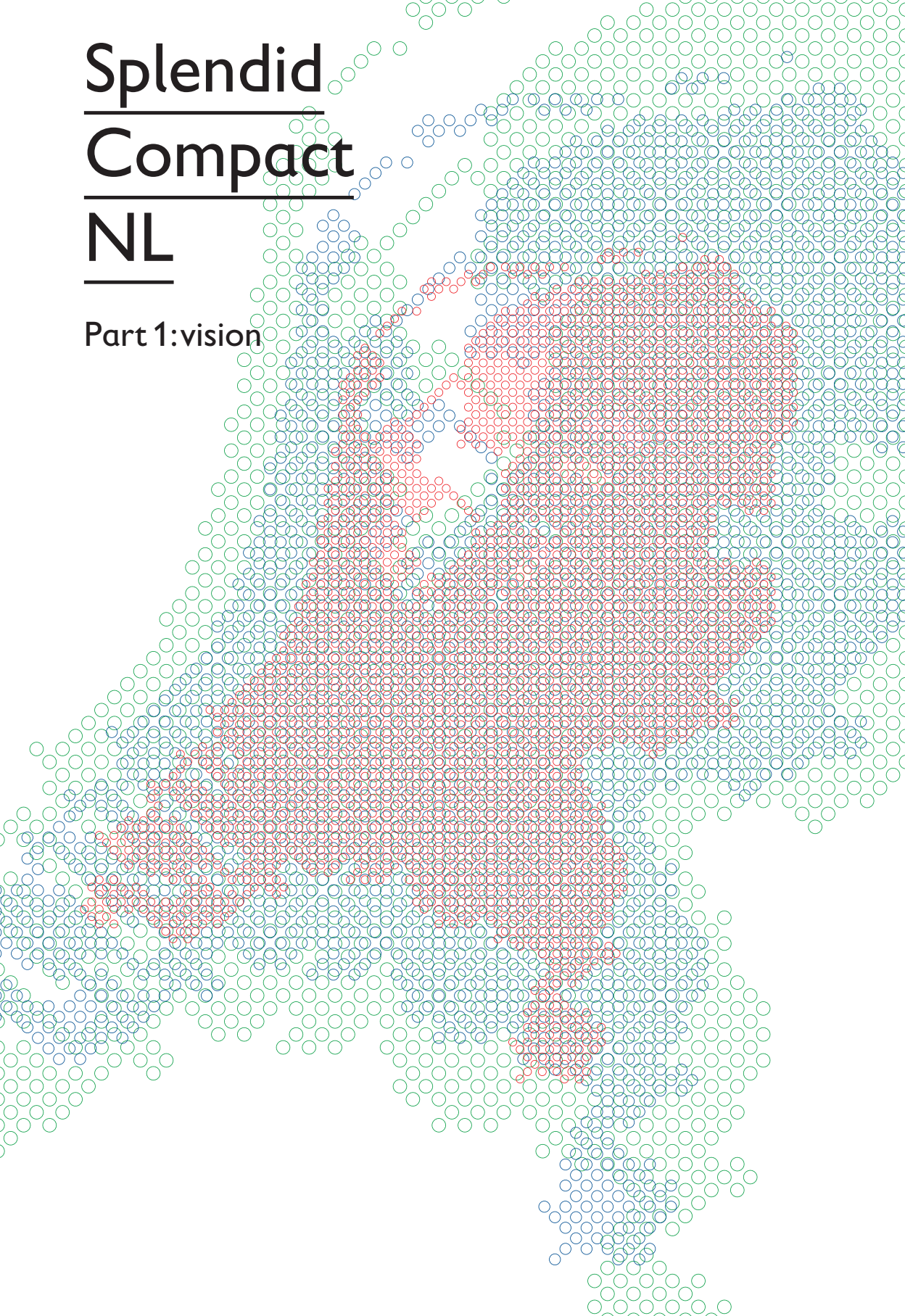


Splendid Compact NL

Part 1: vision



Splendid Compact NL

Part 1:vision

SPLENDID COMPACT NL

A study by the Inner-City Building working party, commissioned by the Board of Government Advisors (CRA), Ministry of Housing, Spatial Planning and the Environment.

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Contents

	<u>Foreword</u>	5
	<u>Reading guide</u>	7
Chapter 1	<u>The immediate cause</u> The Minister's question	9
Chapter 2	<u>The urgency</u> The need to densify	13
Chapter 3	<u>The opportunities</u> In red, green and blue	23
Chapter 4	<u>The approach</u> How to proceed?	45
Chapter 5	<u>Design recipes</u> Intelligent intensification in practice	63
Chapter 6	<u>Summary of the recommendations</u> What needs to be done?	95
	<u>Bibliography</u>	101
	<u>List of terms</u>	103
	<u>Image references</u>	104
	<u>In summary</u> In words and images	109



The publication before you, *Splendid Compact NL*, is a study into the encouragement of inner-city building in the Netherlands. This study was carried out in response to the question posed by the Minister of Housing, Spatial Planning and the Environment (VROM) to the Board of Government Advisors (CRA): 'How can new housing typologies and the urbanistic design for inner-city building contribute to both the physical building requirement and the reinforcement of spatial quality in the city?'

The CRA takes these questions to be fundamental and highly urgent. On the occasion of the roundtable meeting dealing with the Randstad 2040 Structural Vision, which proposes a densification requirement of 40% as policy, the CRA stated that this ambition is too modest in scope. The CRA is of the opinion that the further densification of our cities, for instance around infrastructural junctions, should be assigned far greater priority and assumes that a further densification of on average 80% should be feasible.

For the CRA, the question of the Minister of Housing, Spatial Planning and the Environment formed the immediate reason to set up a working party for these new policy issues that would focus on studying this question. The results of this study have been collected in the report before you, *Splendid Compact NL*. This report was written on behalf of the CRA by the Inner-City Building working party, which is made up of experts in this field and is headed by Professor ir. Rudy Uytenga (professor of professional practice in Housing at Delft University, Building and Architecture faculty/ Rudy Uytenga Architects) and ir. Charlotte ten Dijke and ir. Bart Mispelblom Beyer (Tangram Architects).

This working party has written an inspiring publication that describes a wide range of options for encouraging inner-city building. Due to the composition of the working party, the main emphasis of this publication is on the built-up environment and green space. While the themes of landscape and infrastructure are indeed dealt with, they require further elaboration and attention in a consecutive study.

Although many people are startled by and respond with fear to the word densification, due to the associations it evokes with the anonymous and stifling stacking of human beings, historic cities prove that high-quality green space, water and public space can be effectively combined with intensive development. What could be done in the past is definitely also possible today, now that we have more spatial imagination and technical possibilities at our disposal.

The publication consists of two main sections. Part 1 describes the possibilities for policy for implementing inner-city building. Part 2 provides a range of examples that indicate what is possible in practice and brings together a large number of studies supporting the argument in a knowledge section. Part 1 lies before you, Part 2 will be published somewhat later in 2010. However, together, the two sections will form a single whole.

The working party has taken the liberty of making a wide range of recommendations that are not only relevant to the national government, but also to other authorities and actors, with the inclusion of the 'central-decentralised' interaction. The CRA finds itself in agreement with the broader scope of the working party, as the encouragement of inner-city building must be seen as a policy assignment for the longer term. It requires authorities, real estate developers, investors and citizens to make a strong effort to re-orientate themselves with regard to the Netherlands' spatial planning policy. The current credit crisis presents an opportunity to initiate a fundamental debate regarding this re-orientation.

The CRA thanks the members of the working party for their efforts. Their publication inspires and, in the view of the CRA, presents numerous good starting points to place the theme of building in existing (urban) areas with markedly stronger emphasis on the spatial agenda. However, the working party retains responsibility for the recommendations it has made.

Before you lies an argument that focuses on how we can successfully build more structures in the existing built-up area. This is a study that centres on opportunities and possibilities. A study that is summed up in an evocative story at the end of this publication and which was drawn up in response to a question by Minister Cramer, as set out in Chapter 1.

In order to safeguard the beauty of the Netherlands, it is of the utmost importance that we do not fill the landscape with even more buildings. To simply stop building is not an option: for the time being, the population of our country will continue to grow. It will be necessary to build in the existing built-up area, in other words – the urgency of which is described in Chapter 2. Densification is a dire necessity. But how do we approach this? And where? The Netherlands already seems so full as it is!

That there is still enough space to densify becomes apparent in Chapter 3. Not just in the larger cities, but definitely also in urban villages and in rural towns. Densification is not synonymous with the indiscriminate erection of high-rise buildings, but can be achieved in an attractive, well-considered way. In short: it can be done intelligently, allowing for the development to add qualities and for spatial quality, urban culture and structure to be inextricably linked. Using a wide variety of examples, which can be found in this chapter among other places, we will prove that careful densification is not an empty slogan.

Densification goes beyond the spatial level alone. We need to establish broader connections. That is why in Chapter 4, we will consciously digress to include administrative issues and land policy. To make densification possible, it is essential to have a policy that actually organises and realises and leads to attractive results at all levels of scale. This chapter offers a handle with regard to how this policy can be given shape, in the form of a model plan of action and recommendations for the central government and the municipalities. The establishment of a 'Knowledge Centre for Intensification' is one such recommendation. In addition, we introduce the project matrix: a sample set of good examples.

Back to the spatial level. Professional skill is indispensable for being able to densify with due care. The designing disciplines appear to lack no skills whatsoever for ensuring that building in the existing built-up area is a success. In Chapter 5, we will provide an overview of a large number of design principles that are important for the intensification of the built-up fabric. Numerous examples show that densification is nothing new, but rather an existing (Dutch) tradition.

In Chapter 6, we will provide an overview of the recommendations for the central government, the provincial authorities and the municipalities.

This study is accompanied by a substantive argument, which will be issued as a separate publication in early 2010: a knowledge section, consisting of a Part A: a substantiation of the argument with a collection of studies, facts, figures and essays, a terminology list and a list of consulted literature, and a Part B: the extensive project matrix.

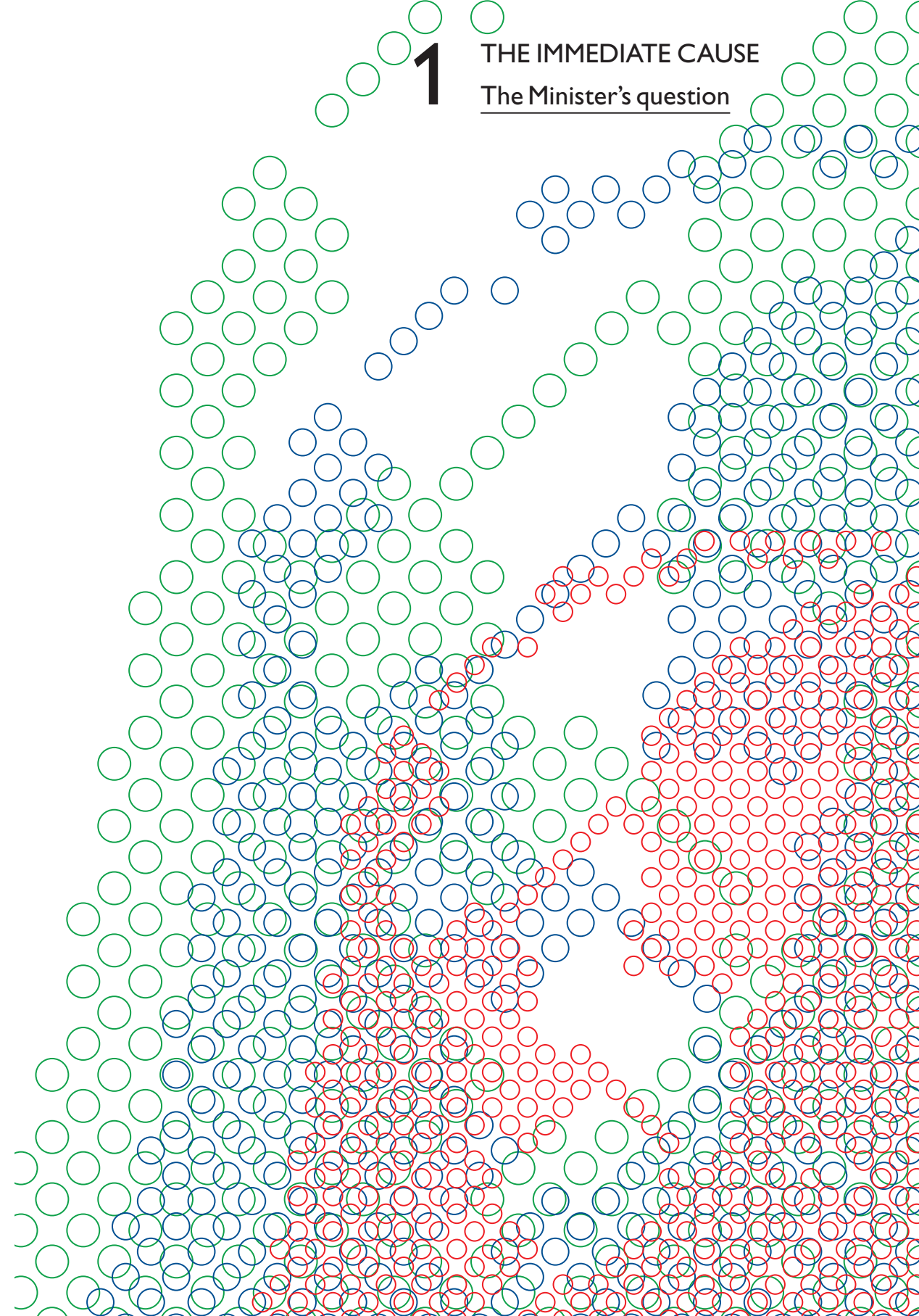
In closing, we would like to briefly comment on the references in the text. The footnotes can be found at the end of each chapter. Underlined words in the text can be found in the terminology list on page 107.

For everyone reading this: be sure to allow yourself to be inspired and motivated by this study. Together, we are on the brink of a Splendid Compact Netherlands!

1

THE IMMEDIATE CAUSE

The Minister's question





Built-up area in Leiden and its environs in 1900



Built-up area in Leiden and its environs in 2000

Cranes in the city!

Construction cranes in the city! Most people immediately think of broken-up streets, sand blowing up, detours, fences, trucks, site huts, stones and freshly poured concrete. Nothing seems further removed from the rural environment, a section of pastoral landscape or a densely wooded Veluwe area. Nevertheless, these two extremes are inextricably linked.

Because building in the existing built-up area simply means that these activities do not take place elsewhere. By building in the city and densifying towns, and furthermore improving them and making them more sustainable, the larger green areas in the Netherlands can remain intact. Of course, the latter can also be achieved by not building anywhere anymore, and considering the Netherlands 'finished'. But in light of the existing demand for homes, particularly in the Randstad, this is not an option. Let alone improvements that relate to infrastructure, increasing the sustainability of existing homes, redeveloping disused, often inner-city areas and making the city more attractive. Building remains necessary. But where? And how?

Differences in flavour

The interesting, often attractive alternation of buildings and nature – 'red' and 'green' – is one of the Netherlands' characteristic features. An alternation with considerable variation in accents, in which even in the most highly urbanised areas in the country, it only takes 20 minutes of cycling to reach the actual countryside, surrounded by green space, with on the horizon only a silhouette of buildings to remind you of the urban bustle left behind so recently.

The Board of Government Advisors (CRA) views this kind of variation in the Dutch landscape, from highly urbanised to rural, from scenic landscapes to heavy industry, as a point of departure for the design work. It is therefore with good reason that the most recent working agenda is called 'Make the Difference': after all, it is the typically Dutch 'differences in flavour' that on the one occasion need to be emphasised and on the other need to be attenuated. The 'red' can often be made redder, for instance, and the 'green' greener.¹

The Minister's question

Over the past century, the development of Dutch space was primarily characterised by an explosive expansion, by no less than factor 24, of the built-up area. This has primarily been at the cost of the area beyond the city outskirts. This raises the spectre that if we continue to build at this rate, we will hardly have a green area left to speak of in the Netherlands. Partly in response to this, on 17 May 2005, the Dutch Lower Chamber approved the intention to realise 40% of the new housing construction in the existing built-up area. Recently, Minister J. Cramer of Housing, Spatial Planning and the Environment (VROM) asked the following supplementary questions: in which way can an urbanistic design for inner-city building contribute to both the physical building requirement and to the reinforcement of the spatial quality? And how can this be attuned to generic core elements and specific, location-bound characteristics of inner-city area development? To be able to effectively answer these questions, the CRA has asked us in which way inner-city building could be promoted. The present agenda for inner-city building is the result of this enquiry.

A sustainable step forward in densification

It is precisely in a period such as this, in which the economy is slowing down somewhat, that we should once again dare to experiment and that further densification has a chance of succeeding. At the same time, the spatial development of the Netherlands acquires an innovative, contemporary layer: we are on the verge of an attractively designed – in every sense (both in terms of the economy, culture, society and energy) – and therefore sustainable and integrated step forward in densification. The text before you explains the urgency, opportunities and threats of densification in the existing built-up area, relays recommendations for governments and developers and, more than anything else, presents numerous attractive, inspiring and concrete examples in the form of design recipes and a project matrix: a sample set of good examples.

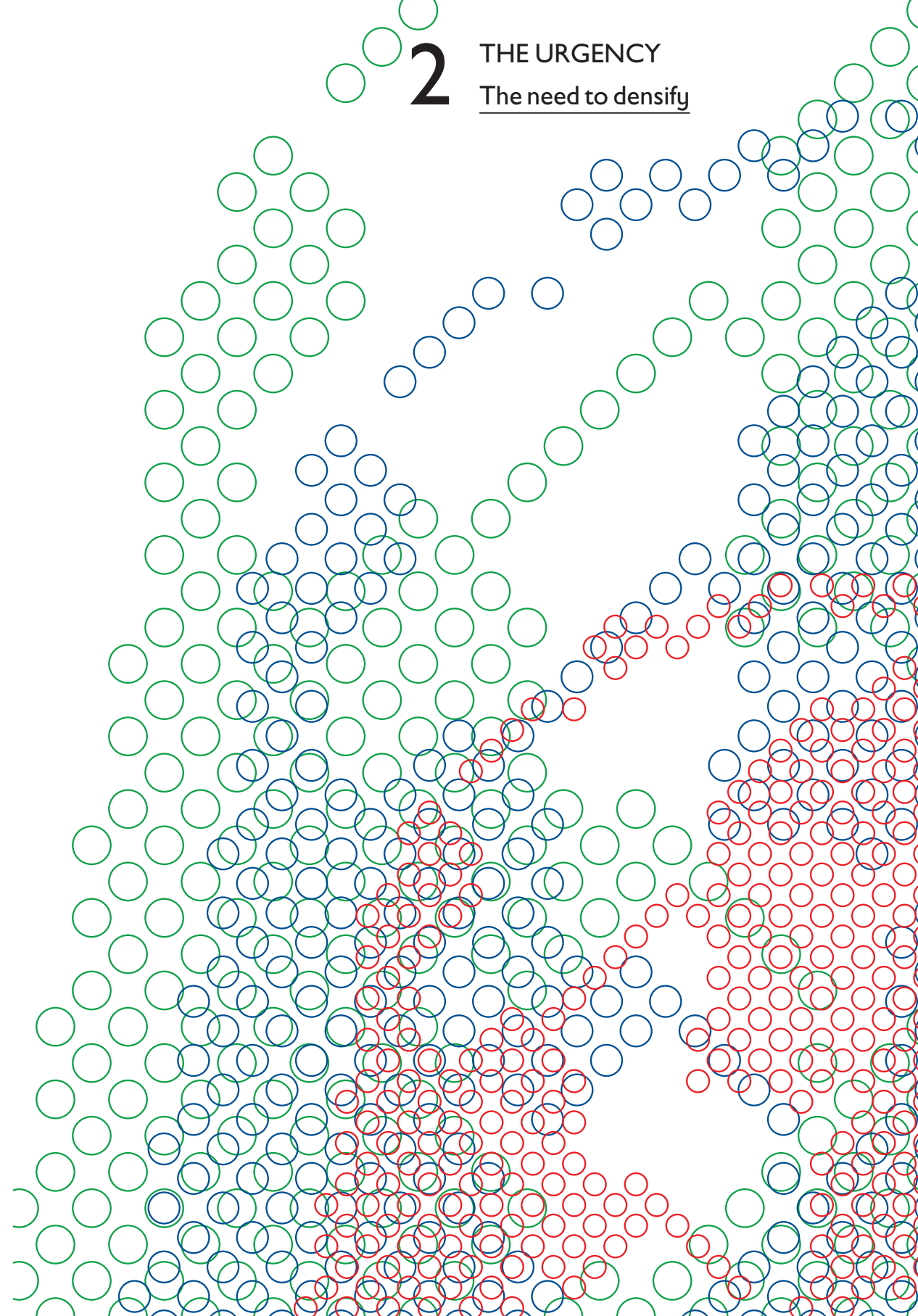


Possible, but desirable? Building scenario for Leiden and its environs in 2050

1 Office of the Chief
Government Architect,
*Maak het verschil. Agenda
van Rijksadviseurs 2009-
2012.* Office of the Chief
Government Architect,
The Hague, 2009

2 THE URGENCY

The need to densify



A three-sided spatial problem

'The Netherlands is small, think big,' has for years served as the recruitment slogan of the Ministry of Housing, Spatial Planning and the Environment (VROM). It is necessary to think big, as the Netherlands has a three-sided spatial problem:

1. Space is scarce in absolute terms: the Netherlands is a small country. If we want to retain any of the Dutch landscape, then the space available for new construction on the city outskirts becomes even scarcer due to highly progressed suburbanisation.¹ At the same time we see, in part thanks to double or triple use of the available land, and the associated progression in technology, that more and more space is being added in relative terms.²
2. The mobility issue: those who do not live in the vicinity of their work, will need to commute to work by public transport or – still in large numbers – by car. This effect is reinforced by the fact that many jobs are located in inner-city locations.³ Those not living there are required to commute.
3. The exodus from the highly urbanised areas: there is a shortage of (affordable) homes in the city. As a result, the middle class is required to move to VINEX neighbourhoods, which evaporates the economic base for facilities in the city centre. Particularly in and near the larger cities with their existing stock of small and older homes, the pressure on the housing market remains high due to the ongoing demand for new construction, replacement and the growth in number and the size of the dwellings.

The prevention of disorganised construction concerns us all

It is the government's policy to prevent the rural landscape from being spoiled even further, so new construction must be realised as far as possible in the existing built-up area. The capacity of the built-up area to accommodate new construction will not be a stumbling block in this context. This capacity is enormous and definitely more than sufficient to accommodate an important share of the required volume in new construction. The trick is to do it in such a way that it leads to a high-quality, diverse range of all sorts of buildings. The effective combination of urban dynamism and intimacy creates a vibrant city: an attractive city in which people enjoy living, working and staying in. Unfortunately, it is still a popular misunderstanding

that this is primarily a task for the large(r) cities in the Netherlands. But saving the rural areas from clutter concerns us all. It is precisely in the rural towns and the urbanised villages where the greatest opportunities lie, and at the same time, a considerable amount of unspoiled man-made landscape can be found in the direct vicinity of the built-up area. It is tempting to build precisely there, which in turn can lead to the blurring of the clear contrast between the city and the countryside. Even though people thrive on contrasts.⁴ Building in the rural areas is a trend that needs to be halted. Particularly when this is driven purely by economic speculative motives and quality is removed from the balance.⁵

Exemplary densification

Halting the further expansion of the existing built-up area means: exemplary densification! The spatial diversity of the Netherlands will continue to serve as the basic point of departure in the densification process. Construction work in the city can lead to temporary nuisance, but ultimately means the preservation of the relatively scarce green open space in the Netherlands and, as a result, of the quality of life ultimately found in the cities. Housing construction is not the only type of construction involved. Physical interventions to accommodate work, recreation, infrastructure and facilities can also often be realised in the existing built-up area. The rezoning of obsolete industrial areas or estates and of disused large complexes, the stacking of functions, but also the simple densification of existing neighbourhoods are all excellent means via which to achieve these objectives. In this respect, the publication *De Oude Kaart van Nederland* already gives a convincing idea of what can presently and will soon be found in terms of square metres of vacant built-up area in the Netherlands and what will soon become vacant.⁶

Densification offers other advantages

The improved utilisation of the area below ground level, including underground construction, is also a point of attention. The advantages of densification go beyond saving green space. For example, densification contributes to the reduction of car traffic. After all, in the city, all facilities and employment opportunities are at an arm's reach. In addition, a compact city, where living goes hand in hand with employment and facilities, ensures that a relatively large number of people are connected to an infrastructure that often already exists, as well as cables and pipelines.

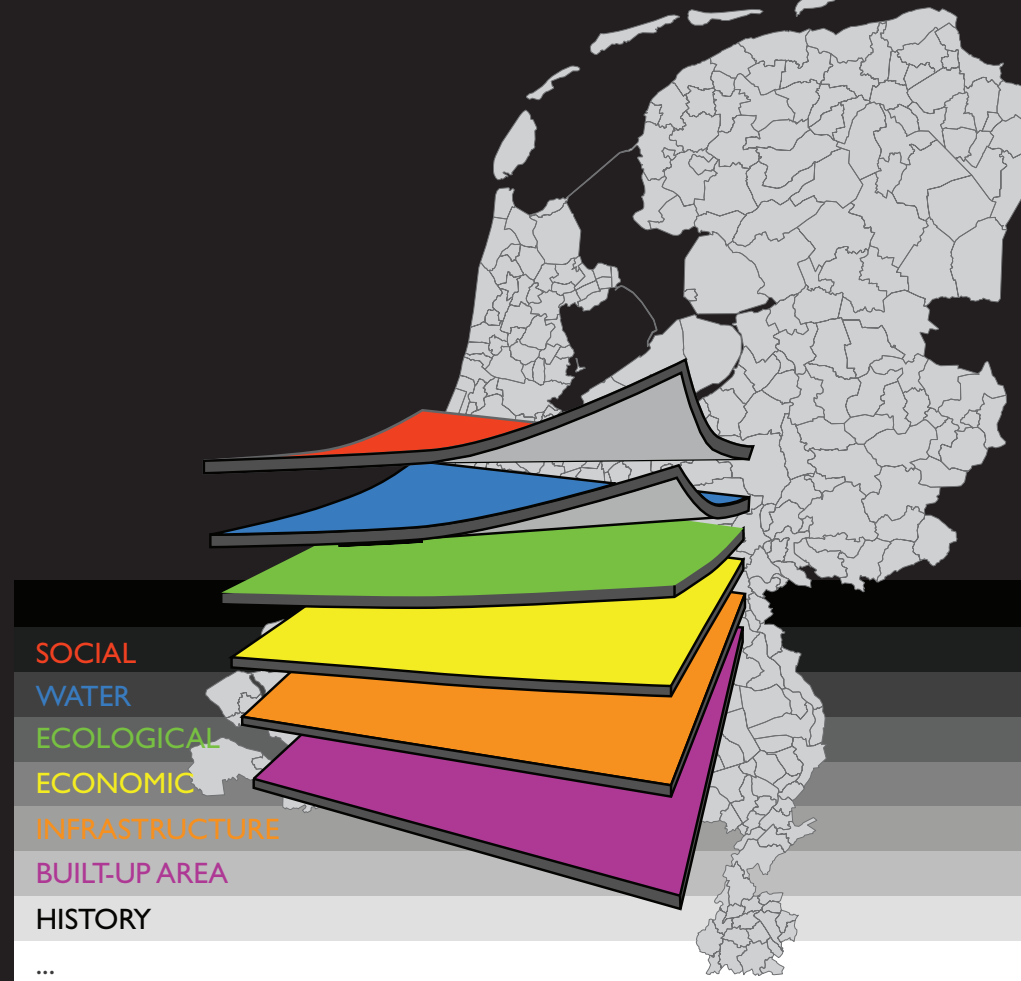


Vacant properties and plans for housing developments, new offices and industrial estates in Utrecht, Nirov

Vacant property
Housing development
Industrial estate
Offices
Mixed Urban

EXEMPLARY DENSIFICATION

‘Take an integral view of all the layers’



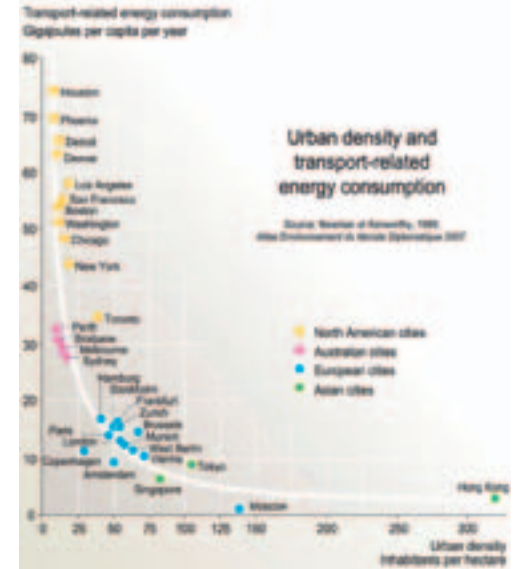
This strengthens their operation and consequently local employment and the economy. More people, more facilities and more work also means more opportunities, encounters and personal development options.

A compact city is attractive and sustainable. At the same time, densification can be grasped as an opportunity for recovering historic structures and as a result, the location's tourist appeal.⁷ Once they have been repaired, old watercourses for example can support an attractive, urban living and working environment. Special attention is paid in this context to outstanding public space, an absolute requirement for successful densification. And finally, building in the built-up area also seems to be an effective means for combating the housing shortage in the cities, with prices possibly normalising as a result.

Energy consumption and density

The saving of space on the outskirts of the city ('saving the meadow') is not the only measure that bears a direct relationship with ecology. There is also a causal relationship between the compact nature of a city and its total energy consumption.⁸ The more compact a city is, the more energy-efficient. Due to their relatively low density of development, the suburbs occupy relatively more space and their mono-functional nature entails an increasing level of mobility, which ultimately leads to a strong increase in energy consumption. Despite their enormous activity and a proliferation of energy-wasting air conditioning systems, extremes on the other side of the spectrum such as Hong Kong and Singapore offer a far more favourable picture, relatively speaking.

Sprawl undermines the efficient use of energy sources, due to longer travel times, expansion of energy, food, goods and distribution systems.⁹ The good thing about cities is that owning a car proves to be unnecessary. At 32%, car ownership in Amsterdam is considerably lower than in satellite municipalities like Haarlemmermeer (52%).¹⁰ Car ownership no longer evokes that mythical sense of freedom, and more and more people opt for the time savings offered by a city, with all the facilities just a stone's throw away. The high-quality energy consumption in cities reduces carbon emissions, for example. This has been proven by now by research, and this effect will become even stronger in years to come.¹¹



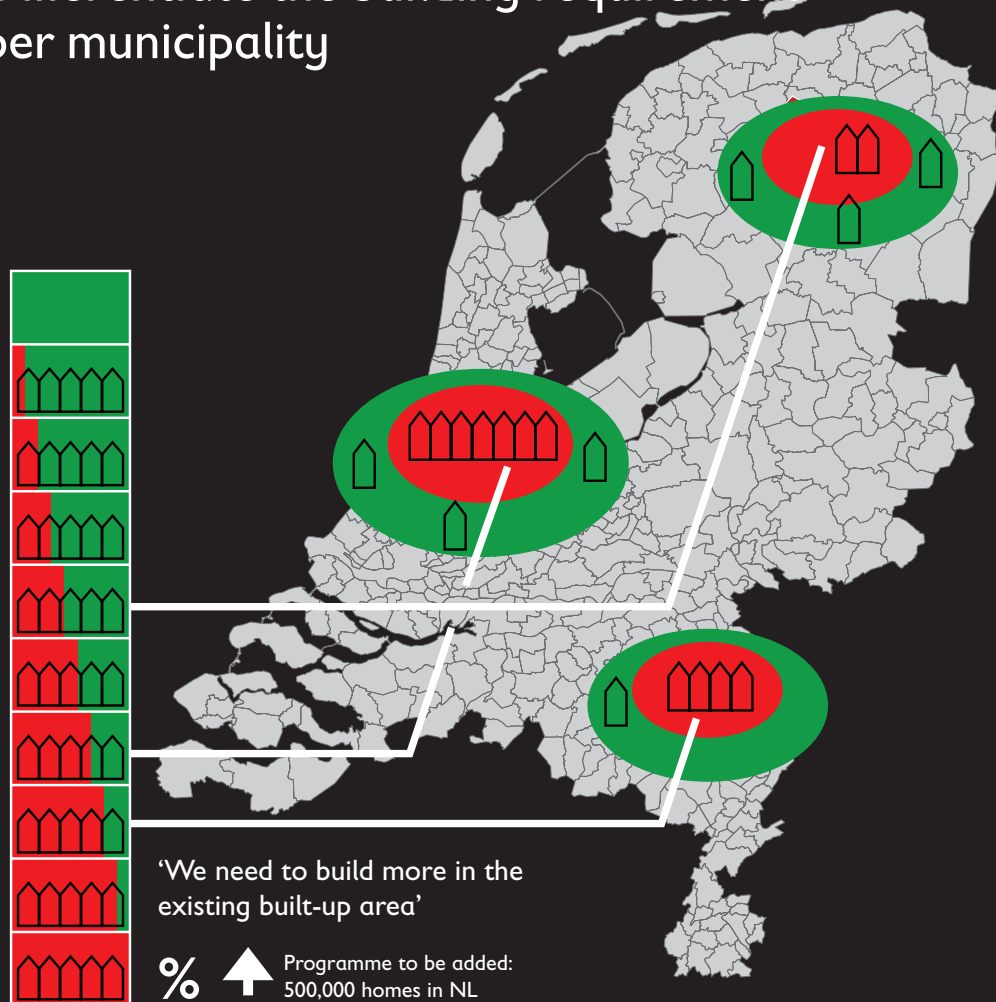
The graph 'Urban density and transport-related energy consumption' (Newman & Kenworthy) shows the relationship between density and traffic-related energy consumption.



The extremes - Houston versus Hong Kong

DENSIFICATION AGENDA

Differentiate the building requirement per municipality



The claim of the environment

Even though we believe that the landscape needs to be preserved, the growing demand for buildings and infrastructure as a result of demographic developments, economic growth and changed living patterns does lead to a constant increase of the number of homes, and consequently to an increase in the occupation of space. A share of this new construction is already planned or under construction; usually on the outskirts of existing cities and villages.¹² The negative impact that this constant process of urbanisation has on the character of our country is by now clearly visible and has been convincingly criticised on numerous occasions to date.¹³ On top of this comes the relatively new claim for space of water as a result of the changing climate. This constitutes a considerable challenge, because in terms of surface area, this claim is possibly even larger than all the buildings and infrastructural works put together.



Flood in Deventer

An agenda for densification

Build more in the built-up area is our motto! There are numerous opportunities to do so, not just in the large cities, but above all in the somewhat smaller towns and villages.¹⁴ The current building requirement can be used to reinforce the cities in economic terms and to make them more attractive, to counter clutter, to accentuate the differences in the Netherlands' appearance and consequently contribute to the development of a Splendid Netherlands.

What is necessary for being able to meet the densification requirement as it applies over the next few years? The process starts with the full conviction that the new building volume can as far as possible be absorbed within the borders of the existing city and that further suburbanisation in the Netherlands is unfitting at this point in time. A further fragmentation of the green space and the progressive deterioration of the landscape are completely undesirable. At the same time, the demand for urban homes is increasing. The sharp increase in housing prices that is partly a consequence of this demand forms an obstacle to this trend, which is actually desirable. This can be done differently.

Densification is nothing new

Densification requires a more conscious programming of the space, as well as new forms of allotment and the interweaving of buildings and infrastructure. Densification demands the



In Leiden, for example, it can be clearly seen that densification is nothing new: for instance here, on this location between the Outer Canal and the Middle Canal, where Roggebroodshof and Hof van Venetië were joined together during an urban renovation period in the past.



IBM Building, New York, Edward Larrabee Barnes Associates

integration of public and non-public space inside and outside buildings and renewed attention for the transitional areas from public to private. Take Manhattan (New York), for example, where, as a result of the lack of outside public space, a large share of the public space is located on the ground floor of the buildings.

In this process, there's a great deal to be learnt from history. After all, densification is nothing new. As early as the 17th century, in the Dutch cities of the Golden Age, all available gaps were filled with buildings before they decided on expansion, which came at a cost as it necessitated the construction of new fortifications. During the period of industrialisation, in the second half of the 19th century, municipalities often could not expand due to restrictive municipal borders. In the 1950s and '60s too, municipalities often had to wait for changes to the borders to be made, and in response to the housing shortage they utilised all the locations that were still available in the city itself to build.

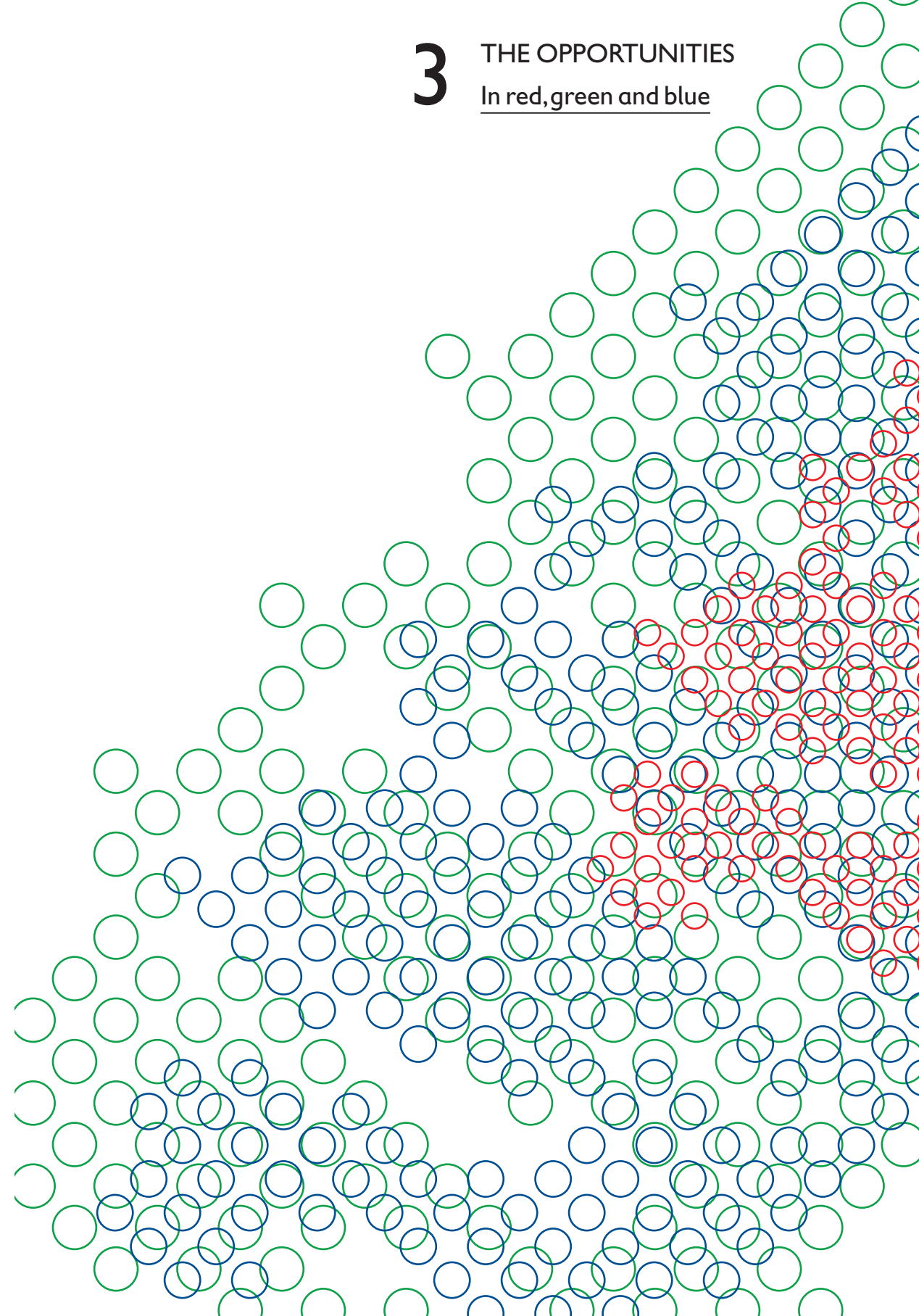
Intensification and quality improvement go very well together if the point of departure is integrality. History shows as much: all layers – spatial, social, historical and landscape – come together in that approach. In the following chapters, we will use various examples to show how we can achieve satisfying results in the Netherlands.

- 1 Research shows that the major cities have gone through an explosive expansion and that a great deal of space was 'spilt' in the process. Uytengaak, R., *Explosie van de stad, Steden vol Ruimte*. 010 Publishers, Rotterdam, 2008, p.17
- 2 Hartman, W., *De Vloeibare stad*. Architectura & Natura, Amsterdam, 2007
- 3 Gadet, J. en Zaanen van, K., *Succesvolle vestigingsplekken. Plan Amsterdam 3-2006*, Physical Planning Department – City of Amsterdam (DRO), 2006
- 4 Maas, J., *Groen is gezond*. Doctoral study February 2009, Nivel, VU University Amsterdam, 2009
- 5 VROM, *Samenvatting Verbeteren kwaliteit leefomgeving*. The Hague, 2007
- 6 Harmsen H., Van der Waal GM (Eds.), *De Oude Kaart van Nederland: Leegstand en herbestemming*. Office of the Chief Government Architect, The Hague, 2008
- 7 This will be explained in more detail in Chapter 3.
- 8 Newman en Kenworthy, *Gasoline consumption and cities - a comparison of U.S. cities with a global survey and some implications*. Murdoch University, Murdoch, 1987
- 9 This was discussed extensively during the 'International Conference on Climate Change and Urban Design' in Oslo, September 2008, see Stutz, B., *Analysis The New Urbanists: Tackling Europe's Sprawl*. Yale, 2009
- 10 *Autobezit in Amsterdam laag*. City of Amsterdam, DIVV, Amsterdam, 2005
- 11 Tillie N., Dobbelsesteen A. van den, Doepel D., Jager W. de, Joubert M. & Mayenburg D., *REAP. De Rotterdamse Energie Aanpak en Planning*. Rotterdam Climate Initiative, Rotterdam, 2009
- 12 NIROV, *De nieuwe kaart van Nederland*. The Hague, 2007-present, www.nieuwekaart.nl
- 13 *Visie Architectuurbeleid 2008+*. Board of Government Advisors (CRA), The Hague, 2006
- 14 'The Cabinet wants 25 to 40% of new construction to take place in the city. This percentage could be a lot higher, as this ambition has since been overtaken by practical reality. Between 1996 and 2005, in the urban regions, an average of 48% of the new homes and 57% of the workplaces (offices, hospitals, schools) were built in the city.' From: Zandee, R. and Tiemersma, D., 'Meer bouwen in de stad. Kan dat?' *Final report of the project 'Compact city: Densification in a healthy city'*. The Netherlands Society for Nature and the Environment (commissioned by the Ministry of Housing, Spatial Planning and the Environment (VROM)/WWI), Utrecht, May 2009

3

THE OPPORTUNITIES

In red, green and blue





As an example of intelligent intensification, we can take a study for a major location in Tilburg, where the addition of 400 homes, 70,000 m² of leisure and commercial functions and a strong intensification of the traffic capacity goes hand in hand with the addition of 38 ha of green, park-like and car-free terrain. - PM 005



Kalverstraat and Begijnhof, Amsterdam

Things can be done differently!

The Netherlands consists of various types of urban area. Our country has a limited number of urban cores, the agglomerations, such as the Amsterdam Metropolitan Area, the Rotterdam City Region, the Greater Twente Area, the Arnhem-Nijmegen City Region and Park City Limburg. These regions contain a substantial share of all homes and facilities.

In addition, we have many rural towns and urbanised villages in the Netherlands. Here too, there is a need for a new building programme, with all the ecological and aesthetic consequences that come out of such a programme. To avoid these cities and villages from deteriorating into unliveable masses of stone when all new construction claims are transformed into projects, it is high time to adopt a different way of thinking. It is time for the intelligent intensification of the built-up area.¹

Intelligent intensification

Intelligent intensification is a strategic means by which to contribute to the reinforcement of the built-up area across all layers, both spatial and social. It can even contribute to the solution of many spatial problems. There is a wide range of options – adding green space or public space, for instance, implementing clever parking solutions or mixing functions. Often, it does not involve separate, but rather integrated solutions that fully utilise the location-specific qualities. To be able to intensify intelligently, it is necessary to establish larger connections than simply those that exist at the spatial level. Administration, land policy, urban culture and the local structure are all inseparably tied up in this approach.

Urban design

Spatial contrasts are an important aspect of a pleasant (residential) environment – not just the contrast between a more compact city and a less dense countryside, but also the contrasts within the city itself. Between compact buildings and the interlying urban space. Within the city itself, the built-up area also always offers an alternation between busy and quiet, often in very close proximity to one another. In Amsterdam, for example, the bustling Kalverstraat shopping street lies directly adjacent to Begijnhof, an oasis of calm. The quality of the urban spaces is a central focus of the design assignment. An integral approach to urban planning and architecture is the prime means by which to eliminate and compensate for negative spatial effects, with comfortable and

appealing solutions. Urbanism plays a key role in this process.

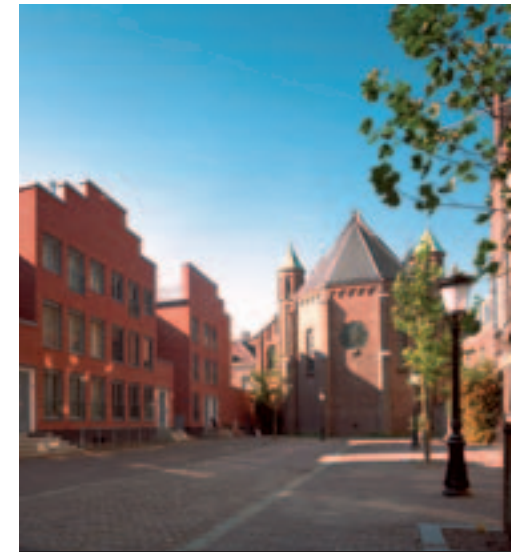
Most people only accept and value higher building densities if they get something in return: quality, facilities, space, green space and water in their direct environs. A logical consequence of this is the move to mix residential and other functions (that combine well with the residential function) – resulting in a friendly and safe residential experience next to dynamic and exciting living. It is worthwhile to once again go in search of forms of communality between residential neighbours and the users of the same multi-business building, for instance in the shape of shared green space. This is already happening, and can ultimately lead to considerable advantages in terms of management. In this kind of complexes, the issue is the level of communality and the harder and softer transitions towards the private domain. In this case, urban planning and architecture merge together to form 'urban design'.

It's too easy to build on the meadow

Of course, it is no coincidence that over the past few years, the building programme has primarily been realised on virgin ground beyond the urban cores. Land on the city outskirts is relatively cheap. In addition, the building procedures in the Netherlands are fully adapted to building on former pastureland. As a result, this is a relatively quick and hassle-free process. Within city limits, it's an entirely different story. What can be realised within nine months on the city outskirts, often takes a number of years when dealing with locations in the built-up area. Of course, this is not only due to public inquiry procedures, but also to matters like noise nuisance, airborne particulate matter and rigid zoning schemes. After all, rules and procedures in the existing cores are simply more extensive, more complex and as a result take up more time. And this in turn entails extra costs. As long as there is no change to the above circumstances, it will remain difficult to accomplish the desired level of densification.

Towards an honest land policy

We will need to put on the pressure to achieve the sustainable reinforcement of the existing built-up area. This argues for clear boundaries outlining where one is allowed to build, and for a recalibration of the land prices of 'easy locations for building'. This can be achieved by taking social and infrastructural costs into account in the calculations.² This makes the comparison with



An example of urban design is the redevelopment of Mariaplaats in Utrecht. The objective was to give Mariaplaats the quality it deserves (or to restore this quality). The square presently fits well into the city's Museum Quarter, and has acquired an appeal that is fitting for this 'calling card of the city'. PM 051



GZG site, Den Bosch - PM 008

The presence of water even makes extremely high building densities acceptable. The Oostelijk Havengebied in Amsterdam, for instance, has a high development density, but surrounded as it is by water, it is nevertheless an attractive residential area. Water makes the difference. High building densities beside wide views and open space make this difference explicit. That is why the continuing structures of green space and water, as they connect with the city outskirts, are as important as they are: in these cases, the transitions are self-evident, and the contrast is not blurred. This argues for the recovery and reinforcement of such structures in the built-up area. Recent experiences show that revitalisation often suffices as a measure. In Den Bosch, for example, the Binnendieze canal was recently revitalised and in Breda, the old port, the southern quay and the watercourse have been restored.

Demolition offers an opportunity

Densification does not simply involve filling in the open spaces in the city, without taking on the whole. Existing cities are the result of decades of optimising how the available space is utilised, and this knowledge can be recycled. In a densification project, the existing fabric should be influenced as a whole, the existing built-up area can be said to be reformed from the inside. To make this possible, tearing down a building is often a necessary measure. At present, exchanging costs and returns between different locations to allow for tangible improvement is not or is barely an option, which in turn forms an obstacle for improvement. Demolition is not merely a spatial or architectural issue. Many buildings are torn down because something else should actually be demolished: a social situation that is out of balance, for instance, or an unbalanced composition of the population or a political deadlock. But by now, we do know that tearing down too many buildings can be harmful for the existing structures of urban life.⁴

Intelligent intensification assumes that the underlying spatial, social, societal and historical layers are taken into account. Demolition is only acceptable in cases where transformations can be realised that demonstrably reinforce the cohesion between what is existing. This approach presents an opportunity to make positive use of the location-specific characteristics of the existing city.⁵



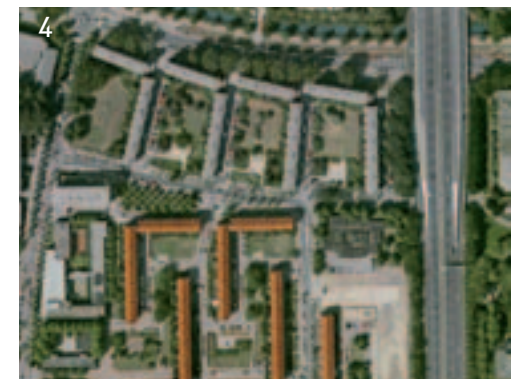
The large-scale demolition of buildings is often carried out in an ill-considered manner that can be sooner seen as an expression of administrators' impotence than of true vision with respect to the issue. In the 1960s and '70s, demolition and new construction were viewed as strategic means by which to quickly transform the urban fabric. One notorious example is Hoog Catharijne, the shopping centre that was built over the course of five years without taking account of the small-scale urban fabric of Utrecht's historic centre. In this case, integration was a side issue; the existing structures in all layers of the cities were violated in the interest of a single objective: economic growth. While such growth did occur, to achieve it, neighbourhoods were torn down, watercourses filled up, buildings with commercial destinations were favoured over mixed buildings and the scale of the city changed. The Utrecht Utopia report, Province of Utrecht, 2005

The Hague, for example, has a strong, extremely specific, finger-formed green structure on its northern and western edges (Scheveningen and Wassenaar). Continuing this existing structure on the south-western edge results in a clear reorganisation on that side of the city. Historic research focusing on the watercourses makes it clear how their continuity can be restored: along these 'new' lines of continuing water, one can see new locations developing for higher grade residential and working environments.

Space in abundance

The built-up area has a tremendous capacity to accommodate new construction.⁶ But where? It seems so full as it is! Nevertheless, there are different types of favourable locations that can be pointed out.

1. The unused strips that line infrastructure. In the past, these were often ignored and viewed as unusable and poor-quality residual sites. It is precisely these areas that present strong development opportunities, on the condition that the physical issues (such as noise nuisance – not legal, but physical) are solved effectively.
2. Extensively utilised sites in the city, such as large parking squares at ground level or extensively utilised green space, can be replaced by mixed (urban) area.
3. Former industrial sites. These can be transformed into fully fledged mixed areas.
4. Existing residential areas, where partial demolition and reorganisation or the restructuring of public space result in a condensed and higher quality area.⁷



HELP!

THE NETHERLANDS IS BECOMING CLUTTERED?

HELP!

THE NETHERLANDS IS FILLING WITH STONE?

HELP!

THE NETHERLANDS IS BECOMING MORE POLLUTED?

HELP!

THE NETHERLANDS IS FULL?

HELP!

THE NETHERLANDS IS BLURRING?

THINGS CAN BE DONE DIFFERENTLY!



Help!

Densification goes awry if those involved don't think things through or make effective designs. A lack of space, privacy, light, air and green space in combination with an overdose of noise, stone and stench quickly put an end to any kind of good intention. In the case of a good design, such problems do not arise. Consequently, in Chapter 5 we will show a wide range of design recipes.

The above negative associations are however current among many Dutch citizens, and will need to be removed by showing good examples and possibly by means of an effectively organised communication campaign. It is also partly our own fault. Taking a too limited view of the incorporation of a new project in the location or simply filling up the final remains of green space in a specific neighbourhood – such as sacrificing the neighbourhood park – has given densification a bad image. An image that is undeserved, because the aforementioned negative connotations are sooner prejudices than truths.

A series of examples, categorised in 'red', 'green' and 'blue', can clarify matters.



Markt Maas, Maastricht - PM 129

Beautiful streets and squares

The essence of successful densification is taking meticulous care to design the public domain as effectively as possible. The clear delineation of public space gives it a sense of security and quality, as if it were an 'urban room'. On the one hand, open spaces function as a kind of spatial counterpoint to the adjacent built-up volumes and on the other, as a typological counterpart of the free open spaces in the rural landscape.

Research shows time and time again that these urban, often green public spaces are valued extremely highly, sometimes even higher than the natural rural areas. On the other hand, the less emphatically designed residual areas in, for example, the post-war reconstruction areas from the last century are valued considerably less.⁸

On the ground level

Densification definitely does not always result in high-rise construction. At a time when, for example, the size of the series in repetitive housing projects is seeing a stark increase and phasing is an important issue, small-scale land-based solutions in higher densities are becoming increasingly important. Individualism and variation are also better served with this housing type.

The city and definitely also the urbanised villages seem to benefit the most from a well-considered mix of land-based and stacked.⁹ Densities of 100 homes or more per hectare of land are definitely feasible with this form of allocation.

For example, a density of 100 homes per hectare was realised in Borneo-Sporenburg in Amsterdam, primarily in low-rise buildings. The recently completed complex La Grande Cour in Amsterdam has achieved the tremendously high density of 300 homes per hectare – about eight times the density of the average VINEX neighbourhood – in relatively low towers (stretching to a maximum of 11 storeys).



Polstraat, Deventer



Borneo-Sporenburg, Amsterdam - PM 013



Geuzentuinen, Amsterdam - PM 316



Outside within the city

It is entirely possible to make effective private outside areas in the densified city. The contemporary outside area comes in a variety of guises: from the secluded patio to the roof terrace and the roof garden, with in addition a wide range of semi-collective variants such as communal roof terraces and court gardens.¹⁰ These can be made as green as one likes. For example, the homes in the recently completed project De Linie in Groningen sold like hot cakes. One cannot find large gardens in this densely built-up area near Groningen's city centre, but one can find a rich variety of smaller gardens, patios, roof terraces and green roofs – on top of built-over parking garages, for instance.¹¹



De Bongerd, Amsterdam - PM 109



Prinsenhof, The Hague - PM 261



Promenade Plantée, Paris



Variety!

An enormous variety of housing types is also conceivable within a high-density set-up. 'Land-based' can both describe living in a single-family dwelling at ground level and living on a stacked grade on top of other functions. The development of a public park on the roofs of an inner-city industrial estate or unused infrastructure can not only be marked as dual land use, but even as reverse land use.

The Promenade Plantée in Paris is a good example of this. Here, an old railway fly-over was transformed into a 1.5-km long park located above street level. Under the park, the viaduct now accommodates 45 stores and studios. The New Yorkers have repeated this trick with their High Line Park, which opened to the public in 2009. Existing real estate in the vicinity of High Line Park has already increased in value and the old buildings in the surrounding area are renovated at a high pace.

Stacking doesn't necessarily have to lead to uniformity – it can also be carried out in such a way that every home is different. The Silodam in Amsterdam is a good example. It is possible to win space and residential quality by means of ingenious links: zigzags, curves, overlapping in 'puzzle sections'.

In short: the old conventions have long been overtaken by the creativity of developers and designers.

Added value with mixing

Mixing different functions can create an enormous added value. This is subject to the condition that the design takes account of which relationships between these various components create added value and which types of relationships need to be avoided. For example, it wouldn't be that handy to combine the delivery lane of a supermarket (with new supplies coming in at 6 o'clock in the morning) with a row of bedrooms. This is a question of making an effective design. Undesired relationships can always be fully avoided, without having to resort to unpleasant measures. But of course, a supermarket in the neighbourhood has many advantages. A good spatial organisation forms the foundation, in other words.

In a building that has been designed for effective management, this mixing can also lead to an expansion of the facilities available to the neighbourhood as a whole. A good example of this is the concept of the *Brede Scholen* ('Broad Schools'): the combination of schools with facilities like a day care centre, healthcare and homes for all target groups. Through alternating use, all groups have access to shared facilities like, for example, a sports centre or a meeting hall. In the case of separate solutions, such an arrangement would have been financially and spatially unfeasible. In terms of energy too, the mixing of different functions can prove an interesting option. An effective exchange of different cold and heat requirement programmes can be effectively realised within a mixed urban environment with a mixed programme, in which all the distances between the programme components are kept as short as possible.



Mariëburg, Nijmegen - PM 103



Existing



New



Downtown Vancouver



Staringplein, Amsterdam

Cars are allowed, but cyclists and pedestrians come first

It is no longer possible to imagine our life without cars. For the time being, a plan that does not take account of an area's accessibility by car and consequently does not offer good parking solutions is undesirable. But this is not the same thing as taking the car as the guiding principle in every planning activity. A good example in this context is Downtown Vancouver, which was densified but where at the same time, the authorities effected a strong improvement in the quality of the public space, using as their tools among others the small-scale mixing of functions at the street level, an abundance of walk paths and bike paths in the city centre and, where possible, green space. The result is a vibrant public space, where furthermore, in the period 1990-present, car use has decreased by over 50%, while the local population increased from 43,000 to 91,000.

The rule of thumb in this context is that the higher the density levels, the more important it is to keep the car out of the public domain. This starts with good park & ride points on the edge of the built-up area, so that travellers can switch to collective transport or reach the city centre on foot. In addition, the network of public transport and bike and walk paths needs to be improved.

Keeping cars out of the area results in an enormous amount of space for the realisation of building volumes and the spatial experience.¹² At the same time, the amount of space that has to be made available for each vehicle can be minimised with the help of underground, technical solutions such as automatic parking. In Amsterdam, this solution has been implemented in among others the Silodam and below Staringplein. At locations where parking spaces cannot be realised underground due to the local soil type, stacking is the preferred solution.





High Line Park, New York



Wilhelminapark, Utrecht

Space for green

Many people are firmly convinced that in the densified environment, little space is left for green facilities. Nothing could be further beside the truth. The fact that the city is becoming more urbanised does not automatically mean that the urban green space – scarce as it already is – needs to suffer as a consequence. Careful densification forces the designer to make optimum use of the public space and to utilise every possible opportunity to develop high-quality green space. The right approach to densification not only means the preservation of the surrounding landscape. It is also the salvation of the urban green space, as this facility is assigned more value and as a result receives more financial attention. In the densified city, green space plays an important role at a variety of scales: that of the city as a whole, the neighbourhood, the street and the home. The challenge in the densification process lies in ensuring that there is sufficient high-quality urban green space, even as the local density of development increases.

In this context, a tree in the neighbourhood of De Jordaan in Amsterdam's city centre is worth more than the undefined urban green space in the more suburban Westelijke Tuinsteden.

Green space is a basic requirement

The landscape surrounding the cities can only stay green if the building requirement is solved within the inner city. Construction in the existing built-up area can only be a success if in close vicinity to the city, one finds large green areas that have a unique natural character and are sufficiently large for a whole day's of walking and cycling. The city-dweller is not satisfied with merely having restaurants, cafes and stores nearby. He also wants to have green space in his direct environs, as well as a pleasant social climate, without extreme summer heat and with clean air. If the city can't offer him this, he ultimately starts longing for a home in a VINEX neighbourhood again.

Studies focusing on experience and recreation show that it is precisely when people live in the city centre that they have tremendous appreciation for green space in the direct vicinity of their home.¹³ In addition, research shows that there is a direct relationship between the green space in a street and the health of the residents of that street.¹⁴ Green invites people to physically get moving. It inspires people to take a stroll through the neighbourhood, sit on the pavement on a bench they put there themselves and inspires

children to play outside. This in turn promotes social interaction. Furthermore, being able to look out of one's window and see green space is important for the psychological well-being of the city-dweller. In this respect, one tree in the city street is just as important as 100 hectares of forest in the Veluwe.

At the same time, green space also has a positive influence in a physical sense on the climate of life in a city. Urban trees alleviate the summer heat on the street and prevent the urban environment from heating up too much ('heat stress'). Greenery on a building's façade and rooftop gardens do the same for individual homes. If the temperature outside is 30 °C, a rooftop garden ensures that inside, the temperature is at least four degrees lower than would be the case with a bitumen roof. Green space purifies and humidifies the air; captures airborne particulate matter, nitrogen and carbon dioxide and dampens noise. Unpaved soil entraps water, including if this soil is found on a roof.

Parks: quality comes first

The quality of a park for its users is determined by, among other things, its lay-out, its offer of activities, the local social interaction and safety and its accessibility. Not so much by its size. A large park where the lay-out has not been geared to the population structure of the surrounding neighbourhoods will not function effectively. In such cases, a large volume of green space can even be experienced as threatening.¹⁵ For instance, fifty square metres more than suffice for a 'stamp-sized park': a tree with a drip line covered with plants, a bench plus a children's playground. Or a herb garden that can be kept by local residents. If you look at the public space this way, you see a wealth of opportunities to assign meaning for local residents to boring expanses of paving or asphalt. New York has a rich tradition in this kind of 'pocket parks'. Their efforts can serve as a good example for us in the Netherlands.

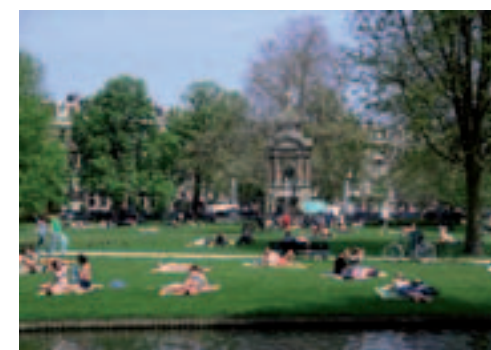
Urbanites increasingly use the parks as a meeting point. They use the parks as a shared garden, as a place to agree to meet up with friends or to work. They don't go to parks to escape the city, but rather to feel true city-dwellers. Take Sarphatipark in the densely built-up Amsterdam neighbourhood of De Pijp. This plot of land of no more than four hectares accommodates two million visitors a year. The residents of De Pijp who don't have a garden of their own use Sarphatipark



City street, Haarlem



Pocket park, New York



Sarphatipark, Amsterdam



as their garden. The structure of the park suits this function very well: lots of large lawns that you can use for your own ends. Without Sarphatipark, De Pijp, which definitely is not known for the high quality of its homes, would not be as coveted a residential neighbourhood as it is.

Large green areas: accessibility and own character

The large green areas around the city are used for active leisure pursuits: walking, for instance, or cycling or sailing. People no longer want to sit in a traffic jam for an hour to reach the Veluwe. They want to hop on their bikes to visit an area near their city that offers a completely different experience to the city itself. The city needs to offer an urban atmosphere, the parks need to offer green space for meeting people, the surrounding area needs to offer wide expanses, calm and space for leisure activities. The city and the surrounding landscape are not each other's enemies, but rather form a single unit.

The city is the protector of and investor in the surrounding landscape (due to its importance for recreation) and the surrounding landscape ensures that people want to live in the city and use it as a business location. The user quality of the surrounding landscape is determined by its accessibility from the city, the recreational accessibility and the distinctive character of the area, which needs to show a stark contrast with that of the city. Such as a well-accessed peat moor with historic villages as attractions. The Netherlands has numerous examples of such areas: woodlands, peat lakes, swamps and dunes.

Ribbon developments or low-density sprawl are deadly for the recreational experience of such areas. A sharp contrast between the city and the countryside makes the transitional areas more attractive. Vague, cluttered transitional zones tend to put people off, on the other hand.



Dichterswijk, Utrecht - PM 115



Repair of the water structure, Zaandam - PM 314



Harbour, Groningen - PM 279

Space for water, jetties in the city

Due to the increasing amount of building taking place in the Netherlands, there is a growing need for space for water storage. This fact can help designers and spatial planners to create acceptance and appreciation for all densification activities. During the renovation of the centre of Zaandam, for instance, a filled-in canal was excavated again and extended. Water does not form a threat if we give it a logical place. Water can for instance be reassigned a role as infrastructure that people can make use of. Jetties do not have to be limited to areas like Steigereiland (IJburg), we can also construct jetties in the city centre!

Water beautifies the city!

Lively water that passes through the city provides an enormous boost to the spatial experience. An attractive watercourse can form a good occasion to develop unique, mixed environments, complete with urban houseboats, water-related light industry and the accompanying quayside homes. At the level of the building itself, water can also fulfil an important role with a variety of aspects: as a 'distancer' to increase the residents' privacy, but also as a building-physical, energetic element that is utilised in the humidification and cooling of the building. A pool of water can serve as a reflective surface and as such increase the sense of space. In terms of recreation too (fishing, water sports), water increases the quality of the residential environment. In addition, open water in the city can also play an important role in preventing heat stress.



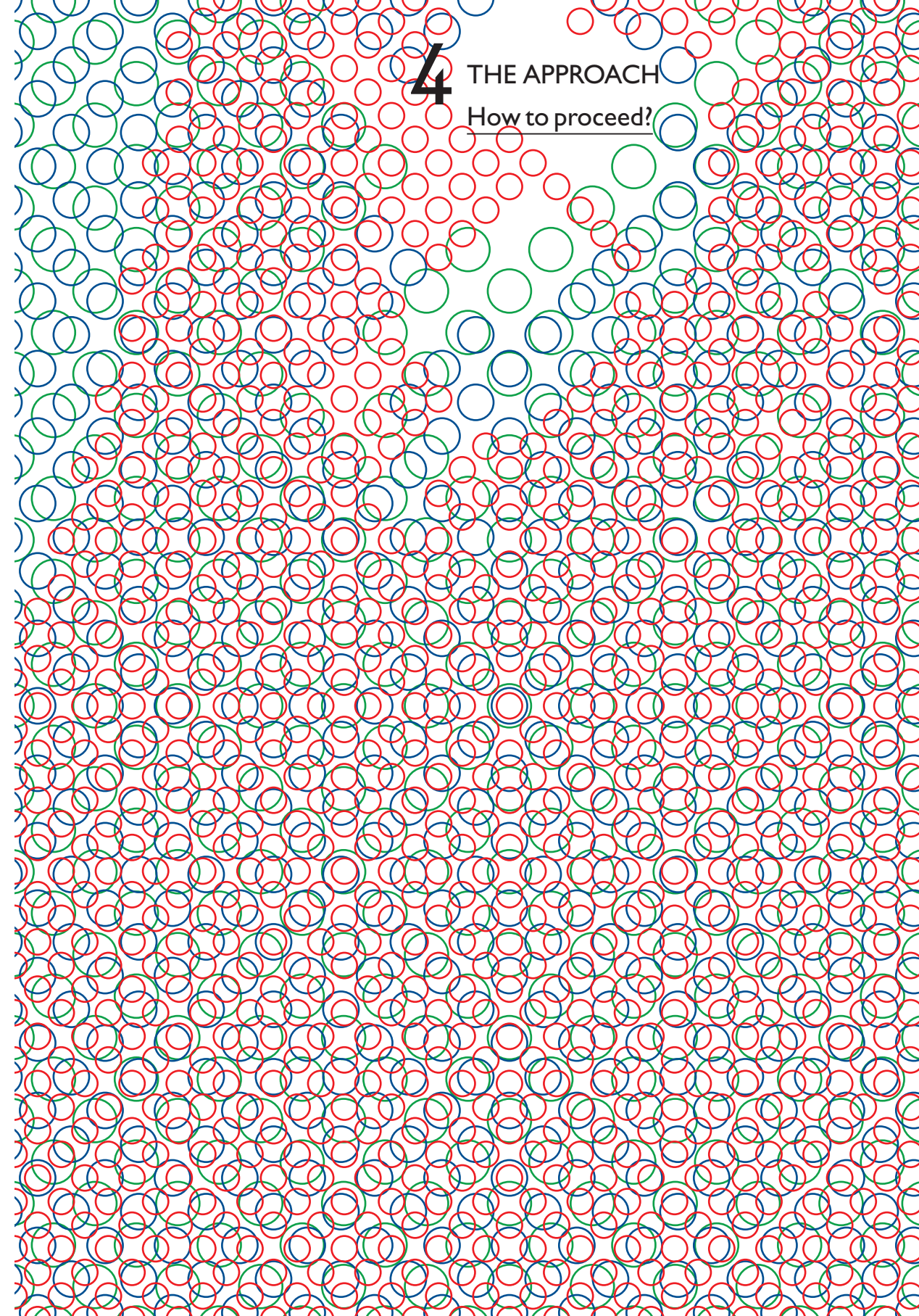
Historic cities, where the convergence of green space, water, infrastructure, facilities and homes often leads to a splendid compact public space, are a source of inspiration for exemplary densification. Oude Gracht, Utrecht.

- 1 See: Dijke ten, C. and Mispelblom Beyer, B., 'Ruimte scheppen door verdichting'. *Nova terra*, The Hague, May 2007
- 2 While these are contributory costs, they are necessary costs.
- 3 Dijke ten C. and Mispelblom Beyer, B., 'Mooi dicht is niet lelijk! Slopen voor het goede doel'. *Stadcahiers* 3/2007, p.84-91, Tracity, Haarlem, 2007
- 4 Boven, J. (Ed.) *Na de sloop*. Nicis Institute, The Hague 2008
- 5 Dijke ten C. and Mispelblom Beyer, B., 'Mooi dicht is niet lelijk! Slopen voor het goede doel'. *Stadcahiers* 3/2007, p.84-91, Tracity, Haarlem, 2007
- 6 See among others: Hilten R. van (Ed.) *Utrecht Utopia*. BRU, Utrecht, 2001; Kreutzberger, E., Benders, G., Bruijn, N. de (Ed.) *VELOV. Verdichten langs openbaar vervoer in stadsgewest en regio Haaglanden*. The Hague, 2004; Verdonk, N. (concept), Dehaene, M. (text), Jansen, B. (Ed.), *De intense stad: verdichting en functiemenging in Groningen*. Groningen, 2004
- 7 The view on urban planning that came out of the Athens charter, in which the work function was at odds with the residential function and/or recreation, is becoming outmoded. The dispersal of functions has led to the extensive utilisation of space, and consequently to waste and the degradation of the space. These areas offer considerable opportunities for densification.
- 8 Brosens, M. and Woestenburg, M., *De waarde van het Groen, Groen en de stad*. The Hague, 2008
- 9 Uytengaak, R., *Explosie van de stad. Steden vol ruimte*. 010 Publishers, Rotterdam, 2008
- 10 *Het balkon. Buitenruimten in de stad*. Published by De Zuiderkerk and Ymere, April 2008
- 11 Overdijk, C., 'Hoogstedelijk zonder te stapelen'. *Binnenlands Bestuur*, The Hague, May 2009
- 12 For example, everything can be accommodated underground or be integrated intelligently, see e.g. the study conducted by Must, *Stedelijk Amsterdam*. Commissioned by the Amsterdam Chamber of Commerce, Amsterdam, 2009
- 13 Bezemer, V., Daalder R., *Groen. The urban power*. Commissioned by the Physical Planning Department – City of Amsterdam (DRO), 1998; Gadet, J., Smeets, H., *Het Grote Groenonderzoek. Plan Amsterdam 3-2009*, Physical Planning Department – City of Amsterdam (DRO), 2009
- 14 Maas, J., *Groen is gezond*. Doctoral study February 2009, Nivel, VU University Amsterdam, 2009
- 15 Crommentuijn, L., Farjon, J., Dekker, D. den, Wulp, N. van der, *Belevingswaarde-monitor Nota Ruimte 2006. Nulmeting landschap en groen in de omgeving*. MNP, Bilthoven, 2007

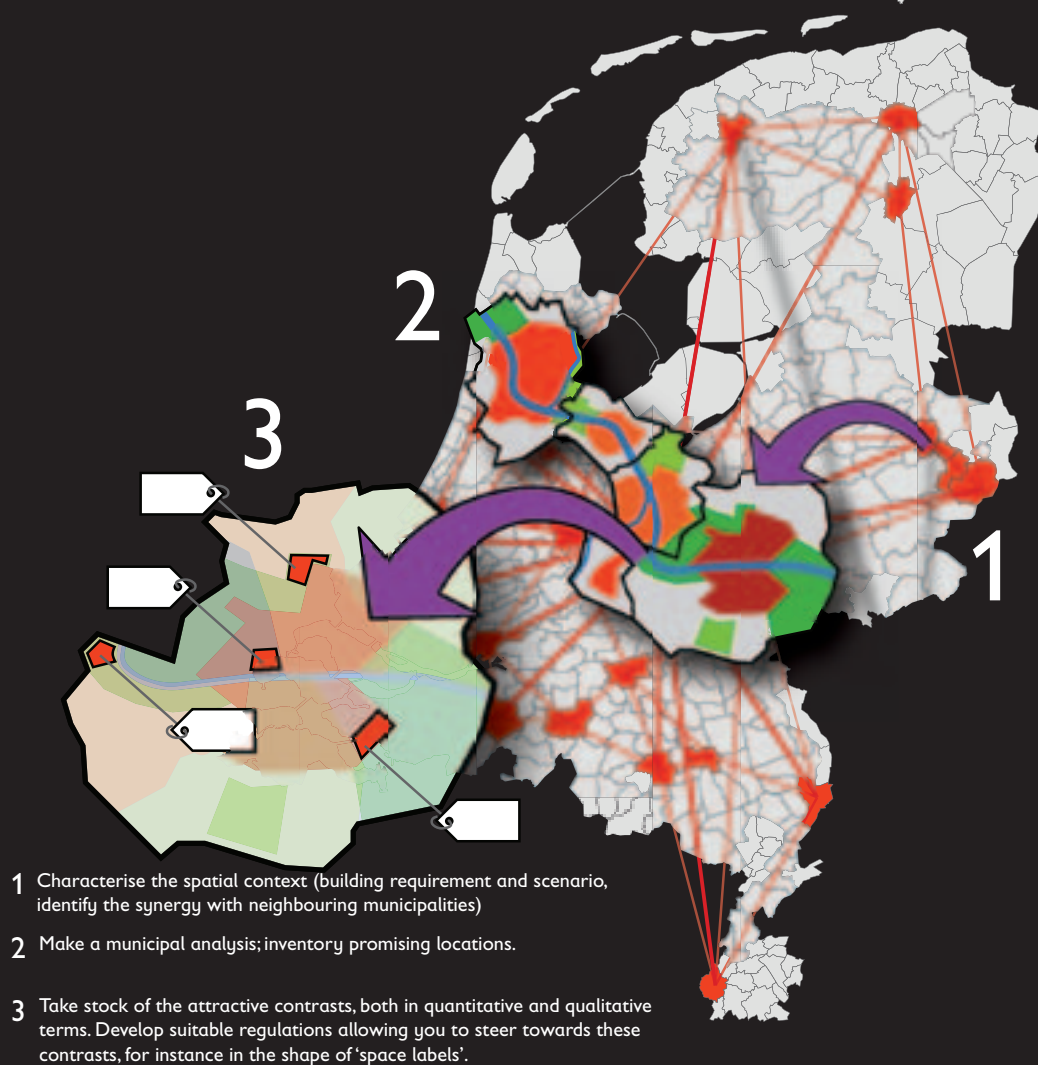
4

THE APPROACH

How to proceed?



SPATIAL STRATEGY



A tradition in environmental planning

The Netherlands has built up an important tradition in the field of environmental planning at all scales, particularly over the past century. We use a variety of plans and programmes that are invariably based on thorough expertise in the area of, among other things, demographic developments, planning and geography. This approach remains important. If politicians wish to continue to serve the public interest with regard to these complex issues, knowledge about the space and the financial background is necessary for directing affairs in a way that is integrated, has a pronounced vision and consequently exhibits sufficient authority.

At the moment, the supply of space is low and the demand for space is high. We believe that this relationship has a higher level of dynamism than we are truly aware of.

Policy for intensification

Increasingly, economic, social and cultural changes have led the city – as the driver of said changes – to become a more and more attractive and sustainable alternative to the suburban 'mortgage landscape', which has increased in terms of mass scale.

Cities continue to grow. If we aim to protect the environment, prosperity, welfare, spatial variety and the accommodation of new city-dwellers, intensifying the quality of our cities is an increasingly urgent issue.

This demands policy that actually organises and realises this process and that leads to attractive results at all levels of scale. This in turn requires meticulous programming to realise local diversity! Another point in this context: when Haarlem and Hilversum have tackled a problem, we want people from Alkmaar to Zaltbommel to learn from this.

Know your character!

The city is an attractive environment to live, work and stay in thanks to diversity and sufficient mass. A heterogeneous built-up area requires scaled direction. In this direction, we need to seek out the contrasts between water, green space, infrastructure and stone; not just between these components, but also within each component. Contrasts between nature and the city, dynamism and intimacy, bustling and relaxed, large and small, low and high, old and new, private and public, hard and soft. Besides, intelligent intensification – and that's what we're talking about here – requires



Residential environments for Zuidvleugel have been mapped out by Zandbelt & vandenBerg architecture and urban design, *Kleurenwaaier Zuidvleugel*. Rotterdam, 2009
Examples can be found on the following page.



City centre urban



Urban post-war compact



Green urban



Rural accessible

remaining on the lookout for meaningful contrasts, insight, knowledge and the right resources.¹ How can we ensure that densification results in a sustainable quality impulse?

The only area developments that have value for the long term are developments that are location-specific: they need to fit in the characteristics of an area that are already present. To ensure that national policy can be implemented and to stimulate the exchange of knowledge both at the national and inter-municipal levels, we need to be able to make the building programmes comparable. This leads to the development of a frame of reference that can be used to look at location-specific issues, and that can serve as the basis for specific municipal master plans that fit within the nationally established frameworks. This is intended to bridge the gap between the abstract nature of national generic spatial policy and the concreteness of municipal programmes and will allow for programmatic differentiation, integration, evaluation and adjustment.

A Knowledge Centre for intensification

An important cause of the current, faulty implementation of the urbanisation policy is the large gap that exists between the abstract level of the government memoranda and the concrete local issues and characteristics of the municipalities. It demands a great amount of knowledge and vision to translate between the two. At most local authorities there is currently a lack of capacity to arrive at a vision or a spatial plan that fits within the policy principles supported by the central government.

After all, this work should not be executed by the central government, but should take place at the decentralised level. The many location-specific issues need to be transformed into a solution that is tailored to the municipality's needs on the basis of national-level policy principles. Likewise, for many developing parties, it is difficult to gain a good overview of the complexity. There is a strong latent need for an accessible, approachable advisory body that focuses on the practice and can provide parties with effective support in getting underway.

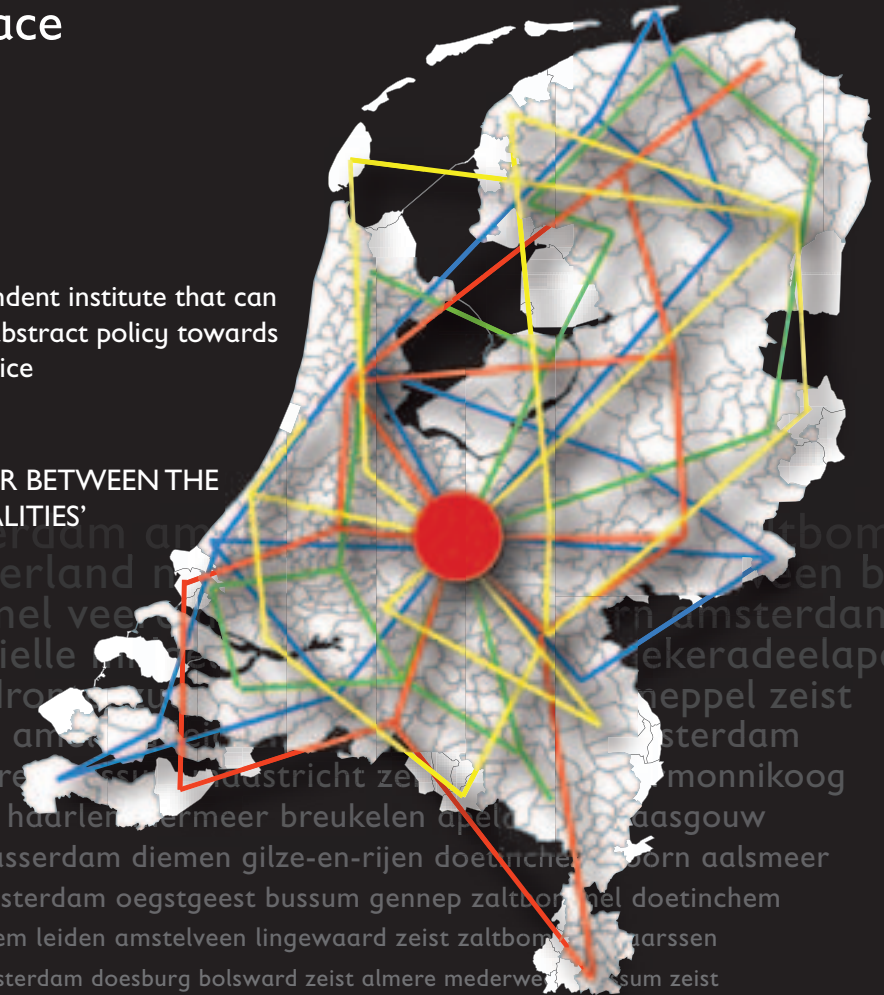
One solution could be the establishment of a central 'Knowledge Centre for intensification,' which parties can make use of to fill in the gaps in their own knowledge or capacities. We should not conceive such a Knowledge Centre as a separate organisation (established in

KNOWLEDGE CENTRE

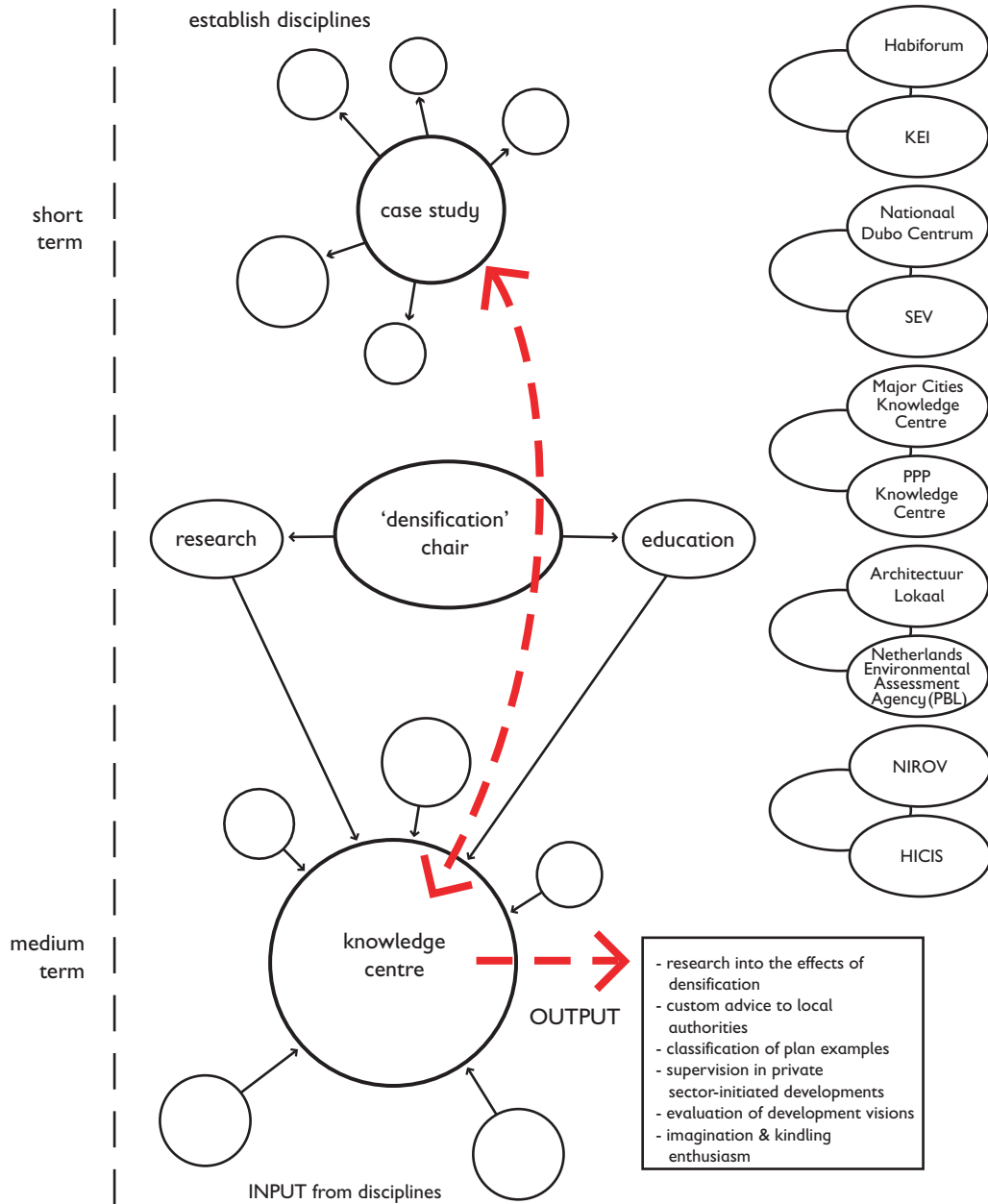
for space

An independent institute that can translate abstract policy towards local practice

'MEDIATOR BETWEEN THE MUNICIPALITIES'



doorn amsterdam an... bommel
nem lansingerland n... een bussun
ist zaltbommel vee... n amsterdam
en bussum brielle... ekeradeelapeldoorn
zoetermeer dro... neppel zeist
zaltbommel am... sterdam
amstelveen hare... daastricht ze... monnikoog
 groningen haarl... ermeer breukelen apeldoorn gaasgouw
amstelveen alblasserdam diemen gilze-en-rijen doetinche... doorn aalsmeer
apeldoorn amsterdam oegstgeest bussum gennep zaltbommel doetinchem
doetinchem leiden amstelveen lingewaard zeist zaltbommel gaarsen
doorn amsterdam doesburg bolsward zeist almere mederwe... sum zeist
zaltbommel anna-paulowna doorn onderbanken abcoude eemnes geldrop-mierlo zaltbommel doetinchem



The Hague), but rather as a centrally organised network of selected professionals for all disciplines and levels of scale involved in the densification issue.

Basic tasks of the knowledge centre

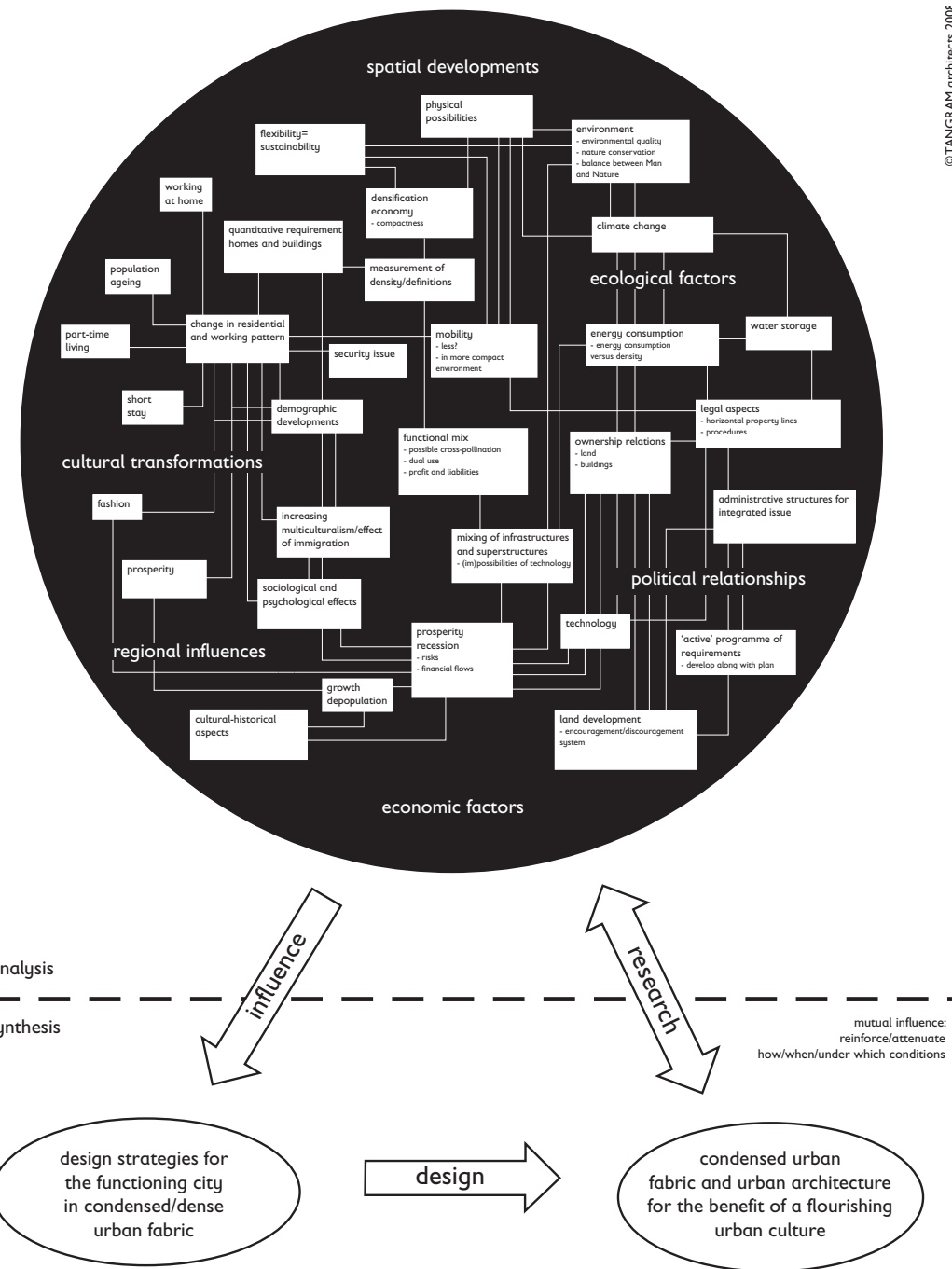
Via the knowledge centre, support can be offered to the municipalities, at their request: to establish the programme, fill in the strategic instruments and to contribute to its execution and the related supervision. Developers and designers can also get in touch with the centre if they have any questions or concrete assignments. This can be done on an ad-hoc basis or take place within a longer-term relationship. The knowledge centre can be engaged to address practical issues – to provide local authorities with tailored advice, for example, to supervise or evaluate the development visions of the provincial authority, the municipality and private parties.

In addition, the centre contributes to the development of theory, among other things by collecting and carrying out (or allowing to be carried out) interdisciplinary research into the effects of densification and by categorising example plans. This will allow municipality X to learn from municipality Y.

One logical step, at any rate, would be to establish a direct connection with the educational institutes to commission research and to contribute situations from the practice of densification as study material. A new 'Densification' chair that is associated with this centre can ensure the integration of education and research with the more practice-oriented field of the knowledge centre. It may be possible for the knowledge centre to make use of existing infrastructure (institutes and organisations that already exist, like Architectuur Lokaal or the Netherlands Environmental Assessment Agency [PBL]) or even become part of this infrastructure. In light of the complexity of the densification issue and the roles of the knowledge centre as set out above, it seems wise to create policy room for a separate, independent organisation.

Spatial and financial balancing

Based on the idea of an integral approach, it has to become possible to make interventions that are less remunerative, but are essential for the built-up environment, by compensating for them with income from more profitable interventions. In this context, it is desirable to steer more towards PPP constructions. This can form a workable incentive



©TANGRAM architects 2006

Sub-aspects for the benefit of the design of the urban fabric, urban architecture and urban cultures. The graph is a direct representation of the number of interrelated factors.

Architecture & Urban Cultures

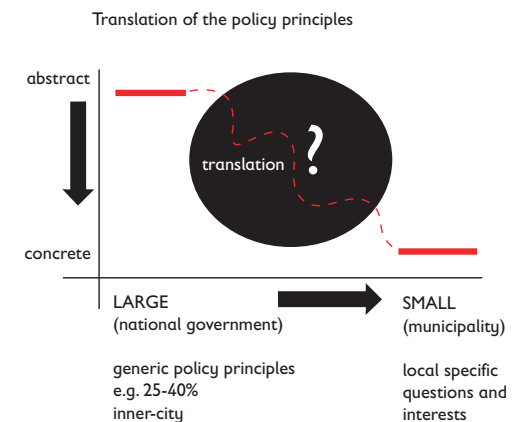
to achieve the policy objectives involved in building in the existing built-up area. It should become possible to reward spatially desired initiatives of private parties, either financially or otherwise. Municipalities need to share their insights into the social costs with the higher administrative bodies and confer about the financial support of the policy. It is only when space becomes truly scarce and clear insight is provided into the financial consequences, that there is a chance of the present ambitions actually being executed.

Building in the existing built-up area is highly complex, on a large number of levels. Matters like a lack of insight into the social returns, the conflicting interests of plan developers and other parties involved, complex construction processes, technical limitations, obstruction by zoning plans, environmental norms, safety norms and the land policy play key roles in this context. Intelligent intensification requires parties to newly delineate the relevant professional fields and spheres of influence.² To arrive at a simplification of the plan process that has – where possible – fewer players around the table, who, however, must enjoy an appropriate mandate level and a certain continuity of involvement throughout the process. The municipality is entrusted with the primate of the process.

One language for developing a spatial strategy

Successful densification involves professional expertise: the development of a good design. To facilitate this, municipalities can make spatial strategies via a single method that is made available at the national level, but of course, urbanisation that follows a universal national template is not desirable. After all, the preconditions differ from one region or municipality to the next. We can distinguish urban agglomerations and cores that are more separate – some of which are located in growth areas (such as the Randstad), others of which lie in the spheres of influence of the depopulating areas (the South Limburg region) – and each of these needs to deal with its own specific issues. For the one municipality, it is an enormous success when 20% of the new developments end up in the existing built-up area, for another, 60% is far too low as an ambition.

Solutions and ambitions will therefore need to be location-specific, and municipalities will need to set up their own municipal spatial strategy within



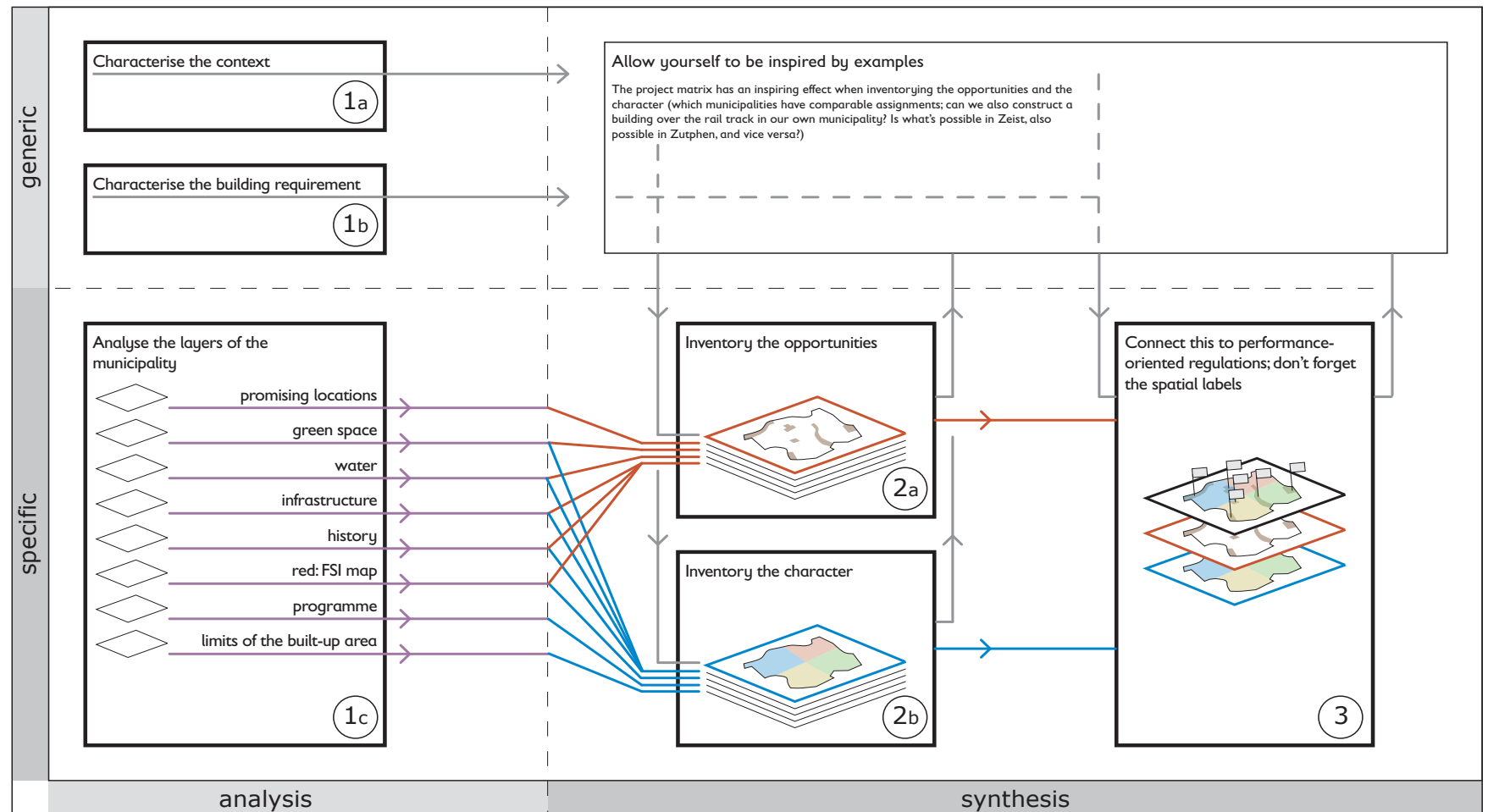
the context of national policy. They can allow its implementation to be evaluated by the knowledge centre.

A spatial strategy involves the programming and quantification of a certain desired scenario, and provides a spatial context (structures, mass, vacancy) for social and economic dynamism. It is an instrument that gives clarity and transparency to the quantitative requirement, so that strategies that focus on the pressure that needs to be absorbed can at any rate be assessed with regard to these criteria and consequently gain a high level of realism. Using the identity (what is already there) and the mission (what needs to be added) as a point of departure, it can be determined which space should get which programme: for instance living, working, water, food production, parking, sports and traffic.

How can you make a spatial strategy?

The formulation of a spatial strategy as proposed here does not involve a definite idea, or a new set of regulations, but rather a way of thinking that centres on a number of elements. Examples of this way of thinking can already be found in various municipalities.³

The formulation of a spatial strategy starts with a characterisation of the spatial context, the spatial building requirement and the development of a municipal analysis (with regard to identity, density, opportunities, contour, green space, water, infrastructure, history). This information can serve as the basis for an inventory of the opportunities and the character, which results in a so-called spatial label: quality is set off against quantity. This is no non-committal process, but is linked to performance-oriented regulations. This idea has been elaborated further in the draft for the 'model plan of action'.



Knowledge centre

The knowledge centre plays an important role in providing the structure for a model plan of action (umbrella plan), in mutual collaboration with the municipality.

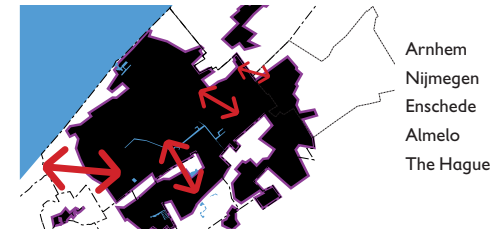
scale	type of location identification theme level of urbanity	weave-in location			functional change location			infrastructure location			extensively utilised location		
		high	medium	low	high	medium	low	high	medium	low	high	medium	low
urban fabric	ecology + flexibility												
	historical awareness + impact												
	functional mix + diversity												
transition between city and building	morphology + public space												
	scenic green space + water												
	functional mix + diversity												
transition between city and building	morphology + public space												
	scenic green space + water												
	ecology + flexibility												
transition between city and building	historical awareness + impact												
	ecology + flexibility												
	historical awareness + impact												
building – exterior	functional mix + diversity												
	green space + water												
	view												
building – interior	privacy												
	outside space + private green space												
	noise												
	sun + daylight												

The project matrix that we are introducing here serves as a source of inspiration and as a guideline. Feedback by municipalities is essential to the proper functioning of this matrix. This way, the project matrix is filled with data and it can enjoy better dissemination. For example, the idea or execution of the one municipality can be used as a point of departure by the other.

Relating to the generic project matrix

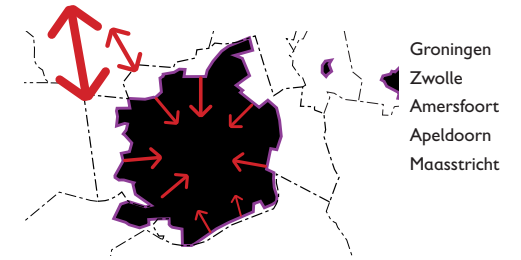
In the project matrix, references are given for various typical building projects, resulting in an overview of inspiring opportunities regarding what is possible at various locations. By relating the spatial strategy to this project matrix, any municipality can map out what the proportion high-rise/low-rise buildings will soon be, which unlikely locations can still get a programme and how 'separate' projects can contribute to the urban structure.

The project matrix shows that we have numerous good examples to turn to.⁴ We can also find more than enough inspiration abroad, for instance in projects like the Liverpool Street Station in London, the Olympic Park in Seattle and the High Line in New York.



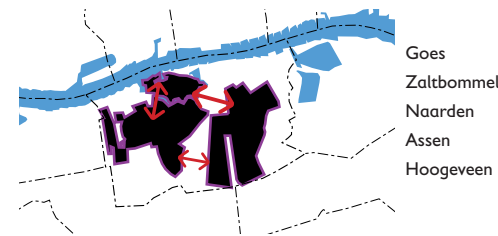
Large cities – as part of an agglomeration

These are network cities. Leaving aside the size of these cities, their possible interrelationships are important when determining the growth strategies. These cities are part of the economic basis structure and accommodate a large share of the population of the Netherlands.



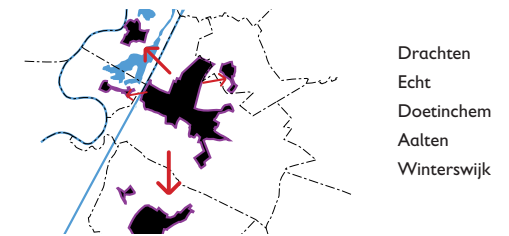
Large cities – self-contained

In their policy, these cities are more turned in on themselves. They form the economic centre in their region.



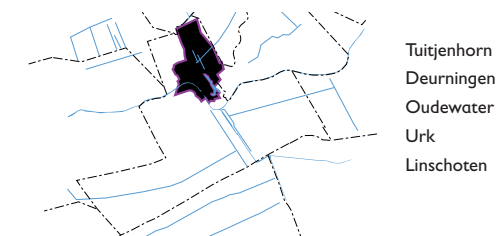
Rural towns

These towns are links in the local economy and are relatively large.



Urbanised villages

These are small-scale cores with a supra-local function.

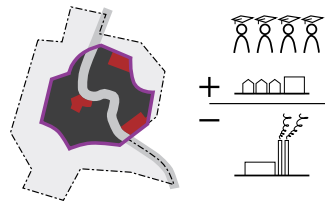


Villages

These are small cores with a local function, often surrounded by an ecologically vulnerable landscape.

Despite the fact that every municipality is different, for reasons of central direction it is possible to classify them as proposed on these pages. Besides this main classification, the desired accommodating capacity of these municipalities will need to be defined in more detail.

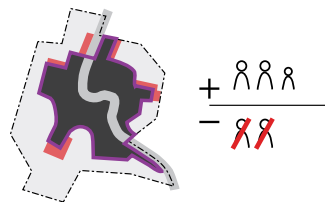
Amsterdam
Utrecht
Leiden
Delft
Haarlem



Transformation municipalities

This are municipalities that are switching from an industrial to a knowledge economy or that have already made that switch and that can therefore rezone extensively utilised sites. Cities that are very popular thanks to their identity and potential in knowledge infrastructure, but that face a scarcity in the supply of space that pushes up prices. The building requirement here is to make maximum use of the freed-up industrial space for homes or other functions.

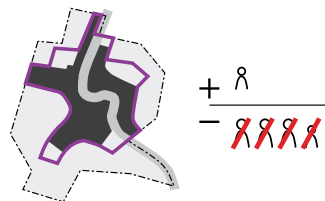
Boskoop
Sassenheim
Zierikzee
Wijk bij Duurstede
Staphorst



Municipalities with natural population growth

Which standard should we work from here? Should we let the increase in built-up area match the growth of the population, or should the utilised occupancy level be taken into account? Should the enlargement be realised via internal expansion? If not; which requirements should we make of expansions and what will still be allowed in these municipalities? All options are legitimate in principle, provided the chosen spatial strategy supports them.

Heerlen
Emmen
Kampen
Sneek
Sluis

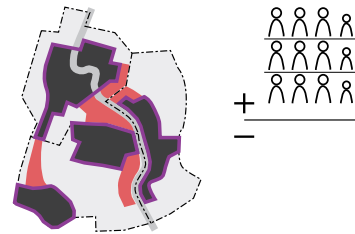


Municipalities in depopulating areas

These municipalities deal with their very own set of issues. The urban cores need to be revitalised in the sense of qualitative replacement, without an increase in the building programme.

MODEL PLAN OF ACTION
STAP 1B: Characterisation of the Building Requirement

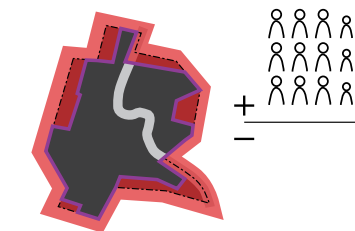
Zaltbommel
Zurphen
Sneek
Goes
Leiden



Small towns within the sphere of influence of larger agglomerations

These towns have characteristic attractive core areas that still have great potential in terms of densification (quantitatively and qualitatively). How can we avoid their heart from being smothered by too high levels of surrounding 'fat'?

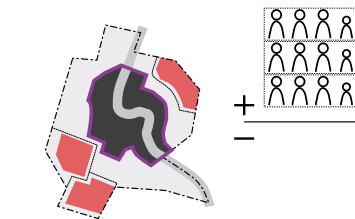
The Hague
Hilversum
Haarlem
Tilburg
Leiden



Municipalities that are hemmed in by the municipal boundary

In these municipalities, out of sheer necessity, nearly all newly developed programme is realised within the existing built-up area. In other words, here the achievement of 80% new construction in the existing area is not a great feat, but a logical outcome of the situation. More than other cities and towns, these municipalities will need to keep a critical eye out for space where, thanks to innovative solutions and cooperation, internal expansion can yet be realised.

Vathorst
Leidsche Rijn
Ypenburg
Brandevoort
Stadshagen



Suburbia

The districts built in the period of bundled deconcentration, introverted 'cauliflower neighbourhoods' and the VINEX 'mortgage landscape'. Due to their relatively isolated location vis-à-vis the adjacent city, they present themselves as an independent spatial entity. They are not however, when one takes account of the mono-functionality of the local programme. This is no longer a desirable option.

MODEL PLAN OF ACTION
STAP 1C: Municipal Analysis



A Inventory promising locations

The layers of the city need to be analysed, both in qualitative and spatial terms.



B Green space & Water

Obtain an overview of the parks and green strips. Furthermore, map out the local water.



C Infrastructure

Analyse the access points in the city for cars, public transport, bikes and trains.



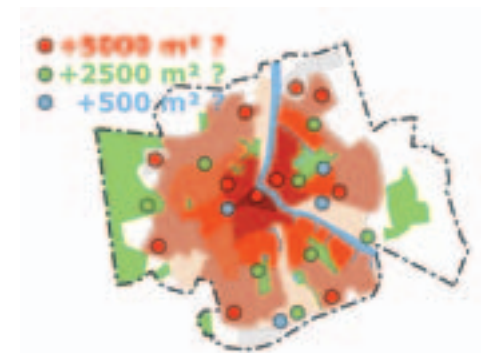
D History

Make a map that shows the historical and cultural values of the city.



E Red

Use this to determine the average density of the built-up area. During this process, draw up an FSI differentiation map.



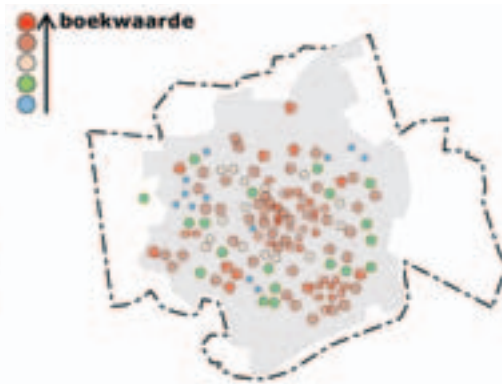
F Determine the space requirement for all layers

This is the sum of the square metres of gross floor space (red) plus the public space, water and green space as components of the spatial strategy and the expected scenario. It is defined individually for each municipality what its vision is for the shorter (20 years) and longer (approximately 60 years) term. The required number and size of the homes, together with the square metres of gross floor space for all the other functions, leads to a prognosis regarding the future development of the requirement.



G Determine municipal limits

The boundary of the municipal built-up environment can subsequently be determined and consequently a definition of the amount of built-up area (i.e. the space occupied by the built-up area) becomes available.



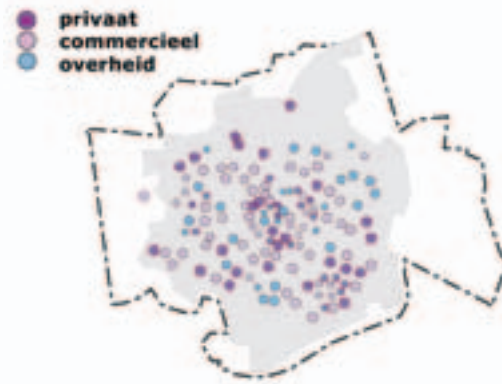
H Condition of the existing buildings

In this process, the condition of the existing buildings needs to be mapped out.



I Depreciation period of the existing stock

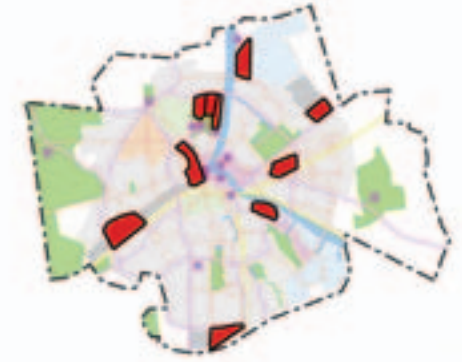
The economic value of the existing buildings will also need to be determined.



J Relations of ownership

The relation between owner-occupied and rental can be analysed to determine the relations of ownership. In addition, there is the question: are the buildings private or commercial property?

A good example of how it can be done is the zoning plan of Buikslooterham in North Amsterdam: 'the most flexible zoning plan in the Netherlands'. It's always allowed to do things differently, provided this offers a better solution. It needs to be avoided that too detailed elaborations of zoning plans stand in the way of optimum solutions. The mapped out location will show the difference in the results that are to be expected (negative or positive). Work towards balancing projects, so that other desired, but less profitable locations get their turn and so that a positive result develops for the municipality in its entirety – not just for each project!



02a Map out opportunities

Every municipality can map out its promising locations, inspired by examples from other municipalities. Specifically locations that are earmarked for restructuring or other forms of densification, which process naturally needs to take account of relations of ownership, the architectural condition and the depreciation period and the relative significance of the location.

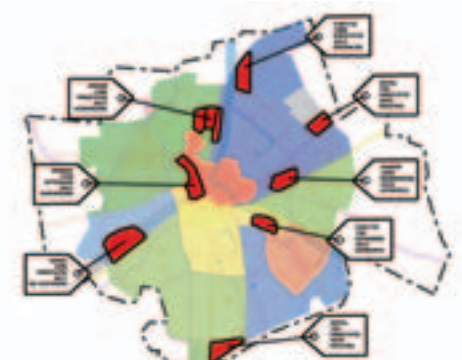
It is important in this context to make use of the layers approach. The layers of a city comprise among other things the subsoil, the morphological structure, structures of green space, water and traffic, social structures, the divisions, zonings and gradual transitions from public to private, the history, the relations of ownership and the condition of the existing stock. All these layers influence one another.



02b Obtain insight into character

An analysis of the built-up area can result in an overview of the various ingredients (port, park, buildings, infrastructure) of a city or urban fabric. The volume of these different ingredients is subsequently examined in more detail, particularly in relation to one another. This mix is expressed in percentages. Such a character description can subsequently be brought in connection with the space requirement.

To get specific environments that differ from one another, the FSI needs to be differentiated: high densities next to lower densities, calm next to bustling activity; these are typically urban and necessary differences. Special attention must be paid in this context to the design of the public domain. The focus on the area development should even shift from a process that targets the production of buildings in terms of the number of homes, to a process in which the urbanistic elements that contribute to a properly functioning area are the key. The public interest in particular needs to be served with effective and high-quality solutions that involve public spaces, facilities, transport/ infrastructure and landscape.



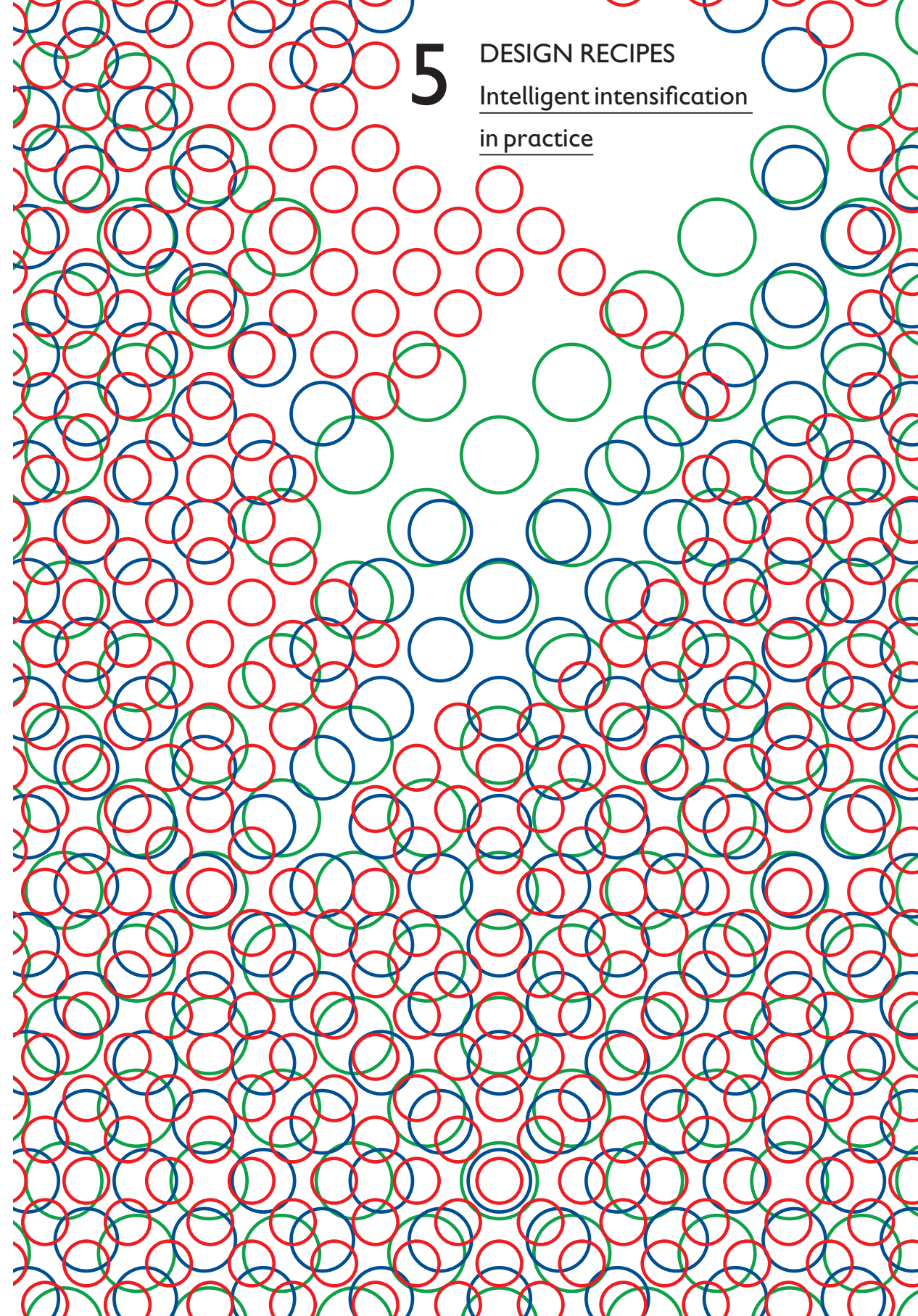
03 Making the interaction of quality and quantity measurable

The promising locations can be fitted with a spatial label, as a means by which to measure the intended interaction between identity and the quantitative building requirement. Naturally, several limitations are included in such an appraisal (for example, a maximum FSI within the desired differentiation and a description of the facilities that are allowed), but nothing more.

- 1 See: Dijke ten, C. and Mispelblom Beyer, B., 'Ruimte scheppen door verdichting', *Nova terra*, The Hague, May 2007
- 2 See: Dijke ten, C. and Mispelblom Beyer, B., 'Ruimte scheppen door verdichting', *Nova terra*, The Hague, May 2007
- 3 This way of thinking is not new. The Hague, for example, already works with an opportunities map, Rotterdam with a VIP map and Amsterdam too has a 100 opportunities map. But these maps will now also be linked to a programme (spreadsheet distribution across the city).
- 4 The Urban Renewal Innovation Programme (IPSV) also provides numerous examples and studies. See: www.vrom.nl

5

DESIGN RECIPES

Intelligent intensificationin practice



Integral approach

When compiling this advice, one element immediately caught our attention: the various firms can already rely on a great deal of in-house design expertise relating to the intensification of the city and numerous physical examples of such intensification have already been realised. The designing discipline lacks nothing to make building in the built-up area a success, so it cannot be blamed for the slow start that densification is making in some municipalities.

With extra attention to and knowledge relating to subjects like daylight, orientation, accessibility, privacy, views, comfort and allure, a good design can compensate for the density of the urban fabric. The possible negative spatial effects of densification projects can always be solved. Furthermore: we don't have to invent everything from scratch, because a lot of this knowledge is already present in our current residential environment and can for instance be seen in the variation and subtle transitions from outside to interior space in our historic city centres.

The 36 'design recipes' in this chapter aim to offer principles that are important when designing an intensification of the built-up fabric. They can be used to generate positive influences of densification at a variety of scales and various layerings in the city.

These tips also relate to the different aspects of the design: to the strategies aimed at realising the design and to the concepts that give the spatial design its form. The relationship between the built-up area and nature – in this context the indispensable interaction of the city-dweller with nature – is given specific attention. The design recipes have been grouped into these main categories, and are run down per theme in terms of scale. These tips are intended for designers, administrators, planners and developers. Each recipe is accompanied by a red icon indicating the level of scale, and a black icon that indicates for whom this recipe is particularly useful.

The sources of these design recipes can be found both in realised plans and in studies and surveys conducted by architects, urbanists and landscape agencies. In addition, we have made use of the views developed by property developers and housing corporations and of what the users, the residents of the Netherlands have indicated.



Planner



Developer



Designer



Administrator



integral

With no relation to scale or present throughout all the levels of scale



fabric

Scale at the level of city, district or neighbourhood; structure of the (public) urban space



Transition from city/
building

At the scale of the block, street or square: transition from public to private



Building

Organisation of the building and its direct surroundings; arrangement of building premises



Building exterior/
interior

Arrangement of the building and the relationship between interior and outside space

GO CONTRAST

1 Building contrasts

The blurring of the boundaries between the built-up and the undeveloped areas results in 'frayed edges' that all too often degenerate into clutter and a lack of clarity. The development of starker contrasts, between densely built-up areas and clearly delineated public space within the urban fabric and the boundless space of the surrounding landscape, can contribute to the achievement of higher-quality, more distinctive characteristics.

In addition, contrast is good for an area's recognisability and legibility, and as such contributes to the acceptance of higher densities and to the promotion of the area's identity. This can be a reason for creating more variation in buildings and public space.

Designers can use a clear point of departure in the 'branding' process – an area's characteristic and strong qualities – to develop location-specific residential and working environments that everyone can live and work pleasantly in.

2 Designing heterogeneous environments

To realise heterogeneous environments, versatility can be introduced at all levels of scale, provided effective direction is given to the process. Besides conceiving specific forms for specific locations, this primarily means accentuating the heterogeneity of lifestyles and living styles in environments that are intended to be urban in nature.

The strategy of utilising a wide range of housing typologies that respond to their different locations can lead to the development of a differentiated and vibrant area. In addition, the deployment of low-rise buildings at the planning level forms an ideal means by which to engage in varied forms of interaction with the environment and to make different urbanistic spaces.

In the case of stacking, a diversity of residential situations is rarely based on essential differences in values that relate to the residential experience, but more on differences in appearance. In addition, the local ground level, occupied as it is by impersonal entrances and waste containers, is a great deal less vibrant than that of areas with lots of low-rise buildings. This needs to be avoided.



GWL site, Amsterdam



Characteristic roof landscape, Zaandam

CITY



Amsterdam
FSI = 0.2
FSI = 0.2 (GFA/surface area in km = 4.3/ 219)

MUNICIPAL DISTRICT



Zeeburg (not including water)
FSI= 0.3

DISTRICT



Oostelijk havengebied
FSI = 0.7

NEIGHBOURHOOD



Borneo eiland
FSI = 1.5

BUILDING BLOCK

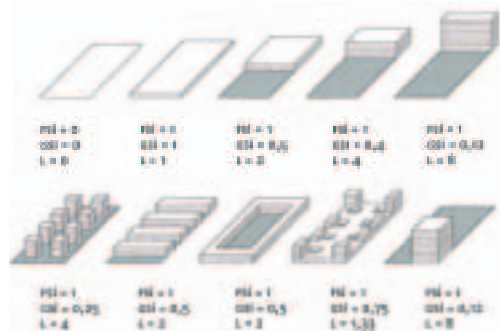


building block
FSI = 2.1

ALLOTMENT



Allotment
FSI = 2.1



Densities with an FSI of, for example, 2, as found in historic urban fabrics, can be achieved via both a building percentage of approximately 50% in four layers (4 x 0.5=2), as well as modern light and air stacks with 16 layers and a 12.5% building percentage (16x0.125=2).The final result is markedly different in atmosphere.

FSI Floor Space Index: Gross Floor Area/plan area.
The FSI defines the intensity of the built-up area within a specific area.

GSI Ground Space Index: Built-up surface area/plan area.
The GSI defines how compact the built-up area within a specific area is.

L: Number of building layers

3 Make effective use of the space at every scale

It is important to consciously deal at all levels of scale with the volume of space that the projected programme will be taking up. Density of development develops by linking the building percentage (the footprint) to stacking. The simultaneous and conscious implementation of both strategies yields the greatest returns (similar to combining the correct rpm and gear).

Different strategies can be followed to realise urban density. The number of square metres that are allocated can be increased, for example. In this process, it is important to make edges, streets and squares compact in terms of size. By ensuring that collective space is limited but strategic, a great deal of allotment surface and relatively more money is left over within the building areas for realising a higher-quality finish to the street level facilities.

Another strategy is to make a strong investment in the building percentage – in other words keep the allotments small in relation to the footprint.



4 Connecting the levels of scale and the disciplines

The intensification of the urban character of a city or village requires a design strategy in which the various layers and structures are designed simultaneously. The built-up fabric is composed of numerous system layers, such as the morphology of the fabric, the green area and water elements within this fabric, the infrastructure fabric, the historical context and its valuation, the functions and the economic fabric, the relations of ownership, the technical and functional condition and the depreciation period of the existing stock.

When designing the intense urban fabric of a city or village, this leads to an analysis in which the effects on other system layers need to be given balanced consideration. Densification needs to have a positive effect on the development of green space and water in the city. Economic returns as a result of land sale or the development of property should never be the only motive behind a densification project.

To address these issues satisfactorily, a municipal 'master plan' for buildings will not suffice – rather, the analysis needs to be elaborated at all levels. This all should not be done at the generic municipal level, but instead should be differentiated according to the colour of the district.



Morphology

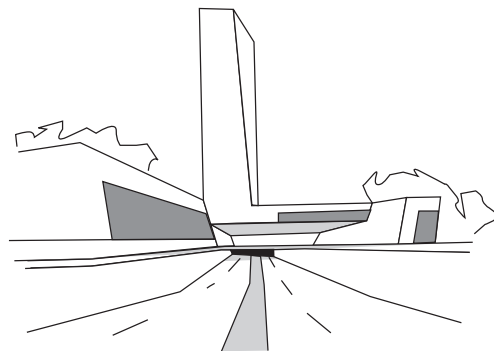
Infrastructure

Green Space

Water



Malietoren, The Hague, Benthem & Crowel



5 Interrelation of the infrastructure with the buildings

In the Netherlands, a great deal of space is taken up in particular by the main infrastructure for car traffic, and as this space is currently only used for one function, it offers interesting opportunities for the intensification of its use. Safety aspects, costs that are covered by different sources of funding and regulations can however play a negative role in this context.

These obstacles can be cleared out of the way, various budgets can be combined into one and costs can be muddled out. After all, the covering, deepening or building over of roads and public transport lines can result in surprising qualities. These solutions can be used to remove fine particulate matter and noise as negative influences from the surrounding area and the residual heat that is generated by the traffic can be re-used for other purposes, by filtering the vent air.

In addition, the fact that the built-up fabric is traversed less often by wide infrastructure 'trenches' can reinforce the homogeneity and quality of the fabric tremendously.

The complexity of such an approach can reap benefits in all those areas where large intensification operations are being undertaken, or can be remunerative as an investment in consideration of important urban or rural issues. At a smaller scale too, such a process of merging can form the solution with regard to intensification issues, such as the solving of possible problems with loading/unloading zones in a shopping centre with homes constructed on top of it.



6 The mixing of functions can reduce pressure

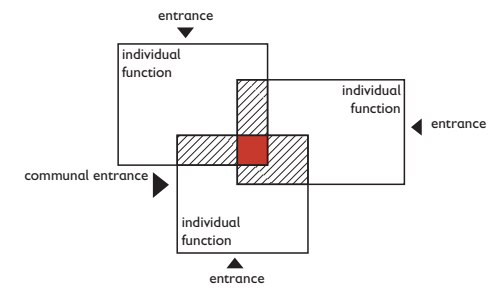
The mixing of different functions in areas increases the likelihood of non-simultaneous usage pressure and works relaxing as a consequence. This offers opportunities for dual use. As a result, the areas often can no longer be captured in simple management and operation calculations, but it is in fact a typical urban quality. Functions no longer form a straight match with local zoning or the spatial form. The mixing of functions is also interesting in terms of energy, thanks to the exchange of heat and cold between various functions.

Not every function is suitable for mixing in a residential environment, particularly heavier industry and noisy functions, but a whole range of options remain. In addition, we can differentiate according to the type of nuisance caused by a function: noise at night is different to noise during the day. Anticipating the future by ensuring that activities are less of a burden on the environment than is presently the case is a must.

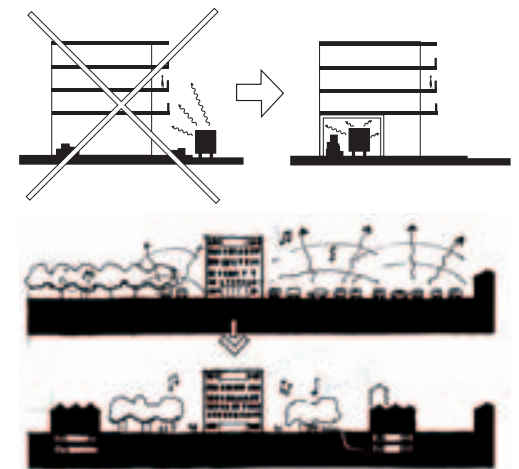
7 Designing away the negative influences of a different function

By carefully grouping functions in a building and its environs, meticulously positioning entrances, daylight openings, installations and other facilities, activities that disrupt each other can be 'designed away'.

Bad examples, with throbbing truck engines waking up the upstairs neighbours in the morning, are widely known. That same shopping centre could also have made use of a covered loading/unloading zone. A critical approach to the design of a plan and good insight into the negative elements as they vary per function make densification a feasible option.



Unity versus individuality





Dobbelman site, Nijmegen - PM 118



Vondelparc, Utrecht - PM 133



Residential street, Delft



Partition for the transitional zone, IJburg

8 The mixing of residential environments results in multifaceted densification

It becomes possible to develop the highest densities in an interesting quality by integrating land-based and stacked buildings in combination with commercial activity. This not only results in the development of spatial quality and the intensive use of space, but also mixes different types of users.

The mixing of housing types results in a healthy complex of social structures and an economic distribution of the target groups in a plan. The mixing of uses leads to the development of a vibrant urban fabric that offers flexible opportunities for use. This is exactly what it seems the city of the future requires.



10 Public space within the limits of the building design



By mixing the space in buildings with the adjacent public space, the plan gives space back to the city and allows city life to breathe within the buildings. The practice of making parts of a building accessible to the general public was quite common in the early cities, but has gradually disappeared. It can make the city appear larger than it actually is. This means that every opportunity to make a building publicly accessible in some form or other needs to be used by the designer.

The further a city densifies, the more important the art of making a pure zoning from public to private, in an incremental form of accessibility, becomes. The boundary – the transition from public to private – can be established separately for each individual case.

9 Careful zoning in the public domain for a sense of space

In a compact environment, the functions of the city and the building merge with one another, and it is in this area of transition where one can find the interesting and effective solutions. This means that the issue is not only to think in terms of the building itself, but rather to focus on how the building connects to the system of the city and the adjacent public space.

A precise zoning from public to private, from open to closed, is extremely important in this context; these transitions need to be carefully directed at all levels of scale (urban planning, architecture, material and landscape). The designing of transitional areas makes it attractive to use the space between the building and the city. The design of these areas needs to be meticulous down to the level of individual details, as even the depth of the façade can contribute to the quality of such transitions.



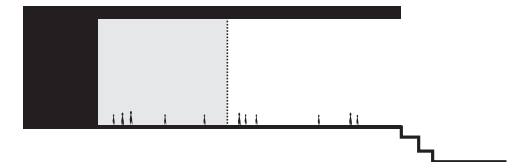
Carré d'art, Nîmes, Norman Foster

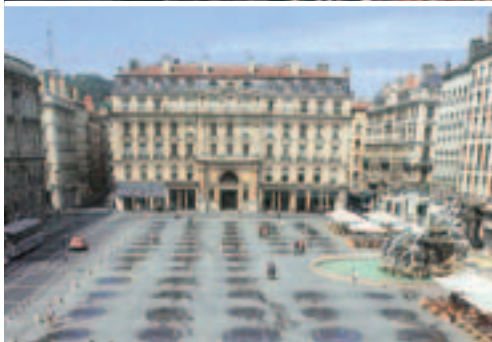


Passage, The Hague



Borough Market, London





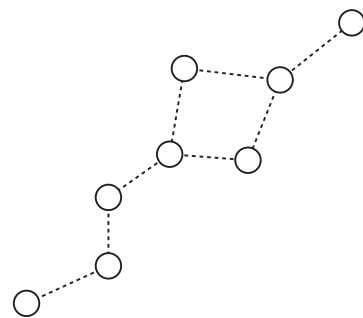
The streets and squares of Lyon's city centre form a network of public spaces (TL). The public space and the (public) buildings that line it give significance to one another, as can be seen in the case of the opera building and the surrounding square (see aerial photograph TR). Each square has its own identity: Place de Terraux (BL) is characterised by densely populated terrace cafés and a grid of fountains, Place de la Bourse (BR) is a cosy location, where people can sit on a bench to enjoy their lunch.

11 Significant public space

It is vital to make significant public space that is cultural and functional or that is historically charged. No empty, pointless expanses, but 'urban rooms'. To this end, the public space needs to be developed on the basis of a programme of requirements; the system of high points, centres of gravity and connections ('corridors' and 'urban rooms') together form the mental map of an urban environment.

The amount of space occupied by parking facilities needs to be limited by maintaining short lines of accessibility (developing a network rather than a tree structure and/or parking on the edges of the city), finding an architectural solution for the parking issue and by offering alternatives such as carpooling and large, cheaper garages. The fundamental question remains whether the garaging of private property is the task of the government. Perhaps we should make a more radical investment in differentiated parking capacity.

Significant public space can also be found by directing one's attention toward less obvious areas. Examples include making allotment gardens and cemeteries attractive for third parties or using obsolete infrastructure to make an area greener.

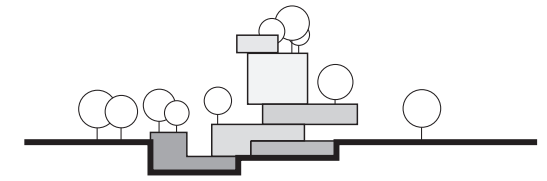


12 Stacking of programmes



As a result of the intensification of the space, the need develops to locate functions in closer proximity to one another. It is no longer desirable to always develop functions separate from one another and in separate zones. The design needs to be based on interrelationship.

If the programme elements can no longer be organised 'side by side', it is possible to stack them. This creates new options. The alternating use of functions can lead to the development of a strong synergy between different organisations. Besides interesting collaborations, for instance between a senior citizens' home and a day-care centre, the various users within a combination often gain access to more facilities than when the components are developed separately. This can result in new forms of living and working together. One condition for the success of such a multifunctional building is a properly designed system to manage the variety of uses.

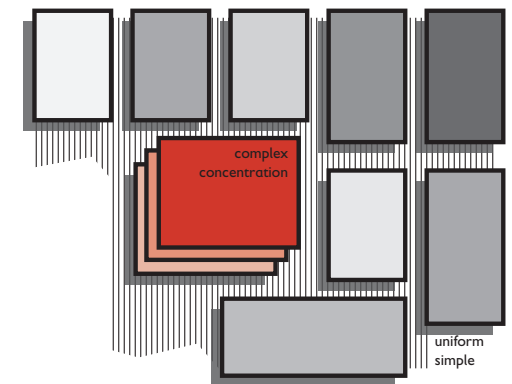


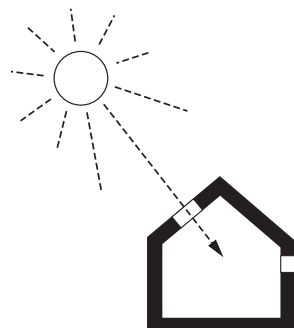
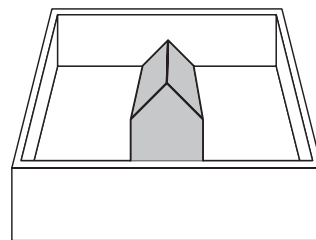
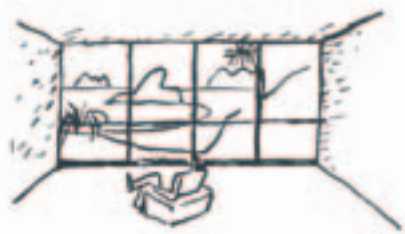
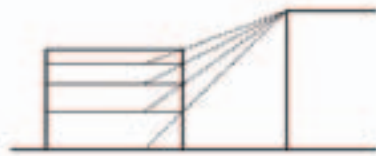
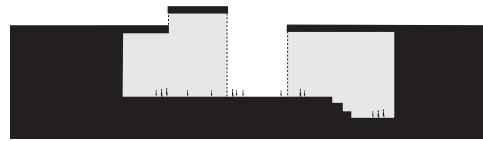
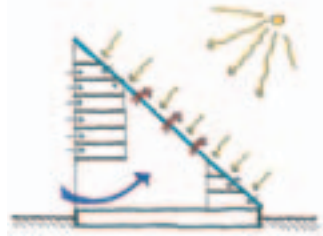
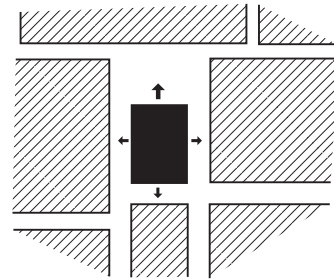
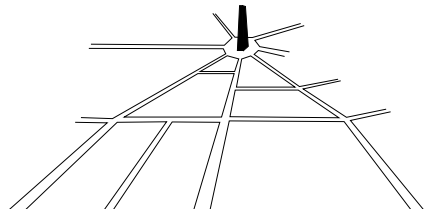
13 Common sense in the concept leads to feasible plans



The mixing of functions is vital to the development of a vibrant fabric. In this context, it can contribute to the manageability of the plan development at the levels of the city and the building complex to create a division. This means that the functional mix is developed in the core areas of a specific plan and not dispersed throughout that plan.

The complexity within a plan can be separated into complex and simple assignments. Those parts of the plan that are relatively simple to elaborate by means of uniform functions can help to develop a large part of the plan relatively easily, for instance in terms of procedure. The mixed parts of the plan, which are relatively complex, can be developed with the aid of a collaborative or delegated client structure. Often, the (municipal) government will be part of the client collective.





14 Designing landmarks



High compression negatively affects one's orientation. Surveying or strolling through such an environment, one is unable to find a point of reference. That is why we need to consciously design reference points – landmarks in the city – that make the cityscape recognisable and offer a handle from a variety of angles.



Landmarks can be formed by buildings that stand out thanks to their size, function and form, but spaces too can form an effective point of reference. A square or park, for example, that serves as a source of spatial relaxation after moving through the urban corridors – the streets and roads.



Aerial photograph of Place de l'Etoile/Charles de Gaulle and its environs, Paris



Arc de Triomphe, Paris

15 Explicit spatial dimensions



Spatial expression provides a sense of space. The lack of individuality of many recent urban profiles in the public space has resulted in public space that is not only inefficient, but also inspires little emotion and is poorly used. To be able to intensify successfully, we need – analogous to numerous historic examples – to dare to seek out an alternation of minimally scaled structures with far ampler, contrasting sizes in the public space.



In the case of these minimally scaled structures, the public space is not defined by traffic flows, but by qualitative proportions in terms of height and breadth. This gives the city more spatial tension and furthermore enables us to achieve enormous space savings, so that more space develops elsewhere for green space and true open and public space that is substantial in size.



We will need to make the necessary adjustments to regulations that deal with, for example, the daylight obstruction angles to allow us to arrive at a more exciting result. The scales of the built-up and undeveloped profiles need to be optimally attuned to one another and we will need to develop varied profiles with diagonals for light and views.



Maastricht, Markt/Vrijthof



Amsterdam, Dam



Madrid, Plaza Mayor



The Arena of Nîmes



V&D department store and peripheral boutiques, Dordrecht, Rijnbout, Floor plan of the ground floor



Donnybrook-Quarter residential ensemble, London, Peter Barber Architects

16 Quality all round

Due to scarcity, the public space, which is reduced in size as a result of densification, will gain more and more significance. The careful structuring of the public space and particularly the transition to the surrounding buildings is of crucial importance. Individual buildings will occupy a less central position than before – indeed, the central theme will be the interrelationship of the building and the public space. The public space will define the location, the buildings will support and harvest the identity and the interaction between public and private will determine the functional significance. The designing and guiding of the intensification process necessitate that all (scarce) public space has quality. By basing the design on a system in which every building unit that borders on the public space shows the quality of a front façade (this is achieved for example through the positioning of the building's functions, the degree of openness of the façade, the detailing and the material), we can create a 'comprehensive building'. The consequences of this are that we have to deal with less clutter and the relevant plan becomes more manageable in social terms. Of course, buildings often also have rear facades. These always need to be developed so that they are connected to (manageable) semi-public or private areas.



17 Land-based high density

Far from everyone wants to live in a flat. In fact: a great many people feel a strong aversion against living in a flat. It is often thought that stacked building is a condition for urban developments. But this idea is outmoded by now. With land-based homes in high densities, it is no problem at all to achieve densities of 100 homes per hectare, triple the density of a VINEX neighbourhood. This creates a range of other options, with various advantages: a clear identity for the residents, more opportunities to realise individual differences from one home to the next and – important in times of stagnation of the large-scale developments – the possibility to phase a project in small portions.



18 Sophisticated parking solutions



Parking forms a crucial factor in the feasibility of a plan for a building. The plan must contain an integral solution to this issue within the contours of the plan. In a densified environment, this inevitably leads to new forms and solutions on top of, next to, below or in the building in question. In the best case scenario, the existing surrounding area also benefits from the parking solution. This not only increases the chance that the parking solution is feasible, it also results in an improvement of the public space that directly surrounds the building. Basing our calculations on a condensed fabric, in which public transport is optimally encouraged and branches out to accommodate the stream of people, we are left with a parking requirement per home. This determines the feasibility of a specific plan. In the municipal norms, a differentiation needs to be made with regard to the homes' location vis-à-vis public transport hubs. In this differentiation, a station location will be assigned a lower norm than a peripheral location.

19 Using the roof



The utilised surface in an intensively used urban fabric can be maximised by making multiple use of the footprint, with the topmost roof surface serving as space for a limited-stay area. The quality of this layer lies in the fact that a relationship develops with the space and that the visitor has a view of the urban fabric and the green space in the distance. The utilisation of this quality is of particularly strong importance in a condensed fabric. The utilisation of the roof area can also entail fitting installations like solar panels or wind turbines. The use of such technology is rapidly increasing and will need to be taken into account as an extra layer in the programme when designing and planning the city. The rooftop terrace is of high quality. Privacy solutions and entrances will however be necessary, and will need to be taken into account in the zoning options for maximum utilisation of the possibilities. Green rooftop gardens are extremely useful in highly urbanised areas, because they make the residential environment more pleasant and handle water storage. For example, during a downpour, a rooftop garden with 25 cm of soil absorbs 80% of the rain that falls on it, and proceeds to slowly release it again via evaporation. We should consequently grasp any opportunity we get to construct a rooftop garden.



Parking on the roof of a residential building, Nijmegen, Van Gameren/Mastenbroek



Rooftop garden



Rooftop terrace, Unité d'habitation, Le Corbusier

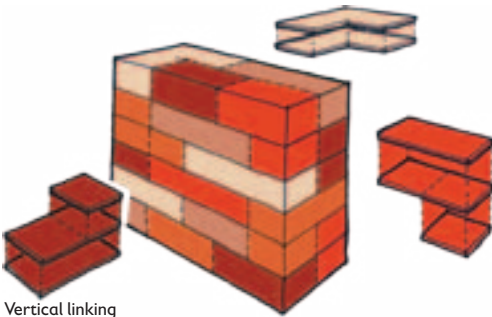
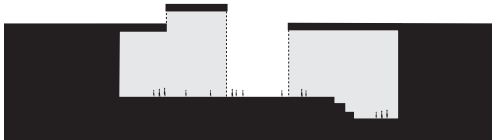




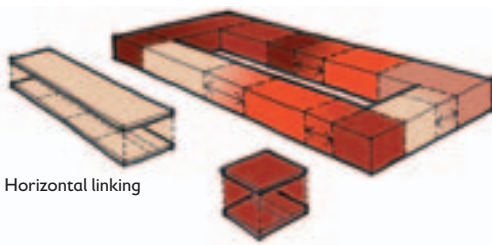
Villa Hoogerheide: in the case of the expansion of Villa Hoogerheide in Hilversum, the architect Jo Crepain has not harmed the existing historic villa (designed by Berlage) in any way, but has accommodated the required new space for offices below-ground.



The underground playground TunFun in Amsterdam



Vertical linking



Horizontal linking



20 Building underground

There is a great deal of pressure on space in the Netherlands. If there is insufficient space on the surface, it may help in certain cases to go below ground. The systematic utilisation of the subsoil is not an easy affair, but it does offer a wide range of good opportunities to use the existing urban area and also the area beyond more intensively. The parking issue can be solved underground, for instance, but infrastructure and water storage requirements can also be hidden below ground level. Vacant underground spaces can be assigned a new function; an obsolete road tunnel can be transformed into, for instance, a playground or an old subway station into a discotheque. Furthermore, in areas where, for historic reasons, building above-ground is undesirable, underground construction can form an excellent solution. There is a whole range of opportunities when it comes to underground construction!

21 Space for flexibility

Sustainability and flexibility are directly interrelated. The laws of flexibility apply to urban planning, infrastructure and the development of the natural landscape. Flexibility in the fabric, at a variety of levels, ensures that the city can be adapted to future changes. Flexibility in buildings is important for ensuring that the structure can be preserved for a long period of time, i.e. that it is sustainable.

A bit of 'excess' is important for making the multiple use of space possible. This requires a certain amount of pre-investment, but also results in quality over time thanks to a certain richness in the architecture.

In this context it should be noted that the standard forms for housing support structures, as they have been developed in the Netherlands, are not suitable for the coming period: dense concrete walls are rigid and inadaptable.

Single use, such as found in the mono-functional residential districts of the last few decades, results in a lack of flexibility. Multi-functional use on the other hand creates flexibility – after all, the structures have been designed to accommodate different conditions.

Each design within the intense environment should give shape to the insight into the possibilities for future changing use.



22 Reflection and light as creators of space

When it comes to experiencing space, its dimensions aren't the only thing that matters. The right materials and textures can contribute to the illusion of space. In the case of a higher intensity, the 'tangibility' of materials is very important. This is often linked to the materials having a coarser structure.

On the other hand, too much texture makes the space smaller and can lead to a shut-in feeling. It is consequently important to apply the right texture at the right time. Materials that are reflective produce the effect of a through view or a duplication. With the right lighting this creates an effect of depth and layering. In the tight public space of the condensed urban fabric, both effects can optically enlarge the area in question.

23 Collectivity - accessibility

In the case of stacked housing types – and with forms that involve mixed functions – a form of regulated communality at the building level can reap major benefits. A crucial aspect of such communality is that contact is possible – but not mandatory.

Spacious homes can compensate for the density of the fabric. The home needs to remove the inhabitant further from the density of the city. The concentrated character of use that is such a typical enrichment for the city, can quickly lead to annoyances in a residential building. Walking around helps to create a sense of freedom and security. The individual home needs to be (partially) removed from the shared point of access and as many homes as possible need to have a direct link with the street.

It is furthermore important to keep the semi-public route in the building as short as possible, unless the target groups are uniformly defined and meeting actually constitutes an added value. If the design outlines multiple routes within a building, this allows the resident to choose for himself, so that meeting is an option but not an obligation.



Reflection optically enlarges the patio space



Wide entrance as point of access to the collective space, Olympisch Kwartier, Amsterdam - PM 286



24 Daylight

Higher density levels put pressure on the insolation of daylight. In the Netherlands, homes need to fulfil legal natural lighting requirements, with the distance to and the height of the overhead building serving as the ultimate criterion. However, as far as the penetration of daylight is concerned, internal obstruction is also an important factor. The design needs to establish the values of the external and internal obstacles in relationship to one another.

In this process, an unfavourable external obstruction can be compensated by less internal obstruction: for example, a narrow street combined with higher storeys can still provide the same quantity of light indoors. In the case of equal densities (FSI), it is more favourable for daylight illumination to construct narrow streets with a low profile than wide streets with a high profile. Light from above or skylights can give a compact block more light and air.

A compact block has a relatively low façade index (the façade surface viewed in proportion to the floor surface), which has a positive effect on the building costs and the energy consumption. At the same time, a low façade index means that a space has less potential for allowing daylight (sunlight) to penetrate it and for enjoying a wide view. If one compares different building forms with respect to the relation between the density and the façade index, it turns out that building deeper spaces under equal conditions in terms of the obstacle angle increases building density but simultaneously reduces daylight illumination.

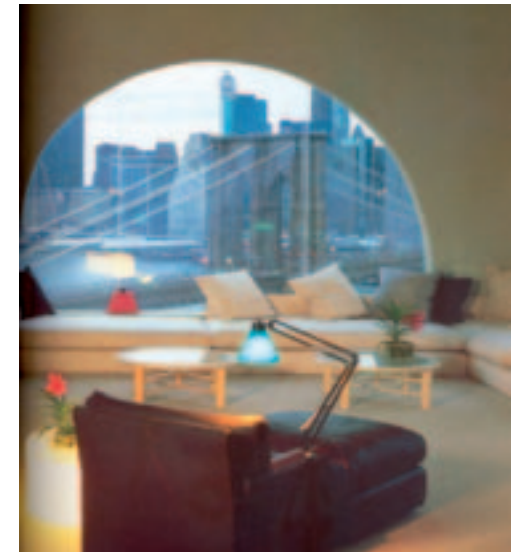


25 View



Just as a home contains a variety of atmospheres and levels of intimacy, a diversity in views also constitutes a richness in its own right. The dynamism of the view needs to be linked to spatiality. That means taking a conscious approach to the different perspectives that can be offered to a city-dweller.

A view of the street, a possibility to look out over the city with the cloudy sky above or a through view to the garden can all give tremendous added value to the space.

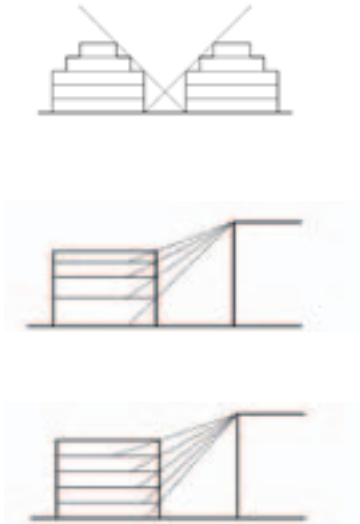


26 Privacy



Architecture can be used to create opportunities for people to make contact or, in contrast, withdraw into themselves. The first step forwards should be made in the organisation of the home in relation to the street or a collective point of access, the functional relationships. As was said before: spacious homes can compensate for the density of the fabric.

The home needs to remove the inhabitants further from the density of the city. A lot can subsequently be arranged via small details, so that the inhabitant can filter and change tracks. That is why it is very important to pay attention to 'the skin', the transitions, the visual relationships and particularly to noise.





27 Sunlight

Sunlight involves a major residential quality. That is why it is important to capture sunlight in the home via any means possible. The home should preferably be orientated to multiple sun directions, with the functions determining the orientation.



If it only proves possible – in exceptional cases – to orientate the home to one direction, this should be compensated by an optimum orientation. In an urban setting with an urban lifestyle, the orientation should preferably be toward the west, with the evening sun. In more general terms, the solutions should be attuned to the latitude of the home.

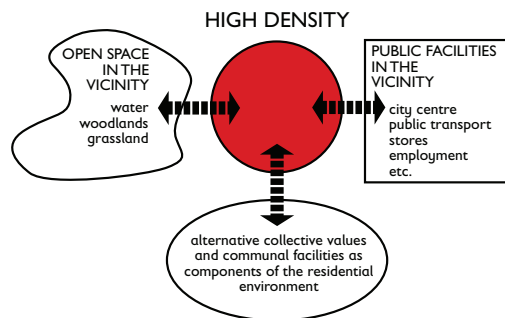
After all, a small light court is less effective in the Netherlands than in Southern Europe.





Atrium with garden, Instituut voor natuur- en bosonderzoek, Wageningen, Behnisch & Partners

PRECONDITIONS FOR BROAD ACCEPTANCE OF HIGH DENSITY



INTERACTION OF THE CITY-DWELLER WITH NATURE

28 Interaction with nature

In order to feel happy, human beings need to have a relationship with nature.¹ Green space, water, wind, sun, light and air need to penetrate the condensed city in sufficient quantities. The development of artificial outside space without daylight is not a desirable option. Artificial air quality turns out to be harmful for one's health. A lack of green space to view results in an unhealthy quality of life.

Making buildings that have windows that can open, that have good daylight illumination, sufficient height in the interior spaces, contributing to an awareness of the environment by making natural processes visible such as the falling of water, the conversion of sunlight into energy, the growth of nature: these are all matters that are of vital importance when densifying the city.

29 Relationship between the closed city and open space

When increasing a city's density, it is very important to make the relationship of the maximum-intensity urban area and the local open space tangible in a physical and visual sense. The issue here is to make the 'possibility to escape' the full environment perceptible. Continuing, recognisable lines in the fabric provide an opportunity to establish this relationship with the 'world outside'.

This can be infrastructure, often in combination with lines of green space and water, such as roads with a clearly designed continuity, for instance in the shape of avenues with recognisable green space. But this can also take the form of a larger green area with water. Watercourses are eminently suited for establishing a relationship with the landscape: they often form a literal flow toward the nature outside the built-up area. Sometimes, they are even literally a waterway, thanks to the possibility they offer to navigate the water. It is therefore important to repair, where possible, the larger (urban) structures.

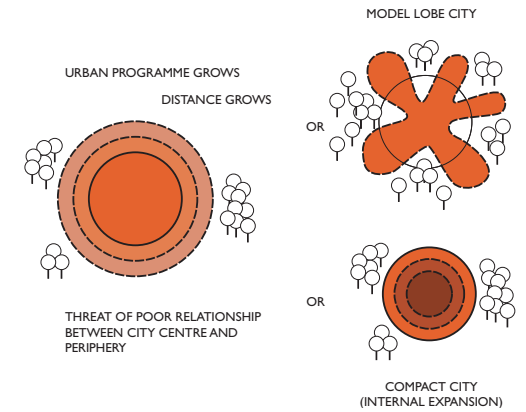


INTERACTION OF THE CITY-DWELLER WITH NATURE

30 Keeping the edges of the built-up area close-by

The development of compact fabrics makes it possible to increase the contrast between built-up and undeveloped areas. The result of this is a reinforcement of the qualities of both categories. In addition, the edges of the built-up fabric can be drawn physically closer. Escaping the city is a mere stroll or bike ride away. This feeling of 'air' becomes lodged in the mind of the city-dweller. In addition, this contributes directly to a reduction in the level of recreational car use.

It is important to utilise the edges of the plan area. Many plates have just as much surface area along the edges as they do in the centre. In this approach, the space acquires a stronger effect in the centre, with more value with mass along the edges. Compared to a central public garden or park, a park zone that serves as an edge is often no longer a park, but a space-wasting buffer area.



Southern outskirts of Den Bosch



Vondelpark, Amsterdam



Square with trees, The Hague

31 Room for green space

A sustainable and pleasant city is a city with a great deal of green space. Green space is listed as one of the primary conditions for a pleasant residential environment.²

Modern city-dwellers do not limit their wishes to green space close to home; they want a park at walking distance and a large green area at cycling distance.

The sacrifice of open, often green, space for intensification is consequently unacceptable. Indeed: it is necessary to simultaneously densify the city and create more green space. There will be a marked increase in public support for a plan if it contains both structures in equal measure.

The green space is required to be of such significance that it has a quality that transcends the plan itself. Only then will the densification project be seen as a positive development. By concentrating the built-up environment in zones with higher density level, it becomes possible to create room for green space – something that can be arranged by establishing a performance requirement for green areas in national, provincial and municipal plans.

However, any building designer is also free to set his own requirements for the design based on this context. Green space has an enormous value within the city. The economic value of green areas will need to be quantified better than has been done up to now, after which it will become clear that investments indeed often yield returns.



32 Compactness, energy and ecology can be combined

A city's energy performance can be improved considerably via the careful positioning of its buildings. This also applies to a building's energy performance and to the opportunities for generating or storing energy.

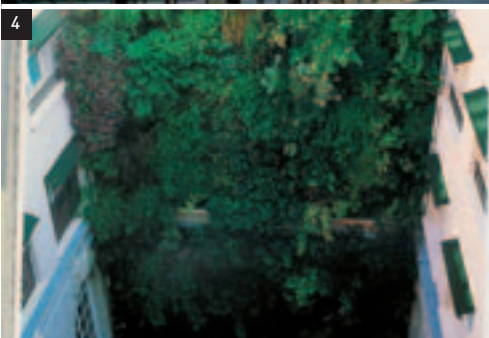
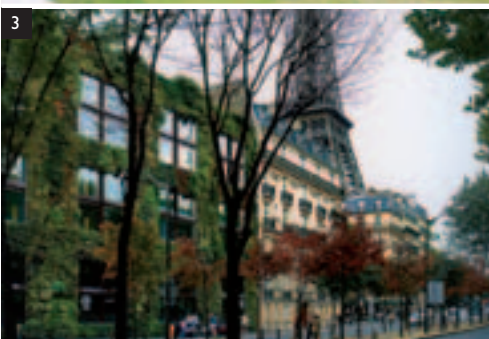
A compact plan can often provide space for collective energy facilities, for example in the shape of a geothermal heat pump. However, this is only an efficient option once the buildings that are served by the heat pump reach a specific critical mass.

Compact building also makes it possible to intensify the facilities level and bring it close to home: the baker's and the school can henceforth be reached on foot. More people living closely together make a high-quality public transport system feasible. The result is a reduction in the number of individual traffic movements. This contributes substantially to a better environment.

In urban renovation and densification projects, effective use can be made of the existing capital of trees by using them in the design rather than clearing them. One well-developed, mature plane-tree, chestnut tree or elm lends identity to an entire neighbourhood.



Winter garden



Good examples of projects in which transitional areas have been made greener are the Griftpark in Utrecht (1) and the Jan van Galen public swimming pool (2) in Amsterdam. The most spectacular examples can be found in Paris, where Patrick Blanc has designed and developed nearly twenty vertical landscapes (3). His masterpiece is the façade of the Musée du Quai Branly (4), in which thanks to the employment of many types of plants and an ingenious irrigation system, an outside wall of 200 by 12 metres has gained the hallucinatory appearance of a tropical rainforest. This is the kind of daring we need to see in vertical gardening.

33 Making transitions greener

Green space alleviates the effects of densification and has a purifying effect on people's spatial experience and the ecology. Green spaces are strongly appreciated within the built-up area and contribute to a feeling of well-being and calm.

Furthermore, the impact of green space on air quality, humidity control, water management and visual and colour effects is stronger than any other kind of material used. As space is reduced, the appreciation for green areas only increases even further. More intensive densification therefore entails a more intensive development of green space, including in the transitional areas between the city and the buildings.

The façades and roofs offer an opportunity to make the city centres greener, without this affecting the amount of space available at street level.



34 Outside space and private green areas

It is also possible to make an outside area if one only has a few square metres at one's disposal. Little sunlit areas, balconies that you can also barbecue on and a rooftop terrace that looks out over the city. Strategically placed green edges, such as façade planting and cleverly designed flower boxes, not only have a tremendous impact on the experience of the building, but can also serve as a buffer between private and public space; between you, the street and the neighbours.

Façade planting goes far beyond ivy that climbs up from a strip of garden one tile deep. There are dozens of types of climbing and hanging plants available for making green walls that are extremely decorative, including in the winter. Façade planting does not harm the façade, but does contribute to a building's insulation, keeping out the heat, as well as dampening the noise in the public space. A hundred square metres of façade planting have the same effect on air quality as one mature tree.



Patio garden, Onno Greiner



Green wall, Tokyo, Shigeru Ban



Waterfront terraces, IJburg, Vera Yanovtchinsky



Place de Terreaux, Lyon

35 Room for water

The ground surface is paved over further and further as a result of the increasing volumes of buildings and infrastructure. Climate change results in heavier downpours, more water nuisance and in the long term to rising sea levels. A consequence of all this is that there is a strong need to store and channel off this water. Both beyond the built-up area and within city limits. The space claim of the water is therefore also pertinent to the city that needs to intensify. That seems to add a problem. Seems, because paradoxically, this actually creates strong opportunities.

Actually, the addition of water structures – and in many cases the repair of old, disrupted structures – is a great tool for realising the desired relationship between full urbanity and the surrounding open nature. Water calms people down and puts things in perspective. The spatial quality of ‘living’ water provides fantastic opportunities to create specific residential environments. At the same time, it addresses the growing need for recreation close to home.

Water clearly makes an important contribution to an area’s spatiality and its experience: in heavily condensed areas, water – almost literally as a mirror of the air – is able to suggest space.

36 Designing with water

Particularly in the Netherlands, where the image of the landscape is closely connected to water, we will be able to make a lot more use of water as a connecting theme.

At the building level, water can be employed as a means to guarantee privacy; to distance residents from their direct environs. Water can be used to mark the transition between a building and the public space instead of a gate or some other partition. Water creates a sense of luxury and atmosphere and is highly valued in the built-up fabric. Within the building itself, it can make a strong contribution to the local building-physical and climatological quality. In a tightly sub-divided environment, the mirroring effect creates a strong sense of space.

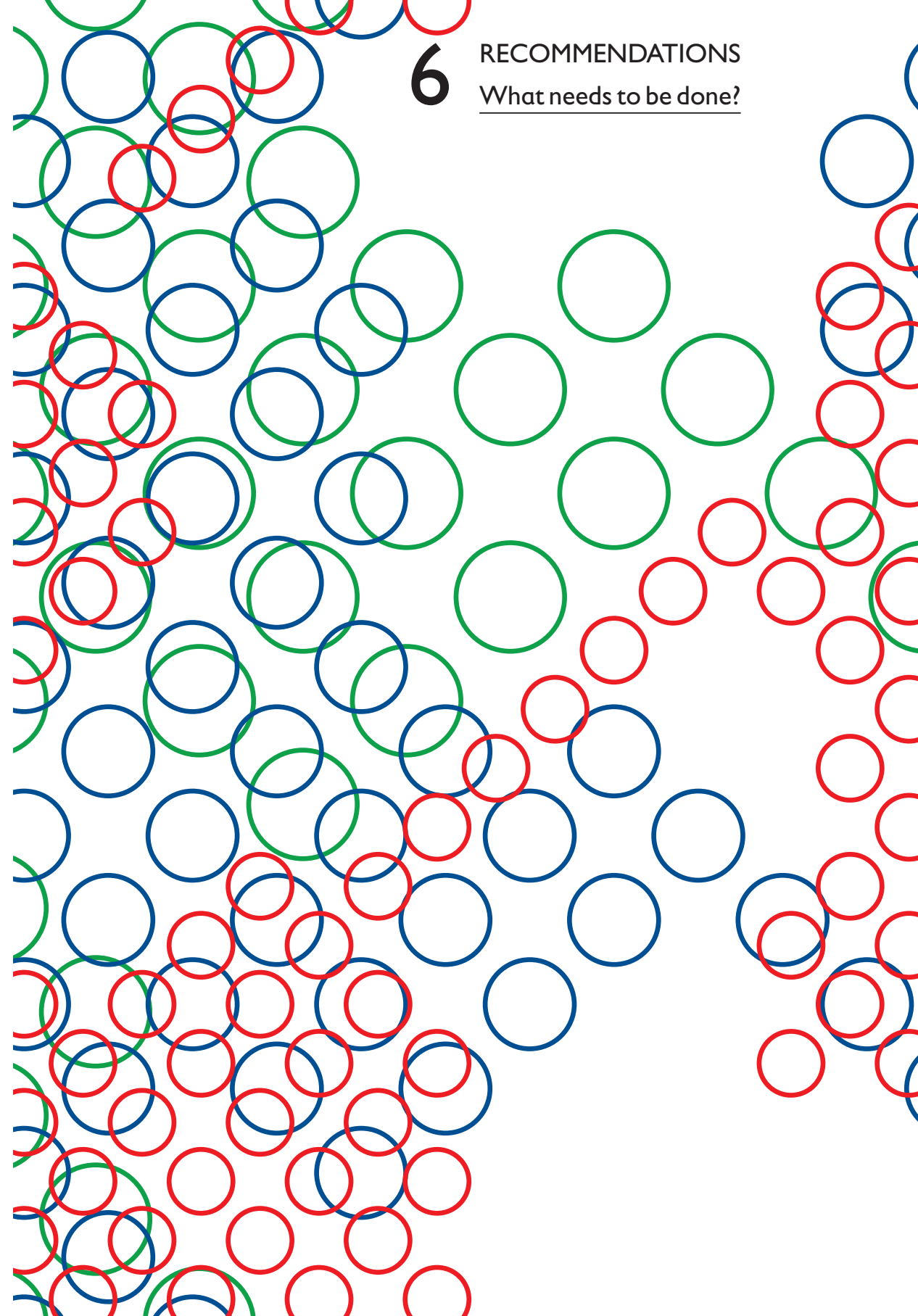


Atrium with water gardens as a distancer between the access path and the homes, Crystal Court, Amsterdam, PM 259

- 1 Bezemer, V., Daalder R., Groen. *The urban power*. Commissioned by the Physical Planning Department – City of Amsterdam (DRO), 1998; Gadet, J. Smeets, H., 'Het Grote Groenonderzoek'. *Plan Amsterdam 3-2009*, Physical Planning Department – City of Amsterdam (DRO), Amsterdam, 2009
- 2 Maas, J., *Groen is gezond*. Doctoral study February 2009, Nivel, VU University Amsterdam, 2009

6

RECOMMENDATIONS

What needs to be done?

IT STARTSWITH A CENTRAL VISION

Introduction

Intelligent intensification goes beyond the mere fulfilment of the spatial requirement. This chapter is intended as a 'helping hand', summing up in six central and seven decentralised recommendations what should be arranged at the political level to make intelligent intensification practically feasible.

This starts with a central substantive vision (Central 01, 02, Decentralised 01). After this, the chapter deals with the collection and indexing of knowledge (Central 03, Decentralised 02), followed by the importance of an integral approach – with an emphasis on the spatial and financial connections (Central 04, Decentralised 03, 04, 05). This is accompanied by suitable rules (Central 05, 06, Decentralised 06) and the decentralisation of a spatial strategy. (Decentralised 07)

Develop a central sustainable vision

First and foremost, the implementation of national policy at lower levels of scale requires a clear central vision vis-à-vis the Netherlands' spatial structure. The areas that are to be built up need to be established in the process. The current memoranda offer too much room to act contrary to what is preferred in terms of policy. (Central 01)

Specify according to municipality

The percentage of new construction that is to be realised within the existing built-up area needs to be differentiated according to region and the type of built-up area. The municipalities need to be involved in the formulation of the quality and quantity of the building plans. This process needs to take specific account of the depopulation scenarios. (Central 02)

Direct meaningful contrasts

Assemble a palette of attractive densities at the decentralised level, to serve as building blocks for the composition of the municipality as a whole. Link this palette to the qualitative building requirement, in order to make different residential environments. Take stock of the development of the contrasts in the municipality in terms of character and scale and evaluate the desired quality of these contrasts. Define the opportunities created by a direction that focuses on volume and vacancy levels. To this end, map out the character – this is how location-specific differences are made. The development of differentiation and choice options makes it possible to serve everyone. (Decentralised 01)

SHARING KNOWLEDGE

Bring knowledge to the municipality and the province

Specifying the percentage of construction within the existing area per municipality should lead to more freedom to operate for the municipality and the province within the national framework. This means that the knowledge and expertise of these authorities needs to be facilitated. This is a task of the central government. An independent knowledge centre can support municipal authorities in addressing their own specific building requirement, developing a universal model 'plan of action' to this end. The knowledge centre advises on spatial matters, but is also equipped to advise with regard to the link between spatial and economic issues. (Central 03)

A Establish a knowledge centre

As an institute, the knowledge centre is either an independent body or fits within the existing infrastructure. A supra-municipal, independent, central knowledge/data bank will ensure that the data of CBS, CPB and CPLO are connected to one another and can consequently make a more systematic inventory of the use of space. The acquired unity in language can tremendously boost the communication of experience and knowledge.

B Allow the knowledge centre to function as a hub

The knowledge centre will function as a hub for the practice, education and research. Inspired civil servants, urban planners, economists, scientists and developers can question and stimulate one another. In the long term, this can develop into a fertile, innovative spatial approach; the Netherlands will once again become an international pioneer in the field of spatial planning!

C Establish the knowledge centre as a key source of information, a delegated overseer and a supervisor

The knowledge centre can be used, where requested, to provide support to municipalities, in order to establish the programme, give shape to the strategic instruments and for the execution and the related supervision.

Request input and supply output to the knowledge centre

Make use of the know-how provided by the knowledge centre. At the same time, provide input for this body, to serve as a basis for further research and to fill a project matrix – a sample set of good examples. (Decentralised 02)

AN INTEGRAL APPROACH

Inventory the connections between space and money

Map out the connection between spatial issues and financial streams. Provide insight into the economic factors that result in densification losing out to expansion. Which extra costs for acquisition, soil decontamination, parking, infrastructure and excessive building costs need to be surmounted? And how? (Central 04)

Also make a decentralised design for an integral cost-benefit approach

In this process, look beyond the municipal boundaries and think in terms of agglomerations, e.g. in the case of a school. Matters that are to be arranged include compensation by means of densification, subsidies/tax and balancing, zoning plans and exemptions. What this seems to demand in particular is a less pre-sorted financial structure, in combination with regulations that offer room for such a structure. (Decentralised 03)

Take an integral approach

Not just at the central level, but also at the decentralised level, it all starts with an awareness and the acceptance of the complexity of the assignment at hand. Of the necessity to arrive at an integral approach, in which legal, political and economic factors and matters that relate to the regulations are all taken into account. Awareness and knowledge of the 'fail factors' are prerequisites for success. The role of the knowledge centre in this process can be to share knowledge about the 'fail factors' and to actively advise the municipalities. This can be done by collecting, analysing, documenting and making accessible good examples. (Decentralised 04)

Constantly steer and simplify the planning process

An important factor in long-term area development is a project-based steering process that can function independently next to the, usually short-term, political programmes. The knowledge centre can connect municipalities to the project steering process. Simplify the planning process, while simultaneously removing the contrast between substantive involvement and a process-oriented approach. This demands a management that is driven by the substance of the issue and that acts in a coordinating role for increasingly complex interest clusters. Ensure that there are fewer players at the table, for instance, but at the same time ensure that they do have integral knowledge and have received a mandate. The knowledge centre can play a role in the tools that need to be designed. (Decentralised 05)

RECOMMENDATIONS

APPROPRIATE REGULATIONS

Create room through rules

The current regulations are primarily adapted to simple, single-use building projects. The consequence of this is that the regulatory pressure, which is presently experienced as severe, is actually inadequate for building in the existing built-up area. Performance-oriented regulations, in which there is room for 'equivalent solutions', can lead to the development of more opportunities for creative solutions. One option could be a spatial label, in which the level of intensification is defined together with the accompanying spatial qualities. (Central 05)

Regulate the assessment

An intensification policy can only be carried out in combination with assessments and consequences in cases where targets are not achieved. The shortening of procedures by means of more performance-oriented regulations should be combined with an expansion of the assessment capacity and quality. This applies to both local and higher-level authorities. The smaller municipalities in particular should be given the opportunity to receive support in the form of knowledge capacity that has been made available at the central level. A renewed role for the province is conceivable in this context. (Central 06)

Steer strategically on the basis of character

The municipalities themselves will also need to achieve a major improvement in quality as far as the assessment of their spatial policy is concerned. The inventoried characters will need to be embedded in the existing municipal products and steering instruments. In this process, the city architect, the provincial urbanist, the *Regisseur stedelijke ruimte* (Coordinating manager of the urban (vacant/public) space) can all play a role. The vision that is generated by the inventory of the characters can also be a component of the document outlining the requirements made of a building's external appearance (*welstandsnota*), which makes it conceivable that the relevant inspectorate will also play a role. This has possible implications for the composition of the inspectorate (*welstandscommissie*) – an urbanist/*Regisseur stedelijke ruimte* is indispensable in that case. (Decentralised 06)

RECOMMENDATIONS

TAKING A STRATEGIC VIEW OF SPACE

Develop a spatial strategy

When developing a spatial strategy, make use of the model 'plan of action' that was developed centrally by the knowledge centre: a step-by-step plan that starts with a generic analysis of the context and the building requirement, which in turn allows for a broad comparison between municipalities. In addition, insight is obtained into the specific physical situation of the own municipality. This leads to a strategic, specific approach for the municipality that brings together opportunities and character. The interaction with the project matrix ensures that the acquired knowledge becomes accessible to all municipalities and can actually be utilised. (Decentralised 07)

A Distinguish between municipalities

Distinguish between the various municipalities and the different types of building requirements, with the help of the categorisation that has been drawn up by the knowledge centre. Characterise the spatial identity on the basis of the present physical situation (village, rural town, urbanised village, city). Use this information to define the desired scenario (expectation and ambition over time, depopulation, population growth, urban growth).

B Make a municipal analysis

Analyse the living layers, the promising locations, the green space, water, infrastructure, history, the programmatic requirement, the built-up area and its boundaries. In addition, identify the synergy with neighbouring municipalities. The role of the knowledge centre is to bring municipalities in connection with one another, to promote the exchange of knowledge, to steer towards this synergy and to link this to central policy.

C Make an inventory of opportunities and character

Gain insight into the four types of location in the municipality that have densification potential (weave-in, functional change, infrastructure, extensively utilised), as well as the characters. This way, the attractive differences between districts and neighbourhoods are mapped out, allowing them to be reinforced. This is done with regard to both quantitative (square metres of red, green and blue) and qualitative characteristics. Examples from other municipalities, collected in the project matrix, serve as a source of inspiration in this process. Laying the opportunities and the characters on top of one another allows for the development of the spatial building requirement at promising locations. A spatial label can be a means by which to define and redirect the ambition and objective per location..

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Agglomeration

A succession of settlements, spread across different towns and villages, the residents whereof behave as if they live in one city. That is to say that the residents live, work, shop and recreate in different parts of the agglomeration and regularly move within the agglomeration within the course of their daily lives.

Blue

Urbanistic term for water (undeveloped area).

Character

The mix of the volumes of different ingredients in an area (harbour, park, buildings, infrastructure) defines its character.

City

Traditionally, a city was a town that had certain privileges, such as the right to build a town wall and to hold its own court and collect taxes. Today, cities and villages are usually distinguished from one another on the basis of their size (the number of residents) or the level of facilities. Whereas villages are defined by their rural character, limited facilities and close-knit communities, cities are more densely populated, have more facilities (schools, hospitals, a theatre, larger stations, etc.) and do not have a close-knit community ('swallowed up in the crowd').

Clutter

This term indicates how the openness of the Dutch landscape is supplanted by 'corporate boxes', greenhouses, wind turbines, breaker's yards, GSM masts, motocross terrains, camping grounds, tree nurseries, and so on. Urbanists speak of the increase in 'random new functions around obsolete agrarian buildings'.

Daily urban system

The scale upon which most daily patterns of commuter traffic, company relations and social relations (identity) take place.

FSI

The Floor Space Index, abbreviated as FSI, is the

ratio of the total floor area of buildings, including the different floors, within a plan area compared to the total, both built-over and undeveloped surface area of that same plan area.

FSI differentiation map

A working name for a chart that maps the differentiation in terms of FSI in a specific area.

Green area

Urbanistic term for nature (undeveloped area)

GFA

Gross Floor Area

GSI

The Ground Space Index is the ratio of the built-over square metres of the plan area compared to the total surface area.

Heat stress

Undesired urban warming

Intelligent intensification

A term that was introduced by Charlotte ten Dijke and Bart Mispelblom Beyer (Tangram Architects) and that refers to a strategic means to reinforce the built-up area in all layers, both spatially and socially.

Knowledge centre for intensification

A central body that is to be newly established and that will take the shape of a network of selected professionals working in all disciplines and levels of scale in the field of densification. This body can be turned to by municipalities to fill in the lacunae in their own knowledge or capacities, and it furthermore assesses and conducts and commissions research.

NEN

NEN is an abbreviation for the 'Nederlandse Norm' (the 'Dutch Standard'), and is also the new name as of 8 May 2000 for the close partnership between the NEN Centre of Standardization and the NEC Foundation (specialised in the normalisation of electro-technology and IT). The NEN is a standard establishing all Dutch norms for a variety of matters.

Network

The bundling of likeminded energy regarding a specific ambition or theme, including contacts and relationships between the people and/ or organisations involved. A network seems to be non-committal in nature and organisation, but has a compelling effect thanks to the 'give and take' principle, mutual dependencies and/or thanks to joint agreements.

Opportunities

In this case: opportunities to densify.

Project matrix

A sample set of good examples in the field of densification, in which the type of location is projected against the densification themes of the plan.

Red

Urbanistic term for the built-up area.

Rural town

The rural character has embedded itself in the town.

Spatial label

A means by which to measure the intended interaction between an area's identity and the quantitative building requirement.

Spatial strategy

An instrument for municipalities that clarifies the quantitative building requirement.

Sprawl

(literally: disorderly expansion) Sprawl is an un-aesthetic and alienating form of urban development that is not attuned to human beings but to the automobile and that is characterised by vast expanses with low density construction without a systematic scale. Sprawl is used to indicate a chaotic, expansive and repetitive pattern of residential districts, shopping centres, offices, motorways and strip malls; broad roads lined by fast food chain restaurants, video stores and DIY stores with enormous parking lots.

Suburb/Suburbia

A suburb is a residential area on the periphery of a central city, although parts of that central city can also be suburban. These suburbs often consist of large-scale residential neighbourhoods. The classic suburb surrounds a larger city, and regularly has a demographically homogeneous population, often families and commuters.

Transformation municipalities

Municipalities that are making, or have already made, the switch from an industrial to a knowledge economy.

Urbanised village

Urbanicity is penetrating the suburbs, such as a forest of slender residential towers in the centre of Ypenburg or a robust facilities centre in Rotterdam-Carnisselande.

Village

A village is a small-sized settlement. Villages are found in rural areas and were the most common form of settlement until the Industrial Revolution and the accompanying urbanisation. In administrative circles, villages in all their variety are often indicated by the term 'small centres'.

VINEX

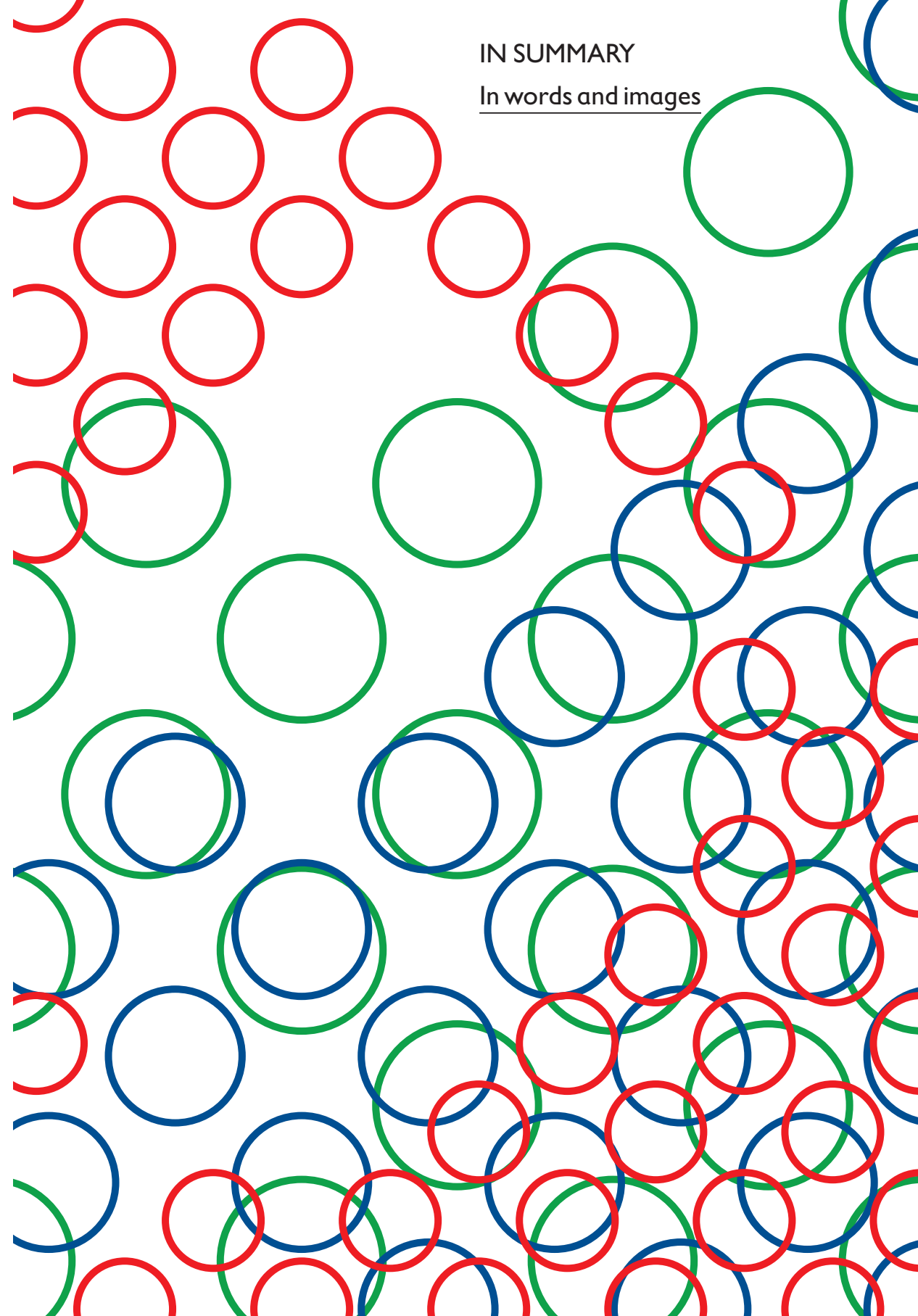
VINEX is an abbreviation for the 'Vierde Nota Ruimtelijke Ordening Extra', a memorandum published in 1993 by the Dutch ministry of Housing, Spatial Planning and the Environment. This memorandum contains basic principles for the construction of new residential locations as of 1 January 1995. For a number of cities, the direction is furthermore indicated in which the new expansion could take place. Formally speaking, it was up to the provinces and the collaborating municipalities to decide on the locations. These locations reserved for large-scale new construction on the outskirts of large cities are often called VINEX locations or VINEX districts.

The PM xxx numbers refer to the project matrix, which is included in the second part of this publication (to be published in the course of 2010).

- PM 005: Park Laar, Tilburg, Tangram Architects
- PM 008: GZG site, Den Bosch, Rijnboutt
- PM 013: Borneo-Sporenburg, Amsterdam, West 8
- PM 051: Mariaplaats, Utrecht, bOb van Reeth
- PM 103: Mariënborg, Nijmegen, Soeters van Eldonk Architects
- PM 109: De Bongerd, Amsterdam, Rudy Uytenhaak Architects
- PM 115: Parkhaven Dichterswijk West (urbanistic plan), Utrecht, studio Quadrat, Bouwfonds
- PM 118: Dobbelmanterrein (master plan), Nijmegen, Marlies Rohmer Architects
- PM 129: Markt Maas, Maastricht, Jo Coenen & co Architects
- PM 133: Vondelparc, Utrecht, Mecanoo
- PM 259: Crystal Court, Amsterdam, Tangram Architects
- PM 261: Prinsenhof, The Hague, Rijnboutt
- PM 279: Haven, Groningen, De Nijl Architects
- PM 286: Stadionplein (sub-plan), Amsterdam, Rudy Uytenhaak Architects
- PM 289: Veltmanstraat, Amsterdam, Rudy Uytenhaak Architects
- PM 314: Inverdan (master plan), Zaanstad, Soeters van Eldonk Architects
- PM 316: Geuzentuinen Amsterdam, Faro Architects

IN SUMMARY

In words and images



Summary of *Splendid Compact NL*

The report *Splendid Compact NL* was written on behalf of the Board of Government Advisors (CRA) by the Inner-City Building working party, which is made up of experts in this field, including Professor ir. Rudy Uytengaak (professor of professional practice in Housing at Delft University, Building and Architecture faculty/Rudy Uytengaak Architects), Remco Daalder (urban ecologist, Amsterdam) and ir. Charlotte ten Dijke and ir. Bart Mispelblom Beyer (Tangram Architects).

This study was carried out in response to the question posed by the Minister of Housing, Spatial Planning and the Environment to the Board of Government Advisors (CRA): 'How can new housing typologies and the urbanistic design for inner-city building contribute to both the physical building requirement and the reinforcement of spatial quality in the city?'

The report is prefaced by a foreword and the advice of the CRA. The study as published by the working party starts with a reading guide and consists of six chapters, which deal with the immediate reason for the study, its urgency, the opportunities, the approach, design recipes and recommendations. This study will be accompanied by a substantive argument, which will be published as a separate part in early 2010: a knowledge section that contains the foundations of the argument with collected studies, facts, figures and essays, a list of terms and a bibliography and the extended project matrix as a sample set of good examples.

The study of the Inner-City Building working party

Splendid Compact NL is a plea in favour of more building in the existing built-up area. This is a study that deals with opportunities and possibilities.

The urgency is clear: to safeguard the beauty of the Netherlands, it is of the utmost importance that we do not continue to fill in the landscape with buildings. To stop building altogether is not an option: population levels in our country will continue to rise for some time yet. It is consequently necessary to build in the existing built-up area. Densification is urgent. In addition, in some areas, we can definitely top the intended 40%. Not everywhere, however, because it is and remains a custom affair.

But if this is possible, how should we approach it? And where? The Netherlands already seems so full as it is!

That only seems that way, because there is enough space left for densification: everywhere, one can find old industrial parks, vacant buildings, residual areas lining infrastructure or extensively utilised sites that are ripe for rezoning. Not just in the city, but indeed, specifically in urbanised villages and rural towns.

The fear that densification will lead to unliveable masses of stone is unfounded: densification is not synonymous with the indiscriminate erection of high-rise buildings, but can be done in an attractive, well-considered way. Indeed, there are a host of advantages to building in the inner city.

A greater emphasis on the inner-city building requirement will not only help to preserve existing green space and existing undeveloped area, and consequently increase the green and landscape qualities around the cities and to increase recreational opportunities, but also keeps the quality of life in our cities at the desired level. City-dwellers can optimally benefit from the vicinity of pre-existing qualities and facilities. This will in turn reduce car traffic and promote bike mobility and the use of public transport. In addition, densification forms a fantastic opportunity to repair historic structures and it can strengthen the economy.

This study takes an intelligent approach to the process of densification. The point of departure of this approach is that spatial quality, urban culture and structure are inextricably linked, allowing for qualities to be added. This layer-based approach is essential to successful densification. Numerous examples show in this context that densification is by no means a new phenomenon, but a time-honoured (Dutch) tradition.

In careful densification, the quality of the public space and the well-considered mixing of functions are not the only issues to play key roles, but also the focus on green space. It is a myth that densification leads to the sacrifice of the last neighbourhood park. Successful densification in fact results in more room for green space.

The theme of inner-city building transcends the mere spatial level. One needs to establish broader connections, and indeed, the study consciously includes administration and land policy in its scope.

To make densification possible, it is vital to follow a policy that actually organises and realises and leads to attractive results at all levels of scale. The study offers a handle on how one could give shape to that policy in the form of a model plan of action, it introduces a project matrix as a sample set of good examples, and recommendations have been formulated for the central government, the provinces and the municipalities in the areas of knowledge exchange, vision, approach, regulation and spatial strategy.

For instance, the national government can play a major stimulating and supporting role with respect to the theme, by setting up a knowledge centre, for instance, or by making a total plan that can serve as a benchmark for municipal plans. In the view of the working party, a design culture gains power through a shared language that enables people to exchange knowledge, experience and motives.

In this process, municipalities need to look beyond their municipal boundaries and simplify the planning process. After all, building in the open landscape is still too easy and inexpensive. It is consequently very important to draw up suitable regulations and adopt an integral approach.

Professional expertise is a prerequisite for being able to densify with due care. During the writing of this study, one element immediately stood out: the designing disciplines appear to lack no skills whatsoever for making building in the existing built-up area a success. Various firms can already rely on a wealth of in-house design expertise relating to urban intensification and we can already refer to numerous well-built examples.

By paying extra attention to and exhibiting knowledge of issues like daylight illumination, orientation, accessibility, privacy, vista, comfort and appeal, a good design can compensate for the density of the urban fabric. Possible negative spatial effects of densification projects can always be solved. Furthermore: there's no need to reinvent the wheel, because much of this knowledge can already be found in our present living environment and can be viewed, for example, in the variety and subtle transitions from the outside inwards in our historic city centres.

We have listed 36 design recipes that proffer principles that are important to an intensification of the built-up fabric. These tips also relate to the different aspects of the design: to the strategies aimed at realising the design and to the concepts that give the spatial design its shape. Specific attention needs to be paid to the relationship between buildings and nature – in this context, the indispensable interaction of the city-dweller with nature.

This way, we can jointly work towards the realisation of a *Splendid Compact Netherlands*.

Advice of the CRA

The CRA wishes to draw your attention to the following points from the report:

- Inner-city building deserves clear direction.
- Inner-city building requires a best effort agreement between all parties in the building column.
- Inner-city building is a requirement that involves infrastructure, rezoning and green in the city.
- An important point of attention is that we make the city attractive to a variety of population groups.
- The densification project demands a custom approach.
- Inner-city building should never become an aim in itself; it should, with effective advance designing research into potential locations and spatial quality, benefit the existing fabric.
- The national government should make use of its range of instruments in order to arrive at concrete work agreements about the densification requirement with a variety of authorities.
- Besides an active directing role on the part of the government, it is also important to pay attention to the financing system of project development.
- Inner-city building requires custom solutions.

And now?

Splendid Compact NL shows that with new typologies, it is possible to arrive at an intelligent translation of the densification building requirement. In addition, the CRA has observed, on the basis of various examples that have already been realised in practice, that the design sector is more than able to effectively give shape to this requirement. Depending on the (spatial) context and the existing qualities, more will be possible at one location than at the other; but the CRA is convinced that across the board, a substantial increase of the current percentage of 40% is absolutely feasible.

To get as clear a picture as possible of the building requirement and the possibilities, it will be necessary to conduct additional research into the residential wishes, the composition of the population and the residents' relocation movements. Such insights are vital for being able to effectively accommodate inner-city building. The CRA will therefore take the initiative of conducting high-quality research into the aforementioned frameworks.

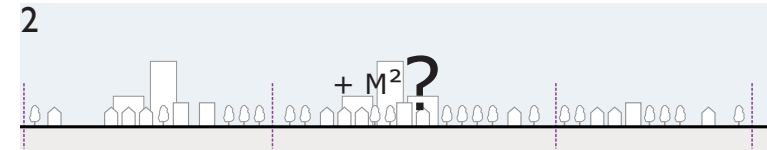
It is time for a broader translation and the removal of the obstacles – both in terms of resources and rules – that stand in the way of an intelligent densification of the existing built-up area. We ask our national government to give further shape to this ambition, to continue working on a different way of thinking and to arrive at a best efforts agreement with municipalities and provinces. This will allow us to actually realise the opportunities that are offered by inner-city building.

Variety is what makes the Netherlands so beautiful



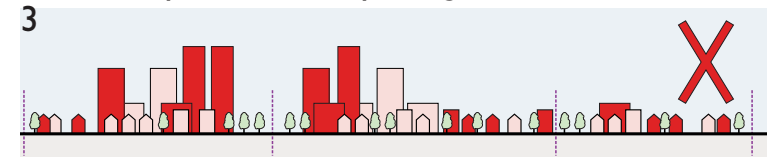
An attractive alternation of built-up areas and nature, that's the beauty of the Netherlands. The percentage of built-up area has increased explosively over the past century, from 1% to 15%.

Requirement:
+ 500,000 homes until 2040



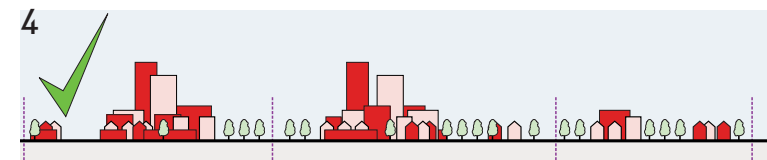
In its policy, the government foresees a substantial housing requirement in the period until 2040: 500,000 homes in the Randstad. This will put pressure on the beauty of the Netherlands.

Watch out:
don't fill up the landscape any further



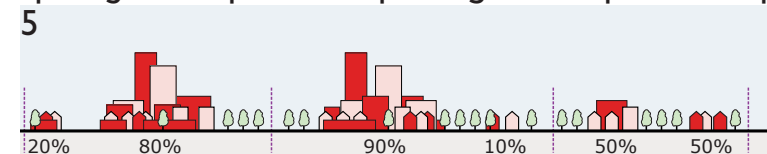
To preserve the differences in flavour, the motto is densification! Compact building is not synonymous with high-rise construction; there is a wide range of other solutions.

Opportunity:
now's the time to make the difference!



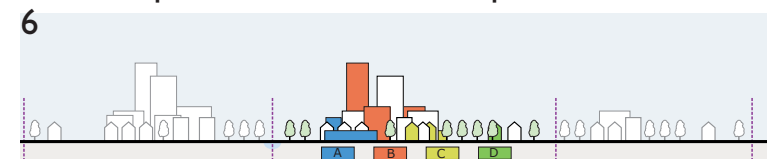
There are still a host of opportunities to build in the existing built-up area. Not just in the major cities, but definitely also in the smaller towns and villages. We need to exploit these opportunities today!

National government:
specify the requirement per region and per municipality



National government needs to ensure that every municipality can formulate a spatial strategy. Coordination, assessment and facilitation aren't the government's only core tasks in this context; so is inspiration!

Municipalities: direct on the basis of character to ensure a pleasant residential experience!



Linking the volume of homes that need to be built to the different living qualities allows you to steer towards attractive contrasts. So that everyone can find their own place to live according to their preferences!

Inner-city building is necessary for keeping our cities vibrant and sparing the landscape. At the same time, it helps us to realise our sustainability ambitions.

With the increasing volume of construction taking place in the rural landscape, the attractive alternation between nature and built-up area that is so characteristic of the Netherlands is threatening to disappear. At the same time, when it comes to building in the existing area, our country can also turn to a tradition. Now is the time to restructure the focus of the spatial planning, bring knowledge up to date and infuse this tradition with a new enthusiasm. It is definitely possible to increase the average percentage of inner-city building.

Furthermore, compact building presents opportunities to further develop the existing qualities of the city. It is here, in the city, that we can take full advantage of existing facilities and infrastructure.

In this publication, the Inner-City Building working party, working on behalf of the Board of Government Advisors (CRA), not only shows the urgency, but also the opportunities, possibilities and advantages of compact building. This team of experts presents numerous good examples, offers various inspiring design recipes and makes recommendations in the area of knowledge exchange, approach and rules. Municipalities, provinces and the national government are called on to assign a higher priority to inner-city building. Compactly developed, spatially rich cities result in inspiring differences between the city and the surrounding countryside.

