

APPENDIX H - Urban Economics

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APPENDIX H. Urban Economics Paragraph

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INTRODUCTION

Cities are not only their built environment. But their built environment has a big impact on the way the complex amalgamation of physical, social, environmental and economic aspects can interact with each other. One of the key drivers of any development in cities is their economic basis and profile. While many economic aspects lie outside the limit of a masterplan, there are important aspects and design decisions that can lead to a physical environment that is more or less competitive than other environments. Like in any investment strategy, in urban development one can focus on the short term gain – the 'quick buck' or have medium or long term revenue in mind. While the former might be advisable for financial speculation – even though the current depression shows that this does not necessary deliver the intended result – when it comes to urban development the latter is by far the superior strategy. Short term strategies tend to generate the money with the private investor on the short run and leave the cities and finally the taxpayers and the majority of inhabitants with the costs for this short sighted decisions. Mid and long term strategies strike a better balance between the completely justified aim of private investors to earn money and the needs and rights of the public to benefit from the investments made by the authorities.

The purpose of this urban economic paragraph is to give the necessary economic background information to the design decisions made in the course of the development of the Masterplan. The economic drivers have been based on the goal to achieve a plan that enables Perm to develop in such a way that existing assets and existing investments are used to their maximum potential and that future investments enable the city as a whole to develop in a economically sustainable way.

CHAPTER 1 - THE COMPACT CITY

1 INTRODUCTION

The Compact City: A Forward Looking Growth Model

- Myths and truths and the rationale behind them -

How cities grow - and why this is important in the future of Perm

Myth: It does not matter how cities grow – advantages and disadvantages will always strike a balance

Truth: On the long run certain growth patterns have put cities in a more competitive position than others that followed different patterns.

Cities can grow in different ways. Historically we have seen a number of growth models – each one with its advantages and disadvantages. To be able to thoroughly understand the pros and cons of the different models one has to go beyond spatial issues and also consider socio-economic as well as environmental aspects. Since a detailed discussion of all the growth models thinkable would exceed the scope of this document we have chosen to consider the two alternatives that seem feasible in the local context of the city of Perm.

The Masterplan for Perm advocates the transformation into a Compact City, as opposed to other models that tend to require more space and a less compact development. The term Compact City in planning terms merely relates to three different possibilities:

1. a macro approach based on certain average densities across cities or even metropolitan regions,
2. a micro approach reflecting densities at a neighbourhood or community level or
3. a spatial structure approach, emphasising a pattern oriented to one main city centre versus a polycentric or dispersed spatial pattern.

The Masterplan focuses on item 1 and 3 since those two aspects target the city as a whole while the questions around item 2 more lie in the execution of the plan and with concrete projects. With the focus chosen a lot of criticism against the Compact City as raised, mainly in the North American context does not apply directly but has to be seen in the context of the overall strategy.

In the introductory chapters of the Masterplan, the rationale for this choice has been explained from an urban and geographical point of view. Whether this can be supported from a financial and economic point of view depends on the starting position in which we find ourselves in. From this perspective it can be assumed that more compact urban development in Perm also makes sense for the following reasons.

In most of the Western world, the trend of the past two decades was to develop compact urban environment. To a certain extent this reverses trends that lead to suburbanisation in the time before. Since the development of railroads and specifically the automobile, large cities have tended to spread out over greater and greater areas. Because commuters could travel a longer distance in the same amount of time, they could live further away from their workplace. Suburbs emerged and inner cities started to decline.

Since the 1970s, there has been a hot debate about what direction urban development should take. Advocates of compact urban design state that lively inner cities are vital for the urban economy and are more environmentally friendly. On the other hand, there are groups that point out that compact cities are often associated with congestion, pollution and inflated real estate prices, and that a more decentralised urban region with multiple cores of employment can be optimal. Such debates are interesting, but do not provide enough evidence to choose for the one or the other model in an already existing urban context. Much depends on the specific context of a real city where economic activity, social life and a built environment already exist. In the United States, New York City has a completely different history, geographical location and socio-economic vibrancy than for instance Los Angeles, and therefore their “optimal” development paths will be different. This is also true in Europe: Amsterdam is a city of about one million people in a very small, densely populated country, whereas Perm is a city of about one million people in an extremely large and sparsely populated country. What is appropriate for the one city is not necessarily the right thing for another city.

What is evident, however, is that extreme developments in the one or the other direction always come at a burden. Take for instance the megacity of multi-million inhabitants, such as Mexico City, Mumbai, or Moscow. If you concentrate too many people in a relatively small area, congestion, pollution and relatively bad living conditions will be the result that can only be mitigated by strict rules or huge investments. Real estate prices in these cities are higher since there is a lot of pressure and land is a scarce good. This increases social problems in certain areas where those who can't afford the high land prices find themselves concentrated. In a wealthy society with high social standards, it may be possible to overcome some of these problems in the inner city, but in those countries we find the problems in the inner suburbs as can be observed in Paris, London or New York.

Regions with a high degree of suburbanisation, such as southern California with Los Angeles as its core or Phoenix in Arizona, face other problems. Since there is no real city centre, there is no natural focal point for infrastructure and services. Everything is spread out over a large area. This forces people to make many trips a day. They are totally dependent on the private motorcar, since it is impossible to maintain a reliable and affordable public transport system

The road network is often congested and expensive to maintain. Public services and facilities on the average are further away due to the lower building density. Those who do not own cars, find it difficult to participate in ordinary daily life – from keeping a job to running their household to entertainment and sports activities.

Besides these aspects related to physical characteristics of those cities the sprawl has a negative impact on the social structure. Development outside existing urban areas tends to target specific groups, both in terms of income levels as well as in terms of a type of consumer.

Perm however is different than the examples mentioned above. It is not a suburban sprawl city and its existing housing stock is anything but of a suburban type. Therefore not all references can be applied one to one to the local context. Nevertheless they provide a series of warning signs that – if ignored can ignite a process of negative performance of the city as a whole. With its around one million inhabitants it is not a very large urban region in terms of population but is fairly large in terms of its surface. From southwest to northeast, we find an urbanised strip of over 30 km in length. The total built-up area is some 300 sq.km or 30,000 hectares, giving Perm a population density of about 30 inhabitants per hectare for the city itself and around 12 inhabitants per hectare for the entire metropolitan area of Perm. Both figures are lower than average compared with other European cities and certainly are very low in the Asian context.

City	Country	Population density Metropolitan Area inh/ha
London	UK	47.58
Amsterdam	Netherlands	45.38
Munich	Germany	42.75
Manchester	UK	39.83
Berlin	Germany	38.51
Kiew	Ukraine	32.18
Nishny Nowgorod	Russia	30.96
Stuttgart	Germany	28.94
Krasnoyarsk	Russia	27.24
Jekaterinburg	Russia	27.19
Duisburg	Germany	21.2
Perm	Russia	12.35
Narvik	Norway	9.1

source:www.wikipedia.com

figure 1: urban density

With an average of 2.5 people per household this comes down to 12 houses per hectare which is at the low end of urban agglomerations. While in many of the examples mentioned above there is a high population density in the centre and low densities at the outskirts, the population of Perm is very evenly distributed. Population densities in the city centre are not higher than in the outskirts.

It could be stated that currently Perm is anything but a Compact City. Population density in the city centre is low, there are many unused and empty lots and there is hardly any pulling force from the city centre. On the contrary, with a declining population and the necessity to replace many of the older housing blocks, there are more forces that push population away from the city centre. The results of what happens when this tendency for exodus out of the city centre is not reversed can be seen in Detroit - like Perm a city of about one million inhabitants, which has gone through a long phase of suburbanisation and industrial decline with no successful attempt made to attract the population back to the centre. The result is devastating. There is virtually no city centre left, the local government is virtually bankrupt, the building structures and the entire infrastructure fall into decline – a huge destruction of capital - and it is difficult to imagine a reversal of this trend.

If no action is taken, Perm could easily become a credible successor of Detroit. But if a coordinated and persistent effort is made today to choose for a different way of developing the city, the results may well be very different and lead to a prosperous and lively city centre.

If one combines all those arguments and weights them against each other, the choice for a city model that puts a focus on developing and upgrading the city centre not only makes sense from a spatial point of view but also is the only economically defensible solution. Any other model would come with huge capital destruction and negative implications in all fields of urban development, ranging from the need for increased transport network capacity across massive investments necessary to extend the utilities network to a further disintegration and segregation of different social groups. For a city in the situation Perm is in, with a city centre that has more than enough room to accommodate developments for the foreseeable future, a declining population, industry in transition and the need to replace many of the existing apartment blocks, the financial and economical reasoning for compact development are overwhelming.

Main drivers for the development of Perm as a Compact City:

- An existing urban structure that lends itself to a Compact City model
- Existing utilities, road and public transport networks that should be used to their maximum potential to avoid capital destruction
- No scarcity of developable land within the urbanised area since brownfield sites and the abundance of public space provide sufficient room for development for a foreseeable future
- One established urban centre that houses most of the public functions that represent the city as a whole
- Best for public budgets since public realm investments have an optimised spending/direct user ratio
- Best for the social structure of the city since out of town development increases social segregation and reduces public safety

In the following chapters more details supporting this statement will be given – separated into the different relevant aspects.

What is the role the local government has to play in the future?

Myth: *Local governments have to facilitate private investment and leave the rest to the market forces.*

Truth: *Local governments play a constructive role in balancing the greater good and market forces.*

One often heard argument in the discussions around urban development in Perm is that one should let market forces prevail and leave it to the market how the city develops in the future. Should this mean that the city development is taking place in the suburbs, why should the government want to fight against that and attempt to reverse this market trend? This thought sounds compelling but to really understand the implications one first has to understand the past and the status quo.

Soviet planning

Under the former socialist soviet regime, in the first place urban planning was a centrally controlled econometric system. This allowed for precise planning over quite long timeframes. Since demand and supply were largely controlled, planning became the optimisation effort of a continuous mass production process, in which all requirements and amenities could be evenly planned and built. Even the growth of the population was predictable to a certain extent, or could otherwise be managed through migration programmes or limitations. This context close public-private collaboration was unknown since private market forces barely existed and the state took care of the needs of the public.

Based on the microrayon - city quarters in their own rights with provision of the full public infrastructure in each of them - the socialist planning tradition led to an extensive urban model with a clear distinction between functional zones. This was only boosted by the seemingly endless availability of developable land, especially in the lower populated areas in the east of the Soviet Union.

Post Soviet planning

In the early 1990s, the economy transformed rapidly from a socialist, state-led economy into a capitalist economy in which market forces prevailed. The transformation took place within a short amount of time and managed to replace the former plan economy by a free market system.

It can be argued that the former Soviet administrative structure was a fertile breeding ground for the now embraced new way of economic activity. It is one of the interesting observations that the inherited administrative organisational structure has largely been unchallenged even though it now operates in a totally different context. This in large parts is owed to the fact that most of the key players in the economic system in the USSR and after remained the same persons. The same parties who were in charge of steering the planned economy and its key players such as state owned industrial complexes now are running the same enterprises but as market oriented businesses.

Urban development in that respect reflects the change in economic system. Private initiative and entrepreneurship at high speed gave way to an extensive model of urban development since this allowed for quick realisation of projects. Freedom of development could be celebrated in the fringes of the city, with full support of the local government.

Status quo

Currently, Russia is trying to come to terms with the new economic reality. In the previous decade, it increasingly has become apparent that some involvement from the state in the private sector is desirable and necessary. If the state withdraws from its steering role entirely and allows the market forces prevail not always optimal result was achieved. The question is how and to what extent there is a role for the government in the terrains now dominated by the private sector.

For urban development similar questions can be raised. If the government does not intervene, private enterprises will make their own decisions when it comes to urban development. Although these decisions may make sense from a point of view of an individual developer or investor, this can not always be said about the aggregate of all individual decisions. On the contrary – results are sub-optimal and the public interest is often left out of consideration all together. Decision-making for urban development that is solely driven by individual private interest tends to favour the extensive urban growth model and sprawl since developing in the green field is less constraint, can be realised quicker and requires less interaction with local population, traditions, heritage... This suburbanisation is further boosted by the prevailing image of what counts as 'western' lifestyle and is usually associated with the lifestyle of the western part of the USA. Suburbs with free standing single family houses, the private motor car and shopping mall culture. What is often left out of consideration is the current trends in the US that start again favouring more compact cities.

The extensive model that locates new development in greenfield at the fringes of cities can be moderately successful, for instance when an urban region has a fully functioning city centre. When the population increases, there is a choice to intensify the city centre or to develop at the outskirts in creating new suburbs. Each choice requires a certain level of coordination by the local government since it is the city administrations that have to invest in infrastructure and services.

The situation is such that the extensive urban growth model is not a viable option. The population numbers of Perm are stable to slightly declining. In such a situation where a market is not increasing significantly, every development in the outskirts drags people from elsewhere, usually from more central locations. Every housing block that emerges in a suburb will lead to empty housing stock in the existing city. In other words, the city centre step by step will turn into a void without resident population. What this leads to can be seen in Detroit where the centre is a wasteland of ruins and a breeding ground for crime and cannot be accessed anymore without risking one's life. For the city centre of Perm a similar risk exists already since it has mediocre appeal to inhabitants and businesses and requires investment into improving its quality to remain a sought place. It is one of the main roles of the local administration and the government officials to prevent negative trends from having a strong impact on the city and stimulate positive trends to hold sway.

How does the Masterplan help to achieve a Compact City?

Myth: *Masterplans with their rules limit the market forces and distract investment.*

Truth: *Masterplans channel investment to take place in locations where they not only create economic profit but also help improving the urban fabric and the public realm to attract more investment.*

In the Masterplan intensive urban development is favoured to strengthen the city centre and limit urban development outside of the existing built-up areas. This approach requires close and regular collaboration between public and private institutions. Driven by private initiative and guided by public interest, it is possible to achieve the high quality demands set out by spatial masterplan without frustrating the private market. It may not be the quickest and easiest way of developing a city, but it does provide the best result in the longer run.

In Perm, the popular belief among project developers is that high-rise greenfield developments or free standing datchas outside the city are the optimal and only way to satisfy current market demand. There is no real thought for alternatives. This thinking is not limited by the scarcity of the prime resource of development: The vast dimensions of Russia give the impression that land is available in abundance. Since there is so much land, there appears to be no problem with greenfield development. It is cheap to build on a Greenfield and high profits are easier to score.

But there are viable alternatives. A city the size and structure of Perm has more than enough room to accommodate all development for the foreseeable future within the existing boundaries of urbanised zones. Although there are few available building plots at the moment, it is possible to create more relatively easy. The local government will have to play a central role in making additional plots available. There are vast areas of residual land in the different microrayons, there are large areas of former industrial land that is not used for production anymore and there are substantial amounts of buildings that – because of their poor condition – have to be replaced in the coming years.

Housing development on these inner city plots may appear to be more expensive than on greenfield plots if only the direct investment by a private developer is considered, the overall business case that also considers public investment and maintenance of different kinds of infrastructure shows that it is much more economical and offers a whole range of advantages that otherwise can't be achieved.

Consolidation and densification of the existing urban fabric (we call this the 'intensive development model') is to be preferred to new greenfield developments on the edge of the city, which will be referred to as the 'extensive development model'.

Comparing the two development models shows that the preferred intensive model is sensible from four fundamental points of view:

- It has direct financial and economic advantages
- It has indirect financial and economic advantages
- It has social advantages
- It provides environmental advantages

We will elaborate on these four subjects below. For the understanding of the full complexity it is important to first take a closer look at the primary domain of the local government: the public realm.

Why is the Compact City so important for the quality of the public realm?

Myth: *It does not matter whether investment in the public realm takes place in a central location or at the periphery.*

Truth: *Investment in the centre and in existing public amenities, spaces and utilities offers more value per capita since money can be spent more efficiently providing benefits for the collective of all users of the city while spending in the periphery largely caters to the needs of a much smaller group and private interest.*

Public realm covers all sorts of public areas and public utilities and services. These are typically provided by either the state (the central, regional or local government) or public utility companies. Public realm can be divided into the following types:

- Public spaces: roads, streets, squares, parks, and playgrounds including and the street furniture such as street lights, fountains, benches, etc.;
- Public amenities: universities, schools, kindergartens, nursing homes, sports facilities, fire stations, police stations, libraries, hospitals and other medical facilities, cultural facilities such as theatres, opera houses, etc.;
- Transport: trains, trams, buses, and their tracks and power grid, their stations and depots, etc.;
- Utilities: electricity, heating, water, sewerage, drainage, waste collection and processing.

Other facilities, such as retail and leisure, are usually considered part of the private realm since they typically require to comply with certain house rules. They will be discussed separately in chapter 6. It can be argued that the government is also responsible for a segment of the housing market – the social housing sector.

Besides the private sector, there are different hierarchy levels of government – municipal, Krai, federal government – involved in development, design and maintenance of public realm. Certain facilities are directly funded through federal budgets. In other cases the public may have to pay for all or part of the running costs, through fees or direct taxation. In all these cases it is the idea that the government is responsible for coordinating the construction, maintenance and running of the public realm. The choice between an extensive or an intensive model of urban development will influence the functionality and the efficiency of the public realm. Only in the rather theoretical situation of a tabula rasa condition where a city is designed from scratch, it would be possible to realise a perfect distribution of amenities and utilities. In the more complex and ever changing real life where an urban environment already exists and where the planning authority does not have full control over urban development, one has no choice but working with the given situation.

Perm is currently a city of moderate size (around one million inhabitants) with moderate density levels in the city centre. The Floor area ratio (FAR) that describes the amount of floor space per square metre ground surface area is around 1. This is significantly lower than other European cities of similar size where the FAR ranges between 1.5 and 4. Besides the low ratio density is very evenly distributed unlike other European cities where FAR greatly varies between different parts of a city. Perm's development has been limited by the river Kama and the valleys which has a strong impact on density levels and lead to the current shape of the city. Since the situation is different than for example in the case of Singapore, Amsterdam or even Manhattan, one should not refer to those cities when describing the intensive development model for the city. Their city centres are considerably more intensely used and densely populated. Perm will and should not develop into a replica of Amsterdam or the other cities mentioned. Equally references of the extensive model such as Los Angeles do not serve as credible development models for the city. Perm should develop based on its own qualities and urban structure and seek to establish an identity that makes it unique rather than another copy of any other city on the globe. It is the role of the local government to identify what those qualities are and pursue their further development to match contemporary and future needs of the local population and the city as a whole. Guiding principles should be oriented at the greater good for the city and not follow particular desires of individuals. The Masterplan provides as good basis to start from since it identifies the key spatial qualities of the city and puts them into the comprehensive context of urban development in all its facets.

FAR of city quarters			
City	Quarter	Country	FAR
New York	Mid-town Manhattan	USA	4.7
London	Canary Wharf	UK	4.6
Paris	Centre around Chaps Elysees	France	3.5
London	Paddington Basin	UK	3.1
New York	Greenwich Village	USA	2.8
Munich	Schwabing	Germany	2.6
Berlin	Gropiusstadt	Germany	1.28
Hamburg	Steilshoop	Germany	1.12
Perm	Russia		1
Munich	Neuperlach	Germany	0.96

figure 2: urban FAR

Why does the Compact City make sense in economic and financial terms?

The extensive development model and its advantages are often described in general terms. They are derived mainly from the examples of North America, which has long favoured extensive urban development in suburbs since the rise of the automobile during and after World War II. To a lesser extent, the same phenomena were visible in Western European cities from the 1960s through the 1980s. But to understand the positive as well as negative impact one needs to look at the particular conditions on the ground and in the local context of Perm. Hereafter follows an assessment of the truths and myths in relation to the urban condition Perm finds itself in.

Investment necessary in infrastructure and utilities

Myth: *Infrastructure in compact cities is more expensive to maintain since it often is outdated.*

Truth: *The choice for extensive development does not decrease the cost of maintenance in the centres but it increases the costs in the areas that are newly developed.*

Greenfield developments always requires investments in infrastructure and utilities since both are not existing yet and have to be built to enable building on maiden land. Depending on the characteristics of the area, geological and geographical conditions and the remoteness from the existing city, this can be relatively cheap or very expensive. For example any development on the north bank of the Kama river will require a number of expensive bridges to be built. In any case it will cost significantly more than being able to use already existing systems. Even when the alternative is to build in an existing city that is functioning near capacity and that would also require investment in upgrading infrastructure and utilities many of the investments to conquer undeveloped greenfield land still don't have to be spent when working within the existing urban fabric. This difference in investment necessary is even higher in a situation as can be found in Perm. The existing infrastructure and utilities in the city centre are overall underutilised. This is partly because they were designed with overcapacity and partly because the population has declined. Due to the ample capacity available, increase in population density in the existing city does not pose a problem. Furthermore maintenance and reconstruction of the existing public utilities can more easily be divided into smaller contracts, so that a greater number of local engineering and construction companies can be eligible for the tenders. With greenfield development, the scale of operations is usually greater, limiting the number of eligible firms and requiring significantly larger investment including inherent commercial risks.

Maintenance and running costs of infrastructure and utilities

Myth: *Extensive cities have the same maintenance and running costs as compact cities if they are well maintained.*

Truth: *Larger networks have higher maintenance costs and money saved in compact cities can be used to invest in amenities or quality public space.*

Where utilities and other public services fail to work properly most of the time poor management, maintenance or investment backlogs are the reason. As the transport strategy of the spatial masterplan demonstrates traffic congestion in Perm is usually because of poor traffic management. The same goes for utilities, which suffer from poor maintenance, neglect and under utilisation. It is unavoidable that the city of Perm will have to invest in its existing infrastructure and utilities to avoid system failure anyway. Since funds available are limited focusing all available budgets in the reconstruction and improvement of the existing infrastructure and utilities would be the right thing to do and is without alternative.

We can expect industries to gradually relocate from locations close to the centre to more remote places where they find the space to expand and/or improve production conditions. If this is combined with housing developments in the suburbs, the existing city centre will become less densely populated. The remaining housing blocks will be improved, so they use less energy. All those trends together that result in the extensive development model, will lead to significant under utilisation of the existing utilities, roads of any other kind of public infrastructure which. For some utilities this even increases the operation costs since for example sewers have to be continuously flushed with drinking water to avoid congestion in the pipes.¹

The choice for greenfield development will leave less money for the centre. Furthermore, it will be more costly to maintain the infrastructure and utilities in future. The volume of infrastructure and utilities that has to be maintained increases, thereby decreasing the available funding per area.

EXAMPLE: To outline the difference in investment the intensive and the extensive growth model can have here an example from New Jersey in the United States: The centre for urban policy research found that the State would save 1.3 billion US\$ over the coming 20 years would it follow a model of managed growth as opposed to the sprawl practised.² Related to the Perm context this would come down to a saving of 162 million US\$. Money that can better be spent on upgrading public space, public transport or the cultural offers of the city.

1. See herefore the experience of the city of Schwedt in Eastern Germany that is currently struggling with population losses of more than 50% due to disappearance of industry and subsequently its employees.

2 Centre of Urban Policy Research: Gomez-Ibanez, Jose, 1991. Journal of the American Planning Association 57,3: 376-9

Modal split of transport and level dependency of a city from the motorcar

Myth: Compact cities are congested and public transport is inefficient and expensive.

Truth: Only in megacities congestion is a result of density - in all other cases sprawl generates congestion. Public transport is more efficient and cheaper the higher the density levels are.

An overly intensively built city is usually associated with traffic congestion. Think of Mexico City or Mumbai. Perm is not only substantially smaller but also has much lower population densities. Therefore it should be possible to house the population within the existing city limits without causing further congestion. Since forecasts show that the population of Perm is rather about to stagnate than to increase the same number of people will be using the same amount of road infrastructure. One can assume that car ownership will increase, but with effective investments in the road network congestion at the current bottlenecks can be resolved relatively easy, as is demonstrated in the transport strategy of the Masterplan. Excessive greenfield development would on the other hand lead to more and longer car trips, inevitably causing more congestion and longer travel times.

example: In 1990 the average American drove 11,155 km per year in his car, the average European 4,519 km.³ At an average speed of around 60 km per hour the difference sums up to 4 days 15 hours not counting the risk of additional delays due to congestion. Besides the loss of time that can not be used for anything but driving there are additional costs for maintenance, insurance and above all - fuel.

The current public transport system of Perm is not operating to its full potential. To improve it the rationale is the same as with infrastructure and utilities. Investment is needed in the existing public transport and funds are limited. It would be wise to therefore focus available funds at improvement of the current public transport system. In the case of increased Greenfield development investment would have to go into the construction of a larger network of tramways and the like there at the expense of the improvements in the centre. Furthermore lower overall population densities lead to lower numbers of users of public transport per area and at increased costs for the larger network necessary to high operation costs. Those can not be fully recovered from the users should one want to keep number of passengers stable or increase them. Inevitably a larger network with a smaller number of users will lead to lower frequency, less reliability and ultimately a poorer offer that is likely to be neglected by those who can afford a car, increasing segregation.

example: A comparison of Portland and Los Angeles, both cities at the American West Coast can show the effects of the decision for compact urban development in relation to public transport: Portland in the 1970s chose to limit growth within existing boundaries while L.A. did not. Today the former city has a fully functioning and increasingly successful public transport system with light rail and buses that is used by – at American standards – a high number of people (around 12 % of the population) to commute while a similar system does not exist. Only few bus lines that are badly connected with each other serve those who can't afford a car. All others (have to) drive. One can imagine what difference this makes

Quality and quantity of public amenities

Myth: It does not matter whether the city is compact or dispersed, quality and quantity of public amenities will remain the same since it is based on the number of inhabitants.

Truth: Building new amenities requires high levels of investment at the expense of the quality offered throughout the city. Extensive development will lead to less quality or a smaller provision of amenities.

Since the population of Perm has been declining in recent years, most public amenities in the city are underutilised. With the extensive development model, the city government would be required to invest in new schools, libraries, fire and police stations etcetera in the new suburbs. The trend to move away from the centre and the resulting lower number of inhabitants there will lead to further underutilisation of the existing public amenities. In the end the local administration would have to maintain more amenities – each one used by less people. The alternative would be to close the ones that are too large, the ones that are in poor physical condition and the ones where no potential users live in the surrounding. In all cases the amenities in the centre would rank high on the list of amenities threatened by closure.

Expanding the provision of amenities cannot possibly exist without huge investments and high running costs. This is not realistic with the current budget of the local government. It therefore would be more effective to focus the limited available budgets towards maintaining and improving the existing amenities, and concentrating new development directly around them.

³ Source: Molly o'Meara Sheehan: City Limits – Putting Brakes on Sprawl, p. 10

Indirect financial and economical advantages

Besides direct savings for public budgets there are also indirect profits that can be realised in developing the city in an intensive way. We believe that focus on development within the already urbanised areas with a focus on the city centre would have strong indirect financial and economical advantages. These advantages will probably not be visible directly, but will emerge in the longer term.

Quality and quantity of private services

Myth: *Quality and quantity of private services is better in dispersed cities since they have the space to operate in the best possible way.*

Truth: *Quality will decrease since the number of potential customers per catchment area is lower so that businesses are forced to operate at lower cost at the expense of quality of the services offered.*

In an extensive development model, the population density is much lower than in the intensive case. Settlement areas are much larger and distances that one has to cover to get to a certain place in the middle are significantly longer. Private services, such as retail and leisure need an economic base, a minimum amount of customers to flourish. This either leads to lower quality services, the typical basic shopping centre with a supermarket, a number of small shops and offices and a cinema in the middle of a suburb and all concentrated in one location – or to massive and large-scale shopping malls, located near a highway junction and servicing a large area. Due to the lack of critical mass both are further away from home than comparable offers in an intensive urban environment. Due to the lack of a critical amount of customers, there is little incentive to do more than the minimal and there is even a disincentive to do anything original or anything that offers qualities to the outside world instead of internalising all offers to create the atmosphere that most of the time is only a far cry of the bustling streetscape one can find in densely populated city centres.

example: A simple comparison of the variety of shops in a grown neighbourhood of Manhattan such as Greenwich Village and the offer one finds in a strip mall in the suburban outskirts of New York City shows that both areas house the big retail chains but only the former provides the small owner run shops that make the area special and local.

The city centre is the growth pole that sets the pace

Myth: *Focusing development in the inner city will result in higher costs and less profit.*

Truth: *The higher quality of the urban environment will lead to higher profit and more attractiveness that attracts more consumers and more investment.*

The intensive model of urban development will strengthen the city centre. The investment of the public sector ideally should be combined with investment in the private sector. It is always difficult to assess the direct benefit public investment has for the private sector but we are convinced that there will be a benefit. The question remains in how far this benefit outperforms that of a suburban condition but our experience shows that investment in the centre is paying back.

example: Brownfield development has a positive impact on the amount of money each and every tax payer has to contribute to the realisation of the different types of infrastructure. For the US the societal cost for one private car for example amounts up to 3000 – 5000 USD\$ per year. This is almost as much as the owner of the car has to spend on gas, maintenance and loss of value of his vehicle.⁴ Similar conclusions can be drawn for other types of infrastructure – no matter whether one uses them or not. These amounts of money spent otherwise, for example for private consumption or the provision of amenities would have a significant effect on the wealth of the city.

First of all, a vibrant city centre with a public realm of some quality will more easily lead to economic development. In the economic transition Perm undergoes – the city will most likely see the industrial-manufacturing sector decrease in size and more knowledge-based sectors increase – it is important to hold on to the young, creative, well-educated and diverse labour pool since this forms the base of attracting businesses as PricewaterhouseCoopers concludes.⁵ A vibrant city centre will put Perm in a better position and higher on the list of global competitiveness to attract investment and talent. The well educated people seek a certain quality of life that – next to good working conditions – also includes provision of high quality amenities, public facilities and an urban environment that is safe, well maintained and attractive. It is not by accident that those cities ranking high on the quality of life index increasingly become the hubs of economic activity where more and more businesses concentrate.⁶

Improving the quality of the public realm will increase the value of surrounding properties. Since investments in private property will be more lucrative if the surrounding public space is at a sufficient quality level, the private sector will invest more in the existing city. More offices, shops and restaurants lead to a more attractive city, which means that more people will want to live in it. This means that there will be a higher propensity to improve the housing stock.

It is always difficult to recover sufficient funds for the local government to pay for the investments and maintenance of the public realm. This depends greatly on the legal and fiscal possibilities that vary from country to country and from city to city. In the implementation of the Masterplan it therefore is important to focus on this aspect and find out which methods of value capturing are most suitable for Perm. Like in most other places in the world there should be a mechanism to reclaim some of these investments from project developers and property owners.

example: What the impact of a high quality public space is on land values can be seen in the Netherlands. Research by the association of real estate agents showed that property next to well maintained parks or water edges delivers 10% more in sales prices than comparable property. Green and water combined delivered even more.⁷

4. J. Holtz-Kay: Asphalt Nation, p. 120

5. Urban Land Institute: Higher density development: Myth and fact, p. 34

6. See Mercer Consulting – Quality of Life Index 2009

7. Source: Interview of Markus Appenzeller with a number of Dutch real estate agents in 2006

Social advantages of the Compact City

Myth: *Compact cities have higher crime rates and density leads to more tension between different social groups.*

Truth: *Due to the higher level of social control compact cities are safer. The Compact City is capable of integrating a heterogeneous mix of groups and stimulates social interaction that avoids conflicts.*

There are social advantages associated with the intensive urban development model. A Compact City with relatively short distances between home, workplace, and services means that it is possible to reach places and meet people easily. A city that lacks density with extensive suburbs relies heavily on automobiles. In the United States, people living in the suburbs require an average of one car per member of the household, because public transport, cycling and walking are no viable alternatives. People who can't afford cars or who are not able to drive (because they are handicapped, aged or simply do not have a driver's license) have difficulties living an ordinary daily life.

Extending persistent trends into the future one should not be surprised to see a separation between affluent and poor households in Perm. If the wealthy households move to the suburbs and those with lower incomes remain in the city centre, social segregation as can be seen in the United States is the result. Levelling effects of a mix of social groups are removed – increasing crime rates and vandalism start dominating the picture and lead to a downward spiral which is virtually impossible to revert.

example: Rotterdam is an example how things can go wrong. Some decades ago people moved to the suburbs outside the city itself. The city's centre nowadays has some of the most deprived areas of the whole of the Netherlands. The city put enormous efforts into gaining back better educated residents in the centre and invests huge amounts of money into high quality public space and reduction of crime rates. Those efforts have been successful to a certain extent but would not be necessary had the city reacted timely and prevented that people seek their home outside the inner city quarters. Besides the segregation by income levels the out of town development in the longer perspective lead to intergenerational problems. New suburbs usually attract one specific group – generally speaking young families with children. This is not a problem in the first two or three decades but examples from the Netherlands such as the city of Zoetermeer show that those settlements become socially deprived and finally unstable. The owners age collectively, have different needs and lifestyles that tend to distract the younger generations and lead to a decrease in land values and a downward pointing spiral of effects that reinforce each other. These are only two examples to illustrate the negative impact of new out of town settlement. The negative impacts go further and range from racial segregation across the danger of turning a city into a collection of gated communities to the simple loss of point of social interaction.

Environmental advantages of the Compact City

Myth: *Compact cities are polluted and provide unhealthy living environments*

Truth: *Compact cities have a better energy performance than dispersed cities and save every resident significant amounts of money. They are less car dependent and offer a healthy living environment that stimulates walking and cycling instead of using the car.*

The extensive development model means more car traffic, because houses, workplaces and facilities are more spread out. Walking and cycling are no viable alternatives. Public transport does not operate at high levels of users. Means of transport that in comparison lead to less pollution and CO2 emissions therefore are no realistic options. With the further economic growth of countries like India and China it can be expected that – despite efforts to save energy – fuel prices will increase and require a bigger and bigger share of the total household expenditures. In some cases families in suburbs can't afford their lives anymore – they are trapped in their homes since the only tool to participate in daily life – the car have become unaffordable. Even such ideas as car sharing that could provide a solution to the problem are not viable anymore since low densities lead to too few customers within a specific area. A Compact City with a functioning public transport system and walkable neighbourhoods is less affected by this trend than suburban sprawl.

example: Effects of increasing fuel prices can already be observed in Los Angeles. While in recent years house prices have fallen in the suburbs at the outskirts of the urban agglomeration, those in Culver City, an inner city quarter have soared. If this trend continues the suburbs – once the 'fortresses' of middle class wealth will turn into slums as renown urban planners state.⁸

Currently large parts of the housing stock in Perm is serviced by central heating plants. Well maintained and equipped with latest technology they perform better than stand alone solutions for each apartment individually. In case new out of town development is actively promoted and serviced by public sector companies, it can be expected that there will be fewer funds available to maintain the already existing infrastructure. Necessary upgrades such as insulation and efficiency improvement of the heating system and as well as the existing housing stock will not be undertaken. Most of the investment will go into the necessary new facilities in suburbs.

Another important issue, besides the energy consumption for heating and transport, is the energy performance of different building typologies. More compact typologies such as apartment buildings, row houses or semi detached structures usually have a better floor area to façade surface ratio which means less energy is being lost.

example: Research undertaken shows that New York with its dense urban fabric has an energy consumption per capita that is only 70% of the American average. Remember – 30% saving within the same country with similar values, comparable consumer behaviour – just by the fact that New York is more compact and has public transport. This example might illustrate an extreme but it outlines the saving potential the simple choice of development model can deliver.⁹

It can be concluded that, environmentally speaking, a well-functioning Compact City is more efficient than suburbia. We stress well-functioning: if population density is too high and roads and public transport are insufficient, a Compact City will lead to congestion and that inevitably leads to pollution. This does not apply to Perm where density levels – even in the case of pursuing the intensive development model – are still at the lower edge of what usually is considered to be a Compact City.

⁸ see: <http://www.post-gazette.com/pg/09095/960370-109.stm>

⁹ Research undertaken by OMA in conjunction with Arup for White City project in London

But if there are clear advantages of a Compact City - why does greenfield development still prevail and what has to happen to reverse that trend?

If it is so clear that the intensive development model scores better on many levels, why does Perm and most other cities in Russia still develop into extensive urban areas with growing suburbs and a loss of population in the central locations?

The key reason is that cities tend to develop in the direction of the least resistance with money being invested where is generates profit in the easiest way.

In Perm there is a shortage of available building plots in the city centre. The complexity of ownership boundaries makes it difficult to develop quickly and the necessary land assembly to achieve reasonably sized plots contains risks private investment seeks to limit as much as possible. The few plots available are not sufficient to cater market demands. Therefore they have high land values. Together with the lack of administrative structure of the public sector to support the more complex inner city development processes investing in the centre is simply not attractive. On the other hand land on the outskirts of the city is readily available, cheaper and because there are insufficient methods to make project developers pay for the costs of extra infrastructure and all amenities delivers higher profit at less risk. From the point of view of a profit seeking project developer, it makes perfect sense to develop in the suburbs rather than in the city centre. Since developing in suburban locations renders highest profits on the short run, real estate developers favour an extensive development of the city with new suburbs.

Some studies claim that compact cities have a series of disadvantages. They state that there is more traffic congestion and as a result - increasing CO² emission and travel time.

They say that enforced restrictions for land use lead to higher land prices and subsequently to higher house prices which is considered unsocial. Households will be confronted with higher costs of living, because cost of life is higher and public transport can never operate profitable anyway. This might be true for large, congested metropolitan areas like Moscow, London, New York but it is not true for Perm. Once the only real problem, the scarcity of building plots available in the city centre is resolved, Perm can develop successfully while maintaining its compactness.

Tackling the fragmentation of inner city property therefore is a key task for the local government. Compared to cities of Western Europe like London or Paris where brownfield land accounts for less than 10% of the city's urbanised area, cities in the area of the former Warsaw treaty have significantly higher amounts of these areas (for example Krakow in Poland: 28%, St. Peterburg in Russia: 45%).¹⁰ There is enough room and when there are many empty spots in the inner city area. For some reason until now it was not possible to build there. If the next General Plan will only draw a boundary around the existing city and prevent development outside of it, there will inevitably be a scarcity of building sites, rising land prices, rising real estate prices and a higher cost of living. Therefore when limiting the urbanised area the government also has to take an active role in land assembly. It has to ensure that development plots of various sizes are available to an extent that they fulfil market demand.

The following chapter explains how this can be done at greater level detail. One of the simple but effective suggestions could be to work with twin projects. A more difficult one in the city centre can be combined with a simpler project in a less central and therefore less constrained location. This would encourage project developers to start projects in the existing city.

Another key question is: will consumers want to live in a Compact City? Will they buy the real estate offered?

¹⁰ Molly o'Meara Sheehan: City Limits – Putting Brakes on Sprawl, p. 43

How to make it happen!

tools and measures to implement the spatial Masterplan for Perm as a Compact City

Consumer wishes are an important issue and building a product that nobody buys has even more devastating effects than leaving plots empty. Assessments of consumer wishes have been carried out all over the place, most found a stereotypical answer: People want to live in detached single family houses. This is neither surprising nor drawing the Compact City model into question. Those consumer surveys usually do not consider the ability to afford a particular type of house and in almost all cases use the family with a married couple and 1 or 2 children as the reference case. But society is changing – the mainstream model of life is step by step replaced by a more episodic lifestyle. In a life one is single, married, has children, divorces, lives together with a different partner and eventually also his or her children. People change jobs more often, move back and forth between different cities or even have several places they call home. These changes in lifestyle already show significant changes in the attractiveness of suburbs in the US.¹¹ It can be assumed that similar trends will manifest themselves in the Russian context in the next few years. Where the suburb and the single family house dominated once, the demographic changes have paved the way for a much more heterogeneous pattern that involves a much larger variety of typologies for the different phases in life and the wide range of lifestyles. In present Perm this transition of lifestyles cannot be observed yet. Two typologies prevail. The apartment in a building block built in post WW II soviet times and single family dachas. Other typologies barely exist – a missed opportunity to exploit market niches that exist and will increase in the future. But it is not the speed of change in consumer behaviour that is difficult to assess anyway – it is the question whether the variety of possible consumer wishes can be accommodated in the spatial Master plan or not? The master plan as proposed suggests many different types ranging from affordable row houses and town houses to interesting mid rise and the occasional high rise structure in the centre. All of them provide better living conditions than high-rise buildings outside the city that neither offer the possibility to have a private gardens nor the benefits of living in the centre of the city, but at this moment the existing alternatives are unknown to the consumer. Exemplary projects that demonstrate what is possible are urgently needed. They will help evaluating what fits the wishes of the Perm consumers in the best way and play an important role in getting an overview of the most important market niches. Ultimately types of houses offered, their specific qualities and the price they cost will determine what is successful and what is not.

At the UIN/ULI conference recently held in Barcelona, 10 rules were formulated as guidelines for cities to improve and remain or become competitive. These clearly acknowledge the importance of close public-private collaboration.

1. Cities should be distinctive and have a clear vision of their future
2. Sustainability delivers livability and creates long term value
3. Adaptability and flexibility are key to navigating change
4. Cities are joint ventures
5. Public investment should better leverage private investments
6. Robust relationships through openness and trust
7. Responsibility for cost and risk reductions are shared
8. Innovation and invention must be used to drive investment
9. Urban investment expertise, knowledge and understanding should be fostered
10. Investment performance should be driven by sound management

In the following chapters these headline ambitions will be explained to a greater level of detail showing ways how to achieve them in the context of the local conditions of Perm.

11. Urban Land Institute: Higher density development: Myth and facts, p. 28

CHAPTER 2 - PRELIMINARY NOTES

2 INTRODUCTION

Context

Masterplan and urban economic paragraph

The Masterplan gives a broad overview of the course to follow with the goal to alter the city of Perm and increase its urban qualities. These qualities are formulated in spatial outlines, requirements and guidelines. Most of them directly influence many other fields that make up a city fabric: infrastructural-, transportation-, social- and economical issues as well as political and legislative issues need to be considered.

The approach taken acknowledges the need for integrated city development and the creation of synergies between different domains, for instance by generating an integration between transport and mixed land use but also in areas of integration with other disciplines, like economics or social issues.

In its implementation the Masterplan sets out the high level ambitions and strategies but also aims to provide exemplary test cases, which will help to assess and develop the actual tools and mechanisms needed to develop projects. While those will require additional work and adjustment to the changing conditions the the urban economic paragraph provides starting points and knowledge from elsewhere with assumptions in how far this expertise will have to be adjusted to match the Perm context.

The Masterplan as a document

The Masterplan is not a legal document in itself. It is a masterplan that sets out the direction into which Perm should develop

Currently the legal and administrative structure in Russia in general and in Perm in particular is still largely purely number driven and founded upon the former Soviet Urban Planning practise. The Masterplan – a document that in its nature and objectives can't be directly used as a planning document fulfilling the existing Russian requirements - needs to be translated to match the legal requirements of general plans and zoning plans.

Annex 1 (pg 45) demonstrates the methodology developed for the translation of the Masterplan elements into a parametric model. Besides compliance with planning regulations this shows also its potential as a tool informing decision making for future developments and policies. In such a way different scenarios can quite easily be translated in to volumes and typologies.

The Masterplan has been developed as a flexible framework and a tool that allows for dynamic steer. While this method allows for a maximum degree of freedom and adaptability, this steer can't be exercised by urban design only but needs to be informed from within other domains and documents. The Masterplan is clip that holds all other policies and initiatives together and translates them into specific spatial conditions. Besides the spatial planning, social and economical policies are the most important domains for a city. It therefore is essential to see the Socio-economic Strategy and the Masterplan as two complementary and necessary documents to actively influence the development of the city.

Socio-economic Strategy for dynamic steer

A Socio-economic Strategy allows the dynamic steer of city development. The Masterplan is a spatial framework that looks at a longer period of time. It sets priorities and goals, but to achieve those depends on policies and private investment and developments. Steer on social and economical issues is by nature a highly dynamic endeavour: political stakeholders tend to change seats and economical forecasts are updated quarterly. Therefore the Socio-economic Strategy is the most direct tool in city development. Combined with the Masterplan it is a highly effective tool to develop the city. As we understand, the Socio-economic Strategy is currently under development.

Transformation

The transformation process of Perm city requires more than just spatial transformation. The required changes are challenged in many fields.

- **Context:** The transition from a communist plan economy to a highly liberal and capitalist model, has not gone hand in hand with an increased integration and collaboration between public and private entities. Both – the communist and the free market economies advocate little to no involvement of the government into the realm of the private market activities. Therefore it does not come as a surprise that the former, communist organisational structure has largely been unchallenged, though set in a totally different context. The integrated approach of the Masterplan requires a more integrated collaboration between public and private institutions. Driven by private initiative and guided by public interest, it is possible to achieve high quality demands as set out in the Masterplan without frustrating the private market.
- **Legal aspects:** The legal structure should adapt to the framework nature of the Masterplan. While the transformation into Genplan documents is under way, we advise to set up a legal structure that will enable quality driven documents like the Masterplan instead of number driven ones to be part of the urban planning process. This simplified process would make the translation into legal documents unnecessary and speed up the process. Such documents could then directly find their way into the decision making process of the local governments.
- **Organisational aspects:** The need for closer collaboration means that the public administration will need to move from consolidated control to a more open collaborative model with market parties and other stakeholders. In achieving this a transparent real estate development process is key, in which all involved parties have a clear understanding of the involved goals and requirements.
- **Political aspects:** In order to maximise the effect of the goals set out in the Masterplan, a fundamental reassessment of public-private collaboration is essential. The cooperation between the public and private sector can come in many forms and shapes and can be catered to local requirements and demands. It is of utmost importance that a political covenant between public and private is the underlying base for this cooperation.

Implementation tools and mechanisms

We have outlined the goals and systemic transformation necessary to be able to use the Masterplan to its maximum potential. It is clear that the implementation itself will be the next big step to take. Implementation issues touch upon a multitude of scales and layers and will require time frames that can vary between a few weeks and several years or even decades. It is evident that there will be a need to formulate new implementation tools and mechanisms for most of the issues mentioned before.

Urban Economy

Objectives

Both, the Masterplan and the Urban Economic Paragraph aim to give further insight into the urban economic issues of the transformation envisioned, and outline possible implementation solutions.

It will therefore address the following issues:

- From an economic point a view demonstrate the credibility and justification of the growth model of the city proposed in the Masterplan.
- Outline the methodology with regards to organisation.
- Outline the methodology with regards to implementation.
- Provide a study on the current status of the housing market, set against the goals of the Masterplan, combined with an outline of implementation tools and mechanisms.
- Provide a study on the current status of the retail market, set against the goals of the Masterplan, combined with an outline of implementation tools and mechanisms.
- Provide a study on the current status of the office market, set against the goals of the Masterplan, combined with an outline of implementation tools and mechanisms.
- Provide a study on the current status of the industry, set against the goals of the Masterplan, combined with an outline of implementation tools and mechanisms.

Constraints

The design of a Masterplan and its implementation take place in sequence. Therefore they are interconnected, but have to deal with different restraints and challenges. While the former has to come up with a flexible definition of spatial arrangements and integration of a multiplicity of issues such as public transport, typologies or utilities, the implementation has to create facts on the ground within the ever changing political, economic and societal conditions.

Having to deal with the day to day life, implementation is usually both the first and the last readable sign of a strategy with the time in between being less predictable and having to respond to the different forces on the ground. As a result the issues addressed here and the suggestions made will be of two different kinds:

- The described tools or mechanisms are of a general nature. The basic concepts are introduced here, sketching the possible solutions and working methods. Those concepts are based on the experience from many other parts of the world and have been considered in the light of the local Perm context. They provide a preview of what will be needed for the successful implementation of the Masterplan. We strongly advice to pursue these issues further and in an iterative process shape them to meet the local condition and secure a succeeding implementation process.
- The described tools or mechanisms deliberately aim to be short and pragmatic. Rather than to focus on theory they aim to sketch a range of directly usable solutions. The final validation of these approaches lies with the local community and it is self evident that the tools proposed will require regular review and adaptation to the changing circumstances.
- It should furthermore be noted here that the outlined processes and tools need substantiation with computer models and input data throughout the entire implementation. Since these were only partly available or showed gaps in their data build up, completing the data set and models is an exercise that will need to be done in the later stages. A second steer that is essential to the implementation has to come from Socio-economic Strategy that still is in the process of development.



CHAPTER 3 - ORGANISATION

3 INTRODUCTION

PPP: Public-private partnership

The government / city administration and private parties have different interest but can work together to achieve common goals. There are many forms in which this partnerships can be successful. In the case of Perm there are some goals like the “on the ground projects” that can be realised in a kind of partnership:

- Invest in infrastructure, Utilities and amenities
- Develop large projects like the railroad station or the embankment project together
- Attract developers to invest in prioritised locations and prevent them from building in undesirable locations.
- Realise affordable housing in order to stimulate upward social mobility and make houses available for lower-income levels;
- Reshape the blocks

Combining the public and private SWOT's (Strength-Weaknesses-Opportunities-Threads) leads to strengths in all fields of development. Private and public parties work together with covenants, letter of intents, contracts, joint ventures etc. Public parties: Government and municipalities have a natural focus on here and now. However they are committed to long term visions and goals. Usually they lack funds, focus less on direct implementation and realisation but more on political results and the support from potential voters. They should work for for the greater good and public interest.

Private parties have a more strategic outlook with a focus on the market. Their goal is to realise a profit. They have (in stable economic times) funds to invest, and need production to cover their costs. They avoid red tape and administrative procedures. As a result, the relationship between the public and private sectors has been traditionally viewed as relatively fraught and incompatible.

In Perm, but also in other European cities, the process of creating sound PPP's is yet at the beginning. They have great potential if the relationship between both parties is calibrated correctly. There is a significant opportunity to use each sector's relative strengths to complement one another and move development forward quickly and efficiently.

To ensure that a relationship between the public and private sectors is built on solid ground it is important that an open dialogue is started and efforts are undertaken to maintain it. Both parties must be accessible, proactive, flexible, engaged and act in the best interest of the city to ensure that investment is used to secure longer term benefits.

example: To give an idea how a PPP could work the following example of a block PPP can serve as reference. The municipality takes the lead: appoints a 'block-pusher', makes it a priority project, avoids red tape (special authority/ mandate), takes care of subsidies or grants and benefits for the lower-income classes. It establishes priorities and rules for homeowners associations and cares for consumer protection. The private party is obliged to work transparent but with a reasonable profit. It secures the financing and realisation power as well as consumer and market know-how. Because of the leniency and cooperation of the municipality the private sector can realise a higher production in the higher price ranges compared to traditional development projects. Working together in projects can either be done in the form of a project office or development agency or in a joint development company. Each of these different types of partnerships has a different legal, shareholder, ownership and financial management structures and implications. In the case of Perm, where the municipality hardly owns land occasions for this type of PPP are currently limited. The more land a municipality has the more power it has to enforce its long term goals therefore the city should seek to acquire land wherever possible at reasonable prices to improve its position.

	Project Office (PO)	Development Agency (DA)	Development Company (DC)
Legal form:	None Necessary	(Public) Limited Company	(Private) Limited Company
Shareholders:	None-Operates by order of stakeholders (Municipality & all private partners)	Municipality & private partners (possibly State, railway company, others)	Municipality + all private partners
Contract:	Partnership contract between all stakeholders	-Shareholder contract between owners of DA - Partnership contract with other stakeholders	-Shareholder contract between owners of DC
Assets / Ownership:	No ownership, project budget from stakeholders	No or some ownership	All land and development rights in landbank, redistribution within DC
Financial management of the Masterplan	Municipality manages levies & subsidies (government funds)	DA manages levies & subsidies (government funds)	DC manages levies & subsidies (government funds)

figure 3: PPO

Bottom-up versus top-down

There are two ways of stimulating development. In a top down approach the government takes the initiative, defines the parameters of development and executes projects. This process is slow and with a lack of funds available only possible in a very limited amount of cases. The bottom up approach relies on initiative beyond the administrative procedures and allows for a stream of work that is less authoritarian than top down methods.

In Russia, the top-down approach for urban planning was common until the end of the socialist period. At present the top-down long term planning is being practised that increasingly is disturbed by the free market economy. In the West both the top-down as the bottom-up approach for urban development are used and combined in a successful way. Top-down is needed for the regulatory framework; bottom-up is needed for realisation of projects. The bottom up approach that is less administration laden is the best method to work together with different stakeholders, municipality, inhabitants and modern style project developers on smaller scales.

The bottom-up approach has many advantages:

- It leads to smaller but quick results;
- Building on empirical research and learning through experience gained: new housing types, marketing, cooperation between municipality and inhabitants, new ways for project developers, and new building systems can be developed to prove their feasibility through exemplary projects;
- It is easier to discover the desires of the public and the market since the bottom up way of working involves a higher level of exchange and communication between the different parties involved.

Mandate office

Big changes need different organisations and working methods. Historically, municipal governments have had insufficient skills and capabilities to manage complex projects, projects with complex assets, or those which have complex financial arrangements. Management of these kinds of projects has typically been moved from the normal bureaucratic system to local government owned special purpose vehicles to carry out the management for them.

Today in Europe, many cities have created project offices and specialist investment facilitation bodies. These cities tend to be more successful at attracting and managing investment. These bodies either come as specialist departments within the city council, development agencies or are specific investment facilitation organisations. They can also take the form of a business angels or an investment network. Ideally they should be staffed with talented individuals, have a clear understanding of the city's offer and investment potential, be accessible and be involved in destination marketing and promotion.

Aiming for an urban development framework that is based on the experience in western Europe but developed further to match the local context of Perm to a certain extent also requires an understanding of the underlying regulatory framework of the cities in the West. Like the physical framework the regulatory framework has to match Russian culture and legal system. Achieving this will have to be a continuous and iterative process.

For the implementation of the Masterplan this means a permanent steering and the creating and adjusting regulations, rules, procedures and possibly even laws. The task of highest priority should therefore be the establishment of an effective and powerful body that will steer and coordinate all aspects of this process.

Mandate office

The implementation of the Masterplan affects the whole city. This is a significant coordination task that is best performed by a single mandate office with tight relationships with the city administration, but with a clear independent mandate, to avoid too much bureaucracy typical of the civil service. It should rather be a taskforce with specific goals than a bureaucratic 'supertanker'. It should be more than an office making plans since it is also responsible for the execution and monitoring of the different plans. To illustrate the scope of tasks this office most likely will have to perform, please see below in the paragraph "business case, selecting/ restructuring priorities".

Project offices

Specific and well defined projects can be steered by a single project office. The size of such a company depends on the scale and complexity of the project the project office is supposed to handle. This project office must have clear tasks, responsibilities and clearly defined relations with the city administration and with the overseeing mandate office. Its main task is realising the project: business cases, feasibility studies, steering and monitoring the process, bringing partners and together, securing funding, public relation and stakeholder management et cetera.

Awareness program and public relations

Visions, opinions and logic arguing might be right and desired but, that does not mean that things will be accepted, especially when the initiative is taken by the public sector which often is blamed for wasting money. Local stakeholders and often also wider parts of society are usually sceptical and negative about the implementation of projects, especially when they are of a large scale. Changing this attitude is the most difficult part of the implementation of plans. New regulations, laws, zoning and a shift of focal points in a city will lead to disadvantages for some parties. This needs a sensitive and careful process. All stakeholders have to be involved in the way that is most useful for the project and their concerns have to be taken seriously with the honest attempt to accommodate them in the development of a project. Groups that have to be addressed are:

- Developers and contractors: the building industry
- Investors and financial institutions
- Architects and urbanists
- Administration employees
- Students, professors
- Consumers and consumer groups
- Citizens
- Journalists and opinion makers
- The local residents and the local business

This stakeholder management is more successful the better the cooperation between the public and the private sector is. Together they have more power to convince people.

Introducing formal awareness and public relations programs for projects requires a change in attitude of politicians, city administration, builders, project developers and investors, architects and urban planners and last but not least the citizens themselves.

How can such a process look like? First of all it needs discussion, education and information which could be taken care of by a project office and its professional stakeholder managers. In this process of communication best practice examples can help getting goals and ambitions across. However they will not answer all questions and concerns, therefore a network of acknowledged experts from elsewhere is a valuable resource in the process of opinion making. Getting access to those networks is most efficiently done by becoming a member of leading institutes and groups in the field. Involving them in regular exchange of expertise not only helps importing knowledge from other places but also makes the processes taking place in Perm part of a wider, a global discussion which can be of benefit for the city.

Another way to convince the local stakeholders is to organise study trips to projects that have been realised successfully. Ideally they are in comparable urban economies to maximise the reasons to believe that such projects are also possible in Perm.

Should one propose a suitable project to test this approach, we think that a mixed use scheme with a focus on housing but with a substantial amount of other uses would be most suitable. The Asylum Site that has been earmarked in the Masterplan as one of the priority sites (see Appendix J, priority Projects) could be a suitable location. The focus on housing would draw the attention of larger numbers of people and the mix of uses would demonstrate how a new quality piece of city could look like that then serves as a reference case for other spots in Perm.

Land economy

In Perm at present the land economy is not functioning smoothly. Due to ownership issues and a lack of available sites as well as a lack of transparency in the real estate market, transaction prices of building sites have a highly speculative character.

To improve the functioning of the real estate market the different factors that have a negative impact need to be mitigated. The focus and the primary aim of real estate investment should no longer be on short term profits of project developers and short term revenues the city administration can realise by selling greenfield land, but rather on the long term benefits that occur when working towards a well-maintained city with a centre of sustainable density.

To achieve this several key steps should be taken:

- **Restriction:** Extensive development should be limited to as few locations as possible. Achieving this goal is a key factor in implementing the spatial masterplan. Mastering the challenges requires thorough understanding of the regulatory framework, the legal implications and the tools that can be used.
- **Stimulation:** The administration has to find a way to make project developers pay for all additional costs in the public realm their development create. One could think of compulsory measures, such as taxation, but also of more flexible measures in which the project developers and the municipality agree which investments in the public realm are directly related to a certain new real estate development and can therefore have to be financed by that development.¹²
- **Awareness:** The municipality should work together with the current property owners and developers to demonstrate that inner-city redevelopment is viable. This must result in covenants.

¹² Example: The British planning system knows a procedure called Section 106 of the Town Planning Act on the basis of which authorities and the private sector have to negotiate contributions of the private sector to the provision of the public realm.

Financial aspects

The scope of the spatial master plan does not provide enough specific information to discuss all financial aspects at a high level of detail.

Currently the Perm City Administration's budget is estimated to be around 30 Million Euros for the maintenance of public space and public amenities - 30 Euros per capita per year. A city like Rotterdam has a municipal budget for these sectors of about 600 Million Euros, twenty times higher. Even though the cost of life is higher in Western Europe and therefore the purchasing power of such a budget is lower. Even when other public budgets, for instance of Perm Kraij, are included the funds available by far do not reach Western European levels. Since it is unlikely that this low level of funding will improve significantly in a foreseeable time, we have to look at other methods to reach the goals desired..

One of the first tasks is to secure additional funds from the central government. Politicians need to be convinced that investing money in Perm is meaningful, because certain investments plan will increase the attractiveness and the economic potential of the city. This requires making sound business cases for various goals and refined methods of lobbying with the key decisionmakers responsible for those federal budgets.

The aim is to channel public investments in such a way that a small investment has the largest impact. Examples from Western Europe and the United States suggests that there are many creative ways to do this. Not all of them can be used one to one. They have to be adapted to the specific social and legal reality of Perm.

Some suggestions:

- With limited budgets, the government could decide to not invest in new social housing, even though part of existing social housing needs to be replaced. Instead the government could stimulate and facilitate the realisation of affordable middle class housing. When these dwellings are purchased by residents of existing housing blocks, the apartments that become available can be used for dwellers of lower income who cannot afford to buy a new dwelling. A calculation shows this financial mechanism is shown in the housing chapter below.
- Maintenance of parks and public spaces: In the United States, there is a system called "adopt a highway". Individuals or companies sponsor cleaning. with a certain amount of money. In return, a sign carrying the sponsor's name is placed on the stretch of highway he pays for. In Perm the number of solvent individuals for these schemes is limited, but there are large companies that can use it as a way of advertising and demonstrating social responsibility. But one could also imagine that these schemes are used to maintain for example parks. Private families could adopt a small plot in a park and show their social attitude by maintaining it themselves. These schemes do not cost the municipality any money and they improve social pride and social interaction between different groups.
- One of the most famous systems stimulating private investment is the micro credit. In many countries it really boosts living standards. It allows local small entrepreneurs to start businesses of which their neighbourhood profits most.
- Abandoned factories can be used as incubator centres for new entrepreneurs, artists or loft dwellings. Examples from Amsterdam or Hamburg show that these spaces are very successful and help attracting more established businesses. The NDSM shipyard in Amsterdam not only houses a wide range of small creative firms and artists, it also has become the new home of MTV's European headquarter that moved from London to this new location.
- A number of public sector banks offer low interest rate loan programs to stimulate private investment with the goal to achieve political goals. The European investment bank for example has an initiative called JESSICA (Joint European Support for Sustainable Investments) that gives low interest loans for urban regeneration.
- Interesting is a new way of investing called Value Capturing Finance. It consists of Value realisation, Value capturing and Local value recycling. VCF represents an innovative means of maximising a city's assets. It is a financial mechanism which not only shares the risks and costs of urban development between public and private actors, but also the rewards. VCF sees some of the costs associated with making urban development succeed internalised within the balance sheets of the developments themselves. Public goods are consequently provided by urban development without the proportional draw on the public resources which would otherwise finance them. It was used in cities like London, Barcelona (see below), Istanbul, Copenhagen, Berlin.

Value creation: In 2001, Barcelona City Council issued a new urban planning regulation which changed the land-use designation of 115 privately-owned old blocks in the south east of the city from industrial (22a) to services (22@). This allows for more productive uses on the land. Density rights were also increased. These changes dramatically increased the land's potential value to private owners, giving them the opportunity to make significant profits. The City Council therefore has strong leverage over the private sector to encourage them to contribute to the wider transformation of the area.

Value realisation: Potential value was made tangible through the private sector planning and development of land parcels within the 4 million metre square 22@Barcelona district as described in the development profile. To date, construction is either planned, underway or has been completed for 67% of this total area.

Value capture: The City Council uses its leverage in a number of ways. In exchange for a planning permit it 1) demands rights to 30% of the total land area of the proposed development or the equivalent current monetary value of the land be transferred to the city (which is decided on a case by case basis); and 2) charges a development levy of EUR 80 per square metre of land developed (which is updated annually). The transfers and levies are donated directly to the publicly-owned 22@BCN company.

Local value recycling: Public sector led re-investment: The monetary and in-kind land contributions of the private sector developers are reinvested in full into the 22@Barcelona district by the public body 22@BCN. The 30% land transfer or equivalent monetary value of the land is used to construct social housing (4,000 units), knowledge-based infrastructures (such as incubators, telecommunications, student accommodation and R+D centres) and green spaces. The development levy is used to fund the delivery of the 22@Barcelona 'Special Infrastructure Plan,' which prescribes the holistic development of the area towards a knowledge-based economy primarily through infrastructure development. Private sector led re-investment: In the 22@Barcelona model, the private developers only contribute to the recycling and reinvestment process indirectly – via 22@BCN.

figure 4: Value cycle

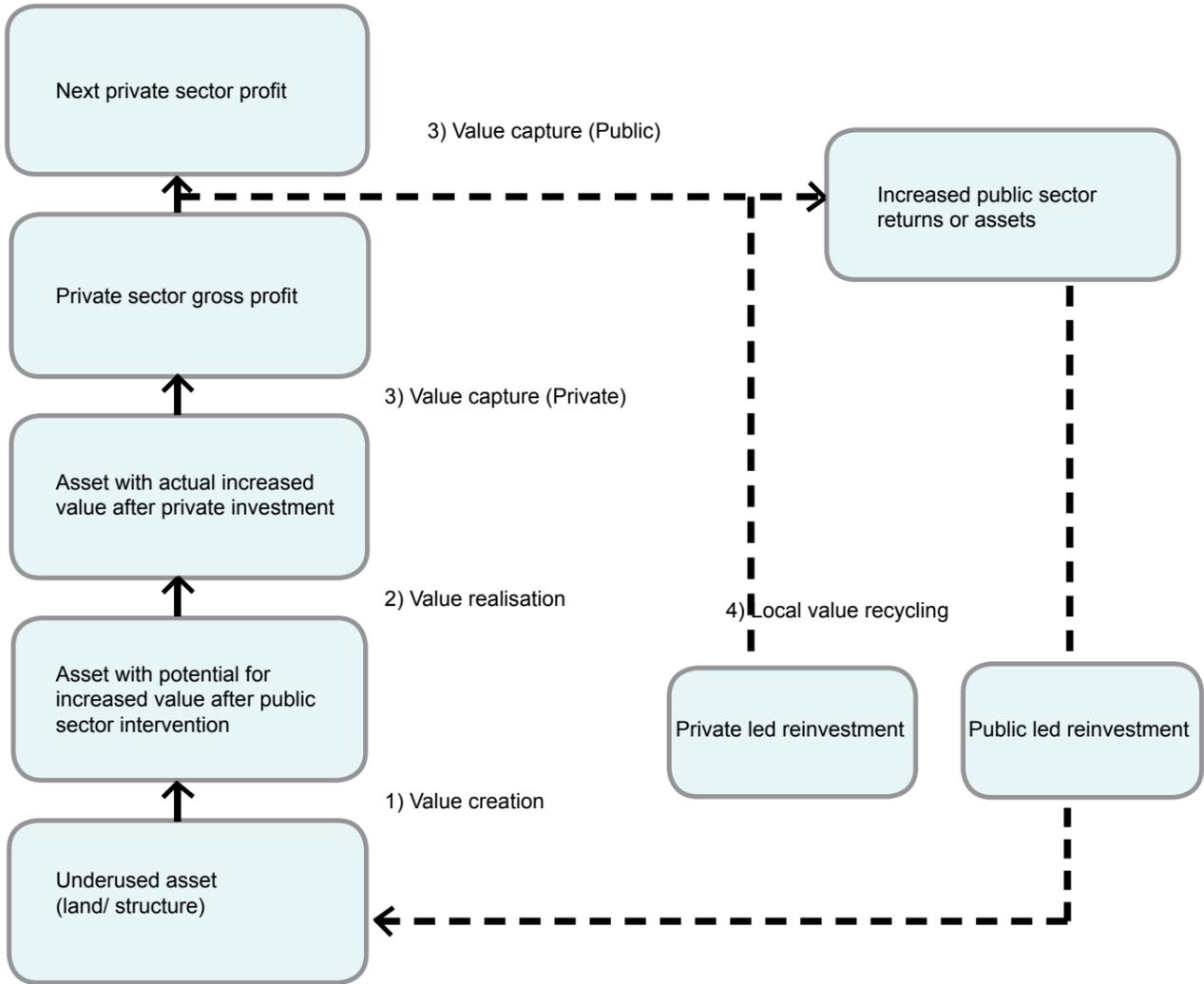


figure 5: The diagram demonstrates the components of VCF
Source: ULI/UIN

CHAPTER 4 - IMPLEMENTATION

4 INTRODUCTION

Remarks

The master plan defines priorities, being able to implement priorities is also based on sound business cases and implementation schemes for those projects:

- financial budgets;
- the possibilities of implementation and eventually limited resources
- market evidence;
- time planning based on design/decision models

The challenge is to find ways in which the vision of the Masterplan can be realised on the ground and in the daily practice in Perm.

Based on a thorough understanding of Perm, its society and its culture a series of opportunities for successful implementation can be identified.

Below we first will outline the general issues: how can Perm change and what is needed to master this process?

After that we will extend on detail in the various fields:

- Compact City
- Design/decision models
- Housing
- Mixed use

For the issues addressed and the suggestions made in this document deliberately aims to be short and pragmatic. Rather than focusing on theory it aims to sketch a range of directly implementable solutions:

- Due to their sketchy nature, the solutions have not been supported by computer models, input data or results. They consist of a description of the models themselves, their goals and parameters.
- They emphasise the fact that besides economic aspects actions have to be undertaken in the field of social values. They are needed to maximise the goals of the Masterplan;
- The solutions shown are a preview of what is needed to implement the Masterplan. We therefore strongly advice to pursue these issues further, adding detail and depth in the implementation process to come.

City type	City	INVESTMENT ENGAGEMENT STRATEGY AND MECHANISMS																	
		Level one				Level two				Level three									
		Council funding	State funding	City investment facilitation body	EIB/EU funding	City development strategy	Event hosting	Keynote mixed/cluster infrastructure development	Private property development	Investment/strategy portfolio	PPP	Commercial loan	Venture capital	Value capture	Tax fiscal incentives	Temporary investment funds	Congestion toll charging	Bond bullet finance	Lottery fund
Knowledge hub	London	X	X			X	X	X	X		X		X			X			
	Barcelona	X		X			X	X											
	Stockholm	X				X					X			X	X	X	X		
	Dublin	X		X	X	X				X			X						
	Amsterdam	X							X		X		X			X			
	Lyon	X		X		X	X			X	X								
	Hamburg	X	X			X		X	X		X		X						
Established capitals	Helsinki	X	X	X	X	X		X			X		X						
	Paris	X	X	X	X	X				X									
	Madrid	X	X	X		X			X	X									
	Brussels	X		X		X				X			X						
	Vienna	X	X			X		X	X				X						
	Warsaw	X	X		X	X	X			X								X	
	Prague	X			X	X			X										
Reinvented capitals	Budapest	X	X	X	X	X			X										
	Bucharest	X	X		X	X			X		X	X				X			
	Ljubljana	X				X			X									X	
	Glasgow	X			X	X	X	X	X		X			X					
	Turin	X	X	X		X	X												
	Manchester	X				X	X		X		X								
	Malmö	X	X		X	X		X	X		X					X			
Transformation hubs	Enschede					X		X	X			X							
	Leipzig	X	X		X	X		X											
	Rotterdam	X	X			X			X		X								
	Antwerp	X							X		X								
	Gdansk	X			X	X		X	X										
	Genoa	X	X		X	X	X		X		X								
	Gottenburg	X	X			X			X				X						
Gateways	Wrocław	X	X		X	X	X		X		X		X					X	
	Posnan	X			X	X		X	X	X	X								X
	Cambridge	X				X		X	X			X							
	Eindhoven					X		X	X			X		X					
Research centres	Bologna	X	X			X	X		X										
	Malaga		X		X	X	X												
	Venice		X		X		X	X	X										
Visitor centre	Krakow	X	X	X		X			X							X			
	Valencia	X				X	X	X											
	Bruges	X							X										

figure 6: investment strategies in European cities

Ancillary conditions

What is needed is not only a view on urban development, but also a view of how local mentality, organisation and administration practices of Perm. How is the local society structured? How does it function and how can it contribute to the implementation of the vision?

The challenges lie in the different transformations the Russian and Perm society currently undergoes:

- from a production orientated society to a consumer orientated society;
- from an urban administration with consolidated control to an urban administration that collaborates with its inhabitants and the local business society;
- from an obscure to a transparent real estate development process;
- from an incoherent urban development based on the 'quik buck' to a well planned, regulated city structure.
- from a partly outdated heavy industry with traditional jobs to a competitive entrepreneurial industry that combines production with the service based creative class.

Although this lies outside the scope of the Masterplan itself, the basic concepts are introduced here in this documents and its appendices . This sketches the possible solutions and working methods, as used nowadays in other parts of the world. It is the current Russian society its systems, the mentality of consumers, producers and administration that will determine to what extend these topics and advices will be implemented.

Within this societal frame developing a Masterplan is not enough. It should be followed by a Strategic Development Implementation Plan on all levels (spatial, financial, strategic, organisational, political, social, educational etc.). The customary GENplans (town planning, zoning maps, regulations etc.) will not fullfill in all requirements. Implementation aspects require close attention and its own organisation. In summary this means understanding, managing, operating and influencing the mechanisms behind the property market. To achieve this a strong city administration and organisation is essential, therefore the city should invest in knowhow of the mechanisms and the management and planning tools.

Business cases, selecting/ restructuring priorities

This document frequently refers to business cases. Therefore a definition can be useful.

Many urban priorities need large budgets that are by far larger than the financial abilities of cities. Some ask for billions of Euros – especially when large infrastructure projects such as underground lines of motorways are developed.

Business cases are the tool to find out which priority has to be selected or how we can change the order of them to reach a maximum in terms of the total of all priorities.

A business case captures the reasoning for initiating a project or task. It is often presented in a well-structured written document, but may also sometimes come in the form of a short verbal argumentation. The logic of the business case is that, whenever resources such as money or effort are consumed, they should be in support of the business.

A business case has:

Financial aspects

- Costs and revenues
- Financing possibilities
- Availability of budgets
- Risks

Social aspects

- Costs and revenues
- Windfall for all stakeholders (municipality, developers, inhabitants etc)
- Options:
 - Doing nothing
 - Doing later
 - Doing partly
 - An alternative

Tools for implementation

- Establish long-term commitments
- Organisation: implementation office, mandate office, project office
- Changing structures and working methods
- Changing attitudes
 - Role of public (federal, kraj, municipal, politics) and private sector (industry, citizens, developers, consumers)
 - Cooperation with international institutions (Urban Land Institute European investment bank, other cities etc.)
 - Education
 - Public relations and marketing
- Having qualified manpower available

One those issues have been addressed, priorities can be set.

Limitations

- Total budgets
- Total revenues: real estate, economic and social
- Speed of changing habits and attitudes

Iterative process:

- Totalising business cases
- Optimising business cases, phasing and redefining
- Investment strategies

Starting implementation

- Defining main ambitions
- Organisation structure, tasks (who, mandates, responsibilities)
- Targets and planning
- Monitoring and updating

Starting pilot projects

- Political and public support
- learning, gaining experience
- showing progress and action

Business cases can range from comprehensive and highly structured, as required by formal project management methodologies, to informal and brief. Information included in a formal business case could be the background of the project, the expected business benefits, the options considered (with reasons for rejecting or pursuing them), the expected costs of the project, a gap analysis and the expected risks. Consideration should also be given to the option of doing nothing including the costs and risks of inactivity. From this information, the justification for the project is derived. Working with business cases shows the limits of your budgets, helps evaluating priorities and can lead to creative solutions that in some cases render a project viable.



CHAPTER 5 - HOUSING

5 INTRODUCTION

Low rise and medium rise versus high-rise buildings

In Perm in the past decade, the focus of project developers has primarily been on high-rise buildings. This can be traced back to project development practices of the 60s to 80s of the last century, when high-rise construction in Greenfield suburbs was common practice – both, in Western Europe as well as in the Soviet Union. The only typological alternative one can currently find is detached housing in the expensive market segment.

In the 1960s, project developers in Western European countries were used to constructing large, standardised and mass produced apartment buildings (10 floors or more, 100+ apartments, average size about 80 sqm) in the suburbs of large cities and in so-called “new towns”. There was still a quantitative shortage of housing and high-rise construction in greenfield areas was the most efficient way to produce. However, during the seventies and eighties, when the housing shortage shifted from a quantitative to a qualitative issue, it became clear that the preference of the consumers, architects and the city administrations changed from high-rise buildings towards much more small-scale developments. Low-rise and middle-rise projects became the new norm.

Builders discovered that the construction costs of system built row houses were 10% lower than the construction costs of high-rise apartment blocks. This is easily understood: there is less need for space consuming and costly staircases and elevators, fire exits, heavy concrete structures, scaffolding, mains & pipelines et cetera.

In addition the net/gross floor ratio of high-rise buildings is not as good as for other typologies. The heavy construction of many of these buildings, because of the cold climate in Perm, often lies even below 70%. The Khrushchev Housing blocks were calculated at a form ratio 60%. This means a lot of square metres need to be build (=costs) and few square metres can be sold (=revenues).

Developers discovered that the selling prices for row houses were about 10% higher since they provide qualities high rises cannot offer such as private gardens or an own front door - a real win-win situation. Besides these typological advantages, low-rise row houses can be put on the market as shells, letting the buyers decide on the finish according to their wishes and budget available. The low-rise housing was built partly in suburbs, but also in existing urban areas where brownfield sites became available.

In the nineties, the trend to appreciate the city centre again formed the market for denser projects: middle to high compact townhouses. In general it is possible to achieve the same density with low-rise and middle-rise developments as with high-rise buildings. Therefore, the land value of townhouses is theoretically at least equal to that of high-rise buildings. Few exceptions exist where super highrise developments such in New York or Hong Kong allow for much higher densities at the expense of private outdoor space.

Creating a market of different typologies

The experience from elsewhere where selling prices are higher for the described new housing typologies is yet to be proven in a market where people simply are not familiar with these different buildings. Developed under the socialist plan economy, the main typology in Central and Eastern Europe consisted, and still consists, of large apartment blocks. Due to a lack of experience with other possibilities, the local building industry, project developers and consumers are mostly unaware of other housing typologies. This means that a sturdy awareness program for consumers, architects, developers, municipality officials and building industry is called for. By realising the first projects of high-density, low- and middle-rise urban redevelopment, the feasibility can be demonstrated further.

High-rise construction implies that a single project consists of many apartments. When constructing projects of low- and middle-rise buildings, it is possible to have a much smaller number of houses per project. This will make the pre-selling phase easier and shorter, reduce risks and the smaller project sizes may attract more project developers.

These new housing typologies will be developed on the background of the local context. This will have to be incorporated in the design and marketing of these new developments. The emerging economic middle class plays a crucial role in the process of enriching typological variety since larger groups of consumers are needed for different preferences to emerge.

The study in the Appendix - A, Housing demonstrates the advantages and disadvantages of a low-rise, middle-rise and high-rise development. It is deemed advisable to pursue this further in actual pilot projects.

Besides enriching the typological variety, creating a new market based on low and middle rise typologies, will induce a new industry. Perm might very well become the leader in this industry.

The existing housing stock

Even in an optimistic scenario, production of new housing developments cannot account for more than roughly 1% of existing housing stock per year. A large portion of the existing residential buildings urgently need to be dealt with. Not all of these housing blocks can be replaced in the near future. Therefore, refurbishment and upgrades of the existing buildings is most urgently needed. This presents some specific challenges: Building quality of the existing blocks varies. In some cases the structure is fairly robust and relatively small investments can increase comfort and appeal, in other cases there is a need for structural improvements. The ownership structure hinders this to take place quickly. A typical building block of sixty apartments has sixty individual owners. There are no legal structures that oblige the owners to cooperate in the maintenance of the structure and the common areas of the building, and there are no associations of apartment owners with their own set of rules and regulations. The residents in these buildings form a diverse group: in any building block there are households that are upwards mobile. They have jobs and income, they are able to invest. On the other hand there are old age retired people and such with very small incomes. What is lacking is organisation and money that can be contributed by each household.

Money can come from the government in the form of subsidies, but given the small budget of the urban administration this is an option which is not very likely. Money can also be earned by increasing the building volume on a plot. In the former socialist states in Central Europe, especially in the larger cities where housing prices are relatively high, positive results were booked by adding extra layers of apartments on top or at the edge of the building blocks. These houses were sold and the profit was used to upgrade the blocks and the shared courtyards.

Organisation

There are examples where inhabitants organise the process themselves, but in most cases it remains an extremely important task for the municipality. Because the city administration lacks the funds to make large investments it has to use different strategies. Optimal results can be achieved with small public budgets if the administration focuses on the process. The municipality could appoint "block-pushers" whose task it is to identify the blocks and areas where active, well respected block residents can be found. The public sector is not directly investing in real estate, but it is investing in facilitating the process.

Another possibility is that the municipality, together with the developer realises a twin project in a PPP: A developer only is allowed to built in the suburbs if he realises at the same time a more diddicult project in the inner city

House owners in the old existing block can buy a dwelling in a new midrise modern block at a reduced price if they sell their old apartment at an reduced price. This makes that the can be combined to larger apartments or become part of the social housing sector.

The system of re-allotment can be used in the neighbourhoods around the city centre and in peripheral areas like Zakamsk. This system uses bartering of land between landowners to create a more economical pattern in land plots. In the Netherlands it is even regulated by law

The demand for new housing

Because of the poor quality and the limited size of most of the existing housing stock, the demand for better and larger houses is high.

What prevents potential buyers from getting new property is their inability to pay for better housing. The bottom segment of the income ladder (such as people that are unemployed, retired or living on social welfare) has virtually no capacity to pay for their housing. They cannot afford more than what they currently pay for heating and electricity. The next group is formed by a large segment of lower-class to middle-class households, often with double income. These families do not have sufficient income to afford a new house, but they can spend more money on improved living conditions.

The middle class, that normally grows rapidly in periods of stable economic growth, usually is able to afford new housing after a couple of years of uninterrupted upturn.

In 2007, approximately 510,000 square metres of new apartments was constructed. With an average floor area of 75 square metres this comes down to about 6,800 apartments. In addition, about 200,000 square metres of detached houses was constructed. With an average floor area of 125 sqm, this amounts to another 1,600 houses. 8,400 houses for a population of 950,000 in one year. The ratio of housing construction per capita was 0.9%.

In West and Central Europe this ratio is around 0.5%. In the first decades after Second World War, this figure was significantly higher. Figures dropped when the market turned from a supplier market with quantitative housing shortages to a consumer market. In the former socialist states of Central Europe, the ratio has declined to an average of less than 0.3% in recent years. This may indicate that the real estate development sector is still in a relatively immature stage in these countries.

Country	Nr. of new houses constructed (x 1.000)	Number of inhabitants (x 1.000.000)	Ratio of new houses constructed to population
United Kingdom	178.17	59.18	0.30%
Germany	277.60	82.51	0.34%
France	296.00	59.39	0.50%
The Netherlands	67.54	16.25	0.42%
Spain	528.29	41.35	1.28%
Western Europe (EC-15)	1,927.94	381.15	0.51%
Czech Republic	29.87	10.28	0.29%
Hungary	31.46	10.16	0.31%
Poland	105.47	38.54	0.27%
Slovak Republic	11.91	5.38	0.22%
Central Eastern Europe (EC-4)	178.71	64.37	0.28%

figure 7: housing production in selected European countries, 2000-2006 average

2008 was an exceptional year in Perm with higher than average production. Economic expansion reached its peak. Many speculative sales took place and a large segment of replacement housing was realised. At present, production is much lower. A key question is how the market will develop in the next years and which phase of maturity it has reached. Since in Perm everybody is accommodated somewhere we assume that the urban housing market is in the transition from a supplier market towards the consumer market phase. Taking an average of the housing production of recent years implies a stable production of $0.4\% \times 985,000 = 3,940$ residential units of market housing per year - both, as apartments and more individual houses). At an average size of 80 sqm, this amounts to 315,200 sqm.

This corresponds with the information from other sources. Private developers stated a stable average production of 365,000 sqm, which was determined as follows:

- 165,000 sqm of individual houses
- 200,000 sqm of high rise apartments

Existing housing statistics show that the housing stock has grown from 18.1 million sqm in 2000 to 20.3 million sqm in 2007. This leads to an average net production of approximately 325,000 sqm; gross production must have been somewhat higher. On the basis of these data, we assume an gross average production between 325,000 and 400,000 sqm.

If the average dwelling area per inhabitant over time will increased from 20.6 to 30 sqm to match European average, this will require 9,260,000 sqm of additional residential floor space for Perm. Assuming that this process will take another 25 years this means $9,260,000\text{sqm} / 25\text{years} = 370,360$ sqm per year. This is based on the assumption that population will remain stable and a that there is an equilibrium between demolishing and replacing of existing houses. Many of the older apartments, mainly from the 60s and in generic faceless housing blocks (1,540,000 sqm), will make room for new buildings in the forthcoming decades. New construction of housing should aim to provide the 30sqm dwelling area per person.

Until 2008, many houses (an estimated up to 40%) were bought by carpetbaggers who anticipated double-digit price increases every year, as was common in the period of rapid expansion. The rapid growth is one of the reasons for selling prices ranging from RUB 35,000 per sqm for budget class apartments up to RUB 50,000 per sqm for higher class apartments. In our feasibilities study, we will use a more modest figure that is cleared of the speculation premium still charged in the market that will not be chargeable anymore in the future.: RUB 22,000 per sqm for budget and 33,000 per sqm for higher class apartments. Interesting is the fact that old block houses currently have approximately the same price per sqm as budget class new apartments. We assume that this is due to the fact that the total price of a new apartment is twice that of an old apartment (fewer people can afford it so the price of the old apartments is kept relative high) and the quality and appeal of the product.

Usually the buyer has to pay for his net property before construction is finished. This leads to certain risks:

- The built quality is unknown;
- The quality of the public environment surrounding it is unknown, especially in greenfield developments;
- Provision of utilities (water, electricity, etc.) is not always working properly;
- Risk of bankruptcy of the contractor.

Property often is delivered as shell with the fitout still to be made by the new owner. This involves additional cost, because these dwellings usually do not contain all the essentials.

Housing filtration or up-trading

An important phenomenon is housing filtration or up-trading. Since the housing stock is relatively stable and it is unlikely that the trend of housing production will be above 0.5% or one new house for every 50 inhabitants per year, one cannot rely on new production alone in the attempt to improve living conditions. What needs to be developed is a pattern of relatively frequent moves from one residential unit to another. In Russia the average number of moves between houses is about two (a person occupies three houses during the lifetime); in Western Europe, this figure is at about seven; in the United States it is even higher. When prosperity increases, people tend to rent or buy a somewhat better house which leads to more frequent moving. Their old home comes available in the market and somebody else with a lower income can improve his living conditions by making a move.

This mechanism can also be used for renovation and improvement of existing building blocks. An ideal situation could look as follows:

- We define a block public-private-partnership (PPP) between the municipality and a project developer;
- With a small starting capital, a plot of buildable land in the city centre is purchased;
- The task of the PPP is to develop higher-density low- to middle-rise houses at affordable prices. The PPP attempt to realise a small profit margin only;
- The demand for these houses, that will have a better value for money ratio than current budget high-rise apartments, will be substantial;
- Buyers for these houses are selected on the provision that they sell their current apartment to the PPP;
- The old apartment is renovated by the PPP and sold or used for social housing purposes;
- Small subsidies for the buyers or special mortgage schemes can accelerate this process.

An overall PPP between the municipality, project developers and possible other relevant parties. It is a possible structure that can serve as a permanent redevelopment tool. Under this umbrella structure, there can be small block-PPP's for specific building blocks in which only the current owners and inhabitants, the municipality or mandate office and a single project developer are active. This can accelerate the process and reduce land speculation. Housing occupancy succession

Housing occupancy succession

It is often thought that when there is a shortage of social housing, the best solution is to provide more new social housing. There are more effective ways. To explain how this alternative mechanism works, let's assume that a standard 50 sqm apartment in a khrushhevka has a value of 1 million RUB. Let us furthermore assume that the construction costs for a new 80 sqm apartment are 1.6 million RUB and that it could be sold on the free market for 2.5 million RUB. Let us furthermore assume that the city administration has designated 100 million RUB for the solution of the social housing problem.

The traditional option would be to construct a new 80 sqm apartment for 1.6 million and designate it as social housing: it could for instance be given to a person whose lived in a building that is demolished due to technical unsafety. It will be possible to build 60 new social houses within the given budget of 100 million RUB.

A better solution is to build the new apartments and to sell them at a reduced rate to individuals, say 2 million RUB. Because these people have been given a reduced price of 0.5 million RUB for their new house, it is reasonable that they pass on that reduction to the municipality, who will buy their old Khrushchev housing, which now costs only 0.5 million RUB. This leads to the assumption that within the limited budget of 100 million RUB, 150 units can be purchased. With an investment of 170,000 RUB per apartment quality of them can be improved. We obtain 150 renovated apartments which can be used as social housing. Or we can join three apartments to create two, in which case we get 100 apartments of 75 sqm each. The project developer will have earned 0.4 million on each new house constructed.

A simplified econometric model shows that up-moving or housing occupancy succession is also interesting for the individual buyers. Assuming that houses of good quality will always be in demand, the development of house prices tends to be above the rate of inflation. This makes it very attractive to start buying a small house as soon as the household income allows, because then the owner will benefit from the margin between house price increase and inflation. Example: A potential buyer with an income of 400,000 RUB enters the housing market as a starter but cannot afford a new budget-type apartment since his income is not sufficiently high. One strategy could be to wait until his income has grown, but if Perm is to be a successful city, house prices may very well grow more rapidly than income levels. An alternative strategy is to buy a smaller, renovated existing apartment, which he can afford. Due to capital built up in his house, he will be able to afford his desired budget-type apartment in a few years. This is one of the reasons why people in Western countries move house more often than in Russia: they cash in on the capital growth, making it possible to buy a larger house.

In the long run, project developers can earn more money by developing a stable flow of houses for the middle class, than if they wait for the speculative periods of high demand and inflated prices.

Assumptions	
Income increase	3.00%
Housing price increase	6.00%
Loan /income	3.25%
Loan: 30 years linear pay back scheme	

House prices year 0:			
type	RUB/sqm	sqm	Price
low class	20,000	50	1,000,000
economy	22,000	70	1,540,000
economy plus	25,000	100	2,500,000

Year	Income	Loan capacity	Housing price			First loan	Selling price	Loan capacity based on income+capital growth
			Low class	Economy	Economy plus			
0	400,000	1,300,000	1,000,000	1,540,000	2,500,000	1,000,000	1,000,000	1,300,000
1	412,000	1,339,000	1,060,000	1,632,400	2,650,000	966,667	1,060,000	1,432,333
2	424,360	1,379,170	1,123,600	1,730,344	2,809,000	933,333	1,123,600	1,569,437
3	437,091	1,420,545	1,191,016	1,834,165	2,977,540	900,000	1,191,016	1,711,561
4	450,204	1,463,161	1,262,477	1,944,215	3,156,192	866,667	1,262,477	1,858,972
5	463,710	1,507,056	1,338,226	2,060,867	3,345,564	833,333	1,338,226	2,011,949
6	477,621	1,552,268	1,418,519	2,184,519	3,546,298	800,000	1,418,519	2,170,787
7	491,950	1,598,836	1,503,630	2,315,591	3,759,076	766,667	1,503,630	2,335,800
8	506,708	1,646,801	1,593,848	2,454,526	3,984,620			

figure 8: housing finance

Renting instead of buying

In Perm 85% of the houses are owner occupied. In many other countries renting a house is quite common. EU: 40%; Germany: 61%; The Netherlands 47%, Spain 20%, Greece 15%.

Houses to be rented out should be built because there are specific consumer groups in need of this sort of housing. It is an alternative way of financing housing. The difference in the percentages occur because some countries promote tax shelters for investors in houses for rent (e.g. Germany), others do it for owner occupied houses (e.g. The Netherlands).

Social housing is mostly done by a social housing corporation that rents out houses below the market price to low-income occupants. From the 47% rented houses in the Netherlands two-third have social, below market, rents.

In Perm there could be several markets for rented houses:

- Specific consumer groups:
 - Short-term expatriates working for relatively short timeframes in Perm but do not like hotels, e.g. teachers at the university or at other institutes or experts from multinationals invested in Perm. Not providing this type of offer can even be a reason to decline the invitation to come to Perm (quality of life in a comfortable dwelling is as important as remuneration);
 - More wealthy students are a possible consumer group for these housing units;
 - Possible investor could be a local university.
- Young urban professional starters:
 - Lack of starting capital inhibits them from applying for mortgages, however they have interesting starting salaries (no cash problems). This group can't buy homes, but they can afford to pay for all the costs connected to their houses. It is an important group for the city and renting can bind them to the city of Perm instead of losing them to Moscow or other cities;
 - At this moment the financial structure in Russia seems to be less favorable for housing investors in spite of much the lower risks compared to commercial real estate investments.
- Social housing. (see Social Housing Paragraph, pg 38)

Note that in the calculation model, the number of dwellings to be demolished in 25 years is higher than the 1.54 mln sqm that have to be replaced in the near future, because we are looking at a longer period. We assume a yearly percentage of 0.41% of the existing stock to be demolished. Clearly, average housing production needs to be high in comparison with European standards to achieve the desired increase in net dwelling area.

Development of housing stock

The spatial Masterplan proposes as a goal to increase the net dwelling area per person, which is currently about 20,6 sqm. Based on the assumption that average number of inhabitants is 2,5 per house, this means that the average house in Perm is about 51,5 sqm and that there are approximately 394.000 houses. The total size of the housing stock is 20,328 million sqm.

If we assume that 10% of the existing housing stock will have to be demolished in the next 25 years, we can then calculate the resulting evolution of housing stock and average dwelling area per person, dependant on actual production.

We will take the estimated average housing production in Perm of 323.000 sqm as key assumption - the average of the 2000-2007 period. This amounts to a net yearly production ratio of 0,41% houses per capita with an average net size of 80 sqm. The average housing production in Central European countries (EC-4) was 0,28% per capita per year in the 2000-2006 period; Western European countries (EC-15) produced a yearly average of 0,51% per capita in the same period. A simplified flow model indicates the expected development of average net dwelling area per inhabitant in 25 years:

Pessimistic scenario	Units	Average net size sqm	Total sqm
Existing housing stock 2009	394,000	51.4	20,251,600
To be demolished	-39,400	51.4	-2,025,160
New construction 0.28%	68,950	80.0	5,516,000
Expected housing stock 2034	423,550		23,742,440
Average net housing size in sqm			56.1
Average net dwelling area per inhabitant in sqm			24.1
Persons / dwelling			2.3
Middle scenario	Units	Average net size sqm	Total sqm
Existing housing stock 2009	394,000	51.4	20,251,600
To be demolished	-39,400	51.4	-2,025,160
New construction 0.41%	100,963	80.0	8,077,000
Expected housing stock 2034	455,563		26,303,440
Average net housing size in sqm			57.7
Average net dwelling area per inhabitant in sqm			26.7
Persons / dwelling			2.2
Optimistic scenario	Units	Average net size sqm	Total sqm
Existing housing stock 2009	394,000	51.4	20,251,600
To be demolished	-39,400	51.4	-2,025,160
New construction 0.50%	123,125	80.0	9,850,000
Expected housing stock 2034	477,725		28,076,440
Average net housing size in sqm			58.8
Average net dwelling area per inhabitant in sqm			28.5
Persons /dwelling			2.05

figure 9: housing production

Social housing

Used here the term 'social housing' refers to dwellings for people who cannot afford to pay market prices for the expenses connected with the purchase (interest payments and repayments) and maintenance of the houses.

In the early 1990s, all state-owned houses were privatised and given to their inhabitants. Currently, the owner-occupied house is the norm in Russia. In Perm 85% of total housing stock is owner-occupied. The remaining segment are municipality houses and old industry complex houses, which generate almost no rental income. In Perm, there is no market supply for rental dwellings, even though there may well be a significant potential demand from people who want to rent houses since they are not able to buy a house.

A social housing sector as is common in Western Europe does not exist in Perm. Housing associations which are partly funded by the state and have the objective to invest in social housing for the lower- to middle-class segment of society have not been established to date. With modern social housing, the tenants pay rents that are lower than the free market rent, but still form a substantial part of their income. The rents are regulated by the state.

Since the free property market can never deliver adequate housing to all segments of society, it has to be considered to develop a new social housing system. This can be a rental sector, as described above, or a regulated owner-occupied segment.

Since project developers tend to have large gross profit margins on new houses, it should be possible to sell a portion of the new houses at lower, regulated prices. The buyers should come from specific income groups and if they ever decide to move again and sell their house, it should be sold back to the housing corporation at a price below market level.

The future demolition of large amounts of Khrushchev Housing blocks which is likely to take place in the decades to come raises another problem. The municipality is responsible for rehousing the occupants, many of whom are unable to pay for new and more expensive housing. To master this a kind of regulated housing segment has to be established. In many Western European countries for instance it is common practice that developers are obliged to realise affordable houses using some of the profit they make on the houses for the market. In the USA, tax shelters are common for builders of social housing.

Housing: general strategy

The highest attention needs to be paid to housing and housing related issues over the next 25 years, because the production for housing will be 20 times the production of retail and offices together.

At this stage, the Masterplan is not detailed enough to give adequate recommendations. The GEN-plan and implementation plan urgently have to elaborate on the following fields.

Housing reform needs actions on different levels:

- Federal government;
- Provincial level
- Municipality;
- Owners.

and in various fields:

- **The price mechanism:** House prices in Perm are far too high in relation to the quality, reasonable costs and affordability;
- **Institutional framework :** Roles and responsibilities at each level of government and home owners; communication and coordination between these levels; Structure of finance , budgets and subsidies, transparent procedures, competitive markets, participatory approach, training etc.;
- **Existing stock:** New construction is needed, but tackling the problems in the existing stock is much more important. It is decaying rapidly: Deteriorating facades falling into disrepair, energy consuming (bad isolation), poorly maintained public/private spaces, inadequate utilities, dangerous structures. Combined with a lack of institutional structure such as homeowners associations, the absence of home ownership laws, many low-income households not used to pay for the rent, maintenance or even the utility bill makes this even more urgent.
- **Utilities:** Poor maintenance, low quality of service and decay of technical infrastructure: Don't start outside the city with new structures. Spend the budgets renovating the existing structures.
- **Social housing:** Policy, subsidy system (rental?), organisational structure, budgets.
- **Housing finance:** Public and private initiatives. Mortgage schemes, private investments, but also, laws, cadastral registration.
- **New housing construction:** Organisation of the market: developers, city administration, tender system, obtaining building permits etc.

The spatial master plan only makes recommendations. Within the GEN-plan and the implementation plan detailed strategies have to be developed at all levels: bottom-up, top-down. What can be expected from the federal and municipal authorities and how can we reach the market (consumers, developers and other stakeholders).

CHAPTER 6 - MIXED-USE

6 INTRODUCTION

Urban development means making choices between several possible solutions since there is never enough money to do all of them. Even the intensive development model proposed in the Masterplan requires that a balanced choice is made where and to what extent efforts for the inner city intensification are focusing on. This can be the historical part, the railway station, or another part, but choices have to be made. Presently the city centre is underused in relation to its size;. Therefore it would make sense to focus all efforts on intensification on one or at the most a small number of designated areas.

Since even in the most optimistic scenarios the total amount of retail and office sqm's is far less than the sqm's needed for houses, too many mixed-use centres will lead to an over provision of office and retail uses with the failures as we see nowadays in many central European cities. For single-use projects in these fields failure rates are even higher since no other uses can balance the losses that occur..

Office market

Currently, Perm has a relatively small office stock compared to other Western European and Central European cities. But, unlike Perm, most of them are capitals with relatively densely populated hinterland.

In general, the relative size of the office market is an adequate reflection of the development stage of an economy and the function of the city as a centre in its relative sphere. For instance, cities like Oslo and Amsterdam have highly developed economies in which the so-called tertiarisation of the economy (the shift from agriculture and industry towards the service sector) is virtually complete, and they benefit from their position as economic heart of the country. In Perm the secondary sector is still very important and the city plays at best a regional economic role as far as the service sector is concerned.

As the economy of Perm develops, the growth of the service sector will almost naturally take place. It remains to be seen how far and how fast its growth will take place, but one can predict that in the medium term there will be a steady demand for quality office space for this sector. This can be accommodated in several locations. In many United States cities the Central Business District or CBD in the city centre has emerged since the 1960s. In Western Europe, there has also been development of city centres, but there offices are just one element, competing for space with retail, culture and housing. The city centre is the favoured office location since it makes the emergence and growth of business clusters viable (geographic concentrations of interconnected, suppliers, and associated institutions in a particular field - see theory of Michael Porter: Competitive Advantage, 1990). Businesses needs an inspiring environment but monofunctional clustering holds the danger of abandoned districts in the evening. A mix of uses can be an excellent strategy to avoid that.

Currently, the city centre of Perm has too little to offer to office users: there are no business clusters. There is no critical density, there is hardly any reason why one should have the office in the city centre. A strong focus on inner city redevelopments and densification, as proposed in the Masterplan, will help the transformation of the Perm urban economy towards the service sector. However this depends strongly on the economical- and prosperity- growth of Perm. At this moment the total office space in Perm is about 800,000 sqm. If we assume that about 200,000 sqm has a reasonable quality and the remaining stock has to be demolished or completely renovated in the next 30 years, then we talk about \pm 20,000 sqm/year.

In a situation of real economic growth 7.0 sqm / workplace, as now in Perm, is rather low. Changing that to 10 sqm as common in many Western countries adds about 300,000 sqm demand. Since we are prudent. For the aims and targets we should assume a yearly production or upgrading office space of 15,000-20,000 sqm/year is possible. In 25 years this gives 375,000- 500,000 sqm. (compared with 8,000,000 sqm houses).

City	Population (x 1.000)	Office stock (x 1.000 sqm)	Average office stock per 1.000 inhabitants (sqm)
Oslo (maximum)	1,200	9,000	7,700
Amsterdam	1,100	7,000	6,300
Frankfurt	2,300	12,000	5,200
Paris	10,000	50,000	5,000
Dublin (minimum)	1,200	3,500	3,000
Western Europe (mean)			5,200
Bratislava (maximum)	600	1,200	2,000
Prague	2,000	2,400	1,200
Warsaw	3,500	3,500	1,000
Moscow	10,500	9,500	900
Budapest	2,400	2,200	900
Vilnius (minimum)	1,000	350	400
Central Eastern Europe (EC-4)			900
Perm	Ca. 1,000	800	811

figure 10: Office Stock
Sources: King Sturge 2008, Perm-Maximal-2060

Retail market

Statistics show that the size of the retail market in Perm is modest compared to other cities. With economic growth and economic development towards a service sector economy, the retail market will develop. The question is whether or not the city centre will be the focus area for this growth (as we have seen in most European cities) or rather suburban shopping centre locations (common in the United States and recently in the smaller Central European cities).

In theory, a large segment of retailers will prefer the city centre since they have a high rent-earning capacity: department stores, shops of luxury products, and shops specialising in market niches (using the Von Thünen theory). These kinds of retail segments can only prosper if the city centre has a threshold magnitude that draws consumers towards the inner city. Currently, Perm only has this to a small degree. Further city centre redevelopment and densification, as proposed in the Masterplan, will stimulate the development of a differentiated retail sector.

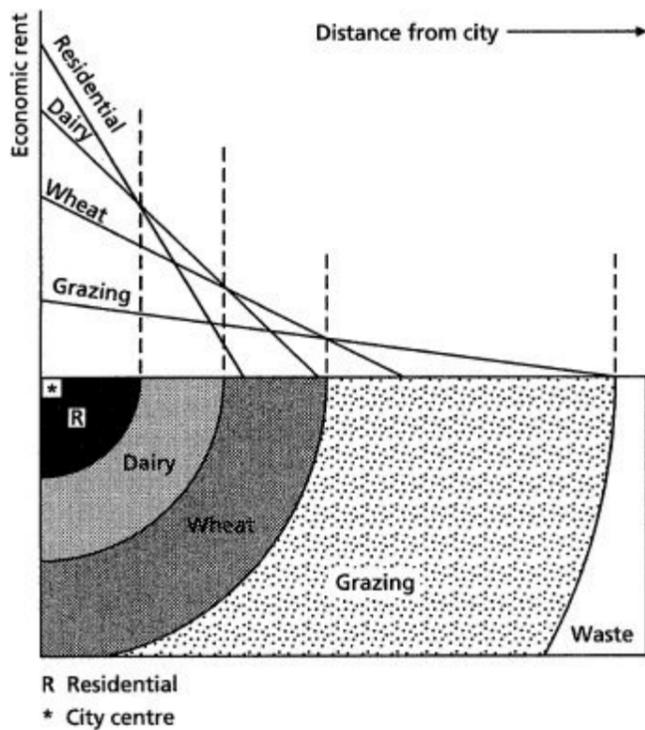


figure 12: Von Thunen model

City	Average retail stock per 1.000 inhabitants (sqm)
Dubai (worldwide maximum)	2,500
USA average	1,700
Amsterdam	1,400
Omsk	783
Rostov	966
Yekaterinburg	715
Perm	732
Volgograd	700
The Netherlands	705

figure 13: retail supply
Source: Retail Space Europe 2008

In the last decades, the modern forms of marketplace have been shopping centres, malls, super- and hypermarkets, retail parks, warehouses, outlet centres, leisure centres or combinations of those.

The USA have traditionally a high GLA per capita (Gross Leasable Area), because of the lack of small shops in the old city centre streets. In Western Europe this modern form of marketplace started later but is an item important for the decision making in urban planning.

However, local regulations have a strong influence on cities can and will develop.

In central Europe this development started only 10 years ago but the GLA's per capita are already comparable to western figures.

The problem is that definitions of retail and shopping centres are different in every survey and every country. Do they mean only shopping malls or is free standing retail space included, or do they mean all retail?

Due to the varying definitions is it difficult to compare the square metre figures, but the information below can give an indication for Perm but has to be detailed further in the GEN-plan.

Shopping centres			
	GLA/1000 capita	GLA/1000 capita	
Central Europe	150		
Hungary	100		
Poland	128	Warsaw	590
Slovakia	118	Bratislava	600
Czech	142		
Romania	24		
Bulgaria	12	Sofia	60
Slovenia	106		
Lithuania		Vilnius	825
Latvia		Riga	750
Estonia		Talinn	1400 all retail??
Russia		Perm	314? 245?

figure 14: retail
Source: Retail Space Europe 2008

Ranging above are the averages per country, the square metres are concentrated in the major conurbations, mostly in the capitals.

In Perm, at this moment, there is still much local shopping and traditional retailing; the retail sector remains dominated by family owned retail outlets, kiosks, and open markets. It hardly has high end shopping streets.

However the total area of retail seems reasonable now and also in the future. The real danger to existing retail outlets is new retail. This new retail most likely will be realised in warehouses at the city borders OR in a couple of mixed-use centres. In both cases some of the old shops will disappear.

		<i>same source other figures</i>
Perm sqm Retail	sqm	
Shopping malls	314,156	244,700
Ground floor shopping	376,601	
Kiosk	52,486	
Market	47,503	
Total	790,746	713,134

figure 15: retail Perm
Source: CPB

The Russian council of shopping centres estimates that an average city of 0,5 mln inhabitants needs at least 9 shopping centres of about 13,000 sqm – this would mean 234,000 sqm GLA in Perm.

If their hope (after all it is a shopping mall council) comes true this will put more than 50% of the groundfloor and kiosk shopping at risk. If some high-street shopping (in the historical centre) is still to be maintained groundfloor shopping along the radials and the longitudinal is not viable anymore.

In this calculation we assumed that the total retail space in Perm stays the same, at this moment (732 / 1000 capita) . What to a certain extent protects existing ground floor shops from being forced to surrender to the big box retail is a real quality jump.

The GEN-plan and implementation-plan has to define the need for the various sorts of retail needed in Perm in the next decades taking into account the current stock and the important role of shops for urban quality.

Choices have to be made:

Stand alone (ground floor) outlets in city streets with high-end in historical centre? Shops along secondary long lines and radial roads? How to improve the quality of the present stock? Local district shopping centres? Mixed use projects possible? Shopping malls in mixed use Retail parks/warehouses? Which type is recommended where in Perm?

This needs a profound study combined with local culture and ideas. For the aims and targets of the relevant documents we should assume a yearly production or upgrading of retail space of 20,000-25,000 sqm/year. In 20 years 400,000- 500,000 sqm.

Industry development / brownfields

Since the industrial sector is relatively large in Perm, relative shrinking can be expected in the course of normal urban economic development. This is partly due to the shift towards the service sector and partly because modern production techniques usually require less physical space. This is specially true for Perm that mostly depended on traditional, heavy (defence) industry.

In the last decades a decline was observed, that seems to have come to a halt. The new economy is starting to emerge with growth of income. The present worldwide economic crisis is expected to be only a temporary disturbance of this process.

An urban redevelopment strategy in which industries are forced by the municipality to relocate can be very costly. The financial compensations are usually so large, that they can never be recovered by urban development, especially when soil pollution is a problem. Many industries has to move just because of that reason since their presence puts a real threat on residential quarters, purity of ground water.

What is needed are less costly actions or actions where the revenues (in the long term) are higher than the costs (business cases).

Necessary tools:

- The local government engages in a permanent dialogue with the business community. Whenever an opportunity arises, for instance when a business wants to relocate or is facing a major investment decision, the municipality can try to guide the business owners in the desired direction by offering concrete opportunities for redevelopment. In this way, the local government learns to anticipate the normal development patterns and investment cycles of industry.
- The basis for such a strategy should be a comprehensive study into the composition of the industrial sector of Perm, which describes the dynamics in the field and identifies potential growth clusters. This will provide the local authority with sufficient background material to engage in dialogue with the business community.
- What kind of industries that are not present in Perm at the moment but could be interested; both Russian and foreign? What are their wishes and preferences and how can Perm seduce them to come?
- Start creating the possibilities for young entrepreneurs: "The creative factory" is an European network of old industrial buildings refurbished for small new enterprises similar initiatives exist in many cities across the continent.
- Financial schemes (such as micro credits);
- Counsellors and simplifying procedures and regulations.

A further in-depth study of comparable developments of future active industrial environment in these fields in other parts of the world is advised. It should cover both, the existing industries (how shall they develop to become more competitive) and new, eventually foreign industries. Which industrial activities are interesting and why should they choose Perm. This study is vital for the future of the city of Perm as an industrial hub.



ANNEX 1

ANNEX 1

A PARAMETRIC MODEL FOR DECISION MAKING ABOUT THE FUTURE DEVELOPMENT OF THE CITY

Introduction

In the Masterplan is calculated that Perm has the capacity for almost 50 million GFA of construction. However there is a expected demand in the next 25 years of about 13 million GFA of construction. This abundance has its advantages: for example, one can choose where and when to built. But if one can choose, one has to prioritise, because choosing to built everything at once isn't a viable option. One has to prioritise between different development projects that, together and in phases, make up the entire development plan for the city. profits are easier to score.

With prioritising different development projects, you have to keep into account the goals of the final plan made for the city. This means the different development areas have boundaries of their own to give a balanced contribution to the final plan for the city. For example, the different development areas together may not exceed the maximum demand of 13 million GFA of construction. You have to give different GFA limits to the different development areas, but in which development areas do you want to have more density and thus a higher limit of GFA of construction? These boundaries or limits are known as constraints in the calculating model.

So the first question is what are the constraints of the development areas? And within those constraints (or solution spaces) lies the second and third question: what are the different goals you want to optimise for the development areas and the final plan? And what is a good balance between those different goals?

The following aspects, for example, must be taken into account and balanced by answering the above mentioned questions so to prioritise different interests. These aspects give constraints and a balanced set of goals to the different development areas and the total plan:

- Distribution of density over the city: high density in the centre, low density in the outskirts
- The social structure: avoid ghetto's, improve quality of life
- Financial aspects: what is the financial optimal solution
- Utility structures: existing and new extension possibilities and optimal usage
- Traffic: optimal use of public transportation and road structures
- Amenities: enough school and, medical care for servicing the public
- Environment and sustainability issues
- The maximum capacity of the construction sector
- Industry/brownfields: restructuring and development of the economic structure of the city, where and when?
- Taking into account the market demand
- Taking into account the political structure
- Human resources: quantity and quality of the resources

These constraints must be translated into numbers in order to develop a parametric model to optimise the development process of Perm. To balance different goals and achieve a desirable outcome there are mathematical techniques available for optimising (like linear programming). These techniques are not yet incorporated in the current parametric model. The future optimising model (yet to be developed) can define where and when to realise what, and gives the argumentation of those choices.

This appendix to the Masterplan presents a first, primitive calculation model. The GFA and population capacity were caught in a simple percentage for the various areas and categories defined by the Masterplan. In the next paragraph we will go further into detail of the first simple calculation model.

An introductory parametric model

The model focuses in this case on the Red Zones, the area where construction is possible. The starting point of the model represents the existing situation of Perm measured in GFA per area and square metres per area. The areas are in this case: Perm city centre, the neighbourhoods within the city and finally the outer neighbourhoods in the periphery. These areas are divided into sub-areas.

Using the square metres per area, via the FAR, the model calculates the GFA of each area and sub area. Using the average GFA per person it then calculates the present number of inhabitants. Assuming a possible density, taking into account the need for demolition, the total potential space for housing can be calculated for all sub-areas and areas and Perm in total. Using the preferable amount of square metres per capita, it becomes clear that Perm has space for 4 million inhabitants.

So here is the dilemma: there is an abundance of capacity and development possibilities, but how should the realisation of projects be prioritised over the total city area and along the time-axis? Where to build, what, when and why...

The present model, used in this Masterplan only looks at the total GFA of the total city plan (the sum from all the sub-areas) and then goes through a process of trial and error adjusting the FAR per sub-area to search for the desired GFA of the city in total and the desired density per sub-area. This process of trial and error is possible when there are just a few sub-areas and one aspect to look at (in this case GFA), but one can imagine the complexity of the trial and error process when one has to adjust lots of sub-areas and steer on more aspects than just GFA (like population capacity or GFA per function, etcetera). With mathematical techniques this problem can be tackled. In a next phase such a model can be constructed.

From the appointed GFA per sub-area, the model then can divide the GFA to the different functions like dwellings or mixed-use. The appointed GFA can also be used for secondary calculations like financial-, population-, infrastructure calculations, etcetera. In fact all the aspects mentioned in the introduction can be taken into account. These aspects aren't yet incorporated in the current primitive calculation model.

The current model focuses on the distribution of GFA within the Red Zones by looking at transformation categories.

Three broad transformation categories

So based on 1) specific assumptions about potential redevelopment areas, 2) specific typologies prone to be replaced and 3) an overall maximal density estimation based upon design exercises, it is possible to produce a rather accurate number of GFA still to be produced within the current urban fabric.

To have a first insight in the kind of consolidation/densification that is possible on the different areas of the Red Zones the potential growths have been divided into three broad transformation categories. Areas have been appointed into one of these categories according to the dominant factor within that area. These can be found mapped out on page 76-77.

The three broad transformation categories are:

- Category A: Specific new development areas
- Category B: Typology related replacement
- Category C: Consolidation / Densification

Category A: Specific new development areas

Areas that are mostly to be dominated by a development starting from scratch, due to the availability of open undeveloped space, or their outdated functional use. These could be subdivided into the following sub-categories:

1. Design Areas

In general design areas are key development areas that require an overall design proposal and cannot simply rely on block rules due to their complex character and particularly large size.

Roughly speaking there are two types: either derelict urban grounds or certain Brownfield sites which have the potential of becoming vacant some time in not too distant future.

2. Non built space within the city fabric

Large vacant land lots inside Red Zones, as well as lots along its borders still adds up to a fair amount.

3. Reserved land

Being reserved for an expanding Perm under a particular population growth, these are not calculated here.

Category B: Typology related replacement

In the calculation model certain types of areas and buildings have been highlighted as most feasible for redevelopment. In general it can be stated that if the general poor level of maintenance of the current housing stock in Perm will remain unchanged, large scale housing replacement will be inevitable. Certain housing typologies are more prone to this danger and are gradually becoming run-down and dilapidated and will need to be compensated; this is an ongoing-natural aging process that results in additional housing pressure.

(In 2008, for example, City administration pointed out 13 Blocks in Perm which are to be demolished. These include mostly wooden houses and barracks [low rise housing build in 1930-1950])

Housing typologies that are prone for replacement are:

1: 1930-1950s low-rise housing

This type of housing is in general a well sized and friendly urban typology, though the quality of these buildings can be very diverse.

The used variation in building materials varies greatly, but facades are generally rendered in plaster. The poor examples of this typology are referred to as barracks.

The assumption has been made that about 30% of this buildings can be replaced within the entire city. Buildings in Perm City Centre and the peripheral town centres should preferably be reconstructed and/or extensively repaired.

2: Krushchev Panel Housing

Currently it is estimated that 30% of the Khrushchev housing stock will need to be dealt with, due to its dilapidated state. This typology has a history of being studied quite extensively on its reconstruction potential and it has become clear that the investments needed for reconstruction make this approach simply not profitable.

It is therefore assumed that the main solution for these buildings may be a natural decrease in market value and gradual withdrawal from exploitation.

3: Individual housing

Though there is demand for individual housing areas, most of these areas that lie within the City Centre and close surroundings are currently under pressure to be developed, due to their overall low height and low density characteristics. Set in an urban context this typology tends to disappear. Exception will be the individual areas that lie within the Heritage areas.

4: Garages

Though not a housing typology, garages take up a fair amount of potential development area.

Similar to other Russian cities, Perm is being colonised by unplanned (steel) structures used as garages, for storage or even as studio space. This is the direct result of a general lack of storage space, design-planning flexibility and effective response to demand.

These units can be found throughout Perm where they occupy many vacant lots, mostly along the valleys.

The Parking and Mixed-Use Strategies will address this issue by steering new developments towards integrating parking and storage at a higher level. Apart from that, as a parallel process, it will be important to start removing these storage units.

Category C: Consolidation / Densification

What remains falls under the general category of consolidation or densification: filling those gaps and edges in the urban fabric with different typologies and densities, based on the direct context and increasing the legibility of the urban fabric.

Based on the overall framework and guidance for the various types of consolidation in chapter 3.7 'Block Strategy' as well as the general consolidation rules as laid out in as appendix C; 'Block Rules', some general assumptions have been made here on possible densifications within a maximum consolidation process.

(An in depth example can be found in the case study done in chapter 4.1: 'Case study Western Inner City'.)

In this case a separation according to the Red Zone Strategy Elements/Areas has been made to enhance insight into their location.

Notes on the calculation

Simplified category scheme

Based on the proposed elements of this strategy a simplified category scheme can be used to estimate the growth potential of different parts of the city. The more directive and specific advice by prioritising potentials in the future of Perm will be described in the Priority Strategy.

Small villages were left outside of the calculation, focusing on the more urban area of Perm.

Defining FAR

The Floor Area Ratio used in the calculation is based on block density, the neighbourhood or district density will be always lower. For details about the density of the existing housing typologies see Appendix A - Housing. For more details about new density parameters of specific areas see chapter "Block Character" of chapter 3.7, Block Strategy, including a differentiation between central versus outer areas of the city.

Evaluation

The matrix on the next page results in a growth potential of 44 million sqm. gross floor area within the red line. This equals 31 million sqm. net floor area at a ratio of 0.7. Two very broad assumptions could be used to test this potential:

- The population is stable and will remain just below 1 mio inhabitants
- 90% of all new development will be residential, 10% non-residential

As a result, the estimated growth potential would allow the average dwelling area per person to increase from 20.6 sqm up to 48.3 sqm – more than double and amongst the top levels in Western Europe.

For details about expected growth in not residential functions see previous sections.

Conclusion

Of course, this is a rather academic figure. It does tell us however, that a considerable amount of Perm's future need for buildings can be easily accommodated within the current built-up area within optimised borders. The main conclusion is that Perm must be very careful to distribute the development recourses and do it in a way that the maximum effect on every particular moment will be guaranteed. Therefore, a thorough and sound formulation of a priority strategy is strongly needed.

Next steps

Based on the calculated growth potential and formulated priorities plus the prognoses for expected demand, a set of development scenarios should be developed. To facilitate these scenario studies a calculation model has to be developed as a decision tool, taking into account a broader set of aspects like mentioned in the introduction. These are the next essential steps towards a balanced and well steer of the development of the city.