

Mixed-Use for a Liveable Tomorrow

1 Introduction

Low Carbon Cities. We all agree on this very desirable, consensual goal. It is in fact not only a desirable, but also a rather realistic goal, since the city itself, as a way of organising human settlement and society, provides excellent foundations for ecologically and economically passable lifestyles. Inside the cities, a lot can be done in order to fight climate change. But instead of limiting this goal to the city, it rather has to be extended to the next scale, the whole urban area. Urban areas include not only the cities, but also the suburbs. Being a relatively young settlement structure, the suburbs are where millions of people translated rising economic wealth into single-family-housing, increased land consumption and long commuting distances. In order to allow a broader perspective, this paper addresses the question of Low Carbon Urban Areas.

For Low Carbon Urban Areas to become reality, a whole set of issues – ranging from bringing down vehicle miles travelled or the consumption of fossil energy sources to reducing land use – needs to be tackled. The concept of Liveable and Compact Mixed-Use Development apparently can help to overcome some of these challenges. If it is well done, it is apt to increase quality of life and reduce, amongst others, land use, commuting or energy consumption for construction and maintenance of both, infrastructure and buildings. As all these issues are related to the question of reducing Co2 emissions, we already dispose of a very helpful and – most important – historically proven tool in order to design and redesign the built environment we are living in according to the standards of a Low Carbon Urban Area.

As evidence in the Vienna Region – Austrians main urban area, comprising the capital Vienna and some neighbouring districts in Lower Austria – shows, recent developments seldom comply with this concept. This is surprising, since planners, university teachers and politicians have applauded the idea decade after decade. It seems that there is little that someone could object to Mixed-Use Development, the idea is generally accepted and in daily life, people enjoy successful historical and contemporary Mixed-Use Developments. So, what are the main restraining forces impeding the implementation of liveable and compact Mixed-Use Developments?

This paper first gives a short overview about the characteristics of Low Carbon Urban Areas, the principal driving forces of suburbanisation and the basic requirements for re-urbanisation. Then, it examines the qualities of Liveable and Compact Mixed-Use Developments, followed by a case-study in Vienna Region, the so called Nordbahnhof Development, and finishes with the final conclusions.

2 The Low Carbon Urban Area

Characteristics

What is a Low Carbon Urban Area? It can be designated as a metropolitan region, comprising both core cities and suburbs, in which a low amount of Co2 emissions is produced. By doing so, this region lowers its contribution to global warming. Based on today's energy supply, a Low Carbon Urban Area would have to cut down significantly the use of fossil energy sources, either by cutting down overall energy consumption or fulfilling a clear shift towards renewable energy supplies.

In any kind of human settlement, energy is spent. Yet, certain settlement structures allow spending less energy than others. Independently from all matters related to Co2 emissions, creating settlement structures that consume less energy should be a goal on its own. However, in today's context, low energy consumption generally also means low carbon emissions, since renewable and Co2 emission free energy resources are still far away from covering our energy consumption.

Energy consumption in the two major sectors, households and transport, is clearly related to the underlying settlement structures. Single-family-homes, for example, tend to demand more energy due to high energy losses resulting from their highly exposed surfaces. Sparsely populated, mono-functional suburban neighbourhoods demand costly and energy-intensive provision of public infrastructures such as roads or distribution networks. Furthermore, they extensively consume land and destroy thereby a natural Co2 storage. At last, they do not allow full coverage, neither with public and commercial close-to-home services (e.g. retail, schools or public transport), nor with jobs. Hence, those structures provoke many journeys per day, long distance commutes and high motorization and lead directly to high energy inputs and emission outputs. The same applies to any kind of mono-functional settlements, be it urban or suburban, since basic needs in daily life cannot be covered in situ and require commute.

Of course, recent achievements like passive or even energy-plus buildings show that the single-family-home per se does not necessarily lead to high energy consumption and urban and suburban communities in many places around the world show that transport can be organized more ecologically than we know it from the Vienna Region. Still, the overall tendency is that settlement structures highly predetermine energy consumption. And as long as energy consumption is related with high Co2 emissions, settlement structures need to be reshaped. The above mentioned examples provide helpful guidance for retrofitting suburbia, but still it is reflecting about the reasons for the prevalence of mono-functional and suburban settlements in the last decades what might bring us closer to a more significant change. For the moment, we conclude that the appropriate settlement structure is crucial for the Low Carbon Urban Area. By means of that, energy consumption and Co2 emissions in public households and the transportation sector can be cut down.

Driving forces of Suburbanisation

Many studies have been dedicated to the questions why and how suburban or mono-functional spaces became the prevailing pattern in urban development during the last decades. In the following, the influence of pricing, planning policies and societal value patterns will be summarized.

It's obvious that many of the usual characteristics of suburbs or mono-functional areas – such as low density, extensive land or energy consumption and long commutes – are only possible, when they are cheap. It is, for instance, typical for the real estate market, that property gets cheaper the farther it is away from productive centres or other attractive venues. And if, for example, commuting is cheap too, many people can afford to live far away from where they work.

But suburbanisation is not only favoured by the functionalities of today's market-based land allocation approach. It is no secret that post-war planning policies, its regulatory framework and subsidy schemes have allowed and encouraged the growth of unsustainable, distant and disperse settlement structures for decades – and are still doing so.

People follow those incentives willingly, since they supposedly can transform their risen wealth into bigger houses, greener gardens and socially more homogenous neighbourhoods in a calm and unspoilt environment. People do so, because this model – once conceived by

politicians and real estate corporations, automobile companies and banks – still appeals to the most basic desires of a “good life” and fits perfectly into the consumerist approach of free-market economies. Rather than providing the basic prerequisites for a “good life” inside the cities, the state funds mono-functionality, suburbanisation, individual motorization and home-ownership publicly, as they become more and more socially accepted. But, as we know that, we see that there is no “natural” need for sprawl. It is pretty much about societal value patterns, which themselves are constantly being shaped and reshaped by both, society and politics.

But let’s go back to policies. The built environment of today is the result of high regulations, in fact there are voices like Richard Sennett that call “the proliferation of zoning regulations in the twentieth century unprecedented in the history of urban design” (SENNETT 2007, 242). We cannot omit the fact that those regulations conform pretty much with the standards of our economic system, which is based upon principles such as free movement of goods, people or capital. Under the current conditions, this system is highly relying on cheap energy, inexpensive or even free externalities and massive fluxes of labour and produce. Competition, also amongst territories, towns and suburbs, migration, international division of labour or intercontinental commodity chains are other key elements. It is not surprising that all these factors influence the way we live, plan and build. The suburbs or mono-functional areas, as we know them today, fairly express those economic values. The economic rationale, as taught and experienced in manifold ways, is thus shaping our built environment, our cities and suburbia.

Urban planning under the conditions of market economies is rather young; still it is already rich in different ideologies. In its beginning, planning was inspired by social ideals, especially in Vienna with its impressive tradition in public housing. Later, it became more and more obvious that planning could never provide absolute solutions and its legitimacy was doubted. A shift towards a more liberal attitude with market-based and rather punctual interventions followed. Today we see that planning tools need to be utilized in order to fight climate change. It is with this new legitimization, that we have to bring back quality of life to the towns and retrofit the suburbs, so that we can achieve the Low Carbon Urban Area.

Requirements for Re-Urbanisation

There are plenty of ideas how to enhance the re-urbanisation or the retrofitting of suburbia, in order to create sustainable settlement structures. Amongst them, we find very global approaches such as the complete internalisation of follow-up costs of land use and mobility, which would ultimately turn more expensive what we consider unsustainable.ⁱ In addition, government spending in infrastructure must truly comply with national Co2 emission reduction goals. If they are taken serious, money must go into public transport, cycling and walking facilities and the redesign of road infrastructure in order to discourage the use of private cars.

Besides, the liberation from our contemporary growth myths – and its inherent impetus to translate economic growth into spatial expansion – can be fostered by limiting land use on a regional level. Another approach is to reduce competition among municipalities and redesign the distribution of municipal shares of federal tax revenues, with the current system attaching high importance to the number of jobs and inhabitants in each community. The absorption of private gains due to changes in zoning could lower the pressure on municipalities to turn farmland into land for building. At last, subsidy schemes need virtually to be reverted. Instead of favouring sprawl by granting commuter tax relief and subsidies for single-family housing, sustainable lifestyles and urban qualities need to be financed and remunerated. What these strategies have in common is their aim to re-shape what is shaping our cities and regions.

Let's focus on a even more comprehensive target: making living close together not only the most economic and perhaps most sustainable way how to organise human settlement, but also the one that comes along with a high quality of life. One can assume that people which move to the suburbs are driven by economic constraints and/or the desire of a "good life" and supported by both, market-economy and planning policies. If we want to stop suburban flight, we also have to develop quality of life inside the cities and cannot exclusively work on the level of pricing or land use regulations, for example. Suburbanisation can be reverted, if the urban areas are attractive enough.

But what is it that makes cities attractive places to live and work in? How do such places look like? What is quality of life? It quickly gets clear that instead of answers to these questions, there are countless imaginations of such places and ideals. Therefore, this paper does not aim to draft another one of those imaginations, but rather stipulate some of the basic prerequisites for such places to become reality, independently from their final constitution. The objective is to work on the foundations of such places, rather than on their surfaces. By doing so, we guide development, but leave the outcome still undefined.

3 Liveable and Compact Mixed-Use Development

Let's get more into the details of Liveable and Compact Mixed-Use Development. How can we make use of this concept in our attempt to reduce Co2 emissions and fight global warming? In order to gain some insight, it's worth focusing on each adjective attributed to this concept – liveable, compact and mixed.

The idea of Compact Mixed-Use is to allow a dense mix of population and functions, be it in inner-cities or in suburban areas. Density is a key element in all efforts to cut down Co2 emissions. As shown before, suburban or mono-functional structures generally provoke high energy inputs and emission outputs. Compared to more disperse settlements, Compact Mixed-Use arguably needs less energy for construction and maintenance, including heating or cooling, as surfaces are less exposed. Successful Mixed-Use also implies flexible structures, which facilitates changing uses and requires less energy inputs for adaptation or substitution of buildings.

Social mix is needed in order to maintain one of the very characteristics of Vienna: a comparatively low degree of ethnic segregation. Ethnic segregation is one of the main causes for phenomena like middle-class or suburban flight. As future population growth will substantially derive from migration, adequate offers in the housing sector need to be developed. Functional mix helps reducing land use and the need to travel longer distances. Thus, it enhances non-motorized mobility and increases the economic viability of attractive public transport networks. This helps to decrease automobile transit, noise and pollution and allows us to redesign public space according to the needs of pedestrians and cyclists, which is clearly related to urban quality of life.

Quality of life in Compact Mixed-Use Developments can be further extended, if architectural qualities minimize potential conflicts (such as noise-related controversies) and basic amenities like a close connection of apartments with outdoor areas trough terraces, gardens or balconies are provided.

Still, we cannot neglect the fact that the successful implementation of Liveable and Compact Mixed-Use Developments requires two major debates. The first debate needs to address the question how we want to organise our urban society, paying special attention to an adequate definition of the public and the private realm within the cities. This is a very demanding task and it needs ongoing, permanent debating. Suburbanisation and spatial differentiation are very much connected to the ideals of individualism, personal independence and autonomy. Mixed-Use urges us to discuss profoundly what position we are taking in this context, since it

is aiming social and functional integration and opposes the voluntary or involuntary isolation in segregated plots. So far, we identified an economical, ecological and social dimension.

The second major debate concerns the aesthetics within contemporary urban planning. This becomes clear when Sonne (2002, 190) says that “building ‘sustainable’ cities requires going beyond ecological, economic, and social measures. What we also urgently need is an aesthetic concept of the sustainable city that leaves behind functional town planning as well as the individualistic, prestige-driven architecture of our times.” A city or an urban area cannot be sustainable – this is, in our case, Low Carbon – if it disrespects peoples’ ability to see and sense aesthetic qualities, or the lack of them.

There is again no point in delimitating what is aesthetical or not, what is beautiful or not. It is much more about understanding that urbanism is a cultural undertaking, that liveable urban areas require thorough preoccupation with design, creation and aesthetics. It can be argued that – independently from changing fashion and styles – the simple fact that, at some point in the past, design seriously mattered, can be sensed. Since humans have the ability of aesthetic perception, neglecting design in a certain area diminishes the quality of life there and makes people search for other, more appealing places to live and work at.

It was argued before, that the economic rationale is strongly shaping our contemporary urban areas. In this regard, aesthetical matters are only of interest, if they can be sold to a solvent client. Thereby, profound design quickly becomes a luxury good. As design has to pay immediately, wide areas in our today’s urban areas are the product of processes which highly disregard aesthetical concerns. The problem with this is that non-aesthetic structures will not become re-discovered, re-appreciated and re-utilized, as it happened with the long-time unattended inner cities.

Design allows us to attach importance or value to objects. When there is no design, a structure will get replaced by another structure or simply abandoned, because it probably does not have any cultural or emotional value. Replacement demands energy inputs and will result in emission outputs, leaving a building behind implies further land use elsewhere plus the before mentioned effects of replacement. So, if we want settlement structures that are going to be ecologically viable and inhabited for generations, we simply must build and design with attention to aesthetic concerns. But first and as stipulated at the beginning, the corresponding debate about these issues needs to be initiated.

If it’s done well, Mixed-Use can provide dense networks of interpersonal relationships that are needed for social coherence and vibrant urban economies, can support the creation of strong communities and the development of liveable areas with identity and a local sense of place. It can host many differing lifestyles, it can grow and shrink, it can get old and renewed. And, after all, since Liveable and Compact Mixed-Use can be implied in suburban areas as well as in inner-cities, it helps getting our whole urban area Low Carbon.

4 Focus Vienna

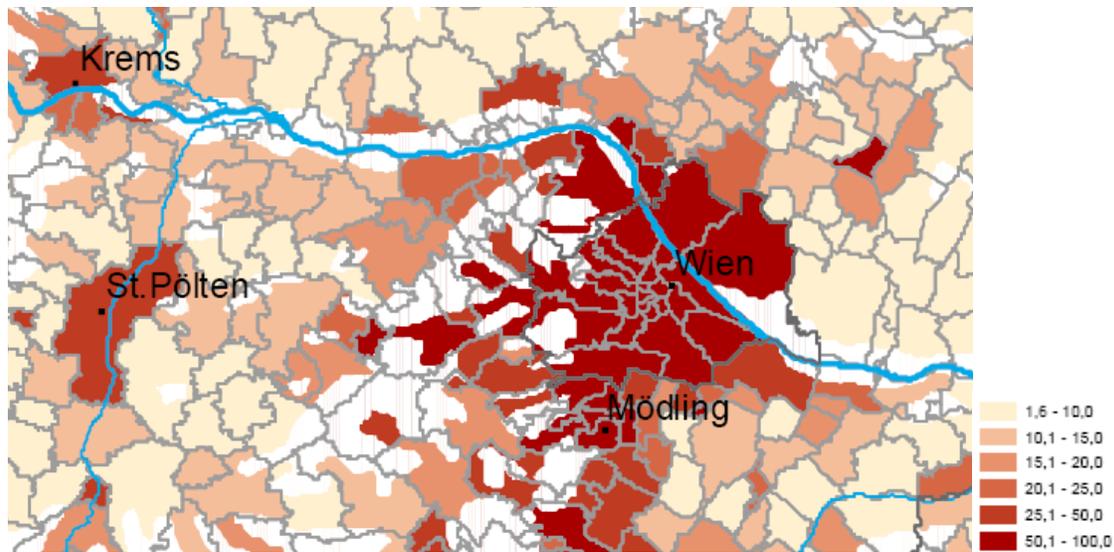
Vienna and Vienna Region

The following case-study is based in the Austrian capital Vienna and addresses the necessity for Liveable and Compact Mixed-Use Developments. For this end, basic figures like population and population growth, land use and energy consumption shall be assessed quickly. Since the questions of Co2 emissions and Low Carbon Urban Areas demand a broader picture, we shall also focus on the surroundings, even though many times data is not available on a regional level.

As of 2008, Vienna was home to approximately 1,7 million people. Between 2002 and 2008, population growth amounted to 7,4 per cent. It mostly took place in the outer districts of the city. Further growth occurred in the Vienna Region, which can be defined on the level of NUTS3 regions and comprises at least the city of Vienna itself plus Vienna Environs North (Wiener Umland/Nordteil, comprising districts such as Gänserndorf or Korneuburg) and Vienna Environs South (Wiener Umland/Südteil, including Baden or Mödling). In a total, the whole area is home to approximately 2,3 million inhabitants. Population growth in the North was slightly higher than in the South (+ 7,4 per cent compared to + 6,6 per cent between 2002 and 2008). As in many other places, suburbanisation is still proceeding, but it is being accompanied by some inner-city growth.

A significant part of the regions total area qualified for settlement is already used (see figure below). Nonetheless, continuous growth in land use has been taking place from 2001 to 2009, ranging from + 2 per cent in Vienna to + 13 per cent in Lower Austria.

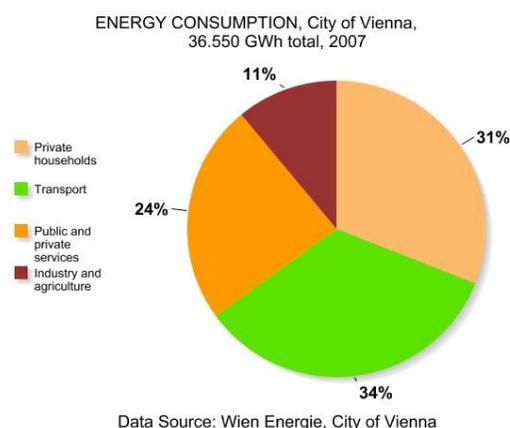
Figure 1: Land use in per cent of total area qualified for settlement



Data Source: Umweltbundesamt, 2003; Image Source: Umweltbundesamt, 2003

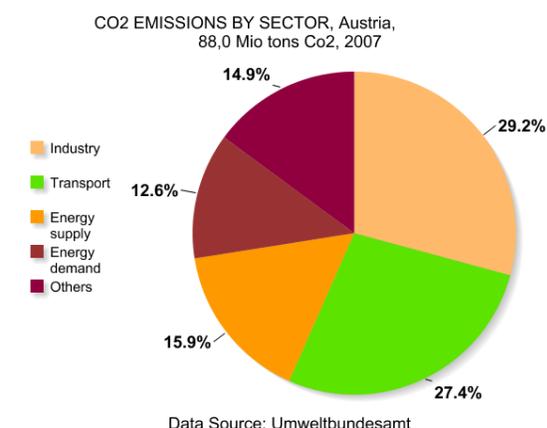
In the city of Vienna, overall energy consumption has been rising during the last years, even though there has been a short decline from 2006 to 2007. Energy is mainly provided from fossil sources (61 per cent). A significant part of electricity is generated by hydropower, other renewable sources amount to only 2 percent. The sectors accounting for the biggest share in overall energy consumption are private households and transport (see chart below). Only 11 per cent of all energy consumed in the City of Vienna in 2007 went into industry or agriculture. Overall Co2 emissions in Austria show high a share of transportation sector and heating. Both factors are, as shown before, dependent on settlement structures.

Figure 2: Energy Consumption by Sector, City of Vienna, 2007



Data Source: Wien Energie, City of Vienna;
Image Source: Author

Figure 3: Co2 Emissions by Sector, Austria, 2007



Data Source: Umweltbundesamt 2009;
Image Source: Author

National efforts to cut down Co2 emission have proven highly inefficient. In fact, instead of going down, emissions rose by 11,3 per cent between 1990 and 2007, with recent declines in 2006 and 2007. The highest deviance from sectoral Co2 reduction targets was detected in the transportation sector. Legal obligations under the climate and energy package of the European Union most likely will not be met.

One must conclude that, following the current trends, increasing population and growing land use will increase transit and energy consumption. This will lead to higher Co2 emissions and the whole urban area contributes more to climate change. The aim – the Low Carbon Urban Area – seems farther out of reach than ever. This is why Liveable and Compact Mixed-Use Developments – as promising elements of future urban development – must be taken into account fast and broadly.

Nordbahnhof Development

Nordbahnhof is one of the largest brownfield developments in Vienna, comprising approximately 75 hectares on the site of a former railway yard in Wien-Leopoldstadt. It is situated next to the Praterstern public transport hub, the historic parks Augarten and Prater and the river Danube (see Figure 4 below). Within a five minute ride on the metro both, Vienna's old-town and Donaacity, a recent concentration of office and residential towers, can be reached.

The debate about developing Nordbahnhof was initiated in the early 1980ies and gained pace as the city of Vienna was preparing to run for the 1995 World Fair (EXPO) on the site of today's Donaacity. The first part of the Nordbahnhof area ready to redevelop was a 700 metre long and 200 metre broad stretch running parallel to Lassallestraße. The intention was to create a rather porous mixed-use structure for offices and retail, with a high percentage of residences. In addition, the projects should also feature commercial arcades towards Lassallestraße and a landscaped corridor for pedestrians and cyclists going through each of the four blocks. What was realized between 1989 and 2003 hardly resembles the initial plans as stipulated by the city of Vienna. There are no residences at all, neither are there any porous, permeable or landscaped structures open for pedestrians or cyclists. In fact, what has been erected are mono-functional blocks for major corporations (see and

Figure 6: First developments (Figure 5 below) and other highly specified structures such as a vast movie theatre and gym. The desired variety in shops and gastronomy did not find its way into this development, since almost all public life is absorbed by the massive structures, easily accessible by car and equipped with vast underground car parks. Some of the initial proponents or tenants of this development either left for other areas (IBM, OMV) or went bankrupt (cinema and gym), since the area lacks the basic qualities fixed in the beginning of the planning process and does not manage to attract sufficient customers. The former cinema-complex recently has been remodelled into a hotel, which made it necessary to remove almost the entire core of the building. Using these highly specified and large-scale structures as an example, we can see that changes in use result in costly and energy-consuming adaptations or vacancies.

Another early development at Nordbahnhof was the transformation of a former tramway depot at Vorgartenstraße (see and Figure 6: First developments below). Even though it can be defined as a rather consequent Mixed-Use Development, densities are reaching extreme levels and limit thereby quality of life.

Figure 4: Lassallestraße and Praterstern



Image Source: E-zone

Figure 5 and Figure 6: First developments



Image Sources: Author, City of Vienna

The development of the first stretch was followed by the elaboration of a masterplan for the remaining parts of the area, which was concluded until 1994ⁱⁱ. This led to the respective zoning plan, as enacted by the city council in 1996. The plan provided for 10.000 apartments, 20.000 inhabitants and 17.000 jobs until 2025ⁱⁱⁱ.

It envisioned again a dense, functionally and socially mixed area as it is characteristic for central parts of Vienna. Priority was given to adaptable structures and long-term strategies which would allow change, experiments, innovation and future re-development. Block by block, the masterplan precisely defined the desired distribution of residential, office, business, retail and service areas. It also made clear that ecologically compatible solutions to

transport requirements would have to be provided. At last, a public interest in urban ecology, microclimates and accessible and diverse green spaces was stipulated. The overall idea was to create a high-quality, integrated neighbourhood rather than a series of well done, but isolated projects and technical solutions.

These requirements have already been ignored by the very first building which was finished, the so called E-zone office building. Instead of a mix of offices, residences, retail and public services in one building, again a mono-functional structure was erected. To compensate the losses in residential or retail areas, the neighbouring blocks will accommodate more of them, which will turn these blocks also rather mono-functional.

Figure 7: Nordbahnhof development site

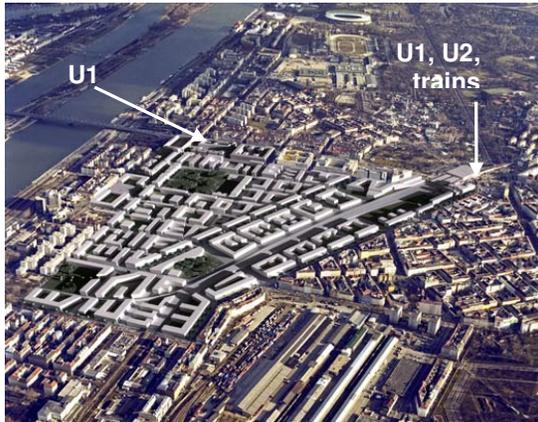


Image Source: ÖBB

As development of the Nordbahnhof area goes on, doubts are growing that the initially fixed goals of functional and social mix can be met. Functional mix is essential for the development of a lively and economically prosperous area. Special attention needs to be paid to the design and functions of ground floor levels. So far, most buildings do not offer any retail or service area on the ground floor. Instead of contributing to street life, they rather are impeding a close integration and interaction with the neighbourhood.

The reason for this can be found in the process a project runs through, beginning with the initial settings as defined by the masterplan and ending at the completed structure. The trustee and holder of the property, Wohnfonds Wien^{iv}, selects the developer and preliminary project following the results of a competition based upon the masterplan. The presented projects need to comply with the stipulated criteria, such as the defined mix of uses at ground floor level. Though, the developer sometimes can renegotiate the project with Wohnfonds Wien and the City of Vienna, if it appears to bear unviable elements.

In economic and administrative ways, it is easier and less risky to plan, develop and manage a mono-functional building. Especially retail areas are susceptible to vacancy, since the prevailing conditions of high motorization, long commutes and retail concentration in the suburbs or a few selected high streets make it difficult to establish businesses. Furthermore, as the individual developers are left alone with the management of their ground floor properties, a coherent strategy for the whole street or neighbourhood can hardly be worked out.

As buildings and housing are almost exclusively regarded as a commodity, anything that might not pay immediately or just carry a risk, is unlikely to be realized. But if we want liveable neighbourhoods, the potential use of ground-floor levels in new developments need

Figure 8: Bednar-Park and Housing complex



Image Source: PPAG Architects

to be considered in the supra-individual balance between the developers and the public interest. In addition, subsidy schemes for housing need to be redesigned in order to facilitate rather than complicate functional integration within one building.

Subsidy schemes work rather well on a different level. In Vienna, low-energy projects receive distinctly higher public funding. At Nordbahnhof, some of the recent projects did fulfil at least low-energy standards. Though, higher standards could have been met, as many examples throughout the rest of the city show.

It is clearly Co2 relevant if building structures can be adapted to changing uses or tastes. Therefore, physical flexibility is needed. One element of a block divided into many units can easily be replaced. It has to be doubted that in big mono-functional structures like apartment buildings – designed to contain up to 300 apartments all more or less of a piece – or office blocks, doing so will also be possible. The risk of over-specification at a too large scale is quite evident. In this respect, Nordbahnhof does not give us the chance to adapt to future changes.

Future Nordbahnhof will mainly be composed of subsidized housing projects, which often require EU-citizenship (or similar), a minimum income or own capital resources. These requirements might form a considerable obstacle for migrants, but also, for instance, students or workers which are only temporarily based in Vienna. Furthermore, Nordbahnhof has already seen very target-group oriented developments such as Bike City, attracting very similar tenants. Thus, it is likely that Nordbahnhof, instead of being a socially mixed neighbourhood, will become a rather homogenous area.

If we want to live in cities with local character, aesthetics and identity, we must allow them to develop a local sense of place, especially in areas with new construction. Only by doing so, people will attach to where they live and care for their neighbourhoods. This can again reduce suburban flight. Aesthetically, the Nordbahnhof area is improving. First developments at Lassallestraße turned neighbouring streets into dull areas with little else but vehicle accesses for delivery and parking. In recent projects, more attention was paid to the configuration and design of buildings and their surroundings. The completion of construction work at the neighbourhoods park may also help. However, the design of other public spaces clearly needs improvements.

At last, traffic and its interdependencies should be mentioned. It must be a unreserved goal to enhance “green” mobility and limit carbon-based mobility, in order to tackle Co2 and other emissions and improve quality of life through redistribution of public space and improved safety on the streets. The expected 20.000 inhabitants and 17.000 workers will need more than two metro stations in the very corners of the area. However, streetcars for example see surprisingly high opposition, although they prove very efficient in urban public transport, and plans for non-motorized mobility have not been announced yet. Seemingly, the City of Vienna still relies on individual carbon-based mobility, instead of promoting sustainable means of transport. In this respect, Nordbahnhof is far away from contributing to a Low Carbon Urban Area.

5 Conclusions

Let's summarize. Liveable and compact Mixed-Use Developments can be implemented in both, central and suburban areas. They potentially allow more density, less land use and shorter commutes. Consequently, energy inputs for construction, maintenance, use and transit and their emission outputs can be reduced. Furthermore, Liveable and Compact Mixed-Use Developments provide an excellent foundation for other eco-friendly developments like energy-plus buildings, non-motorized mobility or public transport. It can be even argued that many of these measures require compact and mixed urban structures.

If they are done well, Liveable and Compact Mixed-Use Developments increase quality of life. Mingling social groups generally leads to a more stable urban society with less segregation and social conflicts. A higher degree of functional interaction and integration fosters economic innovation and growth. All in all, Liveable and Compact Mixed-Use Developments are able to form the basis for sustainable urban development.

What hinders us from implying Liveable and Compact Mixed-Use? As shown, the question of Liveable and Compact Mixed-Use Developments is a complex issue and certainly requires more than just designing masterplans or building such structures. It clearly requires the implementation of the before mentioned basic prerequisites for re-urbanisation (strict policy compliance with national Co2 reduction goals, internalisation of follow-up costs in mobility and land use, reduced competition among municipalities and regionally limited land use, amongst others). This is a political issue, the mentioned ideas are neither extremely radical nor unproven.

Besides, the primacy of economic interests and the high weight of individualist, but unsustainable ideals in urban development needs to be questioned as well. And we need a profound cultural debate regarding the role of private and public investment in urban development as well as the importance of aesthetics and design. Are buildings only a commodity? Is the city itself a commodity? Or is there more, is it a cultural task to build our cities?

The regulatory framework and subsidy schemes need to become more flexible, allowing more than a simple 2 dimensional distribution of segregated uses throughout the city and encouraging people to overcome unsustainable lifestyles. In addition, true and powerful participation and civic responsibility will be required too. The fact that in Vienna, ecology-movements have a long tradition, is often neglected. If people can find a way how to contribute to urban development, shape it according to their desires and attach to the final outcome – a lively and vibrant, eco-friendly city – the whole process of going green also becomes socially sustainable.

As the case study shows, Nordbahnhof is neither doing extremely well, nor doing extremely bad. Some lessons have been learned from the mistakes made while developing Lassallestraße. However, some very basic elements of Mixed-Use Developments, such as mingling uses within one building, allowing close interaction with street life through shops, crafts or services established on ground floor level or trying to achieve social mix, are being frequently ignored. Transport issues – with their high contribution to Co2 emissions – have not been tackled at all until now. The sad thing about Nordbahnhof is that the City of Vienna actively disregards it's very own targets - the requirements as stipulated in the masterplan of 1994. Many of those objectives have not been met yet, though they are still very much up to date.

Low Carbon Urban Areas are not an option any longer, they are a requirement. In the light of the striking need to cut down Co2 emission, we have to do more than well intentioned masterplans or a single innovative development project every now and then. We have to provide essential qualities throughout the whole urban area, to make it a sustainable and desirable place to live for our future. And we have to dig deeper. We have to understand the forces which are currently shaping our cities and regions, so that we can shape them according to the needs of a 21st centuries society, on it's way to a sustainable lifestyle. If we only work on the surface, we will not be able to fulfil the needed turn towards Low Carbon Urban Areas. Instead, we will allow further sprawl, more energy consumption and more Co2 emission outputs. We? We, the planners, the politicians, the commuters, the dwellers, the media, the teachers and the scientists.

Wolfgang Aichinger, Student, Austria

Sources:

- SEIDL, ROMAN (2009) „Zielgebiete des Wiener Stadtentwicklungsplans“, *Dérive*, Vol. 36, 2009
- SEISS, REINHARD (2007) „*Wer baut Wien?*“, Salzburg: Verlag Anton Pustet
- SENNETT, RICHARD (2007) „The Open City“, *The Endless City*, London: Phaidon
- SONNE, WOLFGANG (2002) „Ästhetische Nachhaltigkeit in der Stadt“, *Wissenschaft & Umwelt Interdisziplinär*, Vol. 12, 2009
- STADT WIEN, MA 27 (2009) „*Energieverbrauch und Energiefluss in Wien*“, Wien: Internet
- UMWELTBUNDESAMT (2003) „*Flächenverbrauch in Prozent des Dauersiedlungsraumes 2003 nach Gemeinden*“, Wien: Internet
- UMWELTBUNDESAMT (2009) „*Klimaschutzbericht 2009*“, Wien: Internet

Image Sources:

E-zone, City of Vienna, ÖBB Immobilienmanagement GmbH and PPAG Architects

Special Thanks to João Basto, João Granadeiro Cortesão, Maria João Duarte, Petra Hirschler, Philip Krassnitzer, Ursula Pichlwagner, Thomas Proksch and Melanie Strasser

ⁱ Negative externalities of individual motorized mobility, for instance, range from environmental and accidental damages to negative health effects, high land use, barrier effects, urban degradation and depreciation or minimized opportunities for future generations due to “spent” resources. In addition, construction costs and maintenance charges can be included.

ⁱⁱ The masterplan was elaborated by Austrian architects Boris Podrecca and Heinz Tesar.

ⁱⁱⁱ Where the pressure from the previous land owner ÖBB (Austrian Federal Railways) was too high, the masterplan allows extraordinarily high densities. Nowadays, ÖBB is structured by different corporations, acting for example as private-sector capitalist real estate developers, even though they are publicly owned. This legal construction makes it more and more difficult to consider non-economic targets in ÖBB owned or initiated brownfield developments. The city turns into a commodity.

^{iv} Wohnfonds Wien is owned and controlled by the City of Vienna. It is a fund holding property suitable for social housing and urban development in areas such as Nordbahnhof or Zentralbahnhof. The fund's activities range from strategic acquisitions and project development to the realization of competitions amongst developers, in order to find the most qualified candidate. Those competitions are based upon masterplans and/or provisional lay-out plans and need to consider economic, ecologic and urbanistic qualities.