Density in Urban Context

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Vorönn 2012

Abstract

A direct and fundamentally optimistic approach of dense urban living and questioning of the ideologies of the urban planners since the Victorian age is the core concept in this paper. Density was perceived as destructive in the growing industrial city, which suffered from overcrowding, poverty and ill health. It was for these reasons that planners such as Ebenezer Howard in 1898 proposed a thinning out of the population by creating less dense and greener surroundings like the Garden City model.

This paper will discuss the concept of density in an urban context, and how urban planners applied it in theory and practice. Providing evidence about the influence of density not only as physical environment, but also how it affects our cities in economical, environmental and sociological sense. Proposing a more dense urban fabric serving the complex organism of the city, generating safety and diversity. Learning from one of the most populous dense cities such as Berlin and Barcelona and reflect the experience on the much younger Reykjavík

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1.Introduction.

To say that cities need high dwelling densities and high net ground coverage, as I am saying they do, is conventionally regarded as lower than taking sides with the man-eating shark.[1]

In ancient Rome city planning authorities were designing their cities in consideration of military defense and civil convenience. A city surrounded by a wall to protect its citizens from invaders. Today this would not be a city people would strive to live or work in. A city has to provide efficient social amenities, economical prosperity, safety and cleanliness and stimulate creativity. However, many cities fail on all those aspects and the way we shape our cities will continue to reflect on us in the future.

Urban planning has its implications in the control of land use and the design of the urban environment. The use of land in urban planning is associated with the amount of physical form occupying the land. For whatever purpose building authorities control the occupation of buildings in an area by zoning laws.

The object of this paper is to investigate the importance of density within an urban context, which is often regulated by city planning authority. One of the goals will be to discuss the misconception of density with in an urban framework and how urban modernist planners since the 1920s embraced ideologies that influenced city planning. The first intent to destroy the tradition city was undertaken by the famous French architect Le Corbusier and his scheme *The Contemporary City* for three million people, where he indented to erase the historical center of Paris by replacing it with uniformed high rise buildings in the park. However, his utopia became the reality in many cities.

This paper will uses as a main reference the visionary thinking of the urban activist Jane Jacobs, who was one of the first to raise her voice and question modernist planners and traffic engineers. In her book *The Death and Life of Great American Cities* published in 1961, Jane introduced ideas about how cities function. She wrote about sidewalks/safety, sidewalks/contact, city neighborhoods, neighborhood parks

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[1] Jacobs, Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992,

and the self-organization of the city. She promoted four conditions for city diversity such as primary mixed uses, short blocks, aged buildings and the need of higher densities in cities.

With the industrial revolution urban planner Ebenezer Howard tried to repopulate the countryside with less denser and greener environments than the growing industrial city could offer. His interest towards a combination of town and country derived from his visit to the United States in 1872- 1876, fascinated by the newly populated towns.[2] The result was his publication *The Garden Cities of Tomorrow* in 1898, a manifesto against the growing industrial city.

The cities of today sill continue to grow and we have to question our approach towards the future urban planning and the shape of our city.

Is it a compact urban development that provides sustainable answers to global urban growth, because less urban sprawl leads to reduction of energy and pollution[3] or a low-density urbanism, which promotes extensive car use and will become unsustainable long before fossil fuels run out.[4]

In short this paper will provide information on density in an urban context from a historical and personal point of view and hopefully draw a clearer picture on identifying density as a planning tool for shaping the future city.

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[2] *Teoría de la arquitectura: del Renacimiento a la actualidad, 89 artículos sobre 117 tratados*, Köln: Taschen, 2003, p.668. [Translated from Spanish by Fomyn, Pylyp.]
[3] Burdett, Ricky and Rode, Philipp, *The Endless City. The Urban Age Project*, Phaidon Press Ltd.,2007, p. 22.
[4] Sudjic, Deyan, *The Endless City. Theory,Policy and Practice*, Phaidon Press Ltd.,2007, p. 44.

2. Density´s Definition

In this chapter density will be discussed as a physical environment and present some examples of high density´s characteristics and furthermore seek for the ideal density levels. However high density urban form has an opposite pole which is the low-density suburban model. Generally this model is characterized by low-density zoning with single family housing on large plots of land. This model will be only discussed in this chapter acting as the counterpart of high-density urban form and will be discussed in the next chapter.

Jane Jacobs raised the debate towards dense urban living with the publication of *The Death and Life of Great American Cities* in 1961. She argued for the more dense urban form and attacked the tendency inherited from the Garden City Movement and the modernist planners of the 20th century. In her opinion a sufficient density would strengthen the diversity of a city as on its streets as in its districts.[5] Lets examine first the low-density and its characteristics. A density of 12 dwellings per acre (or 30 to 40 dwellings per hectare) was the typical Garden City model. At such low densities the semi suburb is destined to become a grey area as the city around it continues to grow and its exclusiveness and closeness to nature get lost.[6]

In contrast, urban density varies from city to city as in quantity so as in quality. One of the most compact cities in Europe is Barcelona, which is highly praised for its high density of physical form and its quality public spaces. Barcelona has a district with an average of 400 dwellings per hectare[7] and is referred as *Eixample* (Catalan for extension), which was realized in the nineteenth and early twentieth century by urban planner Ildefons Cerdá. Similar to Ebenezer Howard, Cerdá was concerned with the living conditions in Barcelona. He was pursuing key factors in his design such as natural lighting and ventilation in homes and the need for green environment in people´s surroundings without neglecting the public realm. The main characteristics of his plan were the long straight streets in the grid pattern crossed by wide avenues and square blocks with chambered corners. Cerdà wanted to design an egalitarian city where some neighborhoods are not differentiated from others by the living conditions

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[5] Jacobs, Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992, p.150-151.
[6] Same source, p. 209.
[7] The Urban Task Force, *Towards an Urban Renaissance,* Routledge, 1999, p. 59

imposed. The same services were planned for every corner evenly.[8] However, high ground coverage such as in Barcelona is pretty uncommon when it comes to urban planning.

The idea of density as a tool for urban planning was recognized and implemented in the planning policy in the United Kingdom since the year 2000 with its PPG 3 (Planning Policy Guidance on Housing)[9] The PPG 3 was a the result of the British research group *Urban Task Force,* chaired by architect Sir Richard Rogers. The British government asked to analyze urban conditions in Great Britain and propose solutions to improve the quality of towns. The report covers a wide range of suggestions, one of them entitled "Density and Intensification". In general they proposed urban neighborhoods designed to higher densities than it was allowed by planning regulations in order to create more lively conditions for residents. The Task Force established that the post war British towns were built at a standard of 25 dwellings per hectare. If the standard would reach a level of 30 - 40 dwellings it would allow greater amenities and transport facilities to be located at walking distance.[10] Jane Jacobs wrote that dwelling densities couldn't be subjected to some mathematical abstraction. The performance of a high-density dwelling area is the goal of densification. If however the performance shows flaws then the density is either too low or too high and in response starts to suppress diversity.[11]

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[8] „Historia del Eixample de Ildefons Cerdà, precursor del urbanismo racional moderno. " The Municipality of Barcelona.
http://w110.bcn.cat/portal/site/Eixample/menuitem.7172c1efe9fe3aa433433343a2ef8a0c/?vgnextoid=b504d580d8549210VgnVCM10000074fea8c0RCRD&vgnextchannel=b504d580d8549210VgnVCM10000074fea8c0RCRD&lang=es_ES
[Accessed November 2011.] [Translated from Spanish by Fomyn, Pylyp.]
[9] „ Planning Policy Guidance Note3:Housing." Wikipedia The Free Encyclopedia.
http://en.wikipedia.org/wiki/PPG_3 [Accessed December 2011.]

[10] The Urban Task Force, *Towards an Urban Renaissance,* Routledge, 1999, p. 64
[11] Jacobs,Jane, *The Death and Life of Great American Cities,* Vitage Books Edition, December 1992, p. 208-209.

High density can become intolerable when it reaches seventy per cent of land coverage. In that case the land has to be interlaced by frequent streets, lively parks and a mix of non-residential buildings. Each of these devices will contribute to the relief from the high coverage, but at the same time generate diversity and vitality of an area.[12] A city has to choose between the destructive affects of low-density car-oriented suburbs, which will only be able to maintain themselves as long as fossil fuels will run their engines or embrace higher densities in order to create more lively conditions for its residents.

3. Density and Overcrowding

In order to investigate the importance of density within an urban framework of a city and what kind of benefits it generates for its users it is essential to define the concept of density. The idea of urban density has been discussed since the Garden City model in the United Kingdom at the end of the 18th century. In the 1920´s this discussion continued influencing urban development. Density is a term often regarded as representation of a physical area and the number of people who inhabit it. However this term is often associated with overcrowding, which was regarded as an unfit environment.

The housing problem was one of the major debates in the beginning of the nineteenth century. Urban planners were persistent to improve the living conditions in densely overcrowded metropolitan areas. For a long period of time density was considered one of the major ills of the city and in response the urban planners saw low density as the salvation of the their own city. In 1898 Ebenezer Howard proposed the urban Garden City model, which included only low-density dwellings in its master plan preventing further overcrowding of the city by also restricting the residents to 32,000. Ebenezer Howard looked at the slums of London, which had too many dwellings per acre and too many people per dwelling unit. However it is important to clarify that high density and overcrowding are not the same thing.

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[12] Same source, p. 218.

The significance of these terms is strictly separated. High density means there is a large number of dwellings on a piece of land. A good example would be the city of Amsterdam, which has a very high density due to its plot usage law. Overcrowding means there are too many people in a room or dwelling. For instance fifteen years ago the average space for a person in Shanghai was 6 square meters, which means that a dwelling of 30 square meters could accommodate five people,[13] which fits the description of overcrowding, because too many people are present in a dwelling unit. The overcrowding of dwellings or rooms is still persistent in our world and is a symptom of poverty or discrimination. The Garden city movement did not make the difference between overcrowding and high density. The Garden City planners put these two terms in the same category. The confusion continues until recently reviewing the script by Sir Raymond Unwin, one of the Garden City planners, titled *Nothing Gained By Overcrowding.* The text is promoting the benefits of the Garden City Model, which was the response to the overcrowded city. The text generally presents examples and benefits on how to keep land coverage at an efficient ratio in order to prevent overcrowding. To say that an x number of dwelling units per acre will prevent overcrowding is absurd, because one thing has nothing to do with the other. The Garden City Movement recognized overcrowding of dwellings by people and overcrowding of land by buildings as the same, an unhealthy environment for citizens. Therefore a combination of city and countryside was convincing and attractive.[14]

We need to refer to the French architect Le Corbusier and his scheme "Radiant City" from 1935, which will be discussed in the next chapter in order to complete the variable between low-density Garden City and high-density Radiant City. The Radiant City was considered as high density, because its skyscrapers had a high-density core. Meaning that each building had a high coverage of inhabitants. However the Radiant City is low-density, because the land usage is in the proportions of five per cent dwelling units and ninety-five percent open land and transport. The conception of low-density in both cases is absolutely identical. In regard to the term of low-density Garden City and Radiant City have the same character they just use different ratios when it comes to land usage.

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[13] Burdett, Ricky and Deyan Sudjic edit. *The Endless City*,Phaidon Press Ltd.,2007,p19.
[14] „Garden City Movement." Wikipedia The Free Encyclopedia.
http://en.wikipedia.org/wiki/Garden_city_movement
[Accessed November 2011.]

Obviously urban density and over crowding are different terms and can't be put in the same context. However Danish architect and urban design consultant Jan Gehl dedicates a chapter in his book *Cities for People*, where he argues that density is not the main catalyst for city life. He rejects the wide belief that a lively city needs high building density. Gehl describes several situations where high densities affect the quality of city life, such as New York City´s Manhattan with it´s skyscraper clusters with dark and unattractive streets at their base.[15] Instead of developing high rise and high density building areas, Gehl suggests that the level of density should be combined with quality in the form of good city space.

4. Orthodox City Planning

Since the industrial revolution in the 19th century, cities were facing similar problems as they do today. In fact there is no difference between the problems they experienced in beginning of the 19th century and the dilemmas we have to face in our cities today. Waste disposal, water supply, epidemics, pollution, traffic noise and congestion, but despite that cities still draw us in and give us hope for a better future. The industrialization caused people to leave the rural areas in search of employment in the factories that were responsible for such a great urban growth.

United Kingdom can be illustrated as the first industrial society that became the earliest urban society as well.[16] In only one century a largely rural society became a largely urban one. The impact of such urban growth reflected on the community in two ways: poor health and overcrowded housing.
The earliest intent to deal with the growing industrial cities was undertaken by Ebenezer Howard and the publication of his *Garden Cities of Tomorrow* in 1898. However it is important to bring forward the two most crucial theories of city planning and how those have been misinterpreted and modified by subsequent generations of city planners and architects.

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[15] Gehl, Jan, *Cities for People,* Island press, 2010, p. 68.
[16] „Modernization: Population change." Britannica Online Encyclopedia.
http://www.britannica.com/EBchecked/topic/387301/modernization/12022/Population-change
[Accessed January 2012.]

Both of those theories were dealing with density to some extent and proposed solutions to the problem that cities were becoming. The first one was a response to industrialization and the second one to the modern city and the beginning of the motor age.

The first theory was addressing the rapid growth of towns and cities in the late eighteenth and beginning of the nineteenth century. At this time the city of London was overcrowded by people and wheeled traffic at times dense beyond movement, without any proper regard being shown for health, convenience or beauty in the arrangement of the town by its authority.[17] This was the London of the British urban planner Ebenezer Howard, who recognized the poor living conditions of London and proposed a repopulation of the countryside preventing further density in the city. In his book *The Garden City of Tomorrow* he offered a vision of a self-sufficient isolated small town surrounded by a green belt of agriculture containing proportionate areas of residences, industry and agriculture. Ebenezer regarded the overcrowded city as unfit for the humans and created a utopian town with low-density in which people would live harmoniously together with the nature, but still be able to enjoy the benefits of a town. The two major principals of his model were the limited size of about 2.400 hectares and less than 32.000 habitants, and the segregation of functions.[18]

The housing of the residents had suburban physical qualities and small-town social qualities. Howard arranged each of the city´s functions in relative self-containment leading to commerce of standardized supply of goods, and as serving a self-limited market.[19] Furthermore his paternalistic Utopia was denying any aspects of the city including the many faceted cultural life of the metropolis[20], but after all Ebenezer Howard was not designing in terms of city planning, it was rather an attempt to an alternative of the city with a new physical environment and social life. Yet Howard's utopia was a self-limiting and self-contained model of *Tomorrow*, an isolated town immune to future development. Howard conceived his Garden City model in a broader context. When a town would reach its limits it should stop growing and a second town should be built next to it and form an urban agglomeration.

[17] Unwin, Raymond, *Nothing Gained by Overcrowding,* P.S. King & Son, Orchard House, Westminster,1912, p. 1.
[18] *Teoría de la arquitectura: del Renacimiento a la actualidad, 89 artículos sobre 117 tratados*, Köln: Taschen, 2003, p.668. [Translated from Spanish by Fomyn, Pylyp.]
[19] Jacobs,Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992, p. 18-19.
[20] Same source. p.19.

The complete scheme would be garden cities surrounding one central garden city. Ebenezer was trying to prevent the overcrowding of his towns by limiting their land usage to 12 dwelling units per acre. For instance the public authority of the Garden City had to prevent any speculations or changes in the land use and by that law the town would never increase its density and become a city.[21] It seems that Ebenezer was not trying to intervene in the complexity and the problematic of his London. Ebenezer could have come closer to solve London's ills, instead of rejecting it and putting an emphasis on a new utopian model, which would thin out the classical traditional dense urban fabric.

In the United States Howards ideas were taken further during the preparation of the New York Regional Plan in the 1920´s, which was coordinated by American planner Clarence Perry (1872-1944). He crystalized the concept of the *Neighborhood Unit* attempting to create a planning tool for the industrialized city. The principal of the neighborhood unit was a self-contained residential neighborhood away from the noise and smoke of the industrial city, offering to designers a framework for disseminating the city into smaller sub-areas (suburbs).[22] At the same time Clarence Stein (1882-1975) a close colleague of Perry´s, formed with Lewis Mumford, Henry Wright and Catherine Bauer, the group called the "Decentrists", who´s agenda was to decentralize great cities, thin them out, and disperse their enterprises and populations into smaller separated cities, or better yet towns.[23] The focus of those individuals was once again rejecting the city and in conclusion failing do understand its complexity. Their planning strategy was control and power of preventing further change of the urban fabric, causing a freeze of urban evolution and social isolation.

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[21] Jacobs,Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992, p. 18

[22] „Neighbourhood unit." Wikipedia The Free Encyclopedia. http://en.wikipedia.org/wiki/Neighborhood_unit [Accessed November 2011.]

[23] Jacobs,Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992, p. 19-20.

The great city was Megalopolis, Tyrannopolis, Necropolis, a monstrosity, a tyranny, a living death. It must go. New York's midtown was "solidified chaos" (Mumford). The shape and appearance of cities was nothing but "a chaotic accident…the summation of the haphazard, antagonistic whims of many self –centered, ill-advised individuals" (Stein). The centers of cities amounted to "a foreground of noise, dirt, beggars, souvenirs and shrill competitive advertising" (Bauer).[24]

"How could anything so bad be worth the attempt to understand it", wrote the urban activist Jane Jacobs, who argued against the misleading visions of those individuals.

The French architect Le Corbusier conceived the second vision dealing with the city in 1922 with the publication of the "Ville contemporaine pour trois millions d´habitants". The "Contemporary City" for three million inhabitants was a scheme consisting of 24 skyscrapers standing in a rectangular landscape interconnected by vast green open spaces and hierarchically organized streets. The city´s functions such as traffic, work, housing and leisure are clearly defined and related to it´s corresponding spaces.[25] The fundamental problems of modern urbanism continued to preoccupy Le Corbusier until 1935 when he designed the "Ville Radieuse" or "Radiant City" his rethought version of the earlier Ville Contemporaine of 1922. In February 1930 Le Corbusier was asked to give his opinion on the Green City competition held by the Soviets. He replied in his text "Commentaries Relative to Moscow and the Green City". In that text Le Corbusier shared his dislike for the existing built urban fabric of Moscow but arguing that economic, social and cultural life were all dependent on high density of settlements, he believed that the true solution to the "problem" of the existing city was neither the self contained small centers of the misnamed urbanist nor the disurbanist linear city. Instead, he repeated his advocacy of reconfigured high-density core surrounded by housing set amidst greenery, ideas he had already put forward in his plans for the Ville Contemporaine.[26] In 1943 Le Corbusier published the Charter of Athens, a treatise derived from International Congress of Modern Architecture.

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[24] Same source, p. 20-21.
[25] *Teoría de la arquitectura: del Renacimiento a la actualidad, 89 artículos sobre 117 tratados*, Köln: Taschen, 2003, p.706. [Translated from Spanish by Fomyn, Pylyp.]
[26] Mumford, Eric, Foreword by Framton, Kenneth, *The CIAM discourse on Urbanism 1928-1960*, MIT Press, 2002, p. 46-47.

The Charter was presented as an analysis, which should be applied in response to solve the problems of urbanism. One of the most important aspects of his treatise was the segregation of urban functions; this separation was the core of rational urban planning according to Le Corbusier. However he developed this idea already in the design of the Radiant City in 1935. This utopia was a composition of freestanding skyscrapers with a high-density core, but 95 per cent of the ground remained open as if the whole city was a big park. Le Corbusier believed that high density is essential for the economical, social and cultural development of the city[27], but despite that he proposed high-density blocks without any public life on the ground plane of the streets, causing the destruction of social elements of the city. [28] Le Corbusier continues to be criticized due to rupture of the traditional city and the segregation of functions.

5. Impact of modernist City planning

The modernist rejection of streets and the traditional city in the 1920s and 1930s and the introduction of functionalist ideals of hygienic, well-lit spaces resulted in visions of the widespread tall city between freeways. Walking, cycling and meeting others in shared spaces were not part of these visions.[29]

In 1933 the C.I.A.M. (International Congress of Modern Architecture) organized by Le Corbusier met for the fourth time, which took place on a ship bound for Athens from Marseilles. On high sea away from the urban context the C.I.A.M. agreed on the segregation of functions of the city. The concept of the *Functional City* was the core discussion has driven that congress and later influenced the subsequent generations of urban planners and architects.

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[27] Same source.
[28] Burdett, Ricky and Deyan Sudjic edit. *The Endless City*,Phaidon Press Ltd.,2007,p19.
[29] Gehl, Jan, *Cities for People,* Island press, 2010, p. 56.

The main concept behind this destructive idea was mainly the response of the C.I.A.M. on how to deal with the social problems of the city.[30] However the appearance of this idea was already featured in international thought about planning by 1928[31]. Furthermore the functional city should have been erected in the form of high-rise buildings and low-density land coverage in order to thin out the population. The Functional City formed a very popular approach to deal with the cities. Decentralization by means of low-density zoning led to suburban-growth with shopping malls, isolated communities and vacuums, killing off the last breath of vitality and street life. In 1961 Jane Jacobs was one of the first to raise her voice against the methods of modernist planning and argue against the utopian vision of Le Corbusier´s Radiant City. However she was observing the qualities of the city like no urban planner managed to comprehend. She believed that the increase of traffic and the urban visions of modernism would bring death to city life. Jane wrote that when Le Corbusier designed his Radiant City as a park, skyscraper and automobile freeway version of Howard´s small-town Garden City, he was designing for a new age and for a new system of traffic.[32] "His vision of skyscrapers in the park degenerates in real life into skyscrapers in parking lots", she added. The segregation of the city's functions led to a fragmentation of the city´s vital fabric. However the automobile played a big role as well. The automobile made it easier to segregate cities functions, because it allowed reaching amenities on a greater distance and as result lead to urban sprawl.

Even in Reykjavík´s Master Plan from 1962-83 the segregation of functions was driven as an answer to the growing automobile ownership in order to ease future traffic congestions. Until the 1920´s the buildings in Reykjavík had a tendency towards a mix of residents and work place in same building or block[33], which in turn makes it easier to get around on foot and support daily needs.

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[30] „Congrès internationaux d'architecture moderne." Wikipedia The Free Encyclopedia. http://en.wikipedia.org/wiki/Congrès_International_d'Architecture_Moderne [Accessed November 2011.]

[31] Mumford, Eric, Foreword by Framton, Kenneth, *The CIAM discourse on Urbanism 1928-1960*, MIT Press, 2002, p. 25.

[32] Jacobs,Jane, *The Death and Life of Great American Cities,* Vintage Books Edition, December 1992, p. 342.

[33] *Master Plan for Reykjavík 1962-1983,* The City of Reykjavík,1966, p. 61.

In 1927 Reykjavík´s planning authorities due to the high demand of dwellings took a turn towards a development of residential areas without the presence of work place. A tendency which was pursued in urban planning since the beginning of the century, inform of free standing buildings and since the 1940´s groups of free standing apartment towers and high slab blocks dividing pedestrian and wheeled traffic. If Reykjavík´s development was embracing visions of the Garden City model since the beginning of the century of free standing semi detached housing, than by the 1930's the Functional City model with its segregation of city´s vital functions would contribute to the accelerating motor age. In general the Reykjavík Master Plan 1962-83 was based on the assumptions derived from the traffic survey in December 1960, which was carried out by the City Engineer´s Office and the Directorate of Roads.[34] It was regarded that a modern town has to provide quick and sure connections between residents, work and leisure by means of a satisfying traffic system in regards of capacity, speed, safety and parking. In conclusion the city suffered from the segregation of functions, followed by the privatization of the automobile, which allowed urban sprawl in first place. In order to support the sprawl, traffic engineers proposed the extension of the road system[35] leaving the pedestrian realm defeated by the automobile. This model of city planning could maybe explain why even today Reykjavik's citizens continue to use the car as the main transportation. A person that has grown up in an environment dominated by the car could never comprehend the quality of urban pedestrian life.

For instance, Berlin post-1945 was fragmented and to fifty per cent lying in ruins. The modernist ideas found a fine playground to be crystallized. The high demand for housing was piling up and ideas were debated on how to rebuild the city from ruins. Architects and urban planner were high in demand and the task seemed endless and money was everywhere. The result was a mass production of unpleasant environments, which were hard to compare to the prewar-buildings.[36] The newly constructed forms were based on the principals of *The Functional City* and its modernist segregation. Described as open and green, those nightmarish developments

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[34] Same source, p. 85.
[35] Same source, p. 87.
[36] Leick,Romain, Schreiber,Matthias, Stoldt,Hans-Ulrich: „Out of the Ashes, A new look at Germany´s Postwar Reconstruction." Der Spiegel. http://www.spiegel.de/international/germany/0,1518,702856-2,00.html [Accessed December 2011.] [Translated from the German by Liebel,Jan]

continued to mark the landscapes from 1950. The new residential boroughs were loosely arranged providing clean air and lots of grass. The most known housing development project for West Berlin was *Das Südliche Hansaviertel* (The South Hansa quarter). The orientation of the project provided Le Corbusier with his ideas derived from the fourth CIAM meeting in 1933. In a competition in 1952 were 53 architects from 13 countries invited to express their visions for the reconstruction. Internationally renowned architects such as Alvaro Aalto, Le Corbusier, Walter Gropius, Oscar Niemayar and Arne Jacobsen, were elected to design single projects. The results were displayed in Berlin in 1957 at International Building Exposition called *Interbau*. This exposition was not only representing post war modernism, it was also a statement of the West towards the East.[37]

The residents of those new residential quarters, clean suburbs and satellite towns quickly realized that this kind of urban conditions were not resulting in a better quality of life, but rather gave a feeling of boredom and loneliness. Indeed, many who moved to these soulless ghettos were soon pining for the familiar, chaotic confinement of their former cities.[38]

6. Urban Experience

For in much wisdom is much grief: and he that increaseth knowledge increaseth sorrow.[39]

In this chapter we will look at several benefits of density in the context of my own experience. One of the outstanding qualities of a dense city is that it can generate streets full of life. The user within a compact urban frame has easier access to the daily necessities. Only after experiencing low-density physical environment have I understood the value of density. In my emigration history I have lived in Berlin,

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[37] „Berlin-Hansaviertel." Wikipedia The Free Encyclopedia. http://de.wikipedia.org/wiki/Berlin-Hansaviertel [Accessed January 2012.],
[Translated from German by Fomyn, Pylyp .]
[38] Leick,Romain, Schreiber,Matthias, Stoldt,Hans-Ulrich: „Out of the Ashes, A new look at Germany´s Postwar Reconstruction." Der Spiegel.
http://www.spiegel.de/international/germany/0,1518,702856-3,00.html [Accessed December 2011.],
[Translated from the German by Liebel,Jan]
[39] King James, *Holy Bible*, HarperCollins, United Kingdom, 2001, Ecclesiastes 1:18.

Barcelona and Reykjavík. At the age of six my parents took me on a journey to cities I could only dream off.

The first destination of my migration history was the capital city of Germany – Berlin, located in the eastern part of the country. By 2011 Berlin has reached a population of 3,440,441 million people from over 190 nations[40]. The city covers an area of 891.74 km^2 with a population density of 3,848 people per square kilometer. The greater metropolitan area covers over 891.85 km^2, which raises the population to 4,9 million and makes the city the seventh most populous urban area in the European Union[41].

The Greater Berlin Act in the 1920s was the foundation for the rise of Berlin position as cultural center of Europe. This act was an expansion of the city by connecting to the smaller villages, following a sub-division into 20 boroughs[42].

I grew up in borough of Steglitz in the southwest part of Berlin. My family and I lived in a five-floored Jugendstil apartment building forming a block surrounded by one-way streets. Already as a little child I felt the importance of connectivity and commute of the urban framework of Berlin. I had to travel for about one hour in order to get to my school. I left the lively neighborhood early in the morning to catch the bus, which was arriving with frequency. After that, I had to take the U-Bahn (underground metro) from Rathhaus Steglitz and within 15 minutes I was already in the City Center at Zoologischer Garten. From there I had to take an other 10 minutes ride with the S-Bahn (fast train), which basically is like metro but it moves on the ground level until I finely arrived at Hackescher Markt in Mitte. I was seven years old and got to school on my own. From my experience two major conclusions hit me. How safe and how sustainable this city actually was.

A dense city can generate human presence most of the time. My parents always told me not to speak to strangers and stay close to a crowd of people in case of any danger. The concentration of people in a space causes indirect surveillance. However a street of a dense area can be lively during daytime, but become abandoned during evening hours.

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[40] „Statistisches Jahrbuch 2011." Statistik Berlin Brandenburg.
http://www.statistik-berlin.de/PRODUKTE/jahrbuch/jb2011/JB_2011_BE.pdf
[Accessed January 2012.]
[41] „Largest urban areas of the European Union." Wikipedia The Free Encyclopedia.
http://en.wikipedia.org/wiki/Largest_urban_areas_of_the_European_Union [Accessed January 2012.]
[Translated from German by Fomyn, Pylyp.]
[42] „ Groß-Berlin." Wikipedia The Free Encyclopedia.
http://de.wikipedia.org/wiki/Groß-Berlin [Accessed January 2012.]
[Translated from German by Fomyn, Pylyp]

I enjoyed growing up in my neighborhood, because everyone knew me and I knew them. At the corner spot of the street was an Italian restaurant and opposite of that was grocery store and a kiosk. My parents believed that if I was on the street playing I would be safer, than for example going to the park, which was in walking distance, where I would be more likely to get into trouble. The reason I also share this believef is the fact that the people doing their commerce in my street would in an indirect way be watching over me. The restaurant owner, who also happened to be our neighbor, would have been my parent's biggest bet in case something happened to me, because he was always at his restaurant. The neighborhood was insuring the presence of people. The reason for the frequency of people being present in such neighborhood could be associated with the mixed functions it was offering. Today Steglitz has 72.009 residents in an area of 6.69 km^2, which contains a population density of 10.605/ km^2.[43]

The second destination of my migration history was Barcelona. The city of Barcelona is the capital of Catalonia and is located in the northeast coast of the Iberian Peninsula and forms an edge to the Mediterranean Sea. Barcelona city reached 2011 a population of 1,619.337 million people from over 100 nations.[44] The city covers an area of 102,2 km^2 with a population density of 15,991 people per square kilometer. The greater metropolitan area covers over 803 km^2, in which the population raises to 5,083,000 million and makes the city the sixth most populous urban area in the European Union.[45]

The extension of Barcelona in 1855, called the *Eixample* designed by Ildefonso Cerdá, was conceived in order to connect the independent municipalities. Before that Barcelona was characterized by a medieval urbanism, which with the industrial revolution saw a demographic growth due to the newly born industries. This extension of the city was divided into six districts. Almost a century later the mayor Pascal Maragal used the hosting of the Olympic games in 1992 as a generator, calling for a revision of the Master Plan and refurbished the urban fabric of the city with the

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[43] „Berlin-Steglitz." Wikipedia The Free Encyclopedia.
http://de.wikipedia.org/wiki/Berlin-Steglitz [Accessed January 2011.] [Translated from German by Fomyn, Pylyp]
[44] „Síntesis de cifras de la ciudad de Barcelona." Department of Statistics.Municipality of Barcelona.
http://www.bcn.es/estadistica/angles/dades/sintesi/images/sintesi2.pdf [Accessed January 2012.]
[Translated from Spanish by Fomyn, Pylyp]
[45] „Largest urban areas of the European Union." Wikipedia The Free Encyclopedia.
http://en.wikipedia.org/wiki/Largest_urban_areas_of_the_European_Union [Accessed January 2012.]

design of 150 new public squares[46] Barcelona was transformed in a vibrant city full of street life and amenities where people long to live, work and visit.

I have lived in an apartment in the district Eixample for a short period of time and I am still impressed by it´s unusual urban density of 348 dwellings per hectare.[47] Nevertheless streets and little squares frequently interrupt the high land coverage leaving enough space for the pedestrians and still support heavy traffic. Since 2007 Barcelona even found space for a community bicycle program, which was received with great enthusiasm giving the public an even broader choice of transport[48]

One of the things I realized was that even if the district has a strict grid system it can always adjust to future development and keep its vibrant life. Every chambered block is characterized by a mingling of cafés, bars, restaurants and local supermarkets and the high population number can support those. At any given time you can witness all kinds of activities around you. There is always something new to discover in such a place. I could retreat to some little square or garden, but always return back to the chaotic city life. To me the urban form of the Eixample represents an environmental role model for city planning, because it can support a public transport system. But I also see the sustainability of such urban form because it can be flexible and still flourish diversity. Today Eixample has 260.237 residents in an area of 7.48 km^2, which contains a population density of 34.860/ km^2.[49]

The third destination of my migration history was Reykjavík. The city of Reykjavík is the capital of Iceland, which is an island in the North Atlantic Ocean. Reykjavík city has reached by 2011 a population of 118,898 thousand people.[50] The city covers an area of 274.5 km^2 with a population density of 436.5/ km^2 people per square

[46] Rogers,Richard, *Cities for a small planet*, edit. Gumuchdjian, Philip, West View Press, 1997, p.19-20.

[47] „Guies Estadístiques, Barcelona en Xifras." Department of Statistics. Municipality of Barcelona. http://www.bcn.es/estadistica/catala/dades/inf/guies/bcn.pdf [Accessed January 2012.] [Translated from Catalan by Fomyn, Pylyp]

[48] „Bicing." Wikipedia The Free Encyclopedia. http://en.wikipedia.org/wiki/Bicing [Accessed January 2012.]

[49] „Guies Estadístiques, Barcelona en Xifras." Department of Statistics. Municipality of Barcelona. http://www.bcn.es/estadistica/catala/dades/inf/guies/bcn.pdf [Accessed January 2012.] [Translated from Catalan by Fomyn, Pylyp]

[50] „Statistics Population." Statistics Iceland.

http://www.statice.is/?PageID=1174&src=/temp_en/Dialog/varval.asp?ma=MAN04211%26ti=Foreign +citizens+in+Reykjav%EDk+by+districts+2002%2D2010+%26path=../Database/mannfjoldi/Rikisfang /%26lang=1%26units=Number/Percentage [Accessed January 2012.]

kilometer. The greater metropolitan area covers over 777 km^2, in which the population raises to 202,34 thousand.[51]

Since 2007 I am living in the *Smáíbúðahverfi,* which literally means "Smallapartmentdistrict". This residential district is characterized by low-density land coverage inform of small houses often divided into 2-6 apartments. In some cases apartments are located in the basement followed by an apartment at ground floor level and an attic on top. At the back of the houses are little private gardens, which can be used by the residents of such a house. I live in a 35m^2 attic located to the edge of a little park with views to the mountain Esja, which dominates the horizon of Reykjavík. After living in here for some time I came to realize that I miss the chaotic city life and refuse to live in a sleepy neighborhood. The people in such a low-density neighborhood have to go to a shopping center to do their groceries, because this neighborhood makes it impossible for any small commerce to survive due to the lack of human presence. However density is the departure point for a neighborhood to operate efficiently, affecting the economy and street safety of such. In other words if the concentration of dwellings is not dense enough, the neighborhood won´t attract any other users and remain residential. The planning of such neighborhoods is irreversible, because zoning laws would prevent any further development. There is movement in such a space but there is no progress. The automobile becomes a constant necessity in a city with insufficient density. If there is no high-density in the city or in between it´s districts, then it leads to an unsustainable public transport and in response requires constant usage of the automobile. The common fate of such district or neighborhood leads in conclusion to an unsustainable city depending on fossil fuels. The public transport plays a big role in a dense city, but it has to be efficient and of good quality.

The idea behind a sustainability city is rather sketchy. Energy consumption and emissions of buildings is one of the factors. Other key sectors are industrial production, energy supply and water, waste and transport management. Transport is a particularly important factor because it is responsible for massive energy consumption and the result of heavy pollution and carbon emissions.[52] For instance the city council

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[51] „Reykjavík." Wikipedia The Free Encyclopedia.
http://en.wikipedia.org/wiki/Reykjav%C3%ADk [Accessed January 2012.]
[52] Gehl, Jan, *Cities for People,* Island press, 2010, p. 105.

of Reykjavík passed a resolution to apply for nomination of Green City in 2012-2013. Waterfalls, volcanoes, geysers and hot springs provide the city with abundant electricity and water. Virtually all of the country's electricity and heating comes from domestic renewable energy sources hydroelectric power and geothermal springs.[53] To imagine the city in becoming green is quite a long run. Car traffic, in from of roads and parking spaces are covering at least 50 per cent of the land. The only existing public transport is the bus system, which is a weak link. The bus is not efficient enough due to the lack of users. Urban sprawl in the 1960s caused the citizen to become dependent on the car, in many cases families own up to two cars in order to get around. Reykjavík ´s Master Plan of 1962-1983 was based on false ideals of the *Functional City* and preparing it for the motor age. Low density suburban quarters, which lead to single use districts and rather long travel times by car. After living for several years in Reykjavík I have come to the conclusion that I find it really difficult to get around if I don't own a car myself.

If a government makes a decision to either keep a city compact or relatively spread out it can have a strong impact on reducing travel time in cars and on energy that needs to be used for transfer. Again it is obvious that density is affecting the safety and sustainability of an urban infrastructure. The more compact a city is, the easier it is to adjust the urban frame to its necessities. Meaning if a city is not dense than it will be struggling with future demands.

7. Conclusion

The cities that urban planners and architects such as Jan Gehl nowadays envision should be full of life and activities with in a given urban space attracting people and reinforcing the exchange of ideas. The ideologies of the Garden City Movement and the C.I.A.M. rejected city space and city life. They produced the fragmented city and resulting the difficulty to reach to public amenities. The inhabitants of low-density areas should reconsider their exclusion from public life and social amenities.

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[53] Mihelich, Peggy, *Iceland phasing out fossil fuels for clean energy*, CNN. http://articles.cnn.com/2007-09-18/tech/driving.iceland_1_electricity-and-hot-water-fuel-cell-icelanders?_s=PM:TECH [Accessed November 2011.]

A dense city allows us more encounters with people and different functions, where a place has to be negotiated, which is one of the most fantastic products of conviviality.

At some point of history we were all driven apart and excluded from society by city planning theories and the thinning out of population, which we still see as a positive environment and a statement of our individuality

In this paper the discussion of density in means of a planning tool was analyzed in an urban context. We have seen that higher densities than allowed by planning authorities are a more sustainable answer to urban growth. Cities will continue to grow, but we should not make urban growth a main goal in shaping our cities. We should rather use the word *development* to describe this process.
Density can contribute to a more sustainable, economical and efficient model for the future city planning.

However important buildings are the infrastructure is infinitely more important. You can´t talk about that subject without addressing density, quality, public space and the importance of transport, connectivity and the relationship between history and change.[54]

The performance of the infrastructure of our city has a direct influence on us and we are responsible for designing the future for the generations to come. This paper however has only hit the top of the iceberg. Encouraging to rethinking density as a concept and suggest it as a tool for shaping our future cities. I strongly believe in this concept and encourage the diverse and dense urban model for future city planning. The historical background of the past century dealing with density has shown that the concept of density still needs further exploration.

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[54] Foster, Norman, speaking at the *Urban Age Conference*, Berlin 2006, You Tube.
http://www.youtube.com/watch?v=gHaSG8W9Rfc&feature=related

[Accessed November 2011.]

Ebenezer Howard and Le Corbusier drastically were proposing models in order to deal with the overcrowded industrial city and we have seen in to what our cities have degenerated. Maybe the over determination of those individuals in finding the right solution is what caused the problems we are experiencing in our city. To think that there is one answer to a particular problem is wrong. The city is such a complex organism, that we have to observe it with a keen eye. The city can achieve higher population numbers by providing a denser physical environment. As more dense the city becomes as easier it is to ensure an efficient use of urban functions, meaning that the city needs us as much as we need the city for our well-being. It is our responsibility as architects and citizens to shape a positive future for our city.

8. Resources

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