

SCALING THE TRANSFORMATION - EXTERIOR SPACES AT THE NEW HARBOR FRONTS

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Abstract

This paper aims at introducing the notion of scale to an empirical architectural analysis: The term "scale" presently is being discussed by a broad field of researchers in geography, sociology and architecture. All of them contribute to the understanding of the term from their point of view, according to the space in which they act. This paper intends to open up for a combination of these approaches by showing, how the different understandings in combination can contribute to an empirical analysis of an architectural space. Examples are given from an ongoing Ph.D.-research on the analysis of the exterior spaces of the new housing developments, which arise on the grounds of former industrial harbour fronts, with the case of the area of Sluseholmen in Copenhagen, Denmark as example. The analysis aims at an understanding of the spatial transformation of the harbour space, the transformation of the architectural space.

Keywords:

Scale, harbour, perception – conception, transformation, space of bodily presence

Introduction

This paper is aiming at setting up a theoretical framework through which to look at a specific space. It is embedded in the analysis of the exterior spaces in the new housing areas at the former industrial harbor fronts. Questioning the nature of this space inevitable leads to what forms this space (and what influences the transformation of it).

A space is many things – and than again it is everything but a "thing"¹. Space is the absence of materiality, while at the same time it is made up by all that, which is absent. It is made up by associations, by the way it is perceived and imagined and it is made up by relations. At one hand this makes it a very personal experience, while on the other hand there exists always a group image: Certain parameters will be perceived in the same way by a particular group of recipients².

This search for specific characters of this particular space leads me to the notion of scale.

Interpretations of the notion of scale are as numerous and widely spread as understandings of space, both being constantly discussed by a wide variety of researchers especially in geography, sociology and architecture. All of them contribute to the understanding of the term from their point of view, according to the space in which they act.

The paper is neither an attempt to give an example on how to understand "scale" in one way or the other nor is it an attempt to combine various understandings to one overall definition. Instead it is an attempt in examining how the variety of positions in combination can make up a theoretical framework by which a space can be analysed.

The paper is embedded in the ongoing Ph.D.-project with the working title "Exterior spaces – design, organisation, significance in the transformation of harbour spaces". The area of Sluseholmen in Copenhagen, Denmark is used as example. The Ph.D.-project aims at an understanding of the spatial transformation taking place in the area of the harbour, meaning the transformation of *the architectural space*³.

The location:

Exterior spaces in the new housing areas at the harbour fronts

A growing number of closed down industry harbours became the scenery for many prominent urban

development projects during the last years, where an increasing number of closed down port facilities transforms to attractive housing developments⁴.

These areas provide both, special qualities, like the central location, the view to the harbour front and the possibility of public spaces towards the waterfront as well as special challenges in creating urban space for both, the public and the (new) local residents.

The high number of housing units arises at the same time with a high variety of exterior spaces, which become part of the over-all urban landscape of the particular city.

These transformed harbour areas are understood as a specific case, whose analysis conclusions can lead to a more general contemplation on the exterior spaces in urban developments.

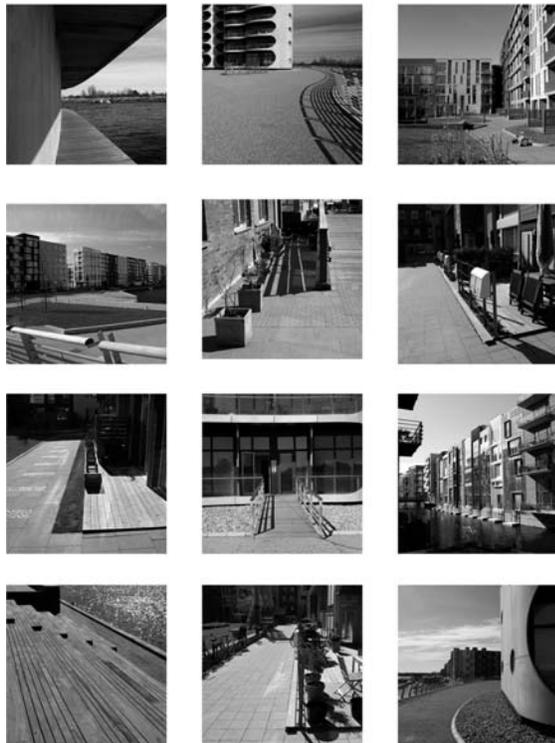


Figure 1: exterior spaces in the transformed housing area of Sluseholmen, Copenhagen

The notion of scale

Scale is...

"... the relative size, extent of something.

... a range of values forming a system for measuring or grading something.

... a series of marks at regular intervals on e.g. a ruler.

*... a relation between the actual size of something and a map, diagram, etc. which represents it."*⁵

By architects it is most commonly used as the latter, referred to as for example a scale of 1:2.000.

In the Diderot's and D'Alembert's Encyclopedia scale is defined as follows: *"In geography and in architecture, a scale is a line divided into equal parts and placed at the bottom of a map, a drawing or a plan, in order to serve as a common measure for all parts of a building or else for all the distances or places in a map"*.⁶

There are many descriptions to be found in the various dictionaries, whose summit adds up to an understanding of *scale* as some form of cartographical measurement, relating to a standardized ruler as a common reference.

And yes, scale is all that, but than again this paper asks you to put aside this understanding of scale as a measurement of the dimensions of a space to give room for an understanding of scale as an active parameter in the materializing of space.

The notion of scale is a question of relation and it is a question of relevance⁷. In that sense *scaling the transformation* is not a question about grading the success of a transformation, but of understanding the relevancies and relations behind the visible process.

Transforming a harbour from being an industrial harbour to a housing development is – more than anything else – a matter of relations. It is a relation of before and after, of form to structure, of interior to exterior, of a place to its surroundings, of housing to urbanity, of the private to the public - a relation of a high variety of scales in general.

Setting up the framework

In the following I will show, how three different understandings of scale set up a framework in my approach of understanding the exterior spaces of the transformed harbour space:

Scale in the understanding of networks:

As a mapping of the parameters which the space sustains, whose scale is determined by the complexity of the relations of those parameters.

This leads to an understanding of the interaction of various actors contributing to how the exterior spaces of the *harboura*⁸ housing developments appear in reality.

Scaling as a mode of shifting between spaces of reference⁹ - the architecturological scales:

The notion of scale as a question of relation and as a question of relevance. From that starting point I ask to the relevancies on whose grounds these new exterior spaces came into being as well as to relevancies that determine the general perception of them.

This includes an understanding of how the architectural space consists out of conception and perception, with scaling being the mode of shifting in-between.

Scaling as a relation of my bodily presence¹⁰ in the world:

How do I perceive the atmosphere of the exterior spaces of the housing developments as an individual?

***Scale in the understanding of networks:
Placing the "architectural harbourness"
into a network of spatial parameters***

Even so a whole area gets transformed (spatially as well as functionally) as it is the case in many harbour areas, the "has been" of the area will always be a part of experiencing it in the present – especially in its exterior spaces. Once you move into the housing units (and the same could be said about office units and, although in a less degree, about cultural spaces) the perception and the acknowledgement of their spaces will be much more dependent of their functioning. The exterior spaces, too, are defined by their various functions, but more than that they also constitute the nerves, the bloodstreams through which the private person is connected with the outer world around itself. They are not only part of the networks of landscape, urban spaces and traffic systems, but also of a network of time, of memories of the past and of expectations to the future – of both: the space itself and of the persons perceiving the space¹¹.

In the matter of the harbour transformations the formative relations seem endless – the more you seem to understand them, the more they reveal themselves.

In the understanding of the Actor-Network-Theory (ANT) this complexity conforms to being of large scale since many actors are participating in a high variety of relations¹². The ANT argues for a flat, star-like structure in which all, subjects and objects are acting on one level. The actors coalesce in networks, with each network becoming an actor in a wider network: The idea of the part and the whole, where every whole can be divided up into different parts again. In this network it is not the actors as such, which are of relevance, but the connections they coalesce: "*The only question one may ask is whether or not a connection is established between two elements.*" Bruno Latour states¹³.

In the case of the harbour areas a high variety of actors participates in the network we perceive as a harbour spaces as well as in the act of transforming those spaces. (Fig. 2)

A thesis to be proofed in the analysis of the PhD.-project is that the scale of a *harbourseque*¹⁴ space in that understanding is much bigger than the scale of the new housing developments.

Architects play their part in this network by contributing to this process of transformation¹⁵. They did not provoke or initiate it, as that was done by developments in the general process of globalisation of economical processes and transport possibilities¹⁶, but they contribute by the presentation of it, meaning the visualisation of those global processes and changed demands of society (and thereby also contributing in changing those demands).

As an architect we can only ask what we can do as architects, where and how we can operate in the space where architecture is taking place.

In the discussions about former industrial harbour areas, which got transformed to housing areas, one critic remains reappearing: The character and the liveliness of a harbour got lost.

But what actually makes up the architectural character of the harbour? What is this atmosphere, which we miss in the transformed areas, grounded on? How much is it based on the spatial structures?

Even so there exist numerous articles and papers of what is going on in today's harbours, a scientific analysis about the architectural spatial qualities and structures of a harbour still seems to be missing. But without the knowledge of the architectural structure of the former industrial harbour, how can we use a reference to those spaces as a critic of the architecture of spaces of today?

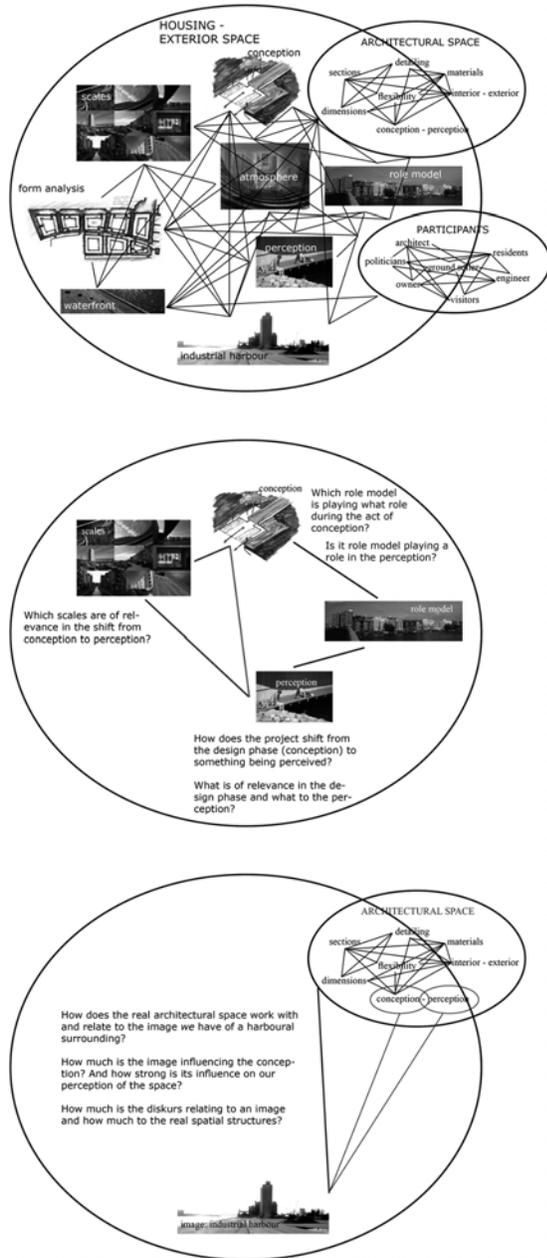


Figure 2: network of actors participating in the transformation process of the new housing area of Sluseholmen, Copenhagen/Denmark and possible questions to be asked to the connections

My interests are the intensive qualities of the harbour: A harbour can be extended or reduced, it still stays a harbour. The knowledge of its intensive qualities can contribute to a successful transformation, if it is used to scale the new design – either by preserving them or by consciously deselecting them. As an underlying idea of the architectural space of a harbour – based on an analysis of what constitutes the architectural identity of harbour space – I introduce the term of "architectural harbourness".

The material used for my analysis is based on my own perception of the spaces: Without any preceding studies I registered them through my senses and with photographs on walks through the harbours of Aabenraa and Køge, functioning harbours in Denmark.¹⁷ Based on my walks I will adumbrate the following themes as relevant characteristics of a *harboursque* space:¹⁸

A fluent space as an underlying structure:
 constructions seem to be floating on the big platform of the harbour district according to sand piles, the spatial structure is open: the exterior is not space in-between, but the buildings are placed inside this space, the relation of the exterior to the interior is threshold free, flexibility exists in use and function as well as in the understanding of temporariness and steadiness and there is a rich variety of intermediate spaces. (Fig. 3)

Scale jumps:
 The space of the harbour is open to a variety of scales. It does not only tolerate them, but actually is constituted by them. It is this variety of scales which shapes the picture of liveliness and which offers a range of flexibility concerning the functions. These scale jumps happen not only as collisions of physical dimensions but also on a mental, a functional and a temporal level.¹⁹ It is especially this characteristic of scale jumps a large part of our fascination of the harbour is grounded on and which makes the space of the harbour obvious for contemplations about scale.²⁰

Conception of space:
 No overall concept for the area is legible. The area seems to be solely developed according to the demands. The concept is oriented towards a process and towards relations of functions. These functions and processes change over the course of time. As a space of movement the harbour is not only open to those changes, but it is made up by the idea of change, process and movement.

Accordingly its spatial structures are flexible, the segregation of interior and exterior spaces is fluent and there is no limitation in scale.

Connections to surrounding spaces (edges/ transitions):
The various kinds of edges play a decisive role in the structure of the area: edges between water and land, between outside and inside, between the different harbour areas and between the city and the harbour.



Figure 3: Harbour space in Aabenraa: buildings seem to be placed randomly on the platform of the harbour space – the same way as sand piles are

In the understanding of the ANT these aspects function as actors in the network that complies with the overall image of the harbour. Being a complex network by themselves they contribute to the largeness of a harbour space. But although the ANT can draw a diagram to represent this architectural space in the complexity of the overall context, it does not explain the processes going on inside this architectural space. The ANT draws the attention to the connection of the actors, but I want to go further in asking what is happening in those connections.

Scaling as a mode of shifting

The French architect and theoretician Philippe Boudon is looking at the architectural space from a scientific point of view in what he calls architecturology. In his architecturology he is referring to two separate spaces: the space of conception (as the space of thought, where the design is taking place) and the space of perception (as the space of reality and usage). He is aiming at explaining the process, which transfers a project from one space to the other by the notion of scale, with scale no longer being understood as a matter of complexity, but as a frame of reference the designer is acting in. By doing so, he can draw our attention from the "real" architecture to the parameters, which influence the creative process taking place in the conceptualizing of a design object. It is in this frame of reference, where decisions are made about relevancies to the design - where it is decided about the scales of relevance²¹. Boudon writes: *„If we suggest to define the architectural space as a unity of two spaces, of the real space and the thought space, in which one is picturing itself in the other and vice versa – than scale is the act of the transfer – in the largest terms of one space to another.“*²²

The act of giving scale is the central focal point in this process: through scaling the project is transferred from (the space of) thought to (the space of) reality²³. The architecture to be perceived in reality thus is a representation of processes inside the space of conception – in which again the anticipation of the perception already was of relevance (as equaling to being a scale, as a relevance that influenced the design decisions). (Fig. 4a)

This idea of scaling as a transfer between spaces is a valuable tool in understanding a transformed space in relation to its origin, but also the relations that form the present space itself.

On that background an understanding of the inherent qualities of a harbour space – an understanding of the *architectural harbourness* - can contribute to a successful transformation if being used as a scale: in transferring one space to another as well as in transferring the general image of a harbour space into an actual physical surrounding. (Fig. 4b)

The characteristics of a harbour named above make up scales, which contribute in the process of design of the new housing spaces: Each actor as such works as a

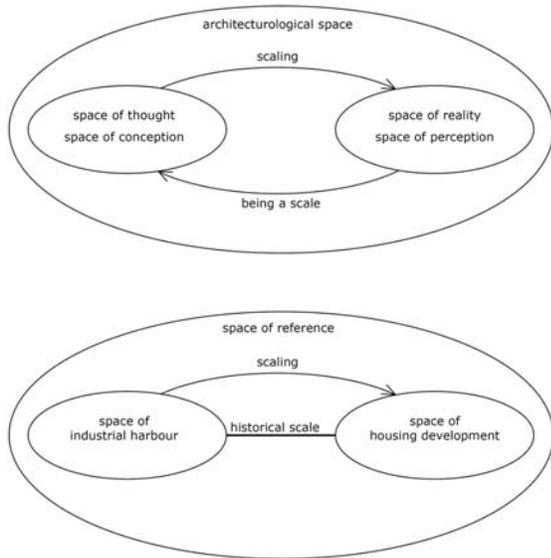


Figure 4a: scaling as the transfer from the space of thought to the space of perception inside the architectural space

Figure 4b: scaling as the act of transferring one space into another inside a space of reference

space of reference which will function as a scale in the process of transferring the architectural project from the space of conception to the space of perception.

The architect for example takes a decision about the threshold between the exterior space and his building. In doing so, he takes decisions about the relation of his design to the pre-existing situation of the industrial harbour by either taking these circumstances into consideration or by not doing so (knowingly or not knowingly).

The next questions therefore are: What are the scales of relevance in the process of harbour transformation? And: Which scales determine the space as we perceive it today?

The following gives an example of how this understanding of scale as a space of relevance is used in interpreting the exterior spaces, by referring to some of the scales Boudon is bringing forward: (Fig. 5)

Historical scale:

Some of the main questions are: What characterises a harbour? Which qualities are getting lost in the transformation process?

The search for the architectural character of a harbour is not a matter of counting the number of maintained harbour elements, but of analysing what constitutes the identity of harbour space. First then it is possible to go back and ask, if the new residential areas actually deal with their location on a harbour site. Is *harbourness* playing a part in the process of transformation? Meaning: Is it a conscious scale in the conception of the new spaces? And: Is there reason to talk of a loss of identity in these transformed areas?

The matter of fascination of a harbour - and to that extend the idea of the harbour each of us has in his head - is very regular and genetic: There is an understanding of harbour, which is independent of location, of nationality and in some regard also of time. When the loss of harbour character is criticized regarding the transformed areas, the comparison seldom is based on a comparison of the same site before and after, but on a comparison with the image (as the general understanding) of *the* harbour and a specific housing development.

Scale of the model:

The island of Java, Amsterdam/Holland is the clearly stated role model to the district of Sluseholmen, Copenhagen/Denmark. Many references are recognized easily and at first glance the import of those new ideas (water channels between the houses, water right up to the facades, vertical structuring of the housing rows with a variety of architects contributing...) seems enriching to the otherwise well known urban structures of Copenhagen. On second glance again, Sluseholmen becomes an oversimplified copy of an original idea, a mere scheme of a lively concept. Java is embedded in the local traditions, whereas Sluseholmen is an import, which neither does grow up to the spatial richness of the original nor to the richness of relations inside the district or of the district to its urban context.

By knowing the role model Sluseholmen itself is perceived in a different way, especially the interpretation of the identity of place is seen in a new differentiation.

Social scale (understood as the connection of the public to the private):

Private space, public space, public domain²⁴ and their meeting to each other are of central significance to the

functioning of a housing development, to its embodiment in the urban context and to the perception of both the residents and the public. The space of the industrial harbour is highly privatised, while its structure as well as its image speaks of openness and accessibility to the world. In the housing developments the exterior space is turned to public ground while it often lacks the fundamental attributes, which actually will turn it into public domain.



Figure 5: Scales at stake in the transformation of Sluseholmen, Copenhagen/Denmark

The concept of Sluseholmen is based on an open graduation of public spaces around eight building blocks (and along the water), half-private (or public?) spaces in the yards and private terraces. It describes itself as an area full with life and activities and a large, theatrical staircase down to the water offers a spatially attractive public space. Yet there is no public domain: the exterior spaces are all accessible, but not inviting to stay since they do not offer anything to experience, to share or to exchange on - the area seems voided for people.

Technical scale:

In the conception of a project the technical aspect, choice of materials, considerations regarding sustainability, statics etc. naturally will play a decisive role.

The materials of the industrial harbour are not only rough in surface, they are rough and big in scale - on all scales (dimensions, detailing, surface): There is not a lot of detailing about them, they consist of flats, which are built up to constitute a warehouse, silo or whatever vessel is needed to contain something inside of it.

The construction of housing units on the other hand is based on a completely different understanding of the scale of detailing. Thought is spent on every tiny detail, colour and material.

Scaling as a relation of my bodily presence in the world

And yet, even so (or rather: because of) an analysis of those scales is taking a discussion about the spaces on objective grounds, it is still missing the most fundamental relation: The relation of me to the space around me. And that is both: me as a designer in the process of conception - since the process of design will always be more than decisions about relevancies, but also include an intuitive process - and me in the perception of the world outside of me.²⁵

How that meeting is conceptualised in the design project and how it is perceived spatially in reality will play a central role in the acceptance and in the image making of the residents as well as the general users of the urban network.

My walks through the industrial harbours as well as through the housing developments were not planned ahead, but spontaneous tours, guided by the spaces themselves. My intention was to be open to the perception of the space with all of my seven senses²⁶. Images and impressions were collected in my head and on numerous photographs to be recollected, ordered and analysed later on, after getting some distance to the immediate bodily experience.

The images I take home from those walks have to be separated into personal experiences and objective (as scientific) matters. To the latter Boudon offers a vocabulary to discuss architecture as a scientific matter.

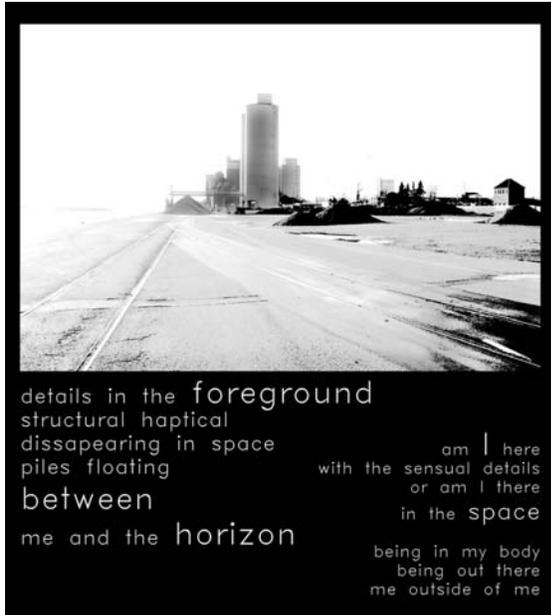


Figure 6: placing myself in the space of the harbour

In a discussion, like the one about the harbour areas, which very much is based on pre-existing images and unspoken (or in any case not adequately formulated) expectations, this understanding offers a way of breaking a complex matter down to traceable topics. In that sense it offers a tool to analyse and discuss architectural space. But all this will never give you a feeling of the space as you will experience it while actually being in it – in the space of bodily presence as Gernot Böhme names it²⁷. As a walker I can register the space with my senses: I see the physical elements, I hear the wind, the water, seagulls, machines and cars, I touch surfaces, feel the wind, the air, I smell the salt, the wood, sand and the petrol and I taste the air and the dust. Through movement my body experiences the space and through my body I experience scale. This experience will always be an experience of being inside and outside of me in my body and it will find a high variety of representations, which all will have a consciousness about their interpretative character in common. (Fig. 6)

This relation of me to the environment is inherent to the notion of perception. Even so it is not a transfer from one

space to another (as the character of scaling according to Boudon) it still is a form of scaling: of placing myself in the surrounding and of taking the surrounding inside of me.

Conclusion

This paper states how various notions of scale (the Actor-Network-Theory, the architectural scales by Philippe Boudon and understanding of bodily presence by Gernot Böhme) can set up a theoretical framework for a spatial analysis, along the case study of the exterior spaces in the new housing developments in the former industrial harbour districts. It is the variety of scales being one of the inherent qualities of a harbour combined with the relevance of relations established by the process of transformation, by the location in the urban context and by the meeting of public and private in these special housing districts that suggests a spatial analysis by the notion of scale.

It has been discussed, how the various approaches of dealing with scale – the placing of the space in its surroundings, its process of realisation and the perception of the space by an individual – can be used to analyse a space from each their viewpoints and thereby contribute to the analysis of the architectural space.

Further results of this analysis will be described in detail in following papers and particularly in the final PhD project – right here they merely indicate examples to underline my intent of implying scale in an architectural analysis.

Biography:

Meike Rehder graduated as an architect from the Technical University Braunschweig in Germany in 1999. During her studies she has received various scholarships, among others for one year studies at respectively the Kent Institute for Art and Design in Canterbury, England and at the Royal Danish Academy of Fine Arts School of Architecture in Copenhagen, Denmark. After her master she moved to Copenhagen, where she worked for KHR architects and JJW architects on various competitions and as a project architect. In 2009 Meike started her PhD-studies at the Centre for Public Space Research at the Royal Danish Academy of Fine Arts School of Architecture in Copenhagen.

¹ "...a gap or an area that is not filled between two or more objects or points [...] an area or a place that is not occupied and is available for use..." [Oxford Advanced Learner's Dictionary. Oxford: Oxford University Press, 1995].

For a confrontation of "place" to "space" see e.g. Creswell, Tom, *Place – a short introduction*. Oxford: Blackwell Publishing, 2004

² Kevin Lynch describes the process of building an image very precisely in his book *The Image of the City*. He, too, distinguishes between an individual and a group image and emphasizes the group image as the relevant one regarding urban planning: "Each individual creates and bears his own image, but there seems to be substantial agreement among members of the same group. It is these group images, exhibiting consensus among significant numbers, that interest city planners who aspire to model an environment that will be used by many people." [Lynch, Kevin, *The Image of the City*. Cambridge: The MIT Press, 1960. p. 7]

³ Architectural space is understood as the space which is grounded on the design of the physical surroundings. [Oxford Advanced Learner's Dictionary. Oxford: Oxford University Press, 1995]

⁴ Forecast of the report of Copenhagen's commune *Kommunaløkonomiske konsekvenser af nye boliger i København (commune economical consequences of new housing in Copenhagen)* says, that 9.000 out of the approximately completely 20.000 new housing units will be developed along the harbour front of Copenhagen in the years 2002-2015. [Kommunaløkonomiske konsekvenser af nye boliger i København. Københavns Kommunes rapport 2002, p. 35.]

⁵ Oxford Advanced Learner's Dictionary. Oxford: Oxford University Press, 1995

⁶ As quoted by Boudon in Boudon, Philippe: *Back to scale*. To be published.

⁷ As brought forward in Boudon, Philippe: *Der architektonische Raum. Über das Verhältnis von Bauen und Erkennen*. Basel: Birkhäuser Verlag, 1991

⁸ I am introducing the term *harboural* as a description for the physical placement of the new developments on the former harbour grounds.

⁹ This space of reference is the particular frame of interest, the matter of concern to with the designer is relating during the design process. Thereby this particular theme becomes a scale in the design of the project.

¹⁰ "Space of bodily presence" as experiencing space through the presence in your own body in the space as opposed to viewing it on photographs as presented by Gernot Böhme in Böhme, Gernot: *Architektur und Atmosphäre*. München: Wilhelm Fink Verlag, 2006.

¹¹ As Gadamer puts it: "In our daily life we precede constantly throughout the coexistence of past and future." free translation of: "Unser tägliches Leben ist ein beständiges Schreiten durch die Gleichzeitigkeit von Vergangenheit und Zukunft." [Gadamer, Hans-Georg: *Die Aktualität des Schönen*. Stuttgart: Reclam, 1977. p. 12]

¹² Albena Yaneva explains how, in the understanding of the Actor-Network-Theory, a computer rendering can be of

bigger scale as being of higher complexity as a society: "The smallest design entities are much more complex than the bigger, always richer in difference and complexity. Therefore, the smaller is always bigger. Or, as Gariel Tarde has put it: 'there is more complexity at the basis of the phenomena than at their summit'." [Yaneva, Albena. *No scales, but Ethnographic Attention to Scaling*. To be published.]

¹³ Latour, Bruno. *Reassembling the social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press; part II How to render Associations Traceable Again, pp. 159-247

¹⁴ Whereas the term *harboural* was introduced for the mere physical location and character of a place does the term *harboresque* include the being of a space on its various levels of perception.

¹⁵ Architect as "a person who designs buildings and supervises the process of constructing them" [Oxford Advanced Learner's Dictionary. Oxford: Oxford University Press, 1995] Here I also include the urban planner and the landscape architect as they, too, participate in the design of the architectural space to be analysed.

¹⁶ Dirk Schubert describes the background for the transformation processes taking place along the harbour fronts in his introduction chapter to *Hafen- und Uferzonen im Wandel* as a result of global restructuring processes, leading to a qualitative change of working processes combined with a physical relocation [Schubert, Dirk: *Hafen- und Uferzonen im Wandel*. Berlin: Gerald Leue Verlag Berlin, 2007/2002]

¹⁷ Aabenraa is a little town in the south of Denmark, placed at the end of Aabenraa fjord. It is a deep-water port by the Baltic, close to the European motorway network. The whole of the harbour is divided into different parts: In the north you have the "old harbour" which today is the industrial harbour. Southwards this area is followed by the fishing harbour, the leisure harbour and the beach area of Aabenraa to finally close up with an industrial area which is not accessible for the public. This line of differentiating harbour facilities offers a string of changes and transfers to be studied in both: the change and the contrast from one to another.

The harbour of Køge, one of the oldest harbours of Denmark, is a functioning industrial harbour, too. As most of today's harbours, it is a harbour in change: It is going to be an extended industrial harbour in the northern part (it is getting extended for ca. 126 mill Euro with ca. 1200 wharf metres and an area 40 ha over the coming years), while its southern part will be transformed to housing developments. The first part of this development already is realised. Still showing its original character, while parts of it start to transform right along it, makes Køge an interesting harbour to study.

¹⁸ These themes only get introduced here in a compromised form to illustrate what the analysis is about. They will be discussed more intensely in the actual Ph.D. project. All those themes function as actors in the network of the architectural space – and as such they can be divided into an endless number of actors again.

¹⁹ A difference of scale is much more than a difference in physical dimensions. In his article *Back to scale* Boudon shows, that the scale difference between the Manhattan skyscrapers to Danish houses is much more than just a difference in physical dimensions: "Though there certainly is a difference between the scale of Danish houses and that of skyscrapers in Manhattan, what is meant through the term that justifies speaking of scale instead of dimension or, even more simply, of size? For it is obvious, in such a matter, that we are no longer dealing with a cartographic scale."

In that sense he presents the royal chapel of Versailles with its relation to the symbolic space of reference to the royalty as a larger church than a good number of other churches even so its physical dimensions may not be so. [Boudon, Philippe: *Back to scale*. To be published.]

²⁰ For elaborations on the fascination of scale jumps in the harbour see for example Weyer, Julien, *Havnefascination – exit soveby, enter havneliv*, in ARKFOKUS, 4/2005, pp. 14-17

²¹ With the architecturological scales Boudon is putting up an empirical list of twenty scales every project deals with as for e.g. the geometrical scale, the functional scale, technical scale, geographical scale, parcel scale, neighbouring scale, visibility scale, human scale, global scale, level of conception scale, extension scale, economic scale, cartographical scale, optical scale, semantic scale etc.

These so called scales appear for the first time in the last chapter of Boudon, Philippe: *Sur l'espace architectural*. Paris: Dunod, 1971.

²² Original text: "Wenn wir vorschlagen, den architektonischen Raum als eine Einheit aus zwei Räumen zu definieren, aus dem wirklichen Raum uns aus dem gedachten Raum, wobei sich der eine im anderen abbildet und umgekehrt – dann ist der Maßstab das Gesetz der Übertragung – im weitesten Sinne von einem Raum in den anderen." [Boudon, Philippe: *Der architektonische Raum. Über das Verhältnis von Bauen und Erkennen*. Basel: Birkhäuser Verlag, 1991. p. 74]

²³ Original text: "... konnten wir Maßstäblichkeit als das definieren, das den Übergang von dem einen zu dem anderen architektonische Raum regelt, und konnten, von da aus, Maßstäblichkeit grundsätzlich als eine Funktion des Übergangs von einem Raum, welcher Art auch immer, in einen anderen Raum definieren..." [Boudon, Philippe: *Der architektonische Raum. Über das Verhältnis von Bauen und Erkennen*. Basel: Birkhäuser Verlag, 1991. p. 88]

The act of giving scale is scaling as deciding about relevancies: A physical dimension for example is given in accordance to a technical necessity. In the design process the necessity is of relevance, thus the architect is deciding about a dimension, which will take the project from the idea of a beam as bearing construction to a beam with certain measurements in reality.

²⁴ For a definition and precision of those terms see Hajer and Reijndorp in *In Search of New Public Domain*: "We define 'public domain' as those places where an exchange between different social groups is possible and also

actually occurs. [...] Public space is in essence a space that is freely accessible for everyone: public is the opposite of private. That is not to say that every public space is public domain. Public domain entails additional requirements." [Hajer, Maarten and Reijndorp, Arnold: *In search of new public domain*. Rotterdam: NAi Publishers, 2001, p.11.]

²⁵ Among other Peter Bertram elaborates about the intuitive method in the design process in Bertram, Peder, *Intuitiv Metode*, Copenhagen: Kunstakademiet Arkitektsskole, 2009

²⁶ Here I refer to the seven senses described by Juhani Pallasmaa in *An architecture of the seven senses*, where the skeleton and the muscles also are described as equal senses in relation to experiencing architecture: "... every touching experience of architecture is multi-sensory; qualities of matter, space, and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle. Architecture involves seven realms of sensory experience which interact and infuse each other." [Holl, Pallasmaa, Pérez-Gómez: *The question of perception*. San Francisco: William Stout Publishers, 2006, p. 30]

²⁷ Böhme, Gernot: *Architektur und Atmosphäre*. München: Wilhelm Fink Verlag, 2006