A Reference Manifesto –
Proposing a field of knowledge in Architecture called Spatial Morphology

Unprecedented knowledge challenges in architecture

The alarmists spreading the threat of the Millenium bug have finally been the ones proven right. More than a decade into the new Millenium we find ourselves in an age of crises difficult to even conceive ten years ago. Tremendous human inflicted disturbances of the biosphere are now accepted as facts and will force us to adapt to continuously changing conditions of existence. Economic crises of a magnitude considered to belong to the past suddenly question the very fundaments of our economic systems and social upheavals in places we thought the most unlikely are currently balancing a thin line between hope and despair.

We might ponder to what degree such an age of crises presents threats or opportunities but what is a fact is that since the beginning of these crises heads have been turning in the direction of the field of knowledge represented by schools of architecture. The future development of our physical infrastructure, not least in the form of cities and buildings, is expected to play a fundamental role in the tipping of these crises in the right direction. But just as the times we are living in has caught society in general by surprise, this newborn interest in architecture, landscape architecture, urban design and urban planning has caught these fields by a similar surprise, facing them with knowledge challenges they simply were not prepared for.

It is argued here that these challenges calls for nothing less than a knowledge revolution of the field and presents its different practices with the long over due impetus to take the critical step from experience based crafts to theory based professions, which in extension also implies a need for architecture as a field of knowledge to finally transform itself into a fully developed academic field. Theory has always been inherent to architecture, it can even be argued that theory is what makes architecture different from building in general, but as long as this remains theory of a tacit rather than discursive kind, which still is the rule in the field, it will
never be able to face up to the challenges advancing in its direction. What has happened is simply that the field no longer can be solely occupied by its inner circle - it has become the concern of society in general.

Spatial Morphology as a new field of knowledge in Architecture

It is in such a context a particular field of knowledge within architecture is proposed called Spatial Morphology aiming to generate knowledge concerning one of the most fundamental entities in human experience – space as structured and shaped by humans. It rests on the conviction that space has never been a naturally given but rather that as far back as we can trace the roots of human practice, space has been the most fundamental technology through which humans have set out to construct their own realities. This is not denying that there is a naturally given, on the contrary, it is only through knowledge on the naturally given that any human constructions have been possible, it is simply acknowledging that we only can develop knowledge on what is humanly experienced, naturally given or not.

Throughout history there are many expressions of such a field of knowledge but in recent centuries there is a particular strand possible to discern under the name of Architecture, expressed both as a specialist practice and a field of learning. It is in such a context that the field of knowledge proposed here belong.

Architectural knowledge

To support the transformation from an experience based craft to a theory based profession Spatial Morphology, just as architecture in general, needs two kinds of theory that moreover are closely intervowen, design theory and architectural theory. Design theory is by nature of a more epistemological kind, a theory about theory, and that is how design theory and architectural theory actually are intervowen. An architectural design theory is simply a theory about how different forms of architectural theory come into play in the process of architectural design.

Architectural design work is about giving shape and structure to architectural artefacts. Since contemporary architectural design work to such a high degree deal with unique and complex situations in almost every project, it is difficult to draw from earlier experience. It is this fact that for a long time has produced the need for architectural practice to take the step from an experience based craft to a theory based profession – architects can no longer argue from the point of earlier examples but must argue from the point of principles. Thus, architecture has become an inherently theoretical field of knowledge. This is the reason why contemporary architects in their design endeavours need support from research and research along a broad epistemological spectrum.

Design work needs theoretical support both in its generative phase, when possible solutions to an architectural problem are formulated (generative theory), its predictive phase, when the performance of such solutions are evaluated (analytical theory), and in its assessment phase, when such solutions are interpreted in relation to a larger cultural and social context (discursive theory). Research in Spatial
Morphology especially aims at the development of analytical theory, keeping in mind that such theory also can be used as generative theory and can support discursive theory. All these are inherently theoretical but represents at the same time different forms of theory. As a matter of fact, they represent the three major knowledge traditions developed in human history: generative theory is what we find in the arts, analytical theory what we find in science and discursive theioyr what we find in the humanities. A design theoretical fundament for architecture is thus that in all architectural design processes all these knowledge forms are needed and come into play, which in extension means that all these are relevant in architectural research.

Architectural research

There seems to be two primary sources in architectural research, architectural ideas and architectural artefacts. Most architectural research deals with both but address them with different methodological approaches in relation to what type of knowledge one is looking for. To a certain degree one can say that the primary source in the generation of analytical theory is architectural artefacts, while the primary source in the generation of discursive theory is architectural ideas. Certainly, architectural ideas are present in architectural artefacts just as well as architectural artefacts are present in architectural ideas. What is essential for predictive knowledge though, is knowledge on specific architectural properties that are possible to tie to specific architectural performances, which tend to make architectural artefacts the primary object of study. What is essential to discursive knowledge on the other hand, is knowledge on the context behind the creation or reception of architecture, which tend to make architectural ideas the primary object of study. In Spatial Morphology architectural artefacts are the primary objects of study, keeping in mind that this also implies studies of as well as development of architectural ideas.

Analysis of architectural artefacts

While the methods and techniques for the critical interpretation of ideas, architectural or other, are quite developed, albeit often debated, the methods and techniques for the analysis of artefacts, architectural or other, are not as developed. This forces any endeavour of architectural research along the lines of artefact analysis to develop analytical tools and techniques. What is at hand is the for all research necessary task to develop tools whereby one can describe ones knowledge object in a productive way. In research phenomena are not just there by themselves, ready to be studied, but need to be generated. In extreme cases we need to build huge laboratories for such generation, such as CERN. In other cases it is just a matter of developing tools that make it possible to see what earlier was not visible, like the telescope and microscope.

Similar descriptive and analytical tools and techniques are just as necessary in architectural research, but its development has to a large degree been neglected. Two things are necessary for the development of such techniques. First, one needs a
clear idea about the nature of the knowledge object one is about to analyse. That is not to say that one aims at defining the true essence of the knowledge object, but that one formulates a productive understanding of it for the kind of analysis one is aiming at. Second, it presumes a clear idea of from what perspective or to what purpose or end one wants to analyse the knowledge object. In the academic field of Spatial Morphology this perspective is the social performativity of architecture, which leads to an understanding of its knowledge object as architectural space as structured and shaped by architectural form.

**Methodological approach**

Methodologically Spatial Morphology is rooted in the social sciences, especially the parts inspired by the natural sciences, that is to say that it primarily work in the field of statistical analysis. More specifically it concerns correlational research, that is, search for relational patterns between different type of phenomena, primarily relations between spatial and social phenomena. Statistical and quantitative description of social phenomena has a long tradition in the social sciences while similar descriptions in architectural research and its spatial phenomena are not as developed. This is the reason for the central concern of descriptive development in the field. How do we build informative models of architectural and urban form in relation to use and similarly how do we quantify architectural and urban form so that we in a productive way can correlate it with different aspects of its social performativity. This also puts Spatial Morphology in the methodological tradition of modelling and simulation.

But such statistical results do not speak in themselves, they are a link between the material world and discourse but they are in themselves not discourse, why they needs to be interpreted in a context of discursive theory, for example social or cultural theory. Therefore such theory plays a critical role in Spatial Morphology not only as an exegetic of its empirical results but also since the empirical studies in Spatial Morphology ultimately aims to generate also discursive theory. There is still reason to stress its primary foundation in an empirico-analytical tradition since it has a specific origin in the study or architectural artefacts, which demands a particular knowledge in the researcher that characterises the field, but it is equally important to keep in mind its dependance and contribution also to other knowledge traditions in architectural research

**The relation between physical form and spatial structure**

As stated earlier architectural design is about giving shape and structure to architectural artefacts, that is to say that architectural design is about architectural form. Absolutely crucial here is the interplay between built form and spatial structure, where built form is a prerequisite for the structure of space just as space is a prerequisite for the articulation of built form. We need analytical tools both for built form and spatial structure that can generate productive descriptions of architectural form for research. Depending on our scientific perspective or purpose, such a
morphology will be of very different kinds. If our approach is discursive the morphological descriptions will tend towards descriptions of architectural form as signs and even language, while in an analytical approach they will tend towards descriptions of architectural form as geometry and even mathematics. Research in Spatial Morphology is primarily based on geometric descriptions.

A geometrically based morphology of architecture can take any direction if there is not a clear idea of the scientific purpose of it. To start with it is clear that architectural form only presents a sub-set of what is geometrically possible. There are two limiting forces at work here. On the one hand the limitations set by the materials that constitute the physical form of an architectural artefact. On the other the limitations set by human use on the spatial structure of an architectural artefact. While the limitations set by the constructive properties of physical materials are rather well known, the limitations set by the “social properties” of space as an architectural “material” are far less known.

When it comes to architectural use in the social sense of the word, that is how architectural artefacts influence social interactions and processes, it is space that is addressed in particular. This means that what is limiting to the geometrically possible when it comes to architectural space is what is spatially relevant to social use of architecture. Spatial Morphology therefore needs to contribute to a morphology that describes and analyses the form and structure of architectural space from the particular point of view of social use.

From firmitas to performativity

The perspective of social use of architecture is a classic theme in architectural theory and history. We can delineate it back to Vitruvius division of architecture into firmitas, utilitas and venustas, where it clearly belongs to utilitas. Utilitas has been given different status and interpretations through history. In the 20th century it held a prime position within architectural discourse, interpreted through the term function. Today the concept of function has become both ideologically and epistemologically problematic, especially when set up as a relation between form and function. Both the definitions of form and function respectively, as they were put forward in architectural discourse during the 20th century, seem to lack a key to how the two concepts actually are related. This is also the reason why scientific knowledge on the subject has proven so difficult to develop. Architectural practice in this regard has also proven most unsuccessful, which in extension has made the discourse on function ideologically difficult.

Therefore it can be productive with a new interpretation of utilitas, substituting the concept of function with the concept of performativity. This concept carries an understanding of architecture, and more specifically architectural space, as not just a background or platform for social processes, but instead as a social material in itself. The other way around, it presents the possibility to analyse and understand social processes as inherently spatial. The more specific understanding of architectural space that opens for such a close tie to the social is an understanding of architectural space as a system or a configuration. Since it is quite easy to understand social entities as systems or configurations, a configurational perspective
seems able to tie the spatial to the social in a productive way. Spatial Morphology therefore has a system approach to the analysis of space, rather than for example a typological or genealogical approach.

The potential of Spatial Morphology

In summary, the general aim of Spatial Morphology is to through research on the relation between architectural design and architectural performativity to formulate architectural theory, primarily of an analytical kind, but as it has been argued, it can also contribute to both discursive and generative theory. Similarly, the prime aim of this research is to support architectural practice, but it can also in a most interesting way contribute to other academic fields where space plays a central role. Ultimately, its aim is to contribute to the development of contemporary society, where the issue of space has been increasingly addressed in recent decades.

Sorted in another way, Spatial Morphology carries the potential to develop a most promising field of research and thereby development of new knowledge, contribute to new fields of education through the dissemination of its knowledge and enhance fields of practice through the application of its knowledge.

It should be stressed that Spatial Morphology as presented here represents a rare thing in the academic world. It is not a field defined by an urgent need of knowledge due to new demands in society, however important and fruitful that can be. It is the discovery of a huge and so far undeveloped academic field that bear promise of great potential of development that can prove to be of importance for innumeral knowledge demands, presently known or not. It is important to remind ourselves what the central knowledge object of the proposed field is - the spatial settings constructed by humans creating the reality of their everyday life. Spatial Morphology aims at the study of the knowledge foundations for these creations.

In this we can detect the ultimate goal of Spatial Morphology - to develop architectural theory that can deepen our understanding, sharpen our critique and contribute to the production of contemporary society and culture. It is a paradox that in the context of architectural research, the truly original thing proposed here is that, instead of using social and cultural theory to understand, criticise and produce architecture, Spatial Morphology uses architectural theory to understand, criticise and produce society.