Abstract - Zusammenfassung

Emergenz Als Gegenmodell zum Determinismus hat sich der Begriff der Emergenz als Erklärungsmuster komplexer Systeme etabliert. Emergentes Verhalten liegt dann vor, wenn aus einer Summe von Einzelkomponenten ein übergeordnetes System generiert wird, deren Eigenschaften ein qualitatives Mehr schaffen als es die Summe der Eigenschaften der Teilsysteme für sich alleine hätte erzeugen können. Dieser Entstehungsprozess lässt sich nicht mehr bezogen auf seine ursprünglichen Teilsysteme rückkoppeln und steht daher im Gegensatz zu deterministischen Modellen. Emergente Systeme sind nicht durch Zerlegung beschreibbar oder reduzierbar.
Über emergente Qualitäten etwas Neues zu erzeugen, könnte auch als das eigentliche Ziel des architektonischen Entwurfs bezeichnet werden. Kompositorische Entwurfsstrategien sind dazu aus sich heraus nicht in der Lage, denn man kann Emergenz nicht *gestalten*. Man kann lediglich Ausgangsbedingungen definieren und diese sich dann entfalten lassen. Entwerfen beschränkt sich in diesem Fall lediglich auf die Auswahl der Teile und die Spekulation über deren eventuelle emergente Verhaltensweise durch Interaktion.

„[...] Typical Parameters of hierarchical design methods - controllability, optimization, predictability, comprehensibility - gave way to parameters inherent to the complex behaviour of swarm systems: adaptability, evolvability, resilience, boundlessness, novelty “(1). From a scientific point of view, these methods cross certain boundaries, boundaries which make it difficult (or even impossible) to give an objective evaluation. It is indefensible to say that these boundaries are indistinct; what is new, however, is to consciously employ these indistinctions as operational instruments (2).

Imagine a Nation's cultural treasure as a piece of landscape. Yet to be discovered in the common sense of a building our proposal for the National Estonian Museum renders a place as a “biopolitical sphere” (3) like Antonio Negri outlines autonomously acting units within global capitalism. The result turned into a morphologic phenomenon delighting the visitor of Estonian National Museum by its simplicity in appearance, whereas the space itself offers a wide range of complexity. The dynamic power innate to the swarming multiplicity of such structures is now being used by a diverse range of social forms of organisation, with the aim of bringing about an increased effectiveness in the accomplishment of their goals.
Complex simplicity

The building of the Estonian National Museum is defined by a rectangular field of a single floor housing the entire programme on one continuous surface.
Gently curving from the outside to the inside the museum is partly lifted up from the ground and invites to enter into the museumScape. Underneath the surface the flow of the landScape continues, escorted by a swarm of artificial lighting. The structure of the ENM is complex, but simple.
The continuity of single room and a softly shifting topography creates a dramaturgic space. Its choreographic potential on one hand is flexible enough to allow different parts of programmes and future changes or developments of the Estonian National Museum. Therefore the spatial configuration intends to be generic and specific at the same time. Compositional design strategies are not able to do it in themselves, as emergence cannot be formed. One can simply define the initial conditions and then develop these emergently. In this case, designing is limited solely to the choosing of parts and the speculation about their possible emergent behaviour through interaction.

Morphogenetic code

The program is interpreted as a code language consisting of a vocabulary of furniture, and hence becomes an architectural tool to generate the museumScape. It is translated into three categories:

1. The working zones defined by the stereotype of a desk
2. The display and archive zones defined by the stereotype of a shelf
3. The communication zones defined by the stereotype of a chair.

All three 'vocabularies' create a complex architectural field within the entire museum, simply be combining it in the architectural 'grammar' defined through the scaped

[1] Ulrich Königs, Andreas Ruby: Toward Moreness, in: assemblage No.33, MIT 1997, p.39.
[2] see: Ulrich Königs: Adaptive and Selforganising Systems in Architecture, in: GAM02, Design Science in Architecture, Wien, 2005, p.107.
[3] Antonio Negri, Michael Hardt: Empire, dt. Ausgabe, Frankfurt a. M., 2003, p. 47.

surface. The swarm of chairs, shelves and desks can be brought into play as a particularly apt model for the phenomena described above, given that it also has aesthetic and spatial qualities, and thus exerts an especially attractive effect for architects to use. “At a high level of connectivity, and a high number of members, the mob dynamic takes hold. More is different.” (4)

Provisional conditioning

The existing program is blurred into the morphogenetic field. Separations between different programs are treated as provisional lines providing a maximum of continuity and interaction among them.
In order to provide the programmatic differentiation, such as climate and light control and to define security zones, a layer of 'provisional spatial divisions' is used. Four groups of vertical elements are included and combined with the programme-code, which together complement each other according the spatial requirements and the given programme. These Elements are simple, stupid and not complex.

1. Fence for security
2. Textile controlling lighting conditions
3. Glass provides climatically and security control
4. Wall separates in terms of security, lighting and climatic conditions

The spatial division is drawn loosely in addition to the coded floor. It is a temporary division, able to be transformed and modified answering the need of a curate program and the size of space whenever and where necessary.
This strategy of provisional divisions emerges a new kind of appearance of the programmed space. For example the separation between public exhibition zones and non-public storage spaces the division is made by a meshed-steel-fence. The visitors are able to see the storage space without entering. Visually, the exhibition and the storage space are extended into a continuous field.
The building gains its own aesthetic, through trust placed in this process-led system - the absence of the classically planning architect does not lead to an absence of architecture - quite the opposite.

Emergent architecture

Architecture is about form and geometries, but design strategies in architecture cannot care about form and geometries as single phenomena. Rethinking geometries means Rethinking programme, Rethinking politics and Rethinking space as a patchwork of parallel operations.
The concept of emergence has established itself as a way of explaining complex systems as a counter-model to determinism. Emergent behaviour exists when a comprehensive system is generated from the sum of the single components; components whose properties create a qualitative advantage compared to the sum of the properties of the part-system. This development process allows no feedback into the original part-system and thus stands in opposition to deterministic models.
The geometry of space and programme are no longer to be considered a constant,

but surrender to the dynamic conditions of a field of flux and changes.

[4] Kevin Kelly: Out of Control – The new biology of machines, London, 1994.