

New Urban Geometries - Part 2:

From Typology to Topology

We are presupposing that each team has established an urban masterplan defining the three primary layers of any urban field:

Urban Massing

Circulation patterns

(Land Use)

The assumption is that the urban massing describes a swarm-formation of many buildings. These buildings form a continuously changing field, whereby

1. no two buildings are exactly the same
2. there are lawful continuities that cohere this multiplicity of buildings

This result may be analysed by means of the concept geno-type/pheno-type.

It should be demonstrated how the rich manifold of buildings can be derived from a single underlying geno-type, or perhaps from a small number of underlying genotypes.

This should initially be demonstrated with respect to the building volumes (= massing) that have already been established.

Parametrically controlled Proliferation

The geno-type(s) are to be constructed as parametric models whereby the systematic variation of its variable parameters produces the multiplicity of phenotypes that constitute the urban field. This method combines the advantages of standardisation – on the level of abstract system types – with adaptive variation and local individualisation.

The variation of parameters should not be randomised, but should rather follow defined laws of transformation that give coherence to the field. Such laws which give an internal logic to the field should also be correlated to contextual conditions, the system of circulation, and the laws of programmatic distribution that should be defined in parallel to the lawful proliferation of building forms.

The building as network of linked parameters

The next stage of work goes beyond the mere shaping of the volume/mass of the buildings. The geno-type(s)/parametric models become complex, organised systems that should define the following subsystems:

1. System of internal subdivision, i.e. sub-volumes, floors, walls, voids etc.
3. Structural system
4. System of internal circulation
3. Envelope defining opaque vs transparent, as well as closed vs openable

The attempt should be made to develop a geno-type that defines and integrates all these systems across the whole range of phenol-typical variation. This task should ideally be solved by means of a single complex parametric model whereby the internal subdivision (e.g. the floors in a tower) is linked to vary simultaneously with the changing outer shape of the model.

Such lawful correlations should not always follow the most obvious/linear path. For instance as the floorplates grow, voids might start to open up instead of the more predictable increase of floor to floor height. The structure should adjust with increasing height etc.

Depending upon the overall span or scope of difference within the field it might be more or less appropriate to establish more than one geno-type (= parametric model) as underlying generators of the field. Phase changes might occur beyond certain parametric thresholds/critical values. Speciation - the splintering of a population into different species - occurs when quantitative variation turns into qualitative difference. This might be necessary if the different subsystems with the parametric model can no longer be plausibly correlated by means of linear lawful variation.

If the field is generated by the interpenetration of two populations – then each population becomes an environmental condition of the other. Dependencies between these population should be conceived.

End.