Typo-morphological Approach to Housing Transformation in Tehran

Typo-morphology: The evolution of typology of dwelling arrangements is developed based on an archetypal building. The basic criteria for classification are enclosure, access, and daylighting. The demonstration represents the limits on enclosure imposed by street access and daylighting in relation to the size of plot.

Samples of house plans are selected from three boroughs of Tehran representing its major morphological transformations. Examples of borough 12 are shown at the bottom-left, from borough 11, examples are at the middle-left and borough 2 at the top-left. In each area, the more frequently repeated types are highlighted by white dotted lines.

Morphological Change Borough 12 (bottom-right) covers the vicinity of the historic city from its origins and embraces the bazaar, arg (citadel) and historic residential quarters. Borough 11 (middle-right) covers some later developments mainly in Pahlavi I (1920-1942). Borough 2, (top-right), the largest amongst the three, covers more recent development up to the present.

Courtyards appear in their largest number mainly in borough 12. Later, in borough 11 they still existed whereas there is almost no trace of them in borough 2 when they were totally replaced by row houses.

The argument is that in transition from courtyard houses to narrow row houses besides cultural conceptions are the constraints imposed by social ‘generic functions’. This transition could be the result of limits imposed by street width, which has its origins in the act of providing street access to each plot of land.

A sample area of 500 metre by 500 metre in each borough is analyzed in terms of plot size, floor plan area, frontage width, ratio of built to open space and density using GIS. On the other hand, the house types are abstractly presented using the archetypal building method.

Archetypes: The abstract representation of house types (left) consists of arrays of elements which could be present or not. The presence of each element is displayed by red and the presence of court in the middle shown by a cross. The grey area is the potential building and the white, open space. Each element then, could be given measurements allowing the calculation of gross and net density, ratio of built to open space, etc. The diagram below explains the representation.