

# THE ENVIRONMENTAL SIMULATOR AND APPLICATIONS OF THE EPISODE THEORY IN TEACHING ARCHITECTURE

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Every architectural design consists of spaces and series of successive spaces. The way in which spaces are arranged to form a series can only be experienced by passing through them.

This means that *movement* plays a very important role in the experience of our spatial environment. At the same time, this presents a major challenge to architects, and especially to students in architecture, who need to take into consideration how their designs are experienced in movement.

Therefore, at the Department of Architecture in Tampere one of our aims in Architectural Design is to teach our students to see the spaces, masses, houses and housing areas they design from the point of view of movement. This training has mainly been provided in the context of a Basic Course and Professional Course I in Architectural Design and the related course on Time and Motion in Architecture. Projects related to the theory of time and motion are started with students in their first and second year. A major role in all this teaching has been played by our environmental simulator, with which we have been able to evaluate our work by using models on different scales (1/200, 1/100, 1/500). We have applied three main perspectives in our courses: *analysis of space*, *series of spaces*, and *series of spaces in motion*.

## 1. Analysis of space

As we set out to tackle architectonic problems in our training courses for first and second year students, we start with an introduction to architectonic space and to the different qualities of space. We analyse the concept of space in architecture and learn how to explore the visual characteristics of space: its shape, size, dimensions and lighting.

*Figures 1  
Space analysis. Interior  
space. Model 1:20.*



*Figure 2  
Interior space analysed  
by the endoscope. Model  
1:20.*



## 2. Series of spaces

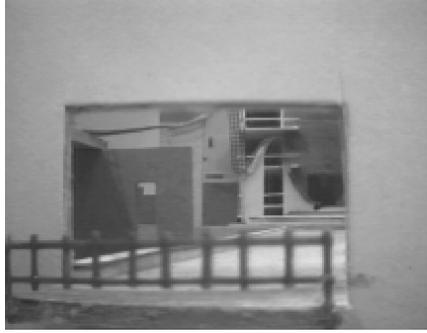
We now organize these spaces we have analysed in a row to create a series of spaces. In order to experience the series of spaces thus created, we look at it and observe it from all possible directions by means of the environmental simulator. We create several series of spaces in succession and consider their relationship to one another. In this process of creating series of spaces, we alternate static and dynamic spaces.



*Figure 3*  
*Mass analysis of*  
*residential area.*  
*Model 1:200.*

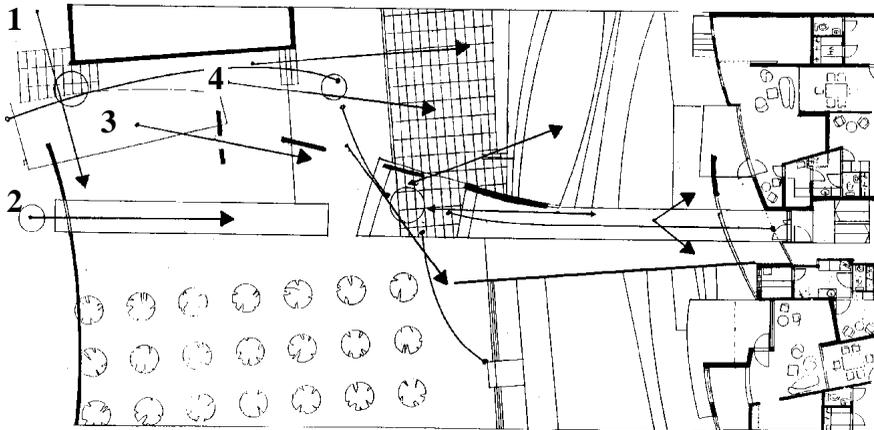


*Figure 4*  
*Composition view of*  
*residential area.*



Figures 5 — 8  
Approaching a block of flats, a student exercise (1:100).

Figure 9  
Viewpoints of the pictures as stated above.



### 3. Analysis of series of spaces in motion

In our training and research work, we have sought to identify and analyse the factors through which we can try to influence the process of producing visual entities. We have created a kind of sign language or map of episodes that we use as a tool in the job of designing. The idea has been to work out a manuscript, a map of visual experiences in which the designer identifies at the outset those factors that are involved in shaping and influencing the visual image of his or her design. In creating our sign language we produce sequences or episodes, each of which has its own place and meaning in the final image. Therefore each period must be analysed separately.

The important thing is that throughout the design process we continue to examine and analyse the series of spaces created by using the environmental simulator. This helps us to evaluate the success vs. failure of the manuscript we have prepared on the basis of the scale model. It is also easy to make any changes that the designer feels are necessary once the experiences of movement have been processed and analysed.

We feel that this sort of visual analysis in motion is extremely important because the human system of perception is so designed that it makes use of the information provided by movement.

In the visual analysis of experiences of movement, the following factors are given central importance in our teaching:

- important views
- focal points for orientation
- periodization, episodes
- spatial rhythm, spatial impression
- shape of terrain
- movement of people
- goals and targets of movement
- beginning, end and interconnections of series of spaces.

On the episode map we indicate all the main factors that have to do with the movement and its direction: the spaces with architectonic significance, the route of move-



ment, the views, focal points of orientation, episodes ( see figure 3 in Seppo Aura’s article). The sign language thus created has proved to be a useful tool that can help the designer more accurately and specifically to organize the elements of the experiences of movement.

#### **4. Creating a series of spaces: an example**

To conclude this presentation I should like to refer to a specific spatial example, the garden of Katsura that was built in the 17<sup>th</sup> century. The garden is located in the Japanese city of Kyoto.

It is interesting to see that this garden, designed with special reference to the views that unfolded in front of the person who was walking there, is grounded in the same idea of design that we have termed episode theory.

The following figure provides a map for the area around the Katsura entrance. There are also a few pictures that illustrate the entrance as well as a route to one of the many tea rooms in the garden.

*Figures 10 — 15  
Pictures of Katsura:  
1. Gate in entrance yard.  
2. View leading direction  
of movement. 3. View of  
tearoom. 4. Approaching  
tearoom from the rear of  
the building. 5. View of  
courtyard upon arrival at  
tearoom. 6. View from  
the front of the tearoom  
towards entrance.*

*Figure 16  
Map of the Katsura area.*

