

Designing Architecture as Dynamic Experiences

New possibilities for architectural design through transposing compositional methods and structural elements from Film

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Abstract:

We present and discuss an experimental architectural student design course which explores the transposition of design techniques and compositional and structural elements from film into architecture with the aim of enriching architectural design.

We demonstrate how focussing on understanding architecture as designed experiences and initially strategically ignoring more traditional aspects like typology, form or organization, a richer and more humane architecture can be designed and new ways of creating inspirational spaces can be found.

“For a building to be motionless is the exception: our pleasure comes from moving about so as to make the building move in turn, while we enjoy all these combinations of its parts. As they vary, the column turns, depths recede, galleries glide: a thousand visions escape.”

Paul Valéry,

Introduction into the Method of Leonardo da Vinci

“A building in which nothing is designed for sequence is a depressing experience.”

Rudolf Arnheim, *The Dynamics of Architectural Form*

Design Experiment: Interest, Motivation and Background

We are interested in designing architecture that offers its users spaces not only of utility or comfort but also of inspiration.

Buildings are experienced in a sequential flow of direct and unfiltered perceptions. But the design and composition of such an experiential sequence is not very often part of architectural design. Much more prominent parts are given to aspects like form, typology, function,

organization, construction or even style. To learn about how to design for experiential sequences, we looked at the only art form that specializes in such direct multisensual experiential sequences: film. Music might be considered, too, but is restricted to the auditive sense only. Literature, another worthwhile area of study, has always to be actively interpreted by its readers. Where in architecture, users are - thankfully - free to move through a building as they wish, film makers have complete control over the perceptions of their audience¹. This command has facilitated the development of a

highly refined repertoire of techniques for designing, composing, structuring and fabricating sequences of experiences.

We experimented with transposing such filmic techniques of into architecture in a design course with students.

Our intention is not a theoretical study of parallels in architecture and film. Although such a study would be very worthwhile and groundwork has been laid in several places ², the realization alone that such parallels exist provides us with incentive enough to start practical experimentation. As the director Andrej Tarkovsky remarked: *"A Poet has the imagination and psychology of a child, for his impressions of the world are immediate, however profound his ideas about the world may be. Of course one may say of a child, too, that it is a philosopher, but only in some very relative sense. And art flies in the face of philosophical concepts. The poet does not use 'descriptions' of the world; he himself has a hand in its creation."* [Tarkovsky 1986, p 42]

From the early days of film, architecture and cinema have been close: Sergej Eisenstein found a cinematic description avant la lettre in Auguste Choisy's observations about the Acropolis, and he was in close relations to Le Corbusier, whom he got interested in film - certainly not uninspiring for Le Corbusier's development of the cinematic Promenade Architecturale.

The architect Bernhard Tschumi has been drawing extensively from film and film theory, and the architect Rem Koolhaas has even started out as an author of film scripts before turning to architecture.

Filmic Production Techniques

A Film is produced in distinct subsequent steps: Treatment, Screenplay, Shooting, Editing [Montage], Postproduction.

We selected 3 of those steps for translation into architecture: the improvisational development of a treatment during shooting, the montaging of previously filmed material, and the re-cutting / montaging of an already finished film during postproduction.

Usually, a rough theme and a plot are described in a

brief treatment which is developed into a script that is then shot scene by scene.

The script, though, is usually changed and evolves during the production, responding to the material already shot and integrating the results of continuous discussion and criticism. In extreme cases, no script is used, but the film evolves from a rough treatment through intense improvisation and interpretation with the actors on set ³.

Such a process of intensely collaborating improvisational development is quite rare in architecture as architects seldom work from a mere theme; usually, a precise catalogue of functional requirements is translated into a building. Yet, *"to discover the movie as it progresses"* ³ can be valuable in architecture, too - and is, in fact, evident in the work of the film-trained Rem Koolhaas or, for example, Kazuyo Sejima and Ryue Nishizawa's projects.

A film is montaged from previously shot sequences, it is created at the editing table. There, the decisions about what of the existing material to use and how to use it are made. Previously made plans are then always altered, and occasionally the character of a film is totally changed. Only subsequent editing makes the hypercomplex narrative structures of various contemporary movies possible ^{4,5}. Sometimes, finished films are completely re-cut, usually by its producers to the dismay of its director. To state but one extreme example, Orson Welles' 'Touch of Evil' was released in 1958 in a version much different from Welles' intentions and only 30 years later - and 13 years after Welles' death - re-cut according to a 58-page treatment that Welles had written after seeing the version that was about to be released ⁶. In fact, having the right of the personal 'Final Cut' is a privilege granted to only a few filmmakers. Editing is nowadays understood to be an art form of its own [see Ondaatje 2002].

To make the most of already existing material, it has to be continuously creatively re-interpreted and re-evaluated. In cinema, this skill is highly developed because of the necessity to stick to existing material: re-shooting scenes after the cast and staff have disassembled is very expensive. As this predicament does not exist in the same way in architecture, this re-interpretative and re-evaluating skill is not very developed and its creative potential largely untouched.

Filmic Design & Structuring Techniques

To produce the film sequences that can subsequently be cut and montaged, actors playing on a set are filmed with a camera. The possibilities of camerawork define which perceptions the film's viewers will be subjected to. The camera frames a scene, it can move, rotate, change its lens angle, its focus, its depth of field. In editing a film, film makers differentiate between a number of ways of how to montage sequences to create various kinds of transitions and relationships between the sequences, most importantly jump cuts, match cuts, parallel montages and delayed drops.

Transposing filmic Techniques into Architecture: An Experimental Design Project

The production, design and structuring techniques from film described above were transposed into architecture

in an experimental student design project divided into 6 stages:

- a. Direct transposition of single film sequences into spatial constructs.
- b. Design of architectonic fragments on the basis of thematic specifications.
- c. Systematization & Cataloguing of the produced material.
- d. Development of dramatic structure and functional content on the basis of the produced material.
- e. Cutting, editing, montage of the existing fragments plus necessary 're-shoots' into a coherent architecture.
- f. Re-Cutting, Re-Editing and Re-Montage of the coherent architecture to amplify specific design qualities.

From step b onwards this sequence reflects the steps of a creation of a film: treatment - script - shooting - editing.

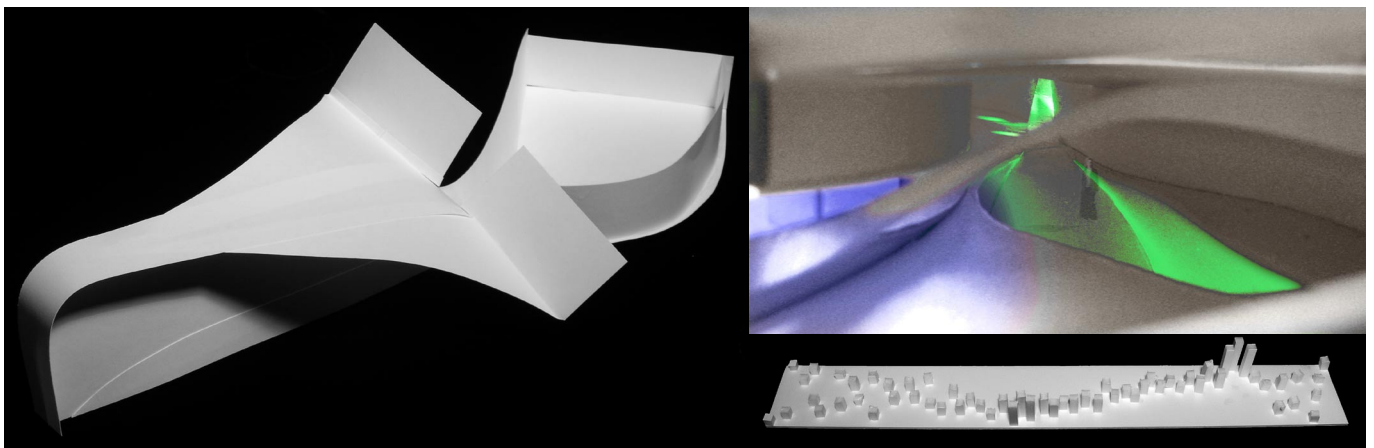


Figure 01: Spatialized Camera movements by Roman Röhrig [left] and Alexander Heck [top right]
Spatialized Film Structure by Roman Röhrig [bottom right]

a. To familiarize the students with filmic techniques through active creative analysis, they were shown single film sequences chosen for their emphasis on the use of one specific design element from a catalogue of shot type, camera movement, narrative structure and the montage types parallel montage and match cut. Those sequences were then analyzed as to how the specific design element had been employed. The analysis was visualized in a graphic notation, and the notation then developed into a three-dimensional structure.

These three-dimensional structures had to realize in spatial terms what the film achieved in visual terms. It did not necessarily already have to be a piece of architecture, but could also be a scale model of a sculpture or even a 1:1 model of an object.

The subsequent steps worked independently from existing footage, as the goal of the design project was not to analyze or shoot films but to design architecture.

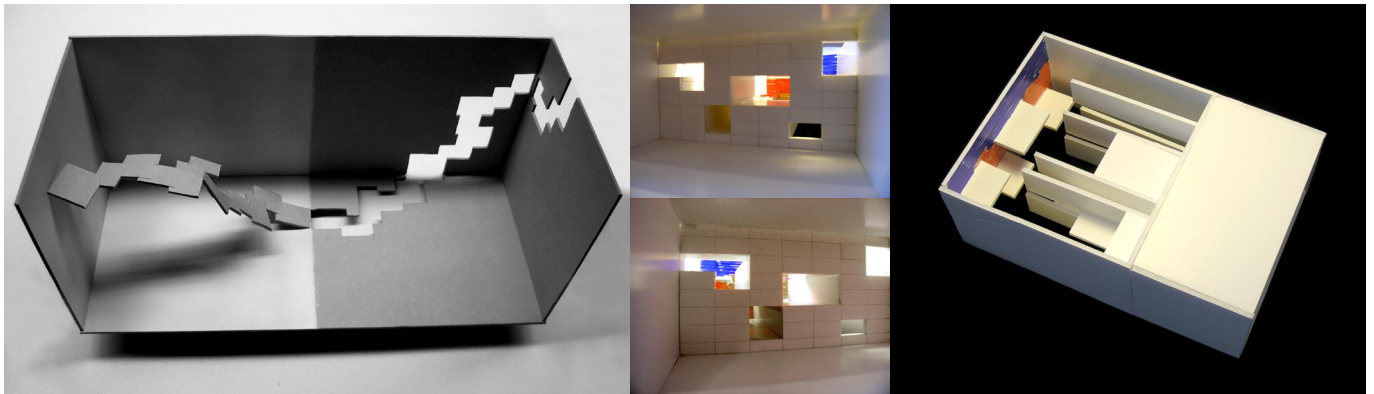


Figure 02: Spatialized Match Cut [left] by Alexander Heck and Parallel Montage [right] by Roman Röhrig

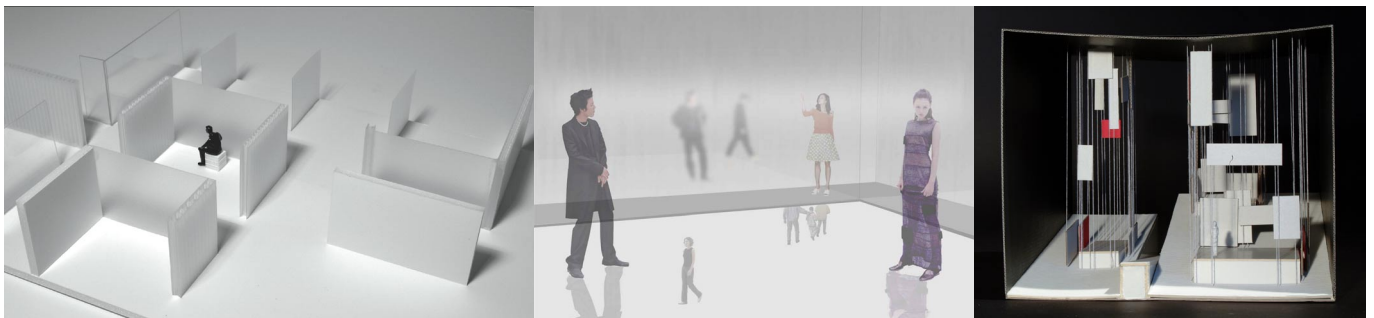


Figure 03: Spatialized Depth-of-Field by Roman Röhrig [left] and Alexander Heck [middle]
Spatialized Parallel Montage by Jessica Kämpfe [right]

b. In a next step, the shooting of separate film segments was reflected in the design of separate architectural pieces. To reflect the thematic improvisational working method of directors like Wong-Kar Wai, D.W. Griffith, John Cassavetes or others ³, the starting point for these pieces was not a list of specific functional requirements comparable to a detailed script. Instead, thematic specifications were made using associative descriptions, somewhat like a moodboard used in advertising. The specifications were categorized into codewords, spatial images, coenesthesia, consistencies, atmospheres, moods and actions. Thus, the students' imaginative and associative capabilities were stimulated and the archi-

tectural designs evolved in a realm much vaster than that of pure functionality.

Furthermore and most importantly, the designs had to use specific filmic techniques, again from a group of categories: camera behaviour, shot size, narrative structure and editing / montage technique.

For the designs, the students first had to find graphic means of expressing their ideas and to subsequently develop those into models. In this fashion, each student created three different pieces of architecture one after another which would later serve as the basis for the montage in the same way that shot sequences of film are used as material for montage.

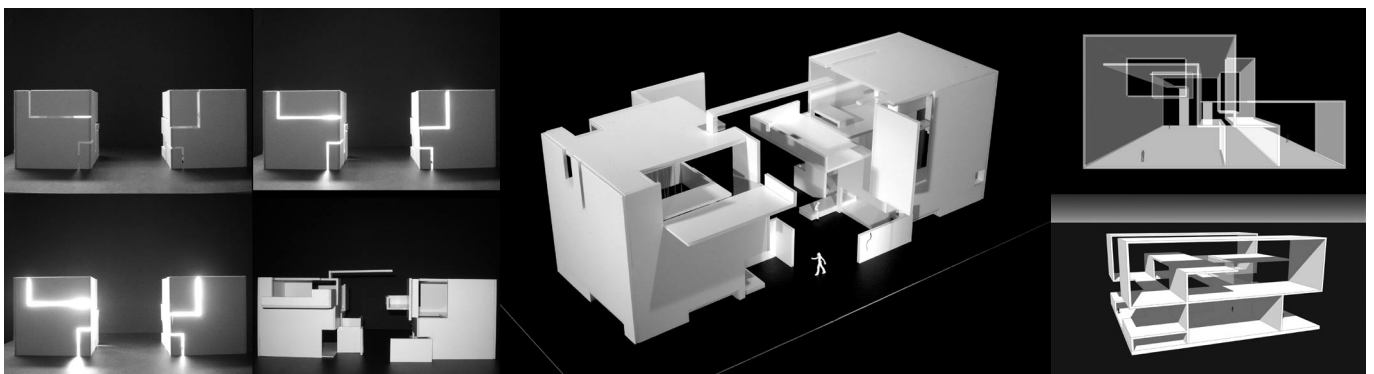


Figure 04: Spatialized Parallel Montage by Jessica Kämpfe [left and middle] and Roman Röhrig [right]

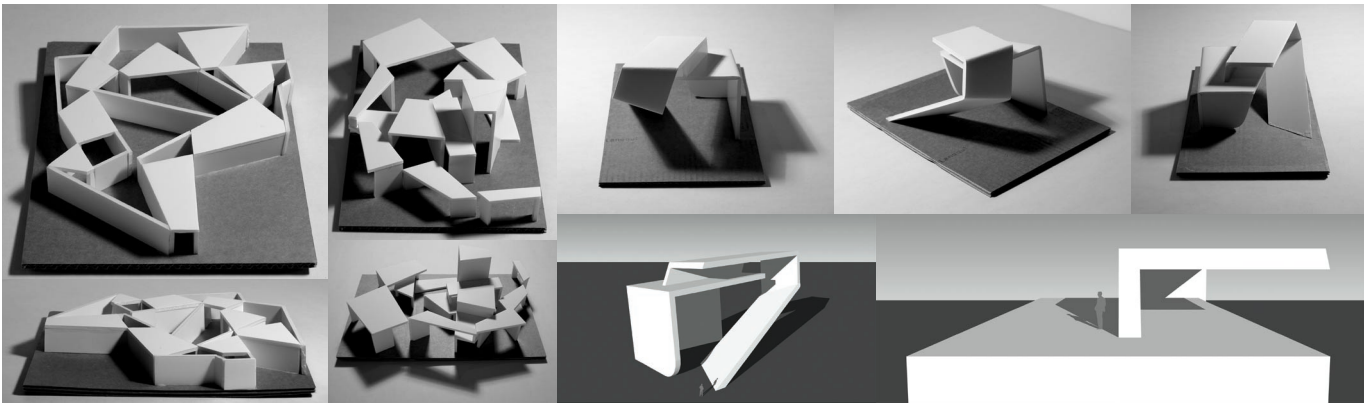


Figure 05: Spatialized Change of Camera Angle [left], Re-Cut [second from left] and Jump Cut by Roman Röhrig

c. To prepare the montage, the students had to systematize and catalogue all material they had so far developed and designed. This facilitated a critical re-view, critique,

re-interpretation and understanding of the latent possibilities of the existing material.



Figure 06: Transposition Catalogue by Roman Röhrig

d. Inspired by their own designs, the students now developed a dramatic structure and proposed functional content for a coherent architectural work. This step again very much reflected the way in which directors

like Wong-Kar Wai and others improvise from their own already shot material ⁷. The creative re-interpretation called for the discovery of hitherto unintended qualities and possibilities in the existing material.

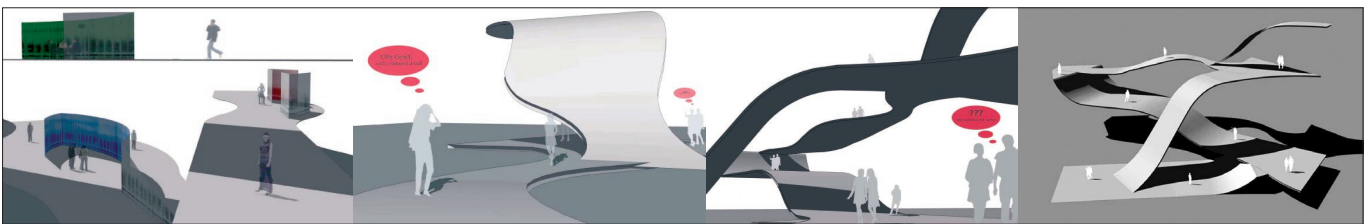


Figure 07: Dramatic Structure of Semifinal Architectural Montage and Preliminary spatialization by Alexander Heck

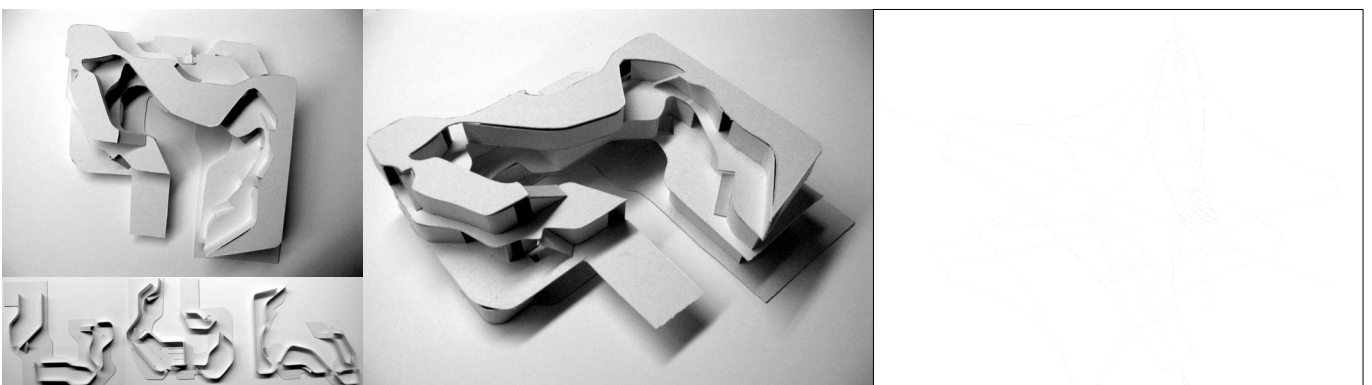


Figure 08: Beginning of Semifinal Architectural Montage by Alexander Heck

e. Using the dramatic structure and the discovered functional possibilities as guidelines, the previously designed architectural pieces could now be cut, edited and montaged into a coherent whole. To ease this proc-

ess, the design of additional architectural material was allowed - much different from film, where the re-shoot of new material is avoided whenever possible due to its high financial costs.

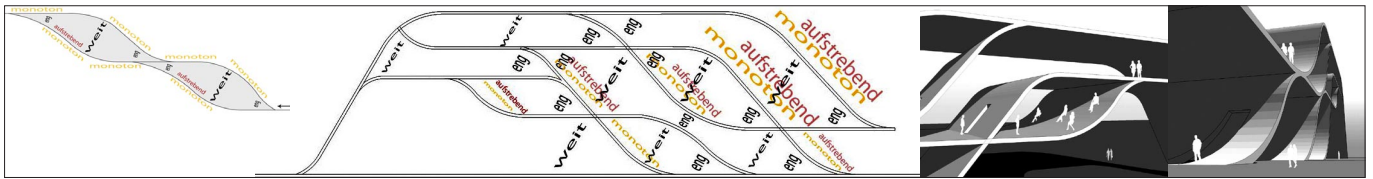


Figure 09: Continuation of Semifinal Architectural Montage: Spatial Sequence by Alexander Heck

f. With a consistent piece of architecture - a building design - now achieved, another step of critical re-view became possible. The whole was analyzed for its strengths, weaknesses and potentialities were revealed

that only could become apparent in reviewing the whole and not the parts. To amplify the strengths and realize the potentialities, the existing architectural design was now re-cut, re-edited and re-montaged.

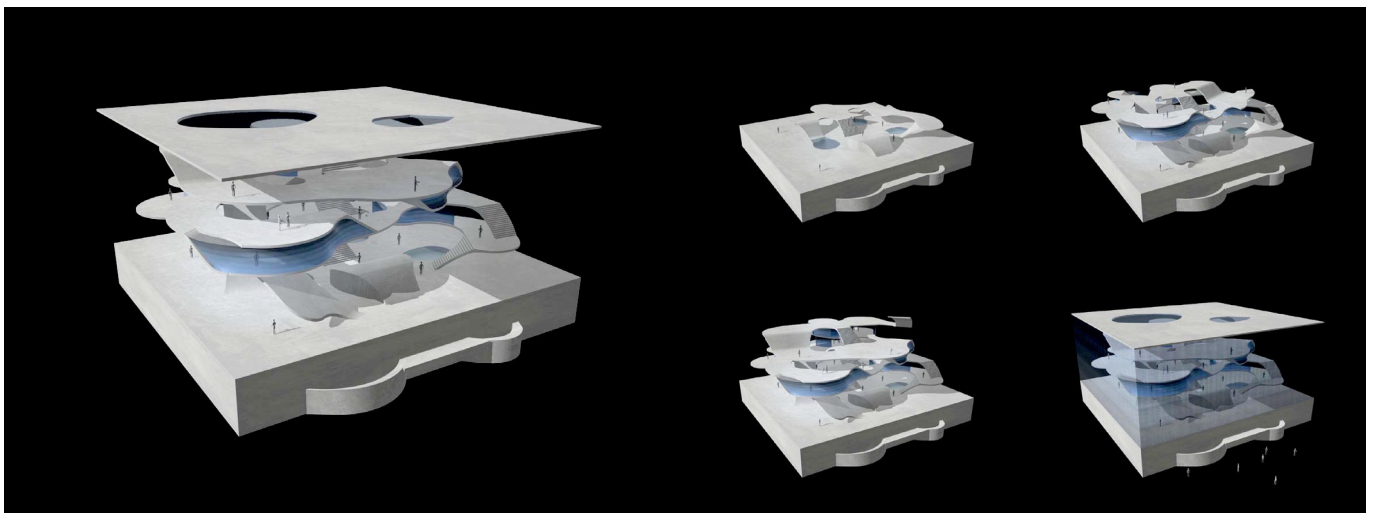


Figure 10: Re-Cut Final Architectural Montage by Alexander Heck

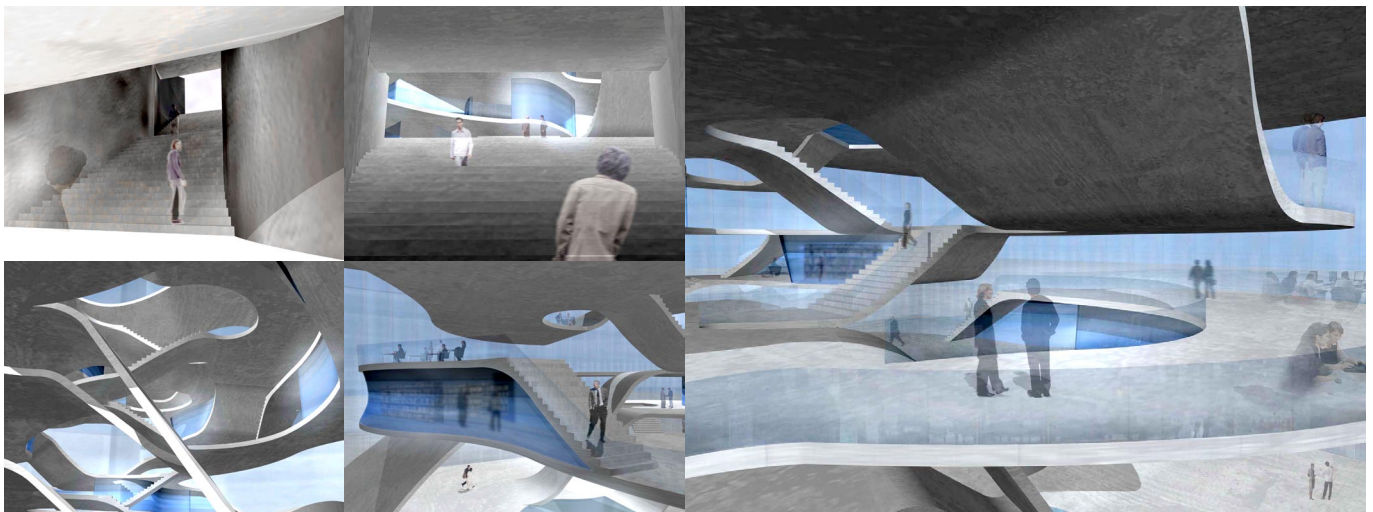


Figure 11: Re-Cut Final Architectural Montage: Spatial Sequence by Alexander Heck

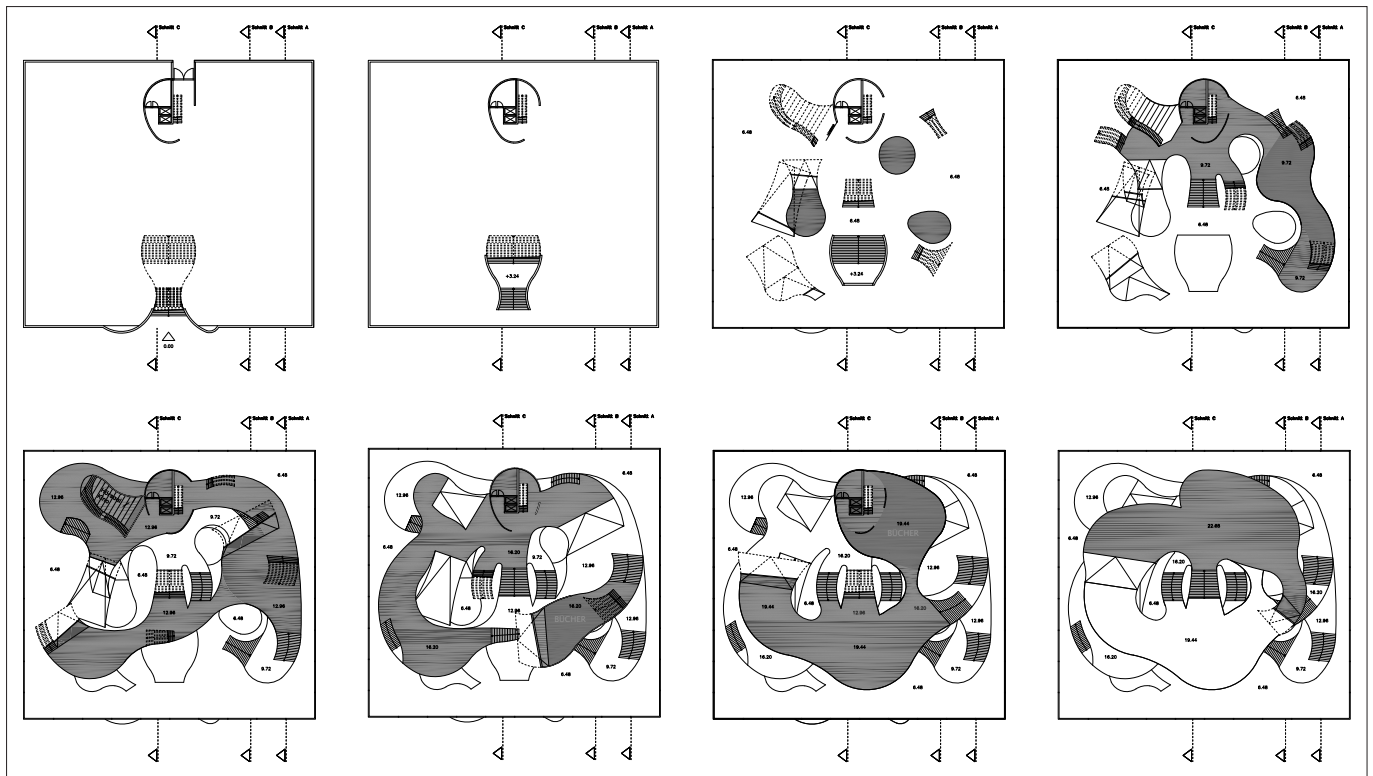


Figure 12: Re-Cut Final Architectural Montage: Plan Drawings by Alexander Heck

Evaluation

An abundance of architectural ideas and surprising and original spatial situations and sequences was created. Concentrating on aspects of perception and developing perceptual sequences borrowing techniques and structural elements from film, freed from typical restraints like function, structure or typology indeed allowed for a much less restrained creativity. On the other hand, finding ways of integrating such aspects into the designs at a later stage proved to be not easy. We like to think that this is mostly due to the fact that the time period the students had for montage and re-montage was much shorter than the one for the design of the architectural pieces. In film, this relation is reversed: usually, much more time is spent for the editing than for the actual shooting.

Outlook

Four areas emerged that we consider worthwhile of further study and development:

- a. Comparative analysis of working methods and design elements and techniques in film and architecture.
- b. A catalogue of possibilities for transposing working

methods and design elements from film into architecture.

- c. Notational Systems for spatial perceptual sequences.

- d. Multiplicity: Fusing many possible perceptual sequences into a single spatial sequence.

a. Many similarities exist between film and architecture, both in terms of working methods and design elements. Yet, although there are numerous studies of these similarities ², we have not found a comparative analysis that would list the elements in one field and couple and compare them with their counterparts in the other. To explore the possibilities for architectural design, though, such a catalogue would be most helpful.

b. The comparative analysis could form the basis for a comprehensive list of examples for transpositions from film into architecture, both in terms of reading existing architecture in a cinematic way and in terms of possible transpositions. Such a catalogue would very much enrich both the spatial and the discursive repertoire of architecture: Currently, speaking about architecture in simple cinematic terms like camera pan, zoom or panorama is not uncommon. But speaking about architecture in terms of montage techniques is difficult as most

architects are not familiar with the montage techniques used in film.

c. We found that there exist almost no notational tools for writing down or visualizing spatial perceptual sequences. Current notational systems in architecture only allow for notating very abstract concepts or simplified architecture. Although several architects have developed notational methods, they were restricted to specific persons and projects⁸. A comparable situation would be the absence of writing: everyone wishing to document written speech would have to develop their own ways of writing. In conversation with Michael Ondaatje, the film editor Walter Murch muses about the development of a notational system for film and observes how the development of a notational system for music facilitated the creation of much richer music:

“... I think cinema is perhaps now where music was before musical notation – writing music as a sequence of marks on paper – was invented. Music had been a crucial part of human culture for thousands of years, but there had been no way to write it down. Its perpetuation depended on an oral culture, the way literature’s did in Homeric days. But when modern musical notation was invented in the eleventh century, it opened up the underlying mathematics of music, and made that mathematics emotionally accessible. You could easily manipulate the musical structure on parchment and it would produce startlingly sophisticated emotional effects when it was played. And this in turn opened up the concept of polyphony – multiple musical lines playing at the same time. Then, with the general acceptance of the mathemati-

cally determined even-tempered scale in the mid-eighteenth century, music really took off. Complex and emotional changes of key become possible across the tonal spectrum. And that unleashed all the music of the late eighteenth and the nineteenth centuries: Mozart, Beethoven, Mendelssohn, Berlioz, Brahms, Mahler !

I like to think cinema is stumbling around in the ‘pre-notation’ phase of its history. We’re still doing it all by the seat of our pants. Not that we haven’t made wonderful things. But if you compare music in the twelfth century with music in the eighteenth century, you can clearly sense a difference of several orders of magnitude in technical and emotional development, and this was all made possible by the ability to write music on paper. Whether we will ever be able to write anything like cinematic notation, I don’t know. But it’s interesting to think about.” Ondaatje, p 50ff

We would claim the same for architecture.

d. Film makers totally control the perceptual flow the audience is exposed to. In architecture – thankfully – users are free to move about buildings as they like and thus determine for themselves the exact sequence in which spaces are perceived. This means that several possible perceptual sequences have to be combined in one set of spaces, somewhat like palindromes or semordnilaps in text. Although Tschumi recognizes this issue clearly⁹ little research has been done on how to achieve spatial situations with such a multiplicity of readings.

We aim to continue the design experiments and to develop the issues a-d in parallel.

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Notes:

[1] *“Cinema is the one art form where the author can see himself as the creator of an unconditional reality, quite literally of his own world. In cinema man’s innate drive to self-assertion finds one of its fullest and most direct means of realisation. A film is an emotional reality, and that is how the audience receives it – as a second reality. ... I classify cinema and music among the immediate art forms since they need no mediating language.”* Tarkovsky 1986, p 176

[2] See Agotai 2007, Bruno 2002, Dantz 2007, Tschumi 1996, Weihsmann 1995

[3] see Wolf

[4] see for example the movies ‘21 Grams’ by Alejandro González Iñárritu (2003) and ‘Memento’ by Christopher Nolan (2000)

[5] *“Interviewer: But surely, Monsieur Le Directeur, your movies have a beginning, a middle, and an end ?* Jean-Luc Godard: *Yes, but not necessarily in that order.”*

[6] see Ondaatje p 184

[7] see Ondaatje p 160: *“... I believe [Wong Kar Wai] created a ‘story’ during editing from a much larger canvas of possibilities he had filmed.”*

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