

## Space | Color | Light - Teaching Color in Interior Architectural Design

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### ABSTRACT

At the Department of Architecture in Dresden we pursue an approach where light, color and material are part of a scenographic process of envisioning a spatial atmosphere as an integral part of the architectural concept from the start. Starting with an intuitive analysis of the experience of color and light, students discover only in the following steps of the process that its various phenomena can be explained in a systematic and scientific manner. Instead from theory to practice we follow a path from practice to theory.

While we have presented the basic structure of our color curriculum in previous AIC Meetings, this time we will present the interior design component of working with color during the foundation year as well as our advanced courses „Interior Scenography“, „Space, Color and Light“. We will demonstrate how this integrated model will produce a different awareness of integrating atmospheric aspects into architectural design and might serve as a model for color education in architecture.

**KEYWORDS:** color education; interior design; architecture

### INTRODUCTION

In contrast to many other design disciplines where color constitutes an integral part of training, in the education of architects it plays merely a marginal role and is often considered a subsidiary component to the design of the plans or the shape and structure of a building. In the actual experience of architectural space however, color is experienced via the reflection of light on the materials of its surfaces, and therefore an integral part of the perceptual process.

How can this dichotomy between the user experience and the design process be resolved? How can students of architecture be taught to incorporate thinking about color, light and material during the initial design phase, instead of at the end of the planing process and thereby consign these critical components merely a trivial role instead of one intrinsic to spatial experience?

The Department of Architecture in Dresden pursues an integrative approach where light, color and material are part of a scenographic design process of envisioning a spatial atmosphere as an integral part of the architectural concept from the start. Rather than following the traditional path of beginning with color theory first, which then becomes more or less successfully applied to design, we start with an intuitive analysis of the experience of color and light and then have the students discover that its various phenomena can be explained in a systematic manner. Instead from theory to practice we follow a path from practice to theory.

In both the foundation week „Color in Interior Design“ as well as in the advanced courses „Space, Color and Light“ we begin with envisioning the atmosphere of a space immediately through models that can be adapted to changing light and color conditions and interior perspective sketches rather than through conceptual diagrams, plans, section and so on. Visual spatial atmosphere is not the result of the design process, but rather its impetus.

### **BASIC COURSE: THREE WEEKS OF COLOR - WEEK 3: INTERIORS**

Three weeks of color — this course is very unique in the landscape of architectural education in Germany, where color is usually given little time and taught independently of the practical aspects of architecture. In having three full weeks, students can fully concentrate on this subject without being distracted by other coursework.



*Figure 1: Three Weeks of Color - 1. Foundations. 2. Color on Facades. 3. Colors in Interior Spaces*

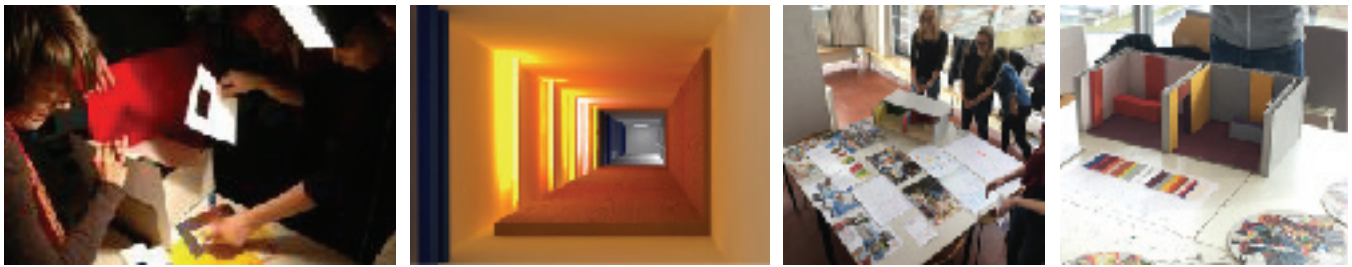
During week 1, students produce a multitude of paper swatches with different shades and hues of color. This way the students get hands-on experience with the medium of color, learn much about the intricacies of mixing colors and value the final results. This is the point of departure for all further exercises. We begin with a deconstructive analysis of the colors in objects found in nature such as plants, minerals, etc. In the first step, the different colors present in the objects are identified within the collection of swatches and arranged in strips of equal width according. In the second step, their relative amounts are represented through different proportions in a color composition. In the third step, students try to establish systematics of the colors identified in the objects by locating them in a color system such as the RAL System. Week 1 concludes with the students designing individual color collections according to various themes. The themes of these collections might pertain to a design problem, a fashion exercise or a story that is to be illustrated using color and space.

Week 2 is devoted to color on facades. Here we focus on the color scheme for a group of buildings. This process begins by developing a color concept through collages that represent different atmospheres. The next step is to extract the principal colors and form color chords with varying quantities. Using these chords, students develop different alternatives for the facades where different colors from the chords dominate the respective surfaces. Ultimately, one alternative is selected and further developed to the last detail: window frames, sills, ornamentation, eaves, etc.

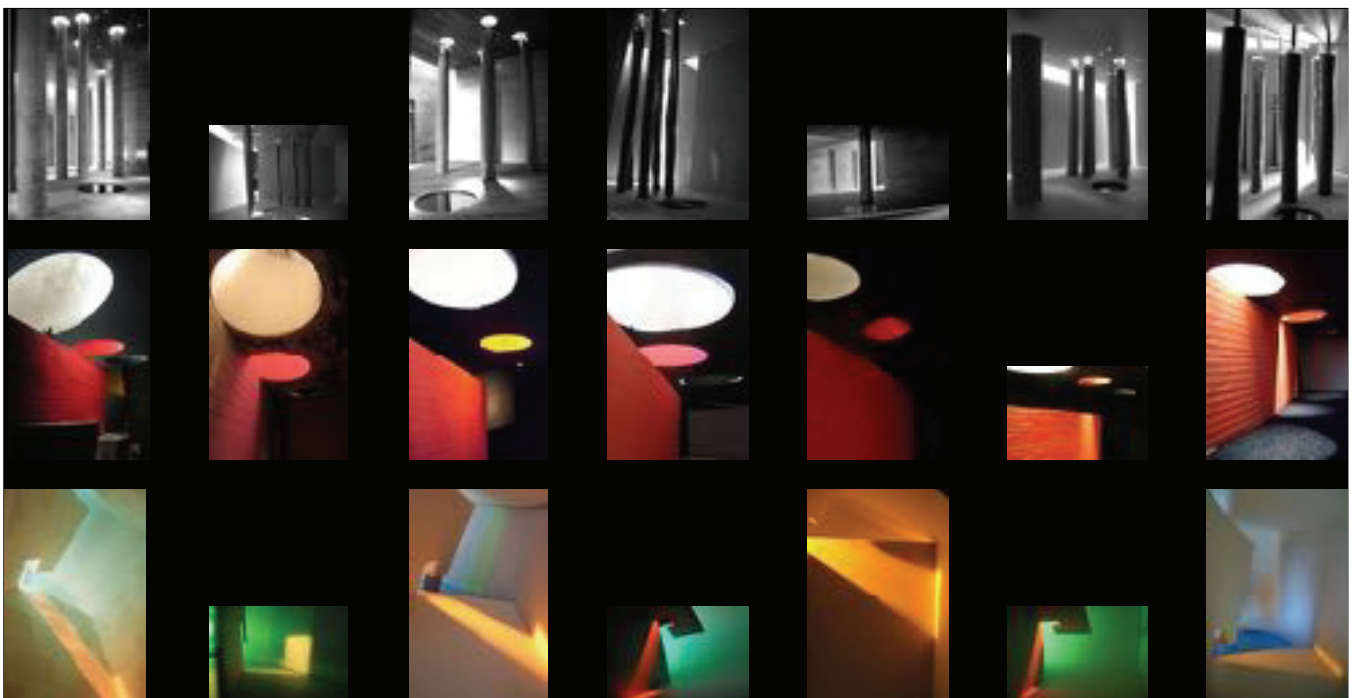
During week 3, our focus is color and light in interior spaces. The students are assigned a room with set dimensions and select via lottery a function for the room such as, office, dentist waiting room, kindergarden, etc. Then the students make a color theme collage that best expresses the atmosphere of the room's function. They build a model and cut different openings to test lighting and color options by using the color paper swatches from week one. Alternatives are developed, tested, photographed and revised, when they have set upon a final concept they produce a 2D perspective on heavy paper.

### ADVANCED COURSES SPACE COLOR AND LIGHT IN INTERIORS

In various seminars “Space, Color, Light” students focus primarily on the triad of spatial geometry, colors/ surfaces and light and its role in creating atmosphere as an immanent part of the architectural concept. All three criteria are examined with varying emphasis in different exercises. The students learn to design with rapid exposure to 2D/3D media such as model making, sketching, photography and computer design using the process of multiple transpositions between these various media.



*Figure 3: Experiments with light and color in architectural spaces.*



*Figure 4: Speed Dating: Re-creating a spatial atmosphere from photographs via drawings to models.*

Under the heading Material Color, exercises that deal with coloring materials and the inherent colors of materials are subsumed. We produce colors from a range of materials such as spices, minerals, plants, etc. and apply them directly. Students also learn about pigments, solvents and binding agents. In addition, a variety of media and techniques applied in the arts are practiced: oil, tempera, gouache, acrylic, ink, wax, etc.. This allows for new unexpected combinations which give the impetus for extensive experimentation. Only in the next step does a systematic exploration of the materials and tools begin.

Exercises that deal with the interplay between color and light in space are subsumed under the heading Immaterial Color. In addition to color hues and shades, surface qualities such as luminosity, texture and transparency are explored directly in 3D space. We use photography twofold: to record the steps of the individual experiments and to critically explore its function as a medium in architectural presentation.

In the exercise „Speed Dating“, 2D photographs of famous architectural spaces are used as a starting point to produce a 3D model whose purpose is to represent the geometry, color and light of the original photograph. Then another photograph is taken of the model. By transposing the original architectural design through different media, its qualities become more distilled and furthers the students own conceptual understanding.

Often we use a ‚Literary Space‘ as a point of departure. The mood, evoked by reading a story or a novel might provoke ideas about a spatial representation, about light color and material. The atmosphere described in a text is represented as an image, forming the starting point for the construction of a 3D model, which subsequently is photographed in 2D. In all of the three exercises the distinctive qualities of each was to be preserved through the various transformative steps.



*Figure 4: Samjatin's Space the story as an impetus for creating a spatial atmosphere*

## CONCLUSION

We have been teaching colour in this way for five years. We have noticed considerable differences in how an understanding of colour and light has developed throughout architectural design projects at our school. While students were usually bored by colour theory and did not really forge a connection to its application in design practice, we now see a clearer understanding of colour theory. Because we do not take the traditional path from theory to practice in colour education but rather from practical and individual intuitive analysis to an understanding of the theoretical principles of colour by personal experience, we feel that students better grasp how colour can be used as a compositional instrument in designing architectural space and form. We also notice that students are beginning to think about creating a desired atmosphere for their projects, and hence, also about the influence of light, right from the start. By now our course has become well known within the landscape of European architecture schools and we hope that this process of teaching colour to architecture students might serve as a future model for colour education in architecture.

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