

EDUCATIONAL PARCOURS FOR ARCHITECTURAL PHOTOGRAPHY

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Abstract

Our didactical concept is based on the idea of simulating photographic techniques by using a set of mock-up situations, created with a common CAAD- and visualisation-software (Artlantis).

The didactic program (and the mock-up-“parcours”) starts with a two-dimensional object, found on different places in the city or on the campus: an „advertising panel“. With any kind of camera it is possible to take a picture of sufficient quality. When taking the real photo, students have to deal with different points of view, different inclinations of the camera and different zoom-adjustments. When they present their results in digital form, they also have to deal with disappointments in form of distortions of their lenses. The cad-model of the same situation (professional photographers use the terminus, mock-up“) shows parallels in using different points of view, different zoom-adjustments. Our experience in using this kind of mock-up-simulation is very positive: students develop a new sight to things and procedures which intensifies their consciousness and their knowledge of photographic and architectural situations.

1. Introduction

We see the knowledge of architectural photography as one of the core items of a modern curriculum in schools of architecture. As we presented at Ecaade 2004 (Gatermann 2004: “didactic triangle”), architectural photography together with descriptive geometry and computer aided design is used in both ways: as an analytical and a synthetical medium.

The basic knowledge of photographic techniques is diminished by nowadays standard equipment: the digital camera with all its full-automatic functionality. From year to year the number of students owning and using a digital camera is growing and the number of students with solid knowledge of geometrical and optical principles of photography is getting down.

For “freshmen” (students in their first academical year) it becomes more and more important to get in touch with the geometrical components of photography and to see the difference between amateur equipment and professional or semi-professional equipment, which is available in further courses.

But - independent from equipment - students have to see, that even with standard equipment the geometrical conditions have to be recognised. On the other hand

students should develop their own interest in taking “serious” photographs.

2. Didactical concept

Our didactical concept is based on a defined “parcour” of real situations on the university campus combined with simulating photographic techniques by using a set of mock-up situations (the “virtual parcours”), created with a common CAAD-software (Archicad) and visualisation-software (Artlantis), which implies special features for realtime-simulation of the geometrical effects of photography.

3. The “real” parcours

The experience of different courses in architectural photography in different academic levels formed a more and more structured set of exercices, with are combined to a defined parcour on the campus. In the following text we will describe *four of ten steps*. For more information the course can be studied in the internet (<http://www.fh-bochum.de/fb1/gat/afg>). It is planned to establish a distance learning course and to establish courses at other universities, using our experience but defining their own real and virtual parcours.

The main focus is layed on the geometrical aspects. Therefore we divide the course into different parts:

- part 1 with concentration on geometrical aspects of architectural photography
- part 2 with concentration on photographic effects
- part 3 with concentration on exposure, light (natural, artificial) and shadow
- part 4 with concentration on special effects (panorama, stereo etc.)

In this paper *only part 1* is described.

3.1 Step 1 - two-dimensional object

This exercise seems to be absolutely easy, but the students will recognise, that is is much more difficult, to take a serious photograph of a two-dimensional object than to take a picture of a friend, an animal, a tree etc.

In addition to the geometrical constraints (finding the correct point of view, the correct hight, avoiding of inclining the camera) students get aware of the quality of their camera, especially the lenses. Other than a photograph of a tree a photograph of an orthogonal object like a wall or, in this case, an advertising panel obviously shows the exactness of the lens and the preciseness, the photographers used his camera.

Using the virtual version (caad-model of the advertising panel, visualised in Artlantis), all influences by the photographer, as using different points of view, different

lenses (focal length or zoom-factors) can be simulated and the results can be viewed simultaneously. Only the distortion of the lens cannot be simulated by the caad-model. These effects can only be simulated by photo-software - at the moment Paintshop has more is this respect than Photoshop.

3.2 Step 2 - simple box extra large (XXL)

While the 2-D-object is easy to access, modest in dimensions, independent from focal length and type of camera, a very large object demonstrates the next level of and the dependencies of the point of view and the focal length. The students have to deal with the problem of getting enough distance or using their phantasy to detect new ways: using the neighbour building to enlarge the height of their point of view, to take several pictures and stitch them together . . . The difficulty of the task is welcome to mobilize creativity and enthusiasm for the job. The first step again is the “real” situation, the next step the caad-simulation.

3.3 Step 3 - the corner

Instead of taking several pictures, enlarging the distance to the object, students try to take a picture “over the corner”. The result is a trapezoidal image of the facade instead of an othogonal form. On the other hand dealing with the trapezoid again is very instructive: it can be



Figure 1: Taking a photograph of a simple 2-D-object (advertising panel) shows all the problems, caused by the unpreciseness of photographer and camera, esp. the lens



Figure 2: XXL-object

transformed by imaging-software (Photoshop or Paintshop), or the effects of different points of view can be studied: e.g. the influence of the distance between the

point of photography and the object, or the influence of different focal length or zoom-factors.

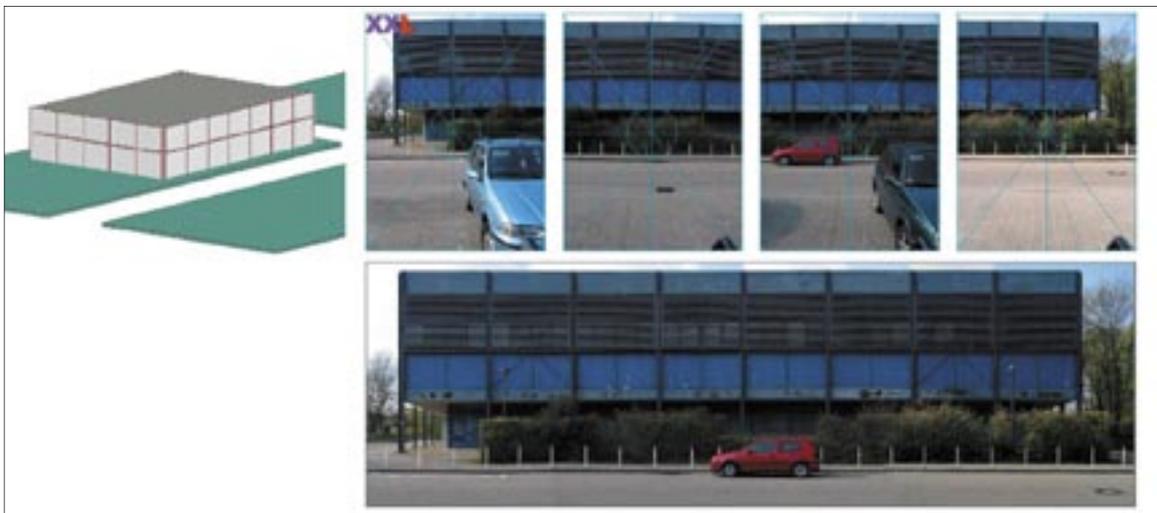


Figure 3: The corner

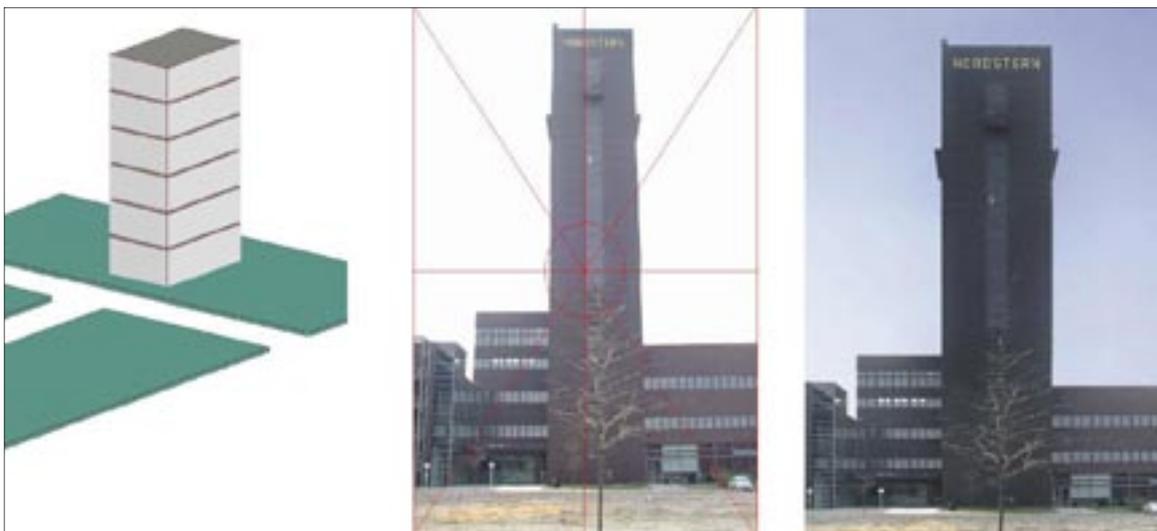


Figure 4: XXH-objects

3.4 Step 4 - extra high buildings (XXH)

Similar to the horizontally orientated “long” building, very high building are a challenge. It is mainly the problem of the distance and the accessibility, but also of the typical result: aberrant lines or a picture with too much “foreground”. The caad-simulation helps to understand the principles and the difficulties.

4. The “virtual” parcours

As said in the beginning, the four steps of the “real

parcours” should stand as example for the modular course we developed and which we use since several years, still developing. One year ago we introduced the virtual parcours as a medium of reflecting the practical experience of architectural photography and as an additional field of creativity and motivation.

The virtual parcours is oriented at the real university campus, but it is concentrated to the major exemplary steps of developing photogrhic experience in a didactically structured way.

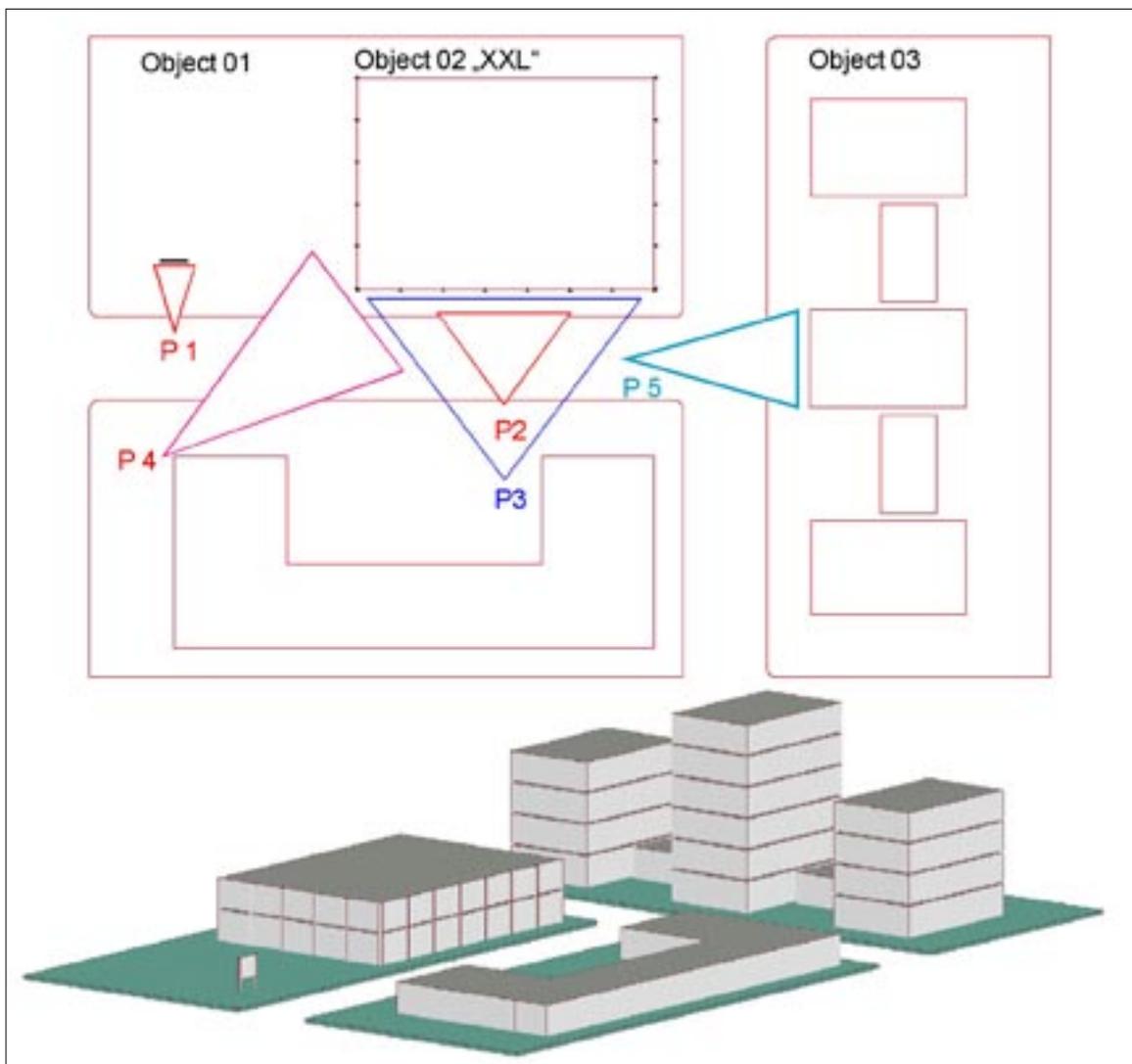


Figure 5 / 6: Didactical Parcours on the university campus and as CAAD-model

5. Conclusion

The described course is used in the first year of our architectural curriculum. The reaction of the students is very positive and leads to a more serious dealing with the medium photography and better result in their further studies - not only in respect to photography but also in respect of their visualisation work.

On higher academic level the basic-course is followed by another course on special items (panorama, stereo photography, endoscopy, simulation methods), on masters level (architecture media management) we offer a course in professional photography with special regards to publishing, printing and archiving.

References

Gatermann, Harald (2004) The Didactic Triangle - Using CAD, Photography and Descriptive Geometry as Educating Tools with Mutual Influence

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