Digital space and ephemeral visuals as determinants of contemporary design:
A Survey of Projects of Architectural Students in CAAD

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Abstract. Outside of views produced deliberately for the design of architecture, there exists a large body of images; visuals of no materialized spaces, constructed only on paper or in pixels in popular cultural media – editorial illustration, comic strips and books, cinema, television, advertising and web imagery.

All the aforementioned visuals, fragments of architecture are within our everyday life and more important influence strong spatial paradigms for students of architecture. The proposed presentation is about the work within a university Computer Aided Architectural Design studio where students asked to investigate the ephemeral environments that surround their everyday life and translate them into architectural intentions.

This paper argues that the digitally mediated design of young students of architecture incorporates the ubiquity of contemporary life-style; reflects through student design proposals the new orientations of contemporary architecture and finally revises the integration of the CAAD studio with the 'traditional' studios of design within the school of Architecture.

Keywords. CAAD and Design Studio Teaching.

Integrating CAAD with Design Studio Teaching

Since the establishment of the CAAD studio capable of instructing most of the facets of CAAD (2D / 3D CAD, model rendering, animation, architectural photomontage etc.) we were able to bridge the gap between the accelerating advancements in computing technology and the architectural studio teaching where most of the time an older generation of tutors was unable to incorporate new technology into their teaching.

The CAAD studio since its establishment in 1998 is producing student projects that reflect the changing orientation of contemporary architecture far more apparent than the rest studios of architecture within the university.

The studio spans four semesters starting from the first semester in architectural education and is taught using a variety of media including lectures, seminars, individual tutorials, Internet, interactive multimedia and workshops. Over the period of the four semesters students are helped to integrate information technology into their work, develop a personal style in the representation of space and in the expression of conceptual ideas. In the third and fourth semester of the studio students are developing a full-blown design project similar in requirements with the rest of the traditional studios only using and incorporating computer techniques and technologies thus exploring the computer as an artistic and literary medium.

The survey presented here spans eight semesters in the University of Thessaly between 1999 and 2002. In all the eight semesters students asked to design an ephemeral construction that would act as a 'generator' of activities that the student also had to envisage.

Initially students being free to develop a project that had to deliver in a computer format developed a tendency to bind their creativity into 3d-model concepts.

Mostly the concept of extrude was used extensively by students introducing the third dimension of their design simply by assigning the amount of extrusion into their CAD program. Since the students were into their initial stage of their studies we conducted a study trying to establish the reasoning behind the extensive use of extrude.(fig 1)
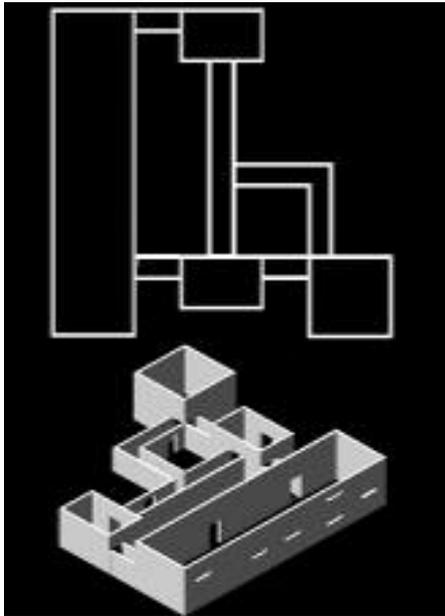
We discovered that students were more incapable to explore and visualize the third spatial dimension rather than unable to build a more complex computer model. Students were at ease with two-dimensional sketches and bubble – diagrammatic plans that were illustrating spatial concepts. Introducing the third dimension was simple a matter of introducing a height (usually 2.7 to 3 m) to their two-dimensional designs. Very few of the students had more complex elaborations of the third dimension of their simple plan (fig.2)
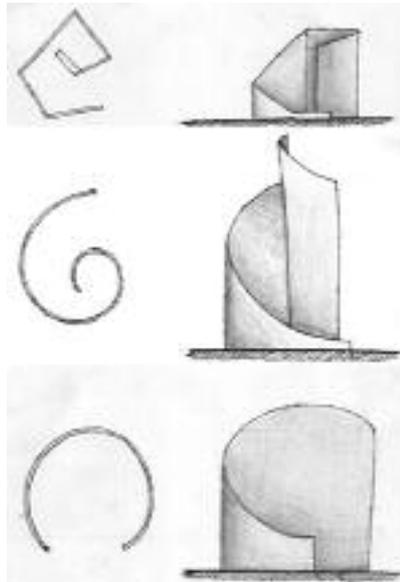
Figure 1. P.Pantazis / S. Fylactou Direct Use of the 3d-model concept of Extrusion to fill-in the 3rd dimension of their plan, even in an initial bubble-diagram stage).

Figure 2. Nikoloutsou X. / Ntatsopoulou Th. One of the very few cases found that the first year students were not using the extrude concept.).

We were surprised to find subsequently how first and second year students are at ease with topological concepts, being able to grasp their world as a set of web-links but unable to refine their designs exploring the section of the spaces they were designing.

We were alarmed as we foresaw the criticism of pushing the students into producing 'bad designs' simple by using computers and as early as the second semester of the studio we introduced the perquisite of developing the project initially with traditional means (sketches and physical architectural models) before even touch the computer. We were not surprised then to confirm that students improved their performance; they were able to develop more complex spatial designs and even when initially in their designs the extrude concept was apparent by the time that was build in a paper model students were keen to explore the geometry of the section.

Our study confirms than once students were freed to adopt any medium to explore their designs as long as their starting point was done by hand, were more capable of adopting with increased creativity various computer techniques.

Gradually hand-made photomontages were replaced by computer ones; initial hand-drawn sketches and quick architectural models driven them to explore second thoughts in 3d-computer models. (fig 3.)
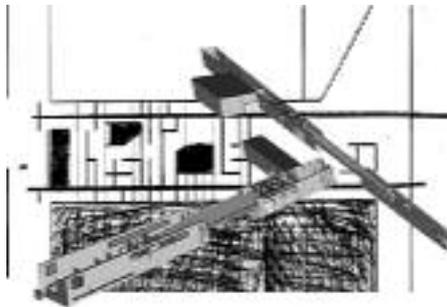
Furthermore the plethora of images on the web helped students to develop series of projects incorporating social aspects of life into them.

Projects for installations dedicated to 'amnesty international' (fig 4), 'medicines sans frontiers '(fig 5) would be impossible without the adaptation of computer techniques and the world wide web into architectural studio.

As all student projects started by hand, students were in position to choose the appropriate technique for each project to develop. Some influenced by computer algorithms and possibly Eisenman's diagrams developed strong methods of producing the plans through a procedural development. (fig.6); some students adopted such methods after had initiated a seed of initial intuitive sketches. (fig 7.)
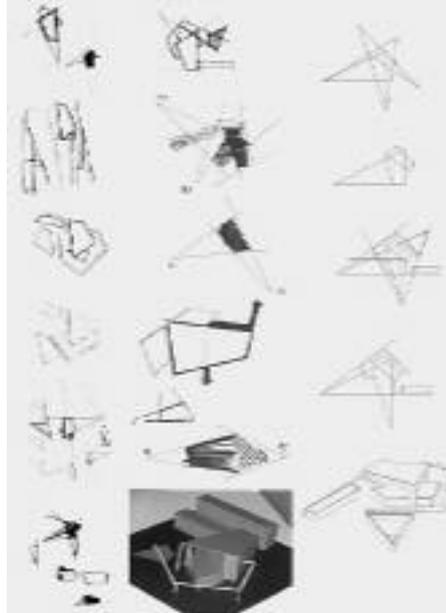
In some cases like the 'medicines sans frontiers' installation the whole idea was based on the graphical deconstruction of the logo; the image through a series of transformation looses its graphical integrity and gradually becomes another image which in turn through another transformation becomes a three-dimensional model. (fig 5.)

In other cases it was common to start with a famous painting (like fig 8 based on a Picasso painting), which was used as a basis for an architectural plan.

Figure 8. Polyzou A. / Tsatsaki V. The development of the project is based on a Picasso Painting.).
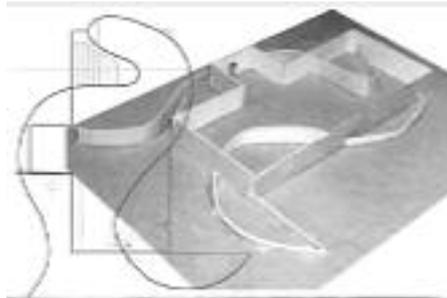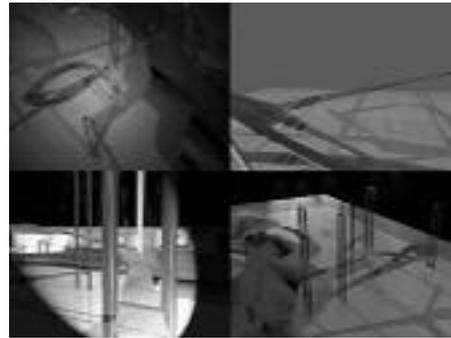
Figure 9. Papasarantou Ch. Sarantopoulou G. Tselepi D.. The development of the project is influenced by contemporary 'fluid' images found on the web.).

architectural educators to review projects that would enable the wiser integration of CAAD into architectural education.

References

R. Evans, Translations from Drawing to Building and other Essays, AA Documents 2, J.Evans & Architectural Association publications, London., 1989.

Finally the last two semesters of 2002, students more and more were able to incorporate the ubiquity of contemporary life-style producing projects with exotic geometrical characteristics (fig 9.), reflecting the importance of the computer medium in the development of architectural projects. It remains of course to be seen whether this extravagant geometry used by students could get translated from Drawings into buildings.

Concluding, the four years of the CAAD studio in the University of Thessaly helped young students of architecture to find computers an obvious tool of creativity and to extend their use into all their School projects. It is thus useful for the