FAKE.SPACE - AN ONLINE CAAD COMMUNITY AND A JOINT ENQUIRY INTO THE NATURE OF SPACE

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Abstract. fake.space was an elective CAAD course in which the (over 120) participating students were an online community. They jointly built up the fake.space node system, a database in which the individual contributions were linked and could be viewed and navigated through in various ways. The topics of the nodes were different aspects and concepts of space. The paper describes the conceptual as well as some technical aspects of this teaching experiment and evaluates its outcome.

1. Introduction

Teaching computer aided architectural design nowadays cannot be limited to teaching concepts of geometric modelling anymore. Besides being an omnipresent production tool, the computer is increasingly assuming the role of a communication medium in the architectural practice. Modern information technology, the basis for this paradigm change, is developing rapidly - changing what is standard in practice at an ever faster rate.

This situation is particularly challenging for architectural education. To prepare the students for their professional future, these developments must not be excluded from the curriculum. But there is a danger to succumb to a purely technology oriented teaching that tries to incorporate the latest trends and software tools without reflecting on their meaning.

What is called for is twofold: technological experiments and fundamental research. On the one hand the latest tools and techniques must be

aggressively adopted and customized for teaching. On the other hand it is essential to provide students with a theoretical framework for architectural work in networked environments.

2. Fake.space

Fake.space was an elective CAAD course in which we tried to meet these demands. The (over 120) participating students were an online community for the time of the course. They jointly built up the fake.space node system, a database in which the individual contributions were linked and could be viewed and navigated through in various ways.

The name fake.space was intentionally both provocative and programmatic. It avoids the positivistic digital euphoria that resonates in terms like cyberspace or virtual reality. It was chosen to enable a fresh look at what it means to create spatial experiences with computer tools.

2.1 THEORY

Space has been an issue in general philosophy and the natural sciences long before it entered the architectural discourse at the end of the nineteenth century, when different social and moral, but also scientific changes necessitated an increasing interest of the architect in theoretic attitudes (van de Ven, 1978). Today space is at the heart of any architectural debate, but even within the architectural discipline the term assumes different meanings, depending on whether it is used with reference to a single building or at an urban scale.

Along with a short discussion of space in different scientific disciplines we put together a reader with literary texts about space. The students were made aware of different aspects and connotations that space has in different contexts.

All of this was to make the point that space is a mental construction that is valid within its proper context, rather than anything that has a direct equivalent in reality. The same, of course, is true for any representation or simulation of space.

2.2 MECHANICS

The system we set up for fake.space applies this contextual idea. New nodes could only be added to the database by linking them to existing ones. So the students were forced to select a context for their works, another work by themselves or someone else that they wanted to react or relate to.

Figure 1. Array of the students'id's and statements about space.

Technically, fake.space is based on a custom web-interface to a relational database. We have gathered experience with this technology in previous courses (Hirschberg and Wenz, 1997). There are no static pages in fake.space. All views of the database are assembled by scripts 'on the fly'. The content of the nodes is displayed in a standard frame, showing the author and some information about the node, including links to its neighbours: the parent node on the left and (possibly) the children nodes on the right side [Figure 2].

To post a node was a very simple operation, comparable to writing email. It was all performed via form input in a web-browser. The content of the nodes was uploaded on our server. So it was possible to post nodes from any Internet-client.

3. Course Structure

The course consisted of 8 exercises in which the main CAAD modelling and presentation tools and techniques were introduced. In every exercise a particular way to represent space was taken as the theme. The tools introduced were taken as the means to express a personal interpretation of this topic. Every exercise had a corresponding node-type that had to be submitted in order to complete the course. So on one side, the students got a step by step introduction into CAAD, on the other side this structuring in different topics was the score that guided the growth of the node system.

Figure 2. different node-types: example of a 'pipe', leading to a 'tank' (node1)

3.1 NODES

As to post a node was equivalent to completing an exercise, we actually called the exercises nodes, also to avoid the predetermination of the word exercise. If not otherwise stated, the modelling was done in AutoCAD, using Inventor and Photoshop as means to control the graphic output.

node0 - personal ID
To become a fake.space agent, the students had to fill out a questionaire about themselves, select a personal color combination, make a short statement about their idea of space and select a fake.name for themselves. The result of this warm-up exercise was the colorful array of all students' id's, a first chance to meet the other (faked) personalities taking part in the exercise [Figure 1].

node1 - plan
Students could describe their own living situation with a plan and a written description how to get there - two very abstract ways to describe a spatial situation which they were to post as nodetypes 'pipes' and 'tanks' respectively. The pipe (the written description) always makes the transition or connection to another tank (the plan of a room) [Figure 2].

node2 - views: in and out
The third dimension was added to the plan. The students produced simple views in and out of their rooms, mixing photographs and computer models and posted them as nodetype 'view'.

node3 - natural light
The natural lighting situation in the students' apartments was investigated with the software Radiance (Ward, 1994). Renderings were posted as nodetype 'light'.

node4 - circulation space
A circulation space leading to their room could be invented, modelling stairs, corridors, etc. Images were posted as nodetype 'circulation'.

node5 - movement in space
Short frame-by-frame animations through their circulation spaces were produced with Radiance and DIPAD, a program originally developed for architectural photogrammetry (Hirschberg and Streilein, 1996). They were posted as GIF-animations as nodetype 'movement'.

node6 - cave: solid and void
The animation paths of node 5 were exported to the program Sculptor (Kurmann, 1995), where the path itself was interpreted as a series of connected spaces, serving as the basis for modelling operations comparable to digging a cave.

node7 - fake.light
fake.light in fake.architecture: using the models of their apartments or any of the imaginary scenes they modelled, students experimented with how artificial lighting effects can transform a space.

node8 - movie
With a special movie-tool, one could put together a fake.space tour, connecting the most interesting nodes, thus creating a second layer of connections on top of the existing node-structure. In this way, a second spatial structure, resulting from the interpretation of the original one, was established.

3.2 STORIES

In the course of the semester, as the students' modelling and presentation skills got more advanced, the assignments were less clearly defined, leaving it up to the students in which way their ideas could best be transported.
All node types could be connected freely. There was no regulation as to what nodes they could link their own work to. As long as it made sense, any type of relation could be established: continuation or rupture, detail or contrast. Sometimes one author produced a long sequence of many nodes, sometimes a dialogue between authors with similar ideas evolved. At particularly interesting nodes, new threads by many different authors could branch off, in other cases a story just died because the author lost interest in it. In this fashion, fake.space grew almost organically into the most diverse and unexpected directions.

Figure3. The fake.space connector, the entry point of fake.space.

At the center of this tree structure was the so-called fake.space connector, a ring of sixteen predefined nodes. It was the seed from which all consecutive node-threads would grow [Figure 3].

4 Navigation

The navigation through fake.space was of key importance to the whole course concept. The growth of the database could only happen in a meaningful way if it was also navigated through and experienced by the authors.
We provided several navigation modes that can conceptually be divided into inworld and outworld views.

4.1 INWORLD: MOVING ALONG THREADS

The standard navigation mode was to use the links leading to neighbouring nodes. In the standard frame layout that every node is displayed in, there are links leading to its neighbours: always one on the left (the parent node) and possibly one or several links on the right side, leading to nodes that were placed with reference to the currently viewed one. The titles of the nodes are used as the links, so a path can be remembered. This moving along threads is very straightforward. There is even an automotion mode that randomely follows threads through the nodesystem, creating an experience almost like watching tv. The automotion mode will jump to a randomely selected place whenever it hits a dead end. In manual mode those dead ends are rather tiresome, though. So there are several ways to jump to new starting points, the so-called outworld views.
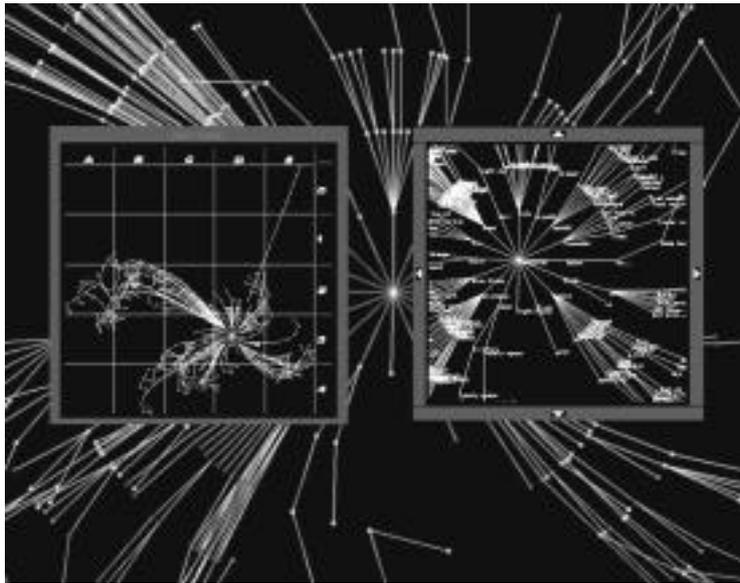
Figure 4. Outworld View: Sky. Graphic representation of the entire database at different
scales. It can be used as a clickable map to access nodes

4.2 OUTWORLD: MAP

The map is a list of all the available nodes, sorted by node-types. In the
default mode it will show the newest 25 of each type, but it also offers a
complete list for every type, if required. A key concept of the map is that it
automatically reloads itself after a while, thus always displaying the most up-
to-date state of the system. So one could keep the map-window open while
working and was kept current of all the new developments. Sometimes
reactions to postings were posted almost immediately.

4.3 OUTWORLD: SEARCH

To make it easier to find specific nodes (if one forgot how to reach them) we
provided a search-mechanism, which is of course particularly useful for
nodes that contain much text.

4.4 OUTWORLD: SKY

The sky-view is the graphic representation of the database, a clickable map
that lets one access the nodes based on the position within the system, and
also provides a very attractive overview of how the growth of the system
evolved. This view was only made available relatively late in the semester. It
will be interesting to see in the next fake.space course, how this view can
influence the growth of the system [Figure 4].

Figure 5. The fake.space nodesystem in outworld view, excerpts from some threads: We need to connect hundreds of individual impressions in our minds to come to an idea of a complex spatial system, such as fake.space.

5. Evaluation

Fake.space was an experiment in many ways. Most of all it challenged the students to not only learn about CAAD (which they had expected when they signed up for the course) but also use those tools to tell stories about their own lives and ideas (something most hadn't expected at all). So not all of them felt comfortable in this setup and some quit rather early. Due to the fact that our course is an elective class that students take in addition to their timeconsuming studiowork, we always have a lot of students who don't finish. (As we keep getting many applicants every semester, this drop-out rate hasn't led us to make our course less demanding). Fake.space was no different in this respect. Only some 50 students actually fulfilled our requirements, about the average 10 per group we've come to expect over the years. Amazingly though, a total of 1357 nodes was produced, mainly by these 50 students, while 7 per person would have been sufficient.

Obviously, there were some students that got really hooked by fake.space and created enormous amounts of input. The natural use of the CAAD tools as a means of expression by some of them quite surpassed our expectations.

Interestingly, fake.space was also used as a communication medium for private messages by some, written in a code that only the addressee could understand. Such messages could have been sent via email as well, but apparently there was a certain thrill in posting them as nodes, comparable to spraying graffiti on public walls perhaps.

Of course we had hoped that things like this would happen. This kind of personal involvement was the prerequisit for the community spirit that can now be felt in parts of the node system, making it a public space in the best sense and much more than the sum of its parts.

6. Conclusion

fake.space was a successful experiment in many ways. Technologically, it used state of the art possibilities of database-supported collaborative work. But fake.space was not about technology.

We've called fake.space an online CAAD community. In fact, it only worked because it indeed was one. Any online community must have strong common interests and a need to share their ideas. fake.space was a success, because its main topic, "space", worked in this respect. It worked because space is a topic close to the heart of any architectural student and because it could be investigated with regard to their own homes.

But fake.space also worked because it allowed a very tight coupling of medium and message. Visiting fake.space is a very spatial experience. Notably not only because in so many of the nodes one will find architectural plans, renderings and animations, but because of the narrative structure all of the nodes are placed in. Time, memory and movement are the essential prerequisits to experience space. Just like from one fixed point of view one cannot have any reliable spatial perception, we need to connect hundreds of individual impressions in our minds to come to an idea of a complex spatial system such as a city or fake.space.

fake.space is what might be called "applied fundamental research". We see the whole of fake.space, the sum of all the students' works and the links between them, as a very insightful theoretical study about the nature of space. In a way, it has become its own theoretical basis. It created the genre of spatial story-telling that suggests new concepts for architectural work in cyberspace.

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