

# instant city

ein elektronischer music bau spiel  
automat

<episode 10>

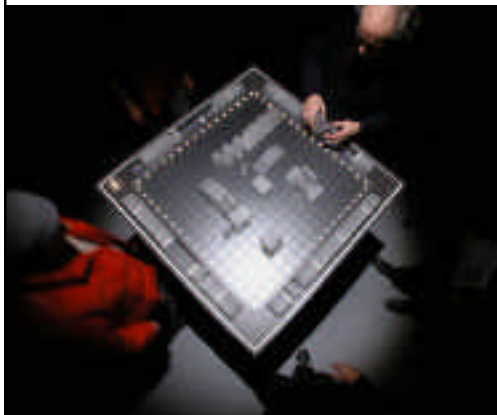
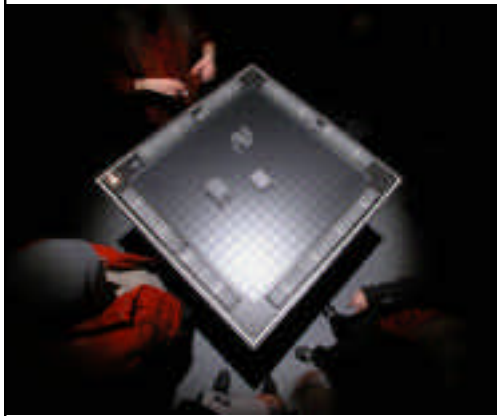
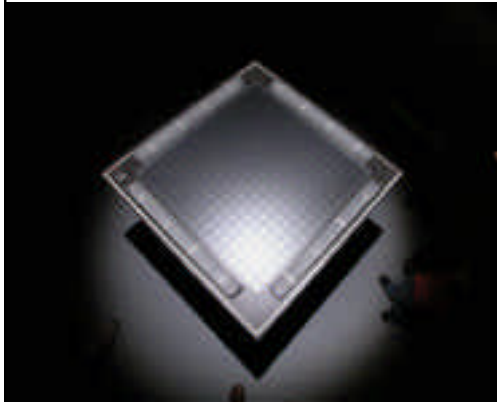
von Sibylle Hauert und Daniel Reichmuth  
mit Volker Böhm

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## instant city



<instant city, ein elektronischer musik bau spiel automat> is a music building game table.

One or more players at a table can create architecture using semi-transparent building blocks and in the process make different modular compositions audible. Every performance is unique because the sequence, timing and combination possibilities are completely in the hands of the players!  
For each game one composition is chosen.

### How It Works:

A spot light hangs over the table and under the glass plate game board there is a field of light sensors. Each semi-transparent building block that is brought into position anywhere on the table establishes a filter dimming down the intensity of the downward-flashing spotlight. The resulting variations – a kind of gray scale continuum – can be registered by the sensor field under the glass plate. Each of these gray scale values corresponds to a particular parameter of the selected "instant city" composition. Exactly what is heard, however, depends upon where the building blocks are placed, how high they are, how many are on the table, and the sequence in which they are used.

To date, eight different musicians have each produced special compositions which serve as the basic music building kits of instant city.

In order to give players a wide choice of compositions, we asked musicians working with very different kinds of music to create the first <music building kits>.

These <building kits> were created with a special sound and detection program that was especially developed to meet the requirements of <instant city>.

In the modular creation of the software, the aim was to achieve a large range of tonal flexibility.

The repertoire and compositions can and will be continually renewed/replenished, i.e., it is possible for any interested musician to create a <music building kit> for <instant city>.



## ein elektronischer musik bau spiel automat

For us the challenge of this interactive installation lies in enticing the audience into action, not only in front of the monitor or with a keyboard, but also in relation to physically real, sensually graspable objects. This action, on the other hand, should influence the atmosphere of the total space luring other people to play and listen...

<instant city> is an interactive installation, modular music-sequencer, composition software, playing console, and game, which can be played by one or more players simultaneously.

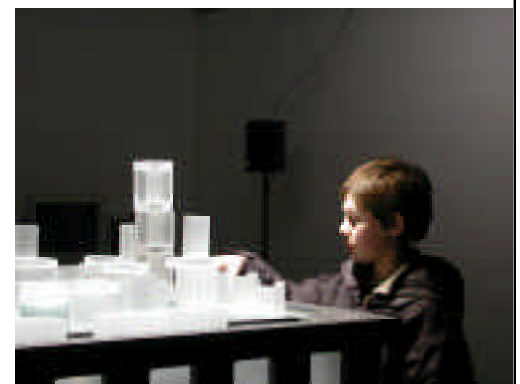
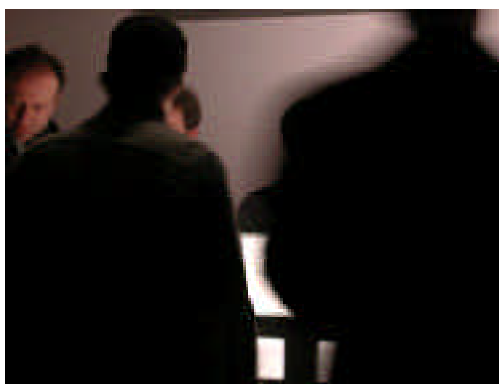
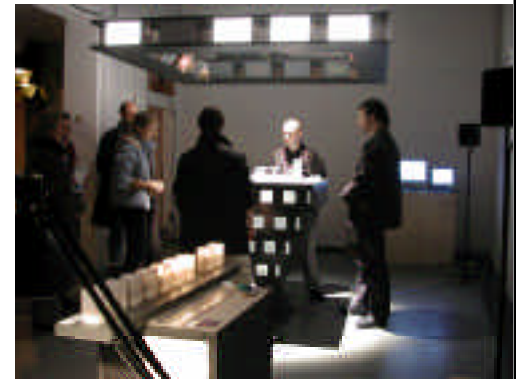
In the summer of 2001 the concept idea was awarded the „Freie Kunstprojekte“ of the Basel Kunstkredits. In the following one-and-a-half years <instant city> could be developed and realized. On January 17, 2003, Basel Museum Night, <instant city> was presented for the first time in the new media gallery plug-in and exhibited there until January 25th.

<instant city> has been presented at the ars electronica 2003 (honorary mention in interactive art, OK Centrum) and is nominated for: “international Medienkunstpreis”, ZKM Karlsruhe(D) “CYNETart 04” Festival for computer art, Dresden(D)

Idea and Concept: any affair, Sibylle Hauert and Daniel Reichmuth  
Development and Realization: Sibylle Hauert, Daniel Reichmuth (Design, Constructions, elektronical Hard- und Software) and Volker Böhm (Software „instant.tool“)  
Hardware Development Mediacontroller: i-art, Valentin Spiess  
Musicians and Composers: Stig Botterbloem, Geri Huber, Bernadette Johnson, Birgit Kempker, Tomek Kolczynski, Samy Kramer und Andri Freuler, Daniel Weissberg.



**a music box, a social game..... an unpredictable music instrument,.....a psychological test**



## an interactive computer game,.... a conversation space,....an aesthetic testing field....

With instant city an "instrument" has been created that can enliven a space and the events in it on a variety of levels. Initially the eye perceives instant city as a sculpture that is stretched like a column between floor and ceiling – a column, however, whose middle section consists only of light. As well, the two parts which, like quadratic funnels (or a reversed stalactite and stalagmite), seem to grow out of the floor and ceiling, are full of light – and a few centimeters over our heads – seduce us to come closer with a blinking which is like that of an inviting market stand.

This music building game automat, as the artists call their work, is also a light show and a seduction machine. We are unable to resist its allure to get engaged in the play.

The game itself has a beginning, but in contrast to most other games, no end - we determine ourselves when we want to walk away from instant city. As well, there are no winners or losers. And every game that is started here follows its own unique, unrepeatable course. There are so many factors which determine the musical "reaction" that the system can never be cracked. Single players could therefore appear as if they are in dialogue with an intelligent being – perhaps from a foreign, but very musical planet. Others might enjoy feeling completely overwhelmed by the mysteriousness of the system. Still others might simply enjoy that their own actions are answered musically.

The playing and what the game triggers are completely different from person to person. Some would like to walk away after only a short time, overwhelmed by the limitless possibilities. Others would like to lose themselves in the game. Perhaps mathematically oriented players will try to proceed strategically through decoding reaction patterns. Esthetes might aim to create especially elegant constructions – and allowing the musical effect to retreat into the background. Musically inclined players might try to coax as much music as possible out of these "automatons". The approaches to the game and the possible outcomes are limitless.

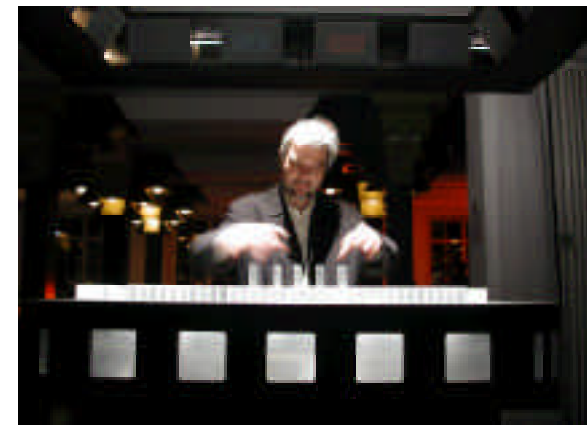
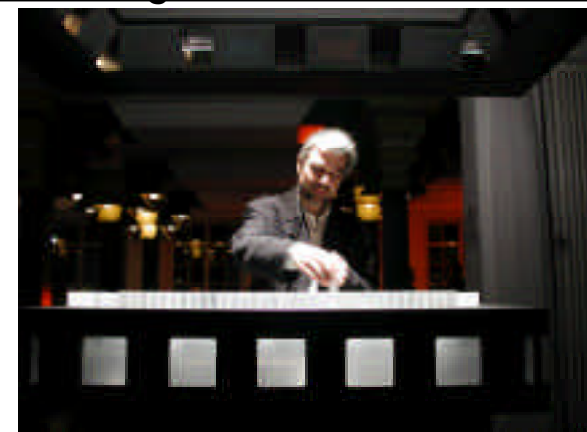
The situation is made more complicated for the players in that they can be observed in their doing. Since the game doesn't have an aim or goal which one can follow, every action becomes a demonstration of the playing personality. With every block that the player plays, he betrays something about himself, he gives something value.

This music building game automat gains a further dimension as more players gather around the table. Inevitably a dialogue situation develops, the action on the table transforms itself into a reaction to what the others do. Although there isn't actually a possibility to play against one another, still aesthetic differences can become visible on the game board in the same way as the different personality structures do. Suddenly there could be leaders who want to build up high – or saboteur whose structural intention is to disrupt or destroy. The music suddenly plays the role of a commentator or also a referee, who through sounds remarks upon the single acts.

instant city is many things at the same time: a music box, a social game, an interactive computer game, a psychological test, an unpredictable music instrument, a light show, a conversation space, an aesthetic testing field, ...

Yet even when the various aspects of instant city can be named, through its own art and means, this music building game automat brings a dynamic impulse into space that is new and whose true quality has to be personally experienced.

Samuel Herzog



## The Installation



<instant city> consists of:

gameboard table with integrated sensor field

a lightbox casing hanging above the table in which  
36 lights are enclosed,  
20 are oriented toward the outside and 16 towards  
the inside.

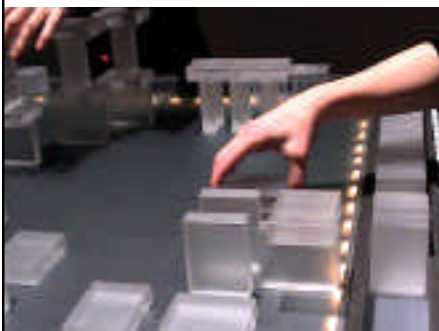
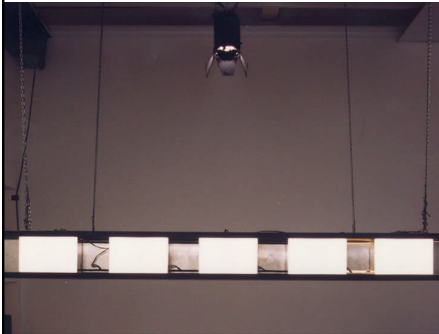
spotlight hanging above the lightbox

table/chest upon/in which the computer rests

4 speakers with built-in amplifiers on tripods  
distributed around the table

a board upon which the composition keys rest

## Functionality



As an „automat“, <instant city> has to provide a certain functionality and because it is a game which works through light and shadow, the operations of the players are largely determined through light signals.

The spotlight illuminates the playing surface and is part of the sensor system. Through the intensity of the light different playing modes can be indicated.

The lightbox casing suspended from above creates a spatial dimension of the total playing area. If the table isn't being played, the outer band of lights turns on to attract exhibition visitors who are passing by. The inner 4x4 light band documents the game course.

Near the installation there is a board upon which the composition keys rest: all are different. For each composition there is one glowing, pulsing plexiglass object. Every object encases a simple, electronic circuitry which not only serves recognizing/selecting the composition, but also to start and stop the game, each piece can be inserted into the respective slot in the table.

The gameboard table is playable from all sides. The playing surface is a satinized glassplate. Under it, is a visible grid with 16x16 fields. Under this grid, is the sensor plate which is light permeable as well, i.e., the table itself is an indirectly glowing element with its 100 openings on all sides.

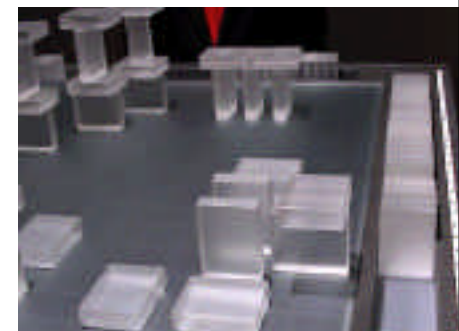
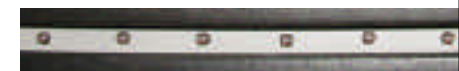
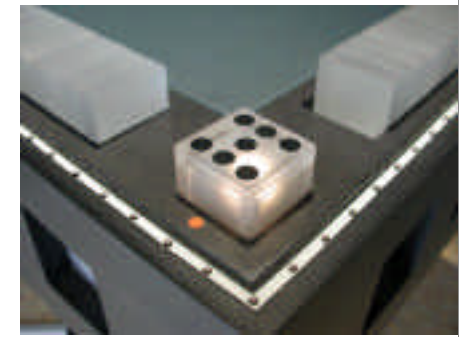
On hand, the building kits are ready to be played, distributed around all sides of the playing surface. The total number of building elements consists of 140 semi-transparent, frosted-plexiglass blocks.

A groove runs around the edge of the playing area in which a band of light sensors are embedded – these „light barriers“ serve to detect and thereby filter out the „building hand“. Casting a shadow on the playing surface during building, any hand in this area stops the course of the game.

As well, this interruption is also indicated by light: when an arm or hand remains in this zone, the „light barrier“ – a light garland in the outermost ring of the playing field – lights up; when the hand or arm is removed, it goes out.

With the building kits, it's possible to build up, make towers, set one on top of another, stacking or finely arranging to create ornaments...

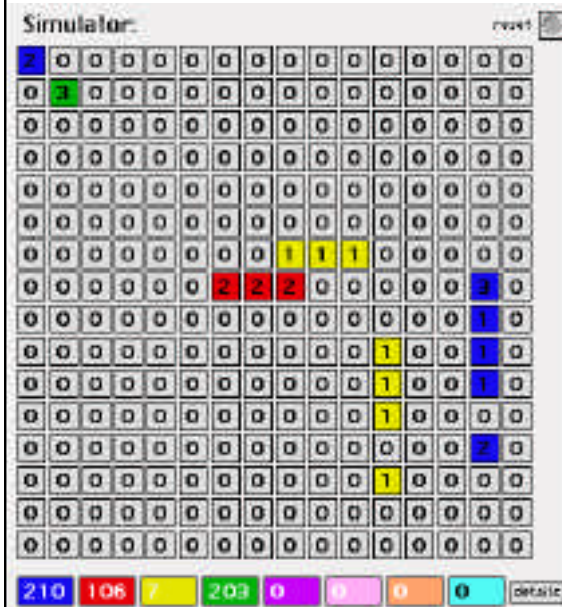
## and Design



## Hardware

The data collected by the 256 sensors is solicited by a media controller, which has been especially modified for <instant city> by Valentin Spiess (i-art), and then fed through the serial interface of the computer.

For operating the lights and the logical circuitry (lightbox, composition selection, etc.), programmable micro-controllers (basic stamps) were used. All gameboard table hardware, as well as electronic circuitry – with the exception of the „Media Controller“ – were developed and built, i.e., programmed, exclusively by <any affair>. Ultimately the generation of sound and evaluation of data detected by the media controllers are processed by two different computers (Apple Macintosh) which communicate with one another through a TCP protocol.



## Software

To create a <music building kit> for <instant city> the composers worked with a special sound-driving software, „instant.tool“. This was developed in the programming environment MAX/MSP (cycling'74). „Instant.tool“ serves as the composition environment and sound driver for the <instant city> playing board. The sensors under the tabletop register the architectural and three-dimensional qualities of the playing pieces on the table and send this information to the „instant.tool“ software as codified data.

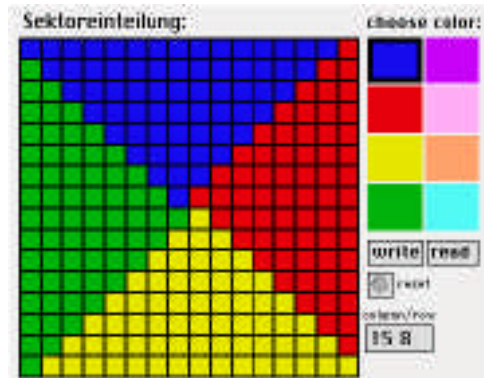
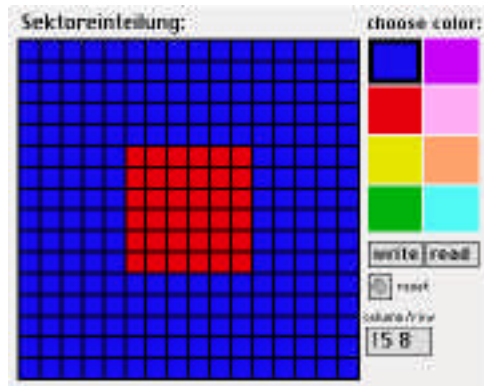
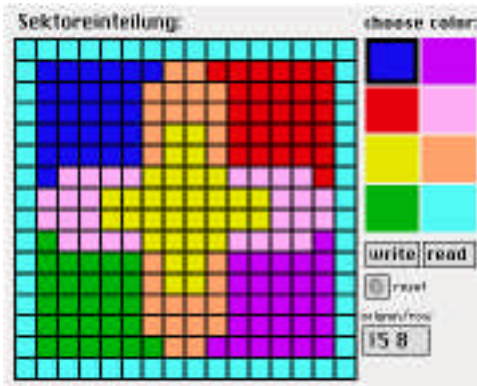
To limit the nearly endless number of various building situations that are possible with more than 100 building blocks, the 256 sensor chambers are combined in a maximum of 8 sectors.

Each individual composer can design the division of the surface in the sectors with the software simulator.

Through the shadow-casting of the building blocks on the chambers, the light sensors detect the number of building blocks and the greatest building height in a sector. Where the block in a sector is placed doesn't matter. The two parameters of number and height are codified into an unequivocal, three-digit number that is generated through the relationship of the architectural and musical situations.

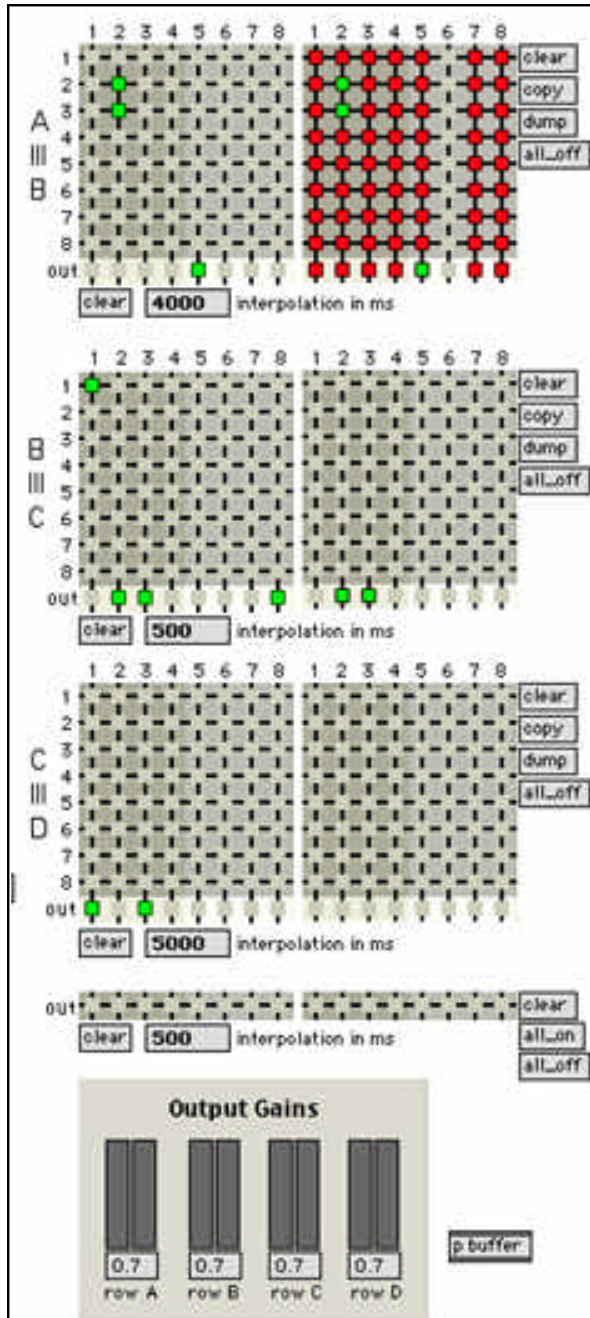
Musical moods, sounds, soundscapes, rhythms, voices, noises, etc. can be heard respective to the different architectural situations on the playing table. The exact musical qualities are produced with the sound modules of „instant.tool“ and saved as so-called presets according to the respectively codified indices in each sector. The choice of the sound module is individually determined for each composition. Different sampling and sound file players are available, as well as diverse sequencers, modulators (FM, AM, etc.), filters, pitch shifters, etc.

The biggest problem (and biggest challenge) in the realization of the musical aspect of the project lies in the nonlinearity of the time axis. A player can begin to build in the red sector just as well as in the yellow or green. The temporal progression of the construction process is completely arbitrary. Thus the temporal progression of the musical performance (especially also the way the single strains are eventually heard together) cannot be absolutely determined, which, on the other hand, presents particular demands in terms of the selection and design of musical material.





# Compositions



Are musical events comparable to architectonic structures?  
 Will people become engaged in “naively” researching a system with which they are not familiar?  
 Which building structures are relevant and which are not?

These are only some of the questions that were posed to the 8 different composers invited to write a musical building kit for <instant city>. These compositions could be anything from noise collages with integrated text to minimal music. The tonal result is not so much a totally-polished composed “song”, but rather is something that can be called a sound environment.

The clang/sound of such music building kits is thereby mainly dependent on the sound files/tones with which the composers “feed” the <instant city> software. These sound files can naturally be produced in the most various of ways, with which methods/programs (recording, synthesizers, sampler, software, etc.) were always and exclusively imported in “instant.tool”.

The software itself contains no prefabricated sounds whatsoever.

Inviting different musicians and composers not only served to provide for a variety of music, but also of diverse strategies in dealing with this “instrument”; while one composition appears to be repeatable, another is never the same; one aims to engage chance, while still another tries to avoid it; here diversity, there simplicity.

While most of the players let themselves be led by the strategy of the respective composer, the tonal result is not reduced to something “pleasing”, but rather it inspires courage and curiosity to do the “unheard-of”. Namely to keep on building!

as mentioned previously

The repertoire and compositions can and will be continually renewed/replenished, i.e., it is possible for any interested musician to create a <music building kit> for <instant city>.



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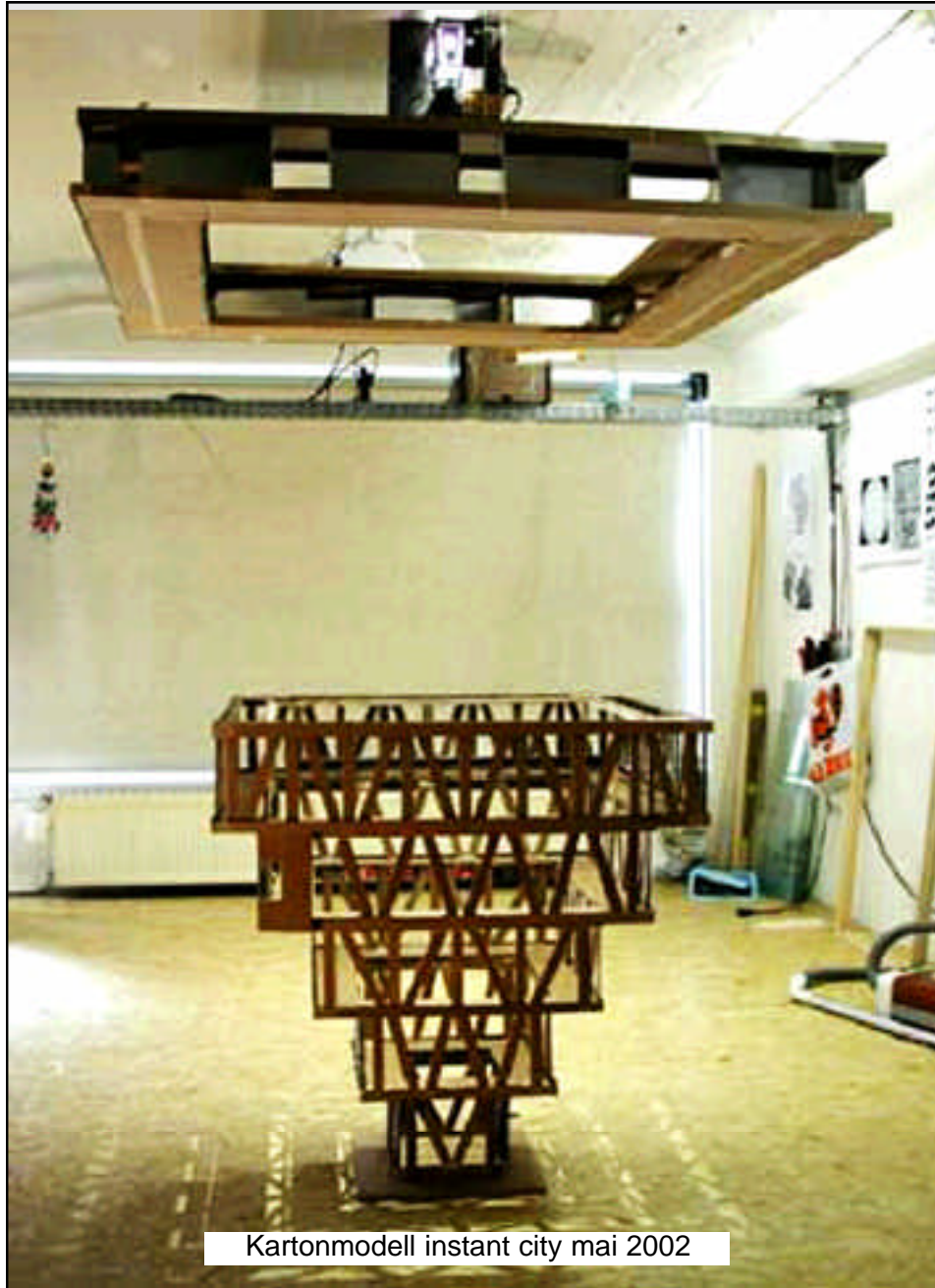
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