The influence of the computer on the development of architecture nowadays is inseparable from current activities on both socio-cultural and scientific level.

Philosophers have described recent cultural transformations in society and alternative spatial properties, whereas scientific research mostly dealt with the actual translation of these other systems through the adaptation of the computer memory. The architectural profession in transit will have to redefine its boundaries and recreate its space within the ongoing discussion.

On socio-cultural level modern (mostly French) philosophers have recently been describing the developments of for example mass media, new media and global communication and its influences on modern societies and global economies. Philosophers like Gilles Deleuze, Paul Virilio and Michel Serres have expanded these notions towards the developments of new spaces, both on architectural and urban scale and described the changed perceptions and political meanings of these spaces. Spaces which are for example: non-hierarchical, nomadic (Deleuze) unstable, dynamic Serres) and surveyed (Virilio).

The investigation of these new systems in science has been enabled by the introduction of the computer, a tool which can register complex mechanisms and simulate their spatial consequences. Here the matrix is the measuring device rather than the two-dimensional grid represented in Euclidean geometry. For example in physics the matrix is used to define 'phase space', a description of points notated in space over time, a dynamic system. In geology the use of Land Sat and Sea Sat systems notate precise satellite measurements which are digitized by computer and visualized in three dimensional imaging processes. They have enabled us to map parts of the world until then unknown. The computer enabled the scientist to visualize these complex phenomena and therefor to understand, investigate and develop them.

The architectural profession, confronted with the complex manifestations of our society, can no longer limit itself to craftsmanship, proportional systems or esthetics. The consequences for the possible architectural developments could be investigated by tracing parallel meanings with other sciences. The act of comparing is a method commonly employed in science. For example cybernetics introduces physics and psychology for the comparative study of 'control' systems represented both in the brain and nervous systems as well as in the mechanical or computerized information- and control systems. For architecture the study of science, like for example philosophy, mathematics or micro-physics, could become of critical importance, they offer new ways to develop architectural solutions to problems raised by new infrastructures, new economics, new sites. What is thus required is dynamic architectural system which can adapt itself to changing circumstances, the equivalent of a 'trans-formal' space, a space which has 'overcome' form and is in constant flux. Here we are concerned with the investigation of a fluid, smooth space which reacts not unlike an organism, a self-regenerating, re active space. The development and representation of this spatial fluidity will be enabled by the generative precision and virtual representation of the computer.

TEXTURE

Texture, textura < texere -to weave. 1. original woven fabric 2. the arrangement of particles or constituent parts of any material as wood, metal, etc. as it affects the appearance or feel of the surface, structure, composition, grain 3. the structural quality of a work of art, resulting from the artists use of material 4. the melodic and harmonic relationships of musical materials 5. basic structure (texture of society).

The basic structure of the projects presented here consist of a texture formed of interweaving layers representing spatial, political, social, economic and cultural influences. The layers form a dynamic system which connect and inform each other in a complex system, represented in the matrix which replaces the two-dimensional grid. The notion of time and space has been studied for years in science. The introduction of time in our spatial experience of architecture will result in a spaces consisting of a series of dynamic frames, of shifting horizons, which will transform the common notions of architectural elements like; the wall, the door, the facade, etc.

In that spirit, the following typologies are proposed; urban-, architectural- and virtual textures.

URBAN TEXTURES

An investigation of the Field-Condition, where new urban solids are fragmented by traces of history (Beirut), speed vectors (the United Nations), or layers of new economies (Grauzone). They form a multiplicity of fluid topologies, fields of energy resonating both in- and outwards.

ARCHITECTURAL TEXTURES

The changing meaning of the Facade or the Wall has been of major influence on the development of the building volume. The property of a „smart" surface containing new information has transformed the wall from a singular object into a membrane. A connecting membrane which transforms the dividing wall into an information zone. The membrane is self-adjusting:

– surveillance and security systems have taken over perhaps the most important function of the

wall – the function of protection. Here the solidity of the wall has been replaced by the electronic surveillance zone of cameras and sensors.

– with the splintering of the corporate world into urban and post-urban fragments, the facade which once represented corporate power has lost its function. The facade has become the signifier of constant change and modulation, and in some cases even the carrier of mediated messages – it has become a mediated screen.

– the development of the urban environment as a dynamic space of flows has rendered the wall in the traditional sense into a permeable 'smart' zone where continuous topological surfaces connect exterior and interior spaces, functional programs and infra-structures.

VIRTUAL TEXTURES
relate to the constant flow of communication and new media. We can no longer visualize the 'real time' space of communication which connects each of us to a global informational matrix. Our messages occupy the D-Zone, the belt around the earth where satellites circle. The new computer network spaces, like for example the World Wide Web, bring us more information on a broader level, but with it comes an increasing superficiality, „Web Surfing". These communication networks change the importance of location or site of the built structure. Buildings can thus be located anywhere in this global matrix: in the desert (Biological Research Center) or underground in the metropolis (Cyber Center Manhattan); buildings are thus no longer concerned with a representation of power but rather form 'nodes' in the global network of information systems.

MANATVS – TEMPORAL TERRITORIES

An urban competition for governors island, 1996 (honorable mention)

The multiplication of effects through rarefaction of means is, for different reasons, the rule that organizes both an art of operating and the poetic art of speaking, painting or singing.
„Practice of every day life" Michel de Certeau

„Practice of every day life"

HISTORY – Governors Island
Looking at the geo-political history of Governors Island, it is striking how the morphology of the island changed over the years. From the moment that the Dutch bought it in 1637 from two Indians – the island in its largest form – to the moment the island was fixated in its final shape in the year 1912, the morphology underwent drastic changes. This historical overview shows that the island consists of two geographical parts; a Stable Region, the head of the island with the fort, castle and mansions, the oldest and highest point, and an Unstable Region the artificially reclaimed land, with no real urban or architectural expression.

CONCEPT – Temporal Territories
The inherent memory of the island constitutes a PERMANENTLY UNSTABLE ENTITY, an ever fluctuating form, a constantly evolving structure. The introduction of pier-structures on the west side of the island will cause a gradual settlement of sand particles along that boundary, and the growth of a NATURALLY PROTECTED BEACH. These piers will also provide the foundations for FUTURE HOUSING STRUCTURES, temporal dwellings, balancing on the edge of the stable and unstable region. The artificially reclaimed sector of the island will contain services for the new apartment structures and for the historical region: Landmarks in the Park.

DIS – A – PIER
Fluid Topologies, Yokohama 1994.

SITE
The city of Yokohama has designated the artificially reclaimed land along the harbor of Yokohama as a large new corporate entity for the city, a 'dynamic urban development' . It consists of two area's: first, Minato Mirai 21, a new zone close to the pier, will consist primarily of high-rises and large business enterprises. This typifies the notion of corporate power, the static, stable part of society. Second, the Osanbashi pier, the future site for the port terminal in the city, forms a space of movement, a dynamic, temporal space, a space of arrival and departure. The visitor experiences the momentarily stretching of time, of delay.

CONCEPT
The notion of delay is introduced in a topological model where two twisted 'rubber' bands distill this time-lapse in the space of the terminal. In the science of topology the 'twisted rubber band' illustrates the unwinding and eventual disappearance of a texture. This notion of instability and temporality illustrates the fluidity of time and space. The two twisted surfaces are loaded with program, one the carrier of city functions, the other of terminal functions. The intersection of the two bands results in a series of functional modules which will simultaneously smoothly connect and slip past each other. Their volume represents the proposed building volume of 48.000 m² required by the organization. The fluidity of the terminal structure is determined by the interaction of the mathematical geometry of the computer and the material resistance factor of the physical model.

TERMINAL FUNCTIONS

The terminal, a space of tight organization and communication, contains the departure / arrival hall and the CIQ (Customs, Immigration and Quarantine). It is located in the tightly intertwined space formed by the intersection of two topological bands, the intersection results in a 'bridge' structure. This allows for a traffic plaza to be located under the terminal, which enables other visitors to wander around the pier freely. The entrance of the departure and arrival hall is located at this traffic plaza. After checking in at the hall passengers cross over the traffic plaza to the CIQ on the +5m level, where luggage is checked in, the passengers then depart via the cruise decks. Visitors can accompany passengers over the bridge and ascend to the +10m level, where they enter the visitor's decks and cafe. The surface of the cafe connects smoothly into the city restaurant located above offering a spectacular view over the bay of Yokohama.

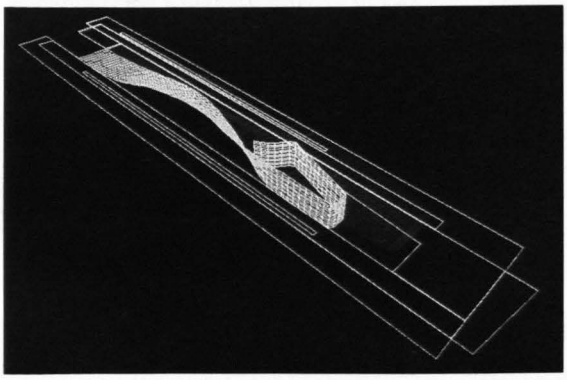
CITY FUNCTIONS

The smooth transformation of the pier surface onto the twisting plane of the terminal allows for the city inhabitants to be drawn inconspicuously up the sloping plaza situated over the departure hall. Along this promenade they will encounter: information center, exhibition hall and shops. These shops have dual access: city pedestrians enter from the pier – and travelers enter through the departure and arrival hall. Walking further the pedestrian passes the roof garden, the foyer of the salon of civic exchange, and proceeds to a spacious restaurant overlooking the harbor.

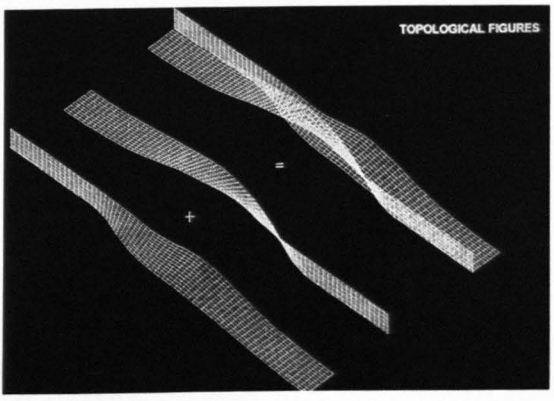
NIWAMINATO

The terminal building is placed on the pier not unlike a 'rock' in a Japanese garden. The pier surfaces are textured with different materials that shift with the movement of the building volumes, the parking garage slips under the terminal in a fluid movement. The tip of the pier is constructed of wooden slats that reveal the water below and form the arrival area for the 'sea bus'. Stone surfaces further define pedestrian shopping areas that are adjacent to the walkway ramp leading to the roof garden and restaurant. The building itself forms a continuous membrane constructed of a structural skin: an aluminum frame wrapped with a translucent texture of aluminum ribbons and fiberglass. The side walls are enclosed by warping glass planes directed by the smooth curves of the building surfaces.

Verfasserin:
Winka Dubbeldam, M. S.
New York



1| Yokohama, concept diagramm



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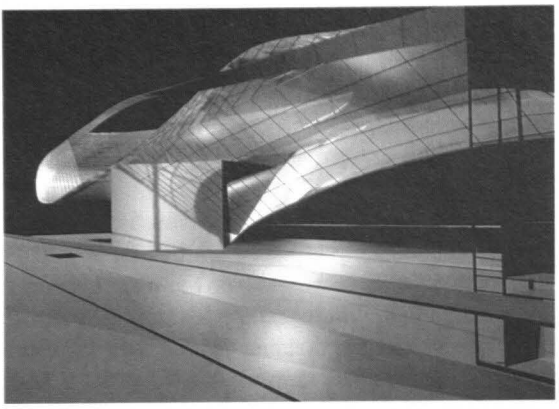
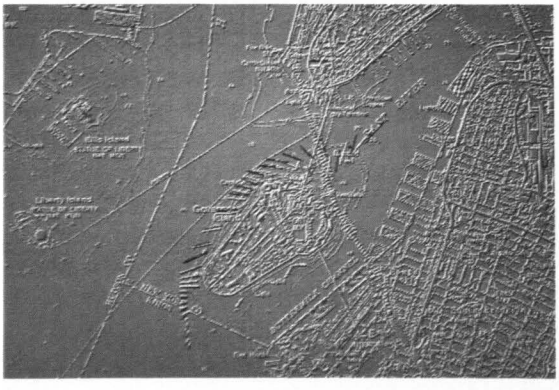
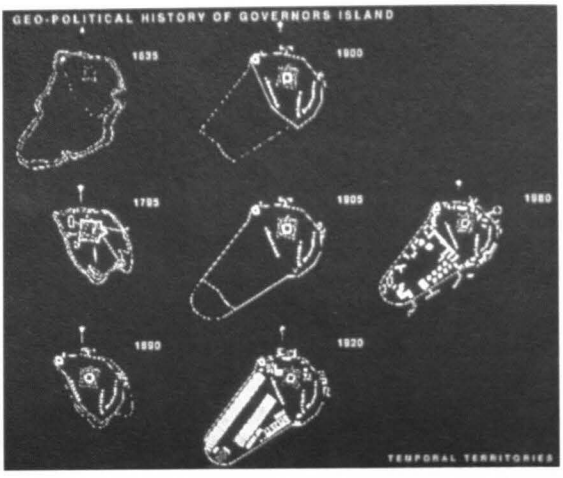


3| Cruise ship terminal, Yokohama 1995

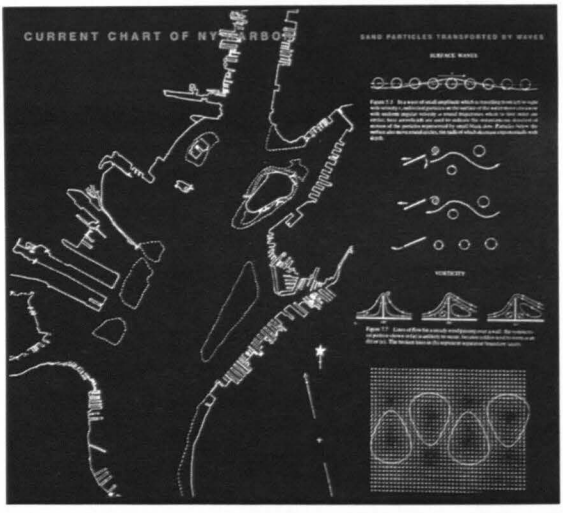
4| Terminal, Yokohama (with Maggie Mahboublan)



5| Governors Island, „Honorable Mention", 1996



6| History of Governors Isle



7| Current Charts

8| Governors Island with new „Housing on piers", 1996