

Mapping Shadows: Infecting the Map's World

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Fig. 1. "Mapping Shadows" Installation, Galleri Rom, Oslo, Norway.

A map of Esmeralda should include, marked in different colored inks, all these routes, solid and liquid, evident and hidden. It is more difficult to fix on the map the routes of the swallows, who cut the air over the roofs, dropping long invisible parabolas with their still wings, darting to gulp a mosquito, spiraling upward, grazing a pinnacle, dominating from every point of their airy paths all the points of the city¹. (Italo Calvino, *Invisible Cities*)

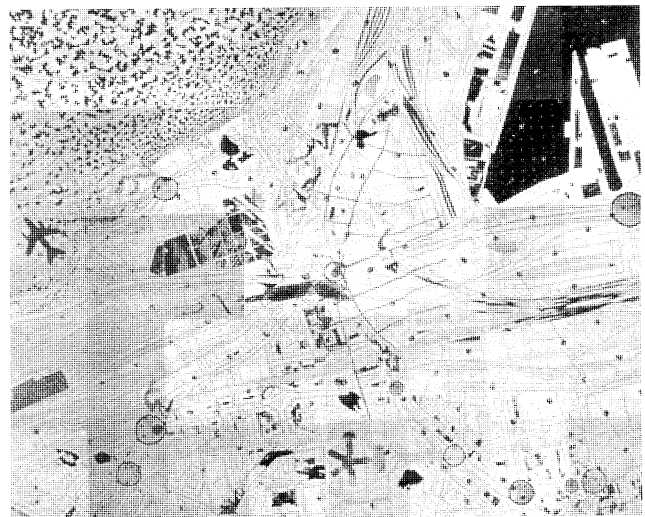


Fig. 2. "Mapping Shadows" Composite Map.

ARCHITECTS, MAPS, AND THE FUTURE

Maps are one of the first tools used by an architect at the start of any project. They are used to orient oneself and the site relative to the "existing" environment. Analysis of surrounding building types, neighborhood boundaries, city patterns, figure/ground relationships, and historical development are all gleaned from maps. Potential projects are placed into maps to check their appropriateness with the existing condition. To some extent, the "actual" world is defined by its representation as it appears through the vehicle of the map. Thus, judgments made by map makers effects how the architect frames the problem at hand and envisions the future built environment.

As an architect, my interest in maps can be captured in several questions: How does the way a place is represented in maps affect our image of its future? What aspects of the lived world are omitted by maps that are of concern to an architect? How does the intersection of the world as represented and the world as lived frame our view of each? "Mapping Shadows," a workshop which I led together with Dan Hoffman, head of the Cranbrook Architecture Office, at the Institut for RomKunst in Oslo in August 1993, posed

these questions to a group of Norwegian artists and architects. The exploration resulted in a collaborative map of Gamle Byen, the old city of Oslo, which we installed at the Galleri Rom for Arkitektur.

MAPS AND SHADOWS

A map is a semiotic tool. A tool constructed of signs, signifying a place. It conveys meaning through the employment of an agreed upon system of signs re-presenting a world in a form both removed and translated from the place itself. The language of signs is the vehicle by which we transform the knowledge of the lived world into an abstract image that we call a map. Charles Peirce categorized signs into three types: symbol, icon, and index.² Of these, only the index carries the direct mark of inhabitation and has a temporal and material dimension. By definition, an index is a mark created in the lived world in time—a record of the physical interaction between an object and a force. Like all objects made in the world indexical signs such as creases, stains, fingerprints, and the ink itself, are to be found on maps, however, indexical marks are absent from the vocabulary of intentional signs contributing to the map's representation. Generally, maps only employ two types of signs, symbols and icons, to describe the world.

A shadow is an indexical sign. It is made of the intertwining of the temporal and the material—the direct result of the interplay of a light source, an object, a surface and a moment. Isolated from this condition, a shadow indicates objects and relationships which are no longer present.

A shadow offers a way of seeing the world that the map lacks. Its implicit situation of relationships can enrich the map with the temporal dimension. However, the shadow lacks the ability to convey the larger context of order and the rational, systematic knowledge which the map offers.

In a fictional Empire described in the parable, "Of Exactitude in Science," by Jorge Luis Borges, cartography has achieved such "perfection" that a map is drawn which depicted reality at "the same scale of the Empire and that coincided with it point for point."³ The Borges story speaks of the desire to map all things, to collect all known knowledge and to duplicate it—to make a map as detailed, as real and as big as the Empire itself. This extreme test of cartography limits and alters our constructions both of the world we inhabit and its possible representations. By claiming to erase the gap between a map and its subject, it indicates that very gap.

In Norway, we embraced that gap by infecting the world of representation, the map, with the qualities of its subject and by infecting the lived world with its representation.

THE PROJECT

Norway is a country with extreme light conditions. Plentiful light in the summer, very little light in the winter. At the end of August, the sun is precious. Each day arrives with the sun and passes with the awareness that we are brought closer to

winter when the sun and its warmth will disappear. Given these conditions, in considering a map of the area we asked ourselves the following questions: Is it possible to harvest the sun, as one does other fruits of the summer? Would it be possible to preserve these moments on the map by using the light of the sun? Could we store the sun by capturing its shadows?

In Gamle Byen, modern systems of infrastructure disrupt the history and life of the city and bind it together. It is a place where the representations of the city described in its maps are intermingled with the shadows of past and present time. The project sought to find a space between these two aspects, between the many maps that have been inscribed upon this neighborhood and the shadows that can be found upon its surface.

During the middle ages, Gamle Byen was the center of Oslo. In 1624, a Danish King, King Christian IV, abandoned the old city and moved the town to the other side of the harbor. Oslo has grown to include Gamle Byen in its borders and it is a much contested neighborhood in the city today. It is now on the periphery—poor, fragmented and rich with history. City planners, politicians, archaeologists and residents have been debating its fate for more than a decade. Our hosts at the Institut for RomKunst conceived of a series of projects focusing on this neighborhood as a vehicle to add the voices of artists and architects to the fray.

The project was structured so that people could work both



Fig. 3. Overhead Video Still of Map Installation.

individually and collectively. 14 individuals created projects on a base map of Gamle Byen.⁴ The workshop began with the act of gathering; the group first collected every possible map they could find of the area. They then went to the site and “captured” shadows—by walking around the neighborhood with two tubes: one empty and the other containing light sensitive drafting film. When a student found a shadow that was related to their exploration, they quickly took a piece of film from the tube, placed it on the surface where the shadow fell and waited until the film was exposed by the sun. This exposed film was placed in the second tube and developed in a blueprint machine at the architecture school.

Shadows were gathered both from the street and from medieval artifacts unearthed by archaeologists in Gamle Byen. Shadows were captured from the site, collected and reinserted into the map. This basic indexical technique was used by each individual in their pursuit of adding that which was absent on the map but present on the site.

THE INSTALLATION

Our map of Gamle Byen was approximately 20' x 24', and covered the entire floor surface of the main room in the Galleri Rom. The manipulated map consisted of 40 sections of equal size (Figure 2). The base map was an enlarged contemporary single line map of the neighborhood which included topographical information, the size and location of buildings, roads, railroads, property lines, street names, and indications of subterranean and surface infrastructure.

To arrive at the Galleri Rom, one climbed a set of stairs to the second floor. A video monitor was placed on the landing outside the Map room (Figure 3). The monitor was linked to a camera suspended above the center of the map recording the activity of the room. This was a visitor's first encounter with the map—a perspective which placed you above it looking down at the people in the room standing upon it—the seeming viewpoint of a map viewer, approaching the impossible, ubiquitous orthogonal position of a. A hallway lined with captured shadows sandwiched between pieces of glass led to an adjacent room. One entered this room and walked upon the map.

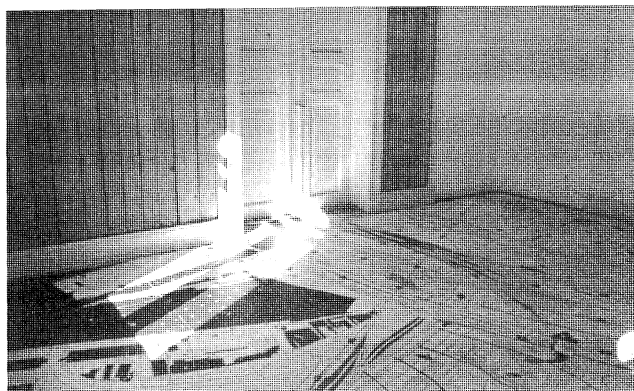


Fig. 4. Detail of Map Room.

EXPERIENCING THE INSTALLATION

Our map of Gamle Byen is both a representation that you can physically inhabit and a room that you can literally “read,” a place that speaks directly about the condition of being here and there simultaneously, both in space and in time. The room is “filled” with the map which covers the floor, and at the same time, it is an “empty” room, (four walls, a ceiling, and a floor) defining a space for action. This dual nature was evident on many levels.

When one walks in a city, a collection of perspective images most closely approximates our vision. The center ray of vision is perpendicular to our eyes and parallel to the ground; closer things are larger and more detailed. As we move, images constantly shift focus between near and far, and within and without our frame of vision. Maps on the other hand are a mathematical projection, a composite image with all information equidistant from the floating observer's eye. When standing in the room upon the map, both orthogonal and perspective viewpoints are present simultaneously.

Maps are usually smaller than our bodies. The map of Gamle Byen was enlarged to a scale that could be physically inhabited. As the representation approached actual size, we appeared to grow larger relative to it—our “large” feet negotiated tiny buildings and tiny streets. The scale of the room flip-flopped, seesawing back and forth, growing and shrinking. When the room was gaged by the map it contained, the room appeared larger than life. When the map was disregarded and the focus shifted to the architectural elements that defined the room, the room “shrunk” to “normal” as this measure (doors, windows and height) was proportioned to fit our scale—and we in turn returned to size. The insertion of the shadow projects on the base map added yet other scales, giving depth to the piece.

Light and shadow entering the room through the windows fell on the map—just like on any other surface in the world (Figures 1 and 4). We are here, now—the specificity of place and time of the room is established by these shadows cast upon the map. But, expected scales were questioned when the shadows of the room fell upon the map. The normal order of magnitude in the world—that objects are smaller than the room in which they sit, and a room is smaller than the city that it is part of—gave way to a space in which the relative size of things was not fixed, but in which it felt as if other factors determined scale—such as importance, value, permanence, emotion, and association—as in the world of dreams or representations.

What are the limits of the map world and of the lived world? Can one define such a boundary? The surface of the floor of the room, and the surface of the map are one. The logic of a room and the logic of the map collide. The room is scaled to fit the expected inhabitant. There is an outside where one comes in from and there are doors and windows to get from here to there or visa versa. At the same time, the map's physical and informational logic—it is a scaled

image, a two-dimensional representation, a constructed frozen moment of somewhere else—frames another subject. It is this overlap that is so critical; a space has been created that allows one to occupy the world and its representation simultaneously—to stand both here *and* there, to include both this *and* that—where one way of thinking slips into the other, and the limits of each become transparent.

CASE STUDIES - MAKING VISIBLE

Our experience of a place is formed by the ever-changing combination of visible and invisible relationships within the environment and within ourselves. Very few maps tell how a place feels. Maps are devoid of time and material. In order to draw a map, time must be frozen. Maps exchange an embodied observer walking upon the earth for an omnipresent position hovering above the earth's surface. In the process of approximating and rationalizing the lived world, differences are erased and similarities overlooked. A sense of the city as built of an infinite number of human decisions and actions is lost. How might we include these qualities which are so much a part of our experience of a place in a map? Multiple investigations occurring on the map within the framework of these questions offered an opportunity to indicate the contrast between an apparent simplicity and homogeneity of maps and an infinite complexity of a subject.

Several of the individual projects attempted to address aspects of Gamle Byen which were hidden either by the view of the map, by the passage of time, by the omission of information, or by the ephemeral quality of the subject. To this end, the original streets of the town were overlaid upon today's plan— a frame which forces us through contrast to recognize that a specific moment in time has been chosen to draw this map, the old harbor edge was inferred by the streets abrupt endings, manholes were enlarged and filled with shadows of water reminding us of the biological needs of the city's inhabitants, fragments of a doll's shadows were inserted in Gamle Byen's courtyards giving image to the daily search of an eccentric inhabitant, and shadows of objects excavated at the archaeological sites were inserted in strategic places on the map (Figure 5).

The first exploration that I will discuss in detail was a

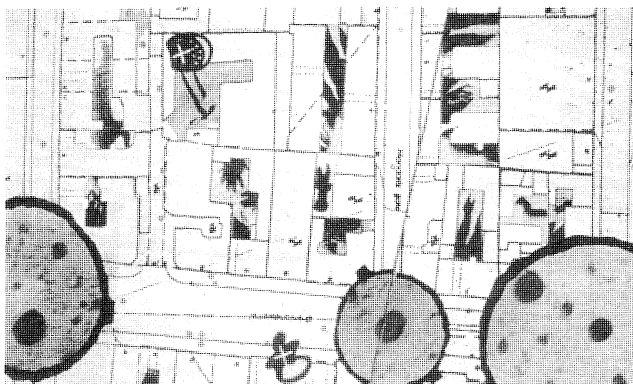


Fig. 5 "Manholes" & "Dollyards"- Map Detail.

response to the presence of wind on the site. The second project, "Knotspace," was a response to the sacrifice of the third dimension in the making of the map. The two case studies of individual explorations on the map are intended to illuminate some of the personal solutions to the problem of "Mapping Shadows."

Marianne Lund lives in Liszt, a town along the southern coast of Norway. In this place, the wind is so strong that one literally needs to take care not to be blown off the cliffs and into the sea. The wind creates a constant roar, muffled only slightly by the hay which is traditionally thatched to the windward wall of houses in that part of the country. How does one represent the wind on a map? Its effect? Its presence and its absence? Its direction? Its strength? At the time when describing the wind was an important part of a map's task, cartographers developed various ways to depict qualities such as direction and strength critical to harnessing its powers (Fig. 6).

We "see" the wind in the world through the things it affects: the billowing of a sail, the flight of a bird, the scattering of dirt, the movement of leaves. Marianne looked to these lived indexes of the wind as a way to represent it on the map. Since it took time to expose the film, it was possible to record phenomena which changed over time with this technique. In experimenting with the light sensitive film under a tree, Marianne found that the density of the shadow image of the leaves varied. Her understanding was that a denser image indicated a constancy of sun blockage, while a lighter image indicated an interrupted screening, a place or time when the sun exposed the film. Partially exposed areas occurred when the wind blew the leaves on the branches and shifted where the shadows of those leaves fell on the ground. In Gamle Byen, the wind alternatively blew from the harbor to the mountain and from the mountain to the harbor. The mass of the mountain and the edge of the water work together to contribute to the direction, force, and timing of the wind. Marianne worked with the shadow shapes formed by the relationship between the sun, the wind, the leaves and the ground. She placed these shapes upon every tree on the mountain marked on the base map.

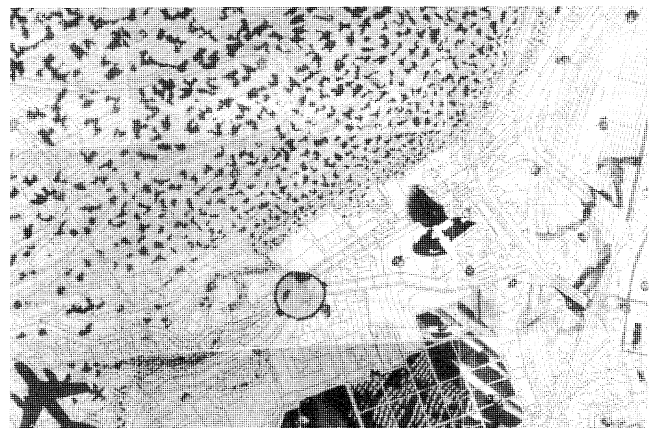


Fig. 6. "Wind"- Map Detail

The second problem she addressed was how to build the mass of the mountain on the flat surface of the map, so that when walking upon it, it would feel as if it were rising towards one. To this end, she combined techniques from two different representational systems. The wind shadows were placed following the lead of the topographic map conventions already present on the base map (the steeper the slope, the closer the contour lines) and the rules of illusionist pictorial language (the further away, the closer together and the smaller the marks).⁵ By combining these two rules with the wind shadows, Marianne succeeded in creating a sense of vertigo, pushing the lower slope of the mountain and the flat area of Gamle Byen down into the picture plane, and pulling the peak of the mountain forward and upward. Depending on which scale this image is framed, different associations come to mind—the wind shadows on the peak appear to float above the surface like shadows of clouds, or appear as leaves blowing across the map, or recall a portion of a single tree's crown of leaves. An inversion occurs: the trees are signified by the shadow of the wind blowing through their leaves rather than by a symbol of their substance.

"Knotspace," Merethe Varostrand's particular exploration focused on the continuity of space around objects in our experience of place and the collapse and subsequent loss of space in the map (Figures 7 & 8). The transformation from

three dimensions to two is accomplished at the cost of flattening space perpendicular to the picture plane. This particular sacrifice is due in part to the 90-degree rotation of our viewing orientation from a position parallel to the ground plane to perpendicular and to the conventions of orthogonal projection. How does one represent the spatial dimension that was sacrificed in the making of the map? Merethe was particularly interested in the space that was always in shadow because it was below something else. To explore this issue, she found points on the map where the infrastructure of travel, in this case roads and railroad tracks, shared the same xy coordinates but were in different places along the z axis. It is only because there is space above, below and around these routes that the two systems can operate simultaneously. One of the significant qualities of this space is its continuous flow around objects. Merethe modeled this aspect analogously by replacing space with a material object, a scarf, which had similar flowing properties. By knotting and wrapping the scarf around the paper map, she mimicked the flow of space under, over and around the bridges. By inserting these images on the map she indicated that space flowed around these intersections and that there was a place in shadow to be found under each bridge as well as a place above it.



Fig. 7. Overpass in Gamle Byen, Oslo.

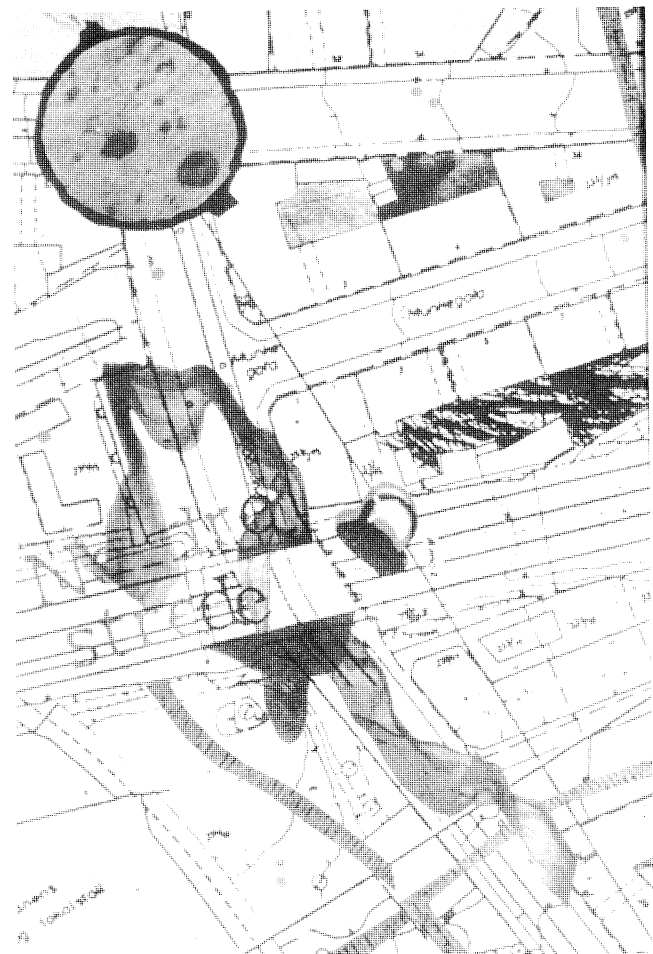


Fig. 8. "Knotspace"- Map Detail.

CONCLUSION

The intertwining of different experiences of scale and temporal phenomena (i.e., frozen moments and duration) in the world and the map was one of the most significant achievements of this installation. For it is this uncertainty and richness that we carry with us when we experience a place. Perhaps, it was the ability to imagine ourselves where we are not or could not physically go that compelled humans to make maps in the first place and to eventually follow them. In our experience and in our dreams we manage to hold all these different scales and times together, why not in our maps?

The knowledge lost to the map and contained by the body such as memory, consciousness, and time were carried to our map when we stepped upon it. By allowing the body the opportunity to inhabit the map, and the map to serve both as a representation of another place and as the surface upon which we walked and shadows fell, the lost dimensions of time, material and space were thrust upon it. By giving image to some of the aspects of Gamle Byen and to the individual experiences of the city, other yet unvoiced and still hidden complexities surfaced. Our attempts to both map the “routes of the swallows,” and develop our own “Perfect

Map of the Empire” yielded an overlapping condition of the world as represented and the world as lived. The work asks us to reconsider the existence and the location of the boundary between these two worlds.

NOTES AND REFERENCES

- ¹ Calvino, Italo. *Invisible Cities*. Translated by William Weaver, p. 89. New York: Harcourt Brace Jovanovich, 1972.
- ² See C. S. Peirce, “Logic as Semiotic: The Theory of Signs”, In *Philosophic Writings of Charles Peirce*. New York: Dover Publications. 1955. See also, Rosalind Krauss, “Notes on the Index: Parts 1 and 2”, In *The Originality of the Avant-Garde and Other Modernist Myths*. Cambridge, Mass.: MIT Press. 1984.
- ³ Borges, Jorge Luis. “Of Exactitude in Science”, *A Universal History of Infamy*. Translated by Norman Thomas di Giovanni, p. 141. New York: Dutton, 1972.
- ⁴ In addition to Dan Hoffman and myself, the map makers consisted of the directors of the Institut for RomKunst; Soren Ubisch and Mette L’Orange, and the workshop participants; Hilde Andersen, Anna Aren, Einar Bjarki Malmquist, Silvie Haugen, Merethe Varoystrand, Annebeth Meldal, Marianne Lund, Henny Lie, Emil Fedida.
- ⁵ Lund used a Xerox machine to enlarge and reduce the shapes. As the shapes broke down from the enlargement process, she found that the new shapes were in a relationship of similarity to the originals.