



la Biennale di Venezia

16. Mostra
Internazionale
di Architettura
Partecipazioni Nazionali

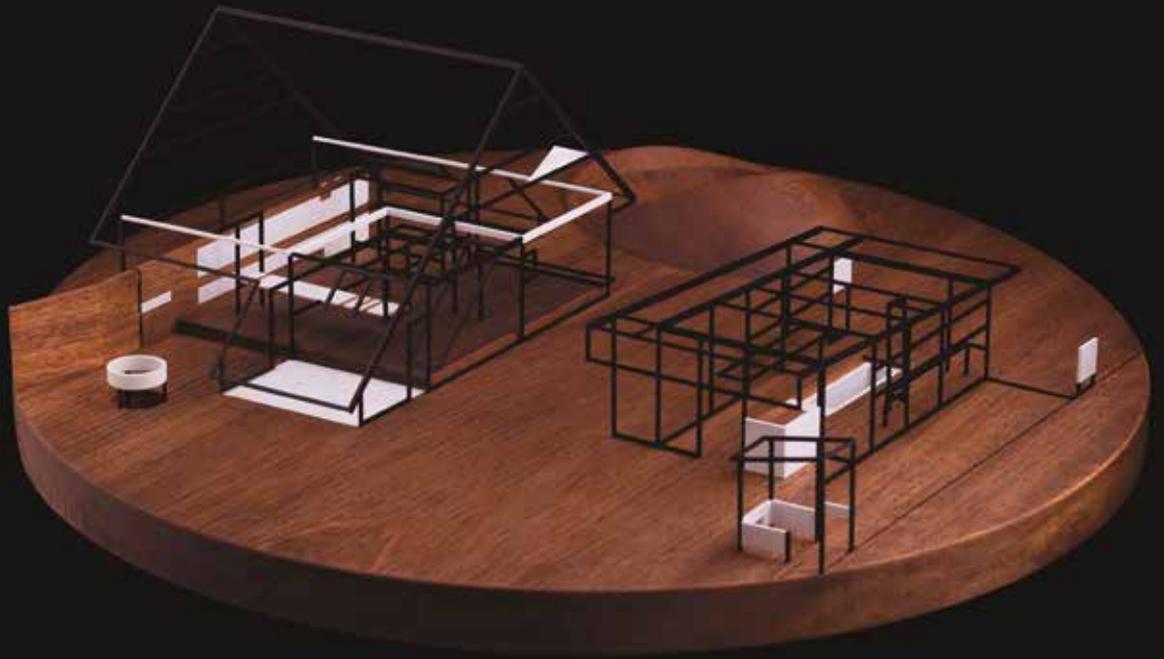
Amplifying Nature

The Planetary Imagination of
Architecture in the Anthropocene

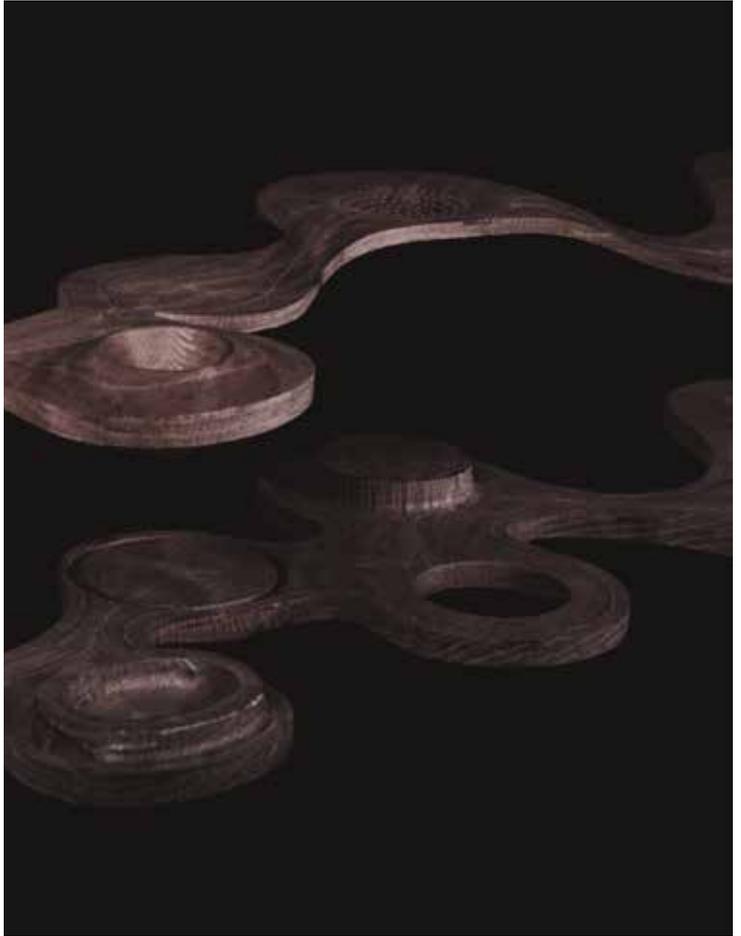






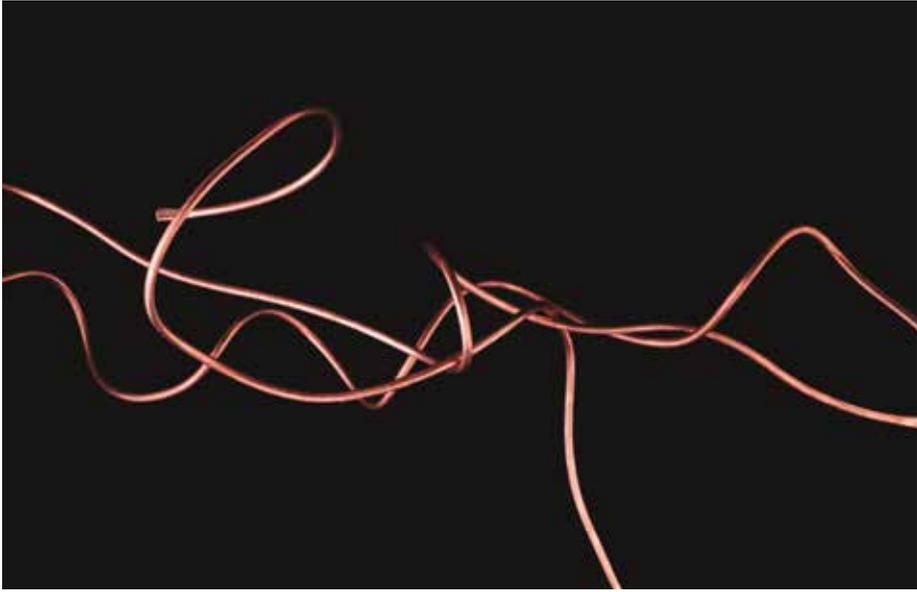
















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**THE POLISH PAVILION
AT THE 16TH INTERNATIONAL ARCHITECTURE EXHIBITION
— LA BIENNALE DI VENEZIA**

EDITED BY ANNA PTAK



Amplifying Nature

The Planetary Imagination of Architecture in
the Anthropocene

ZACHĘTA — NATIONAL GALLERY OF ART
WARSAW, 2018

Introduction

'Freespace provides the opportunity to emphasise nature's gifts of sunlight and moonlight, air, gravity, materials, as well as natural and man-made resources.

Freespace encourages changing ways of thinking and seeing the world, encourages inventing solutions where architecture provides for the well-being and dignity of each citizen of this fragile planet.

Freespace can be a space for opportunity, a democratic space, un-programmed and free for uses not yet conceived. There is an exchange between people and buildings that happens, even if unintentionally and without prior design, so the buildings themselves find ways of sharing and engaging with people over time, long after the architect has left the scene . . . Architecture has an active as well as a passive life.

Freespace encompasses freedom to imagine, the free space of time and memory, binding past, present and future together, building on inherited cultural layers, weaving the archaic with the contemporary.'

The above are excerpts from the first manifesto by Yvonne Farrell and Shelley McNamara, curators of the 16th International Architecture Exhibition in Venice. The *Amplifying Nature* project, developed by Anna Ptak with the CENTRALA architecture studio, was selected in an open competition by an independent jury appointed by the Minister of Culture and National Heritage of the Republic of Poland not just because it creatively tackles the abovementioned themes of this year's Biennale. Modern to the core, experimenting with exhibition-design forms in the space of the Polish Pavilion in Venice, it also references outstanding designs — built and unbuilt — of Polish modernism of the second half of

the 20th century. It visualises that which was and is no longer, that which was meant to be but never was, that which has been preserved, and finally that which may yet be. Tenses and orders mingle: the imperfect with the past perfect and the future; all this has been woven into a narrative on architecture as a part of nature, an area of human activity interconnected with the workings of natural forces. Original projects, or memories thereof, are interpreted by other creative individuals: the artist, the architects, the graphic designer. This publication, with contributions from a range of outstanding scholars, is part of this project too.

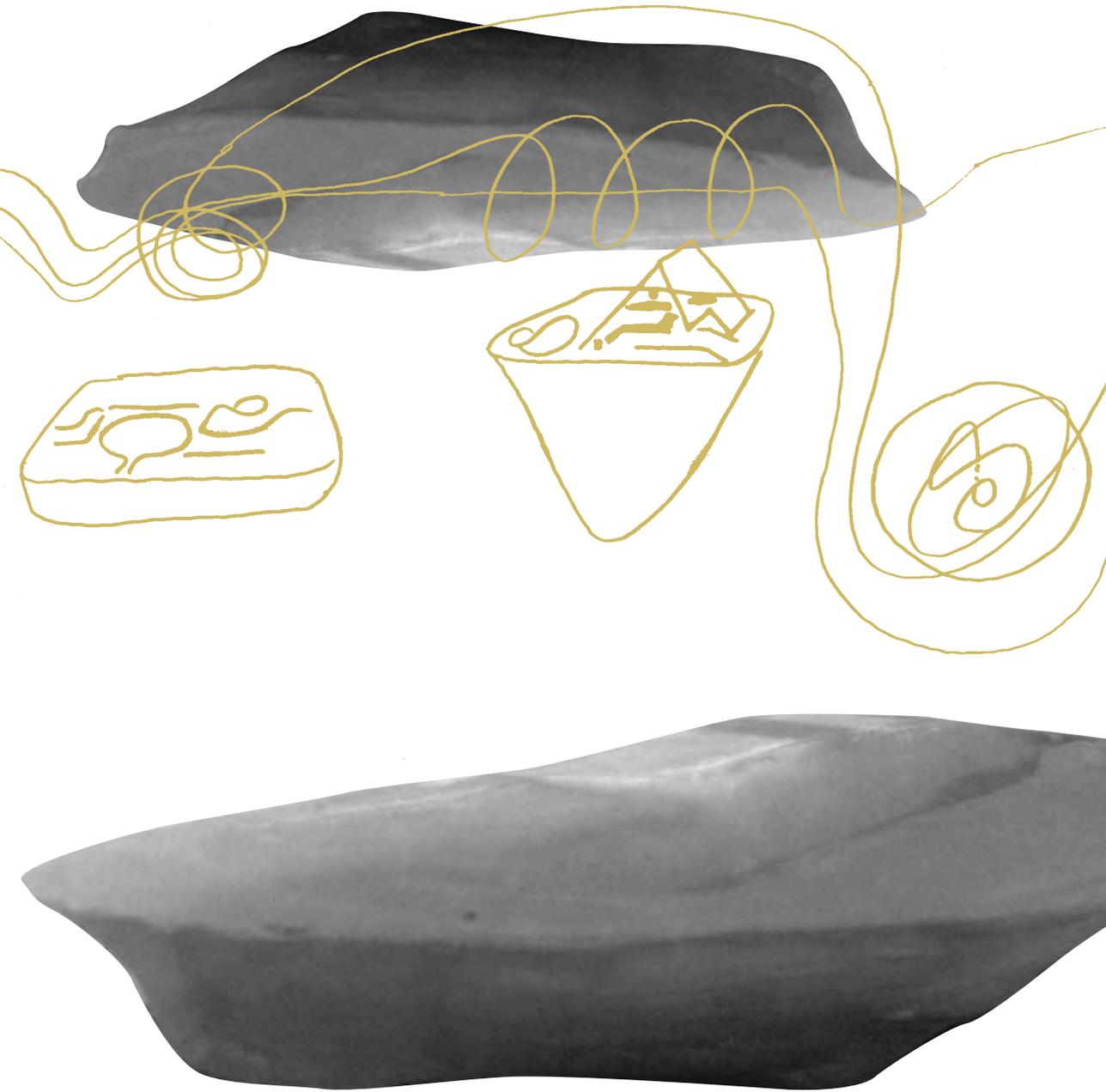
Architecture is collaboration, on various levels and in various orders. I thank the exhibition curator, Anna Ptak, for making it possible for Zachęta — alongside the architects and artists she has invited: Małgorzata Kuciewicz, Simone De Iacobis, their mentor Jacek Damiński, and Iza Tarasewicz — to engage in this process.

Hanna Wróblewska

commissioner, Polish Pavilion, 16th International

Architecture Exhibition in Venice — La Biennale di Venezia

director, Zachęta — National Gallery of Art



Contents

- 21 The Universe Speaks to Us in
the Language of Architecture
Anna Ptak

THE SCALE QUESTION

- 35 Floating Rotary Pavilion (1975/2018)
39 Architects Are Conductors of
the Universe. A conversation between
Jacek Damiński and CENTRALA

THE GEOLOGICAL TIME OF ARCHITECTURE

- 57 Warszawianka sports complex
(1954–1972)
65 Deep Metabolism. A conversation
between Jan Zalasiewicz, CENTRALA
and Anna Ptak

LIQUIDITY IN ARCHITECTURE

- 83 Rain Pavilion (2018)
87 Liquid Constellations. A conversation
between Matthew Gandy, Anna Ptak
and CENTRALA

OSCILLATION OF LIGHT

- 107 Zofia and Oskar Hansen's
House in Szumin (1975)
111 The Third Time of the Day.
A conversation between Małgorzata
Kuciewicz, Simone De Iacobis and
Kacper Pobłocki

CHRONOBIOLOGICAL BODIES

- 135 Cabrio House (2018)
139 Housing the Biome. A conversation
between Monika Stupecka-Ziemilska,
CENTRALA and Anna Ptak

ARCHITECTURE-PRODUCING GESTURES

- 159 Let's Stop Building. A conversation
between Amitav Ghosh, CENTRALA
and Anna Ptak

- 167 Reconstructions. Five Concepts from
the CENTRALA Research Lexicon
Magdalena Roszkowska
178 Selected bibliography
180 Authors



Iza Tarasewicz, test drawings and sketches for the installation *Amplifying Nature* in the Polish Pavilion at the 16th International Architecture Exhibition — La Biennale di Venezia, 2018

The Universe Speaks to Us in the Language of Architecture

Creating concepts is an important aspect of the politics of nature. Each concept leads us in a different direction. One media and political term used to define the relationship between humans and nature is 'sustainable (or non-sustainable) development'. Natural scientists have put forth the hypothesis of the Anthropocene: a new geological era marked by significant human impact on the planet. In the social sciences and cultural studies, there has been a growing reluctance to label the man— nature connection in any particular way as long as 'capitalism' sufficiently describes the character of the relationship between resources and their use.

That architecture is interconnected with the forces of nature is a fact, as demonstrated by local vernacular architecture. The roof thematises the circulation of water, the foundation — the force of gravity and the type of climate related to the hardness of the ground. In the field of cultural meanings — conferred upon it in the process of modernisation — the function of architecture has become to 'protect' man from nature, to neutralise its workings, or to turn it into an object of examination, admiration and consumption. The causal aspect of nature, the material basis of biological existence, has been removed from the view of the construction for living, working and resting. The ability to control the outside conditions has become a *sine qua non* of architecture.

Including architecture in the discussion of the incredibly complex life trajectory of the planet and nature requires a stretch of the imagination: revising existing concepts and creating new ones. The concept we are proposing in this publication, which is a collection of research materials accompanying an exhibition held

under the same title, is that of 'amplifying nature'. Its purpose is to reconstruct the planetary imagination of architecture.

*

The concept of 'amplifying nature' invokes the planetary perspective as the only possible scale in which we can observe the dynamics of global social processes in the political and cultural dimensions. The same perspective makes it possible to perceive the Earth through the prism of physical and material phenomena. For the purpose of this exhibition and book, we are proposing a conceptual and exhibition-design experiment consisting in 'un-sewing' stable architectural structures through processes related to the history of the Earth. Phenomena that are the substance of architecture — gravitation, light oscillation, water circulation — are the same ones that serve the reproduction of the planet. Moreover, the concept of amplifying nature leads us towards architecture as a language in which the fundamental interdependence between planetary space and human space is expressed. It demonstrates the projecting character of the experience of space by changing the relationship between those asking (architecture) and those replying (planetary reproduction processes). Relinquishing anthropocentrism, we point to a reversal of the vectors of communication — not only do humans have something to say here, but the universe also speaks to us through the language of architecture.

'Amplifying' is for us a verb rather than a noun, a process rather than an effect. The etymology of the word can be traced back to rhetoric, technology, biology and psychoanalysis. In rhetoric, to amplify is to strengthen one's argument by adding extra material serving to emphasise the gravity of the matter and cause an emotional reaction in the audience — both in classic rhetoric and the commercial one of the social media. As far as technology (from acoustics to neurobiology) is concerned, amplification is more like translation: one type of wave signal is replaced by another. In biology, it is a way of classifying a rapid rise in the number of molecules of a particular type — a cell, gene, DNA fragment — where quantity changes quality, becomes something different. In Jungian psychoanalysis, amplification (of elusive or obscure material) enables the patient to recognise a personal neurosis in the sufferings and creative potentials of mankind.

Embracing this complex history and the word's broad range of meanings, we would like to make it part of a concept whose subject (architecture) is inseparable from its becoming (amplifying nature). Ambiguity is both expected and intended here. It is gravitation, water circulation and light oscillation that amplify architecture as a correlate of human life, and architecture is something we can narrate this life with, sometimes with very modest means.

*

'Amplifying nature' is a composite concept: impossible without the examples comprising it, though we won't find it complete in any of them. The reinterpretation of existing constructions and the new projects showcased in the exhibition highlight its different vectors. In one, it will be the aesthetic and political impulse, putting emphasis on operations on the sensory experience of nature. In another, the impulse will come rather from the order of engineering, which uses natural processes to satisfy socially defined needs. There are examples of primarily semiotic character, indicating the future horizon of life on Earth as expected by various life forms and resulting from various rhythms. There are those, finally, that through daily life verify our assumptions about nature, approximating climatic and natural circumstances with their workings.

The designs presented in the book enable us to highlight six elements of the concept of amplifying nature. In the successive chapters, each example is correlated with the issues of scale, geological time, liquidity in architecture, light oscillation, chronobiological bodies and language. If it is a theoretical construction, then one informed by the architectural practices of the particular authors and the CENTRALA collective comprising Małgorzata Kuciewicz and Simone De Iacobi. Rather than preceding practice, theory is closely connected here with the modes of approaching the realities defined within it, those of architecture, nature, people and natural forces. Stemming from it is the postulate of rethinking the tools that we use to organise imagination for the sake of the future: of not using fear, but rather reciprocity where architecture can play the role of a modulator of the future experience, based on forces operating within the space of Earth rather than the paradigm of man's separation from nature.

In the light of these examples, the work of amplifying nature is a process of architectural production where the builder is not only an author or user, but also an addressee of the operation of natural forces. The builder crystallises the courage, ascribed to modernism, of conceptualising large relationships, and makes it possible to relate to the consequences, including the unwanted ones, that modernism has brought about in the planetary perspective.

*

As a means of organising the human experience, architecture is obviously connected with place. As a cultural practice that has collective spatial experiences as its subject, it accumulates collective knowledge on the dynamics of Earth's morphological, hydrological and climatic processes. How does one search for a planetary imagination in local architectural experiences?

The designs selected to serve as guiding points in this task were created in socialist Poland, on the eve of the Great Acceleration: a major wave of industrialisation, farming mechanisation and human population growth. Among them are the *Warszawianka* public sports complex, designed in the 1950s by a team working under the auspices of the Warsaw Academy of Fine Arts' Art-and-Research Facility, as well as the private home of architects Zofia and Oskar Hansen, built as a summer dacha and then converted into a year-round abode. Today, architects from the Warsaw-based architecture studio CENTRALA enter into a dialogue with them in the context of the climatic future of the Anthropocene. They design the *Rain Pavilion* and the *Cabrio House*, spatial devices that visualise the physical and biological character of the experience of urbanised nature — architectural models of new forms of activity of the inhabitants of the Vistula drainage basin. The next two examples escape this relatively simple opposition of past (extant) and future (projected) architecture. Conceived in 1975 but never executed, Jacek Damięcki's *Floating Rotary Pavilion* is an apparatus for the amplification of sensations related to the processuality of architecture. Complementing those designs in the book are *Architecture-Producing Gestures* — examples of such embodied practices that stress poetic synchronisation between social devices, architecture and nature, on the level of singular activities pointing directly to the elementary dimension of

natural forces. The reconstruction of the planetary imagination that forms the ideological horizon of *Amplifying Nature* combines historical and projective architectural research, indicating and analysing examples that activate the oscillation of micro- and macroscale. The historical experience of this architecture is conceptually tested in a different situation — one of planetarity and the subordination of space to the logic of accumulation. This retroactive manifesto in the field of nature-culture allows us to reflect not so much on the agendas of the architects (as critics usually do, accentuating the unique ideas of Jerzy Sołtan, the Hansens and Damięcki) as on the performativity of the architectural construction — what the structures *do* in their environment, how they operate.

CENTRALA's practice is particularly adequate for the task. The Warsaw-based studio's designs share an affirmative and non-instrumental approach to architecture. As a result, its members have stopped designing actual buildings for public or private clients to focus instead on research, education and discursive/artistic interventions. Their projects often take their point of departure in studies of the architectural tissue and such reinterpretations of their underlying ideas so as to get as close as possible to its materiality. CENTRALA is currently the architectural custodian of Zofia and Oskar Hansen's house in Szumin. In 2016, CENTRALA and Skwer Sportów Miejskich won the first prize in an international ideas competition for the revitalisation of Warszawianka.

The focus on materiality means designing for the future, beyond the anthropocentric perspective, a perfect example of which is — paradoxically — logistics architecture: factories, garbage dumps, server farms and a tourist industry based on the accumulation of historical landmarks. The question of the future must acknowledge the past and recognise that architecture is a moment in time: a temporary balance of social, political and natural forces. The concept CENTRALA proposes for working with the past within the horizon of the future is the idea of the *living monument*, informed by the thought of architect Bohdan Lachert. In the process of reconstructing the legacy of architecture, communication is as important as conservation, and the ways of using space (variable in time, with changing actors) become a method of studying the past, preserving overlooked topics and facilitating their future reuse.

Designs detached from current experience make it possible to model our ways of thinking, which is why iconic historical designs and contemporary speculative propositions become in a way

equal in *Amplifying Nature*. There is perhaps a certain radicality here: in the possibility of exploring historical designs down to their political, sociological and material roots (*radicaux*) and of treating this exploration as an experimental process of future-oriented research. The ideas and solutions conceived by the post-war Polish architects presented herein appear as the germ of an alternative genealogy: a retelling of the relationship between architecture and nature. Interpreted in this spirit, the legacy of the Art and Research Unit (Zakłady Artystyczno-Badawcze, ZAB), an interdisciplinary design-and-teaching unit that operated from 1954—1977 at the Academy of Fine Arts in Warsaw, goes beyond the modernist progressivism of an impossible utopia based on an unrealistic vision of human nature. Viewed in the context of the materiality of their realised designs and models, the work of the architects associated with the ZAB, if only for a brief period of time (including the authors of all the analysed constructions, such as Jacek Damięcki during his studies), may direct us towards different processes than the declarations of the architects themselves would suggest: to other-than-human factors of architectural practices and constructions. An indoor light-focusing polychromy, a permeable and flexible retaining wall, a 'bulge-and-hollow' (constructional cavities and embankments) — all of these are not so much individual technological inventions as components of a semantic and emphatic process based on the practical interpretation and amplification of natural processes. As well as a reminder that architectural imagination goes beyond the individual imaginations of the people who created them at a particular historical moment.

*

The exhibition in the Polish Pavilion at the 16th International Architecture Exhibition in Venice is a synthetic equivalent of inquiry into the performativity of amplifying nature through architecture. The CENTRAL architects collaborate here with sculptor Iza Tarasewicz.

The exhibition is a diagram: it traces the correlations of architecture using the medium of sculpture. It attempts to create an affective dictionary, expressed in the language of the form of the action of architecture amplifying nature and nature amplifying architecture. Its focal element is water, through which the temporal character of processes — the pivot of the interpretation of architectural designs — can be experienced.

Spatial, abstract and evocative at the same time, the installation appeals to the memory of the body and the logic of the material. In the first place, it subjects the visitor to an experience of that which in architecture is considered obvious: water circulation, light oscillation and gravitation; they construct the spectacle of the exhibition here. In several steps, the sculpture brings otherwise imperceptible processes to their material/sensory presence. It consists of resin hardened on a model of the landscape as shaped by the Vistula River in what today is Warsaw, the swelling of the form under the weight of water, a suspended diagram of light and the circulation of water, the attraction of forms to each other, the tectonics of the ground. The installation's crucial gesture is that of symbolically replacing a gravity- and air-based presentation setting with one premised on displacement and water. Water-borne, the architectural models can float freely. The mode of working on the exhibition — artisanal, imperfect, following distortions that occur during the exhibition — stresses the (exhibition-design, architectural, literary) concept's rootedness in objects, materials, viewer experiences and finally the relational character of the design process, informed by what is handy.

*

The exhibition is first of all meant to (inter)act: through emotions, connotations, a surplus of the physical presence of the lay of the land: the very space of the exhibition, its architecture modelled (as the positive and negative of the river valley) on the Warsaw escarpment, sculpted by the ancient river, the glaciations and human activity. The show's concept takes its point of departure in the notion of nature as processes rather than landscapes, in the order of nature-culture as a whole, an approach that contests the view of architecture as a shelter from nature or a means of accessing it safely. Therefore, we construct a water-based exhibition environment: using water as a medium of information, of the reactions carried by playing in water, associated with a contrast between regularity and unexpected events. The feeling of joy, solemnity, fear, or disgust, resulting from physical contact with nature, is a socialised way of thematising nature as something that is outside, perceived by an active subject. What we search for in the exhibition medium, in turn, are signals of the material and processual continuity of architecture and its users. Paradoxically,

the diagram illustrates the essence of the show and the idea of amplifying nature not through a summary or through abstract correlations, but as an experience and the changes it entails.

The exhibition-as-diagram features architectural models created on the basis of the analysis of existing designs, photographs, interviews with authors and users, as well as CENTRALA's detailed field research. This thoroughness has helped to reconstruct architectural elements combining natural processes with the building programme. Tracing the flows of water, its viscosity, displacement and thickness, visitors themselves will be able to infer from the objects what natural processes matter in historical designs and what processes CENTRALA want to relate to. Architectural models play a special role in the installation, modulating material flows rather than enclosing forms, creating sluices, translations between different processes.

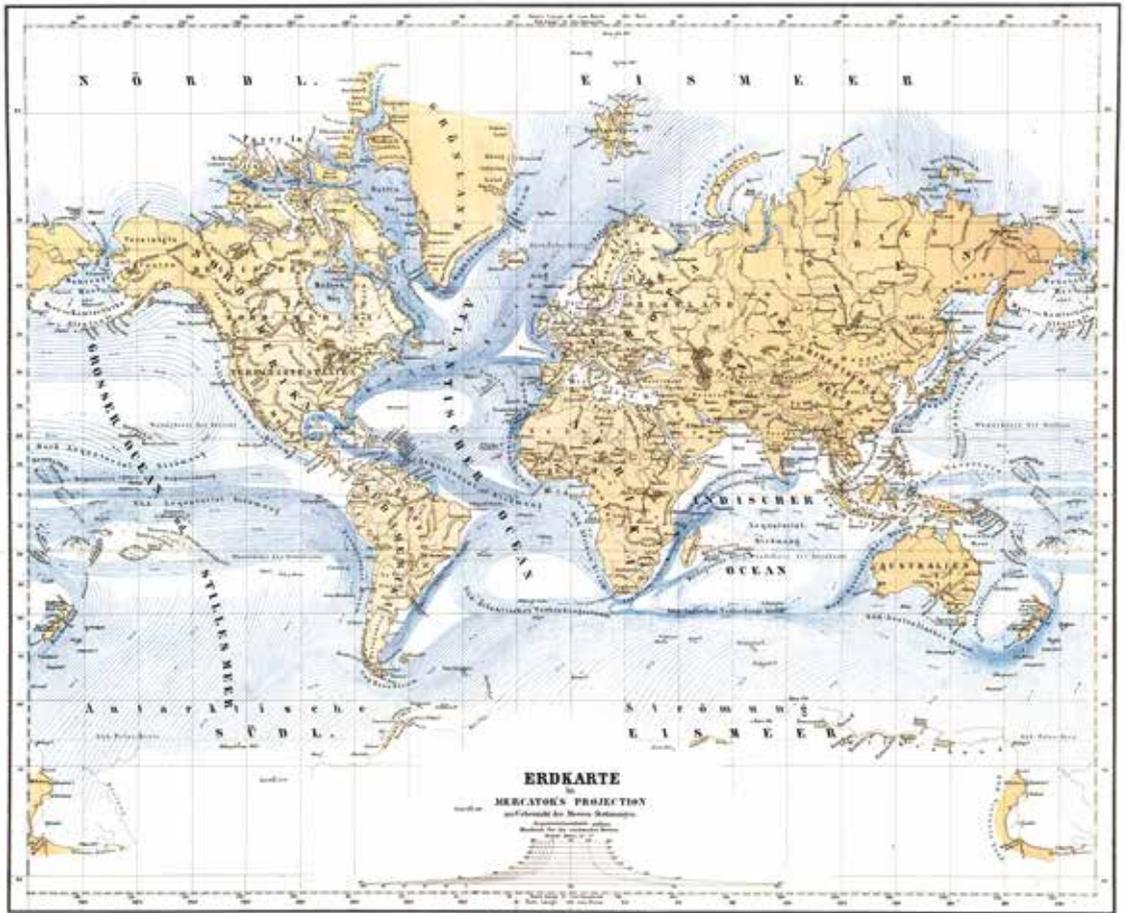
The collective, experimental and interdisciplinary effort of working on this floating and fluid imaginarium placed the emphasis on the imagination factor, which connects different scales. Can we imagine that water seeping through a geological formation directs the movement of crowds of people circulating between viewing platforms, swimming pools, beaches and playing fields, or that of local residents taking a shortcut? Can a home work literally like a *camera obscura*: capturing the light of dusk and dawn, modulating the field of its inhabitants' daily practice with the third time of the day? Is architectural space variable and able to participate in the cyclical day-and-body rhythm?

The concept of the exhibition has been directly inspired by architect Jacek Damięcki's unrealised design, *Floating Rotary Pavilion* (1975), where gravitation was replaced by water displacement as the main constructional force of the architectural construction. It was a visionary (if not utopian) proposition of an exhibition based on a mobile self-presentation of shapes. The form's rotation comprised a spectacle that forced the viewer inside to remain physically active — to move along with the rotation and at the same time avoid the water falling from above. For the construction to work, it was necessary to acknowledge the dependence of architecture on its material base and to cross-relativise the movement of the construction and the user.

CENTRALA discovered the model, which resembles a snail shell, while conducting a detailed inventory of Damięcki's legacy. The model, created in 1975 with nylon stockings and wire (today brittle and a wreck in museum terms), and its author's story

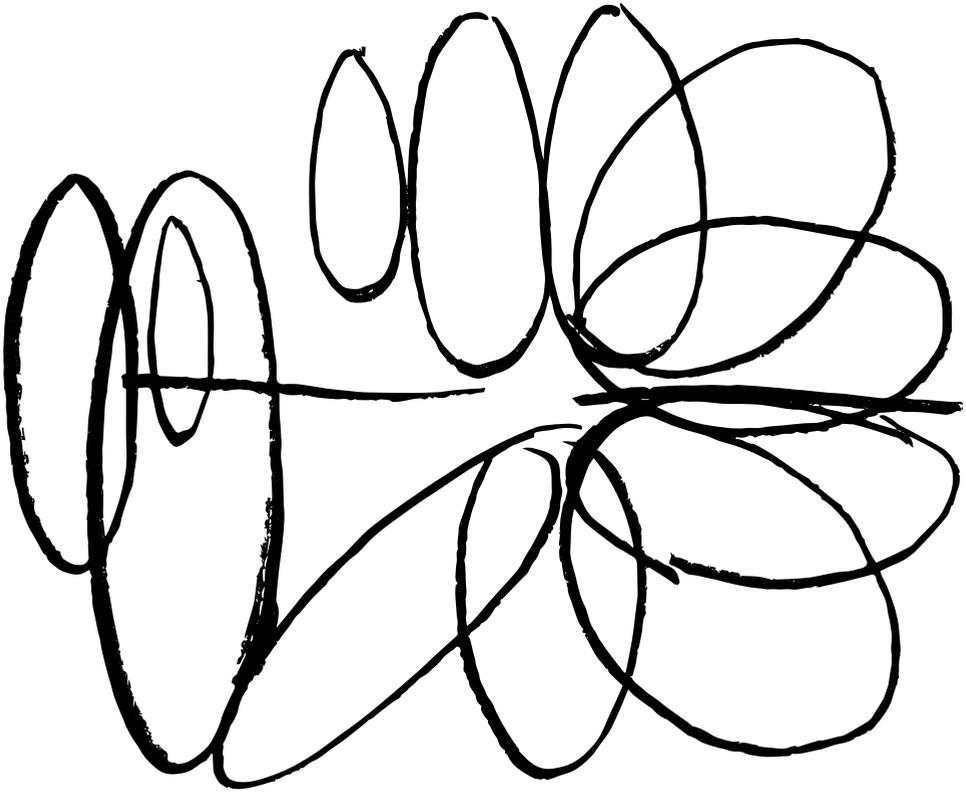
inspired a project about a spatial imagination exploring planetary and microscopic scales and at the same time, remaining within the affective dimension of architecture. In the exhibition we visualise, in 1 : 1 scale, the outline and size of the *Floating Rotary Pavilion* in full rotation (the actual object would be larger than the Polish Pavilion itself). We similarly evoke other constructional elements of the previously discussed designs as they are being restored to the collective imagination — a retaining wall entering in a relationship with the pressure of earth and water at an outdoor sports complex, a house door with a guiding polychromy. These quotations, in the form of 1 : 1 scale drawings, illustrate visionary and at the same time locally rooted recognitions of amplifying nature.

The contemporary and archival materials presented in the book and exhibition relate to amplifying nature on three levels: realised and unrealised designs utilising and connecting with natural processes; relationships between different experiences of materiality connoted by the (architectural) imagination; and the dynamics of the Earth, whose processes influence the static and provisional condition of the social formations manifesting themselves through architecture. What the explorative process that is *Amplifying Nature* leaves to us is the collectivity of labour inscribed in the devices, which more than unique features of this or that design are common goods — exemplifications of interdependence between micro- and macroscale.



Druck und Verlag von C. Neumann in Leipzig.

Map of sea currents, 'Erdkarten in Mercatorprojektion', *Diercke Schul-Atlas für höhere Lehranstalten*, ed. C. Diercke, E. Gaebler, 1896, David Rumsey Historical Map Collection, CC 0



THE SCALE QUESTION



Aristotle's On the Heavens posits the following cosmology: there exists the mutable world, the world of the elements, known as the sublunary sphere, and an immutable, perfect supralunary sphere. With the Copernican revolution, this finite cosmos expanded into an infinite universe. A feeling of awe inspired by the complexity and beauty of natural phenomena was gradually supplanted by the Enlightenment project of recognising the phenomena which continues to this day. A global optics of mobility has replaced the experience of the sublime.

In 1968, seeing the Earth from its orbit, astronauts experienced a cognitive shift, a sense of profound unity with a living planet, known as the 'overview effect'. Since 2005, thanks to Google Earth, everyone can look at the globe from this perspective. With time, the satellites making this possible become an addition to the very view: space junk, cosmic debris, a new attribute of the sublunary space. [MK]

Scaling is a key instrument of spatial analysis, behind which there lurks a design challenge: how to capture being in many scales at once? Our guide to the issue in this chapter is Jacek Damięcki's *Floating Rotary Pavilion*. The ecology of this design, like that of many modern megastructures, is based on the categories of the sublime and the individual experience of elemental nature. Of particular interest for the *Amplifying Nature* project are its speculative and performative aspects: the intensification of emotions through the experience of scale, the relativisation of architectural solidity by displacement, the replacement of interior/exterior or subject/background oppositions with topology, as well as the physical negotiation of space in a technological-natural-biological environment. Imagination is the equivalent of



Visualisation of a compact binary of rotating black holes, 2016, Simulating Extreme Spacetimes project, <http://www.black-holes.org>

scaling in (human) life experience, its horizon expanded by sense impressions to include experiences of other people, other species, other modes of living. In *The Scale Question* we speak of the experience of the micro-macro scale transition, which may open the way to a planetary ecology. [AP]

1975

Floating Rotary Pavilion

Jacek Damięcki

Study work and model (wire, nylon fabric) in 1 : 140 scale,
diameter 13 cm

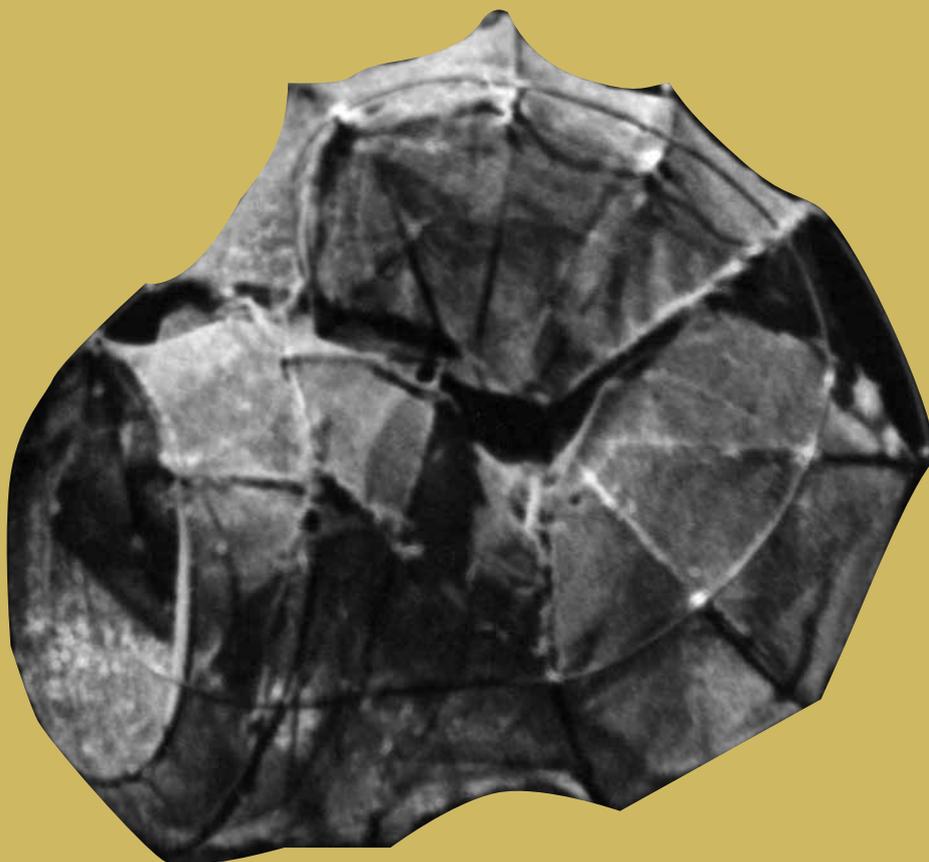
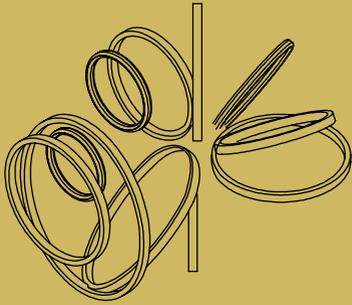
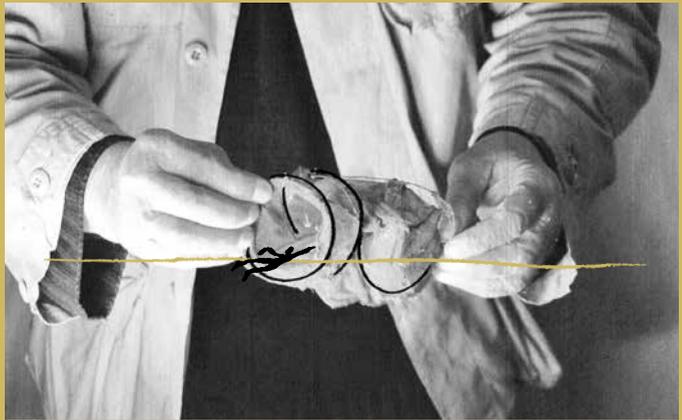
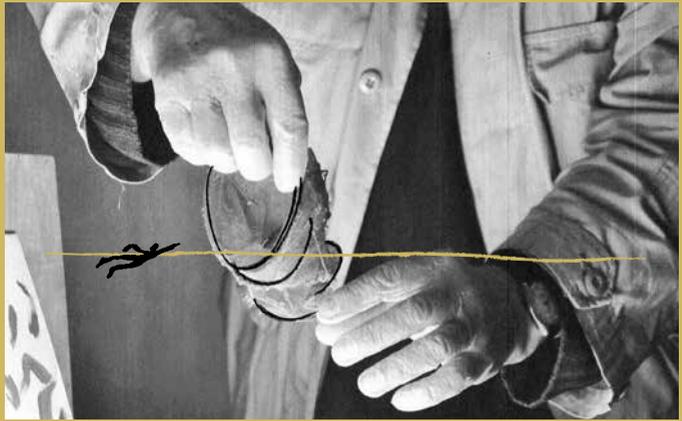
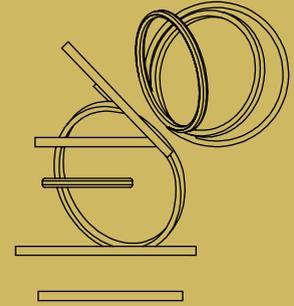
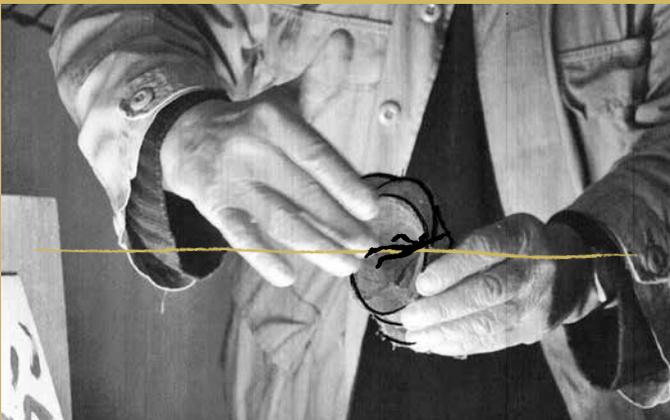
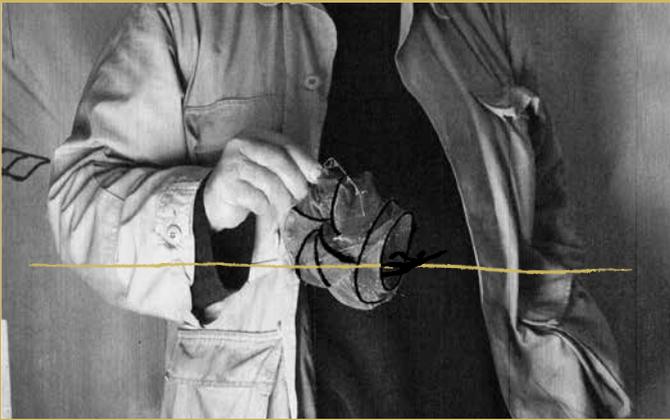
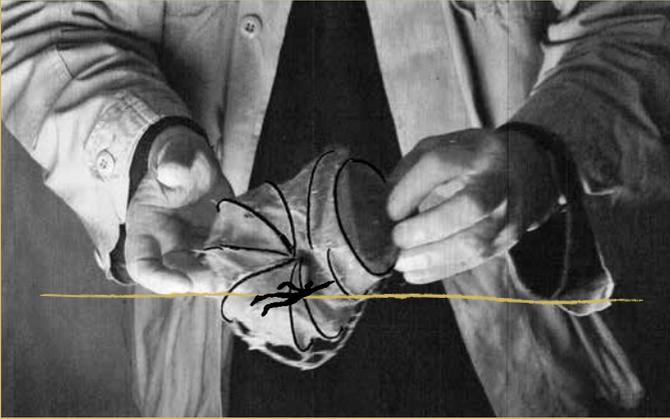


photo: Jacek Damięcki, 1977, courtesy of
the Exhibition Bureau / Polish Modern Art
Foundation



Jacek Damięcki designed the rotating, water-borne form, which one enters in a boat, in 1975. It was meant for sheltered waters or deep pit lakes. In 1 : 1 scale, the construction was to measure 18 metres in diameter. It is the sole design in the history of Polish architecture and one of few at all that base the construction of space on water displacement rather than on gravity. Moreover, it was meant to be a topological form in movement: rotating along a twisted-eight orbit, the structure would gradually reveal its underwater section. Surface tension of water on the eyelets of the frame-stretched mesh would create an immersive spectacle of liquid materiality for the viewers inside. Their experience would rely on a spatiotemporal self-presentation of architecture: the fluctuating mirror of water would be framed by the successively emerging, surprising elements of the construction, their shape dependent on the phase of movement under and above the surface.





The rotation of the *Pavilion* would be regulated by cog belts and a wheel outside the shell, and an external motor. In 1994, the author updated the design, proposing a mill wheel mechanism instead (with the orbiting tanks submerging alternately), and in 2018 a computer-controlled hydraulic mechanism, whereby water would be successively pumped between the chambers of the shell to make sure the centre of gravity was always below the centre of buoyancy — as in submarines. In 2018, using 3D printing technology, CENTRALA reconstructed the first model in 1:3 scale, working in collaboration with Damian Wierbitowicz at Skriware. A floater with movable ballast, placed inside the model, ensures that the centre of buoyancy remains above the centre of gravity, meaning that the model is always stable on water as viewers set the *Floating Rotary Pavilion* model in motion. [MK, AP]

Diagram of the rotation of the *Floating Rotary Pavilion*; illustration: Krzysztof Pyda; photo: Simone De Iacobis, 2016



Floating Rotary Pavilion, model reconstruction, as interpreted by CENTRALA, 2018;
3D model: Damian Wierbilowicz / Skriware



Jacek Damięcki, *Floating Rotary Pavilion*, 2018, model; photo: Anna Zagrodzka

A conversation between:
Jacek Damięcki (JD)
CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis (CEN)

Architects Are Conductors of the Universe

CEN

We are fascinated by how your designs respond to the mobility of the elements and encourage participation in atmospheric phenomena. The scale of your architecture is not determined by size but by the scope of the phenomena it connects us to.

JD

What interested me in the designs I did during my studies at the Academy of Fine Arts was their processual rather than objectual aspect. Let me cite two important examples that highlight the relationship between matter and object. One is Frank Lloyd Wright's Fallingwater (the Edgar J. Kaufmann Sr. Residence), where nature and architecture relativise each other, remaining in a very strong relationship. The other is the Villa d'Este near Rome, where a waterfall runs not only through the architectural structure but through the garden landscaping as well. The water flows down troughs in the stair-rails, there are compositions of water mirrors, so that the presence of water in both nature and architecture serves to integrate the two. This mobility remained in me somehow.

I've always been opposed to the popular slogan that 'small is beautiful'. To the object concept as the standard work method, whether from the general to the specific or the other way around. There is plenty of methodological bias in this kind

of education. I preferred 'lateral' thinking and searching for the right scale, perspective, or framing for the given phenomenon. I was searching for amplification, a way of making a stronger impact. The script, what we begin with, is always a given, whether it's the broad context, the landscape, or a fragment thereof. Our job is to give it the right tone, the right vibration. So what I produce are not so much objects as situations where the space resonates with you. If we can't stir your emotions, what's left is just an inert mass, with no discernible purpose. The aim is to appeal to your sensitivity, to make you tremble. If the architecture is small-scale, it has to be in great relationships. We speak in solid figures, but we also speak in registers of action, complexities, and scale. We communicate on a different level, through the right diapason. Architecture is about conducting the universe, not about placing things throughout the landscape.

CEN

So architecture can be small-scale, but it has to pull us into infinity?

JD

Always. I call it bringing architecture closer to humanity, to the point where the human being is firmly rooted in the local. Whatever the theme or scale of the job, I need to pull cosmos through the prism of the design into my orbit of action and connect it to humanity. Every seemingly trifle detail is a fragment of the macro scale. Cosmos is not something far, far away; as we sit here, a fragment of it rests against our hands.

CEN

The café at the foot of the slope of 1958, your first design, was partially buried underground so that the customers sat at eye-level with the lawn of the park. The tradition in Warsaw is to put buildings on the escarpment to allow for the consumption of a broad view, whereas you located the café at the foot of the slope and additionally lowered the horizon to allow

an extensive vista of the surrounding area. Users thus gain an experience of the space that goes beyond the building itself. Is this a manifestation of the fact that, as you said, architecture is a verb, that is consists in processuality?

JD

I set the horizon the way I did precisely in order for people to see the grass and the spiders, walking around, constructing cobwebs, building their own world in which the wind blows and the rain falls too. And only after the spiders come the larger, thick, branches, the trees on the slope, and finally the birds and the macro-scale of the clouds. I call this the degradation of scale. If the building is small, it should serve as a conveyor to a larger scale, to find an articulation from small form towards a macro-scale. If you do something huge, on the other hand, it has to contain structurally smaller and smaller elements ultimately leading to the human scale.

CEN

In September 2007, at the age of 72, you swam across the Bay of Puck, from Hel to Gdynia. After that experience, you wrote, 'Swimming is feeling with your whole being. Your whole body. Feeling with your whole being is a state of isolation and focus on the confrontation with a different kind of matter that extends us'.¹ We see in this a confirmation — an extreme one — of the relationship between architecture and a direct experience of the continuity of matter, a relationship that is so crucial for your designs.

JD

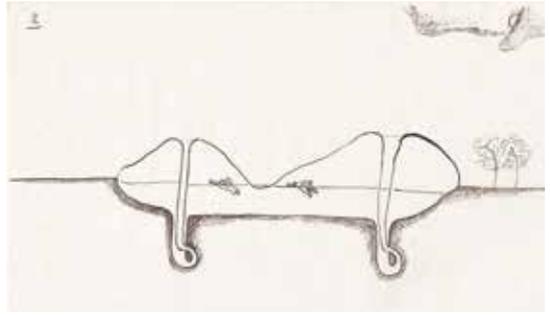
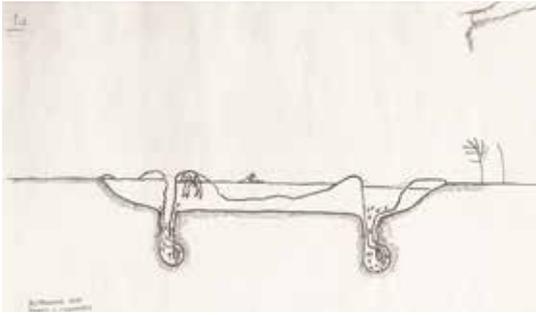
After World War II, Warsaw was in ruins, reduced to piles of rubble. But the aquatic environment is something you can't air-raid, something that never grows old and remains attractive in any form. Living in a ruined city is an extreme experience and you look for moments of respite. So my refuge was the river, where the sand and the water weren't destroyed. Living in *Saska Kępa*, I spent



Plaster models of shell roofs with various bearing arches.

Lech Tomaszewski, *Non-Flat Arches*, 1961, co-author: Jerzy Soltan, models by Jacek Damięcki, Museum of Academy of Fine Arts in Warsaw

¹ Quotations from an unpublished text by Jacek Damięcki.



practically all of my days on the Vistula; I'd sneak out of the house and sit in the water.

In itself, swimming is very monotonous, limited to the sequence of movement-slide-breath. And the swimming position is basically to be as deep as possible in the water and emerge only periodically. Swimming, I realise that I, too, consist of 70 percent water, that I'm living matter, the same one that surrounds me. It's moment of revelation, a sense of unity — water moving through water using the diaphragm, a sort of membrane, really. When swimming alone, I think and don't think at the same time. Swimming across a large pool of water ceases to be movement and becomes duration in space-time, for a man in swimming trunks is an unarmed man, at the mercy of the elements.

Design for a roofed/open swimming pool using a flexible shell — a one-sided surface questioning the interior/exterior boundary. Depending on the season, the shell either swells due to overpressure or collapses, resting on the bottom of the open pool, with water moving from one side to the other. The way out of the pool is down, intuitively 'underwater', through a coiled narrowing that finally leads the swimmer outside. [MK]

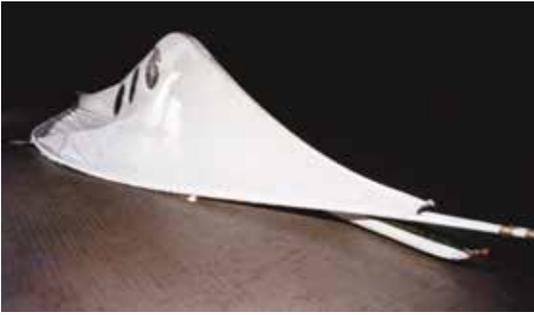
Jacek Damiński, *Topological Swimming Pool*, 1968, courtesy of the Exhibition Bureau / Polish Modern Art Foundation

CEN

Does this kind of spatial experience exclude the whole cultural landscape?

JD

Definitely not. The challenge is to make the experience of the richness of the world inherent to the creative process. I also practiced yachting, obsessively and for quite a long time, and finally gliding. Sailing on a yacht is also duration, but with equipment, at the intersection of two elements, wind under the dome of the sky and a dark abyss underwater. The undulation of water is a result of the friction and movement of these two centres relative to each other. Gliding is flying with immobile wings, like storks when they



cruise. The glider pilot incorporates themselves into a constantly changing situation in the air. The conditions that I'd experienced, exposed, on various scales, to water and air, gave me a range of memories that I could choose from for the purpose of my design work.

Gliding helped me to understand the dimension of the bird and the dimension of the machine. Knowing the range and profile of flight facilitates the transition from macro- to micro-scale, gives you a sense of large totalities and the small elements symbiotic with them. It shows the place of the fragment within the whole. The glider hanging from the ceiling in my studio still retains this magic effect.

Let me say once again that the environment I grew up in was a ruined city, transforming into a continuous space, what seemed like a topological continuity. In classic geometry, we are in the paradigm of the interior and exterior of the form. In topological geometry, this paradigm loses its validity: space is continuous and one-sided. My job is to find the right scale, the right framing, where relationships and objectuality level out, exist in the proper tension, produce a sense of participation on a macro-scale. I don't experience space in terms of rejecting or accepting anything. Abandoning the negative-positive paradigm encourages you to modify your thinking, and the notion of structural continuity emerges as a binding agent.

A shell has been stretched over a one-person rowing boat — between the double arc of the poles inside which the user sits, and the flexible floater connected to the oars. During rowing, the shell becomes movent and active. A special hanging slider attached to the 'spine' of the shell moves the membrane along the arched poles. The prototype documentation was submitted to the 6th International Design Competition in Osaka, themed *Wind/Air*. [MK]

Jacek Damięcki, *Drifting Hillock*, consultation: Antoni Tym, 1992; photo courtesy of the Exhibition Bureau / Polish Modern Art Foundation

CEN

Let's talk about your *Drifting Hillock* (1992), an object stretched over a skiff, a one-person rowing boat. Sitting inside a floating tent, you were able to feel the force of the wind and, drifting, experience the impact of air on a form, being a part of it yourself.

JD

The construction resembles a large dragonfly, 8 metres across, but very lightweight, weighing just 10–15 kilograms. In other words, it is a tent that slides on the inner poles on which the shell has been stretched. Depending on the position of the oars, the deformation — change of outline — is symmetrical or counter-symmetrical. Along with the shell, the window openings also shifted. The shell resisted the gusts of wind, so it served not so much for moving in a particular direction as for drifting. It is a drifting place of contemplation that allows one to endure in form and move noiselessly across the landscape.

Perhaps this concept is related to the *Articulated Arches* research study, conducted in 1961 by Lech Tomaszewski, with my participation in shaping elements of the pavilion using twisted surfaces. Years later, that experience of studying a new geometry of the pavilion returned, in a way, in *Drifting Hillock*. Here, geometric variability, symmetrical vs. asymmetrical, was a function of the movement of the rower's torso and arms. The drifting shape allowed the rower to contemplate nature, possibly for a whole day, on a large lake, alone with the universe around them. The prototype, a life-sized model, was a miniature replica of the geometry of that pavilion study and a 'demonstrator' of topological transformations. Let me add that form harmonises here with the rhythm of the surroundings.

Being in nature is a supreme moment, and the form that I'm talking about is a way of

appreciating the fact that nature is magnificent, pure. To observe a certain dimension of the world in this way, and then to return in the evening, rowing — it was a moment of slowing down, of reflection, of being removed from everydayness.

CEN

You described your studio in similar terms: 'Thinking of my abode as a yacht is something I derived from sailing'.

JD

But it was still a different kind of thinking than a modernist form symbolising the ship. I once said that I travel around the world every day in this home/yacht/capsule. This is partly due to its structure: closed rooms on the sides, connected by a large, open, glassed-in space in the centre. During a storm, exposure in the central room can even be too great. This is not the kind of expressivity you get in architectural journals: when the wind tears off part of the roof covering during a storm, you need to go outside, like on a boat, to repair the damage. The materiality of my studio is fragile and volatile, with its openness and vulnerability to destruction helping me to feel movement. By integrating architecture with the surrounding space, we free it from the world of objects and connect it to the circulation of the moving, transforming matter of the world.

When I was working and saw terns flying overhead, I knew the Vistula had flooded the meadows and come up to the studio.

CEN

During the same time, the first sketches were being made for the *Cloud* (1994) macro-installation, a large-scale composition of sheets of black silk stretched on rows of wooden poles at Plac Piłsudskiego, a major Warsaw public square. We are interested in how you translated this personal, corporeal experience of wind into a collective experience for the crowd.



The large-format installation in Warsaw's main public square, commemorating the 50th anniversary of the twilight of the Warsaw Uprising, was realised as part of the 'Warsaw Autumn' International Festival of Contemporary Music (curated by Józef Patkowski, founder of the Polish Radio Experimental Studio). The installation consisted

of strips of black parachute silk stretched on wooden poles. The construction was designed in collaboration with Wiesław Słowik, PhD, from the Department of Construction at the Faculty of Architecture, Warsaw University of Technology, using the results of wind-tunnel model testing. Assembly was carried out by the Polish Armed Forces. [MK]

Jacek Damiński, *Cloud*, macro-installation,
1994; photo courtesy of the Exhibition
Bureau / Polish Modern Art Foundation

JD

It was a coincidence of two things. I decided to build my studio myself. I did the design, but I also dug the hole myself — there is living sand in the earth around Warsaw, the so-called 'Otwock sands' in the old river beds of the Vistula. The earthwork became a vessel for the effect of the sun. It was terribly hot. I bought two parachutes at the flying club, had the canopies sewn flat across, and made myself a roof. And then I started watching: I'm digging here, I'm building a home here, I'm measuring the foundations there, but I still obsessively see movement overhead, the waving of that tent. And that was the inspiration for *Cloud*. Building the studio, which took two or three years, I was already going tests, cutting out pieces of cloth and making sketches.

CEN

When was the work first presented in public?

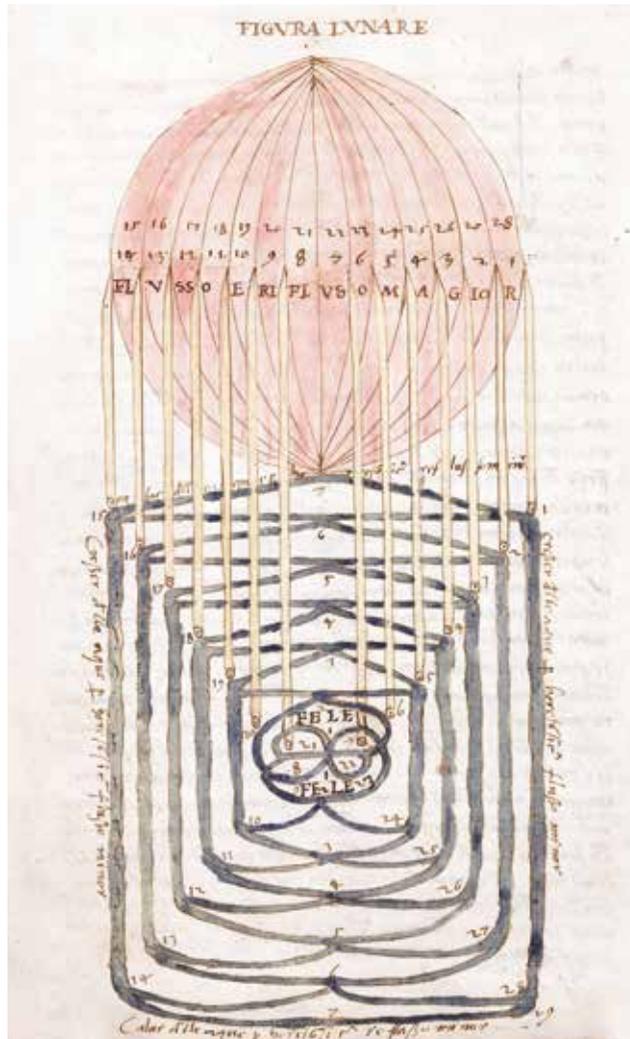
JD

The *Cloud* was stretched at Plac Piłsudskiego in 1994, on the 50th anniversary of the twilight of the Warsaw Uprising. People would come, lie down on their backs, and lie there in silence. The poles creaked, the counterbalance sand bags sagged, the huge fabric rippled, and the whole thing had the scale of true sound. It was a capture and materialisation of the idea of wind. *Cloud* was like a monument to the horror of the uprising.

The surface area under the undulating canopy was 3,200 square metres. But the whole thing wasn't about creating an experience for the crowd, but about demonstrating — through scale — the spatial relationship inside the limits of the rippling, semi-transparent silky fabric. It was no longer a canvas, a canopy, but a blackness in the open space of the square, reacting to the natural movement of the air.

CEN

You've designed many forms related to water or based on the principle of displacement,



The Nobel Prize in Physics for the year 2017 was awarded for the discovery and capture of gravitational waves. In February 2015, the terrestrial detectors of Virgo Collaboration (in Europe) and LIGO Scientific Collaboration (in the United States) detected a gravitational wave emanating from the merger of two medium-sized black holes taking place at the speed of 150,000 kilometres per second, 130 billion light years from Earth. In order to measure the space-time ripple, the detectors had to be incredibly sensitive, to the order of a thousandth of the width of a proton, and the calculations had to be

distinguished from seismic (e.g., ocean waves crashing rhythmically against the shores), thermal, or quantum noise. The image conveyed by the measurements is that of Earth as a vibration zone: fluid and dynamic. Tide changes, long studied, invariably reveal the effects of the gravitational fields created by the Moon, the Sun, and Earth's rotation. The rises and falls of vast masses of water, weighing hundreds of millions of tonnes, significantly influence local climate, with warm ones contributing to higher annual temperatures and rainfall levels and cold ones pushing temperatures down and reducing rainfall. [AP]

Moon chart — effect of lunar cycle on ocean tides drawn by Cristoforo Sabbadino in 1557, Archivio di Stato di Venezia: Savi ed esecutori alle acque, disegni, atti (secc. XV-XVIII), busta 231, disegno 2

such as the *Floating Rotary Pavilion*, which we are showing in the exhibition at the Polish Pavilion. You've said that such investigations are informed by the way you experience the unity of space. Is it possible to directly translate the mathematical logic of topological, one-sided space into an architectural experience of this unity?

JD

As I see it, topological forms are 'cataloguish' and closed to the outside observer. These are objects like the snail shell or the car tyre, the torus. When employing topology, one must avoid presenting its objectual nature, which to me seems oppressive, even terrible. I did three topological sculptures and one beautiful day in nineteen eighty-something I burned them all, because I was fed up with looking at the Klein bottle. The portrait expression of these forms is boring and tedious.

The object kills the legibility of space: it doesn't assimilate, doesn't connect to the spatial context. The challenge for architecture is to search for such a concept of forms that will be integrated with space, one where relationships and objectivity even out and exist in proper tension. The point is phenomenality, the multidimensionality of experience, as opposed to objectuality, which is one-dimensional.

CEN

Does placing forms in water reduce their objectuality?

JD

Yes, it does. It relativises them and produces a sense of participating in a macro-scale. Objectuality melts away in the totality of the setup. Only one-third of the *Floating Rotary Pavilion* is visible above the water surface, but the whole thing is spatiotemporal, revealing itself gradually through circular motion.

What matters here is not a portrait vision of the form, but the experience of the revolving grotto. You sail inside on an engineless boat,

the form surrounds you like the firmament, moving like a galaxy and orbiting, gradually revealing its underwater section. Half of the space is a fluctuating surface shell, half is a reflective water mirror which also keeps changing its shape within the limits of the pavilion. It is the form's circular motion that presents its topology, the one-sidedness of a surface that, encompassing us, doesn't set off space and permeates itself.

CEN

Was the design ever meant to be executed?

JD

It's an unrealised design, conceived to be presented as a tie-in with the Parade of Ships in New York, part of Operation Sail to commemorate the United States Bicentennial. Against the cliff-like New York cityscape and the slow, linear movement of the large ships, the rotating form signals its difference.

After sailing inside — which is not an 'inside' at all — the viewer notices movement: the movement of a continuous and one-sided space, revealed above the surface of water, latent but perceptible underneath. Form is perceived here through the movement of the surroundings rather than of the observer themselves. There is no form, only movement around us, above us, and under us, with the water flowing and the whole composition being lit through, as it were. We are suspended in this cosmos. Experiencing the non-uniformity and continuity of circular motion, we understand our existence in a fragment of the universe.

CEN

The fluidity of water makes the whole setup unstable.

JD

It means that the form doesn't rest, as if on a stand. The point here is amplification, tuning in. Every kind of artistic activity is about amplifying qualities that potentially exist in the space around us.



Aerial photograph of Warsaw taken in 1945 by a Soviet pilot, Archiwum Państwowe w Warszawie [State Archive in Warsaw], set 'Biuro Odbudowy Stolicy' [Warsaw Reconstruction Bureau]

AERIAL VIEW IN PEOPLE'S POLAND

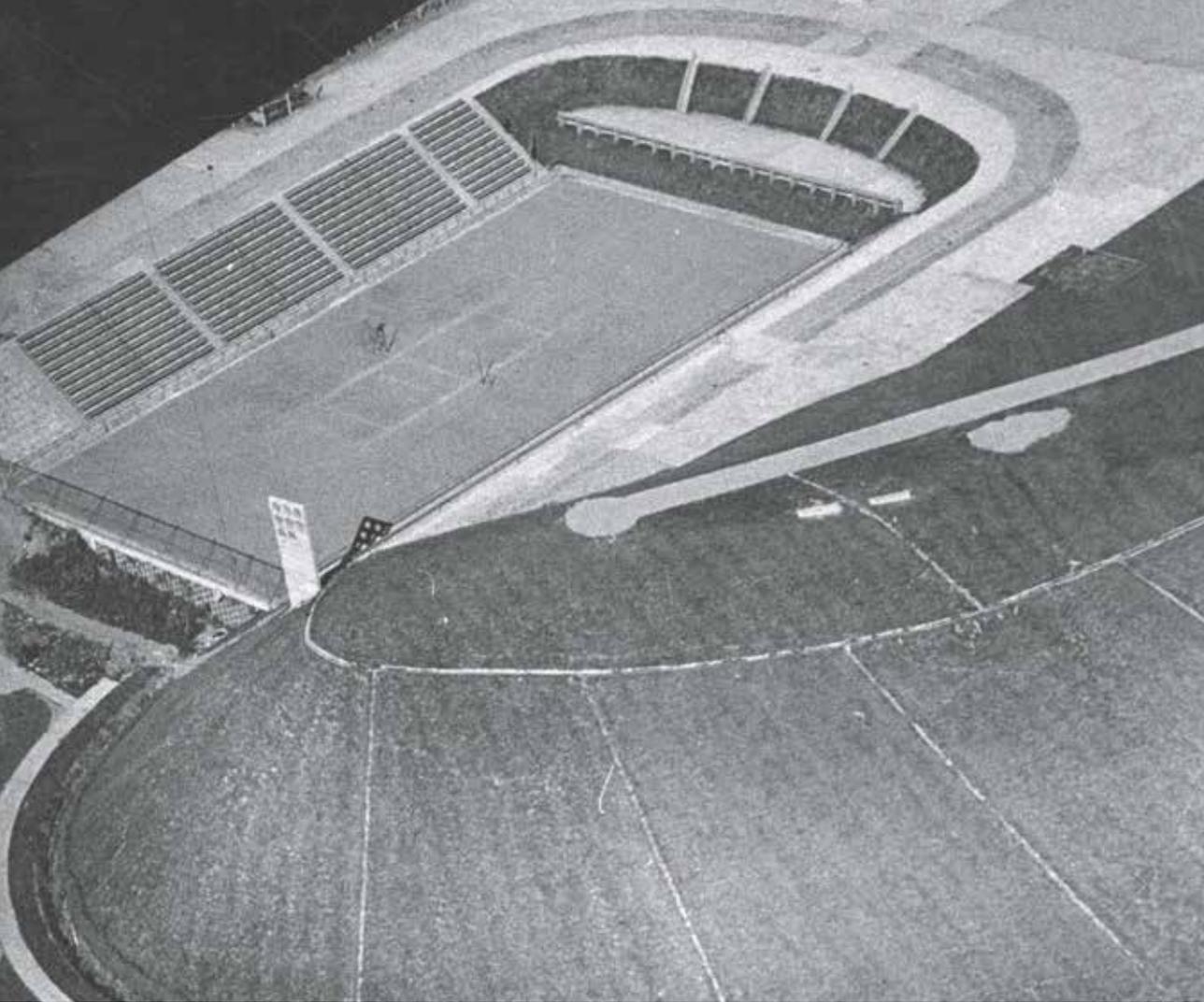
After a brief period of free enterprise, post-1945 civil aviation was quickly institutionalised. By the late 1940s, private flights were no longer possible. Both sports and sightseeing aviation was put under state control. In the 1950s, airspace was a militarised area, with every entry requiring permission from an air traffic control tower. At the same time, there were vigorous efforts to promote gliding aviation. The relatively most popular form of civil aviation, aside from passenger traffic, was low-level agricultural flying for

purposes like firefighting or crop-dusting. Architects and urban planners were occasionally flown by usually Soviet or trophy German aircraft to aid design work; flying at a proper altitude made it easier to determine the scale and height of the future building. This method was used, for example, in deciding the height of the central section of Warsaw's Palace of Culture and Science.

The period following the post-Stalin liberalisation in the late 1950s saw a revival of recreational flying. On the ruins of the pre-war Aero Club of the Republic of Poland, the Aeroklub PRL (Aero Club of the People's Republic of Poland), affiliated with the Aviation League and the League of Soldiers' Friends, was created through the merger of a number

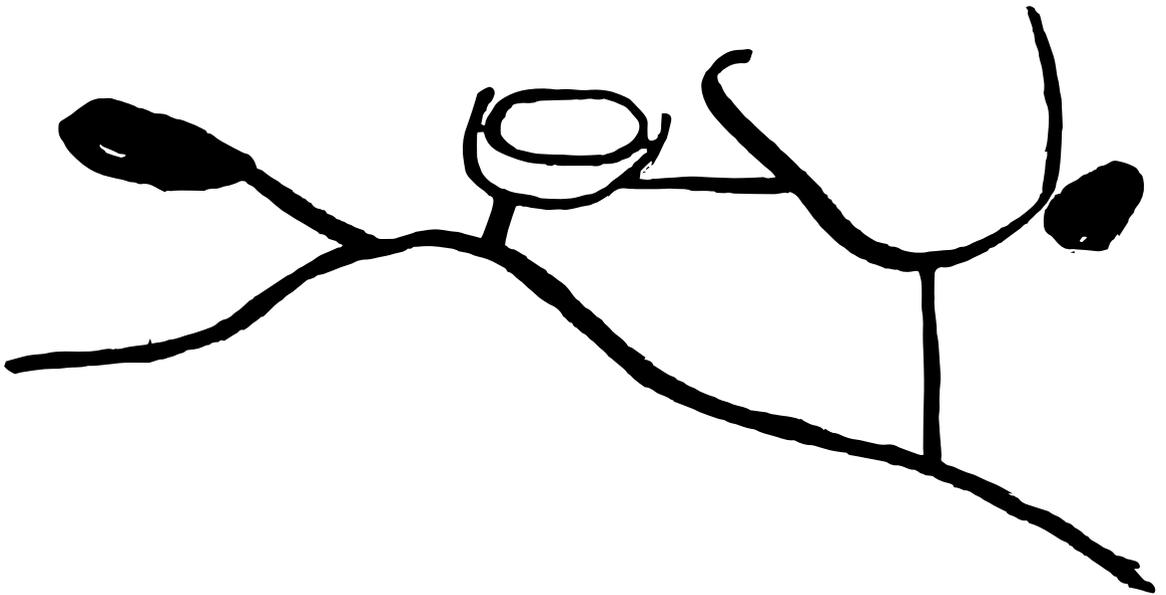
of civil associations. Flying, one of the postulates of modernity, remained an elite discipline, but it was now far more open than a couple of years earlier. Representatives of many professions, including architects and urban planners, joined gliding teams. Many achieved international success. Being able to observe terrain from the air determined their thinking about space. Starting in the 1970s, before starting to draw a new housing estate or industrial facility, designers would be flown around the prospective site in a helicopter.

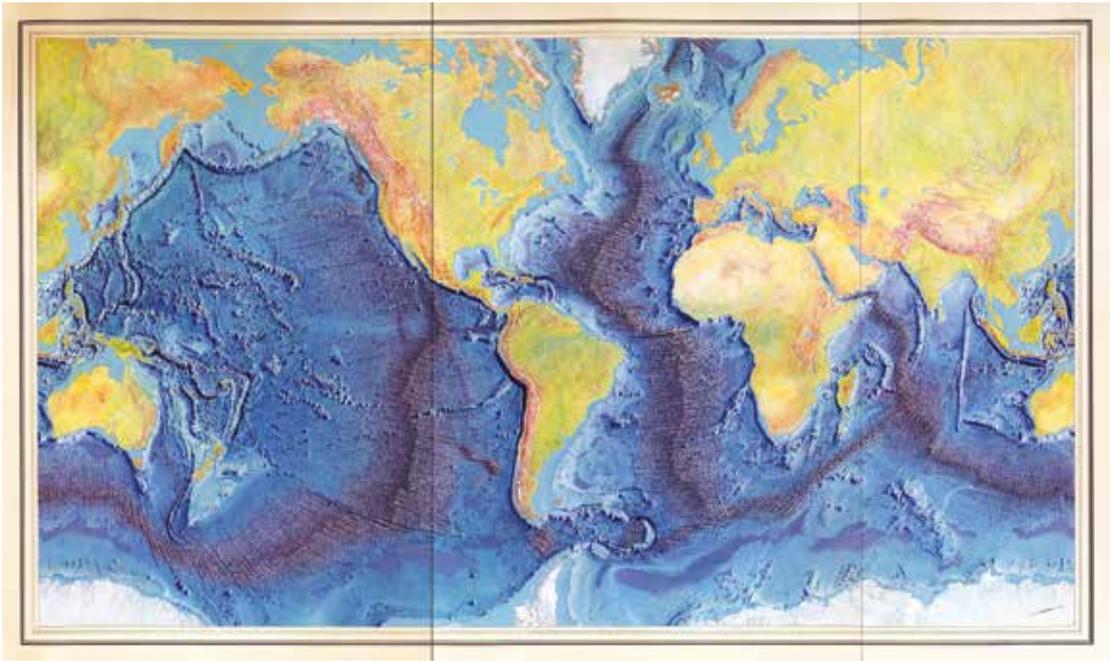
Andrzej Skalimowski



Warszawianka in 1964, Museum of Academy
of Fine Arts in Warsaw

THE GEO-
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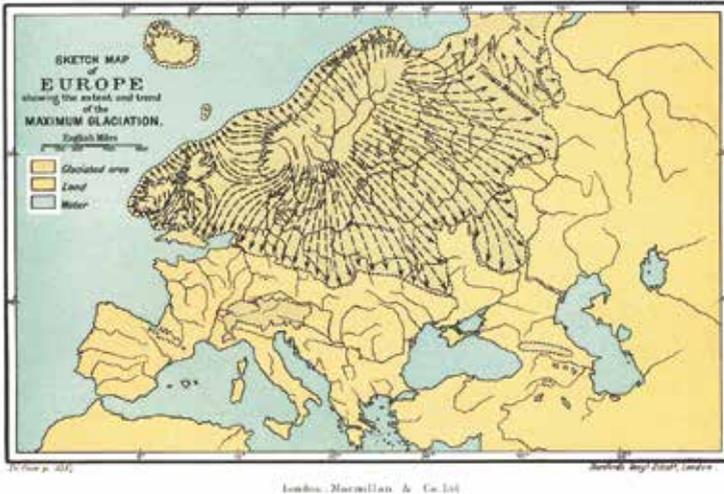




In a long-term perspective, rocks are fluid, too. The dynamic nature of the Earth is reflected not only in climate change, but also in phenomena such as continental drift, expansion of the ocean floor, or Mount Everest's annual growth of 0.6 centimetres. The first ocean floor map — showing the largest planetary relief and the responsiveness of land to sea — was published only in 1977. [MK]

Bruce Heezen and Marie Tharp's *World Ocean Floor Map*, painted by Heinrich Berann, 1977, Geography and Map Division, Library of Congress, part of the division's Heezen-Tharp Collection

The Anthropocene is an epoch in Earth's geological history associated with the results of human impact on the environment. Various authorities place its beginning at the Neolithic farming revolution or the invention of the steam engine. Today, we annually consume the equivalent of the animal and plant material that lived on the entire planet for 400 years. Nation states that colonised territories near and far, and modernised themselves have become a metabolic force of the Earth, responsible for material transfers on an unprecedented scale. In this chapter, we look at urbanisation from the viewpoint of geology, reflecting on architecture as a device that helps to organise the planetary imagination. Our point of departure here is the Warszawianka sports complex built in 1956–1972 into the side of the Vistula valley,



Even though the last continental glacier retreated from Europe some 12,000 years ago, local architecture still carries its memory — in the parameters of the foundations needed to transfer loads securely from an architectural structure to the ground. Receding, the ice sheet left layers of clays, gravels, and sands, accumulated during transgression and recession and compacted by the weight of a kilometre-thick layer of ice.

Last glacial maximum, in William Bourke Wright, *The Quaternary Ice Age*, London: Macmillan, 1914, CC 0

its design informed by an understanding approach to ongoing hydrological processes on the ground. We talk to Prof. Jan Zalasiewicz, Chair of the Anthropocene Working Group (AWG) at the International Commission on Stratigraphy, about, among other things, the temporal mesoscale that makes it possible to combine thinking in geological and community terms. [AP]

1954–1972

Warszawianka Cooperative
Sports Club sports complex
Art and Research Unit at
the Academy of Fine Arts
in Warsaw, team led by
Jerzy Sołtan



The Warszawianka is a large-scale complex for amateur sports and popular recreation, set into the gentle escarpment of the Vistula river valley. Compositional elements include earthen structures, plants, and multifunctional mini-pavilions. A feeling of cohesion and durability has been achieved here using the simplest materials: earth, water and concrete. The numerous retaining walls, forming terraces across the slope, have been built without foundations, using small self-locking concrete modules. Unlike deep-foundation walls, which resist the pressure of the earth, the Warszawianka retaining walls move together with its masses, without interrupting the circulation of water or the movement of animals. They reinforce the terrestrial set-up of the site. In the complex, situated on the side of a large river valley, water is a component that directs the flow of people, produces microclimates appropriate for the various disciplines and cooperates with gravity in sustaining the architectural-geological construction of the site — on the scale of not only Warszawianka, but also the nearby Łazienki Park, the Vistula River and the whole city. Many of the challenges that the Warszawianka designers successfully solved — such as microclimate management or water retention

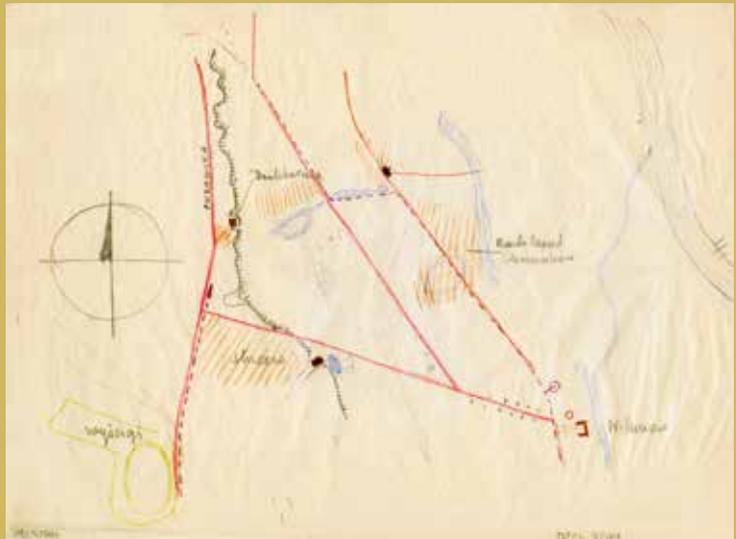
I stage, 1954, competition: Jerzy Sołtan, Zbigniew Ihnatowicz, Wojciech Fangor, Franciszek Strynkiewicz

II stage, 1956–1962: Jerzy Sołtan, Zbigniew Ihnatowicz, Lech Tomaszewski, Włodzimierz Wittek, Wiktor Gessler, Wojciech Fangor

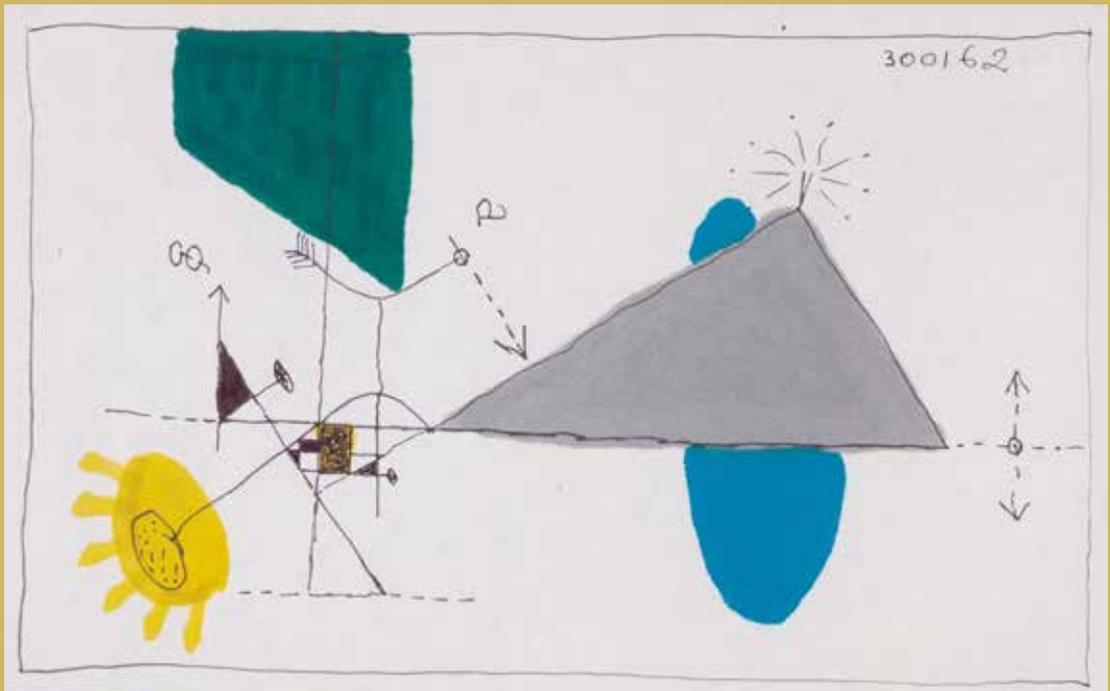
III stage, 1964–1972: Jerzy Sołtan, Zbigniew Ihnatowicz, Bogusław Winiarski, Wiesław Nowak, Viola Damińska, Wiktor Gessler, Julian Hulnicki, and team

1972 Warszawianka wins the 'Mister Warsaw' architecture prize (1959–1980) for best Warsaw design

2016 Ctrl+Space international competition for a Warszawianka revitalisation design concept; 1st prize: CENTRALA and Fundacja Skwer Sportów Miejskich (Grzegorz Gądek, Simone De Iacobis, Natalia Kowalska, Małgorzata Kuciewicz, Jakub Szczęsny).



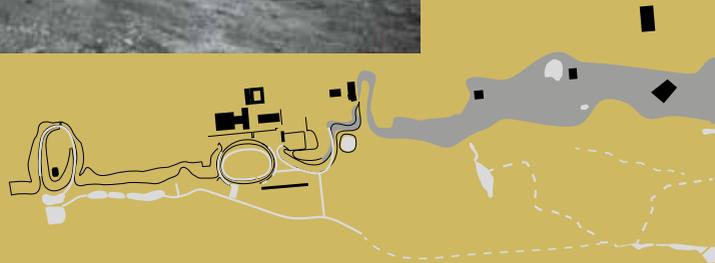
Warszawianka surface and subterranean waters on city scale. Jerzy Sołtan, master plan for the site, 1956–1962, 21 × 29.2 cm, colour pencils on copy paper, Museum of Academy of Fine Arts in Warsaw



Jerzy Soltan, *Composition with Pyramid*, 1962, 12.5 × 20.2 cm, felt-tip pen on paper, Museum of Academy of Fine Arts in Warsaw

Drainages and water ducts as decorative lines and a visual element of the design tectonics: The slope is covered by decorative lines of broken stone, standing out sharply from the green grass. The modelling of the hill and the graphic visualisation of the lines are meant to emphasise the abstract quality of the man-shaped form. The site has undergone an architectural-sculptural transformation . . . Besides visual values, the rich diversity of the terrain levels plays a crucial role in directing human traffic and perfectly substitutes for fencing.

— are highly topical issues today. This ‘multi-element, conceptual sculpture, which is founded on the great memory of the Earth and harnesses the forces of nature’, has become the focal point of initiatives undertaken by urban activists, including CENTRALA, aimed at winning public support for the idea of revitalising Warszawianka as a public sports-and-recreation centre and a living monument of visionary architecture. (MK)



The slope is vulnerable to landslides and erosion rills caused by surface waters. The Warszawaianka architects incorporated those features into their design as valuable architectural components.

The escarpment before Warszawaianka, 1939; photos courtesy of Stowarzyszenie Okolska

Warszawianka in 1965; photos: Zbyszko Siemaszko / Polska Agencja Fotografów FORUM

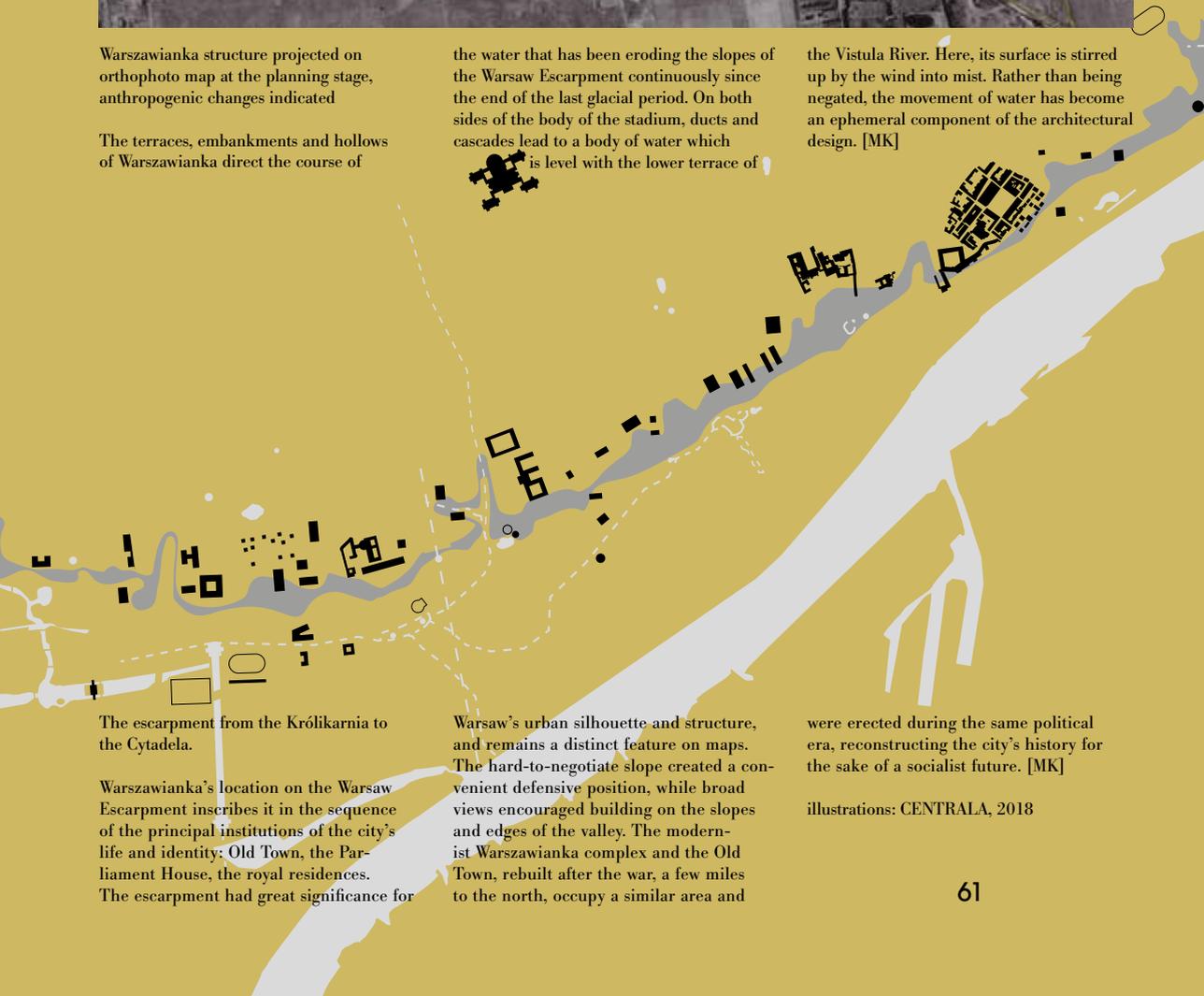


Warszawianka structure projected on orthophoto map at the planning stage, anthropogenic changes indicated

The terraces, embankments and hollows of Warszawianka direct the course of

the water that has been eroding the slopes of the Warsaw Escarpment continuously since the end of the last glacial period. On both sides of the body of the stadium, ducts and cascades lead to a body of water which is level with the lower terrace of

the Vistula River. Here, its surface is stirred up by the wind into mist. Rather than being negated, the movement of water has become an ephemeral component of the architectural design. [MK]



The escarpment from the Królikarnia to the Cytadela.

Warszawianka's location on the Warsaw Escarpment inscribes it in the sequence of the principal institutions of the city's life and identity: Old Town, the Parliament House, the royal residences. The escarpment had great significance for

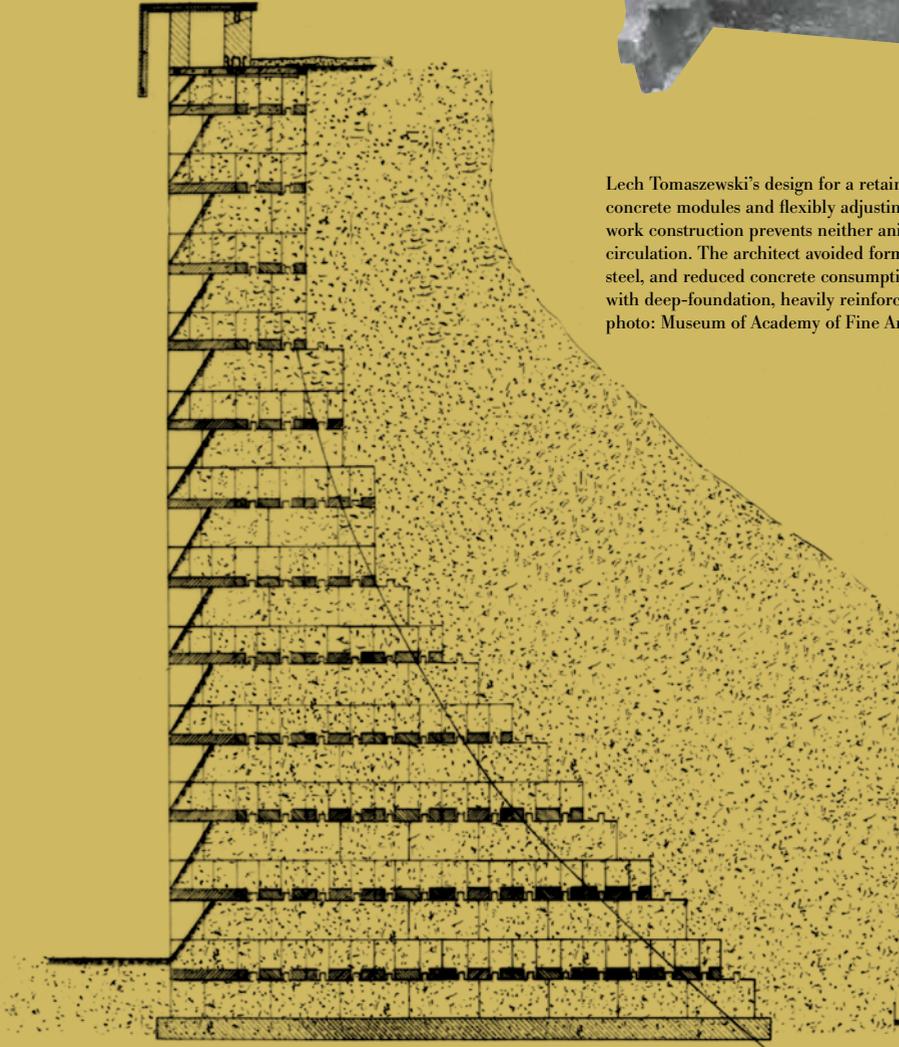
Warsaw's urban silhouette and structure, and remains a distinct feature on maps. The hard-to-negotiate slope created a convenient defensive position, while broad views encouraged building on the slopes and edges of the valley. The modernist Warszawianka complex and the Old Town, rebuilt after the war, a few miles to the north, occupy a similar area and

were erected during the same political era, reconstructing the city's history for the sake of a socialist future. [MK]

illustrations: CENTRALA, 2018



Lech Tomaszewski's design for a retaining wall built with self-locking concrete modules and flexibly adjusting to earth pressures. The open-work construction prevents neither animal movement nor water circulation. The architect avoided formwork, eliminated reinforcing steel, and reduced concrete consumption by 40 percent compared with deep-foundation, heavily reinforced rigid retaining walls. [MK] photo: Museum of Academy of Fine Arts in Warsaw



Soil accumulation in the concrete modules of a permeable retaining wall, Museum of Academy of Fine Arts in Warsaw

Oskar Hansen, quoted in *Jerzy Soltan. Monografia*, ed. Jola Gola, Warsaw: Wydawnictwo Akademii Sztuk Pięknych w Warszawie, 1995, p. 59

It's about a retaining wall, a three-dimensional lecture on gravity. The natural law formative for a natural slope, normally unnoticed, has been rediscovered by transforming the natural slope into hundreds of small slopes, enclosed like paintings in rectangular frames. This over 100-metre-long 'bas-relief', providing a narrative about the gravity of the related earth pressures, reminds us in a new form of an eternal law.



The Warszawianka retaining walls comprise a techno-biological system. Concrete parapets designed by Lech Tomaszewski were constructed to create terraces and distribute the slope's pressure among a number of smaller escarpments. As planned by landscape designers Wanda Staniewicz and Alina Scholtz-Richert, mosses and lichens were planted in the earth that deposited inside the open-ended self-locking modules in such a way that the roots of the species selected would withhold the slope's pressure and prevent the soil from spilling over. The relationship between architecture and natural forces is the same for the macroscale, the whole design (no resistance to water circulation or animal movement) as the microscale, the single retaining-wall module. [MK]
photo: Museum of Academy of Fine Arts in Warsaw



photo: The Jerzy Soltan Collection, courtesy of the Frances Loeb Library, Harvard University Graduate School of Design



Human scale and landscape scale — guidelines for the Warszawianka design; photo: The Jerzy Soltan Collection, courtesy of the Frances Loeb Library, Harvard University Graduate School of Design

A conversation between:
Jan Zalasiewicz (JZ)
CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis (CEN)
Anna Ptak (AP)

Deep Metabolism

AP

You once wrote that Earth is not a single planet but instead there are a number of different Earths that succeeded each other in time. Each was endowed with different chemical, physical and biological traits. What is, from a geological point of view, the most remarkable feature of the Earth we inhabit?

JZ

Cities, actually. They are not normally considered as part of geology, but if you consider them as effectively rocks and minerals, put together in particular patterns by natural organisms — that is by us — then they constitute some of the most remarkable geology. Normally, geologists look at other things when they study the human impact on our planet — the changing of the general chemistry of the air (particularly the extra carbon dioxide we have added to the system), pollution of different kinds with things like cadmium, zinc and so forth. But I think it is more interesting to look at the less classically geological parts of the system. At something that we may call the 'urban strata' of the Earth.

AP

And how significant are cities from a geological perspective?

JZ

The simplest, and perhaps the smallest, part of the answer is that cities are made of reconstituted geology. Concrete is a combination of limestone, sand and gravel. Brick is

largely clay or mudstone, and so on. But this is never in stasis. Rather, it represents a dynamic system, comprising flows of matter (both living and non-living) and energy, arising, evolving — and ending, too — over time. The distances travelled can be short (usually only tens of kilometres for bulk materials such as sand and gravel) or extraordinarily long (in the case of more expensive components, such as decorative stones that clad buildings). And the scale of all this is now extraordinary. Concrete, for example, a rock type used by humans sporadically since Roman times, has become the dominant constructional material today. Since 1945, we have laid out ca. 0.5 trillion tonnes of concrete, the equivalent a kilogram or so for every square metre of the Earth's surface, both land and sea. So one of the questions we are beginning to ask ourselves is: 'how heavy is the city'? Or take plastics — the signature mineral novelty of the Anthropocene. Their production rose from globally negligible levels in the 1940s to the current 300 million tons annually. This represents — every year — the amount equivalent to the total mass of humans on Earth. Much of this material will eventually fossilise. And millions of years from now, some of our cities will make gigantic, spectacular fossils, visible in the high cliffs of the rocky coastlines of some new oceans.

AP

So, if we look at our Earth from the point of view of a future geologist, how will this urban stratum be different from the other ones?

JZ

First of all, gravity no longer plays a role in this metabolic process. Rivers used to be one of the vehicles for the transport of geological materials. The movement was from the mountains to the coastline. There was a clear pattern and a logic to the strata formed reflecting



the dynamics of the river system and the nature of the material. A geologist could easily work out the direction from which the sediment had travelled, the rock composition and dynamic behaviour of the eroding mountains in the hinterland. The logic of construction of the urban stratum is very different. Gravity plays little or no part in determining the direction of travel, as the transport follows a gradient from areas of supply to areas of demand. Components of a city sedimentary system can therefore be driven uphill. Some of this is accumulated vertically and part of it also ramifies downwards into the ground, too, as the foundations of the city. Another example is the dispersal of human materials on the ocean floor, whether deliberate jettisoning of clinker (the residue of coal burning) from steam ships to the litter from shipwrecks. The ships are equivalent to icebergs dispersing

Human scale and landscape scale — guidelines for the Warszawianka design; photo: The Jerzy Soltan Collection, courtesy of the Frances Loeb Library, Harvard University Graduate School of Design

It is a hill erected by human hand for green grass to grow on it and for snow to paint it in winter time. The hill's large mass and simple geometry make it an absorptive background able to neutralise the aggressive formal impact of sporting events and to keep the composition in equilibrium. The grassy or snowy slopes are a background against which the forms of human events are highlighted.

sediments into the deep ocean, but the trains of sediment follow global marine trade routes rather than ocean currents.

Oskar Hansen, quoted in *Jerzy Soltan. Monografia*, ed. Jola Gola, Warsaw: Wydawnictwo Akademii Sztuk Pięknych w Warszawie, 1995, p. 59

Part of how I like to look at cities can be represented by the idea of urban metabolism. This kind of approach has explicitly biological connotations — it considers a city as a living, breathing, moving — and eating and excreting — organism. It is clearly a useful metaphor. But it works mainly on a timescale that approximates that of the geological present. There is yet another timescale, and sense of process, between the metabolic one and the abstract, deep-past and far-future perspectives. That's the most interesting one.

AP

CENTRALA with Aslı Çavuşoğlu, in an action dubbed *The Cut*, once conducted archaeological excavation in Warsaw's Muranów district — where the rubble of the Warsaw Ghetto was explicitly used as the very foundation of a new housing estate. The whole estate — with a hilly structure of organised rubble and recycled bricks in facades of houses — was designed as a monument to the victims of Nazi atrocities. Hence, the term of 'living monument' coined by CENTRALA after the estate's architect, Bohdan Lachert. Following your line of reasoning, one could say that Earth constitutes a gigantic living monument.

JZ

What do you mean by this?



Warszawianka,
1970; photo: Jan
Goots, courtesy
of the Exhibition
Bureau / Polish
Modern Art
Foundation

CEN

We don't understand monuments in the classical sense, as symbols of some past memory. Take old trees that are sometimes classified as monuments of nature (*pomniki przyrody*). They have some symbolic meaning but they also do something. If you want to have such monuments, you have to maintain them, like old clocks or old cars. We're not interested in preservation per se, but in how monuments are kept alive by being used. This is how we thought of the Warszawaianka sport complex.

JZ

I have been recently involved in translating the works of the Comte of Buffon. He was a French savant of the 18th century and he wrote the first scientifically based geological history. And on the very first page, he referred to something he called 'monuments'. He said that just as humans leave things like coins and objects, so nature also leaves monuments — things that remind as of what has once been and how it was different in the past. Thus, the word monument has resonance, particularly when you go back to the beginnings of geology. And of course, since that time it has been detached from the science. So you won't find modern geologists speaking of monuments. I think it is useful to go back to these beginnings because in these times people did not concern themselves whether they were scientists, humanists, artists or whatever, they just tried to think things through, they tried to think through the earth and life and what it all meant. This is particularly pertinent when we are speaking about the Anthropocene.

So yes, I think you can treat the Warszawaianka complex as a monument almost in the full sense — as something that was put together out of bits of geology, brick, steel, glass, concrete and all of that. You need to take rock apart to make these new kinds of rocks, and at some stage, the components will be eroded, taken apart and

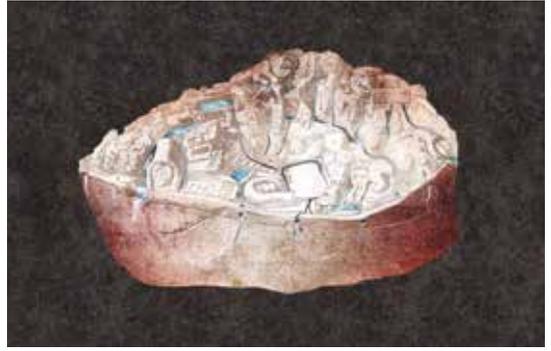
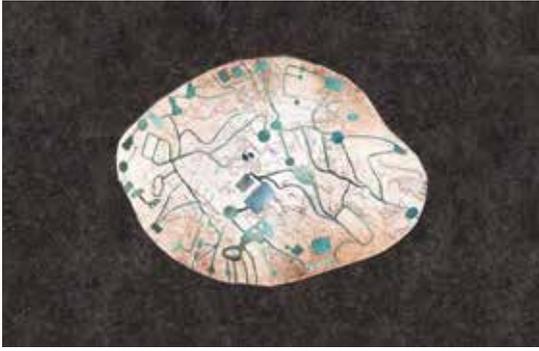
will go on to make other kinds of rocks. Some of it might last, some will disappear. From what I gathered, when the architects put it together they were trying to evolve it further, were thinking of it almost as part of nature. So they were concerned with the evaporation of water, with sunlight and how it is trapped, how to channel the water through it and past it, as well as how to remind the people who use it that it is part strictly of a human system, but it's also part of a natural system, therefore there is a kind of hybrid. And that is why it is interesting.

CEN

Tuning humans in with nature. Their imagination was magnetised into the so-called meso-scale. It is a term that was used by the Warszawianka architects. They were interested in the area that was within reach for the individual human beings that would be using the complex. Nowadays, people find it hard to build these connections between themselves and the larger systems they are a part of. Not only geographically but in a temporal sense too.

JZ

It's interesting to think of Warszawianka as a part of a sedimentary system with materials on different scales, from different places, flowing in and flowing out. The Earth is always in a state of flux, even the smallest piece of land. Because it's on a particular slope and you want to try to work with gravity, rather than disregard it, you build walls in a particular way. And you know it's built on some glacial deposits and those were carried there mostly by ice from Scandinavia. They've taken a particular journey, and different kinds of components of those boulder clays and sands and gravels have moved various distances. Some survived the journey better than others; the harder rocks will survive better than the soft rocks and so on. So this is the logic behind the substructure on which the Warszawianka was built.



For example, after the Ice Age was finished, the Vistula River then came along to channel through those deposits. The Warszawianka is now balanced somewhere on the boundary between these two systems. And the river slope is like a meso-scale structure. And then groups of *Homo sapiens* entered the picture. Take a concrete wall in the Warszawianka. It comprises sand and gravel, probably sourced locally, mixed with limestone and mudstone, which has probably travelled rather further. And those will not travel by gravity or solar energy but by energy stored within hydrocarbon deposits, coal and oil. Slabs of granite, these probably came from somewhere in Poland but now such objects are generally brought in from China. The steel has almost certainly come from either Norway, Canada or Australia, and there would be electrical systems in it, so copper is present too. The copper might have come the mountains on the Polish-Czechoslovak border or it might have come from Africa. There has been nothing like this kind of geological transport before our species. And the Anthropocene is either bringing in new matter or it is amplifying it enormously. Now we have plastics, and plastics will come from oil deposits somewhere, maybe the Middle East, maybe Russia or Kazakhstan.

So this complex system was built over decades, and it will have a lifetime of a few

The Sayhuite monolith is perhaps a hydraulic scale model created by Inca engineers to design water-flow pressure and speed. The pre-Columbian urbanistic knowledge included the planning of the frugal use of mountain streams. The monolith may have also been used ritually in water cult ceremonies, enabling worshippers to watch the sacrificial drink flow through the carved channels. [MP]

Hania Podladowska, *Sayhuite Monolith*, 2018, drawing



decades or maybe a few centuries if it's lucky. And then something else will happen to it. One part of it is going to be demolished and rebuilt. And my interest is where that material is going to go. Is it going to be a part of a landfill site? Is it going to be crushed and put down as basement material for a new building, will it go to making roads? Sometimes, these remains will be affected by the erosion of wind and water and begin to travel downwards by gravity. Geology looks at these kinds of processes, at where things come from, how long they last in a particular system, how they are recycled within that system, and ultimately, in the span of tens or hundreds of millions of years, how they become new geological strata. But I'm also interested in the medium term, the meso-temporal scale. In the journey these materials will take over the next tens or at most hundreds of years. I'm trying to think of this in terms of the next few generations.

Warszawianka, 1970; photos: Jan Goots, courtesy of the Exhibition Bureau / Polish Modern Art Foundation

The Anthropocene is, put bluntly and briefly, a moving target. The Holocene, all the time up to pre-war era, was a stable system. People changed and cultures changed, but the carbon cycle stayed broadly the same. The biosphere was being altered but was still more or less functional. Now since the mid-20th century, humanity has now used as much energy as it used in all of the previous Holocene time. So we are now trying to take that through into the meso-future.

AP

I like the concept of the meso-future. We were struck that the Warszawianka project was created at the crest of the big acceleration, before the escalation in the production of metals, plastics and so on. And the condition which its builders had to work with was shortage. So to make up for the lack of concrete, they thought of the entire structure as a landform.

CEN

The retaining walls, for example, were built without foundations and without steel, as an elastic structure made of concrete. It resembled a chain, ready to react to the functioning of the land and plants. As Oskar Hansen put it, they translated one slope into hundreds of microslopes and they used the roots of the plants to keep the ground stable.

AP

The seasonal use of the complex is yet another example. What were outdoor swimming pools in summer became ice skating rinks in winter. So they tried to harmonise the geological and atmospheric processes with social processes, and it was a success. At the peak of its popularity, the Warszawianka was frequented by 8,000 people daily. However, it is very different from the 'starchitecture' stuff, it's not spectacular in the contemporary sense. It's not a building that hits the sky. And simply easy to be overlooked. So this sense of the meso-scale, in both spatial and temporal sense, needs to be re-discovered.



The winter adjustment of practices at Warszawianka, 1970; photo: Jan Goots, courtesy of the Exhibition Bureau / Polish Modern Art Foundation

CEN

And now most neighbours and users are oblivious to all this. That is why we need to restore this planetary imagination.

JZ

When people live close to the land, they understand the fabric of geology even if they do not address it scientifically. In my younger days I used to do a lot of geological mapping. It was clear that the farmers had a very good understanding of those physical structures of the land. Not only of the farmland. Their buildings, particularly in low-lying areas, were clearly adapted to the geology because of height, drainage, type of soil, type of foundation and so on. They clearly had a practical understanding of it even though it would not have been expressed in a modern scientific language. Possibly, as we develop a more artificial environment around ourselves, we lose track of that. It seems sensible to me, particularly in the Anthropocene, when things are going to be changing, to again become sensitive to these kinds of processes, as with the Warszawianka design. To go with the flow, go with the grain of landscape and also go with the grain of the processes around it.

Again, it is not just the natural patterns, but let's say the Vistula now, presumably, has stopped meandering. In the past it would have

been a meandering river, moving a few meters one way or the other every decade. But now if it is in the centre of Warsaw, then those banks have been set and stabilised.

AP

One of them is, the other one is still wild, fortunately.

JZ

Okay, so you are dealing with a half-wild river, and there will be consequences of the attempt to control it. This will have feedback into the system, they make the flood waters go more quickly, more slowly, make flood waters go faster or higher than they would otherwise do and so on. Another analogy that we might use is the coral reef — a biologically built composite complex structure which is adapting itself to local conditions of sunlight and wave energy, nutrient levels. It is built by the combined activity of not just the corals, but also the algae, and other invertebrates and fish play an important role in controlling all of that. So to a zoologist, a coral reef is a wonderful ecological phenomenon; to a geologist, it is building rock. So corals are building their skeletons out of the calcium carbonate that they take from the seawater, so that it's ultimately grafted from some other continent. Corals fix that calcium carbonate and they grow their skeletons. Millions of skeletons make up the coral reef. These can form structures larger than cities, sometimes stretching several thousand miles. And because of the Anthropocene, the Great Barrier Reef is now undergoing changes to its structure.

AP

To what extent does the environmental and the stratigraphic understanding of the Anthropocene constitute disparate perspectives? Because it seems that from the geological point of view, from the longer temporal perspective, *Homo sapiens* may be rather insignificant for Earth's

history. We are messing with the Earth's archive but we are probably causing something like a one-millimetre change in the stratum.

JZ

In some places, this is actually a hundred-metre change in the stratum. Surely, this is very short in terms of time, but we're making great changes. 65 million years ago, a meteor struck the Earth and that is thought to have killed off the dinosaurs and much more, effectively knocking down one ecosystem, and then another ecosystem grew out of the ruins of that. And we are the meteor now. We are doing an awful lot in a very short span of time. Much of this is irreversible. But indeed, the human and non-human temporalities are different, so it's again a matter of scale. Take sea level change — the sea levels have risen by 20 or 30 centimetres so far. One or two metres of sea level change, geologically trivial, will have a huge impact on all of our coastal cities.

THE HYDRO- GEOLOGICAL HISTORY OF WARSAWIANKA

The southern (left-bank) wall of the Vistula river valley constitutes Warsaw's most distinct geological formation. South of the city centre, where it retracts from the present-day river by nearly 6 kilometres (the original watercourse that carved the valley was nearly 20 kilometres wide), and where the gently sloping wall is some 18–20 metres high, the Warszawianka sports complex is situated.

Between 23 million and 2 million years ago, the fresh water of the emerging Carpathian Mountains mixed here with the salt water of the Miocene Sea. The sediment they left — loams, silts, sands — was then ploughed and covered by gravels carried by the young rivers of the freshly emerged Carpathian orogen. Three successive glacial transgressions — advances and retreats of the continental glacier — left three layers of sediment and levelled out the surface of the area. Towards the end of the period, the plateau was split: the ice sheet melted gradually and the resulting water flew south, creating the beginnings of what we know today as the Vistula valley.

The last glaciation stopped north of the area, but intense

lateral erosion and accumulation of river deposits in the Vistula valley continued: deepening and widening its valley, the braided river created the slopes and the difference terraces. The morphology that awaited the contemporary man was ultimately shaped some 8,000–12,000 years ago; its natural dynamic processes today include mass movements, meteoric water flushing, or floods. Human impact on the escarpment began 250–300 years ago, resulting in changes in the morphology of the slopes due to their transformation by development as well as changes in flora and



Numerical model of the escarpment area in the vicinity of the Warszawianka complex, Head Office of Geodesy and Cartography

hydrographic conditions (for both surface and subterranean waters). The Vistula escarpment was also a place where waste and rubble were deposited, where buildings fell into decay and developed anthropogenic crusts.

The geological history of the area means that the subsurface structure of the Warszawianka site is limited to young (Pleistocene and Holocene) rock formations: two layers of glacial till separated by a layer of fluvio-glacial sands. In those places where the sand layer accumulates water, the slope gradually slides down. Where the Warszawianka stadium has been located (coincidentally or as a result of engineering foresight), the layer seeps water, but the slope itself is quite stable. There the stadium

has nestled, its viewing-platform side propped against the slope, below a retaining wall that after many years still reacts flexibly to the constant pressure of the earth, the weight on the city uphill, the flow of water.

This topography of the city's geological history, once intersected by ravines and gulches, today by the corridors of highways and streets, eludes perception. Warsaw cityscape paintings, including the oldest one from 1585, for nearly 300 years presented Warsaw exclusively from the other side of the river — as a city (a succession of residences and gardens) on a gently sloping valley side. Walking around the city today, one encounters its tokens: the vistas, the elevations, the cool air at the foot of the slope, the former gulches

conveniently connecting housing estates in Żoliborz (in the northern part of the city), or the Warszawianka complex with its connectivity with natural forces. The complex itself has fallen into neglect and can be easily overlooked, summed up with a disdainful 'there is nothing there'. But despite the degradation, the modernist design is still working — despite or perhaps thanks to the fact that so little had been built there, leaving it to the natural forces to regulate the flows of human activity.

Dariusz Grabowski



Puławska Street in the rain, Warsaw, 1968,
photo: Zbyszko Siemaszko, National Digital
Archives



LIQUIDITY IN
ARCHITECT-
TURE



Photographic archives seldom feature photos of precipitation other than cataclysmic rain. Here are selected examples from the life of the city and an embodied architecture of rain.

There is no place in modern planning for the ephemeral, labile, occasional. In this chapter, we look at the life of the city through the lens of temporary gatherings, unexpected changes, ad hoc organisations, embodied practices and ephemeral components of architecture and last but not least, the weather. The *Rain Pavilion* is a device that amplifies the perception of precipitation — an atmospheric phenomenon of critical significance for the Earth's ecosystem. Its representation in cities of Warsaw's latitude is usually negative, with various methods of protection from rain being developed in both architecture and everyday life. Changing the way water circulation is perceived, connecting it multisensorially with social practices, is a postulated performative dimension of CENTRALA's architectural intervention.



Puławska Street in the rain, Warsaw 1968; photo: Zbyszko Siemaszko, National Digital Archives



A book-selling stand, Krakowskie Przedmieście Street, Warsaw 1979–1982; photo: Grażyna Rutowska, National Digital Archives

A conversation with Prof. Matthew Gandy, focusing on water in the imagination and in urban infrastructure, introduces a critical perspective to a study of urbanised nature. An uneven distribution of power is a specifically human way of strengthening the dynamic processes transforming the material environment of life. [AP]

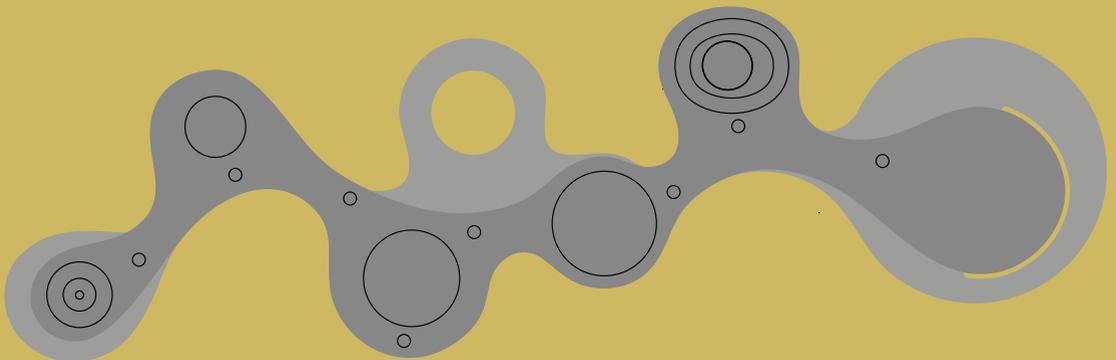
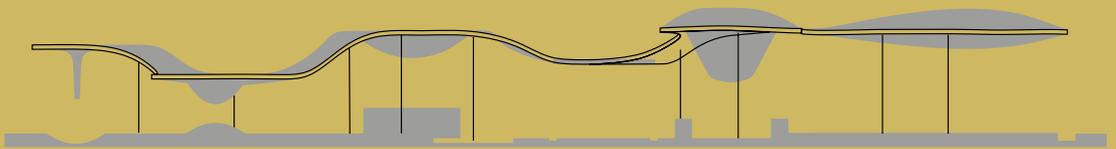
2018

Rain Pavilion

CENTRALA —

Małgorzata Kuciewicz,
Simone De Iacobis

Study work and 1 : 50 scale architectural model for
the *Amplifying Nature* exhibition at the 16th International
Architecture Exhibition in Venice, 2018



ULEWA
[ulēva]
a downpour



DŹDŹA
[dzhjah]
a silent, very fine mist-
like rain, a drizzle



TRZASKAWICA
[tshaskavitsa]
a rainstorm with
distant thunders

LYSKAWICA
[weeskavitsa]
a lightning storm

PLUCHOTA
[plookhota]
a heavy splattering
rainfall or sleet

CHLAPANINA
[khlapanena]
a long heavy splash-
ing rain, a pelt



CENTRALA's *Rain Pavilion* is a structure in which rainwater is a periodical component of the architectural form and allows visitors to enjoy the sound of falling rain. It makes possible the naming, visibility, and audio-description of liquid matter, conveying the notion of the global circulation of water.

The *Rain Pavilion* would be located in Warsaw, on the unregulated right bank of the Vistula. Freshwater aquifers in the Vistula drainage basin

provide 70 percent of the area's potable water. The river's waters are supplied by precipitation — in half flowing gravitationally from the whole drainage basin, and in half reaching deep groundwater levels which it may take several decades to seep through to the river. As a result, the Vistula doesn't dry out during rainless periods.

The architecture of the *Rain Pavilion* is a medium of hydrological phenomena in all possible scales — from raindrops to

situations where the sky touches the earth. The pavilion doesn't offer protection from the rain, but it organises a sonic, visual and tactile perception of the circulation of water.

The pavilion consists of elements that react in different ways to precipitation. These include:

A drum chamber in the lowest section of the roof, above the

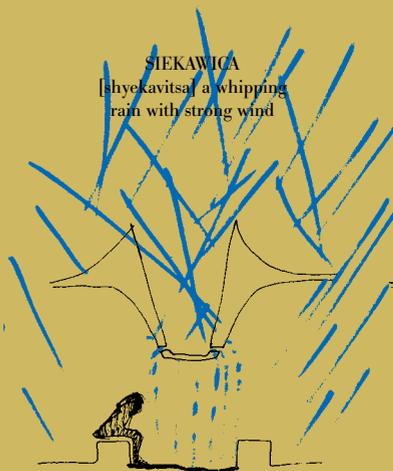
KAPANINA
[kāpaneena]
a fine dribbling rain,
a mizzle



SIEWKA
[shyevka]
a fine yet dense, intense
brief rainfall



SIEKAWICA
[shyekavitsa] a whipping
rain with strong wind



Precipitation types in Warsaw. A monument to contemporary rain: the types of precipitation in the Masovia region in 2017 depending on size of droplets

illustrations: CENTRALA, 2018

seat. Together they comprise an instrument for detecting the sounds of a **trzaskawica** [tshaskavitsa — a rainstorm with distant thunders].

A funnel for collecting water from an **ulewa** [ulēva — a downpour] into a water column, with a wide platform separating the audience from the splash zone.

Platform for monitoring a soundless **dżdża** [dzhjah — a silent, very fine mist-like rain, a drizzle], revealed through

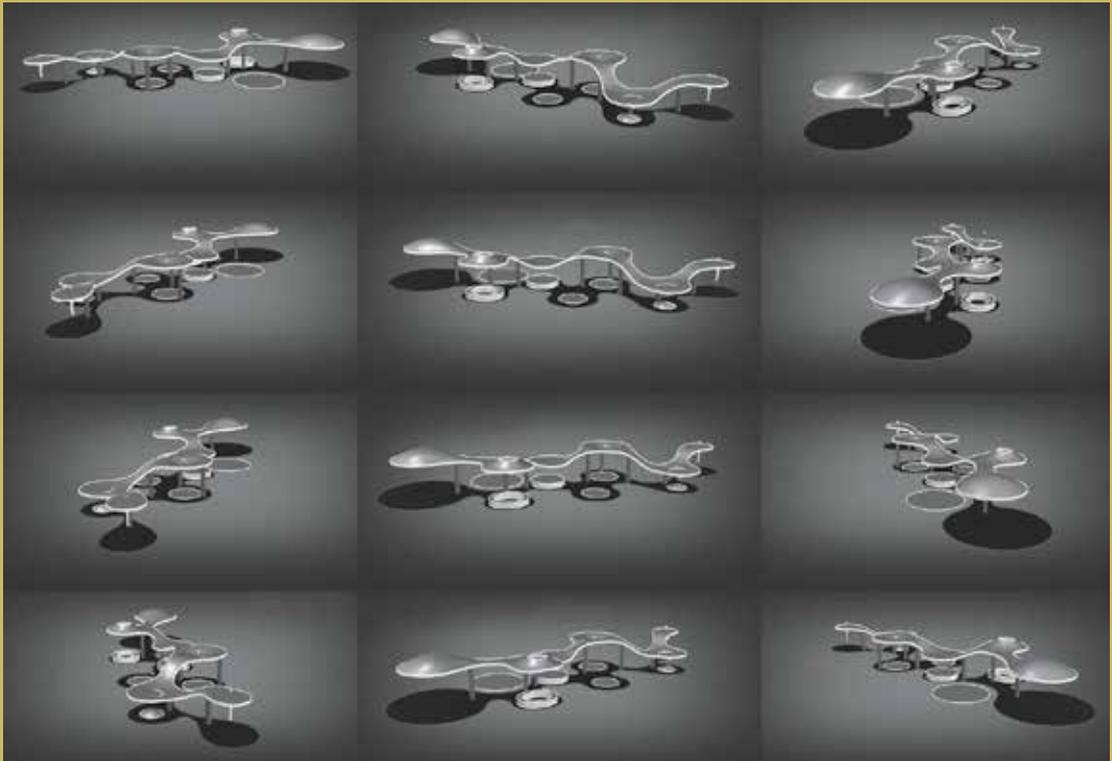
a moisture-condensing perforated trough in the roof above.

A reversed bell for collecting water from a multidirectional **siekawica** [shyekavitsa — a whipping rain with strong wind], above a bench allowing the user to change their position depending on the direction of the wind.

Flat surfaces above a reduced-thickness section of the roof to amplify the sounds of a **kapanina** [kāpaneena — a fine dribbling rain, a mizzle].

An undulating roof edge to divide a **siewka** [shyevka — a fine yet dense, intense brief rainfall into visible streams].

Water-collecting depressions outside the roof contour and the platform to help monitor a **chlapanina** [khlapaneena — a long heavy splashing rain, a pelter] or **pluchota** [plookhota — a heavy splattering rainfall or sleet]. [MK, SDI]



3D modelling and model of *Rain Pavilion*: Tomasz Gancarczyk, black oak, 75 × 25 × 20 cm

					
0,5 mm	1 mm	2 mm	3 mm	4,5 mm	6 mm

Sources:
 Władysław Kupiszewski, *Słownictwo meteorologiczne w gwarach i historii języka polskiego* [Meteorological terminology in the dialects and history of the Polish language], Wrocław, Warsaw and Kraków: Zakład Narodowy im. Ossolińskich, Wydawnictwo PAN, 1965

Kinga Kulesza, *Zróźnicowanie przestrzenne wielkości opadów w Warszawie* [Spatial differentiation of precipitation size in Warsaw], Department of Climate Studies, Faculty of Geography and Regional Studies, University of Warsaw

<http://www.mojapogoda.pl> (accessed 19 March 2018)

compiled by CENTRALA, 2018

A conversation between:
Matthew Gandy (MG)
Anna Ptak (AP)
CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis (CEN)

Liquid Constellations

AP

How does should we research water as a crucial element of urbanised nature? At which scale should we start?

MG

I would suggest that we should use multiple scales. We are not only dealing with the scale of hydrology and the biophysical properties of water but also with wider circulations and patterns, including intersections between the flow of water through urban infrastructure and the flow of capital that underpins capitalist urbanisation. We therefore need to think of multiple and intersecting scales of analyses..

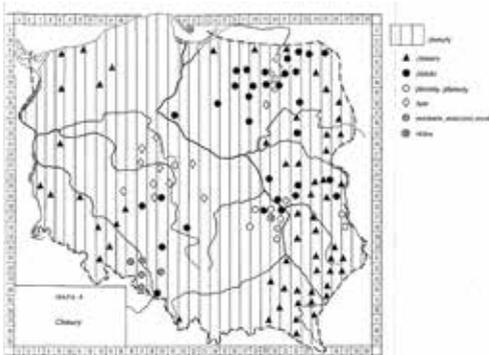
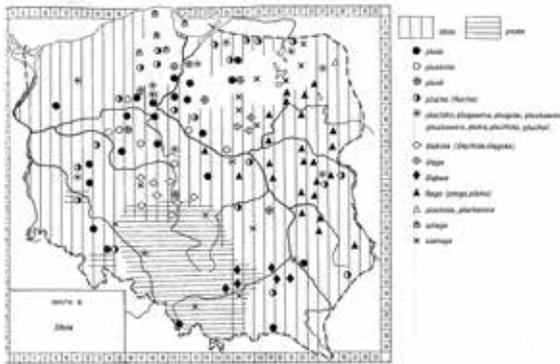
AP

I asked about scales because often many of them are invisible locally. You hint in your book at this paradox of visibility. Visible water infrastructure usually signals problems: of distribution, inequalities, exclusions and so on. And the 'good water' is the invisible water, the one that is subsumed under infrastructure.

MG

Yes, in the global North, the metabolic relationship between the body and city remains largely hidden. We become aware of it only in a moment of crisis, when there is a failure, disruption or contamination. In a 'plumbed city', so to speak, the private and public realms are also separated, and they meet only in the intimate space of a standardised modern bathroom. In the cities of the global South, the visibility of water is

modes of interaction with nature. Also, there are different facets to this separation from water that come about as a result of modernity. James Joyce, for example, in his novel *Ulysses*, celebrates this series of complex interactions. The simple act of filling a kettle in early 20th century Dublin, and reflecting on its connection to the Roundwood Reservoir in county Wicklow, is enough to propel Leopold Bloom into an extraordinary catechism on the subject of water. Joyce highlights these remarkable achievements and shows how they make us appreciate nature more rather than less. They make us more aware of the complex interactions that underpin modernity. So this is not a question of a simple separation but rather a re-contextualisation of how we interact with nature.



The different dialectal words for rain were collected by Władysław Kupiszewski as part of ethnolinguistic research conducted in 1956–1962. Today, both dialectal diversity and linguistic sensitivity to the different types of rain are on the wane.

Source:

Władysław Kupiszewski, *Słownictwo meteorologiczne w gwarach i historii języka polskiego* [Meteorological terminology in the dialects and history of the Polish language], Wrocław, Warsaw and Kraków: Zakład Narodowy im. Ossolińskich, Wydawnictwo PAN, 1965



An architectural visualisation of rain in Siena: all of the city's rainwater flowing into a single sinkhole; photo: Michal Murawski

AP

So this separation actually entails more intimate inclusion, so to speak.

MG

Yes. And this is something that might relate to your project and your interest in rain in an urban setting. One could build a heuristic tool that makes people think about water in a much more intricate way, that re-creates a closer connection with hydrological processes.

CEN

We actually wanted to ask you about rain, since you wrote *The Fabric of Space. Water, Modernity and the Urban Imagination* but also you edited a book on sound (*The Acoustic City*).

MG

I always have been interested in a multi-sensory approach to the city, how different sensory realms intersect in terms of the experience of urban space. It is also related to my recent work on urban atmospheres. As for rain, there are many possible ways of experiencing it. There are many different elements that come together to produce the sensory experience of rain. There is, for example, the sense of an impending rainstorm or thunderstorm; and then there are changes in the sky, changes in temperature. As rain begins to fall there are also olfactory changes: there is the smell of rain on concrete surfaces. And, of course, there are different types of acoustic properties of water. And those extend to other-than-human actors such as birds and insects. The experience of rain links various aspects of the sensory realm of urban space.

AP

Your selection of the cities you analyse — from Lagos and Mumbai to Los Angeles and Berlin — represents different forms of power. And these various power systems are manifestations of different forms of water management. Thus we have different scales and then maybe also different, or maybe converging, imaginaries of modernity and power?

MG

I think scales and imaginaries are different domains although they are sometimes combined. When I visited the office of one of the engineers in Mumbai, I found that he had a map of the Paris water system in his office. This really struck me. It was a beautiful, intricate map with varied thicknesses and shadings of blue used to indicate different sizes of pipes in a series of complicated spatial arrangements. It's a kind of modernist imaginary from an engineer's perspective. The idea that every household should have access

to a safe water supply and that the wastewater is then conveniently carried away to sewage treatment plants is a very powerful technical imaginary. To use Stephen Graham and Simon Marvin's term, this represents the quintessential 'modern infrastructural ideal', comprising specific ideologies of science, the imprint of urban planning, emergent patterns of consumption, and territorial dimensions of state formation. Many engineers in different cities around the world would aspire towards this kind of socio-technical arrangement.

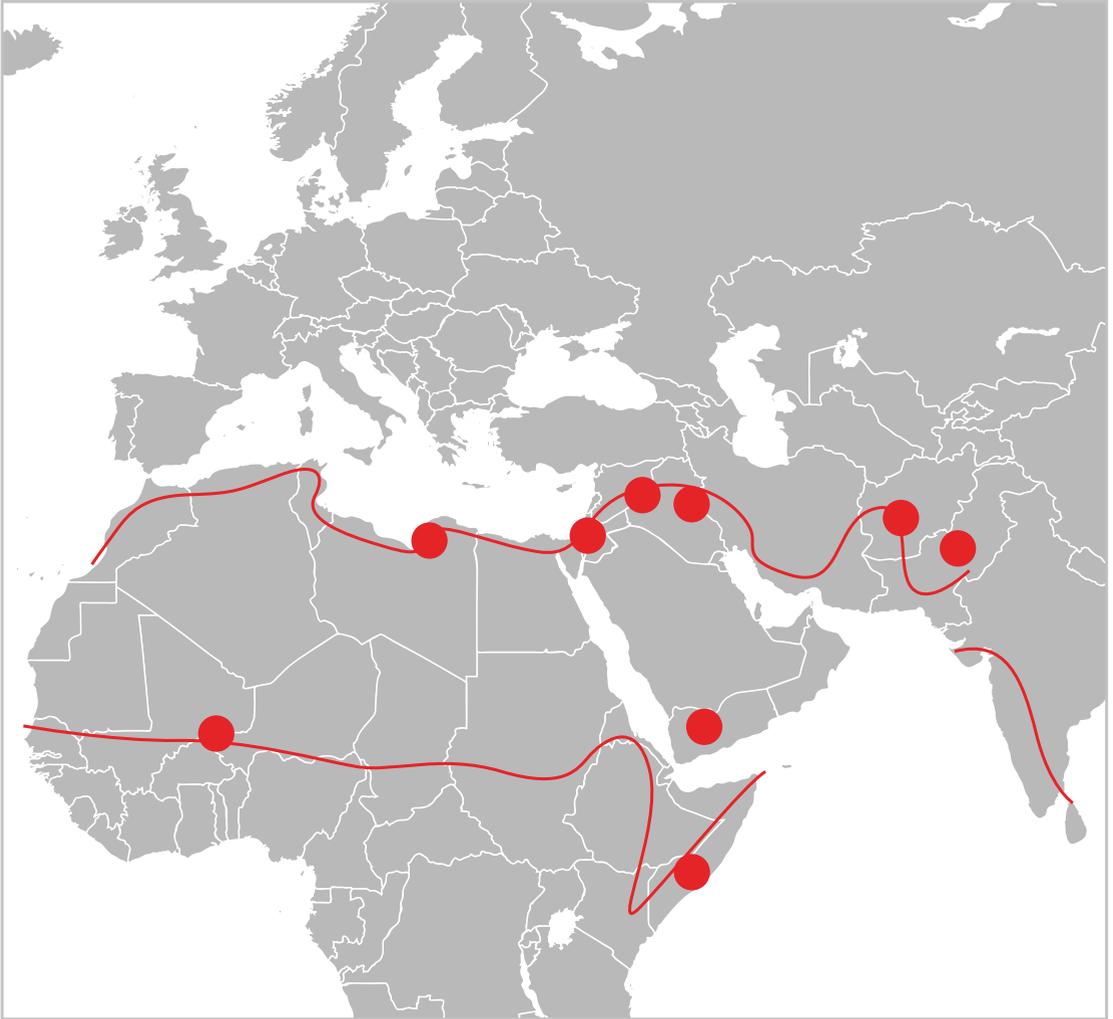
The reality, though, is often far more complicated. In many places, people are digging wells and making other private provisions, often there is a proliferation of different suppliers, and so on. When you talk to engineers in, say, Lagos, Nigeria, then it becomes clear they want to provide a very good and efficient service to everybody. But the obstacles are quite formidable. It is not just a question of lack of capital or the inability to pay for infrastructure services. It is a question of breaking criminalised networks which deliberately prevent some neighbourhoods from being connected to the centralised water supply service because vulnerable people can be exploited and made to pay extra for access to the essential services. As a result, we have to contend with these micro-spheres of violence and exploitation.

AP

This global ideal of democratised water is universal, but the realities on the ground are different. The local differences amount not only to different political systems, but there are also often very different ecological situations in various parts of the world.

MG

Yes, that's a very good point. You need to take into account the hydrological differences between different cities. So, for example, let's



Social crises caused by climate change represent a challenge to 21st-century politics and imagination. Climate-change phenomena clearly have a political dimension, as illustrated, for example, by *The Conflict Shoreline* (2015), a project by architect Eyal Weizman and photographer Fazel Sheikh. Their research shows that the aridity line (where annual precipitation doesn't exceed 200 mm and beyond

which there stretches a non-arable desert) has not only catalysed various domestic conflicts and population displacements in recent years, but also tallies with the area where Western military forces conduct particularly intense drone operations. Aerial colonisation has been a form of exercising control over colonial borders on the aridity line ever since the end of the First World War. [AP]

Aridity line based on: Eyal Weizman, Fazel Sheikh, *The Conflict Shoreline: Colonisation as Climate Change in the Negev Desert*, Göttingen: Steidl Books, 2014

come back to rain and surface water runoff. In some cities, obviously in South Asia, during the monsoon season there would be an immense concentration of water that poses a very particular set of challenges. In Mumbai in 2005, for example, over 400 people lost their lives as makeshift dwellings were washed away, buried in landslides, or simply inundated by rising flood waters that could not disperse through blocked or non-existent drains. The refuse of the rich blocked the gutters and creeks but it was only the poor who drowned. The increased frequency and ferocity of extreme weather events due to climate change adds a further another dimension to this hydrological insecurity.

CEN

Isn't this disparity also a matter of the inherent instability of the modernist project, of the fact that modernism can never actually deliver on its promise? You mention the unintended consequences of grand modernist projects, such as the Egypt's Aswan Dam as analysed by Timothy Mitchell.

MG

Yes, there are many examples of this. Attempts to change the traditional water drainage systems, for example in South Asian cities or some of the colonial cities in Africa, are good cases in point. Creation of surface water runoff generates sites for breeding insects such as mosquitoes. Modernity often has unpredictable or contradictory outcomes. And here we are also back to the question of the specific hydrological or ecological characteristics of particular regions.

AP

Let's talk about the method again. To what extent can we incorporate the sensual into a study of such nature infrastructures? How do



Fog catchers for condensing water in one of the world's driest places, the edge of the Atacama Desert in Chile. Carlos Espinosa Arancibia (Universidad Católica del Norte, Antofagasta, Chile), *Atrapanieblas* (no. 781025), 2014; photo: Sergio Alfaro

the changing and ephemeral aspects of urban life fit into these imaginaries that we have talked about?

MG

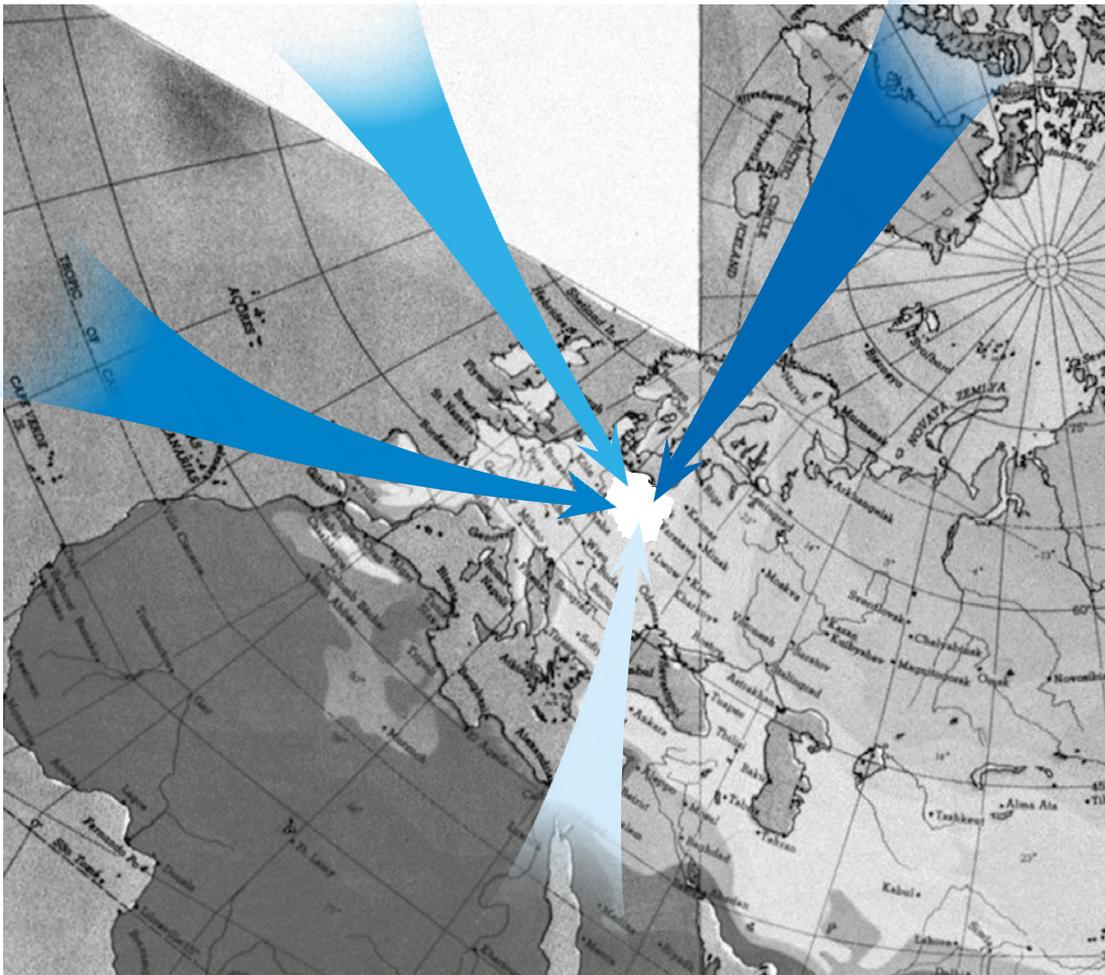
One angle is the intersection between infrastructure and landscape. Sometimes infrastructure becomes a form of landscape, or a part of the landscape experience. In Mumbai, for example, there are these giant water pipes that serve as public walkways to different parts of the city. They were incorporated in an unintended way. Also, infrastructure systems produce very distinct landscapes. For example, the Los Angeles River became a technological corridor with the extraordinary concentration of different types of infrastructure systems not just related to water or storm water drainage. These are unintended, yet nevertheless extraordinary landscapes. And the idea of landscape helps us understand both the individual and the public experience of the urban. For example, for the poet Luis J. Rodríguez, the bleak landscapes of LA's 'concrete river' are a physical metaphor for the abstractions of power that have wrought injustices upon the city's poor. Another example of a cultural appropriation of the LA River is the mural entitled *The Great Wall of Los Angeles*, which chronicles key political moments in the city's history.

AP

You cherished these forms of research on the nexus of the experiential and the structural. Does your idea of urban constellations allow for the various forms of agencies to be taken into account?

MG

The urban constellation is an evolving concept, nevertheless it does take the question of agency seriously. And when we talk about agency we need to think about the differences between the individual and the collective human



■ maritime-polar air mass:
 rain formed over the ocean
 [65 percent of days]

■ maritime-tropical air mass:
 rain formed over the Azores
 [2 percent of days]

■ arctic air mass:
 rain formed over Greenland and the Arctic
 Ocean [4 percent of days]

■ continental-tropical air mass:
 rain formed over Asia Minor
 [2 percent of days]

remaining days: dry continental masses

The planetary biography of Warsaw rain.
 Compiled by CENTRALA; collage: Krzysztof
 Pyda, 2018; based on the sources:
 Kinga Kulesza, *Zróżnicowanie przestrzenne
 wielkości opadów w Warszawie* [Spatial
 differentiation of precipitation size in
 Warsaw], Department of Climate Studies,
 Faculty of Geography and Regional Studies,
 University of Warsaw
<http://www.mojapogoda.pl> (accessed
 19 March 2018)

subject, non-human nature, material properties, and so on. Those different components create a very complicated socio-ecological assemblage. I like the idea of the constellation, because it also points to the socio-political aspects. There is a historicity to the concept. The fundamental tension in discussions around agency revolves around the idea of the human subject as a self-reflective and historically conscious agent. I think one of the problems with the overextended or undifferentiated agency posited in some of the 'new materialism' literature is that it loses sight what is unique about the human subject. We lose sight of the possibility to envisage different scenarios or to make specific historical choices. Thus the question of the historicity of human subject needs to be retained within the concept of the urban constellation.

AP

These alternatives are perhaps expressed in the connection between the local and the planetary.

MG

Yes, certainly.

CEN

We were wondering how architecture could be regarded as a tool for this public, planetary imagination? How can architecture help with the rescaling of these everyday understandings of all the processes that unfold in both time and space?

MG

Fields such as planning, engineering and architecture are closely interrelated. The important question for me is the existence of different technological pathways. We can also identify different architectural pathways through urban space. And we should always ask ourselves about the possibility for choice. Choice is something that is historically constituted. Many aspects of socio-ecological relations or environmental

degradation are an outcome of very specific human choices. I would not, however, endorse the facile environmental perspective that we are all equally responsible for environmental problems on the planetary scale that rest on little more than the analysis of our shopping choices. We are dealing with fundamental structural tensions and in particular the tension between capital and ecology on different scales. And the question for me is about the role of architecture, technology and these possibilities in creating alternative routes through modernity. I don't perceive modernity to be one monolithic or teleological set of developments but rather as a series of tensions, possibilities, or even crossroads or forks in the road to use a different metaphor. The question is how to articulate the possibility of making different choices along the way.

CEN

That is also a crucial issue for us. Not necessarily that architecture can generate solutions as such — that is always a very complex issue — but rather that space can become a vehicle for problematising things. For example, in Warsaw, we cannot complain about the shortage of water yet, so for many residents this is a very abstract issue. This is why we are trying to exercise our brains, so to speak, to nurture this planetary imagination.

MG

One thing that really interests me is “citizen science” and the possibility for ordinary people to be engaged in complex technical and scientific debates. Not in a purely passive way but actually in a more active way — for example by collecting and sharing data, discussing different possibilities. And maybe that idea of citizen science could be extended more fully to the technological and the architectural realm so that people are become much more interested in, and engaged with different potential choices or pathways.

Martin Wagner, the chief planner for Berlin in the late 1920s, coined a metaphor I find very powerful. He referred to an 'orchestra of experts' when trying to describe how different sources of knowledge or expertise can be brought together to solve common problems. There is this narrow definition of an expert but if we assume a broader and richer understanding of what expertise can be then this idea can be extremely productive. This not only allows us to look at urban questions differently but also enables a wider range of solutions. The Berlin case is actually pertinent in a new way because there was a recent referendum that enabled the city to take its water supply back under public control. This positive event shows that sometimes politics, technology, and infrastructure can still come together in positive and unexpected ways.



A granary on a river island in Modlin, 2 June 1941, courtesy of fotopolska.eu

RAIN-ACTIVATED ARCHITECTURE

Water Colonnade

In 1844, at the confluence of the Narew with the Vistula, facing the Modlin Fortress, a sprawling system of fortified positions started in the early 19th century and developed well into the 20th, a huge granary was built according to a design by Jan Jakub Gay. Funded by Bank Polski, which invested in road construction and other strategic engineering projects in the Kingdom of Poland, the granary was located on a river island since grain was transported

using barges. The building, from 1853 serving as a storage facility of Modlin Fortress, received a neo-renaissance décor with the main façade overlooking the river. According to the era's standards, rainwater was carried off the roof by a series of decorative stone spouts, creating the impression of a 'water colonnade' visible from the river level. The system was used from the Middle Ages until the 20th century, when gutter piping came into use.

Embassies of the Vistula

The system of water receptacles that was introduced in Warsaw in the 1960s only to be replaced by conventional flower pots shortly thereafter

has no clear author. Designing this kind of small-scale street furniture was often entrusted to interns at the municipal planning offices. Landscaping in post-war Warsaw was made part of large-scale planning due to the important role played by green areas in the shaping of climatic conditions, marking progress from their perception as pure decoration. Here we remember the figures of Alina Scholtz-Richert and Wanda Staniewicz, landscape designers and architects, authors of the Warszawianka green infrastructure design, who often worked together.



A receptacle for aquatic plants. Witold Szolginia, *Estetyka miasta*, Warsaw: Arkady, 1981; illustration: Archives of the Institut of Urban Planning and Architecture

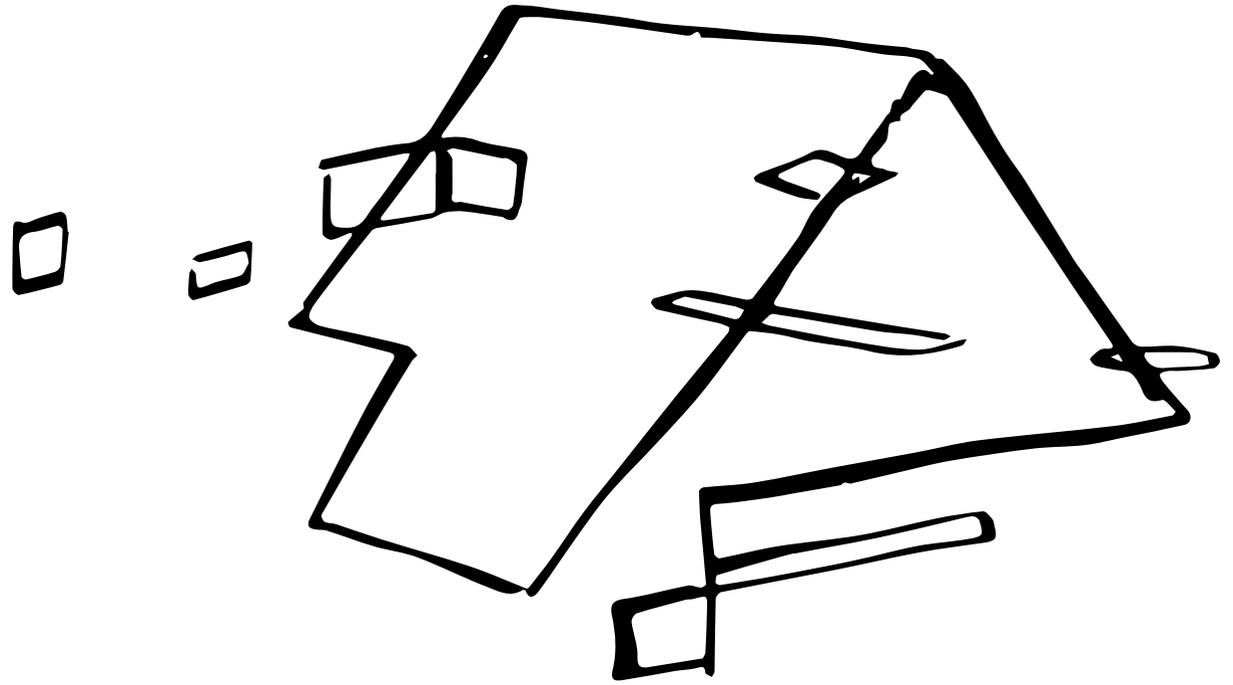
Alina Scholtz-Richert (1908–1996), from 1946 employed at the Green Infrastructure Studio of the Warsaw Reconstruction Bureau, designed green areas for the Trasa W–Z thoroughfare. Author, with Romuald Gutt, of a reconstruction and revitalisation design for the Saxon Garden (1948). She also designed the Central Park of Culture in Powiśle, Warsaw, of a planned area of 200 hectares (a third of which was realised). In later years, she did landscape designs for housing estates designed by various architects, e.g., Halina Skibniewska, and built by state investors such as Kombinat Budownictwa Miejskiego ‘Śródmieście’, and for recreational areas.

Wanda Staniewicz (1916–1999) was an author or co-author of green infrastructure designs for the Zatrásie housing estate in Żoliborz (architects Jacek Nowicki and Halina Skibniewska), the area around the Warsaw Citadel (1966), a shopping centre in Bródno (1967), as well as a spatial master plan for a shopping centre in Mokotów (1970). Her largest project was a master plan for the redeveloped centre of Pruszków.

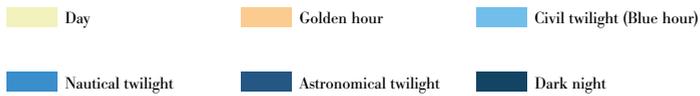
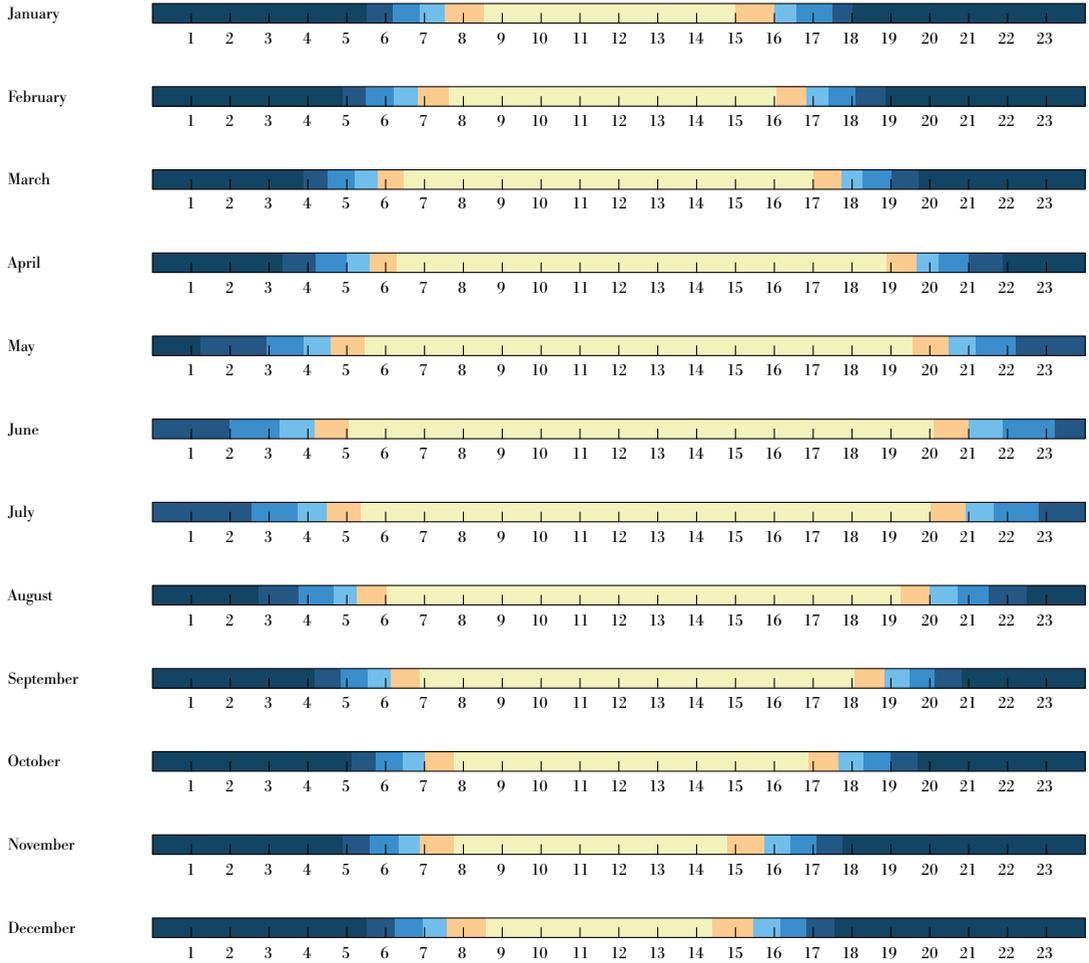
Andrzej Skalimowski



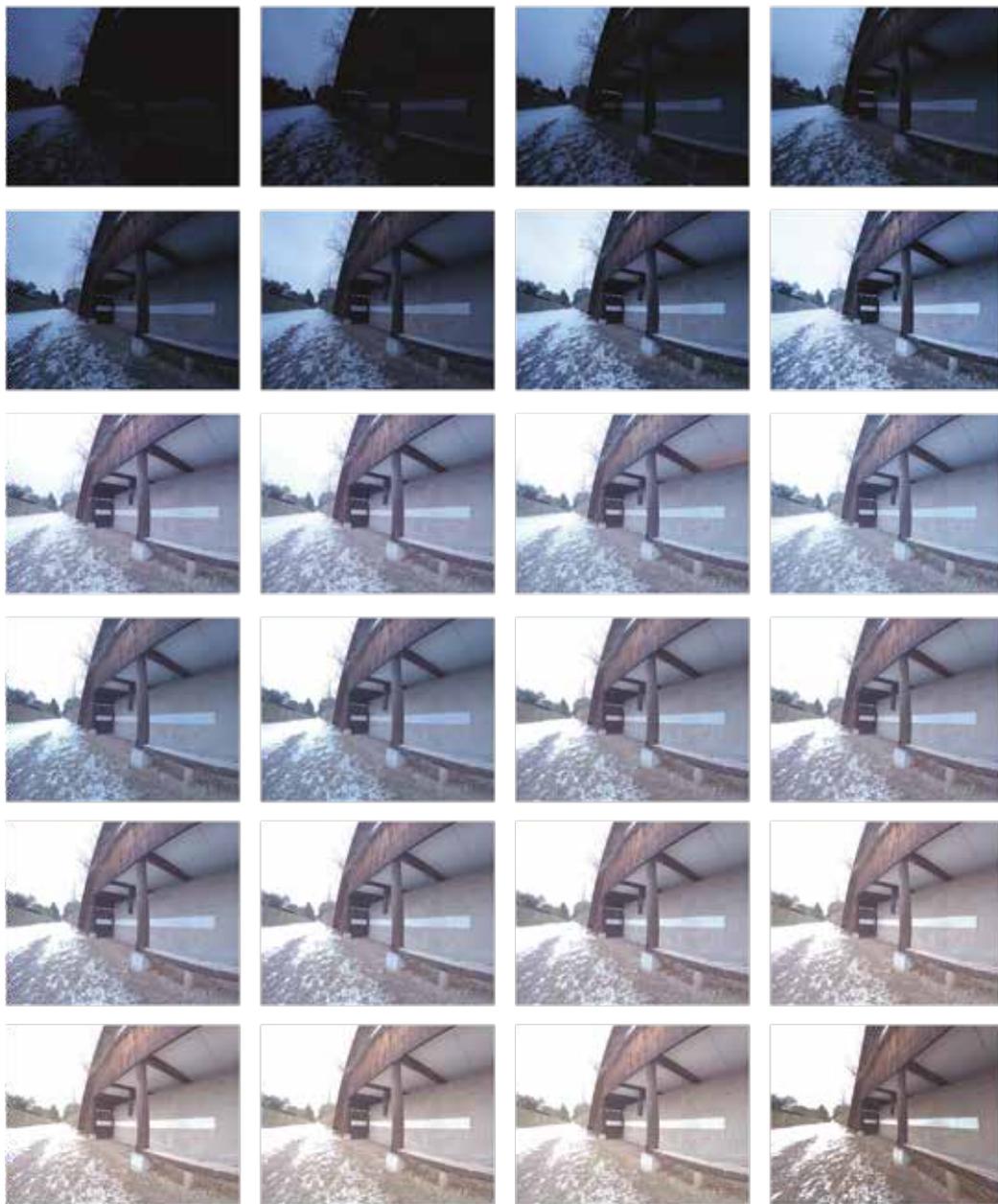
White polychromy in Zofia and Oskar Hansen's house in Szumin at twilight, 29.03.2018; photo: Anna Zagrodzka



OSCILLA-
TION OF
LIGHT



Since 2013, CENTRALA has been the custodian of the architecture of a living monument — Oskar and Zofia Hansen’s house in Szumin near Warsaw. Staying there for longer periods of time reveals a choreography of everydayness, synced with the day-night cycle and embedded in the architecture. In this chapter, we seek to show the house as a dynamic process that concentrates and modifies routines and cycles, not only in relation to the inhabitants, but also the substance of the space co-begotten by the intensity of light at different times of day. In a conversation with Kacper Pobłocki, Małgorzata Kuciewicz and Simone De Iacobis report on how the study of the embodied and material aspect of the house replaces the difference between the ‘objective’ and ‘subjective’ images of architecture. [AP]



Dawn in Szumin, 29.03.2018,
photo: Anna Zagrodzka

As of 1975

Zofia and Oskar Hansen's
House in Szumin



Harvest time in Szumin, 1975,
photo: Zofia and Oskar Hansen Foundation,
courtesy of Igor Hansen

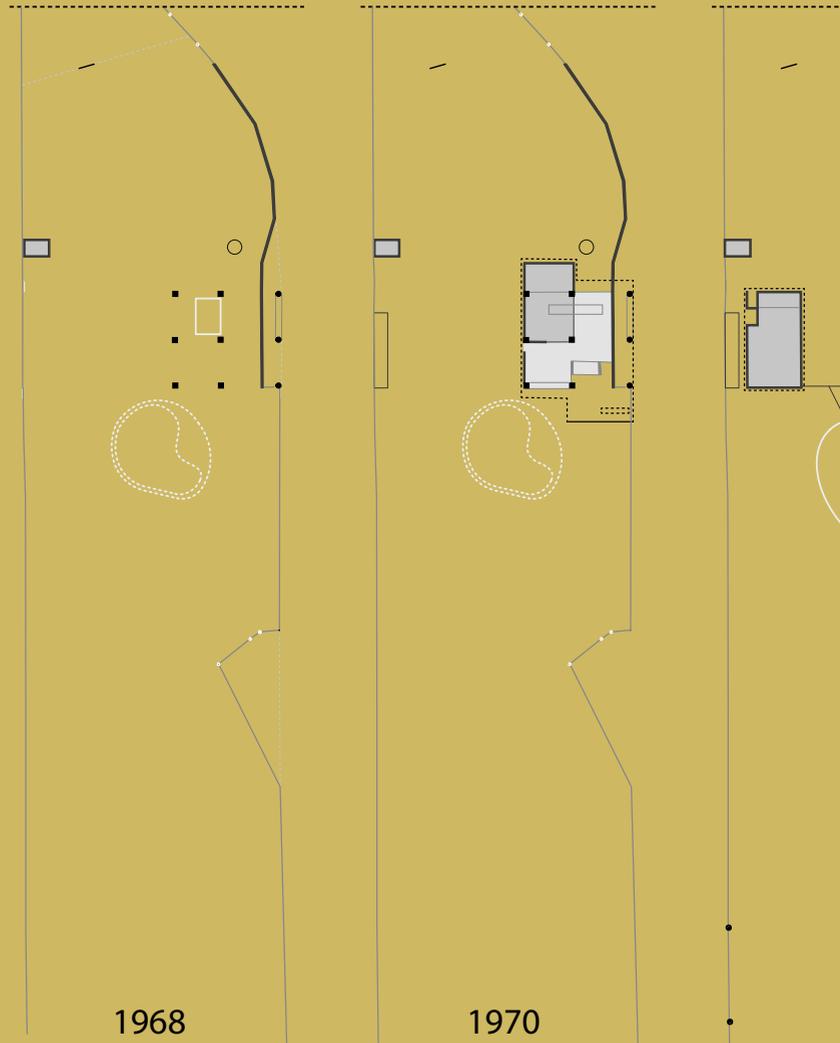
HOUSE FLOOR AREA (AS OF 1975):

20 m ²	ground floor (interior)
28 m ²	platform (floor only)
10 m ²	porch
35 m ²	garret floor
1 m ²	toilet
29 m ²	garage

Zofia and Oskar Hansen's house in Szumin, built and expanded from the late 1960s on, was originally meant as a vacation cottage for the Hansen family and at the same time a spatial manifesto of Open Form, a theory and practice aimed at creating architecture co-shaped by its users, serving as a background for the events of everyday life and adapting to changing needs.

The essence of such architecture consists in a variable architectural space, with the form and aesthetic of the substance of the building being of secondary importance since it was built in a DIY system, in a period of market shortages, including with second-hand materials.

An inventory of the condition of the Szumin house carried out by CENTRALA in 2013–2015 for the Museum of Modern Art in Warsaw consisted in tracing back its biography in as much detail as possible, serving as a reconnaissance for and introduction to

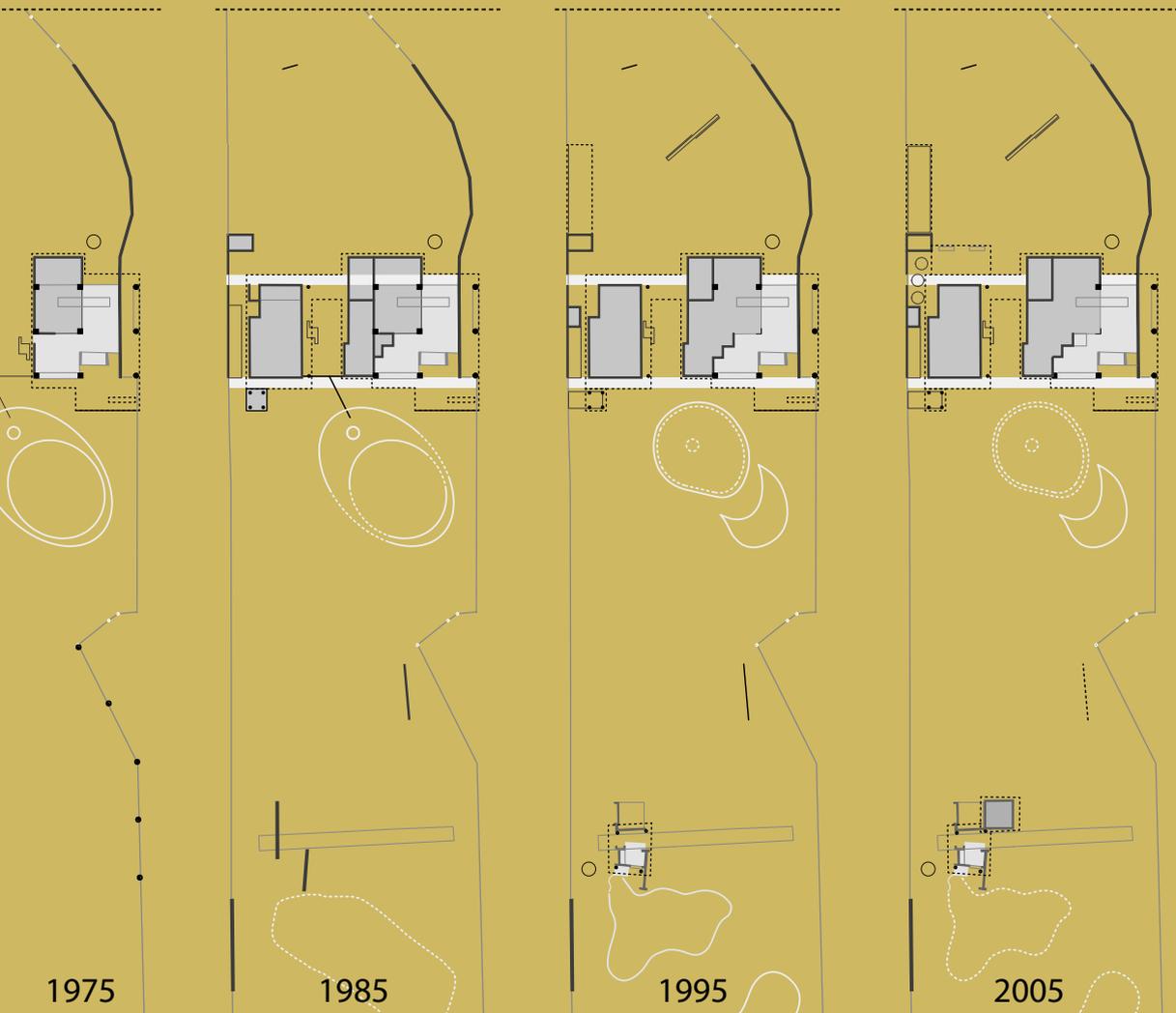


Analysis of the expansion of the house in Szumin, drawing by CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis and team), 2013

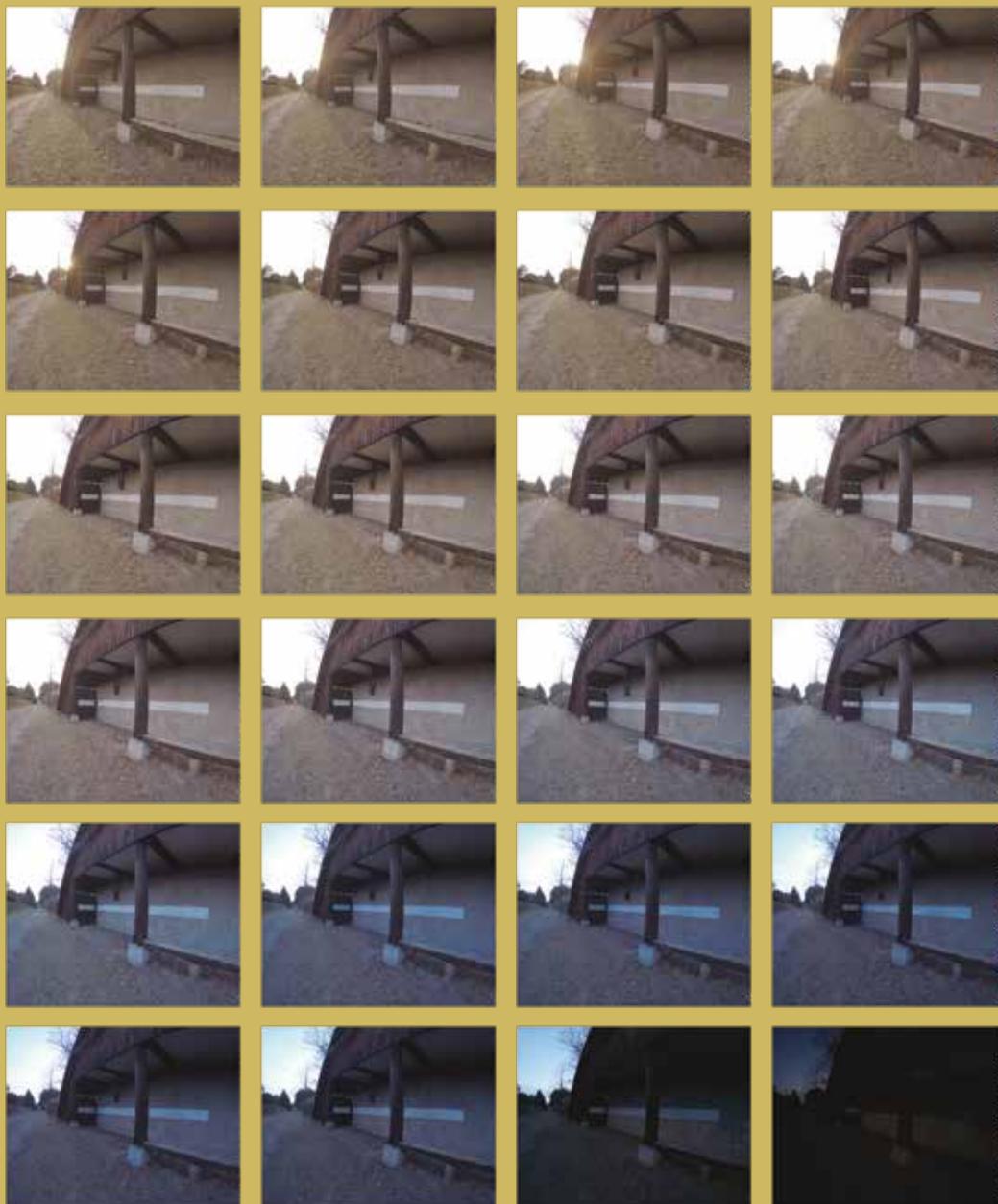
a future conservation strategy focused on the materiality of the house and its underlying philosophy. Research ranged from an analysis of archival materials and testimonies, to paint colour tests and the study

of the building's layers and chronological phases.

Since May 2014, the Szumin house has been part of the



Iconic Houses Network, and in late 2017 it officially became a branch of the MMA, curated first by Aleksandra Kędziorek (2013–2017) and since 2018 by Tomasz Fudala. [MK, SDI]



Dusk in Szumin, 28.03.2018,
photo: Anna Zagrodzka

A conversation between:
Małgorzata Kuciewicz (MK)
Simone De Iacobis (SDI)
Kacper Pobłocki (KP)

The Third Time of the Day

KP

What is it that you call the third time of the day? That's the Polish term for it, and I use it because English synonyms, such as 'twilight' or 'crepuscular hour' . . .

MK

Aren't as pretty.

KP

. . . and don't describe the autonomous phenomenon. 'Twilight' is merely the moment when day and night meet, a transient thing and not a phenomenon unto its own. So what is it?

MK

The third time is a distinct and discrete part of the solar day, distinguished not only by its light, but also by aromas, animal activity, and sounds. It has been completely repressed from our perception because electric light is now so strongly embedded in our environment. Few architectural structures or spaces are dedicated to the celebration of this time. When the third time of the day begins, your perception of distance changes, implying a different choreography of space. Your perception of your own body changes too. What is very close is suddenly amplified, while more distant stimuli are muffled.

KP

Scale is experienced differently.

MK

Yes, you inhabit space and the surrounding scales differently. The reality close to your body becomes domesticated, comfortable. What is farther away becomes blurry, vague, perhaps even slightly ominous.

SDI

We don't mean contemplation — that it's some kind of magical moment. For me, the most important aspect of the third time of the day is the tension that our daily routines are streaked with. In the morning, when you wake up, following that part of the full day that serves regeneration, and in the evening, when you prepare to go to sleep. Today, when you enter the workplace, it's daytime and when you leave, it's already dark. We've lost hold of the moment when our body can — for a short while at least — synchronise with the environment.

KP

How do you yourselves experience it?

MK

When I start receiving sonic or olfactory stimuli, my senses are recalibrated. When thinking of the third time of the day, I see myself in nature. In the city, it's a part of the day that I don't really notice at all. But when I'm in nature, I realise I have other senses too, not just eyesight.

KP

This is perhaps because today in the city, we are surrounded primarily by visual stimuli. One of the icons of contemporary urban space is New York's Times Square where the passer-by is bombarded with images. In cities where heaps of horse manure lay on the streets, the sense of sight had serious rivals.

MK

There are probably many reasons for this hyper-visibility of cities. The effect, however, is that our daily routines are not connected with the third time of the day. In Polish culture, the only



A photographic analysis of light reflection at the Zofia and Oskar Hansen's house in Szumin, according to CENTRALA's 'third time of the day' concept

Photos taken on the 28th of March 2018 between 7:26 p.m. and 7:40 p.m. and on the 29th of March between 5:31 a.m. and 5:51 a.m.



moment when it is noticed is Christmas Eve, when children are told to look out for the first star. Its appearance in the sky is a signal to sit down at the table and begin the feast. The festival, which lasts for a couple of days, begins precisely with the third time of the day. But that's an exception.

SDI

When looking for examples of amplifying nature, we were struck by the fact that in pre-modern cities, the moment when the sun rose and set was easier to notice.

KP

When I was a kid, I was fascinated by the moment when the street lamps went on, even though it was still daytime. This could stretch to almost an hour. I thought at the time it was a system error, that someone had had something wrong. After all, street lamps should be on during

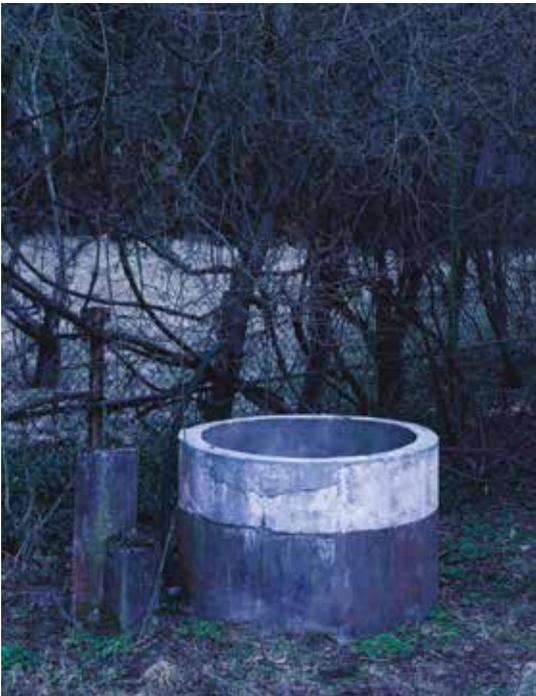
night-time only, shouldn't they? As a teenager, I attributed it to the proverbial sloppy Polish organisation of things. My reaction shows how much the binarity, the concept that it's either day or night, has become entrenched in our thinking. I would never have thought of it as an amplification — most likely unintended — of the third time of the day.

MK

The early morning is also the best time for watching birds in the city. They wake up at two or three a.m. It's the only moment when you can hear them. You can even tell the time by the voice of a given bird. If you recognise bird voices and wake up, you know what time it is.

SDI

It also needs to be noted that the third time of the day is a phenomenon of our geographical latitudes. Nearer the equator, night-time does come abruptly. You go to the bathroom when it's

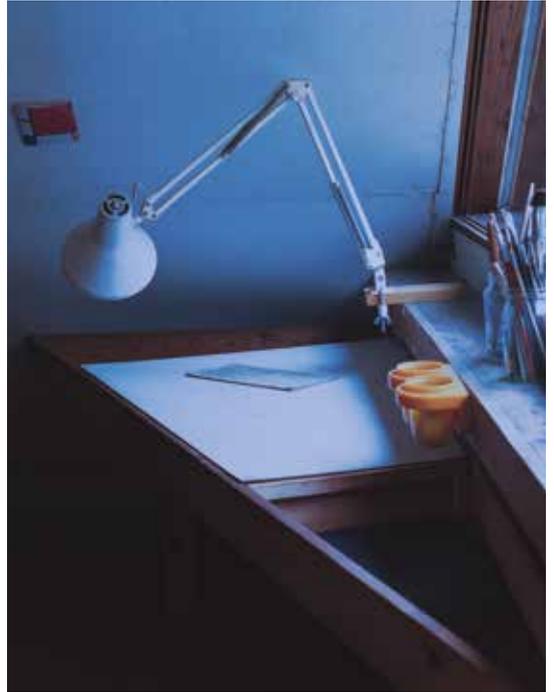




daytime and when you come back to the living room, it's already dark. In Poland, the third time of the day can last three, even four hours. In the summer, especially in the north, on the Baltic coast, the night is very bright, almost white.

KP

You've discovered the third time of the day — or, more precisely, named the phenomenon — through your experience with the Hansen house in Szumin. Not by working with theory, such as Oskar Hansen's idea of Open Form, but through the documentation of the structure. Your point of departure was in materiality.



MK

Szumin is not so much an architectural structure as a machine for the senses. First, we experienced the space, then we started connecting certain facts, not necessarily while in Szumin itself. First of all, we connected the pieces of information we'd received from various sources, such as that Zofia Hansen liked to sit on a bench in front of the garden, that she had her favourite spot at the kitchen table, that it was mostly she who washed the dishes. Measuring the house, we noticed that the three spots were strewn along a single viewing axis. The Hansens had actually lowered the kitchen floor so that when doing the dishes, Mrs Hansen could look from the same level as when sitting at the table or on the bench. It was her favourite view and she could see it from those three places. So the tectonics of the house had been subordinated to Mrs Hansen's gaze. It's not something you can

discover by simply being there, because none of us is Mrs Hansen. You won't sit on the bench or at the table and you won't wash the dishes to notice this. One person told us that Mrs Hansen had her favourite spot at the table, another one showed us her bench, and then we learned that her husband cooked quite often and she did the dishes. And we connected the facts.

KP

Why was it so important for them to build this axis into the architecture of the house?

SDI

Perhaps it was the oblong shape of the plot, which was an important factor in designing



the house. First there was a bulge-and-hollow, and then they came up with the idea of using the lay of the land to grow plants that are unusual in Poland, such as peaches. So the house was being kind of pulled along through those interventions in the landscape. Mrs Hansen's view was part of that. It's actually a primal feeling when you are a farmer — you want to be able to take in the view of your domain. So I'm not surprised that while doing the things she liked to do, she wanted to have her estate in view.

MK

Szumin was woven with their habits. It's not like they built an architectural structure and then chose their favourite places in it. It was an open form, and they kept expanding and rebuilding it. And though there are no captions there today, you can still read the inhabitants' invisible routines from the space.

KP

And how did you discover that Szumin was a light machine — a *camera obscura* — in a very literal sense, as Anna Ptak put it?

SDI

When we went there for the first time, the Hansens' son, Igor, brought to our attention white vertical grooves in the corner of the building's sole concrete wall. Reflecting light, the low relief served as a warning sign for cars so that they didn't crash into the wall. The road curves there and you can miss the house. You can easily assume that these polychrome details are there for the sake of decoration only rather than playing a practical function. But we noticed that the main white horizontal line leads to the keyhole. So it's a life hack that helps you to open the door when it gets dark.

MK

And I simply fell into the service pit in the garage. Waiting for someone to rescue me, I discovered that its now-faded walls used to be

painted white. And I realised why the borders of all water wells in the garden were painted white.

KP
Why?

SDI

To prevent people from falling into them. An edge amplified with white paint becomes a warning.

MK

We had another experience when we'd invited some guests to Szumin and as luck would have it, there was a power shortage. We only had candles. The slats comprising the top of the main table are painted white on one side. The table is also a didactic apparatus that's used for practicing composition; you can arrange various patterns by placing the slats this or that way. But when we turned all the slats white side up, the white began to reflect the candle light. This illuminated the white ceiling overhead. Additionally, the whole space ends with a horizontal mirror and another white polychrome on the other side. Suddenly there was quite a lot of light. Enough to read without electricity.

KP
And it was during the third time of the day,
wasn't it?

MK

That's right. And that was the moment when we began to realise that all those white lines weren't there for compositional reasons. They can be found by the dovecote because sharp tools hang there. White is a signal that here are the sharp edges of the rakes and there hang the pruning shears. Contrasts were thus heightened during the third time of the day and the outlines of the items were brought out.

KP
Do you think they were aware, theory-wise,
of the amplifications they were effecting?

MK

The house kept changing, being constantly expanded. The exhibition presents its condition as of 1975 when it hadn't yet grown all those extensions. Then the Hansens converted the place into a year-round abode and gave it new skins. Polychromy is best visible at the earliest stage. At first its function was purely utilitarian, but then the Hansens began to use it in a more visual way, and ultimately even in a formal one. Even the dog house had a white element, for no apparent reason.

SDI

The first facility that was built, even before the house itself, was a privy. They had no electricity there at all yet. And the privy has polychrome elements too. The door handle area has been painted white to find it more easily when it gets dark. The toilet itself is a plank with a hole and a drawer underneath. You can remove



the drawer from the outside in order to empty its contents. The area around the drawer has been painted white, too, so you can locate it and reach for it efficiently.

MK

During the period in the history of the Szumin House that we are showing in the exhibition, the trees in the garden were also painted white. In orcharding, you paint tree trunks white so that, if an early spring arrives, the white colour reflects sunlight. This delays the release of sap and the start of vegetation. The plant — its most sensitive parts such as blossoms or fruit germs — is also more resilient to ground frost, which occurs frequently during early spring in Poland.

KP

So we have a situation here where a practice commonly used in orcharding is transplanted — most likely by Mr Hansen, who was an avid gardener — to the field of architecture. But you are also saying that the experience of Mrs Hansen, who participated in the reconstruction of the Polish countryside after the war, is also evident in the architecture of Szumin.

MK

And not only Szumin. During our performative lecture on Zofia Hansen, her son, Igor, told a story about the specificity of entrances to peasant cottages. They are adapted to the scale of the human body. The entrances are small, like in a boat. The natural instinct when stepping over something high is to stoop, so the doors were low and had a high threshold. This reduced the escape of heat from inside. Mrs Hansen's knowledge of such matters was extensive and she often used it. In the housing estate in Rakowiec, Warsaw, which the Hansens designed in 1959, you'll find a mirror that is an obvious quotation from small towns or farmsteads. Each entrance to the apartment block has a kind of mini-porch, a small roof



supported by a post. On the inside of the post there hangs a mirror, so when leaving the building you encounter your own image and have the last chance to tidy yourself up.

KP

So the mirror was brought from private space out into public space?

MK

To the space in between, in fact. Just as it was in the peasant cottage. There the mirror usually hung on the porch rather than indoors. It was the last 'checkpoint' to make sure you haven't forgotten your headscarf or something.

KP

What other quotations from folk architecture can be found in Szumin?



MK

For example, the *dirt floor* which is part of the house. Or the foot-beam bench, which they built outside the house, under the roof overhang.

SDI

In Szumin there are three, or actually four, such benches. One for the guests and neighbours, by the main entrance, one for Mrs Hansen at her favourite spot, one by the garage, and one by the exit from Mrs Hansen's bedroom and the kitchen entrance.

MK

In the traditional Polish house, which had stone foundations and wooden walls, there was a ledge at their junction due to the difference in thickness. The place closest to the door was traditionally a place of meeting. People would sit on the foot-beam bench and chat. The Polish

word *przyzba* comes from *przy izbie*, meaning 'by the room'. As we understand it, it's domesticated outdoor space.

KP

Again, neither private nor public, but rather something in between.

MK

The foot-beam bench was often installed under the roof overhang, which in bad weather allowed you to perform various farm-related activities, and in good weather even the domestic chores. So you could go outside with your sewing or potato peeling. The foot-beam bench made for very comfortable seating; it was located at approximately 30-40 centimetres above the ground, the usual height of the protruding part of the foundation, more or less equal to rain-splash or snowfall level. In Szumin, Mrs Hansen's foot-beam bench, which is situated on the edge of the floor, is also 30 centimetres high.

KP

So what is the architectural difference between the *dirt floor* and the other floor?

SDI

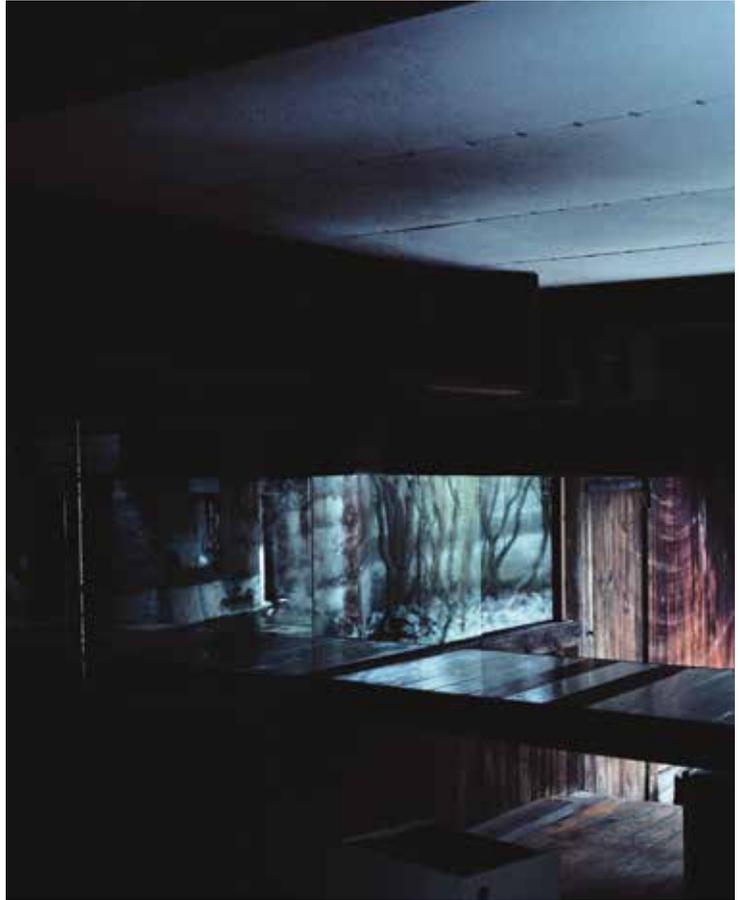
In Szumin, when approaching the house, the first thing you see after opening the gate are the wellingtons of the whole family, standing right past the threshold. Then you enter a raised floor, a kind of platform, which is level with the floor inside. This step is precisely the boundary between what you might call the *dirty floor* and the *clean floor*. As in a Japanese house. The kitchen floor and door are, in turn, flush with the ground rather than the platform, so when carrying a bucket of water from the well, for example, you don't need to negotiate a step.

KP

Anything else?

MK

The chimney corner or inglenook (*zapiecek*). In the middle of the rural cottage, the cooking stove



stood there, or rather the whole cooking range, a multifunctional fixture. It featured the cooking part with an iron top plate, a bread oven, a heating stove, as well as a section where you could sit on, recline on, where you could dry mushrooms, herbs, or bed linens. It was a system whose thermal effect was used to the full. The Hansens' stove was painted white and fuelled with wood from the outside through the wall. All of the dirt and ash remained outside, and the heating chamber was a large, sculptural form that set the tone of the domestic space. The inglenook was tiny, good for a brief sit-down or for drying things. The bed was above the stove, upstairs.

SDI

What is evident at the Szumin House is the logic of building around the fireplace. There is a chimney there now because the original stove was replaced after 2004, but in 1975 there was no structural chimney yet. So you can see how the inglenook principle was applied throughout the house. I can imagine perfectly well why Mr Hansen built his bed in that elevated spot, above the living-room floor level — because it was the warmest place, heated from below by the stove.

MK

The lesson we drew from all that was to think about architecture through routines rather than functions. Spaces kind of configure themselves around specific household activities. And during different seasons. That was the main point of departure for us in thinking about the *Cabrio House*.

KP

You could say the Hansens were building a machine for living, as postulated by modernism.

SDI

It's actually anti-modernist because modernism was based on a whole system of infrastructure, like central heating, that served you and your home. Here, everything is individual, you need to heat your home yourself and take care of everything. We are particularly interested in how certain solutions from before the industrial era can be applied in contemporary architectural design.

MK

For example, we are preoccupied with the question of responsivity to the seasons. The first thing you do when you come to Szumin is open the window shutters. You remove the first outside skin. And then the outside space pours inside and you can become disoriented as to where the edge of the house is. This house is like

an onion: it consists of layers. You can remove them, but also add them. Mrs Hansen had even tailored a down-filled quilt that insulated a section of the roof from the inside to prevent heat loss in winter time. Windbreakers are quite frequent: you hang a curtain in the corridor to create an extra textile skin for the home. But I've never heard of someone tailoring a garment for a house, and a suspended one, as if it were to be its palate.

HANSEN'S ECOLOGY

In two books about Oskar Hansen, *To See the World* and *Towards Open Form*, both published in 2005, the value criteria underlying his philosophy of space resound very strongly. *Open Form*, as Hansen construed it, after Johann Jakob Bachofen, is characteristic for a matri-archal culture based on the conservation and nourishment of the inner causes of life in its most diverse forms, as well as the active, cognitive organisation of space. *Closed Form*, in turn, is a consequence of the desire to possess. The existing organisation of space is one of the reasons for

the difficult current situation on Earth. The repercussions of spatiotemporal compositions are varied — some can serve life while others may cause destruction.' A transition to an era of ecological sustainability and social justice is hindered according to Hansen by such *visual influence tools* as 'nation states, centric cities, patriotisms, nationalisms, and theisms'. In the 1990s and 2000s, an era culturally and politically geared towards individualism and neoliberal freedom, this ecological aspect of Hansen's legacy was ignored or dominated by the impact of *Open Form* on the small scale and the criticism of Hansen's fundamental macro-scale program, the Linear Continuous System (envisaging parallel settlement 'belts', hundreds of kilometres

long, stretching across the country), as a totalitarian idea. In a conversation with Joanna Mytkowska, Hansen explains why it is necessary to reorganise our spatial notions: 'The LCS is not a fad. Not because I insist, but because we won't change the forces of nature: gravity, the way sun heats the earth, or the direction of river flows . . . The LCS is based to large extent on nature laws. All four bands relate to rivers. Why? Because they ensure the best flow of air. We have to breathe.' Convinced he was dying of cancer caused by exposure to the Chernobyl nuclear disaster radiation (as on those days



in 1986 he worked in the garden as usual, unaware of what had happened), Hansen criticised the greedy exploitation of natural resources, militarism, and nation states nursing a siege mentality. The results of this are felt not where they serve the powerful, but where they affect the powerless. An anti-capitalist rhetoric is accompanied in his statements by the idea that the partnership of mankind and nature is not a challenge on the individual level, but that 'we need to realise that we are in a different quantitative phase, that this quality has to be managed differently.' (AP)

sources:

Oskar Hansen, *Zobaczyć świat*, ed. Jola Gola, Maryla Siłkowska, Joanna Kania, Agnieszka Szewczyk, Warsaw: Zachęta Narodowa Galeria Sztuki, 2005

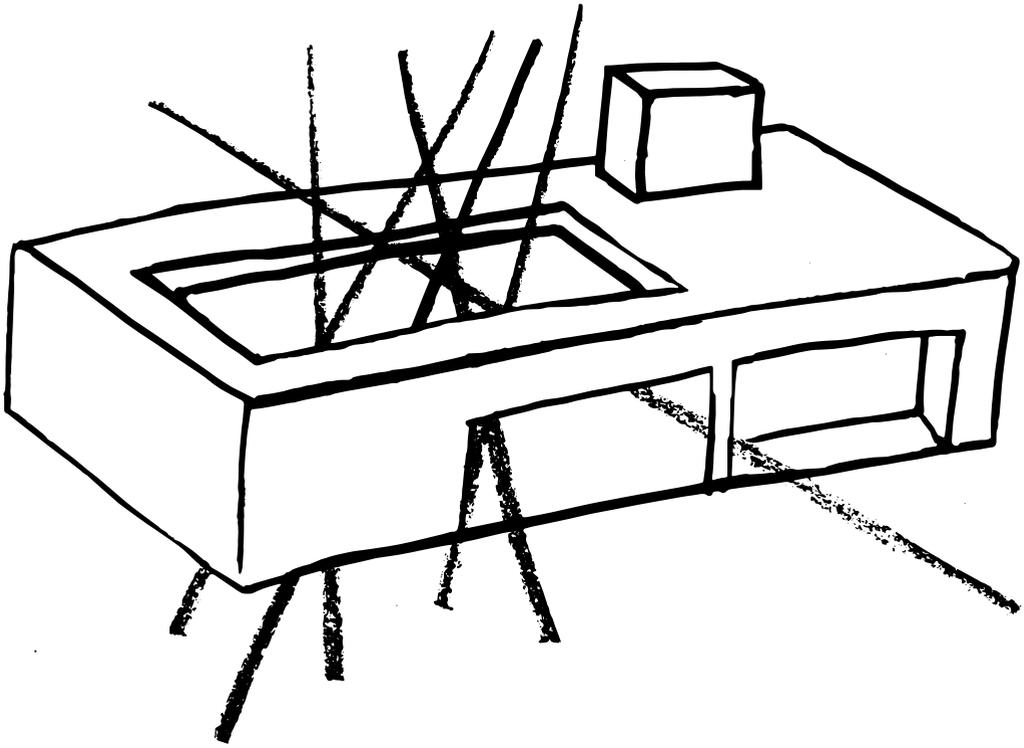
Oskar Hansen, *Towards Open Form*, ed. Jola Gola, Warsaw: Fundacja Galerii Foksal, Revolver, Muzeum ASP w Warszawie, 2004



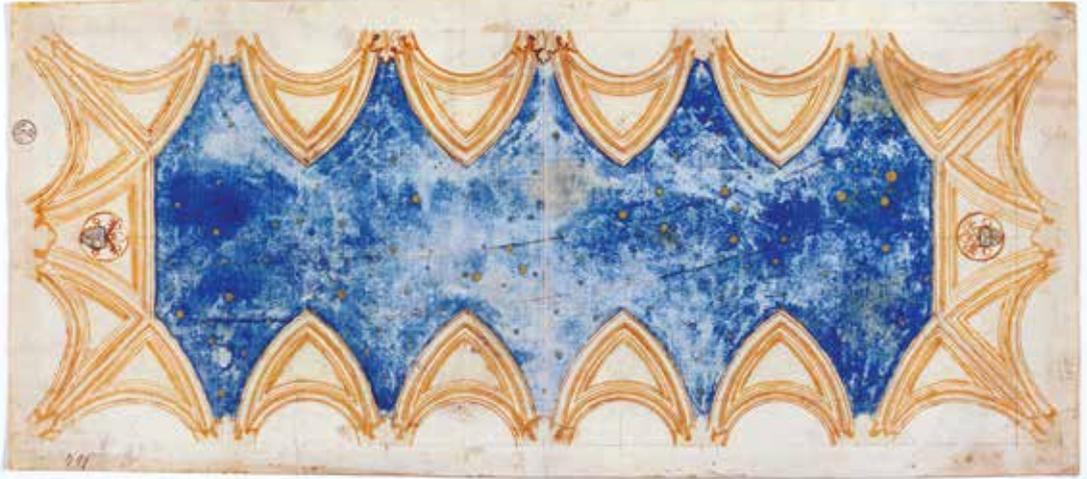
The *sukkah*, or 'booth', is a temporary hut constructed by Jews for use during the festival of Sukkot. Its roof should always be at least half-open so that Jews can look at the stars like their ancestors did in

the Egyptian desert. The *sukkot* built in north-central Europe didn't feature a permanently open roof, but, like in the model shown here, the roof was openable on demand. [MK]

photo: Jewish Historical Museum,
Amsterdam



CHRONO-
BIOLOGI-
CAL BODIES



Starry vaults. *Quadratura* is one of the many architectural painting techniques used for centuries to connect buildings and their inhabitants with the sky. Illusive representations of the night sky date back to the times of Queen Nefertari (1295 BCE). Instead of covering

and protecting, as it were, from what is above them, they open up to the symbolic celestial space, thus blurring the sharp boundaries between architecture and the firmament, between the indoors and outdoors. [JK]

Pier Matteo d'Amelia (ca 1450–1503/8),
design for the 15th-century decoration of
the ceiling of the Sistine Chapel (no. 711A),
Gabinetto dei Disegni e delle Stampe degli
Uffizi, Florence; photo: © Scala, Florence,
2018, courtesy of the Ministero Beni
e Att. Culturali e del Turismo

In this chapter, the idea of amplifying nature is discussed on the example of the seasonality and changeability of architecture. The material collected here presents the house as an extension of the human body. Removing the floor and roof — the permanent vertical boundaries of the house shell — triggers a process analogical to that occurring in the body: the negotiation, transfer and transformation of matter, which is a way of participating in natural phenomena. CENTRALA's research into domestic space as an overlap of intimacy and planetary cycles refers to the experiences of different cultures, expressed, for example, in architectural representations of the desire to see the sky and reconfigure the feeling of comfort induced by domestic space and the subjectivities of its inhabitants. This reconfiguration points the way for interweaving architecture more



Underground Tokyo — invisible parts of subway buildings, Google Maps

strongly with the natural and environmental sciences, while indicating a cognitive uncertainty as to the spectrum of the phenomena in which we participate through inhabitation, what substances we release into the environment and what substances we absorb. We talk to biologist Monika Słupecka-Ziemilska about living in many scales and cycles in architecture based on biological concreteness: connecting the micro and macro levels (gene expression and planetary cycle). [AP]

2017

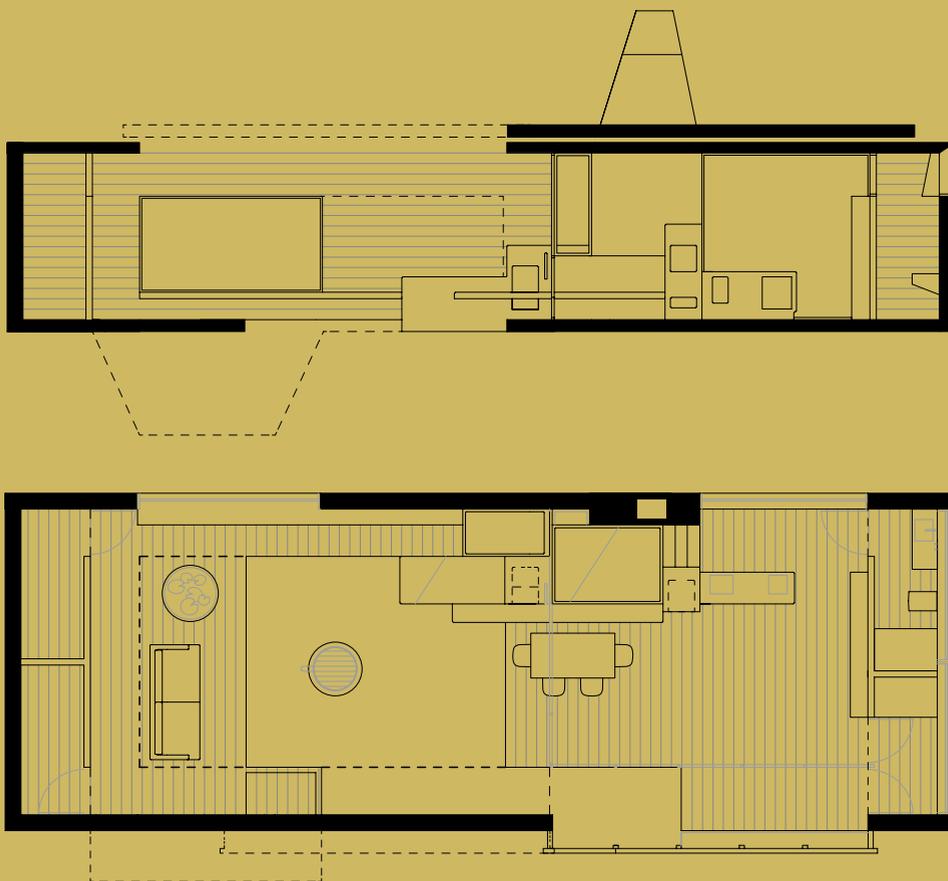
Cabrio House

CENTRALA —

Małgorzata Kuciewicz,

Simone De Iacobis

Study for a model of a chronobiological house and architectural model (cork oak wood and bark) in 1 : 50 scale, 60 × 26 × 20 cm, for the exhibition *Amplifying Nature* at the 16th International Architecture Exhibition in Venice, 2018



104 m² EXTERIOR-INTERIOR SPACES:

41 m² vertical room, including the *przyłap* 15 m² (space under the eaves)

14 m² *zapiecek*/
przypiecek/
nadpiecek

23 m² living room

3 m² veranda

7 m² porch

4×4 m² functional walls (cold room, laundry, bathroom, sluice)

72 m² EXTERIOR SPACES:

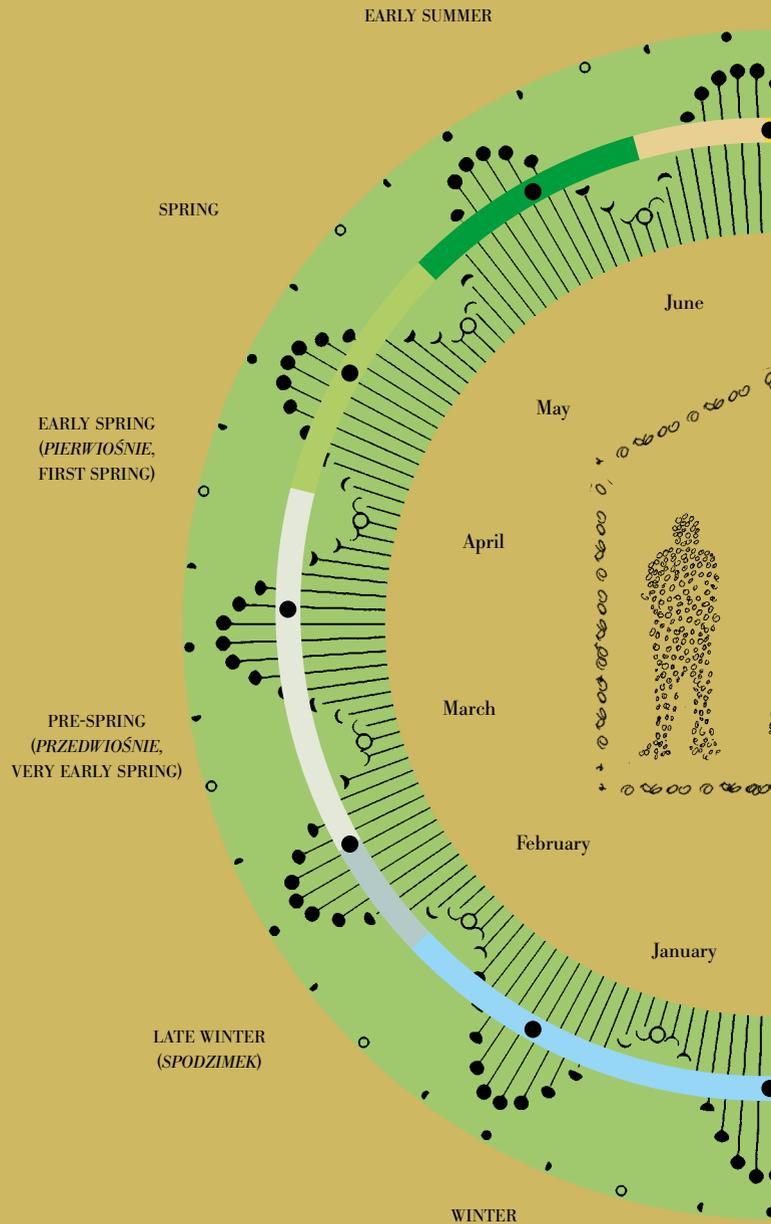
8 m² cold hole (*ktądówka*)

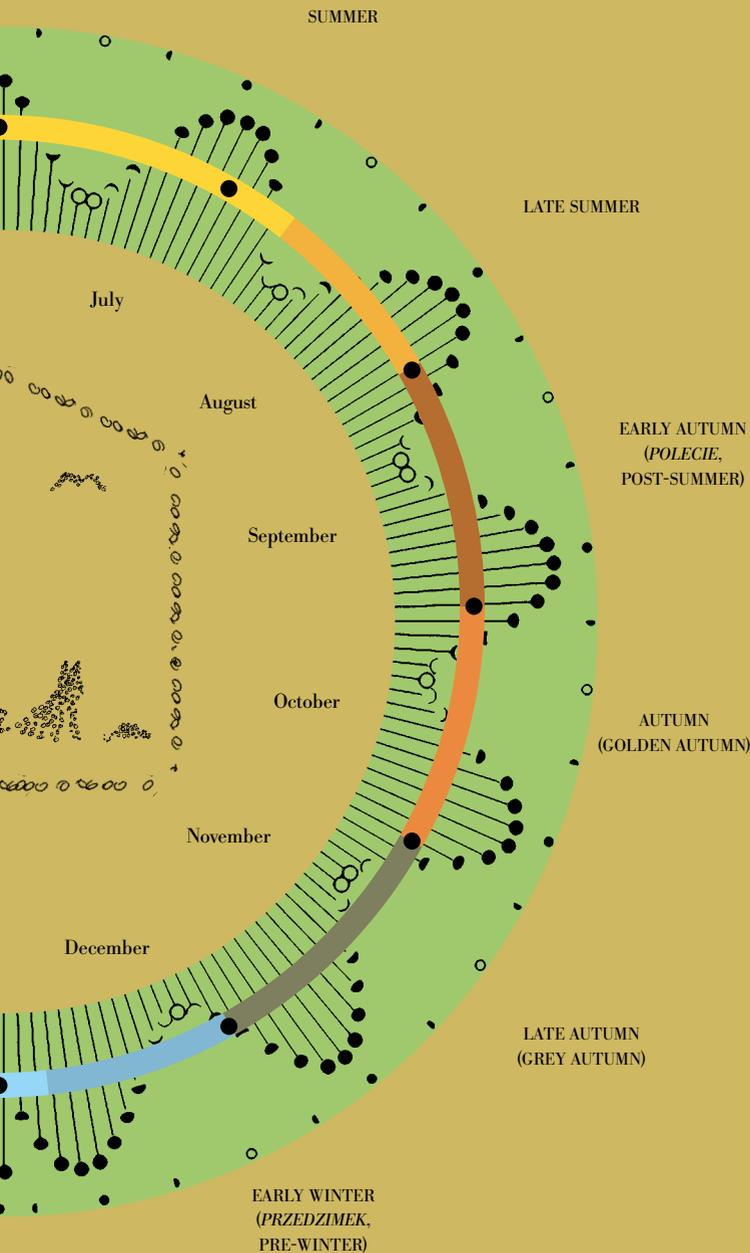
64 m² ante-garden

Cabrio House is a set-up consisting of two main spaces that can operate in two modes: open or closed. One space opens up vertically, the other horizontally. The space under the convertible roof can function as a patio with a fireplace, a living room, or a summer bathroom. The fixed-roof room is surrounded by a veranda and connects to a porch that in the closed mode becomes a wind-catcher leading to a sluice in one of the functional walls. The inner, roofed part of the building

Biological rhythms are cyclical processes occurring in living organisms due to external factors such as the seasons of the year, the Earth's axial rotation and the light-dark sequence. Organisms have adapted to those cycles by developing diurnal rhythms, endogenous mechanisms

that 'measure time' and program things like feeding, body temperature, sleeping and waking, hormone secretion and metabolic homeostasis.





The diagram presents:

1. The primary and secondary annual seasons in the moderate climate zone, an effect of the Earth's orbital motion;
2. The diurnal light-dark cycle caused by the Earth's rotation (day, night, dusk, dawn);

3. Moon's monthly cycle

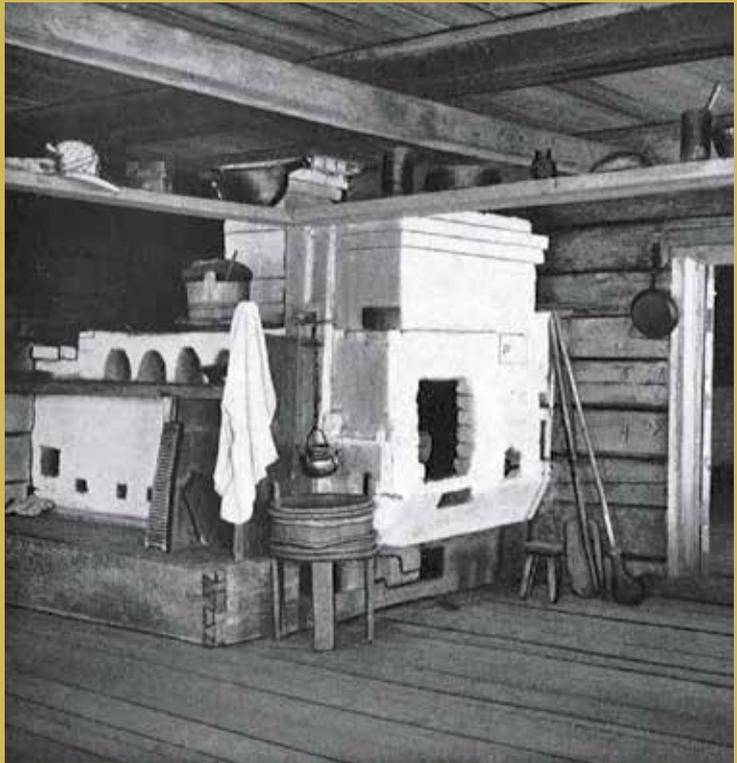
- synodic month: cycle of bright and dark nights; the lunar light sequence connected to the phases of the Moon;
- sidereal month: cycle of the Moon's gravitational pull connected to the Moon's course and position in relation to the Earth.

includes a bathroom, a laundry and a cold room.

The residential zones of the house aren't demarcated by flooring, which has been partly replaced by an adobe floor, or the platform of the veranda or the *przyłaps* (outdoor domestic spaces under the eaves), but by a multifunctional *zapiecek* inspired by a key element of the rural cottage. The *zapiecek* connects all the other spaces. It is a cooking range with shelves, a tall heating fireplace, dens/resting places (*nadpiecek*), a warm seat (*przypiecek*) and a place for the washbasin. It is fuelled with renewable energy sources or – temporarily – with wood when the bread oven is in use, and, like a traditional *zapiecek*, makes maximum use of thermal radiation. Together with the cold hole, situated across the house, the thermal chimney, which serves also as a wind tower, uses air convection and can produce draughts. On cool summer nights, the *zapiecek* makes it possible to sleep under the stars.

The chronobiological house strengthens the sense of being part of cyclical phenomena, the day rhythm, the sequence of light and darkness, the seasons and weather changes – with

all the consequences thereof. A house with a convertible roof is an example of architecture where the interior and exterior aren't defined once and for all, just like the sleeping room, the living room, the yard, or the veranda. The *Cabrio House* forgoes the functional notion of the interior: through its 'double skins' and convertible roof it encourages the inhabitants to negotiate their sense of security (in confrontation with the archetype of the house as a 'roof over one's head'), with the desire of vastness and contemplation of the sky, to combine intimacy with the scale of the universe. [MK, SDI]



A multifunctional cooking stove (*zapiecek*) in a cottage in the Russian Empire, 1917; unknown photographer, Wikipedia Commons, CC 0

The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up of the fireplace and the lighting of the reviving, warming, and food-preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first rude religious concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape.

It is the first and most important, the *moral* element of architecture. Around it were grouped the three other elements: the *roof*, the *enclosure*, and the *mound*,¹ the protecting negations or defenders of the hearth's flame against the three hostile elements of nature.

According to how different human societies developed under the varied influences of climate, natural surroundings, social relations, and different racial dispositions, the combinations in which the four elements of architecture were arranged also had to change, with some elements becoming more developed while others receded into the background. At the same time the different technical skills of man became organized according to these elements: *ceramics* and afterwards metal works around the *hearth*, *water* and *masonry works* around the *mound*, *carpentry* around the *roof* and its accessories.

But what primitive technique evolved from the *enclosure*? None other than the art of the *wall fitter* (*Wandbereiter*), that is, the weaver of mats and carpets.

A conversation between:
Monika Słupecka-Ziemilska
(MSZ)
CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis (CEN)
Anna Ptak (AP)

Housing the Biome

CEN

We are interested in designing discomfort. We understand that it's not the shell of the home but our skin that negotiates our participation in natural phenomena. We wonder whether it is possible to think about the home by moving from the idea of functional space towards that of inhabiting the environment — on top of that in our climate, with the four seasons — from the freezing yet sunny winters, through the vigorous springs, teeming with insects, then the hot and rainy summer months, to the golden autumn. What have we lost by disconnecting the home from the effects of natural phenomena, from the seasons, the day-night cycle, the rhythms of animal activity that once regulated the functioning of the rural homestead?

MSZ

You're asking about chronobiology. Prior to this conversation, I made it clear that this isn't something I directly deal with. But every natural scientist has to take the circadian rhythms into account. This is in fact what we begin with when planning any research experiment. The more closely you look at a biological system, the more you realise how everything is connected to everything else.

AP

Including life's biological and cultural aspects?

MSZ

The more I become aware of the biological process taking place in our body, the more I wonder how much we are really in control

of our lives. I know that my behaviour, mood, activity, are regulated by hormones, neurotransmitters, and the circadian rhythm.

CEN

The 2017 Nobel prize in physiology/medicine went to Jeffrey C. Hall, Michael Rosbash, and Michael W. Young for 'their discoveries of molecular mechanisms controlling the circadian rhythm'.

MSZ

Yes, the three US scientists were awarded for proving the existence of 'clock' genes. They described the cell's internal biological clock (the 'molecular clock'). The expression of an estimated 43 percent of all our genes is rhythmic. Gene expression is a process whereby the genetic information stored in a gene (a DNA fragment) is read and copied to its products proteins or various RNA forms. Every stage of the expression process is regulated, as well as being dependent on daylight rhythms.

CEN

What does it mean for us?

MSZ

Clock genes regulate the cell cycle. They 'tell' the cell when to divide, repair itself, or self-destruct. The cell's internal biological clock controls its fate. This has crucial significance for us: like us, the tissues of our organism need time to regenerate. Knowledge of chronobiology is also used in the case of cells that don't want to die; able to cheat their naturally programmed death, they keep dividing even though they shouldn't. These are cancer cells. Knowledge of the cell's internal biological clock allows us to make chemotherapy more effective. Instead of applying it when the cells are inactive, it can be administered when they are dividing. This is called 'chronotherapeutics'. Similarly, in cases of other diseases, synchronising medicine application with the biological clock makes the treatment more effective and reduces side effects.

CEN

Biologists speak of the circadian rhythm because, if we understand correctly, it doesn't always equal 24 hours?

MSZ

Indeed. Our internal biological clock is synchronized with external stimuli — the light-dark cycle. When kept in total darkness, cut off from any light sources, humans will still function in a circadian cycle, though it may extend to even 30 hours. But the rhythm will be maintained. The region of our brain responsible for regulating the circadian cycle is the hypothalamus. Its supra-chiasmatic nucleus receives neural input sent by the retina in contact with light. The neural signal received by the hypothalamus is processed and then relayed via neurotransmitters, hormones, growth factors to other regions of the brain and then to organs and tissues. The hypothalamus is the centre of regulation for pain response, body temperature, feeding, satiety, reproduction, and aggression. It can therefore be said that the key aspects of our biological functioning are synchronised by the cyclical nature of light and darkness.

CEN

Does our biological clock always follow the day-night cycle?

MSZ

There are two well-studied professional groups whose sleep-wake rhythm is permanently disturbed. These are aircrew members, who change time zones rapidly and often, and people working in a shift system with a night shift. These two groups show metabolic disorders such as higher risk of diabetes and obesity, cardiovascular issues, menstruation cycle disorders, fertility issues, and depression. Shift workers show an increased risk of gastrointestinal cancer. Our alimentary system is programmed to work very intensely during the day and has to regenerate at night. Unlike its ancestors, *Homo sapiens* learned

to secure food mainly through gathering, and that's something you do in the daytime, not at night, when you can't see anything. In predatory animals, which hunt at night, the sleep-wake rhythm is different. They have adapted to nocturnal digestion. We operate in a diurnal mode. At night our tissues and organs regenerate.

CEN

Can any cycle be considered natural?

Today's belief that we should work 8 hours, rest 8 hours, and sleep 8 hours can be traced back to a slogan coined in 1817 by Robert Owen. It is a system aimed at maximising the physical productivity of humans. Before the industrial era, people went to sleep with the animals, slept for a few hours, got up, performed various tasks, and went back to bed for a 'second sleep'.

MSZ

We live in a world that is unified in many respects. But the biological clock varies from person to person and depending on age. The circadian biological clock is different in adults than in children, different in seniors, and different still in teenagers. Infants don't function according to the circadian rhythm. When they have eaten, they sleep, and when they feel hungry again, they wake up. It is only around the 12–20th week of life that the production of melatonin (the hormone that regulates sleep and wakefulness) starts and the cycles begin to stabilise.

We discern two phases of sleep: the NREM phase, i.e., deep sleep, when all organs regenerate while digestion and absorption slow down, and the REM phase, distinguished by rapid eye movements and dreams. In adults, deep sleep, when the organism regenerates most quickly, occurs between 2 and 4 a.m. or between 1 and 3 a.m., depending on whether the person is a 'night owl' or an 'early bird'. But in teenagers this phase falls between 3 and 7 a.m., which is why it is so difficult for middle-school kids to fall asleep



Architectural designs are often presented as a cutaway diagram or drawing, with the surface elements removed. Considered literally, they can serve as an inspiration for open-sky spaces; photo: CENTRALA



Houses with unheated 'roof barns' (overhead storage spaces). Czechów Górny during regulation, public works in Lublin, 1938; photo: collection of Jolanta and Wojciech Jurkiewicz

before 11 p.m. or get up at 6 or 7 a.m. Their natural biological clock has been disturbed culturally. We pull them out of bed for the 8 a.m. start of school, which is out of sync with their rhythm but in keeping with the adult biological clock. As a person ages, their pineal gland, which is responsible for melatonin production, gradually calcifies. Melatonin levels fall, so seniors often go to sleep very early, get up very early, and nap during the day.

CEN

Are those cycles synchronised with the seasons, dependent on the time it gets dark?

MSZ

If we lived without electricity, our circadian rhythm would shift slightly, adjusting to the season. In animals, reproduction is highly seasonal, to procreate and bring up offspring during the part of the year when food is most abundant. Seasonality is also present in the kingdom of plants, which synchronise the pace of physiological processes with cyclical changes in the environment. Humans are the exception here. There is of course monthly cyclicity (the menstrual cycle), but no annual cyclicity. Since our children are unable to function independently for years, our mating patterns are not seasonal.

CEN

We are interested in fire. Whether in open form or as a hearth, it was, we believe,



Underground city. Tungkwan in Henan, China, is an example of architecture opening out into the ground, given by Bernard Rudofsky in his now legendary exhibition *Architecture without Architects*. Dwellings were hollowed out from soft loess, reaching as far as 10 metres underground, with vertical square patios serving as

the only source of daylight and air. The ground level is the city's apex here, defying the stereotypical notion of where architecture begins and ends. In this case, unusually, earth is the coping rather than the foundation. [MK]

Source: Bernard Rudofsky, *Architecture without Architects, an Introduction to Nonpedigreed Architecture*, New York Museum of Modern Art, 1964; photo: Wulf-Diether Graf zu Castell, Munich/Riem. New York, Museum of Modern Art (MoMA). © 2018. Digital image, The Museum of Modern Art, New York/Scala, Florence

the original architectural feature, not the wall or roof. A multigenerational home organised around a fire provided shelter not so much against nature as against other people. The fact that everyone slept in one big room, around a fire place, having bolted the door, also determined the organisation and generational assignment of household chores. In the context of what you are saying about the cycles of seniors and children being similar, a multigenerational home makes a lot of sense.

AP

Perhaps we shouldn't be speaking of the home as a place inhabited by people, but rather as the site of the symbiotic cohabitation of humans, animals, and plants?

MSZ

Symbiosis, like family relationships, can have different faces. Ecologists identify three types of such interaction: mutualistic (where both sides benefit), commensalistic (where one organism benefits and the other is unaffected), and parasitic (which can be considered as negative symbiosis, where one organism benefits while the other suffers). Moreover, the nature of the interaction can change over time, with one of the symbionts deriving more benefits during certain periods, becoming a parasite and causing detriment to the functioning of the other. It needs to be noted that on the level of the human body, we can also speak of the coexistence of a diverse community of bacteria, viruses, and fungi that inhabit our organism, known as the microbiome. Our microbiome is unique like a fingerprint, and its condition and diversity determine our health and physiology through the synthesis of lipids, amino acids, carbohydrates, vitamins, xenobiotics, their metabolites. We are so inextricably entwined that the notion of a 'superorganism' or 'metaorganism' has been gaining foothold in the academic world.

AP

Science used to hold that controlled, even sterile, conditions were good for your health. Now it turns out that health should be thought of in terms of exposing the body to diversity.

MSZ

That's right. Our microbiome includes not only bacteria, but also viruses and fungi, a community of 10 trillion cells, almost as many as all the cells of our body. The microbiome genome contains many times the number of our own genes. But the microbiome isn't limited to just the micro-organisms inhabiting our gut. This is also the microflora of the mouth, of skin. In women, also the microflora of the vagina, which plays an important role because the foetus lacks its own microflora and the child naturally acquires one from the mother as it is born. Breast milk contains microbes too. By the age of 2.5 years, most children have developed a micro-flora characteristic for adults of the same population.

CEN

And our cohabitants are the closest representatives of that population. Does that make our microbiomes similar?

MSZ

Each and every one of us has a different microbiome. But every family comprises a unique microbiological home. If it lives with domesticated animals, then their microbiomes are included too. A family's unique microbiome colonises a living space within 24 hours of moving in. When we leave a place, the microbiome goes, too. It doesn't live alone — it constantly needs us. Every family — not because of kinship but simply by dint of the fact of living together, cohabiting in a single space — comprises this unique microbiome of the home.

CEN

Can such a microbiome generate a particular smell, for example?

MSZ

Perhaps when we say that a place has a good atmosphere, that we feel well there, it is because the local microbiome resonates with ours. A home is very much constituted by its inhabitants. We know of course that the smell of our skin is related to the bacteria that live on it.

AP

On the one hand, our physiology syncs to the planetary cycles regulating our circadian rhythm. But does our body also interpret these cycles for the sake of our microbiome?

MSZ

Our biological clock tells us when to eat. Through the timing and composition of our meals, through our diet, we influence the microbiome of our gut. Research has shown it to be highly variable. Even a 24-hour fast affects very significantly the quantity and diversity of the gut microflora. All this shows that within the superorganism (the individual and their microbiome) there run two clocks — one our own and one of our bacteria. The former is synchronised by light, and the latter mainly by food. On the other hand, we know that bacteria synthesise melatonin, the hormone responsible for the regulation of sleep, activity, and wakefulness. So if someone has sleeping disorders, there is the question of how much it's an internal disorder and how much a matter of bacteria that have been producing less melatonin.

CEN

In other words, our bodies act as intermediaries between microorganisms and the planet!

MSZ

You could say that.

AP

And how does our civilisation's obsession with cleanliness impact the microbiological environment?

MSZ

Urbanisation has led to sweeping changes in human living conditions. This has been due to more hygiene, the common use of antibiotics and bactericides, and farming practices that drastically reduce the microbiological diversity of soil. Studies show that people who grow up in urban environments have less diverse microbiomes.

City dwellers are more likely to suffer from autoimmune diseases such as diabetes, multiple sclerosis, as well as allergies. Microbe-rich environments are a source of beneficial microorganisms that ensure gut microflora diversity, reducing the risk of inflammations. Research studies also show that growing up in microbe-rich environments, such as at a traditional farm, makes you healthier. This means that the high occurrence of inflammatory diseases in modern cities may be a result of less exposure to beneficial environmental microorganisms, such as house-dust or animal microbes. It has been demonstrated that the presence of house animals has an effect on the gut microflora in infants and reduces the risk of allergic diseases at a later age.

CEN

So contact with animals or the soil enriches the shared microbiome and we learn to function with others, including microorganisms.

MSZ

This is definitely better than living in sterile conditions. Too much hygiene has become a civilisational problem, though we've been seeing more and more of the opposite trend, for example, the popularity of 'forest kindergartens' in Scandinavia. There, the kids are outside all day, even when temperatures drop well below freezing. They get dirty a lot. Architecturally, the kindergarten itself is often limited to a simple shelter that offers protection from rain, wind, or snow. Meals are also eaten outdoors, under

the same shelter, ignoring the fact that there is sand on the table and the kids may consume some of it too. Today most people live in artificial, man-made environments, to which we are often allergic.

CEN

In an attempt to protect ourselves from diseases and respond to consumer needs, we construct a sterile urbanised environment and destroy biodiversity. And we are becoming increasingly oversensitive to the world we have created. We are, in a way, becoming allergic to ourselves.

AP

Smog is a good example of this. In Warsaw, it is caused mainly by outdated heating systems. So an attempt to produce comfort indoors, through heating, has produced an environment where life is unbearable.

MSZ

Which is why we isolate ourselves even more, locking ourselves inside our homes.

AP

One of the car manufacturers has been touting a new model with special filters that ensure super-clean air inside. So what? You generate pollution precisely by sitting in such a car. But one day, both the car and the home will have to be left behind.

CEN

And this is precisely the moment when we need to stop thinking in individual terms and start thinking in planetary ones. And we need to open architecture up more to biological, body-related issues.

AP

Perhaps it's the smog masks that, marking a boundary shift from the shell of the home to the human skin, are the architecture of our times.



TRANSITIONAL AND SEASONAL SPACES

The 'onion' layering system of clothes helps to protect the body with several layers of warm air while allowing the user to adjust to changing weather conditions easily by adding or removing layers. Traditional Polish architecture was also multi-layered, combining domestic spaces with elements used depending on wind, air temperature, or season.

GANEK (porch)

A year-round projecting building that houses the entrance door; offers protection from wind, rain and snow.

WIATROŁĄP (wind-catcher)

Inside the house, e.g., a curtain hung in the vestibule (or 'mud-room'), or outside, a 'lean-to', where the grounded roof surface serves as a buffer against the wind.

PODCIEŃ ('sub-shade') and

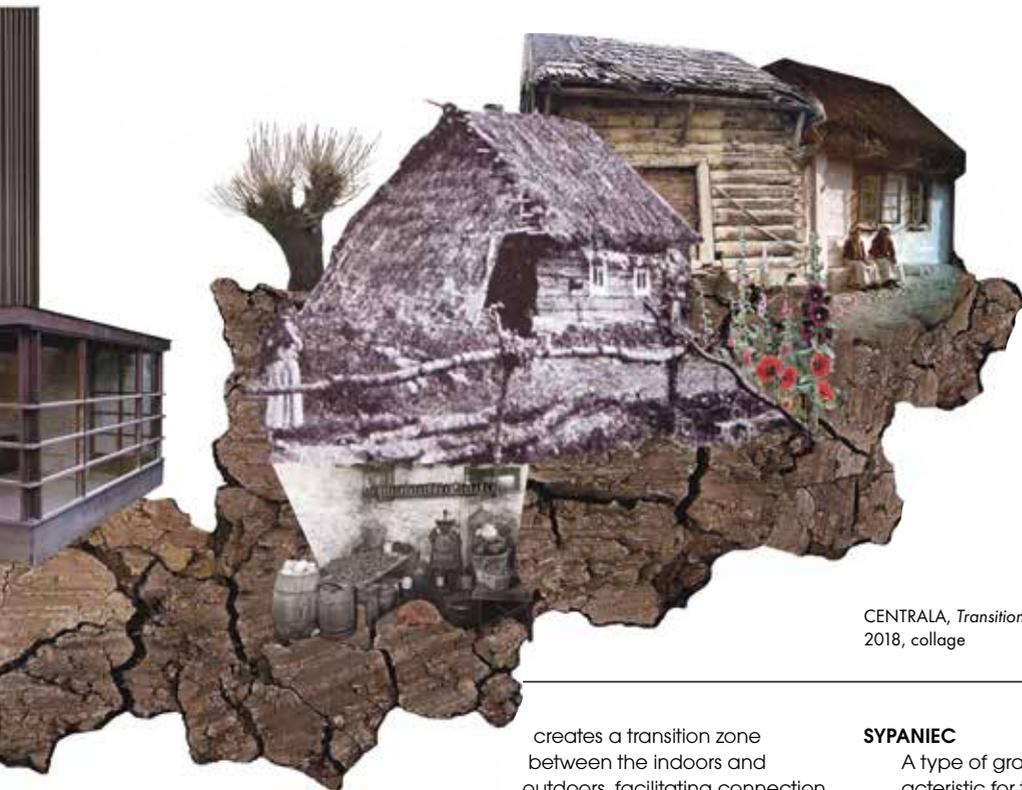
PRZYŁĄP ('catch-on')

Outdoor space under the eaves

where the daily farm chores can be performed in case of adverse weather; also a space for firewood, herb and mushroom drying, linen airing and so on.

VERANDA

Open-through in the summer as a roofed terrace, with a special walling system, with lock-in windows for post-season and extra window shutters for winter.



CENTRALA, *Transitional and Seasonal Spaces*, 2018, collage

In summer time, the easily removable windows can be replaced with wind-catching wooden trellis modules. To cover the entire height of the veranda, the window panes are characteristically divided with wooden bars into smaller 'quarters'. One of those is the 'vent window', which can be opened independently to facilitate air exchange.

PRZEDPROŻE ('pre-threshold')

A small front-door platform or wide roofed threshold that

creates a transition zone between the indoors and outdoors, facilitating connection with the environment (similar to the Japanese *engawa*).

ZIMNY DÓŁ (cold hole)

Situated outside the wall outline, collects the cold, thick air of the ground floor, functions as a pantry, known as the *kladówka* ('store room').

ZIMNA IZBA (cold room)

Unheated in winter.

KLEPISKO, POLEPA

An adobe ('dirt') floor.

ŚWIETLIK ('clerestory')

A window above eye level.

SYPANIEC

A type of granary building, characteristic for the Polish-Slovak borderland, with walls thickly pasted with clay to protect from fire, with a shingled roof, unconnected with the walls, that could be thrown off in the case of a fire hazard.

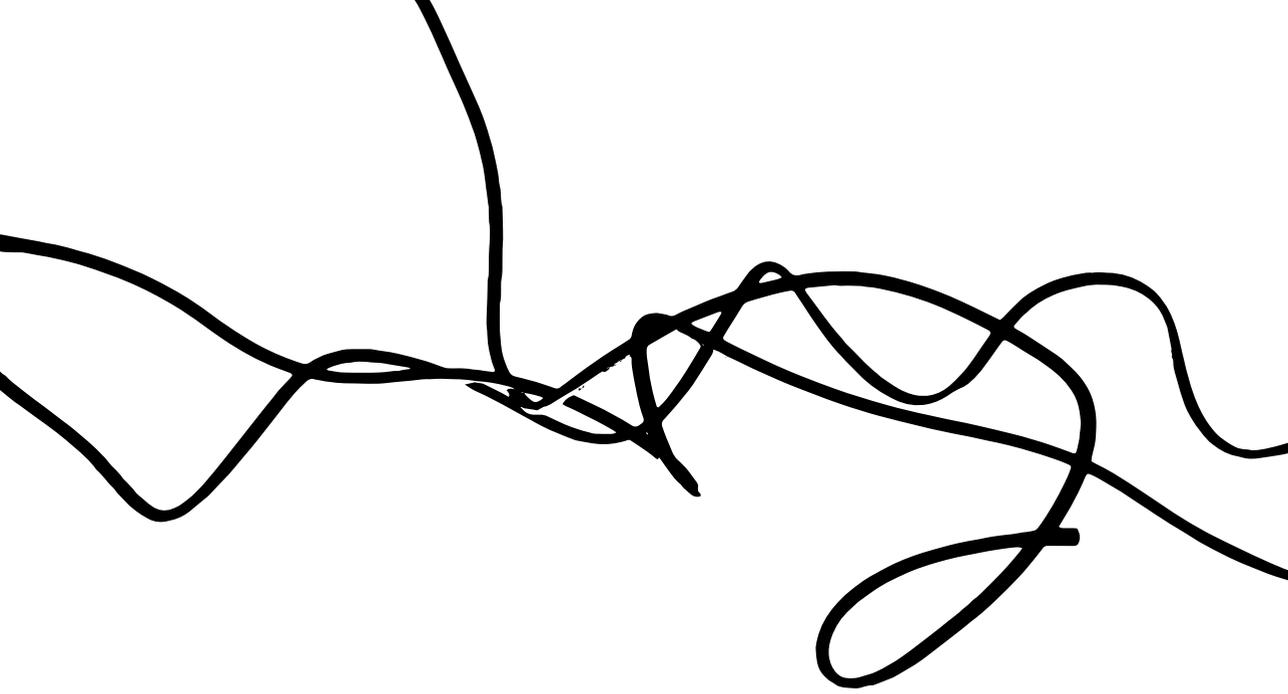
THERMAL CHIMNEY

Painted black, like in steamers, to boost the chimney effect, with a damper (an adjustable plate for controlling the draft).

(MK, SDI)



Road to the village of Ściężny (whitewashed
trees and roadside stones), 1948;
photo: Polish Press Agency



ARCHITEC-
TURE-PRO-
DUCING
GESTURES



Working in a garden, 1983



School kids from Lesznawola doing communal work, 1980



Benedykt Adamczyk whitewashing the barn entrance, 1974



Whitewashing of orchard trees, 1983

Shaping space: whitewashing as an aesthetic,
sanitary and protective practice;
photo: Grażyna Rutkowska, National Digital
Archives

Architecture-producing gestures are spatial transformations whereby natural processes are interpreted and amplified through individual and collective bodies. The emergence of an identity that responds to the relationships of the life of human collectivities and the natural environment is the horizon of this perspective in architectural research.

Studying semantic processes — non-linguistic, spatial means of communication — entails looking at architecture from the viewpoint of many different ‘users’ — including human ones — as well as considering solar operation, earth pressure, water circulation, which find their expression in architectural form and technological outcomes. It enables us to see how the overlapping and intersecting actions of those ‘users’ amplify each other and what the possibilities are of a future



Jaali screen panels: façade of the Embassy of the Republic of Poland in New Delhi; industrial-packaging repurposed panels

transformation of the whole 'ecosystem'. This would be the affirmative project in architectural research: to find images that encourage a deeper, more thoughtful connection with the life of the planet as a whole. Imagination, evoked in our conversation with writer Amitav Ghosh, postulates opening up — ethically and aesthetically — to the collective experience of dynamic nature. [AP]



Spaceframe structures: Khoj International Artists Association artist-in-residence centre; protracted demolition of the house opposite



Chaajja shades: Hauz Khas complex pavilions; main street building, Khirki neighbourhood

Architectural details corresponding to climatic conditions in historical buildings, contemporary designs and houses built without permit in the New Delhi suburb of Khirki.



Mir diamond mine and the town of Mirny in Siberia, 2016; photo: Igor Dvurekov, Wikimedia Commons, CC 0



Monte Kali — a spoil heap of 188 million tonnes of salt, a waste product of local potash mining and processing, Heringen, Germany; photo: Wolkenkratzer, Wikimedia Commons, CC 0

A conversation between:
Amitav Ghosh (AG)
CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis (CEN)
Anna Ptak (AP)

Let's Stop Building

AP

'This is perhaps the most important question ever to confront culture in the broadest sense — for let us make no mistake: the climate crisis is also a crisis of culture, and thus of the imagination', you argued in *The Great Derangement*. You argued that contemporary literature is unable to speak about climate change because the predominant genre — the realistic novel — excludes unexpected, unthinkable events and still boils down to a description of an 'individual moral adventure'. How about architecture?

AG

Architecture is in a paradoxical position regarding the present planetary crisis. On the one hand, architects are already having to gauge the impacts of climate change so they are perhaps more aware of the crisis than say, novelists or artists. At the same time, their work is itself one of the most significant drivers of climate change, in that it relies heavily on materials like steel and cement, which are responsible for a large and growing proportion of global emissions. Cement and concrete play a special role in this, in that producers of these materials have become major players in politics at every level. In India, the power of the 'cement lobby' has grown exponentially over the last few decades. It can now push through huge infrastructural projects with little oversight. I suspect that these lobbies are largely responsible for pushing through many of the enormous dams that are being built across Asia, at enormous environmental cost.



A 'bulge-and-hollow' at the Warszawaianka sports complex — a sunk tennis-court area with wind-breaker earth banks, 1965; photo: Zbyszko Siemaszko / Polska Agencja Fotografów FORUM

CEN

How about past architecture? Consider stepwells, for example. The earliest harken back to 600 AD and appeared as infrastructural monuments for water collection — gigantic artefacts, sunken in the earth, poised between landscape and architecture. Or take the Jantar Mantars from the 18th century. The purpose of these observatories was to not only compile astronomical tables and to predict the times and movements of the sun, moon and planets. Isamu Noguchi noted that they also had a metaphysical dimension: 'They contain an appreciation of measured time and the shortness of life.' These two very different artefacts are for us representative of how Indian architecture used to cherish a direct connection of the human with the sky above their head and the soil below their feet. Does the technosphere surrounding us today 'concealed the real' up to the point of obliterating such need to commune with the universe?

AG

Indian stepwells, the Jantar Mantars and so on are very beautiful structures but today we can only look back on them with a certain kind of nostalgia. Because unfortunately, most modern Indian buildings (and cities) are hideous eyesores. Moreover, they are completely inappropriate for their environment. The built-up environment of contemporary India is indeed nothing less than a catastrophe. This is a real pity because some contemporary Indian architects, like Laurie Baker, and the great Charles Correa, were true visionaries when it came to environmentally sensitive architecture.

AP

It is fascinating that you, as a writer, question our logocentric ability to understand climate change and its consequences. This also pertains to the dominant environmental discourse that, on the one hand, relies heavily on identity politics,

personal expressiveness and so on, and on the other hand toys with promises of modernisation for billions of Earth's human inhabitants. You point to another sphere of communicative entities, collectives comprising both human and non-human agents responsive to each other, who can articulate different futures for their respective environments. Because how else can we understand this 'language beyond symbolic language'?

AG

Historically collective, often unarticulated, understandings enforced certain architectural forms in an almost ritualistic fashion. This is evident not just in medieval cathedrals, temples and mosques, but also in the ways in which cities were laid out (most obviously in China) and in the patterning of marketplaces and so on. But these collective understandings also fell victim to certain kinds of modernism which valorised individuality, expressiveness and gestures above all else.

CEN

In a paper on 'Green Architecture in India' we read: 'The ancient Indian civilisation always respected its environment, and this explains why our traditional architectural designs were so sophisticated and even climate responsive. A close observation of our ancient architecture will reveal that in India, the practice of using climate-responsive design, the use of local and sustainable materials, water harvesting, etc., dates back thousands of years. Architectural elements like courtyards, clusters, wind towers, roof terraces and jaalis (stone lattices), among others, were used for effective climate control, keeping social and cultural needs in mind.'¹ Is this merely nostalgia for a lost tradition or can we learn something from such practices?

AG

Historically, every culture has had to adapt to its circumstances: they had no choice in this.

¹ 'Green Architecture in India: Combining Modern Technology with Traditional Methods', *UN Chronicle*, vol. XLIV, no. 2, June 2007.



A 'bulge-and-hollow' in front of Zofia and Oskar Hansen's house in Szumin, formed with earth from the foundation digs. *Lubin — humanizacja miasta* [Lubin — humanisation of the city], from the *Polska w obiektywie* [Poland in the lens] series, TV show, produced by Telewizja Polska, 1976



Teresa Murak, *Sculpture for the Earth*, 1974, Ubbeboda, Sweden;
photo courtesy of the artist

Just as traditional Indian architecture had to adapt to the environment, so too did Chinese, Japanese, Persian, North African and European architecture — what is startling is that this perfectly obvious aspect of architecture should now seem surprising to us. The rupture between architecture and environment begins with certain kinds of modernism, and these aesthetics have now become institutionalised around the world (there are exceptions of course — the modernism of Frank Lloyd Wright, for example, was very well adapted to the environment, as anyone who has visited Taliesin will attest). So what we see now, going up around the world, are gigantic, concrete structures, clad in glass and steel — these gestures are performed as an extension of a certain kind of modernist aesthetic. In the context of climate change, this kind of architecture is nothing short of obscene. Let's face it — the best thing the world could do, in relation to climate change, is to stop building.

LIVING THOUGHT

In the book *How Forests Think*,¹ anthropologist Eduardo Kohn describes the relationship between the Ávila Runa people and the jungle they inhabit in the Ecuadorian Upper Amazon. The life forms of insects, plants, humans and animals, as well as supra-individual evolution processes comprise a deeply semiotic ecology of interconnected selves. Through the forms that life assumes speaks other forms, which are also part of the shared environment. Life processes preceding logically or linguistically construed differences

or similarities are described by Kohn as significant,² in keeping with the thought that, 'The semiotic quality of life — the fact that the forms life takes are the products of how living selves represent the world around them — structures the tropical ecosystem.'³

The formation of habits, the possibility of misrecognition related to similarity rather than difference, the adherence of some forms to others — those are but some of the non-linguistic modes of communication described by Kohn. The anteater is a sign whose pedigree is a result of the selective past and future adjustments of its body to the shape of the anthill. A unique multi-species assemblage of organisms — toxic plants,

fish species, colour of the river — escalates the difference between different kinds of earth: sandy white and fertile soil. The Ávila Runa jaguar-trapping myth speaks of selves that are able to connect different perspectives. Seeing the jaguar, the hero, who is up on the roof, patching it, addresses the man-eating jaguar as if it were his son-in-law, asking the animal to pass him a stick. The jaguar steps inside, where light shines through the roof and passes the man the stick. The stick, which fits a hole visible from inside, the response to a call in the shape of a human



Perspective exchange: gravitation and tourists propping up rocks on a train in the Góry Stołowe mountain range, 2010; photo: Zuzanna Kacperek-Karetta

being — these are the forms in which occurs an exchange of viewpoints connecting the perspective from inside and outside. Through the congestion and multitude of selves in a relationship network, the tropical forest enhances sensitivity to their characteristic ways of communicating, but life is semiotic in its essence, Kohn writes, due to the future horizon inscribed in the possibilities of the biological reproduction and modification of the forms adopted.

The language of architecture, which we point to in the *Amplifying Nature* publication, following the interpretational and reconstructive practice of CENTRALA and a sculpture installation created in collaboration with Iza Tarasewicz,

has four qualities directly unrelated to human choices and politics: it is unselfish, it is informed by the invisible (imagination and intuition work, natural laws), it connects the great and small (however defined), and it is visionary, experimental and innovative. Perhaps it stands at odds with the classic narrative of service, but with this exhibition, we want to bring attention to the wide-ranging non-instrumentality of architectural processes. In this sense, the architecture reconstructed here is an opposite of remedial practices (such as design) or those dealing only with the symptoms of the crisis and failing to address the gist of the relationship between the dynamic system of Earth and the consequences of its processes

for the planet's inhabitants. *Amplifying Nature* strives to avoid reifying architecture as a thing unto itself.

Following a clue from Eduardo Kohn: the planetary imagination is a 'living thought', with architecture developing relationships with other totalities. A totality for Kohn is the horizon of future life in the organic sense. In the light of recognitions of the scale of changes whose consequences are permanently altering the planetary dynamics, science's delusions about technological ways of 'protecting' mankind that ignore the political aspect of decisions, or



Astronomical systems imagine the cosmic and mundane orders as complementary. The night sky doesn't have to be interpreted solely by connecting the star points. The oldest astronomical system known, that of the Australian Aborigines, is of a negative type: it is based on the dark spaces between the stars, the Milky Way's dust clouds and nebulas. [MP]

Emu in the sky — the principal constellation of Aborigine astronomy; photo: Barnaby Norris



Perspective exchange: material flows — wave-synchronisable swings under the Sopot Pier; photo courtesy of Sopot Museum

recognitions concerning the structure of matter, e.g., in quantum physics, the notion of the Earth as a homeostatic Gaia is no longer tenable. Sometimes the planet is compared to a drum vibrating at different frequencies in different places. In the field of human practices, these vibrations assume perhaps the form of our cultural ways of dealing with matter: learning, care, conservation and destruction. We are therefore striving to call architecture a language. A communication-based vision of architecture connects the past and the future; it expresses differently, in different scales, the horizon of the future of life.

1 Eduardo Kohn, *How Forests Think. Toward an Anthropology beyond the Human*, Berkeley, Los Angeles and London: University of California Press, 2013.

2 Not in the sense of a symbolic language, where difference is a scheme that defines the relationships between objects and words refer to each other in a closed system. Kohn follows Charles Peirce's distinction between symbol, index and icon, where index means adherence (compatibility) and George Bateson's biosemiotics and his idea of dual description: amplifying similar differences (which makes it possible to connect evolutionary processes with the theory of mind).

3 Kohn, p. 78.

The central mission of the CENTRALA architecture studio is to initiate and participate in a debate about shared spaces and the role of architecture in shaping them. CENTRALA conducts research into historical designs, reconstructs outstanding, though often forgotten, architectural ideas, and designs its own interventions, recreating modes of architecture functioning in complex narratives: urban policies, cultures of memory and affirmation of social spaces. The following micro-lexicon presents selected research topics from CENTRALA's practice, which, like 'amplifying nature', take their point of departure in the materiality of architecture.

Reconstructions. Five Concepts from the CENTRALA Research Lexicon

DOMESTICATED COURTYARD



Reconstruction of polychrome decorations of two apartment blocks at the Rakowiec housing estate, designed by Zofia and Oskar Hansen in 1959, 2016; architectural design: Małgorzata Kuciewicz, in collaboration with Katarzyna Klimasz, Simone De Iacobis, Francesco Ronconi; for the Warsaw Uprising Museum, as part of the project *Pastelosis*. *Photography — Colour — Architecture*, 2013; illustration: CENTRALA



Przyzba [Foot-Beam Bench], 2015, intervention at 10 Rydla Street, Bronowice, Kraków; authors: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); as part of the 7th Grolsch ArtBoom Festival in Kraków; photo: Simone De Iacobis

THE DOMESTICATED COURTYARD

is a shared space that integrates the public sphere with elements of private spaces, helping to forge neighbourly ties.

The concept is linked to the study of pre- and post-war Warsaw housing schemes. The small size of the dwelling units of the 1930s modernist housing estate in Rakowiec, Warsaw, caused its designers to relocate much of the residents' activities to shared spaces.

The neighbourly zone was meant to be cosy and safe, which is why the pre-war architects, Helena and Szymon Syrkus, adopted the kindergarten child's step and the senior person's field of view as the basic measurement units. Zofia and Oskar Hansen, designers of two apartment blocks from 1959, developed a concept of a neighbourhood informed by the communal arrangements in villages and small towns. Assuming that the new buildings would be inhabited by first-generation rural economic migrants, the shared spaces were furnished with features meant to encourage the adults to engage in small talk and the kids to pursue

games and outdoor activities. The building entrances were roofed, the entrance bays equipped with mirrors, and a high threshold protected the zone from the dust and dirt of the street. The space between the blocks was designed as a continuation of the domestic space. A reconstruction of the Rakowiec spatial logic prompted CENTRALA to explore other Warsaw housing schemes and draw up a catalogue of shared-space attributes, i.e., a list of small architectural features comprising a 'cosy space'.

Since the designers of contemporary housing schemes seldom embrace outcomes developed in



Playscape, 2016–2017, architectural design: CENTRALA (Simone De Iacobis, Małgorzata Kuciewicz), Grzegorz Gądek (Fundacja Skwer Sportów Miejskich), Marcin Baca Duch; partner: Skanska; photo: Michał Matejko / Jaśniej



Archipelago, 2015, socio-spatial revitalisation of the neighbourly space of the Za Żelazną Bramą housing estate in Warsaw; authors: Fundacja na Miescu, CENTRALA (Simone De Iacobis, Małgorzata Kuciewicz), Krzysztof Syruć, Marcel Dawid, Tomasz Koczur, Piotr Bujas, 4 Pory Roku; partners: Project for Public Spaces, Wola District — City of Warsaw, Skanska; photo: Simone De Iacobis

the past, the concept of neighbourly spaces has been eroded. *Foot-Beam Bench* (2015) by CENTRALA proposes to domesticate the courtyard by using the eponymous feature which in traditional rural architecture not so much separates a cottage's interior and exterior but rather connects them, serving as a bumper zone encouraging relaxation, small talk, observation of the surroundings, and socialising. Such a bench was installed by the entrance to an apartment block in Bronowice, Kraków, where the common spaces, devoid of any seats, served merely as public passages to private quarters. A small intervention turned

them into neighbourly spaces.

Research into pre- and post-war housing schemes has revealed that the abstract, sculptural form of social-space attributes allows for changes in their usage over time. For example, as the residents aged, the sandboxes were turned into flower beds, tended by the seniors. With its attributes being transformable, we can think of space in terms not so much of its defining function as of the possibility of programming it according to current needs. This is the philosophy that underlies designs such as *Playscape* or *Archipelago* — multifunctional activity spaces meant for local communities.

EXPOGRAPHY

is a term coined by Philippe Duboy in his book on the Italian architect and designer, Carlo Scarpa, according to whom exhibition design, using a spatial language of its own, comprises an autonomous medium of experiencing and experimenting with reality. CENTRALA embraces the concept in a two-fold way: by studying the visual grammars of the Polish exhibition design tradition and by designing exhibitions as experimental zones of urban space programming.

The doctrine of socialist realism, which remained in

EXPOGRAPHY



Oskar Hansen. *Open Form*, 2014–2015, MACBA, Barcelona, in association with the Museum of Modern Art in Warsaw; curators: Soledad Gutierrez, Łukasz Ronduda; collaboration: Aleksandra Kędziorek; exhibition design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); photo: Simone De Iacobis / Museum of Modern Art in Warsaw



Oskar Hansen. *Open Form*, 2015, Serralves Museum of Contemporary Art, Porto; curators: Aleksandra Kędziorek, Łukasz Ronduda; exhibition design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis, Krzysztof Syruć); photo: Simone De Iacobis / Museum of Modern Art in Warsaw

force through the mid-1950s, the lack of understanding of bold visions of modernist architecture on the part of the communist regime, and technological limitations of the building industry all meant that visionary architects seldom had the chance to see their designs realised on a large scale. Exhibitions of domestic art and industrial products presented in Polish pavilions at international fairs offered a welcome alternative. Paradoxically, it was there that architects and designers enjoyed the creative freedom they so much longed for. Polish post-war exhibition design is a rich source of ambitious formal experiments and distinct

visual tools, such as photo mural, photographic-graphic frieze, spatial relief, visual essay, etalage, or active/passive background. But a cutting-edge exhibition design grammar wasn't an end unto itself; rather, it was a testing ground for innovative spatial design solutions for homes, housing schemes, and cities.

The exhibitions designed by CENTRALA have included those devoted to the work of Zofia and Oskar Hansen, as well as Jacek Damiński (*Macro-forms*), which sought to reconstruct the design grammars of their protagonists. Embracing the idea of exhibition architecture as an experimental space of

experience, the principal element of which is not so much a display of objects as the individual and their relationships with the surroundings, CENTRALA has also proposed its own exhibition design interventions. The design for *Painters of Illustrations* included baskets of glass marbles used in children's games, which alluded to the mood of the illustrations themselves. Objects of this kind are usually missing from public spaces due to safety requirements, but an art exhibition is at least partly exempt from this logic, becoming a laboratory where the potential of shared spaces can be tested. Another experiment with the exhibition



Zofia and Oskar Hansen. *Open Form*, 2017, Museum of Modern Art in Warsaw; curator: Aleksandra Kędziorek; exhibition design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); photo: Piotr Chuchla / Museum of Modern Art in Warsaw



Jacek Damiński. *Macro-forms*, 2016–2017, Zachęta — National Gallery of Art; curators: Sarmen Beglarian, Małgorzata Kuciewicz; exhibition design: Jacek Damiński, Simone De Iacobis; photo: Simone De Iacobis / Zachęta — National Gallery of Art

medium was the prototype for an urban sports square built at the Museum of Modern Art in Warsaw; an outside space moved for the winter inside the modernist Emilia pavilion explored the practical potential of this kind of roofed public space.

PERFORMATIVE ARCHITECTURE

is an approach that emphasises the processual rather than objectual aspect of architecture. Instead of thinking of architecture in terms of nouns — space, house, street, city — CENTRALA

emphasises and affirms the wealth of its verb forms, reflecting movement, change, flows, and actions. In order to experience architecture in this way, one needs to abandon the deeply entrenched notion of it as a sum total of buildings. For nearly a decade now, CENTRALA has pursued the formula of critical tourism, taking locals and visitors (artists-in-residence, researchers, architects) on urban walks. Each of these walks reconfigures the histories of the places visited, the anecdotes heard and told, the research narratives unfolded, enriching them with the participants' experiences and thus constructing new meanings. Fiction and storytelling are important

tools of CENTRALA's work, in accordance with the notion that architecture is not just a physical condition of space, but a whole system of meanings, symbols, and images accruing around it. The purpose of critical tourism is not only to acknowledge them, but also to develop, question, and change them, for architecture is an inherent part of the dynamic flows of social life rather than merely an inanimate fabric of our everydayness.

One of their early proposals to modify the mental map of the Polish capital was *Warsaw Smile* (2010). The spatial logic of downtown Warsaw is defined by an orthogonal grid. The line



Painters of Illustrations, 2013, Museum of Modern Art in Warsaw; curators: Agata (Endo) Nowicka, Maria Zaleska; exhibition design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); photo: Simone De Iacobis



Prototype for an urban sports square, 2013, Museum of Modern Art in Warsaw; authors: Grzegorz Gądek (Skwer Sportów Miejskich); operations managers: Kamil Dołowski, Jakub Kazikowski (Stowarzyszenie Parkour United); architecture: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); graphics: Eryk Gaj; authors of installations: Michał Jońca, Marta Rowińska and Lech Rowiński (Beton), Agata Woźniczka and Mateusz Adamczyk (BUDCUD), F***ramps; research: Pracownia Badań i Innowacji Społecznych Stocznia, Projekt Społeczny 2001; partners: Stowarzyszenie Parkour United, Sławomir Wiśniewski (Studio Tańca Ready to Battle), Kuba Perzyna (INFO Magazine), Adam Kadenaci (Klub Sportów Miejskich Skarpa); photo: Bartosz Stawiariski / Museum of Modern Art in Warsaw

traced by Mokotowska Street, Bracka Street, and Zgoda Street cuts diagonally across it, unexpectedly disturbing the pattern. Archival research revealed the remnants of an old road that existed even before the city's founding, while the behavioural ethnography of the streets' users — owners of niche boutiques, passers-by using the sequence of streets as a convenient shortcut — demonstrated the embodied distinctness of the setup. *Warsaw Smile* is a reference to its form, but also a name for a fragment of the city that is missing from its mental map, as well as a first step towards further proposals.

Roofology (2017) is a peregrination over and

across Warsaw rooftops. Stereotypical notions of the city mean that its elevated part is known only to chimney sweeps and pigeons. *Roofology* not only makes it possible to experience the city from a new perspective, but also challenges established mental patterns, making us aware that the sidewalk can be the roof of underground premises, while rooftops can serve as multifunctional neighbourly spaces.

The performativity of architecture is also an ability to produce new forms of embodying space. A group of people can sit on *Dido's Blanket* (2016) and hold a discussion or a picnic, or they can sneak underneath to avoid inquisitive

gazes or to warm themselves up. The blanket encourages collective activities, forces you to agree on the way in which it is to be used, creates intimacy between its users, becoming a means of choreographing everyday life.

The sense that architecture and choreography have a lot in common inaugurated collaboration between CENTRALA and Centrum w Ruchu [Centre in Movement], a group of independent choreographers and dancers. *CENTRALA in Movement* (2013), performed in the revitalised space of a former shop in a socialist-realist downtown building, explored how the body establishes spatial relations.



PERFORMATIVE ARCHITECTURE



Warsaw Smile, 2010; design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis), Sebastian Balut (590 architekci); performed as part of the festival Warsaw Under Construction; illustration: CENTRALA

Polish Pavilion at the XXI Triennale di Milano International Exhibition, 2016, exhibition design: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis), curator: Magdalena Kochanowska; produced by Culture.pl; photo: Simone De Iacobis

SPATIALISED MEMORY

is a research practice aimed at initiating public debate on the ways in which memory materialises in urban space.

A key experience for this aspect of CENTRALA's practice was its study of the Muranów Memorial Housing Estate, whose construction began in the late 1940s on the ruins of the ghetto. The scale of wartime destruction was so great that not even the frames of the pre-war tenements had survived. The whole area of the former Jewish district was

covered by 3 million cubic metres of rubble. The ghostly living conditions in the ghetto, the extermination of its residents, and the crushing of the ghetto uprising made Muranów a place of extreme trauma. The new estate's chief designer, Bohdan Lachert, wanted to reconcile the imperative to commemorate the recent tragedy with urban pragmatism: the urgent need to satisfy the housing deficit of the early post-war years. The modernist estate was thus erected as a memorial to the Jews who had lived in the area before the war. Part of the rubble was used to create plateaus on which blocks of flats were built with rubble-concrete bricks;

originally, the houses were meant to be left unplastered to highlight the tragic history of the place. Streets were laid out in the 'canyons' between the artificial mounds, and the estate was equipped with all kinds of attributes of social space: benches composed into retaining walls, bicycle lockers, sandboxes, and garbage enclosures. Over the years, many unplanned changes were carried out in Muranów that largely erased the original character of a housing scheme that constituted a unique example of 'mnemonic modernism' — utilitarian infrastructure commemorating the history of the site on which it was built. CENTRALA's research



Wandering Roof, 2010, intervention: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis, Krzysztof Banaszewski), as part of Warsaw Day; photo: Simone De Iacobis



Małgorzata Kuciewicz, Simone De Iacobis, *Roofology*, 2017, a series of walks as part of the *Synchronisation*. *Unbalanced Architecture* cycle, Fundacja Bęc Zmiana 2016; photo: PION / Fundacja Bęc Zmiana

work led to a petition being addressed to City Hall, asking for the removal of socialist-realist plaster and stuccowork from one of the Lachert-designed buildings. When it turned out that the decision lay not with the mayor's office but with the co-op, the tactic of the efforts to restore the originality of the memorial was realigned: now the idea was to involve the residents themselves in a debate about the meaningfulness of remembering. That is how *The Cut* (2015), a collaboration with the Turkish artist Aslı Çavuşoğlu, came about.

The purpose of *The Cut*, a week-long archaeological excavation of one

the artificial plateaus of Muranów — the site of the former Evangelical (Protestant) hospital — was not so much to dig up any buried artefacts as to tackle the issue of the cultural and ethical right of ownership to Warsaw's urbanistic heritage and to initiate a social dialogue on the destructive and productive forces in the city.

A map of Warsaw's spatialised collective memory, created and updated in the course of research projects such as the Muranów one, problematises the need to construct a unified historical narrative, showing just how vulnerable it is to manipulation. It also prompts us to reflect on whether traditional

memorial architecture makes sense as well as on our attitude to ruins and materiality as a part of the historical experience that exists independent of the historical narrative.

THE LIVING MATTER OF ARCHITECTURE

is a concept that accentuates the symbolic value of socialist modernism and the need to preserve the material authenticity of its heritage — an architecture that combines the ideas of European modernism with unique



Dido's Blanket, 2016, temporary minimal architecture, authors: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis); as part of Re-Directing: East Curatorial Residency, Ujazdowski Castle Centre for Contemporary Art in Warsaw; in association with Akademie Schloss Solitude, Stuttgart; photo: Bartosz Górka / Ujazdowski Castle Centre for Contemporary Art



CENTRALA in Movement: Portos, 2014, Ujazdowski Castle Centre for Contemporary Art; choreographic collaboration: Aleksandra Borys, CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis), Weronika Pelczyńska, Marysia Stokłosa, Izabela Szostak, Karol Tymiński; photo: Simone De Iacobis

technological outcomes compensating for the shortcomings of the socialist-era Polish economy.

After 1989, the future of the modernist pavilions and public buildings became uncertain since they were commonly associated with poor building quality. Many were demolished. CENTRALA was one of the initiators of a public debate about the significance and uniqueness of People's Republic of Poland-era modernism. In 2002–2008, the CENTRALA architects carried out a series of media provocations aimed at highlighting the problem of the gradual disappearance of this legacy. They also revitalised, in association

with an investor, a small pavilion that for years served as the ticket office of one of the downtown municipal railway stations. Retaining its original look, it was converted into a café/restaurant. However, the idea of saving the material authenticity of socialist modernist architecture by aligning it with the logic of capitalism is problematic; the revitalised buildings often become the harbingers of gentrification.

Aware of the social costs of strictly commercial projects, CENTRALA has worked with public institutions, including the Ujazdowski Castle Centre for Contemporary Art in Warsaw. A discussion about restoring the original shape

of a defunct shop interior at the downtown Marszałkowska Dzielnica Mieszkaniowa (MDM), housing estate assumed a practical form: the site became a temporary location for artistic residency projects, such as *Learning from Warsaw*, *Make Yourself at Home Guide to Warsaw*, or *Action PRL*.

In 2016, when the decision was made to demolish the iconic Emilia pavilion, originally a furniture store, then serving as the temporary space of the Museum of Modern Art in Warsaw, CENTRALA and Aleksandra Kędziorek inaugurated a debate about architectural *Transplantations*. The idea was to reflect on the socialist



A table-cum-model of Jazdów district accompanying the critical tourism walks, as part of Jazdów Archipelago festival, 2015, Ujazdowski Castle Centre for Contemporary Art in Warsaw; authors: CENTRALA (Małgorzata Kuciewicz, Simone De Iacobis), festival curator: Anna Czaban; photo: Anna Ptak

SPATIALISED MEMORY



Muranów Memorial Housing Estate, 2017, research collage by CENTRALA

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CENTRALA —

Małgorzata Kuciewicz, Simone De Iacobis is a Warsaw-based architecture and architecture research studio, founded in 2001 as a creative interdisciplinary platform by Krzysztof Banaszkowski, Małgorzata Kuciewicz, Jan Strumiłło, and Jakub Szczęsny. Kuciewicz and Simone De Iacobis (who joined the team in 2010) have been running CENTRALA since 2016, pursuing an agenda of independent research, reinterpretation, and interventions aimed at renewing the language of architecture. Authors of dozens of exhibitions, projects in public space, and artistic interventions in Poland and internationally.

Iza Tarasewicz

is an artist, sculptor, author of spatial installations, sound works, and performances. Her art balances between thorough investigation of the material and physical foundations of life, the unity of the organic and inorganic, and a vitalistic approach, intuitive and rooted in practices of rural resourcefulness and craft. Author and participant of numerous solo and group exhibitions around the world, winner of *Views 2015 — Deutsche Bank Award*.

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is a Polish architect and inventor. His uncompromising spatial concepts and syncretic designs combine elements informed by the experience of multiple disciplines — art, geometry, sports. Since the 1960s, author of architectural and exhibition designs as well as large-scale spatial and painting installations. Author of the largest artistic installations ever presented in the public space of Warsaw: *Warsaw. Three Decades* (1974) and *Cloud* (1994). In 2016, Zachęta National Gallery of Art presented his solo exhibition (*Jacek Damięcki. Macro-Forms*).

Anna Ptak

is a cultural anthropologist, curator of artistic research projects, focused on the ecological and political aspects of cultural practices. Editor of books, co-author of the international artist-in-residence programme and curator of exhibitions at the Ujazdowski Castle Centre for Contemporary Art in Warsaw, e.g., *kurz/dust/ghobar* (2015, with Amanda Abi Khalil), *Maja Bekan: 23 Assemblies* (2017), *Blue Box. Five Pieces on a Background* (2016, Izolyatsia, Kyiv).

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Anna Zagrodzka

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Jan Zalasiewicz

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Exhibition

Amplifying Nature

Polish Pavilion at the 16th International Architecture Exhibition — La Biennale di Venezia, Venice

26 May–25 November 2018

CENTRALA —
Małgorzata Kuciewicz,
Simone De Iacobis,
in collaboration with
Iza Tarasewicz and
Jacek Damięcki

curator:
Anna Ptak

Polish Pavilion commissioner:
Hanna Wróblewska

deputy commissioner:
Joanna Waśko

exhibition organiser:
Zachęta —
National Gallery of Art
pl. Matachowskiego 3,
00-916 Warsaw
zacheta.art.pl
labiennale.art.pl

The *Amplifying Nature* sculptural installation designed by Iza Tarasewicz in collaboration with CENTRALA

water basin and seating form produced by
Usługi szkutnicze —
Michał Kozłowski

All models are CENTRALA's designs or reconstructions, created in 2018

model of Jacek Damięcki's *Floating Rotary Pavilion*, as of 1975, produced by
Skiware,
Łukasz Jagoda Studio,
Miroslaw Brzózka
and Anna Wiśniewska

model of *Warszawianka* as of 1972, based, among others, on the drawing Viola Damięcka, produced by
Rapid Crafting

model of *Rain Pavilion*, 3D modelled by
Tomasz Gancarczyk
produced by
Tomasz Gancarczyk,
Zbigniew Latuszkiewicz
and Andrzej Bialik

model of Zofia and Oskar Hansen's house in Szumin, as of 1975, produced by
Łukasz Jagoda Studio

model of *Cabrio House*, produced by
Łukasz Jagoda Studio

floor realisation:
OAK CENTER Zbigniew
Latos

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