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think the link

Hamburg 2030 — Urban Futures

Annette Bögle, Sabrina Gieron, Frauke Kasting,
Maria J. Mujica von Seggern, Kristina Peselyte-Schneider,
Emiliya Popova (eds.)

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Hamburg 2030—Urban Futures

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think the link Hamburg 2030 — Urban Futures

Reflections on urban regeneration processes
and documentation of the second
Baltic International Summer School 2016
at HafenCity University Hamburg

**Annette Bögle, Sabrina Gieron, Frauke Kasting,
Maria J. Mujica von Seggern,
Kristina Peselyte-Schneider, Emiliya Popova (eds.)**

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Foreword



With its approximately 2.400 students in civil engineering, architecture, geomatics, urban planning, metropolitan culture and urban design, HafenCity University of Hamburg (HCU) brings together a wide variety of disciplines with one shared point of interest: how does the future of cities look like? Combining the mentioned disciplines at one university, HCU has an entirely interdisciplinary structure that offers students, partner universities as well as stakeholders of urban planning and building projects a holistic perspective on the trends and developments of the built environment and urban life.

Due to similar traditions in architecture, civil engineering and planning as well as its corresponding interests and fields of research, HCU has decided to focus its regional efforts of international collaboration with the leading universities of the Baltic Sea region. The advantages of this network are obvious: given the in many respects joint history and culture, tradition and structures of the contributing harbor cities, the metropolitan regions face common challenges, such as the changes of the logistic chains, the demographic developments, immigration, integration and many more. Obviously, the research interests must be similar, the results and solutions are widely transferable and also very importantly: most of

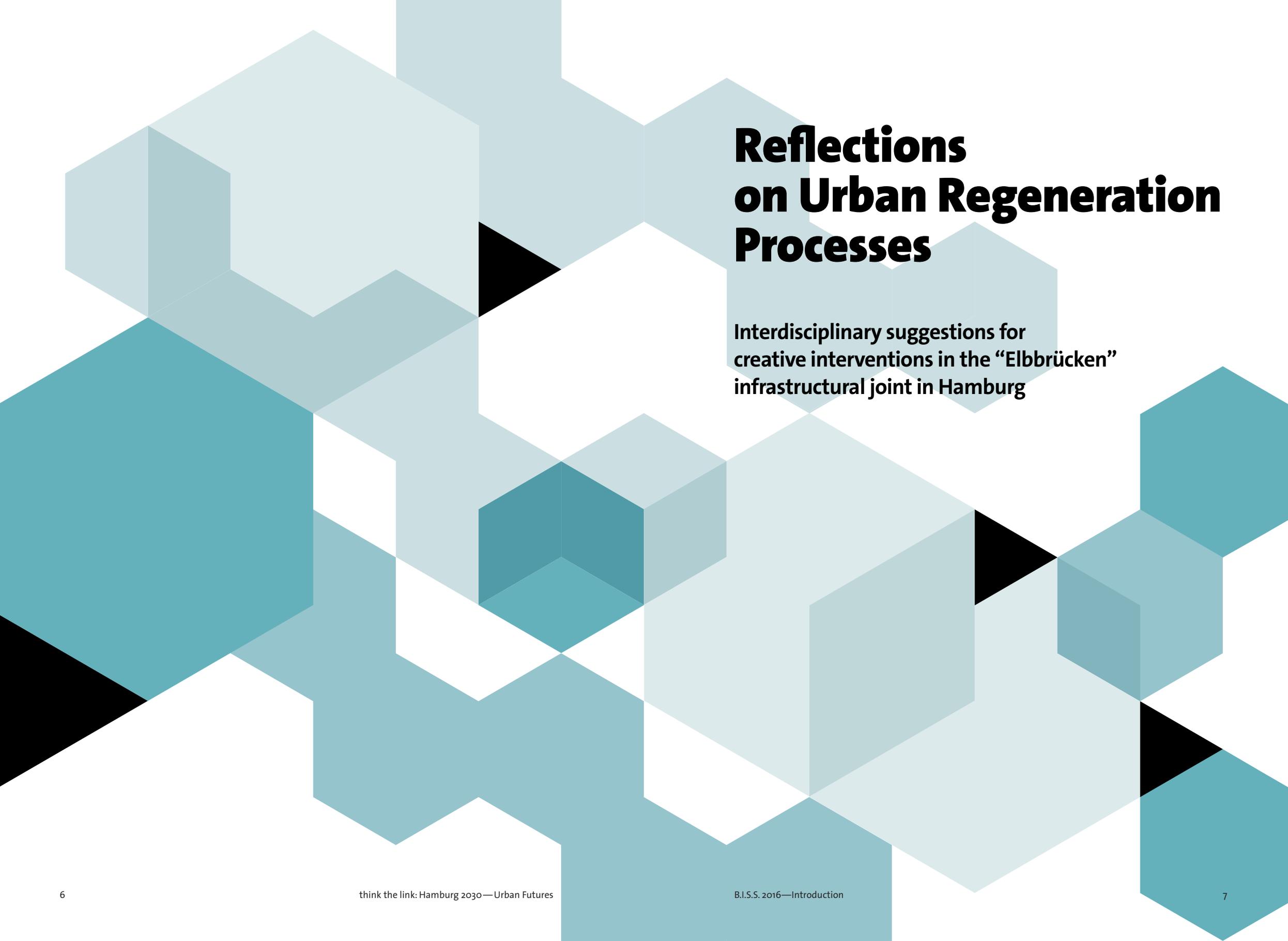
our partners follow a comparable interdisciplinary approach.

This, the extension and deepening of HCU's scientific network with the leading universities around the Baltic Sea, is one of the stated goals of our international strategy. For the purpose of providing our partner universities in the Baltic Sea Region and ourselves with a constant and sustainable platform of continuous exchange, we have installed the annual Baltic International Summer School (B.I.S.S.). The attractiveness of the idea and the success of this event has certainly generated impetus: especially since it has evolved to become the ERASMUS+ program-funded research project "BeInterBaltic" (period 2016–2018), the members of our partner universities have taken up vivid exchange over all institutional layers, resulting in even more research projects and in some cases also in personal friendships.

We enjoy hosting this lively and exciting event and wish the B.I.S.S. participants interesting workshops, presentations and discussions, so as to create many more cherished memories.

Dr.-Ing. Walter Pelka

President of HafenCity University of Hamburg



Reflections on Urban Regeneration Processes

Interdisciplinary suggestions for
creative interventions in the “Elbbrücken”
infrastructural joint in Hamburg

Hamburg 2030— Urban Futures

Baltic International Summer School

Annette Bögle

Challenges like migration, globalization, climate change or political and economic uncertainty will irrevocably change our cities and our way of life. Adequate methods and strategies to deal with these challenges are needed, which is why the second Baltic International Summer School (B.I.S.S.) looked at how to do so. With the topic “Hamburg 2030—urban futures,” the B.I.S.S. developed new perspectives for the near future by dealing with utopian scenarios and sought to find answers for realistic specific questions. Consequently, the projects focused either on a general method to deal with the challenges generated by weather and irreversible conditions, such as in “The Arrival City—How to facilitate the Unintended”, “Risking it All” and “Sensing the Future: Designing Solutions for the Unknown” or they focused on a task aligned to a specific problem needing to be looked at, like with “Energy Flow”

and “3 Hours of Sun” as a central theme. All these sub-topics were set in Rothenburgsort, an eastern district of Hamburg that is facing major changes, and its surroundings.

These complex themes require cooperation and understanding among the disciplines as well as different competencies to interact successfully. It is the universities’ task to lay the foundations in academic education to overcome the difficult barriers that arise from a lack of understanding. The universities need to proactively frame and address the complexity of interdisciplinary practice.

The initial idea of the B.I.S.S. is based on this understanding. It is an innovative workshop, which aims to develop, test and implement new ways of interdisciplinary teaching, learning and designing. After



the sustained success of the first B.I.S.S. that took place in 2015, the same partner universities from Poland, Estonia, Sweden, Russia, Finland, Russia and Denmark launched the second summer school. The second B.I.S.S. is part of the ERASMUS+ project BeInterBaltic, just as B.I.S.S. 2017 and 2018 are. It took place from August 12 till August 20, 2016 under the patronage of the Second Mayor of the Free and Hanseatic City and Senator for Science, Research and Gender Equality, Katharina Fegebank.

Working interdisciplinary and internationally

The B.I.S.S. as well as the BeInterBaltic project seek to spotlight the impact on the disciplines in an interdisciplinary context. Having this in mind, we aimed to create an atmosphere in which every discipline was equally challenged and appreciated at the same time. Each discipline challenge was approached by a solid group structure, which would only allow one discipline (and nation) in one group—meaning a maximum of one or two participants representing their discipline within their group—just as is the case in our professional working environment.

The positive, respectful and cooperative atmosphere was achieved by a smart group-finding process in which—given the solid structure—the students could choose with whom they wanted to work with on a personal basis. This group-finding process combined individual personal experience—preparing a meal together—with intellectual input in form of a subject-related presentation by each participant, drawn up in advance of the B.I.S.S. Additionally, this process included the choice of the sub-topic, which was represented by a team of mentors. In order to agree on a project and on a mentors’ team and to find new ways and solutions for their challenges, each participant had to leave his or her comfort zone and ideally find new solutions in their own discipline in order to cooperate successfully with the others.

Mentors’ team

The backbone of the B.I.S.S. were the mentors; young teachers, researchers or practicing planners from the participating universities. Like the students, they represent the different disciplines of the build environment, such as Urban Planning, Urban Design and Architecture as well as



Civil and Structural Engineering or Environmental Engineering. During a preparation workshop and based on their own research topics and methods, they matched into pairs and worked out their sub-topics. Each mentors' team supervised two or three groups of students. The students could thus not only choose experts in different topics but also experiment with different research methods. This very individual mentoring enabled an atmosphere of understanding and appreciation of the other disciplines, of creative work and reflection.

Scientific input and social interaction

The nine days at the B.I.S.S. were unique and the excitement was tangible. To allow this sense of excitement to unfold, social interactive tasks and excursions were part of the scientific program. These included ice-breaking activities on the first day as well as the farewell party on the last day. To stimulate the scientific approaches with creative input, Harald Kloft (osd—office for structural design) and Bartłomiej Halaczek (Knight Architects) presented outstanding public keynote lectures. Additionally, the participants met every morning for the so-called “Food for the

day” lectures by participating professors or invited lecturers for further thematic input.

I would like to sincerely thank all the participants, mentors, experts, lecturers and supporters of the B.I.S.S. 2016 and look forward to seeing you and new young professionals at B.I.S.S. 2017!



Sensing the Future: Designing Solutions for the Unknown

Katarzyna Urbanowicz and Viktorija Prilenska

Sensing the Future—the Context for the Proposed Topic

Our cities, our homes and the world around us are constantly transforming. Furthermore, not only can we see the tremendous difference between nowadays and previous centuries, but we also notice significant changes influencing our lives even through the last decades. There are multiple factors, such as technological developments, increasing population, climate change and many others that contribute to or directly cause the transformation of experience on a global scale, but also affect our everyday lives and us ourselves. Our sensory perception of space has changed through time, since “the sensorium is a historical formation,” to borrow David Howes’ explanation of “the continuum of perception.”¹

“The objects we perceive in our surroundings—cities, villages, fields and woods—bear the mark of having been worked on by man. It is not only in clothing and appearance, in outward form and emotional make-up that men are the product of history. Even the way they see and hear is inseparable from the social life-process as it has evolved over the millennia.”²

Unfortunately, the scientists and researchers from diverse disciplines studying sensory perception acknowledge the long-term tendency of sensory impoverishment in the contemporary cities, architecture, urban spaces and everyday lives. Already in 1966, Edward T. Hall pointed out that Americans living in urban and suburban environments had less and less opportunities for valuable sensory experiences. Hall states that man’s sense of self is closely related with his space perception and since quite some time it is constructed “from the bits and pieces of sensory feedback in a largely manufactured environment.”³ Nowadays, as Juhani Pallasmaa notes, modern architecture, instead of empowering our senses and imagination, more often narrows down our perception to calculated visual effects.⁴ Edward Relph argues that in our modern era, an authentic sense of place is gradually being overshadowed by a less authentic attitude that he calls “placelessness”: “the casual eradication of distinctive places and the making of standardized landscapes that results from an insensitivity to the significance of place.”⁵

“Is it possible to combine the different approaches to contemporary urbanism with

a ‘sensorial urbanism,’ capable of offering a broader understanding of urban settings, interested in describing the character and atmosphere of places, and aiming to contribute to a new definition of public space?” asks Mirko Zardini, proposing “an alternate approach to urbanism.”⁶ The importance of the sensory quality of our surroundings is not negotiable. It is also a fact that contemporary cities and modern architecture tend to become even more impoverished according to their multi-sensory characteristics. Fortunately, more and more researchers and practitioners focus on developing the knowledge on this subject, advocating their conclusions and actually improving the sensory quality of our urban experiences.

The interdisciplinary student workshop organized within the second Baltic International Summer School 2016 at HCU in Hamburg, under the title “Hamburg 2030—Urban Futures,” seemed to be a perfect occasion for inspiring the students not only to unfold their sensitivity and learn to absorb the space recognizing the fullness of the multi-sensory experience, but also to reflect on the possible future image of the cities concentrating on the sensory perception and emotions in the utopian future.

Utopia is a neologism coined by Thomas Moore in his novel “Utopia” depicting a perfect society.⁷ The word “utopia” is a combination of Greek words ou—“not,” and topos—“place,” and literally means “nowhere.”⁸ In scholarly literature, there are multiple interpretations of utopia. Sargent defines utopia as “a non-existent society described in considerable detail and normally located in time and space.”⁹ Sargent adds that generally utopia is used as an equivalent of eutopia, eu—“good,” which is considered to be a better society than the existing one.

It is acknowledged that contemporary urban planning has its origins partially in

utopian tradition (Renaissance ideal fortification towns).¹⁰ Furthermore, main features of contemporary cities resulted from utopian models: separation of pedestrian and vehicle traffic (Henard, 1910, Rue Future; Garnier, 1917, Une Cite Industrielle), functional zoning (Garnier, 1917, Une Cite Industrielle), the use of prefabricated systems (Le Corbusier) and housing standards (Howard, 1898, Garden City).¹¹ However, the experiments to put utopia into practice generally failed.^{12,7,13,14} Aside from this, utopia as an architectural problem is outdated, since contemporary cities are less defined by spatial layout than before the modernist era.^{7,11} What is the purpose of utopia nowadays?

According to Coleman,^{12,11} the objective “is not to construct a Utopia, rather it is to imagine superior forms (or frameworks) for human inhabitation that emerge out of the critical moment Utopia shelters and which conventional practice obscures.” In other words, utopia firstly provides a critique of existing spatial and social order¹¹ and secondly serves as a catalyst for social and spatial change.¹⁴ Utopia identifies existing aspirations or anxieties, amplifies and extrapolates them into the future resulting into utopia or dystopia and thus initiates the debate about the development vector of the city (Archizoom, 1970, No-stop City; Archigram, 1964, Plug-in City).⁷ Utopia also provides “a horizon, a place beyond reach, but within view, [by aspiring to which] people could become active in the production of a better world.”¹⁵ It is necessary to emphasize that utopia nowadays has transcended the field of architectural and urban form and entered the social field. The key question that utopia has to answer is “what sort of city for what sort of society?”¹⁶ Thus, spatial configuration of the city is the result of social processes, not vice versa.

There is an ongoing debate about current neoliberal, free market, capitalist society and utopia (Bloch, Harvey, Coleman).

Coleman states that in contemporary society, architecture and the city are being commodified, reduced to technical, visual aesthetic and/or economic aspects.¹² The architectural and urban design are thus purposeless, “stripped of ideology,” resulting in the production of meaningless environment, which provides basic needs of “love, sex, fun,” but suppresses the desire to imagine and long for alternatives.^{12,7,13,14} The aim of utopia, nowadays, is to free planners and designers from market interests and encourage them to invent better social and spatial environments.¹⁴

Within the scope of the B.I.S.S. workshop, mentors from the universities participating in the project proposed different approaches and methodologies to the general theme of utopian Urban Futures. Students from different countries with different educational backgrounds in the architectural or engineering sectors formed several dynamic interdisciplinary groups. Two of the groups decided to work under the proposed topic: Sensing the Future: Designing Solutions for the Unknown, subdivided further into the projects: **Hyper** ▶ p. 78 and **What if Bridges Die?** ▶ p. 84

Designing for the Unknown— Methodology and Design Process

The main goal and focus for the groups was the sensitive approach and the experimental design process during the workshop rather than the final product. The timeframe included three main stages: 1. defining existing qualities of a place; 2. building a scenario of the future; 3. imagining the future qualities of the place.

As architects and engineers rely mainly on visual recognition and representation of the space, the students were encouraged to focus on the non-visual perception of spaces and to document their experiences through alternative media, such as soundtrack or text. Inspired by the words of Jean Nouvel: “I mistrust drawings as fix-

ing things too early in the creative process, while words liberate,” students visited the area of Rothenburgsort and collected individual sensory experiences. The students tried to capture the atmosphere of the places, concentrating on sounds, smells, textures and on their emotions in the places. They were very open-minded, some of them collected samples of plants, others lay down on the ground, tested the echo of the spaces or experienced the texture of the paving with bare feet. At the end, each group combined their notions and descriptions in a sensory map of the area, which was a helpful tool in specifying their focus and field of interest for the project.

In the second stage, both groups brainstormed together on the factors that might shape the future. The factors were restricted to those with an articulated spatial impact, such as new modes of transportation and building production, overcrowding weather conditions and alike. Within the groups, students picked three random factors and developed a scenario based on them. In the scenarios, students had to focus on spatial and sensual implications of the factors. To introduce the effect of the unexpected, which is often the case while imagining the future, students swapped the scenarios and con-

tinued developing their projects based on the scenario generated by the other group. Swapping the scenarios was an unexpected turn, which made students reconsider their approach towards the design for the future. Students acknowledged certain futility of providing solutions for the future, since the future is uncertain and might differ from our forecasts and expectations. This insight encouraged students to develop abstract and artistic projects that raised questions rather than gave answers.

In the third stage, students developed group projects based on the outcomes of the previous two stages. They had to re-imagine the existing place according to the scenario. There were no requirements towards the medium of the project, thus students were free to experiment and express themselves without any imposed limits. The works of both groups were very impressive, especially considering that students had to experiment with new methods, tools and media, including scriptwriting, sound and video recording, and movie-making. Hopefully the workshop opened new perspectives for the students, stimulating their sensitivity and inspiring creativity, which will help them in their future practice.

Project 1: Hyper by Anna Else Burisch,
Linnea Löytönen, Aleksandra Papunova



Project 2: What if Bridges Die?
by Nikita Mary John, Helina Maalt,
Emilia Miszewska-Urbańska,
Hanna Närhi



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- 16 Gold in Pinder, D. 2002. In Defence of Utopian Urbanism: Imagining Cities after the “End of Utopia.” *Geogr. Ann.*, 84 B (3–4), pp. 229–241: p. 232.

Risking It All or Here Comes the Flood

Karl Eriksson and Hanna Obracht-Prondzynska

The added title to our topic was borrowed from Peter Gabriel’s biblical ballad “Here comes the flood.” The song offers a labyrinth of interpretations^{1,8} (let’s not get lost so early on), but the title’s directness and its underlying plea that salvation lies in surrender spoke to us. Our outset for the summer school was to embrace the challenges and see risks and dangers as opportunities and possibilities rather than threats. The very relatable—especially in Hamburg—matter of flooding exemplified it. Can flooding be considered from a different perspective than the prevailing one, which is to secure and insure against it?² Instead of safeguarding and protecting ourselves or our property, can we as designers anticipate radical changes and embrace them? Can we have political, economic, social, environmental changes working for us? Indeed, Harvey wrote that the right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city.⁷ We were imagining a utopia where cities, (infra)structures, and architecture flow with the current instead of trying to swim against it. We were ready—bring the flood on.

That was our outset but indeed not the outcome—and we were happy that this was the case. During the intense days of B.I.S.S., the students worked fearlessly and without ever cutting corners or falling into the habit of taking the easy way out. The three groups distinctively wandered in different directions, exploring and debating, individually and together on the subject of flooding, ownership, the passing of time. If the overarching topic did not directly tie these three projects together, the approach and the methodology—represented foremost by the drawing—became the uniting factor. The directness and clarity, but also seducing ambiguity that can be found in the drawing, were pushed to their limits in each of the groups’ explorations. Using a collage of techniques—hand drawings, photos, models, videos, sounds—the groups shaped their projects into inquisitive explorations that didn’t provide answers, but asked the right questions.

Methodology played a key role on this journey. Method comes from the Greek *metá* (after, beyond) and *hodós* (motion, journey), and if we work on the premise

that B.I.S.S. is an exploration, it becomes even clearer that the goal is not the result, but the journey itself. This approach was covered in Morten Lund's inspirational lecture that focused on collaboration, an open mind, and prepared us to expect the unexpected. To achieve these, we needed a method and a map—a scenario—but a map without a specified start or finish. All three different projects followed this *modus operandi*, and we think that the seeds of projects that were sown during this extended week will continue to grow long after the end of B.I.S.S. 2016.

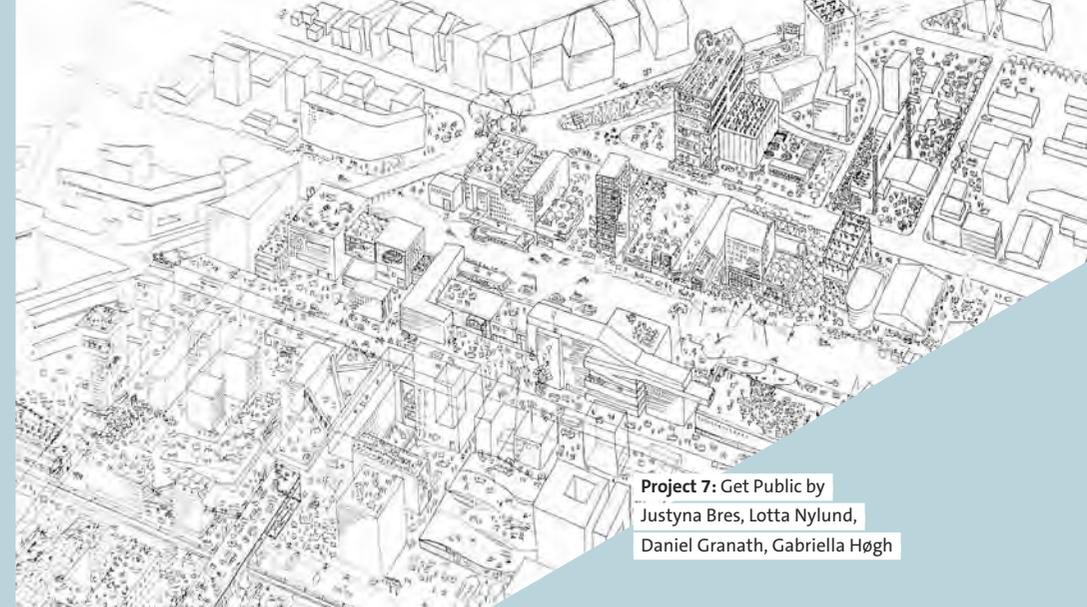
Even though at first the three scenarios, our maps, seemed to be dystopian visions for the future (indeed without a start or a finish), the (un)completed³ projects contained to our surprise many elements that addressed the realities of the present. Perhaps it is the effect of looking at utopia not as a projection of the future—even though utopias are often perceived in this way—but as a projection of the past or present, as if they were the future⁹. The discussion centered on a set of themes, all stemming from the challenges society is facing today: overpopulation, migration and rapid urbanization, environmental changes resulting in re-occurring extreme weathers, political shifts and economic crises. What approach to architecture and urbanization can emerge from these premises? As Rorty emphasized: to understand future architecture, we must first understand future society.¹⁰

The project **Get Public** ▶ p. 115 resonates with the architectural office Dogma's proposal for the 2013 Tallinn Architecture Biennale, the theme of which was "Recycling Socialism"¹¹. Dogma did not actually recycle any existing socialist utopian project, but used architecture as an instrument to form and define a collective. In a similar way, **Get Public** utilizes the drawing to formulate a new setting for what a collective can be and shows an alternative to the way we live our lives today. What

can we lose and how much can we share, can we share everything? What is the bare minimum we need? With wit and wisdom, the project inspires a drastic take on revolution. It is not trying to reshape the city within the currently existing framework. First we must abandon the existing framework⁴—the concept of ownership and the public/private dichotomy—then we can start thinking about remodeling the city. In these gloomy days, when a tax-evading misogynist tycoon with extremist views is sworn in as the president of America with the promise to create a nation that hails selfishness, intolerance and greed, **Get Public** offers a much more welcome critique of neo-liberal ideas and privatization of public space and assets.⁵

The British architect Sir John Soane (1753–1837)—who set up the Bank of England and whose house at 12–14 Lincoln's Inn is a fantastic museum—was fascinated with ruins throughout his life. Piranesi's 18th century mythological etchings of Roman ruins had a big impact on him and he was a dedicated collector (which is why his museum is so fantastic). A large drawing of the Bank of England by his draughtsman Joseph Gandy (1771–1853) is also among the artwork in the museum. It depicts Soane's architectural masterpiece as a ruin, open and wounded but as part of a landscape—because eventually everything returns to dust. Just as Gandy's drawing shows the passage of time, the project **Set the Pace** ▶ p. 121 depicts a slowly changing cityscape in contrast to the rapid change often brought about by gentrification and regeneration. As a counterbalance to the capitalist maxim that value generates value, can devaluation of space be seen as a design tool? Can deconstruction and demolition be operated to shape public space?

That is what **Set the Pace** proposes: slow down and let the hands of time work. As degradation of the city sets in, instead of the typical recipe of development, **Set the**



Project 7: Get Public by
Justyna Bres, Lotta Nylund,
Daniel Granath, Gabriella Høgh

Pace suggests a different formula: a non-construction. Instead of rebuilding, modernizing or rehabilitating—the usual components of regeneration and gentrification—the city is, in a programmed way, given back to nature. In surrender lies salvation. Nature in turn reshapes the city step by step, a choreographed event but with scope for improvisation and tells the history of the city anew. This vision re-sounds the tale of the city Zora from Calvino's novel *Invisible Cities*: Zora has the quality of remaining in your memory point by point, in its succession of streets, of houses along the streets and of doors and windows in the houses, though nothing in them possesses a special beauty or rarity. Zora's secret lies in the way your gaze runs over patterns following one another as in a musical score (...). The man who knows by heart how Zora is made, if he is unable to sleep at night, can imagine he is walking along the streets and he remembers the order (...). This city which cannot be expunged from the mind is like an armature, a honeycomb in whose cells each of us can place the things we want to

remember (...) Between each idea and each point of the itinerary, an affinity or a contrast can be established, serving as an immediate aid to memory.⁶

The 2nd Movement ▶ p. 109 appears in a future world where reoccurring floods have become commonplace. How do we adapt to such a situation with extreme conditions and can potential disaster bring something good? The project skillfully turns the disaster and dissonance into awareness and sound. No retaining walls or flood barriers are proposed; instead the threat of flooding is treated as an opportunity. A sound-based awareness system adds new frequencies to the existing sounds of the city. As the water levels rise, so does the volume and thus the awareness. The shifting sounds of nature and environment are brought back to the city. This, once again, resonates with Calvino: our cities have, unfortunately, lost their echo. Wide, open spaces of modern streets do not reflect sound, and sounds are absorbed and censored inside modern buildings.⁶ (...) Our ears have been made deaf.

The 2nd Movement succeeds in a poetic way to bring back the echoes and noise of the city, and at the same time address environmental crises and extreme weathers that we are likely to face.

The outset for the workshop was not to find solutions or answers but to raise questions and find an approach to many of the challenges that we are facing today. How can design formulate a way forward, a route ahead instead of simply a finished product or solution? Confronted with the final three projects (and all the other amazing projects conceived during the B.I.S.S.), question after question spring to mind: how can we endure extreme conditions, can we live without possessions, how can we set our own pace, are there alternatives to regeneration, what do we want our future cities to look like, how can design be resourceful? The projects do indeed propose answers to these questions but most importantly, they open up to a further set of questions and interpretations. And in doing so, they make sure that the discussions held during the B.I.S.S. don't end with them. Upon writing this essay, it's been almost half a year since our time at B.I.S.S. 2016 in Hamburg. But maybe it is an inherent feature of such an adventure as the B.I.S.S. that the journey never ends. Each moment, each question, each discussion are just a part of the whole that generates further ideas and new questions. It is also true in a more pragmatic aspect — we know for sure that there will be a B.I.S.S. 2017, and we are convinced that the questions raised and discussions held in Hamburg last year will continue throughout this year and beyond. Let the flood continue!

Project 6: The 2nd Movement,
by Joanna Kordemets,
Natalia Lipczuk, Tristan Schmedes,
Martin Schmidt Lauridsen



- 1 “When I wrote this song [Here Comes The Flood], I had an obsession with short-wave radio and I was always amazed at the way in which the radio signals would become stronger as daylight faded. I felt as if psychic energy levels would also increase in the night. I had had an apocalyptic dream in which the psychic barriers which normally prevent us from seeing into each other's thoughts had been completely eroded producing a mental flood. Those that had been used to having their innermost thoughts exposed would handle this torrent and those inclined to concealment would drown in it.” Gallo (1986).
- 2 From early December 2013 to the end of February 2014, the steel gates of the Thames barrier, a gargantuan shining structure that prevents Central London from being flooded, were closed a record-shattering 50 times. That accounts for almost half of the times the barrier has previously been closed since it began operating in 1982. This is predicted to become the new norm when extreme conditions affecting tides, storms, the sea level and rains become commonplace.
- 3 The projects were always considered unfinished in the sense that they were only seen as seeds being sown. We were not looking for solutions or answers at this point.
- 4 Elia Zenghelis, the co-founder of OMA, proposed that architecture should do “acupuncture with a big needle,” but what if that needle was instead used to puncture the bubble that represents the existing framework? For further reading, see Log 30 and Log 34.
- 5 As if Trump and Brexit were not enough, in September 2016 Patrik Schumacher, director of Zaha Hadid Architects, presented his vision of our future society: abolish social housing, scrap prescriptive planning regulations and usher in the wholesale privatization of our streets, squares and parks.
- 6 Calvino, I. 2013. *Invisible Cities*. Lublin: W.A.B.
- 7 Harvey, D. 2012. *Rebel Cities: From the Right to the City to the Urban Revolution*. Warsaw: Bęc Zmiana.
- 8 Gallo, A. 1986. *Peter Gabriel*. London: Omnibus Press
- 9 Foucault, M. 2011. Other spaces. *Embodied Utopias: the time for architecture*. [in:] Świątkowska, B. (ed.) *That something on the horizon. Architecture of the 21st century*. Warsaw: Bęc Zmiana. pp. 125–135.
- 10 Rorty, R. 2000. *Philosophy and Social Hope*. New York: Penguin.
- 11 van Gerrewey, C. 2015. *How Soon is Now? Ten Problems and Paradoxes in the Work of Dogma*. [in:] Log 34, Fall 2015. New York: Storefront.

Internet

<https://www.theguardian.com/artanddesign/2016/nov/24/zaha-hadid-successor-patrik-schumacher-art-schools-social-housing>

Further Reading

Log 30, Cynthia Davidson's interview with Elia Zenghelis.

<https://www.theguardian.com/artanddesign/2016/sep/11/zaha-hadid-architects-patrik-schumacher-blueprint-future-parametricism>

Adaptive Design for Severe Climatic Scenarios

Emanuele Naboni and Kai Schramme

Number of events

Relevant natural loss events worldwide 1980–2016



Accounted events have caused at least one fatality and/or produced normalized losses \geq US\$ 100k, 300k, 1m, or 3m (depending on the assigned World Bank income group of the affected country).

Figure 1: Natural Loss Event 1980–2016.

(Source: Munich RG NatCatSERVICE), © 2017 Münchener Rückversicherungs-Gesellschaft, Geo Risks Research, NatCatSERVICE—as at April 2017

Scientific-Based Hypothesis of Climate Change

Our desire to live in cities has never been stronger. According to the World Health Organization, 60 percent of the world’s population will live in cities by 2030. As urban population increases, climate change becomes more tangible. The impacts on cities, caused by extreme weather events due to climate change, are rapidly increasing. Some effects of the planet getting warmer can already be felt, and further serious consequences are likely to occur.

These changes vary from region to region, but general trends are evident: change of precipitation patterns and heavier downpours even in areas where overall precipitation declines; longer, hotter and more frequent heat waves; rising sea levels due to melting glaciers and land-based ice sheets; loss of both sea ice and protective snowpack in coastal areas; stressed water sources due to drought and decreased alpine snowfall; and “positive feedback loops”—consequences of warming that cause further warming, such as melting sea ice decreasing the capacity of the

northern oceans to reflect solar radiation back out of the atmosphere (figure 1).

Contemporary measures connected to cities and building design are related to mitigating (preventing or slowing) the impact on climate change. However, given the slow pace of climate policy changes and the still-contentious political climate, no amount of mitigation will prevent potentially devastating impacts; it’s necessary to adapt. The proposed workshop seeks for adaptive design solutions that respond to extreme and speculative climatic scenarios in Hamburg.

As for today, most of these strategies for adapting cities and buildings to the effects of climate change are aimed at mitigation and can be characterized as prescriptive and relatively straightforward. The adaptive answers to climatic challenges should be more systemic and are likely to be far more comprehensive. The framework to which the workshop inscribes is a system that combines the return of degraded, damaged or polluted sites in Hamburg to an acceptable state of health by means of

human intervention with projects that restore the connection between people and extreme climatic conditions; it means that places re-earn their capability of self-organizing and evolving in a context where humans have a role to play.

In the same workshop, it became evident that an Adaptive to Severe Climate design entails interdisciplinary competencies being systemized to design technologies and strategies that regenerate Hamburg’s resources supporting all life in social and ecological sets. The students were thus given a series of climatic scenarios and were asked to find adaptive solutions.

Habitats for Humans ▶ p. 162

–50 +75 °C Dry, Reduced Atmosphere
This scenario was inspired by the Gobi desert and extrapolated to –50 °C at night

and +75 °C around noon during the course of one day, assuming the earth’s atmosphere is reduced to the point that our moderate conditions are not sufficiently protected.

3 Hours of Sun ▶ p. 150

The possible occurrence of this scenario of which there are only three hours of sunlight each day may be derived from a polluted, dense atmosphere or locations that are either in the very northern or southern hemisphere.

Embrace the Wind ▶ p. 156

Storms, Hurricanes, Tornados
Predictions of global warming forecast an increasing regularity of extreme windstorms. This scenario predicts an almost continuous presence of such windstorms and related consequences.

Each of the groups needed to find hyper-specific design solutions for the island of Kaltehofe in Rothenburgsort, Hamburg. The island was formerly used to filtrate water of the river Elbe in order to provide clean water for the residents of Hamburg. The basins as well as the infrastructure of tunnels still exists and is left for renaturation purposes, today functioning as a natural reserve (figures 2 and 3).

The workshop attempts to propose a network approach based on the analysis and correlation of customized climatic data as a premise for the students' design visions. The students were to take into account the climate, ecosystem, city, buildings and human variables, as well as their interdependencies and make decisions that impact each of these components positively. Embracing the complexity of such networks by modelling them and their links with extreme climatic events adds a layer of complexity to the design process. The students needed to contribute by developing their own multidisciplinary design methods and specific tools.

Students Design Methods

The students developed a series of strategies for each of the climatic scenarios. Ar-

chitectural solutions were proposed in which the buildings were conceived to be adaptive, thus able to play with different series of environmental flows that were just regulated, enhanced, attenuated, rejected or entrapped. Each group of students designed transient and dynamic operations, buildings, components, robots.

In a coherent way, with the concept of an architecture that evolves and develops to serve the needs of its people, the students sought to trace the fluctuating parameters of the community of the future. The responsiveness of their design to climatic and human changes posed high design challenges that required the specific ability of the three teams to project design scenarios and use of interdisciplinary tools to model climatic events, buildings' adaptive behaviors and human conditions.

While some of the students moved towards a data-driven design, most of them developed intuitive answers to the climatic challenge. They used sketching and collages to promote adaptive designs that included multiple perspectives or waves of complexity, yielding viewpoints and concerns, thus establishing more holistic design tactics. They created experimental

models and graphics rather than numerical series and charts. While not every proposed design had the full grasp of the mathematics that governs physical phenomena, they furthered general intuition and abilities to synthesize in sketches the relationship between building operations and human activities.

A variety of first principles of physics were invoked. For example, one group focused on the first principle of heat transfer applied to heat loss and to reducing such loss. First principles of thermodynamics were applied to the efficient generation and delivery of heat, the transport of heat away from buildings for cooling, and the increase of associated efficiencies in order to reduce energy use.

Another group explored aspects of illumination, relating to lighting energy use, and the human interaction and ergonomics of lighting. Besides the physical principles, the group used the scenario, which in their story had climatic dystopian origins, to develop a strategy for not only coping with the environment but also for which measures should be realized to improve the climatic conditions in the future. By doing so, the project illustrated how tech-

nique and scientific thinking can be a driver of prospect (figure 4).

A third group played with the first principles of fluid dynamics and discussed such building-related phenomena as "stack effect" buoyant airflow through buildings. By such analysis, different shapes and their effect on disturbing the airflow were investigated. Even though the scenario given was negative, many thoughts went into how these constraints could be used in positive ways, i.e. embracing the windstorms and using them as a feature of the space.

Due to the coexistence of architectural and engineering students within the three groups, all students equated sustainability with visible technology, quantifiable climatic efficiency or its visible hardware. They proposed a complex reality that included social, technological, and aesthetic values.

Interdisciplinary Design as the Foundation of Future Adaptive Design

Climate change impacts affect the operation and performance of a wide range of infrastructure and lead to demand for new or modified designs, adaptation in



Figure 2: Remnant of water filtration on the island of Kaltehofe (photo: the project team)



Figure 3: Area map of the Kaltehofe Island. Intervention of an open street map.

Energy Flow

Amelie Rost and Mathilde Landgren

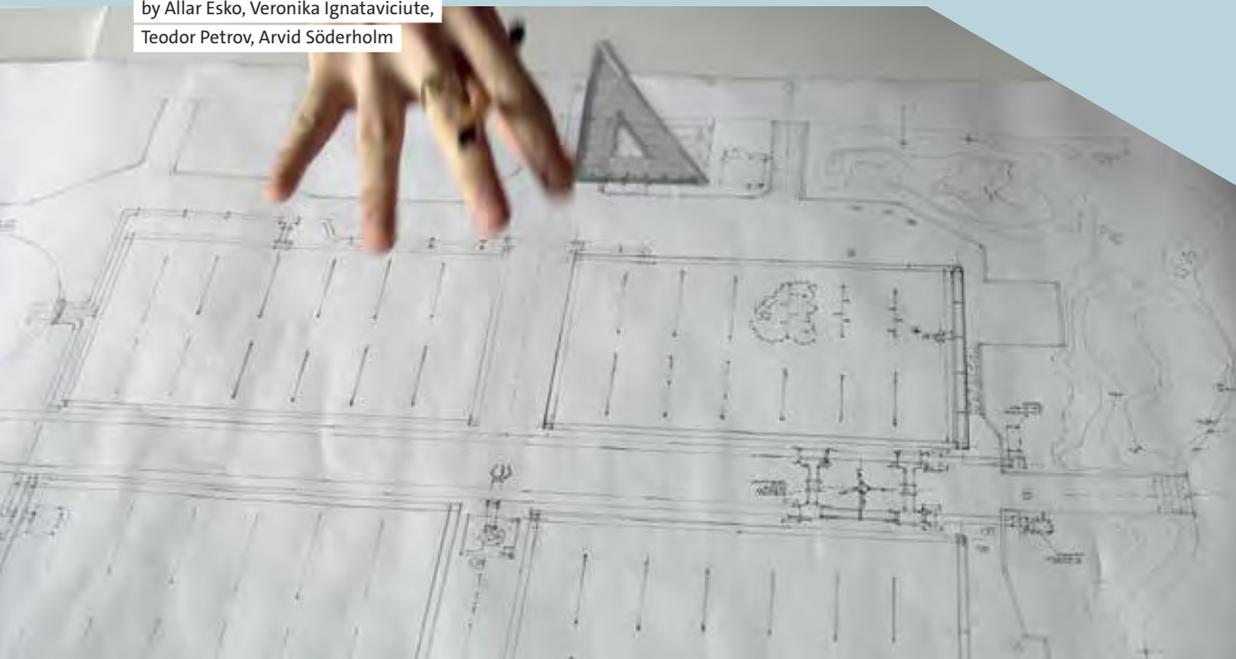
management strategies, and new technologies. Effects on transportation, energy, building and water systems, materials, and other infrastructure components are already occurring. Climate change adaptation is critical for architectural design and engineering. Students of today need to be leaders in preparing for and responding to climate change.

Adaptation to climate change has always occurred through generations, with constant improvements, feedback evaluations, and “survival of the fittest” design solutions based on certain fitness criteria. However, the velocity of climate change superimposes immediate solutions that need to be based on interdisciplinary knowledge as was shown in the workshop.

The work of students made it clear that it is no argument that the practice needs to embrace interdisciplinary design strategies, methods and tools, expanding its design scenarios and exploring traditional and advanced processes, methods and tools to conceive, develop, test and implement innovative and holistic sustainable solutions that celebrate the richness of design when adapting to climate change.

In the Climate Change Adaptation workshop, students developed new skills and tools to meet the challenges in a severely changing climate, including: climate change projections for engineering design, data-driven solutions, adaptable architectural engineered and natural systems, maximizing benefits while minimizing costs and risks, human-infrastructure interaction under climate change. Investigating these interdisciplinary topics enabled the development of new solutions for resiliency efforts that maximize the performance and life-cycle cost-effectiveness of climate-ready infrastructure investments.

Figure 4: 3 Hours of Sun (Project 13)
by Allar Esko, Veronika Ignataviciute,
Teodor Petrov, Arvid Söderholm



Rothenburgsort

The area of Rothenburgsort is a complex area that has a large variety of urban structures and usages (industries, residential, offices, etc.), separated and crossed by different urban water typologies (tidal water Elbe, channels to dry the wetlands, mud flats, etc.). Due to its location close to the inner part of Hamburg and to the growing Hafencity, also because of the rising demand for residential accommodation, there is enormous political interest and pressure to densify Rothenburgsort.

To work with Rothenburgsort and to develop a future vision for it means to work with the existing building structures as well as with the existing water structures.

“Energy Flow”

“Energy Flow” in this context meant to see both the existing building and the water structures as a resource, as an existing energy that should be kept and just be developed further. The aim was to find or rather create the “missing link” between the existing structures and the demands of the future.

Water as a Spatial Resource

The topic “water” gives a few options to work with it and to see it as a resource. Wa-

ter is a resource as a way of transport, for food production, as an energy reserve, etc. But water is also a spatial resource. It is not only a spatial quality for cities by the water, it is rather also a space reserve, a spatial potential to densify and/or enrich cities with buildings on the water. A few cities already work with water to this end. Alongside Amsterdam, famous for its houseboats and new floating houses, Copenhagen, too, with the architectural firm BIG designing and planning the Harbor Bath, has started to use the water to similar effect (figure 1).

But floating parks on the water are also conceivable, as evidenced by the pontoons along the redesigned Seine river banks in Paris. Here, four pontoons with different thematic programs are moored, allowing different uses, such as a playground for children or a green recreational space in the middle of the city (figure 2).

For Hamburg, the architectural firm BIG even proposed a floating Alpenwiese in 2009, which was meant to become a hybrid between a floating space on the roof and an event space inside. For various reasons, the project has so far not been implemented.



Figure 1: Floating Houses in Amsterdam, Netherlands, © Amelie Rost

And in London the Floating Cinema (Dugan Morris Architects) shows another option to use the water as a resource. Built on the body of an old ship, the construct allows not only the cinema use on the ship itself, but can also, depending on the site, include the environment in the usage. Depending on where it is located, one bank could then hold the screen and the other bank the auditorium. The connection of both sides of the river is then a purely mental and above all temporary connection. When the ship casts again, the connection is no longer there.

All the projects were designed on the water for different reasons, but they all use the water as a resource to enrich the cities with new uses on it. They add new functions on the water and in this way allow people to experience the city from a new perspective.

Change Perspective: Everything Is a Resource!

Not only water is a possible resource for keeping the existing energy flow, but also the unused parking areas or industrial buildings can be seen as a resource. By transforming and reusing the existing facilities in a new way, the energy flow keeps floating in the area and bringing new possibilities. The open unused spaces, such as parking lots, can embrace the rising water levels and create a semi-dry-wet zone. A zone where playful ideas can emerge, including social interaction, urban farming and alternative future transport.

The existing buildings can be transformed into new functions or maybe even flexible usages to accommodate future unknown challenges of an increased number of inhabitants and their needs. The existing buildings can form the foundation for sev-

eral-storied rooftop apartments or offices. Even green roofs and gardens can be added to the building mass to handle rain and urban farming for a self-sufficient future community.

Rothenburgsort's Energy BISS 2016 Tasks and Group Work

So the question was: how could the existing structures in Rothenburgsort be seen as a resource? What was the potential in the specific structure? And how could it be developed further, with particular focus also on the existing energy flow?

As the groups were interdisciplinary to some extent, the process of the groups emerged from their unique group constellations.

The first task for the students was to discover Rothenburgsort and to map their findings. This first task was called "Walk and Talk!" and was based on the idea of getting familiar with the site and also of getting to know each other.

It was then followed by more detailed tasks like "Analyze!", which meant analyzing the findings and defining the possible resources of the area and "Play!", which meant thinking outside of the box, developing a utopian concept based on the

idea of working with the defined resources and developing them further.

The idea of working as one common group at the beginning encouraged social interaction, interdisciplinary and inter-cultural discussions, which in turn created a good basis for further cooperation. Later on, the two groups worked separately and two different projects were developed: **Utopia is Here!** ▶ p. 144 and **Landscape of the Future** ▶ p. 138.

In **Utopia is Here!**, the existing contrast between the industry and the allotments was defined as a resource and the group developed a toolbox to densify Rothenburgsort, while maintaining the contrast.

In **Landscape of the Future**, the group used the old railway tracks as retention spaces for water and to develop a multi-layered and multifunctional landscape of the future in those spaces.



Figure 2: Floating Ponton Park, Paris, © Amelie Rost

Urban Driftwood

Social and Material Constructs for the Future

Markus Hudert and Jan Suchorzewski

The sixties and seventies of the past century have spawned a vast amount of visionary and utopian architectural projects, a phenomenon that in this form remains unmatched to this day, especially when it comes to the social dimension and the—sometimes maybe purpose-led or ironic—optimism of these projects. Some of the protagonists of that era are architects like Yona Friedman, Eckhard Schulze-Fielitz and the Archigram group, as well as the artist and “hyper-architect”¹ Constant Nieuwenhuys.

Although there are a few architects dealing with utopian and fictional architecture today—François Roche of R&Sie(n) among others comes to mind—several scholars have recently diagnosed the lack or even absence of utopian projects in

contemporary avant-garde architecture.^{2,3} Consequently, one of these scholars, the late Lebbeus Woods, placed his hope on a utopian renaissance emerging from the coming generation.⁴

Assuming that the situation is truly that dire, the question then arises whether or not this hope is justified. What is the coming generation’s take on utopia? And how does it compare to the architectural utopias of the sixties and seventies? By having a closer look at the outcomes of the 2016 Baltic International Summer School (B.I.S.S.), this essay aims to find answers to these questions.

Urban Futures and Driftwood

Initiated by the HafenCity University Hamburg, the B.I.S.S. program seeks to

foster collaboration between students of different disciplines—architecture, civil engineering and urban planning—and from universities located in different harbor cities of the Baltic Sea region. The topic of the B.I.S.S. 2016 was **Hamburg 2030—Urban Futures**. In addition to dealing with the challenges and opportunities related to urban planning and design in marine environments, the participating students were asked to develop a utopian vision for Hamburg’s Rothenburgsort, a currently rather under-used area close to the recently developed HafenCity quarter.

Based on the theme of utopia, six sub-topics were proposed, one of which was “Urban Driftwood.” The notion of “Urban Driftwood” refers to the phenomenon of driftwood as it occurs in nature, and which is defined as “wood that is floating in water and carried by the water.”⁵ Obviously, this sub-topic establishes a direct relation to the site conditions and especially to the former *Holzhafen*, which is located in the southeast of Rothenburgsort. Moreover, on a more abstract level, some characteristics of driftwood can also be associated with the dynamics of urban environments as well as some strategies used in utopian architectural projects such as: the dualisms of old and new, ephemeral and permanent, static and dynamic, local and foreign as well as the principle of superposition.⁶

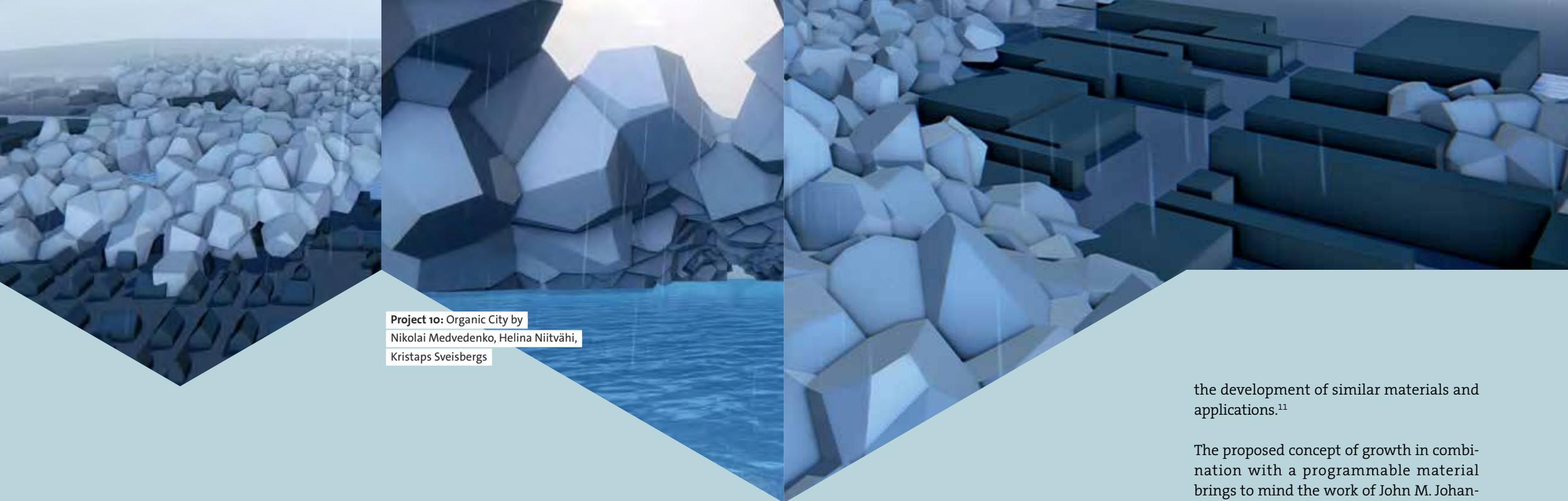
Driftwood is often composed of elements of different geographical origins. Together, they form something new. In rivers, and with a large number of individual branches or logs being involved, floating driftwood tends to form dynamic patterns that emerge both from the interaction between elements as well as from their interaction with the current. A similar systemic quality can also be found in social and material systems. Large amounts of driftwood can block a river and thus obstruct its access by boat. At the same time, this obstruction

makes it possible to walk—literally, almost—on water. It provides access to areas otherwise inaccessible by foot and opens new views and perspectives.

Today’s Tomorrow and the Utopian Premise
Although the summer school’s main theme and sub-topics were predefined, the participants were in principle free to come up with their own interpretation of utopia. The evaluation of the resulting projects, however, requires a basic common definition and a better understanding of the possible nuances of this notion.

One text that provides insights on these matters is “Megastructures: Urban Futures of the Recent Past.” Its author, Reyner Banham, was an architectural theorist and contemporary of the earlier-mentioned protagonists of utopian architecture. According to him, a project qualifies as utopian if it is not only “visionary or improbable” but also “seriously engaged in the task of proposing a radical new and perfected social order.”⁷ By referring to authors like Jürgen Joedicke and Mechthild Schumpp, he also indicates ways of classifying different types or versions of utopian approaches in respect to the planning of utopias.

In Joedicke’s writings,⁸ a first version is the traditional utopia. This approach is based on the sixteenth century book “Utopia” by Sir Thomas More and—according to Banham—“frequently does try to overturn the real facts simply by reversing the present polarities of man and society.” A second approach or version is the “New utopianism of French and American professional futurologists, which often merely amplifies present trends in society.” The third version is “what Joedicke calls ‘blind visions’ unrelated to any known or anticipated condition of man or his society.” Schumpp, on the other hand, identifies three characteristic propositions “dominating three distinguishable types of modern planning utopias.” These three



Project 10: Organic City by
Nikolai Medvedenko, Helina Niitvähi,
Kristaps Sveisbergs

different propositions are “the Metabolist distinction between the permanent and the transient,” the concept of a “mobile leisure population,” and “a technological vision of the city (as in Hollein, Katavolos, Schöffler).”⁹

Based on this, and on the basis of two examples, the following discussion will clarify whether the students’ projects can be considered as utopian, and if so, what kind of approach was pursued. In addition, similarities and differences with the utopias of the past century as well as the aspects of technology and materiality will be addressed.

Congeaed Growth and Constant Change

One of the resulting projects, **Organic City** ▶ p. 132, focuses on the relationship of man-made structures and nature in respect of green areas in urban environments. It aims to reduce urban sprawl by bringing nature and civilization together and by reducing the amount of private space per person. In order to achieve this, the authors introduce a bio-engineered plant-like building material as well as a

comprehensive sharing economy. In addition to bringing together human civilization and nature, the project also responds to the predicted consequences of climate change. With the sea level rising, the structure grows, spreads out and ultimately spans over the newly flooded areas. In terms of organization and articulation, the proposed scheme can be described as a megastructure based on the geometric principle of Voronoi cells.

By inverting the prevailing separation of nature and civilization, the project pursues a traditional utopian approach. It proposes a new societal model, in which humankind is in accord with nature and in which the sharing of goods and property is common ground. Therefore, one can classify this project as truly utopian as well.

Aside from this, it has a number of similarities with “classic” utopian projects. One aspect is the superposition with the landscape, which is also an important feature in the works of Tange and Constant. Then there is the idea of the city as a living or-

ganism, which, albeit less literal, was a core concept of the Metabolist movement. At first glance, the concept of growth seems to promise adaptability and flexibility. However, the growth of a megastructure needs to follow a predefined blueprint and spatial logic. Otherwise, the newly grown parts would render the existing ones unusable, as they would cut off their access to natural light and ventilation. Yet another issue is that of accessibility. Hence, one can conclude that the potential of the aforementioned proposed growth would ultimately be rather limited.

Apart from its traditional utopian quality, the work also displays new utopian traits, as it builds upon already visible trends. One example is the research project “Baubotanik,” which is coordinated by Ferdinand Ludwig at Stuttgart University,¹⁰ and which investigates ways to integrate living plants as structural elements in buildings. Moreover, the Defense Advanced Research Projects Agency DARPA has recently launched the so-called Engineered Living Materials (ELM) program, which aims at

the development of similar materials and applications.¹¹

The proposed concept of growth in combination with a programmable material brings to mind the work of John M. Johansen, yet another visionary architect of the past century. His “Nanoarchitecture” series is comprised of studies on plant-like shaped buildings. In contrast to the Organic City project, these buildings are not based on a genetically modified living material, but on programmed and self-reproducing nanomachines.¹²

Nevertheless, what is manifested here could be an indicator for a possibly widespread dream: that of an omnipotent building material that solves virtually every construction-related problem. Such a dream is also the possible reason behind the current frenzy regarding 3D printing technology. What the true impact of such an omnipotent material for architecture would be is a question that shall remain open here.

The statement that technical feasibility alone is not a universal remedy becomes evident in the few utopian projects of the past century that became a built reality. More often than not, the supposedly ideal configurations turned out to be incompat-

ible with the inhabitants' actual lifestyle. Moreover, their assumed flexibility remained theoretical.

What can be learned from this is that technology and materiality need to be related to a well thought out and flexible organizational and spatial concept that can accommodate varying and altering forms of society. Resilience and reversibility are crucial in times of constant change.

Engineering for Survival

The second project, **Drifting into Utopia** ▶ p. 126, proposes floating structures as a substitute lebensraum for urban areas and settlements that are about to fall victim to rising sea levels. For the development of this project, the authors employed an elaborate timeline that aligns the development of the project and required technological developments to cope with the rising water levels.

The proposal is based on a modular system with tetrahedron-shaped wooden frames as basic units. These units are conceived in such a way that an individual can assemble and customize them. Several of these modules can then be combined into more complex structures, such as bridges, platforms or even city-like configurations. These configurations are illustrated with regard to three different scenarios: temporary flooding, a sea level rise of three meters and of five meters. In addition to developing different configurations, the project also involves a number of fictitious developments in the material engineering of wood. Perfectly parallel fibers and an optimized cell size and shape lead to an improved strength distribution. An enhanced capillary action is achieved through better grain organization. These improvements help to sustain the population of the floating structures. The engineered wood functions as a water-cleaning device and contributes to a balanced oxygen level in the surrounding waters.

With regard to flexibility, this project is more successful than Organic City, as the proposed structural framework allows for changes in the use of the individual modules as well as in the global configuration. In principle, this flexibility allows for different forms of society to unfold. The authors suggest nomadic communities that can change and grow according to the wishes of their members. This proposal does not fully correspond to the radicalness of the project, which in one respect could be interpreted as a new Noah's Ark, marking a new beginning for humankind; a reset of civilization. Then again, the changes required in society may be so fundamental, that the nature of these changes and their results upon society cannot be imagined today. Despite its slightly cautious vision of a future society, the project has traditional utopian traits.

Several utopian projects from the past century show similarities to this work. However, the most obvious counterpart from that era is the work of Eckhardt Schulze-Fielitz. Most of his projects employ a tetrahedron-shaped basic unit. Here, the goal is to create a harmonic spatial order that allows the user to customize and appropriate the provided space. The idea of participation is central to his work: "Participation, for him, is the possibility to think architecture as a collective production that requires free and permanent adaptability under ever-changing conditions."¹³

It has been mentioned earlier that the so-called new utopian approach implies a projection of already existing trends into the future. When it comes to this project, one could almost talk of an inversion of this approach, since the future—at least on an environmental level—is already known. The remaining challenge is to invent and to engineer the means to adapt to it.

Hence, on the one hand it could be argued that this project is less about imagining an ideal or better future than about how to

deal with the consequences of our and our ancestors' lifestyle. On the other hand, one could say that out of the necessity of adaptation, the project generates a highly flexible framework for future forms of society, maybe even for those that we cannot yet imagine.

Where are we now?

The above-discussed projects are only partly representative of the overall outcome of the B.I.S.S., and even more so of an entire generation of young academics. However, they give a rough impression of the state of mind and future expectations of today's budding architects, engineers and urban planners.

In this context, it was remarkable to see that the predicted change of our climate and the related rise of the sea level played not only an important role in Organic City and Drifting Into Utopia, but in several other projects as well. Almost none of the projects investigated utopias related to future working conditions or the topic of migration, both of which represent big challenges in our current society. In a way, this is not surprising, as dealing with the challenges and opportunities related to urban planning in proximity to water expanses was a part of the task. But was this the only reason for the almost overwhelming presence of this topic? Or was Lebbeus Woods right with his assumption that environmental concerns and issues have generally become so pressing today that improvements to human society have become secondary?¹⁴

If we look at the basic conditions that led to the blossoming of utopian projects in the 1960s, it is striking to see that they were quite similar to those we are facing today, especially when it comes to the extent and speed of technological innovation. However, as pointed out by Douglas Murphy, we should not forget that the projects of the past century also emerged during a period that was overshadowed

by the threat of nuclear war.¹⁵ Moreover, even back then there were great concerns regarding environmental issues. In his manifesto-like treatise "Touch not," Archigram's Warren Chalk states: "Our very survival depends on an ecological utopia, otherwise we will be destroyed."¹⁶

Yet in contrast to the utopian projects of the past, a noticeable number of the B.I.S.S. projects reflect—in one way or another—a certain level of anticipation or even acceptance of doom. It remains to be seen if the young generation will let environmental concerns get the better of them, or instead learn to use these and other threats as fuel for its creativity and to develop a more optimistic and daring attitude.

Utopian thinking and the conception of utopian projects make us aware of our current society's state and especially its difficulties. Even if most of these projects are never going to be realized, the awareness of and confrontation with these obstacles in the context of a utopian project might lead to new insights and strategies for their elimination. Let us hope that the participants of the B.I.S.S. have recognized this value and will share this insight with other students at their home universities. If this is the case, we might witness a new blossoming of utopian projects soon.

- 1 M. Wigley. *Constant's New Babylon: The Hyper-Architecture of Desire*, 010 Publishers, Rotterdam, 1998, p. 49
- 2 See L. Woods. *Utopia?*, <https://lebbeuswoods.wordpress.com/2009/10/11/utopia/>, accessed on 22.02.2017
- 3 See D. Murphy. *The end of Utopia*, <https://www.architectural-review.com/rethink/viewpoints/the-end-of-utopia/10006220.article>, accessed on 22.02.2017
- 4 See note 2
- 5 Merriam-Webster online dictionary, <https://www.merriam-webster.com/dictionary/driftwood>, accessed on 22.02.2017
- 6 The principle of superposition is applied in many of the 60s and 70s utopian projects, both conceptually and visually. Constant's *New Babylon*, for example, spreads over existing cities and landscapes, and Archigram's *Walking City* moves past the skyline of Manhattan.
- 7 R. Banham. *Megastructure: Urban Futures of the Recent Past*, Thames and Hudson Ltd, London, 1976, p. 79
- 8 Banham's reference is Joedicke's introductory essay to a special issue of *Bauen + Wohnen*, entitled "Reality and Utopia in Town Planning," published in January 1964
- 9 Here, Banham refers to M. Schempp. *Stadtbau-Utopien und Gesellschaft*, Gütersloh, 1972, p. 121
- 10 See <http://www.ferdinandludwig.com/subject-baubotanik.html>, accessed on 22.02.2017
- 11 See <http://www.darpa.mil/news-events/2016-08-05>, accessed on 22.02.2017
- 12 See <http://johnmjohansen.com/Nanoarchitecture.html>, accessed on 22.02.2017
- 13 W. Fiel. *Eckhard Schulze-Fielitz: Metalanguage of Space*, Springer, Vienna, 2010, p. 8
- 14 See note 2
- 15 See note 3
- 16 W. Chalk. *Touch not*, in P. Cook (ed.), *Archigram*, repr. of the ed. *Studio Vista*, London, 1972, p. 138

Spotlights on: Hamburg 2030— Urban Futures

Engineering Urban Futures: from Digital Planning to Digital Fabrication

Harald Kloft

Recent decades have brought a formal freedom in architectural design. From the Guggenheim Museum in Bilbao to gigantic structures, such as the stadium construction for the Beijing Olympics, this “freeform-architecture” pushed the boundaries of conventional construction and announced a shift towards digitally-driven architectural design. Today, we are forced to bring the potential of digital tools in planning and fabrication together with the issues of economy and sustainability. Especially form-finding methods driven by structural logic, such as the shell structures of Isler, Candela, Torroja, etc. and those of finding a form by architectural intuition no longer need to be at odds with each other. In the environment of “digital workflow,” the integration of architectural and engineering design issues could be programmatic, resulting in a new, more complex “logic of form.”

In many examples of free-form architecture in the past years, the digital workflow started after the architectural design as a top-down process. The digital models were “constructed” after the form-finding process and included all pieces of information and implementation necessary for

realization—but they acted as reactive instruments and not programmatically. In contrast to this, the main idea of unifying digital planning and manufacturing with the issues of economy and sustainability is to integrate as much information as possible at the beginning of the architectural design process, with the aim of creating 3D models in a bottom-up process as active instruments in an integral design process. These digital models come with the information of the relevant issues from the start, meaning that architectural design is tuned to engineering feasibilities. Additionally, these 3D models act as complex information structures, which allow designers to optimize their design models iteratively throughout the entire design process.

Finally, the aim of implementing digital fabrication is to rethink sustainability in building design by bringing environmental aspects and technological development together and to save resources by integrating higher efficiency in digital design processes. In future, sustainable structures offer an efficient use of resources, in particular the use of material and energy.

The Future of Bridge Design

Bartłomiej Halaczek

Throughout the centuries, the development of our society was always closely linked to the progress in technology. In a historical perspective, local infrastructure has been a reflection of political, cultural and scientific achievements in a given period. Bridges in particular are such manifestations of the engineering avant-garde. Being not only a benchmark for the inventive power of their designers, they were also reactions to the problems, challenges and opportunities a civilisation had to deal with.

In most cases, big leaps of progress do not happen overnight, but can be seen as a continuous array of small steps taken within their context, which eventually lead to the “eureka!” moment when a new idea is born and a new concept is finally materialized.

Designing structures today doesn’t only mean facing our present problems, but also anticipating and responding to challenges future generations may face. Bridge designers need to be able to foresee these challenges and respond to them accordingly.

So far there are countless fields which tend to be omitted during the design process, mainly due to the misconception that bridges are not more than well-engineered solutions to a technical problem. But the very real and hard requirement of making a bridge stand should only be the base layer to much softer, but important questions. Questions of social responsibility, questions of legacy, questions of environmental awareness. How can a bridge achieve a zero-carbon footprint? How does a viaduct affect the lives of people living nearby? How can it connect to and respect these people’s culture? How will our bridges be used 100 years from now?

The lecture explored current developments in infrastructure and bridge design on a number of built and unbuilt examples, and sought to shed light on the road ahead of us.

My Master Thesis in Urban Design: Rothenburgsorte

Strategic Developments for the Urban Periphery

Yvonne Siegmund

Hamburg is growing fast! Hamburg's strategy is one that many cities pursue nowadays: wasting less new settlement areas and growing internally. One of the biggest problems in this context is Hamburg's patchy growth. Urban and popular districts are getting livelier, more dense and expensive. And the unattractive rest seems to be pushed further to the periphery.

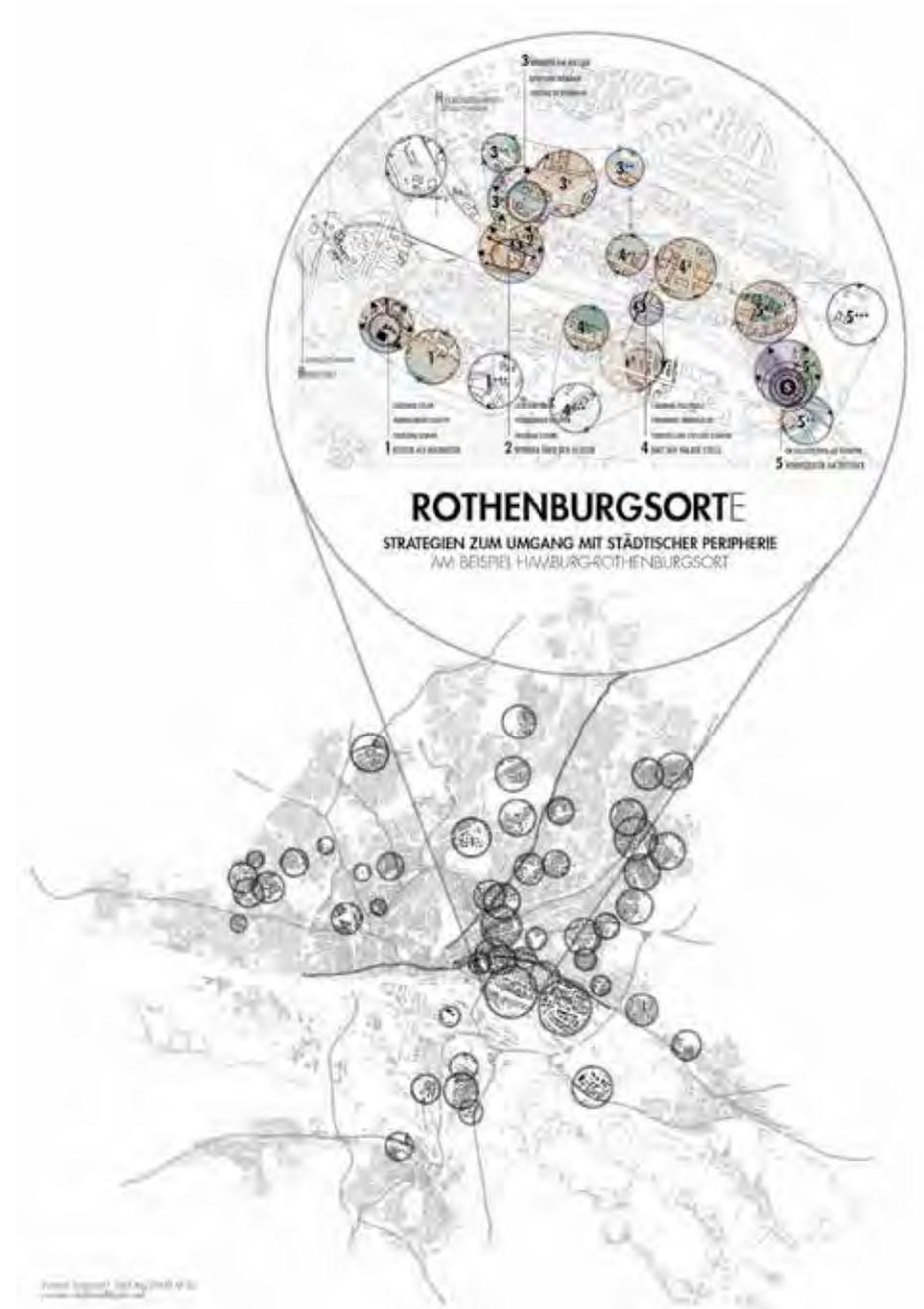
My research interest was on the areas off the centre; the edges of Hamburg; places that looked or felt like periphery.

Periphery [puh-rif-uh-ree]

- is characterized by monofunctionality

- is typical modern random architecture: lots of clean plastic places
- the working space is intimately separated from the living area as well as the private space from the public area
- there is just little public space, but many traffic routes and junctions

Just like in Rothenburgsort ... the district consists of several islands; unconnected fragments drifting side by side. The main important objective in my concept was to connect them.



Yvonne Siegmund

studied architecture in Munich (2001–2008) and urban design in Hamburg (2011–2014). In between she worked on various construction projects with Frank und Probst Architekten in Munich (2008–2011). Later, in 2011, she changed her work emphasis to the field of applied research at the chair of urban architecture with Prof. Dietrich Fink at the TU of Munich. There, she was part of a team developing strategies of redensification for the region of Munich. Since 2014, she has been working as a teacher and researcher in the department for urban development and neighborhood-based planning with Prof. Michael Koch at the HafenCity University. Her interests lie in the research of urban peripheries, speeds and their effects on planning dynamics as well as debates on disciplinary boundary crossing.

But it's also a district full of contradictions

- with quiet places and small crossings
- different inconsistent functions side by side
- acquired urban spaces, littered, anarchistic
- and in some senses an idyllic

Is the faceless periphery just a cliché? The quiet, sometimes boring, sometimes unsafe, inhospitable sites are still not under the administration's control, still undiscovered by the mainstream and still not of commercial interest. Urban peripheries are likely to play a crucial role for the development of cities that have to cope with the scarcity of land for housing.

My research questions were:

- Where are the untapped potentials of Rothenburgsort and how can they be preserved and strengthened?
- How is it possible to gradually densify attractive residential areas on the one hand and preserve their particularities and qualities on the other?

I worked with several rating levels and criteria for densification as well as for protection. I used them to understand the qualities of modern architecture, its structure, places and gaps.

The next step to understand how this district works was to develop two extreme scenarios of redensification: the first one—“cleaning up”—kept the separation of function and the second one—“mix it up”—sought to ensure an appropriate mixture. Both scenarios failed because of the scale I chose. I did the same mistake that modern planning once did: I applied one standard answer to different problems and destroyed the qualities I could have preserved if I had initially taken a different perspective.

So I did and I had several interviews with experts, residents and retailers who told me about the advantages and deficits. I

created a fictional discussion between all interviewees as a graph. Some conclusions were surprising, such as the petty crime, the diversity of the residents, the informal places; some were to be expected, like the many recreational areas or the affordable housing. Next I formed my own impressions and captured them with the camera. I visited places I'd been told about and sites nobody ever speaks of. And I found out that Rothenburgsort is full of unconventional beauty; I understood what and where the qualities of this district are and how its people work and live.

I mapped all my findings, objective and subjective factors and identified the high potentials of the area that needed redeveloping and redefining, referring to them as Rothenburgsorte. I tried to transform the weaknesses into strong points by connecting the fragments again. Firstly, transformation through reprogramming mono-functional spaces and unused gaps:

- flexible programming or coding
- creating communication space
- densifying different applications

Secondly, transformation by minimal interventions to activate small locations.

I developed scenarios for five important spots, calling them e.g. “Culture incubator” or “Living above the tracks.” The first spot-activation might take time, but will shift to its neighborhood and densify one after another like a domino effect.

The point is: you cannot plan the future, but you can provide the paths of possible developments. Urban development is a slow process. An initial ignition raises awareness and leads to debates about the place. A gradual activation triggers a finer-grained connectivity in the district. Plan it slowly, in short periods, flexibly and adaptable to “possible futures.”

Rothenburgsort was just an example. But Rothenburgsorte might be the places to experiment with!



Source: Initiative City Association, 2015

Routes Instead of Roots— New Strategy of Forming Future Identity of Places

Piotr Czyz

Routes instead of roots—is a motto of identity of the future. This new perspective is an answer to the increasing need of social connection for people in post-postmodern reality. Our contemporary culture needs new strategies of connecting people. The sense of architecture as a core notion of postmodernity is no longer valid in the reality of mobility. Do we really need meaning to live happily? Is it important in creating space in which we feel secure and fulfilled? Do we need meaning to live together? These are questions the new generation of designers will need to answer. The presentation focused on a new concept of identity and place as a replacement for the concept of meaning. Future identity can be developed more on the concept of social integration, urban rituals, interaction between people, instead of identity based on the concept of cultural heritage. This notion comes from new insight on contemporary culture, which is no longer concerned with meaning, but

with interaction. To interact, we need spaces that encourage people to meet and spend time together—which is the most important foundation of a city. The almost 70-year-old statement by Hannah Arendt now seems most important: “The only indispensable material factor in the generation of power is the living together of people. Only when men live so close together that the potentialities of action are always present will power remain with them and the foundations of cities (...) is therefore the most important material prerequisite for power.”¹

¹ Arendt Hannah, *The Human Condition*, 1958, University of Chicago Press, Chicago, p. 201

Sensitive and Reactive Architectural Devices for Regenerative Design

Applications in Manaus Heat Islands and Surrounding Rain Forests

Emanuele Naboni and David Garcia

Abstract

When designing regenerative spaces and buildings in severe climatic contingencies (e.g. a city affected by heat island phenomena or a hot-humid rain forest), a comprehensive understanding of the microclimate and local environment, the multiple equilibria, is a prerequisite for an architectural design aimed at restoring

and enriching the ecosystem, whilst promoting fair living conditions. Standard data such as weather files, and “big data” related to urban and ecosystems patterns render a general outlook of a context. On-site data gathering with types of equipment such as thermometers, anemometers and infrared cameras could offer additional information. Yet designers find

data from this equipment difficult to interpret. Their analysis, interpretation and translation into design answers is often confused and architectural results do not always contribute to solving the environmental issues of a site.

The proposed work explores the idea that designers can acquire augmented and easy-to-read environmental information with the use of customized “architectural devices.” The devices are small and self-sufficient prototypes that foster the thorough understanding of one or more hyper-specific site conditions. 20 different devices, each fabricated by a student attending the Architecture and Extreme Environments master’s program at the Royal Danish Academy, ranged from body equipment to shelters to spatial installations. They were intended to be sensitive and reactive to local specific conditions, adapting their form, aspect, color, light, and position to local environmental flows. The tools visualize the hidden potentials for regenerative solutions which are fine-tuned to the dynamics that characterize a place (e.g. thermal phenomena, water flows, flora and fauna adaptation to site, human cycles, and material cycles). The devices were conceived for and utilized in the context of Manaus, Brazil, and its surrounding rain forest. They were situated within the city, which is affected by a heat island phenomenon, and in the nearby forest, which has a delicate eco-balance and is now threatened by human activities. The devices retrieved information about temperature, breezes, humidity, rainfall, sky condition, light quality, energy potentials, pollution, and their interplay, thereby revealing chances for future architectural, fine-tuned tactics.

1. Introduction and Objective

The integration of environmental and climatic information should be a driving factor in architecture and urban planning. Just as flora and fauna adapt to their surroundings and create sustaining ecosystems, designs should enrich and regener-

ate their environments rather than consume them. In thinking about environmentally responsive design, striving to create solutions that respond directly to their unique place, a first step is an in-depth understanding of the physical location’s environmental events. A series of data can be obtained from local environmental agencies and climatic stations. Other data can be derived in place with a series of measuring tools.

However, the research hypothesis is that a hyper-specific design requires hyper-specific tools, here named as architectural devices, as they are intended to perform as a medium that leads to architectural design. The devices act as a hyper-specific study agent that not only measure phenomena but cooperate with the complex environment. By becoming a dynamic part of the occurring cycles, the device stores a series of information. Their conceptualization arises from ecologic understanding: each of them has a closed loop input–output model, where the output is greater than or equal to the input. The devices prove and probe solutions that can restore, renew or revitalize a site capitalizing on climatic cycles (atmospheric, ground and water) that occur, rationalizing the courses of local sources (energy and materials), creating a sustainable environment that integrates the needs of human well-being with the integrity of nature. The tests and the results collected by the device are an anticipation of the possible environmental coherence of an architectural solution. A series of devices were conceived by the master’s degree students of Extreme Environment at the Royal Danish Academy in Copenhagen.¹ The devices are aimed at the study of the regeneration of the city of Manaus and the curing of compromised parts of the Amazon forest. The campaign in Brazil provided a platform to collaborate with local inhabitants and experts in the conceptualization of the devices, where students examined a climatic and environmental problem that could guide them in forming an architectural regenerative program.

1



Air cooling systems add heat loads to Manaus.
Photo by Johan Steenberg

5



The device collects rainwater which is cyclically transmitted to the terrain. Time of evapotranspiration is recorded and factored with atmospheric conditions, thus allowing a comparison between the deforested and forested areas.
Design by Lin Zhen, photo by David Garcia



The façade device is able to collect the water necessary to host local species. Overall, outdoor and the indoor mean radiant temperature (MRT) is affected, increasing comfort.
Designed by Johan Steenberg, photo by David Garcia

2



The device is activated by the flow of water. The space in between the latex envelope is acclimatized by evaporative cooling.
Design and photo by Alexander Emil Juel Jespersen

6



The device channelizes air and passively controls humidity and temperature creating in its core an environment suitable for human living. The device can potentially be scaled into a building concept.
Designed by Veronika Ignataviciute, photo by David Garcia

3



The device inflates multiple latex-made balloons, creating a visual effect of the magnitude of the length of the periods when the air velocity is significant, and its velocity. The factor of the two is energy that is visually expressed by the size of the balloons.
Design by Anders Nottveit, photo by David Garcia

4



LED lights connected via long clear wires to the generator turn the water reservoirs into giant floating light diffusers while the generator illuminates to reveal the source of the energy.
Design by Otis Sloan Brittain, photo by David Garcia

7



The interplay of mosquito nets creates different thermal zones with variable temperature and humidity, which are carefully tested and measured.
Design by Gabriele Selmistrayte, photo by David Garcia

8

2. Methods: from Devices' Design Process to Site Engagement

The device design process occurred in Copenhagen and Manaus. It was distributed in four stages. The first one was an introductory, experimentally driven phase, aimed to perform climatic and physical testing based on scientific research laboratory methods. The second phase, targeted at fabrication of the device, was devised to link scientific questions to functional, visual and spatial entanglements. The third step, the fieldwork, implied the installation of the device on site, its fine-tuning and the acquisition of data. The fourth phase was about the retrieval, the processing, and the design interpretation of gathered data. In the first phase, students created artificial test rooms or “study chambers” with specific boundary conditions. For instance hot, humid climate test rooms were built to test a series of devices or their constituents' parts. They could design and test original configuration of materials that they could later detect in Manaus (e.g. latex). The devices were all made of an organic composition (biotic) and a synthetic (abiotic) material. In the second phase of prototyping, students operated in a manufacturing workshop. Expected performances were treated with researchers in sustainable design, building physic and structural systems. Assembling the final device was a design hurdle in itself, as limitations in transportation from Denmark to Brazil were a restriction. A lightweight and easy-to-assemble design, which relies on material sources in the Amazon forest, was essential. The fieldwork phase was concerned with surveying and mapping the urban and surrounding forest environmental qualities and criticalities through the constructed device. Besides the gathered knowledge from the campaign, students examined local phenomena and could ascertain future design hypotheses for architectural developments further down the line. As opposed to developing a hypothetical or uncertain interpretation of the site from data such as weather files,

environmental records, and onsite measurements, the architectural device enabled the direct understanding and the visualization of local microclimates and ecosystem dynamic characteristics, thus supporting the examination of regenerative ideas. The fourth phase was about reporting in graph all the measurements that were made on site; data were interpreted and processed and the “learnt lesson” described in a full report.

3. Anticipating the Architectural Potentials of Restoring Manaus Livability

The city of Manaus, the center of development in the immense, hot, humid tropical forest of the Brazilian Amazon, manifests the climate changes representative of major cities. From 1961 to 2010, the average temperature in Manaus rose by 0.7 °C, i.e. to 26.5 °C. The increment was due to the growth of urban areas (figure 1), a process that has escalated in recent decades. With more buildings, concrete and asphalt taking the place of indigenous vegetation, what is known as the “urban heat island effect” determines that at any time of day, the temperature in the most densely populated areas is consistently higher than that in nearby rural areas.² The temperature difference amid the urbanized parts of the Amazon metropolis of Manaus and an area of Amazon forest, peaks at more than 3 °C in five months of the year.

The first architectural device described here aimed at restoring exposed grass and trees in Manaus. They are a trait that could alleviate perceived temperatures peaks via façade components that modify the urban scene. Inspired by earlier research on sheltered façades,³ the device hosted epiphytic plants, which do not require soil to grow, in a specific bio fabric. The device provides rainwater and nutrients through a heat capacitive ceramic buffer that accumulates water once it rains (daily) (figure 2). Once disposed in Manaus, the effect of the system on the radiant environment was measured with an infrared camera. Over a cycle of 24 hours,

the façade device had a surface which was 15 °C lower than the surrounding brick-made surfaces. Reducing material temperature and emissivity in a heat island context is a key factor to control the mean radiant temperature and consequently increase human thermal comfort.

A second architectural device created a cooler micro-thermal zone and reduced humidity by solely passive design means. At the time of the investigation, temperature in Manaus could reach 40 °C, and humidity was constantly close to the air saturation point. Finding a strategy that reduced temperature inside spaces was thus key. The device conception is based on the hypothesis that by simple architectural means, i.e. without consuming mechanical systems, it is plausible to reduce the need for cooling in this region.⁴ The concentric layers and mechanics of the device are inferred from the dyeing dart frog, an ectothermic amphibian of the Amazon. The natural thermoregulation action of this creature was translated into components (figure 3). Air passes through Venturi tubes made of plastic and an eggshell material formulated using biomimetic knowledge. The device was equipped with a series of temperature sensors. The device was able to decrease air temperature and humidity in its micro-thermal zone. Comparable to the lime construction ones, these components could be scaled to suit building fabric new configurations, potentially being able to replace polluting mechanical systems.

Manaus urban architecture, with its high buildings and dense arrangements, and with its hardscape, can significantly reduce the magnitude of air breezes and the air temperature, thus enhancing the perception of heat. A specific device, a “wind bank,” was created to search for airflows in dissimilar areas of the city and at varying heights. The device capitalizes on winds and breezes and transfers the produced energy with a Savonius wind turbine that pumps latex-made balloons (figure 4).

The device recognizes the city cooling potential given by convection. The mapping process revealed how natural ventilation is abundant in areas where, incongruously, there is a copious use of AC, with the equipment displayed on façades. The map highlighted areas where people can reach “air in movement” such as roofs, distinct hills or usable platforms above the ground. The study proved how the city is planned with scarce understanding of breezing and with architecture permeable to such resource. The exploration suggested that new architectural developments should be based on the use of territorial and local use of computational fluid dynamic models.

4. Regeneration of the Amazon Forest

Deforestation of the Amazon rainforest can be associated with many circumstances at local, national, and international levels. Local inhabitants perceive the rainforest as a resource for stocks pasture, hardwoods, housing space, farming space (especially for soybeans), roadworks (such as highways and smaller roads) and medications. During the expedition, we documented how supplementary deforestation has resulted from farmers clearing land for small-scale agriculture. This transition in land use modified the region's climate.⁵ Atmospheric temperatures and humidity as well as the ground thermal and hygroscopic conditions were measured in deforested sites, and in the forest itself, with a specific device (figure 5). The over-ground part of a device acts as an inverted well which yields rainfall from the atmosphere to the ground by a balloon equipped with receptive containers. These discharged water into the ground. Depending on how well the ground absorbed water, the balloon assumed different heights. The system was equipped with a series of thermometers and could reach the height of 20 meters above ground. The device registered how the forest evapotranspiration rates, compared to a surface designated to agricultural uses, were much higher. Changes in land

properties led to a change in absorbed solar radiation, latent heat flux and sensible heat flux. The water fluxes from a seasoned tropical forest were greater due to a substantial leaf area that provided transpiration and access to water from a deeper root system.

Inspired by the studies of the indigenous people and their architecture, another device was aimed at investigating how, in a seamless concert with the cycles of nature, it is possible to create environments with controlled mean radiant temperature and airflows. Heat is an obvious problem for Amazon inhabitants. Though in the city there is a more sensitive variation of temperature, the temperature differences in a day in the forest are neglectable. Here, the fluctuations of perceived temperatures, which are mainly influenced by the combination of humidity, surface temperature and air temperature, are even lower. The only factor of change in a typical day lies in precipitation, which as a temperature that is lower than air temperature. The rain falls copiously in the afternoon after the sun has peaked. A device was thus deployed to capitalize on the thermal effects actuated by water cycles (figure 6). When it begins to rain, the latex skin leads rainwater into a locally sourced bamboo gutter, where it is diffused to six metal rings. The water runs within the rings and cools them, thereby affecting the radiant local exchanges with a human body. The water accumulates in hanging plastic bags, which stretch down the latex skin. When a total of twelve liters is collected, the structure is completely folded. After a time, the water droplets that lie in the latex grooves begin to evaporate, further cooling the interior space. Belatedly, water gradually pours out of the plastic bags (small tubes calibrate the flow). The structure unfolds and is ready for another cycle the day after. For about four hours, the perceived temperature within the device is affected, showing how with dynamism, passivity and mechanism, it is possible to affect microcli-

mates.

Another issue of the site is water pollution. One more device was formed by a series of rain catchers displaced in the forest canopy. Fresh rainwater was collected for drinking and harnessed its potential energy to generate electricity and light. Water, though abundant in the Amazon, is muddy and ridden with parasites. The device's purpose is to support isolated communities where neither clean water, nor electricity is available. Over the course of the year, 2,286 mm of rain falls in the area. Utilizing the abundance of rain, the project explored "off-grid" means of clean drinking water and generating electricity with a "vertical dam" system. The construction itself used the natural structures of the forest. Four rain catchers were hung at a height of the forest canopy (figure 7). These collected rainwater, stored it, and were connected via tubing to a small hydro-generator at the ground surface. When the water was released, it passed through the generator, creating electricity, and then landed in the store for drinking. The power generated manifested itself as artificial light, via LEDs connected to the generator. This performative transformation of resources—rain to light to drinking water—encouraged further exploration of the capitalization of natural resources.

An additional local challenge is malaria. River Tupana community members live right in the heart of the Amazonian rainforest and very commonly experience malaria a few times during their life. Rooted in previous research about the implementation of nets in tropical areas of Africa and Asia,^{6,7} a device reinterprets the way the mosquito net can be used in an adaptable suspended shelter placed on a site where mosquitoes breed. The student's body heat and CO₂ attract mosquitoes. The mosquito-proof skin constructs flexible space that wraps around the body by 360° (figure 8). The nets were modelled by telescopic poles that give control to the user. To allow occupation during the natural rain, latex creates a waterproof skin which

wraps around just one side of the device. The rain in the Amazon often comes fast and the device could roll around the horizontal axis. The main challenge of the device is to provide internal comfort, although airflows are reduced by the net. The net permeability to air is thus a key factor. The device was used to collect a series of data that could impact human comfort. Specifically, air temperature and airflow velocity in the occupied space were recorded, thus providing directions for further design development.

5. Conclusion

In conclusion, the architectural device can be intended as a metamodeling exercise, where a prototype is a model of a design principle that links to a possible future, architectural development. The devices allowed the analysis, construction and development of the frames, rules, constraints, models and theories applicable and useful for the anticipation of a predefined class of environmental problems. Engaging through design and manufacture before the departure to Brazil, students constructed devices, which were implanted in natural cycles in order to chart specific conditions related to a chosen field of interest. Drawing inspiration from science and technology, and with a particular focus on climatic and natural cycles, the students devised solutions, visualized and measured phenomena. The amplification of the phenomena occurred while testing solutions. The architectural devices established a visual clarity and hierarchy that manifested the details of complex phenomena which could not, otherwise, be fully understood by numerical information. The collected information was used by the students in the second semester and contributed to a series of architectural and urban planning solutions for the region of Manaus.

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Street of the Future

Dr.-Ing. Anke Jurleit

Just like today's city, the streets of tomorrow will be a mix of the past, the recent, the state-of-the-art—and always in flux.

Future visions and narratives of the city often address all the problems for all the people all the time. That's a natural consequence of those visions coming from and reflecting one perspective, but no city or street is experienced from only one vantage point. Even cities in history that evolved from major master plans—Haussmann's Paris or New York's street grid spring to mind—exist in a reality that's vibrant exactly because it's so much messier than the plan could ever envision.

The street of the future will not arise from a single gleaming vision. It will consist of many visions, layered on top of each other, tomorrow's visions on top of yesterday's visions, all on top of a history of human existence right back to when the city was no more than a village. (Mayo Nissen in "5 Visions for the Future of New York City Streets.")

Often times it takes an initial event to ignite disruptive change. San Francisco had an earthquake and in the case of Copenhagen it was the several downpours in 2011 that caused a cumulated damage of several million euros. The city then decided to spring into action. It was decided in 2015 to implement over 300 projects within the next 20 years in order to make the city more resilient towards the consequences of climate change.

In a climate-resilient city, the urban fabric is robust and adapts to the rising volumes of rain in the future. A total of eight urban and street typologies were developed to retain, infiltrate and carry rainwater. One of them is called a cloudburst road. A cloudburst road is a public road that can hold cars, cyclists and pedestrians but at the same time is able to function as a channel conveying the rainwater in torrential downpours safely away from the neighborhood. Cloudburst roads are designed so that water stays on the road and is not pushed out against the façades of



1
Sankt Jørgen Sø Park in summer time, rainless period.
Cloudburst Management Plan Project Implementation.
Picture taken in August 2016 by
Maria J. Mujica von Seggern



2
Sankt Jørgen Sø Park in summer time, rainless period.
Cloudburst Management Plan Project Implementation.
Picture taken in August 2016 by
Maria J. Mujica von Seggern



3
Sankt Jørgen Sø Park in summer time, rainless period.
Cloudburst Management Plan Project Implementation.
Picture taken in August 2016 by
Maria J. Mujica von Seggern

buildings and basement steps. By changing the typical road section dimension to a V-shape, where the high point is along the curbs, water is channeled towards the middle of the street.

Copenhagen streets—Thinking multi-coded, future streets will be THICK

“The streets of the future are going to be thick. Literally. Forget all about that thin membrane of asphalt you know now, the slick one, the steamy, concrete jungle one, the gum-stained one. Forget about the 12,000 miles of concrete- and bluestone-topped sidewalk. Our streets will be thick like a sponge, deep and porous, flexible and reflective. Your super-thin sneakers will know the difference: you won’t be jumping over puddles at the intersection anymore, because rain and flood waters will slowly seep into and out of the streets of the future. You won’t find tar on your soles in the heat of July, and you won’t have to worry about potholes, because the streets of the future will all be one giant organism-like network of self-healing material. Thick with this infrastructure, the streets will channel new forms of resources and technology through bedrock and wetlands to the far extents of the five boroughs” (Annie Barrett, Columbia University.)

But this is not everything. The City of Copenhagen sees the change in street design as a chance to improve its urban quality of life through rethinking transportation towards prioritizing bikes, creating ecosystems and recreational space. The streets of the future will also be thick with potential. They’ll be wired, coded, and electrified. They’ll support forms of transit, shopping and movement we don’t yet know about, with technology we don’t yet have, and choreograph divergent, overlapping pedestrian events. Today’s streets are 1:1 diagrams of their own uses: sidewalk, tree, curb, street drain, bike lane, car lane. Things won’t be so simple in the future. Thick with possibility and anticipation, surface markings won’t be painted on,

they’ll be emergent, and might come and go depending on the day, the season, the event.

Future streets will have to be tackled in an interdisciplinary set-up consisting of urban designers, infrastructure experts, industrial designers, architects, city planners and the citizens themselves if we want to find an answer to the questions raised during the B.I.S.S. sessions: How can we place the human being at the heart of the question? How will we move anyway? How will we shop? Are solutions at hand to tunnel the city, freeing up land above? Might advanced drones cut the number of delivery vehicles on the roads? To what degree can we, or should we pedestrianize our central streets—and perform work in so-called shared spaces?

Open City

Martin Kohler

The Open City of Amereida is a radical experiment in architecture. Founded in 1970 by students and teachers of the faculty of Architecture at the Catholic University of Valparaíso, Chile, the city is conceived as an architectural laboratory with an existential premise from where to inhabit, re-discover and re-found the American continent based on an original, creative, and non-colonial idea of identity.

Based on a documentary by Andrés Tapia Urzúa filmed in 2013, one of the “open citizens,” Alejandro Soto, discussed the transdisciplinary experiences of a laboratory in architectural education that utilizes the symbolic and poetic thought fused with architecture for an almost mythological emancipation from colonial order by ad hoc architecture as process and ritual.

Firmly rooted in the 1970s, the political claims can easily be criticized for their naivety, but the peer-based collaborative learning and production process of visionary architectural concepts feels more than adequate to contemporary challenges.



Documentation of the Second Baltic International Summer School 2016

think the link: Hamburg 2030—Urban Futures

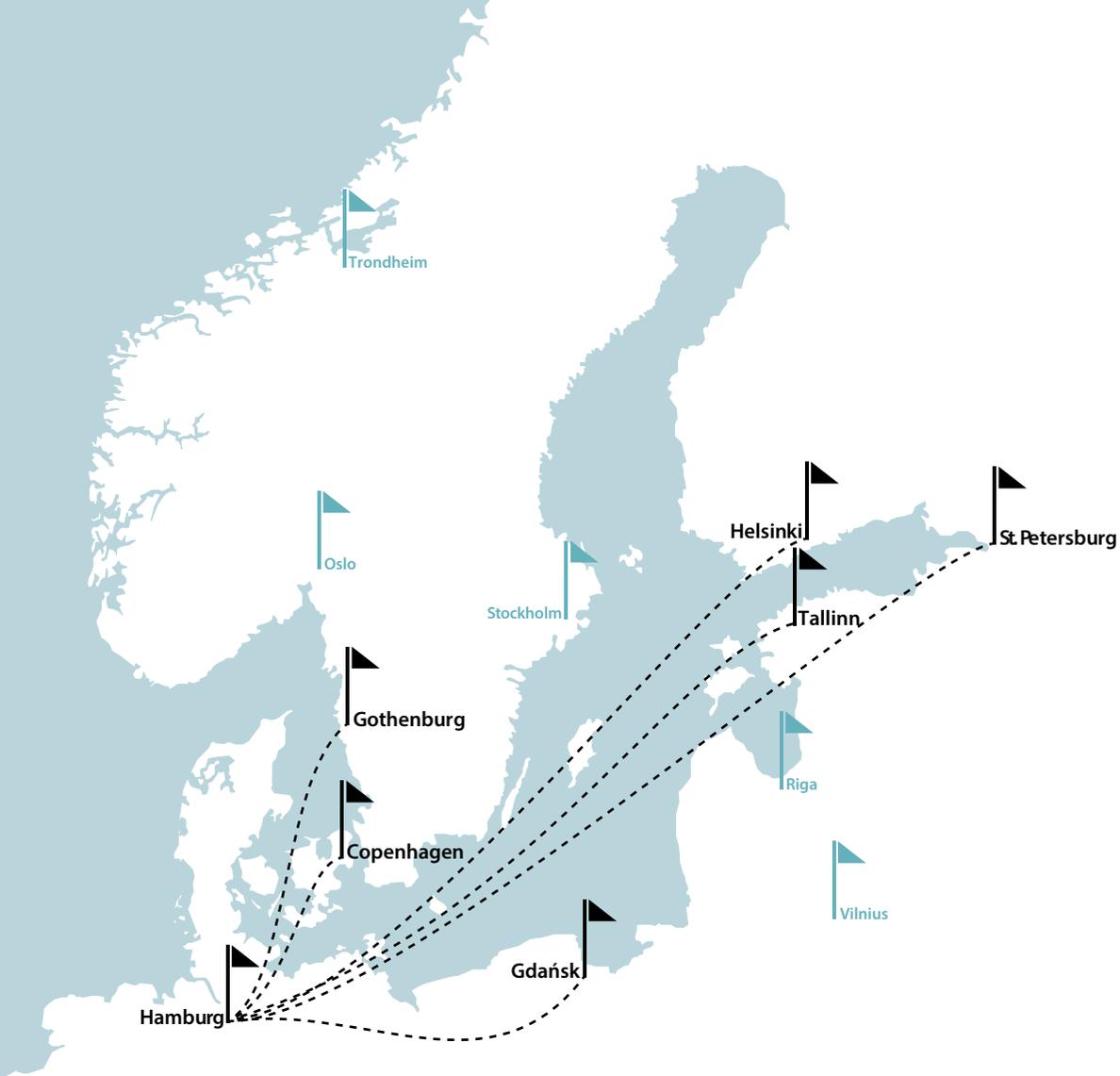
“Introstruction”

Compressing nearly two weeks of a summer workshop with all its accompanying events, social activities, lectures and keynote presentations, vivid discussions, nights out and much more into a few pages is quite a task. Nevertheless, on the following pages, we would like to give you an idea of the spirit of B.I.S.S. 2016, laying out the feedback of the individual groups, giving you an idea of the agenda of the summer school, the work in the groups as well as some impressions of the final closing event. Included is also a non-ranking list of all the projects we worked on.

The “think the link” motto for the second Summer School with the topic “Hamburg 2030—Urban Futures” indicates the interdisciplinary approach. B.I.S.S.’s overriding aim is the quest for ties and commonalities in culture, in the collective wealth of experience, in the understanding of city and buildings. The careful analysis of each B.I.S.S. partner city’s initial position and the linkage of the connection points worked out is the main task that B.I.S.S. seeks to accomplish over the coming years. The Baltic International Summer School not only linked related disciplines, but people: students, teachers and researchers. Friendships emerged, ideas for future projects arose.



The network—partners and participants



When the B.I.S.S. project started in January 2015, we approached a few of our partner universities to see if they were interested in the idea of an international summer workshop. It evolved that our initial contact was highly successful—not only did the following partners agree to participate; they all actively contributed to the development and implementation of the very special format of this summer school.

Due to so much positive feedback, we are looking forward to integrating even more partner universities from the Baltic Sea region within the network in the years to come.

Aalto University
in Helsinki, Finland
Prof. Dr. Toni Kotnik,
Design of Structures

Chalmers University of Technology, CHALMERS
in Gothenburg, Sweden
Prof. Morten Lund
and Prof. Dr. Karl-Gunnar Olsson,
Architecture and Engineering

Technical University of Denmark, DTU
in Copenhagen, Denmark
Assoc. Prof. Dr. Lotte Bjerregaard Jensen,
Department of Civil Engineering

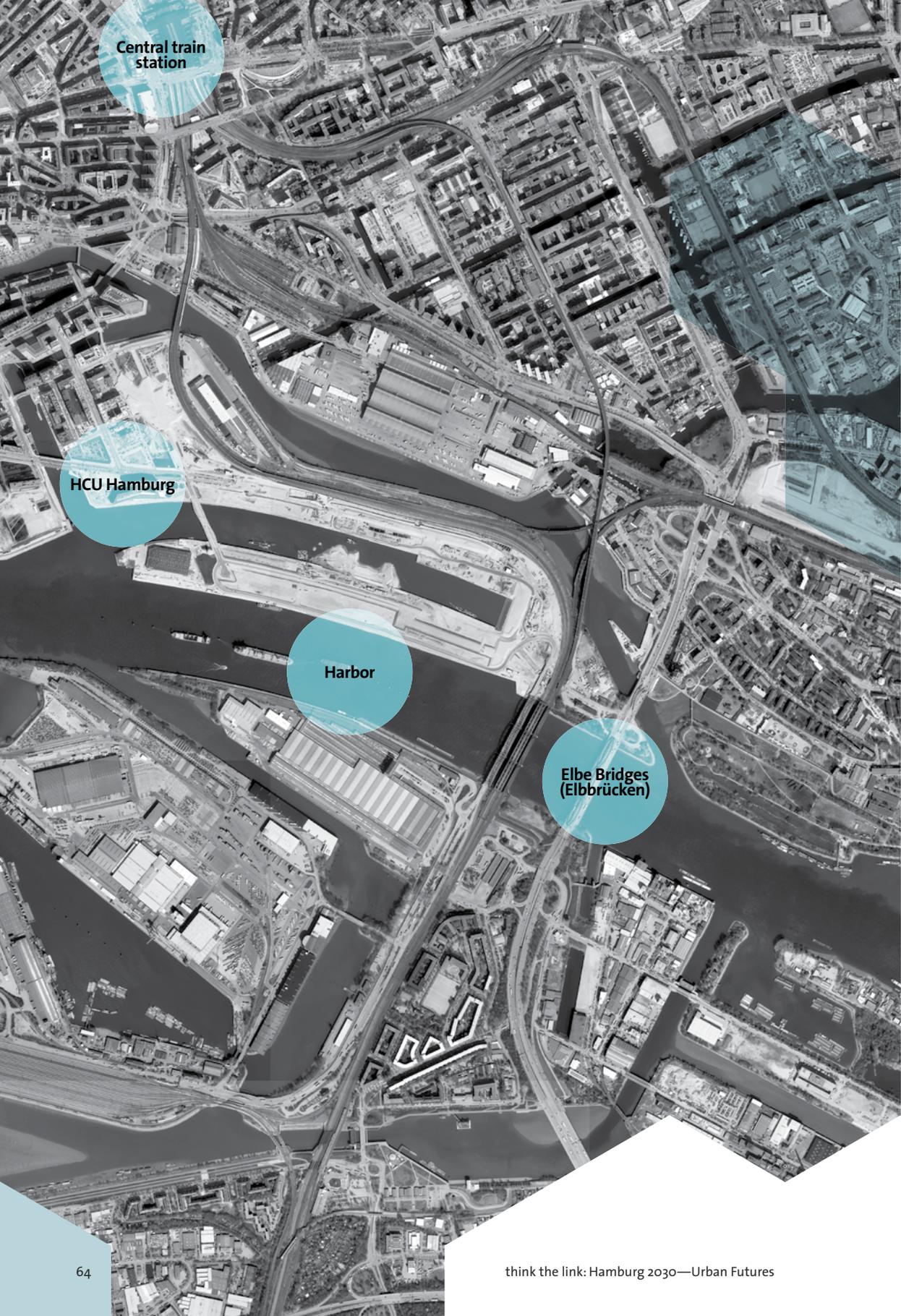
Gdańsk University of Technology, GUT
in Gdańsk, Poland
Dr. Bartosz Macikowski,
Department of Architecture

Royal Academy of Fine Arts, KADK
in Copenhagen, Denmark
Prof. Dr. Olga Popvic Larsen,
Institute of Architecture and Learning

Saint Petersburg State University of Architecture and Civil Engineering, GASU
in Saint Petersburg, Russia
Prof. Dr. Andrey G. Vaytens,
Department of Architecture

Tallinn Technical University, TUT
in Tallinn, Estonia
Mr Prof. Roode Liias
Faculty of Civil Engineering

HafenCity University, HCU
Hamburg, Germany
Prof. Dr. Annette Bögle,
Structural Engineering



Central train station

HCU Hamburg

Harbor

Elbe Bridges (Elbbrücken)



The topic 2016: Hamburg 2030—Urban Futures

Located in the heart of one of Europe's largest inner-city development projects—Hamburg's HafenCity—the HCU offers its students and guest scientists an attractive urban laboratory just outside its university building, providing many opportunities for avant-garde case studies that are relevant to the area. Given this top location and the similar interests and conditions, such as the participating partner universities being harbor cities, the B.I.S.S. team selected one of Hamburg's most developing districts as the object of research: Rothenburgsort.

The motto "think the link" indicates the interdisciplinary approach that looks for ties and correlations between experiences, cultures, cities and objects of the built environment, creating even more links on social levels between the participants across northeastern Europe. Its main idea is to join different disciplines—such as design and art—with the goal of creating various social and urban links between the existing problems and the possible solutions to cover the Baltic cities.

The area east of Hamburg's city center, in particular around the "Elbbrücken" industrial joint set the stage for the 2016 topic

"Hamburg 2030—Urban Futures." The students were asked to deal with water, urban junctions and quality as well as barriers and separation in interdisciplinary and internationally mixed project groups. They were to look at the development of Hamburg as a model for other harbor cities in the Baltic Sea region, thereby also for the participants of the B.I.S.S. Multiple realistic or utopian suggestions for the near future of our cities and answers to a variety of current questions about the built environment, such as "urban functions of water areas in the city," "food production in the city" or "sustainability in material usage and creative design" were the main focal points of the workshop.

The B.I.S.S. hereby seeks to address not simply a typical problem in Hamburg but one that is characteristic for most harbor cities and is thereby of interest to the participants of the B.I.S.S. The results range from artistic to architectural and engineering concepts for the development of the cities. Thus the task was to look at reviving the district, while at the same time providing the students the chance to transfer their solutions to their current homes.



The workshop

Mentors

The mentors, PhD students and junior professors from nearly every participating university were major assets for the summer school. They were the first point of contact for the students during the nine-day course, taking care of two or three working groups, coaching them independently, identifying the missing links in the proposals, solving the problems that emerged during the pro-

cess of defining their individual tasks as well as consulting and supporting them when it came to presenting their results. In their roles and with their knowledge and dedication, the mentors were literally the backbone of the summer school, sharing their teaching experience on an international as well as intercultural and interdisciplinary level.

The schedule



The program—formats and schedule

The workshop took place from August 12 to 20, 2016 at the HCU in Hamburg.

Working in small interdisciplinary and internationally mixed teams of students and mentors was to ensure an intense and continuous scientific, organizational and cultural exchange among the B.I.S.S. participants.

Several formats were applied:

- Keynotes: Harald Kloft (osd) and Bart Halazek (Knight Architects) gave the thematic impulses.
- “Food for the day”: each working day began with one of the participating professors giving a short morning lecture.
- Group work with mentors: the students worked on their projects in groups of three or four following their own thematic and methodic focus, and supported by their mentors.
- Expert critique: the groups’ progress was commented on by a number of experts present during the workshop.
- Final public presentation: guests from press and politics as well as local and international experts and participating teachers commented on the projects at the closing event on Saturday, August 20. This event was open to the public and followed by a farewell party.

A special social program was also organized, where all participants from different countries and disciplines could meet in a casual setting.



The groups

On the first day, nearly 60 students—most of them in master's programs in the fields of engineering, architecture, urban planning and other related disciplines—created cultural and disciplinary mixed teams in a large team-building event: cooking together on the HafenCity University terrace.

Once the teams were established, they had only nine days left to explore the field, identify missing links in Rothenburgsort, agree on a project, work on it and prepare the public presentation. This time schedule was enriched by regular input—so-called “food for the day”—by one of the various participating professors, who also launched a

workshop day. Guest speakers gave presentations on a variety of themes, which added further spice to the food—as did the social activities.

Two highlights of the workshop were when the B.I.S.S. opened its doors to the public for the keynote lectures by Harald Kloft and Bart Halaczek. They gave significant thematic impulses on their specialist fields of expertise, future in engineering and bridges designing.

The final presentation and the closing event

At the end of the B.I.S.S., the results of the students' projects were reviewed by an international jury of architects, engineers, urban planners and the head of the jury, Michael Rink, a representative of the City of Hamburg. Together, they selected three projects that were presented to the guests at the official closing event on August 20, in the presence of Katharina Fegebank, the Second Mayor of Hamburg and Senator for Science, Research and Equality and the patroness of the B.I.S.S. 2016.

- Michael Rink, Chairman of the Jury**
Head of the project team Hamburg East at the Ministry for Urban Development and Housing
- Prof. Dr. Michael Koch**
Professor for structural engineering at HCU Hamburg
- Neil Thomas**
Director at Atelier one
- Klaus Bollinger**
Director at Bollinger + Grohmann
- Peter Schmal**
DAM Deutsches Architekturmuseum
- Prof. Lotte Bjerregaard Jensen**
Professor of civil engineering at DTU Denmark
- Prof. Dr.-Ing. Annette Bögle**
Professor for structural engineering at the HCU Hamburg



Preparation

Jury

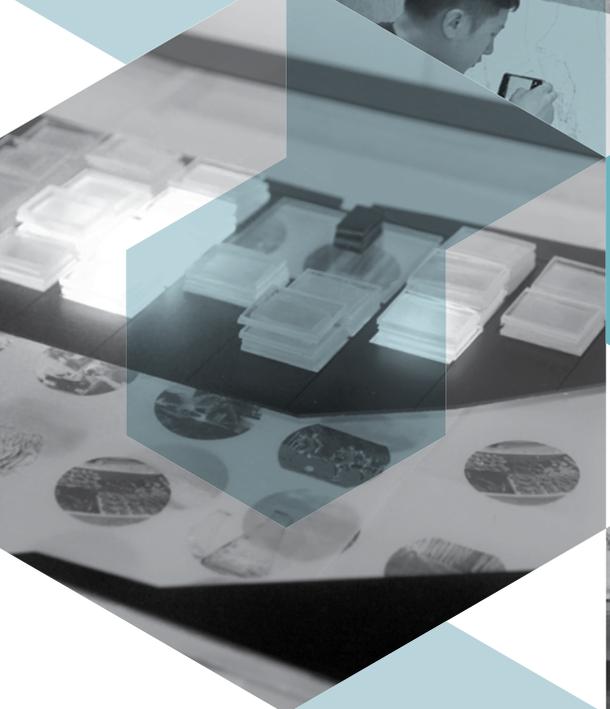
Presentation



SET THE PACE

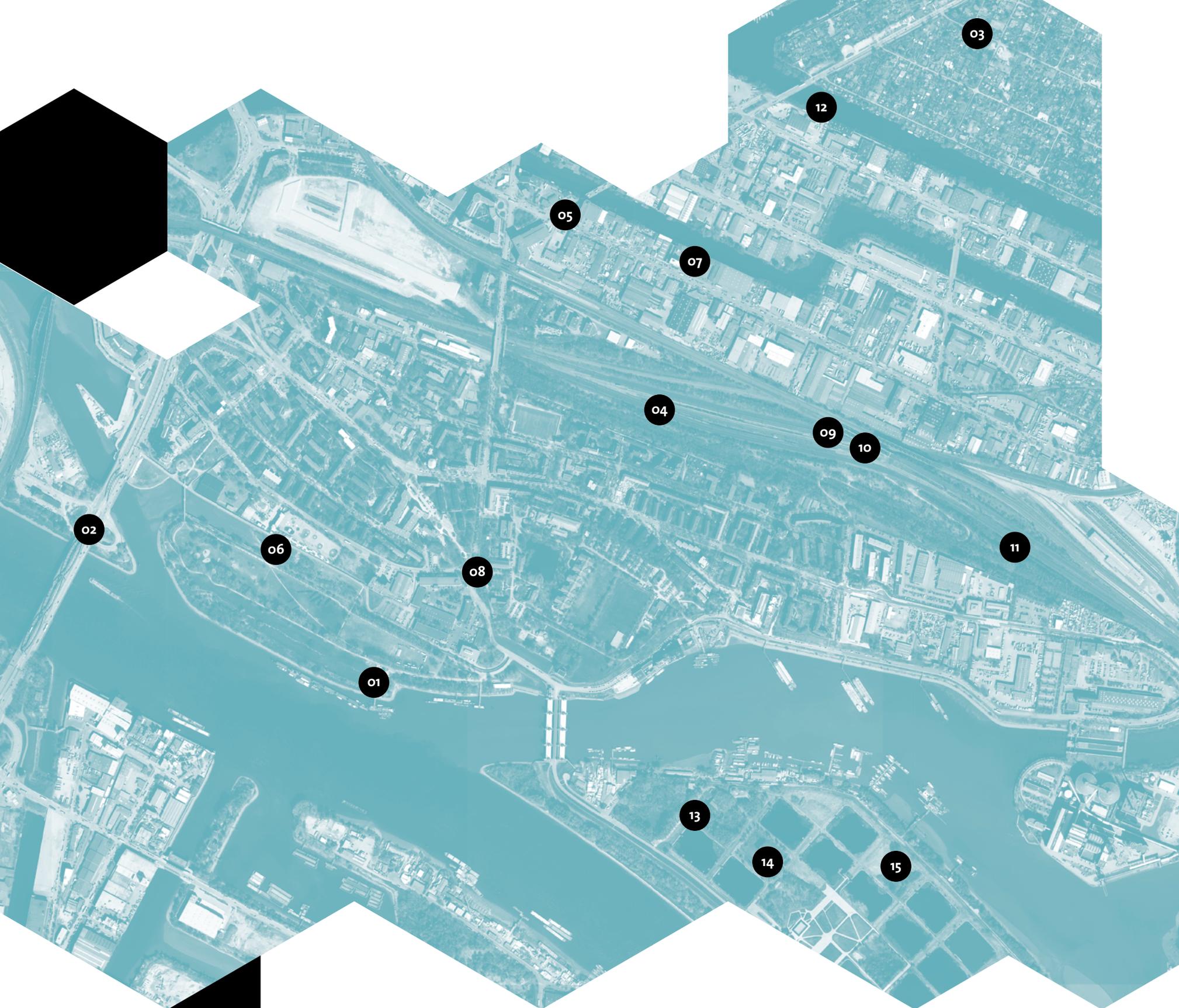


Exhibition



Celebration





The projects

01. Hyper ▶ p. 78
02. What If Bridges Die? ▶ p. 84
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Along with the students, it's the young researchers and teachers—the mentors—who play an important part in the B.I.S.S., they contribute to the documentation in a significant way. The layout of the documentation is divided into blue areas for the mentors' profiles and comments and the white areas for the students' comments and the projects.

Each group was asked to give us their feedback, to describe their group members' characters, their projects and their impressions of the summer school.



Kasia Urbanowicz,
Mentor

GUT, Gdańsk

Kasia studied architecture at Gdańsk University of Technology in Poland and at Roma Tre University in Italy. She obtained her Master of Architecture at GUT in 2008, where she now continues her research and work on her PhD thesis. Her PhD focuses on new media and interactive technologies in public spaces and their possible role in the city renewal processes. Her research interests include the potential of artistic interventions in city spaces to influence social relations and enrich the multisensory perception of the space.

Working as an Assistant Professor at GUT, she teaches at the design studio, deals with projects in abstract spatial forms and designs architecture and city spaces. Additionally, she runs an architectural drawing course in an art studio in Gdańsk and teaches axonometry at the Gdańsk Autonomous High School.

Kasia gained her teaching experience as a tutor, but also as a co-author and co-organizer of architectural and interdisciplinary workshops in Poland, Italy, Spain, Portugal, Belgium and Turkey. She is passionate about innovative ideas and unconventional solutions that can emerge during workshops. She ardently believes that the B.I.S.S. offers the students the chance of widening their horizons by being exposed to the variety of ideas, cultural backgrounds, the different professions and disciplines present.

Anna Burisch

Being forced to step out of my comfort zone as an engineer, I recognized that it is important to be open to changes. I also learnt to focus more on methodology and less on just the product or outcome.



Aleksandra Papunova
Technology Institute of Architecture and Urbanism, TUT, Tallin

Aleksandra is a creative and passionate person with a great sense of humor. "Why doesn't the swan have a head?" we asked while this Illustrator wizard worked her magic. Working with her was a pleasure since she always came up with a new idea when our mentors doubted our previous one.



Anna Burisch
MA Architectural Engineering, DTU, Copenhagen

Anna is a very energetic, communicative and positive person. She was able to go with the flow and embrace the uncertainty associated with our method. She even took off her shoes to feel the city. As an engineer Anna is an excellent problem-solver and learned to edit sound in a short time. Get ready for DJ FluffyPuppy!



Linnea Löytönen
MA Architecture, Aalto University, Helsinki

She is optimistic, a good listener and a great team player. She is very reliable, hardworking and able to learn new programs in a short period of time. Linnea is enthusiastic, but still a very calm person. "Why panic?" she says, having just five minutes left to finish the video before the jury comes.



At first we had trouble communicating, but when I tried to listen more, our teamwork began to be much better.





Viktorija Prilenska,
Mentor

**Tallinn University of
Technology**

From 2014 until now I've been working as a PhD student at Tallinn University of Technology. In 2012, I graduated from Delft University of Technology with a Master of Science in Urbanism. In 2009, I was granted a Diploma in Architecture from Riga Technical University.

I am interested in the application of series games as tools for public engagement in planning. During my previous studies I did research in housing typology, planning waterfronts in complex conditions and city branding through developing flagship projects. I am a practicing planner, therefore I do not teach regularly at university. In 2015, I gave a workshop for final year bachelor students at Riga Technical University on research structure and methods. I was a mentor at Delft University of Technology summer school for international students, where I taught communication, presentation and information skills. I spoke several times as a guest critic at Riga Technical University and RISEBA.

Teaching is my vocation. Although I do not practice it often, I like it, it comes easy and hopefully I am good at it. There are always ideas in my head about how to upgrade the existing course or how to design a new one. Luckily, Kasia and I share the same vision about the B.I.S.S. course we are giving. We are excited about the course we designed and are looking forward to testing it during the B.I.S.S. and to observe the outcomes.



Context Sensing space is not only about the vision. We experience space through hearing echoes, feeling the texture of the pavement with our feet, smelling the fragrance of a passerby and even through tasting the saltiness of sea air. Contemporary cities are filled with noise from vehicles, blinking lights from advertisements and distracting smells from vehicles.

This multitude of sensations may cause sensory overload, which is experienced as uncomfortable. What is interesting is that how we sense an urban space today might not be the same way people will sense it in future. What we consider pleasant sounds and smells in contemporary cities might be experienced as uncomfortable in a future city.

Site Infrastructure Entenwerder Park is a large recreational area situated close to the Elbe river. An old pedestrian bridge connects the park with a new café which attracts people to visit the area. The main characteristics of the space are the several visible factories, the noticeable noise from the nearby vehicle bridge and the large green empty space.

Missing links The experience of the site changed when we understood the context of the area. The area struggles with a high level of noise, air and soil pollution, conditions which are usually not pleasant to have in a recreational area. This given context might be the reason why the different members felt and experienced the park differently.

Utopian potential Entenwerder Park consists of beautiful elements, e.g. the huge park, the river, the trees, etc., but it is also surrounded by a polluting industry. This contrast is interesting, since the park has potential to become a center that defines the area's identity.

Theme Conceptual idea and development The team was first inspired by the dilemma of the invisible pollution characteristic for the site. It made us think about how knowing the context might change how a place is experienced. Later, we worked with a random future scenario consisting of three factors: social polarization, a new transportation system and extreme weather conditions. Based on our scenario, we decided to explore how a person with hypersensitive senses would experience the site.

Interpretation of "link" We interpret the missing link as warped sensations in the urban space. People living in the city are surrounded by artificial materials, rarely experience natural smells and may prefer smartphones to real interaction. The soundscape of the city is, however, overstimulating and research shows that this is stressful to many people.

Relevance for future cities We believe that it is important to think about the sensory experience when planning and designing cities. There is a need to focus on people and the sensory experience of the urban space in the future. The short movie "Hyper" is a statement for creating a utopia—the city that is not stressful but pleasant for all the senses.

Mentors' comments on Hyper

The group focused on multi-sensory perception of the space nowadays and in the unpredicted future. Students were fascinated by the Entenwerder Elbpark and the examination of the emotional response to the space, which changed as they learned about the context of the place, air and sound pollution, soil contamination, industrial surroundings.

Students decided to make a movie as their final project, though it was their first time working with sound and video recording devices as well as editing software. Since they had many ideas, they struggled to define the contents and message of the movie. Finally, they produced a short poetical movie representing their thoughts about the sensory perception of the space in the future.

Although the task was ambitious and their reflections were sophisticated, they cooperated well within the group, working as a whole, changing roles and defining every step together. They were hard-working, imaginative, innovative and they enjoyed themselves in the process. The result was thrilling and it was a pleasure to work with this group.



Final design

Creating the film “Hyper” is a short film about the experience of sensory overload. The protagonist is feeling Entenwerder Park in Rothenburgsort by using several senses. The park seems pleasant with the surrounding trees, the café and the river near it. The protagonist is, however, hit by an increasing number of unpleasant sensations: the traffic is noisy, the dirty water smells awful and the dog looks disgusting.

The message The hyper-stimulation experienced by the protagonist is visualized through fast moving images and amplified sounds. Details in the landscape suddenly start to become more visible and hearable. Factories that were previously experienced as neutral change into unpleasant experiences. The sounds from passing bicycles and boats are startlingly loud. The pigeons running around create a nervous atmosphere. The wind rustling the leaves feels like a storm.

The film climaxes when the protagonist becomes so stressed that she hides away. Slowly, she breathes, calms down and comes out from her shell. For now, she seems happy and is humming while walking barefoot on the grass. But what made her calm now? Will the feeling of calmness last?

The most important details and characteristics of the project

Storyboard Over a period of three days, “Hyper” was scripted, filmed and edited. The storyboard of the entire movie is a product of working with the random future scenario in close cooperation with the mentors. The images and the entire soundscape was recorded by the group and edited for the final movie.

The protagonist in “Hyper” has hypersensitive senses which leads to a need of hiding away. This is, however, the reality: many people already are stressed and the contemporary urban environment contains few places to rest. Are we heading towards a future where people must rest in isolated bubbles?

The final scene, where the protagonist walks barefoot on grass is a depiction of having calmed down. We think this is what should happen in a utopia—a city that is pleasing to all the senses. Hyper is a wake-up call for noticing the real need and importance of taking the sensory experiences into consideration when planning urban spaces.

What if the future environment could be stimulating but not stressful?



Kasia's comments on B.I.S.S. 2016

B.I.S.S. was a very fruitful experience according to academic and personal benefits. I appreciate the possibility of didactic training working with innovative methods as well as meeting and working with international and interdisciplinary participants of the workshop.

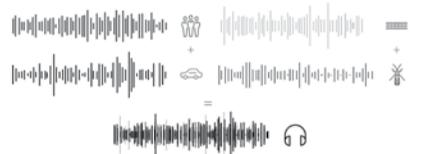
Together with my co-mentor, our main goal was to open up students for a more sensitive space perception, especially considering their sensory experiences. We also wanted to keep them as creative as possible, allowing them to work in totally unexpected conditions in the future scenarios for their chosen sites. Our plan was successful and we were very satisfied with the whole process. The topic of the group work is close to my research interests. The workshop gives an opportunity for didactic experiments, and since this one worked so well I hope to repeat it more often in future practice with students.

It was refreshing to cooperate with another mentor. We had a coherent idea and plan about the group work, which worked out very well, while on the other hand, the difference of opinions during the consultations enriched the discussions, giving the students a wider spectrum of the aspects to consider. I enjoyed working with the student groups—watching their development during the workshop and their progress while following our plan was a great pleasure. The results were in my opinion more than satisfying. I was impressed by the process that the students went through, the great ideas that they had and the way they implemented them.

The smart organization of the workshop allowed all the students to get to know each other and also let them get to know all the mentors. What I enjoyed the most was meeting such a wonderful group of people, enhancing not only the list of professional interdisciplinary contacts, but also expanding the circle of friends in the Baltic Sea region.

Hanna Närhi

During the short but intense stay in Hamburg, I learned how to collaborate with others and overcome cultural and linguistic difficulties. In my future professional career this will be a valuable experience.



Nikita John

Resource Efficiency in Architecture and Planning, HCU, Hamburg

When puzzling with transforming your ideas into words, ask Nikita for help. Nicky's prior knowledge in acoustics and sound helped us to understand our subject matter better.

Helina Maalt

Architecture, TUT, Tallinn

Helina is an efficient and fast worker. She keeps track of things and knows what needs to be done to meet the deadline. She is easily recognized by her spiky backpack.

Hanna Närhi

Architecture & Engineering, Chalmers, Gothenburg

Hanna is very passionate about the software subject and highly adept at it. We have never seen a person more excited about tension bridges.

Emilia Miszewska-Urbańska

Civil and Environmental Engineering, GUT, Gdańsk

Emilia is an innovative and quiet thinker. She is quick with solutions. Emilia has completed the Ironman competition and loves not just engineering, but also sports.

What if Bridges Die?

Mentors' comments on What if Bridges Die?

During the field trip aimed at experiencing the urban space through multiple senses, the group discovered the “sound identities” of the Rothenburgsort bridges. Although the key idea for the project emerged quite early on, the mode of the presentation was a subject of discussion till the very end of the workshop.

The concept of the project was to reflect on possible future connections—utopian links and the non-physical nature of these links. Students recorded the sounds of the Elbbrücken, combined them into a soundtrack and transformed this into other media.

The group's creativity and sensitive approach towards the workshop topic was remarkable. The students were enthusiastic about the project and cooperated with each other and the other groups very well. Students were consistently following through on each other ideas. They divided the tasks among the group and worked individually, but coordinated the workflow of the group as a whole. We enjoyed working with the group and the final project it created is impressive.



Context

Historically The story of Hamburg is written around its waterways and bridges. They have connected people for centuries across canals and rivers. Today in the district of Rothenburgsort, we see this timeless link yet again in the Elbbrücken.

Socially The users and surroundings of an area go a long way in creating an idea, an identity of a place, as is the case at the Elbbrücke. Every side the bridge connects with, harbors its own qualities. Each side has distinct elements both organic and inorganic that define and separate it. The bridge creates the only kind of cohesion in the area, while it simultaneously helps locate the separation.

Structurally and architecturally The most important characteristic of our project revolves around the structural and architectural qualities of a bridge, or rather the absence of one. We tried to separate the image that a conventional bridge creates and replace it with a new way of expressing that space. Could a new way of sensing the bridge change our way of devising this link?

Site

Infrastructure Rothenburgsort is a district that is fairly central. The Elbbrücken are the most important infrastructural connection to the city. The site and its immediate surroundings include the highway, railway crossings and the waterway.

Missing links There is a lack of cohesion in the district of Rothenburgsort. Every characteristic the area has to offer stands out individually, not melting in with the others. While the bridges connect the areas, they are in themselves the only point where all these characteristics could possibly merge.

Utopian potential Imagine the bridge as a link that does more than physically connect two points. In the future that we cannot describe or predict, there might be the need to let go of the structural and architectural identity of a bridge, making way for a new way to sense this link.

Theme

Conceptual idea and development The iconic Elbbrücken have a sensory depth that enticed us to look into them more. We realized that our experience of the Elbbrücken was shaped by our perception of their sounds and vibrations which created an atmosphere, a soundspace. Each bridge has a story and an identity. It is written by its past and strengthened in its present context.

Interpretation of “link” Sound is a mechanical wave propagating through a medium and is experienced through our senses—hearing, feeling and seeing. Sound can also create spaces—the compressed and expanded spaces between particles, ripples on water or as a waveform, being therefore the medium of our choice.

Relevance for future cities The future, however, is riddled with the unknown. There are countless possibilities. The question: “What If Bridges Die?” entices the user to imagine the alternative ways of sensing a space, setting aside the visuals that our logical selves know so well. Our interpretation of the link takes the user on a journey of sensing the space, when created by sounds which can and will be different in the future.



Viktorija's comments on B.I.S.S. 2016

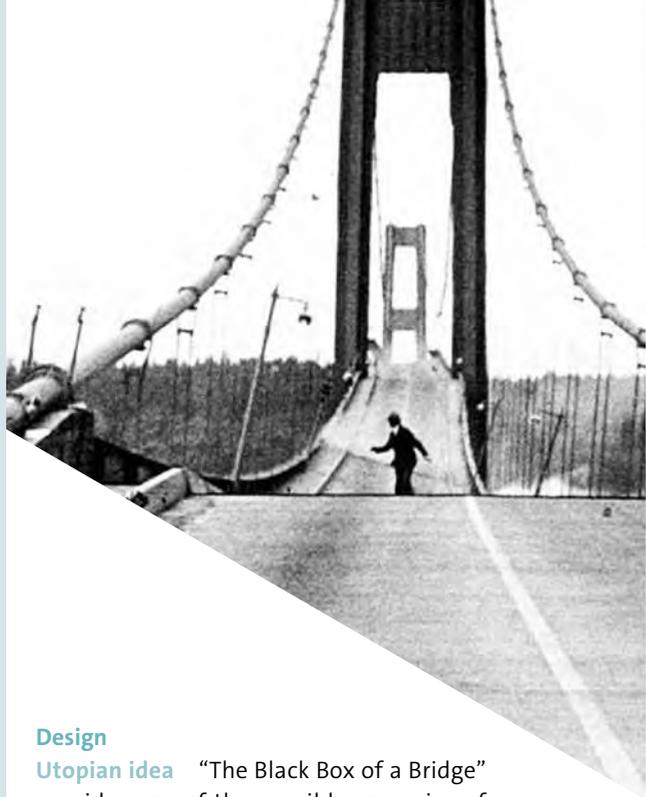
The course that I taught with Kasia was an experiment for me. She is an experienced mentor, an open-minded and easy-going person. I learned from her how to be a mentor. She was supportive when I needed help and at the same time gave me space to find my own expression.

I liked the structure of the B.I.S.S., in particular the kick-off of the day with the food for the day lectures and a discussion. All lectures were interesting and raised questions to think about. Social interaction, where students shared their project ideas, was definitely useful! I was curious about how other mentors teach. In my view, the B.I.S.S. is also an opportunity for the mentors to learn from each other.

I liked the process and the products of my teams—who were independent and excited about their projects. There were no interpersonal conflicts within groups. And, although I was expecting slightly different results, I liked the final output that my teams offered.

The public jury round was definitely useful! Students have to experience new approaches to project development and presentation that are different from what they usually do at university. That is why I liked Martin and Marieke's iterative critical design approach. I think that if I participate in B.I.S.S. again, I will commit to a structured process-oriented workshop as well.

Generally, I enjoyed the B.I.S.S. a lot! It was great that most mentors stayed at the same hotel and we had an opportunity to go to the university and go out together. I'd definitely be open to participating in the B.I.S.S. again.



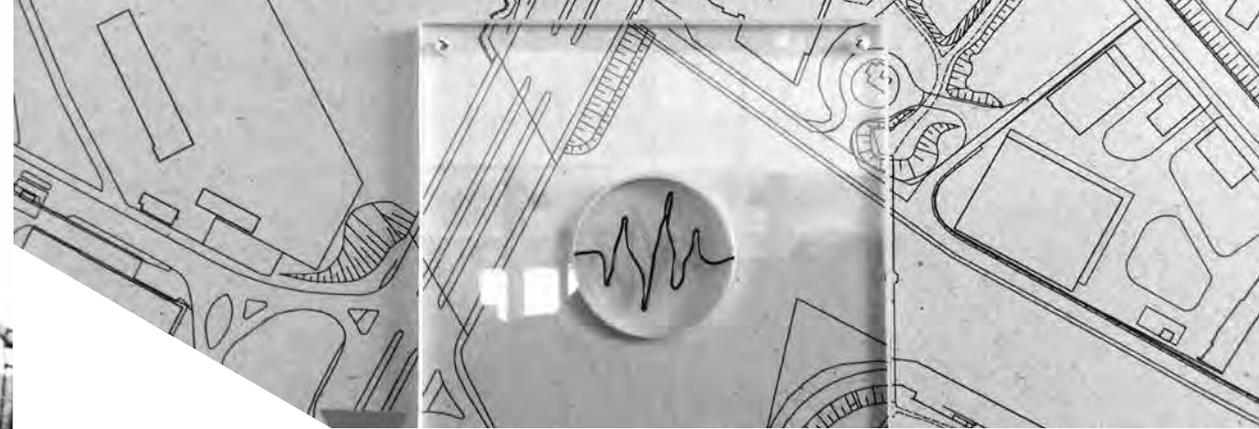
Design

Utopian idea “The Black Box of a Bridge” provides one of the possible scenarios of how we can experience this link differently, based on the sounds and the vibrations it creates. Can links in the future be based on sounds?

The link The physical aspect of bridges may not exist in the future, yet we know we can rely on the physicality of the sounds of the bridge that will transcend time and space. Sound is therefore how we chose to tell this story. We hoped to recreate and transfer our senses and our context to the future citizens.

Nikita Mary John

The entire exercise was actually liberating in a way. It broadens your horizons and gives a better perspective on methods that can be adopted. I think this summer school was a great way to practice life skills in a fun-filled but very real fashion.



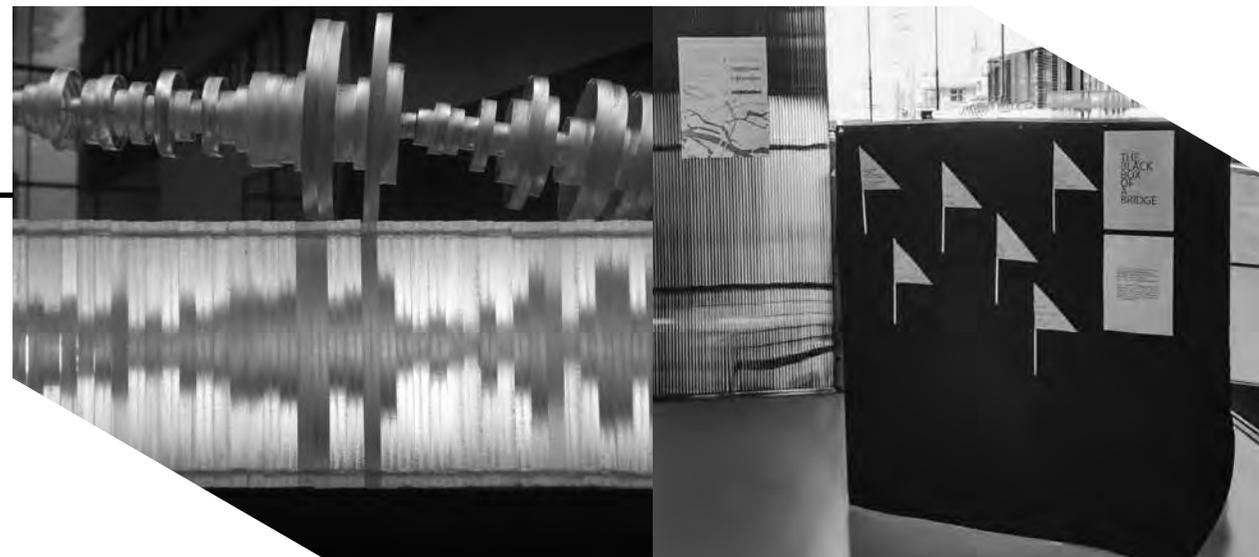
Implementation of the link A part of the installation was a composition of sound, complemented by vibrations. The soundtrack started with the sounds of water, then crickets, followed by people and cars, tracing a lifeline of the bridge from before its conception. A heartbeat, sounds taken from the wind, gives the sense of ages, life and activity. Each sound tries to dominate over the other. Leaving only the last few beats of the heart of the bridge, the physical aspect of the link disappears, allowing the freedom of imagining new ones.

Distinctive features

Sensing the future The installation was designed to make the user question the existing way of experiencing the link. The change of activities that can be expected in the future will meddle with the sonic identity, which changes. With the diminishing sounds, it is for the user to interpret the future of the link.

Possibilities The beginning of a new link? Redundancy of links in the future? Can links in the future be based on sounds? Will we still need a link in the future? What will the link be made up of? Does it have to be a physical structure?

Result Questioning the links as we see them now might help us better envision the links for the future.





**Marieke Behne, Mentor
HCU, Hamburg**

Marieke's BA degree focused on essential architectural topics, her master's degree was centered more on interdisciplinary projects relating to Urban Design.

She is interested in linking the theoretical with the practical. She currently works in an architectural office focused on redevelopment and is involved in a project that is converting an office into a residential building. She was involved in teaching building and conceptual design in architecture (Prof. Klaus Sill, HafenCity University) and is now part of the interdisciplinary research and teaching program Urban Design.

She is convinced that the university grants the option of thinking things through in a theoretical, scientific way and of finding solutions and concepts that go beyond the daily routine.

She thinks that working in international and interdisciplinary teams is a rewarding experience for new and also experienced participants and that it opens up new avenues for solutions to emerge.

Asger Karl

I found the idea of using design as a means of criticizing problems in society a very interesting proposition, and I hope to be able to use it further—if not in my studies, then later during my profession.



**Giselle Bouron
Computation in Architecture,
KADK, Copenhagen**

Giselle was responsible for the text and merging all the parts together in writing ... and the one always calling out the beer o'clock!



**Sebastian Gatz
Computation in Architecture, KADK,
Copenhagen**

Sebastian was the dark humorist guy of the team. Very good in doing technical drawings, we discovered his biggest strength in the bar, at night. Very precisely (because he is German, of course), he was able to pour sand perfectly into the model.



**Aleksandra Suwińska
Architecture, GUT, Gdańsk**

Alex was the Photoshop pro. Without her, we wouldn't have been able to achieve such a nice panel, and have had such good crits!



**Asger Alexander Wendt Karl
Architectural Engineering,
DTU, Copenhagen**

Asger is a highly creative engineer. He can make a technical drawing of a box in Illustrator without a problem. We were very lucky to have him in our team. How would we have built a box without him?:D



* MUNICIPAL IMMIGRATION INTEGRATION PROGRAM



**Martin Kohler, Mentor
HCU, Hamburg**

Martin studied Landscape Architecture at Hanover's Leibniz University and South Australian University in Adelaide.

His research focuses on open urban spaces in a comparative international perspective and the use and potential of neglected spaces in urban agglomerations. He also specializes in urban photography and visual anthropology. He now teaches disciplinarily and interdisciplinarily in the fields of urban planning, urban design as well as urban photography.

His special interest lies in urban processes and informal planning. He is motivated by the students' engagement and enthusiasm. From the B.I.S.S. 2016, he expected discussion and collaboration between students and teachers from many different backgrounds on one of the most distinguishing factors in Hamburg: the water-city relationship in the port area and beyond.



Context

Historically The focus area of the project is Rothenburgsort in Hamburg, which lies close to the Hafencity area that is currently undergoing large-scale changes. The east-bound expansion of Hamburg has historically been very limited, leading to large areas of the city differing significantly from their surroundings. One such area is Rothenburgsort, which now faces the possibility of becoming the next area to be redeveloped.

Site

Socially Rothenburgsort can be divided into three somewhat separate zones; the southern part, which is comprised primarily of residential areas, the industrial central part, and Billerhuder Island to the north, which contains allotments with small houses and gardens. This island is one of the government's target zones for densification, but the garden's owners don't want to lose their little pieces of heaven. At the same time, Germany is promoting its "openness" regarding new arrivals. This raises a contradiction. Our project wants to deal with this contradiction—and it seeks to hone in on the impact of our self-centered desire of comfort at the expense of those less fortunate.



Structurally and architecturally The project is essentially an underground skyscraper placed directly beneath Billerhuder Island, which means that it intentionally stands in stark contrast to the structural and architectural context of the surroundings above. Where the island is comprised mainly of smaller houses and gardens, the massive underground structure represents the direct opposite..

Missing links With the development of the Hafencity area in Hamburg, and the ever-increasing need for space, it seems almost inevitable that all of Rothenburgsort including Billerhuder Island will face changes in the future. In this project, the missing link is the acceptance of this change from the inhabitants, which we seek to overcome by showing—through critical design—why this change is necessary.

Aleksandra Talko

Personally, the B.I.S.S. put me in touch with different people from around the Baltic Sea (and the world), teaching or showing me interesting and fruitful cultural differences in working styles.

Utopian potential The M.I.I.P. project does not try to show a potential utopia, rather the opposite; by showing a more dystopian future for the area, the goal is to dissuade the inhabitants from staying on a course which might lead there and instead embrace the inevitable change and work towards an actual utopia.

Mentors' comments on M.I.I.P.

Combined with the arrival of refugees and other immigrants, the underground tower reworked this statement and gave a grotesque and obscene ARCHITECTURAL PROPOSITION communicated in a cool rational engineering language. The notion of unwillingness to change that came up in the analysis sparked a line of thought from the mental overload of chaotic urban places like the Billwerder Straße to the criticism of large-scale architecture as anonymous locations and places of social separation that have to be overcome.

Theme

The theme of our project is **Living Water Lines**, which means the project aims at regenerating the synergy between the Elbe river and the people in Hamburg. Our main focus was to reestablish the connection with water, providing access to the river and enhancing the movement of pedestrians and cyclists in the area that is currently mostly dominated by car traffic. Moreover, the project is intended to play with the nature of the river.

Motivation

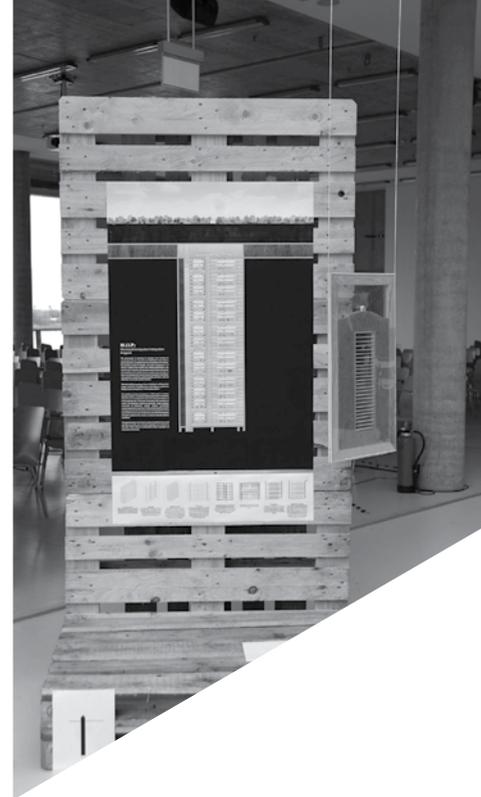
The main goal of our project was to connect the northern and southern part of the city through highlighted spots without competing with existing structures. By placing emphasis on significant characteristics in the chosen places, we create not only the connection, but also “living” spaces that will attract people. The project was intended to encourage people to explore the landscape and to show new, unexpected and beautiful views that the area exposes. The goal was also to incorporate climate change adaptation and to create a structure that would be adaptable to the constantly changing tide. An important matter was to establish an enjoyable, invulnerable path for cyclists and pedestrians to cross the river without obstructing boat traffic in the process.

Structure

The focus of this project was the idea of the connection and how the connected spots could be developed. The structural concept was not considered the main topic during the B.I.S.S. but rather something that could be developed at a later stage. Yet there is an important structural feature that was incorporated into the bridge design. The curved path ensures stability. A straight path, supported from below, would be more inclined to fall when pushed from the side. The curved path also handles thermal movements much better.

Distinctive feature

There is no single most essential part in this project; its wholeness is the most distinctive part. Perhaps one can even say that neither the bridge nor the developed spots are particularly important, but instead the fact that an underdeveloped area has been identified. The project's role is to highlight the potential and the underlying problems at hand.



Marieke's comments on B.I.S.S. 2016

The B.I.S.S. brings together nationalities, disciplines and methods on different levels. As a format of a summer school, the B.I.S.S. creates a space for students, teachers and experts working on a topic that is relevant for each invited university. Working at the waterfront of Hamburg, the B.I.S.S. provides the students the opportunity of transferring their solutions to their current homes, which are all harbor cities, too. As a format of a research project focusing on interdisciplinarity in teaching, the B.I.S.S. creates a space which allows the participants to exchange their knowledge of and methods for new approaches in interdisciplinarity of teaching, which can be applied and tested in the format of the summer school.

One result of the reflections and theoretical workshops between the first and the second summer school ended in a format by which the mentors were able to partner up in pairs. For me, this seemed a very intelligent enhancement to the summer school: to have the different perspectives of the disciplines during the entire course of the two weeks and not only as a flash-light represented in the experts rounds and in the jury at the final presentation.

Due to the heterogeneous interests of the mentor pairs preparing the topics beforehand, the results of the students' work represented a wide range of subjects and also methods, which at first sight were hardly comparable. The conversation formats during the week were well-balanced between presentations and discussions. All participants, students, mentors, experts, speakers and organizers of the summer school had the possibility to exchange their knowledge and interests in a broad way in different formal and informal discussions. The difference of disciplines,

Katre Laura

I believe this method of working and especially working in groups with people from different disciplines was very beneficial, as architects coming straight from education are not used to working and collaborating with other disciplines.



Dennis Wiklund
Architecture, KADK,
Copenhagen

Dennis Wiklund is a native of Gothenburg city, with a bachelor's degree in Architecture and Civil Engineering at Chalmers University. He plans to go back to Chalmers after the summer to acquire a master's degree in Structural Engineering and in Architecture.

Katre Laura

Architecture, KADK,
Copenhagen

Katre is a graduate of Computational Architecture and has a degree in Mathematics, which enables her to process architectural issues with critical computation and digital technologies.



Michał Bańka

Architecture, Gdańsk
University of Technology

Michał is a senior student of an Architecture master's program. His fields of interest are non-physical aspects of architecture and urbanism, especially the cultural and historical background of built structures.

Agnieszka Ziółkowska
Architecture and Urban
Design, GUT, Gdańsk

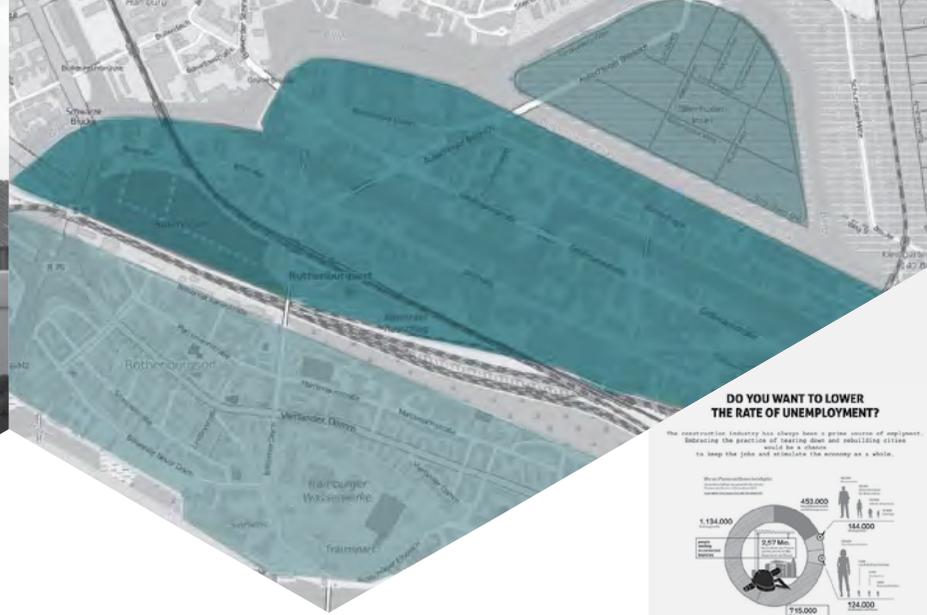
Agnes studies architecture and urban design in Gdańsk, Poland. She is interested in the social aspect of designing, for people, places that match the appropriate city scale as well as places that match the architectural scale.



Burning City

knowledge and methods, the discussions between group members, mentors and experts were all represented and included in the huge range of interesting projects. Well-prepared and edited for the final exhibition, the projects yielded strong results and solutions—the work of the long discussions during the last two weeks. A special competition also in itself, when we think about all the work that goes into architectural competitions over months that end up in three A0 panels.

An interdisciplinary and international summer school includes the chance to discuss and to question the work of the last two weeks in a broader context, e.g. by means of the final presentation. In this case, the format of presentation rated by an interdisciplinary jury could be developed in a discussion format for all participants.



Context

Historically The world's population is rising at incredible speed. The cities need to be densified. Throughout history, Rothenburgsort was an area with a low population, which now needs to be densified, too.

Socially Problems, such as the rising number of immigrants, refugees and expatriates, speculation of the property rent prices, non-sustainable buildings, having uninhabited spaces, property price speculations, homelessness, high rates of unemployment and a steep social ladder is the reality that the city sees today.

Structurally and architecturally Rothenburgsort is an industrial area with a very low population. Most of the buildings in the Billstraße as part of the site have a commercial purpose; the other part holds allotments.

Agnieszka Ziolkowska

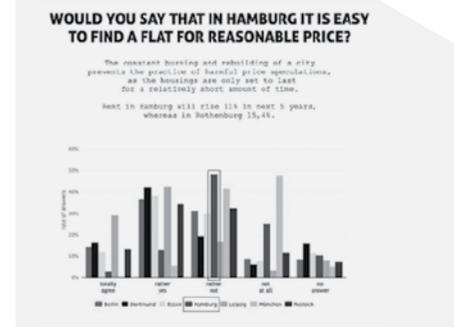
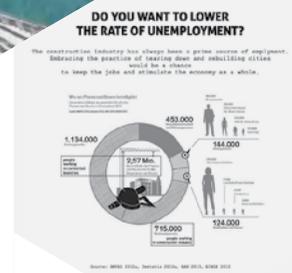
Despite different points of view, I learned how to reach common goals working together in an international team.

Site

Infrastructure Rothenburgsort is an area of Hamburg consisting (mainly) of three islands separated by channels, but connected by a network of bridges. The area's main connection to the wider city is the roads, the bus lines and as the tram, which passes through the largest and southernmost of the three islands.

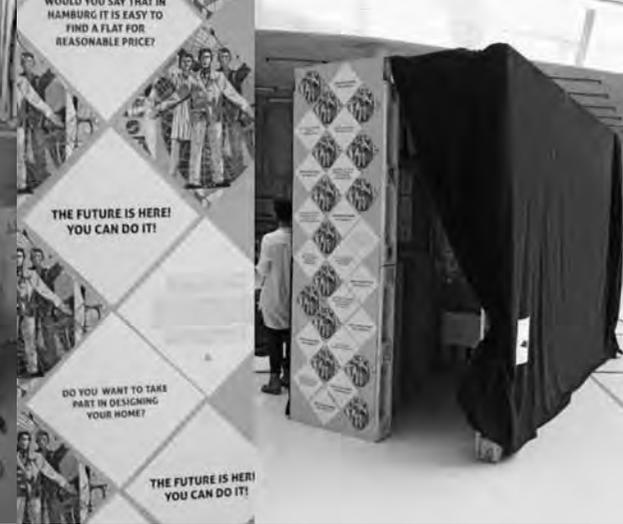
Missing links The area of Rothenburgsort lacks a social link. The three islands, and the people living on them, are very different in character. In spite of that, they all share a certain insularity and unwillingness to see the area change. However, the lack of cohesion makes them vulnerable to forces directed at changing the area without their input.

Utopian potential There is an opportunity here to create something utopian in the original sense, as a critique towards contemporary society. In Rothenburgsort, we can do that by highlighting an alternative way to live and to approach change in an already rapidly changing world.



Mentors' comments on The Burning City

The Burning City project is a response to the constant increase in poverty and social exclusion. Based on the lack of empowerment of the residents in Rothenburgsort, a conclusion drawn from observations, interviews and discussions, the group used this idea as a tool to question land property in general for opening a debate about other strategies for the economic and creative relationship between city, society and neighborhood. Related to these questions, the Billerhuder Island represented a massive land resource in a highly developing part of the city. At the same time, this resource cannot be used differently as it also represents a green, idyllic function for the better-off members of the city.



Theme

Conceptual idea and development The team focused on the problem of the city today. Possible solutions were brought to extremes to show that sometimes we do not see a way because before we think it might work, it is already defined as ridiculous or utopian. The team's intention was to prove that sometimes we need to risk a lot to face the major challenges that the future presents.

Interpretation of "link" The link is implemented as the time ball. The time ball connects the future with the past—the existing with the gone and the unborn. It is metaphorical but also very practical link that defines the lifetime of the city and is the great ruler of the whole urban organism.

Relevance for future cities The cities nowadays have more and more problems with the processes that are not yet defined and there are very few ideas on how to solve them—and some of the few ideas are not taken into consideration as they are said to be too utopian. But what about if we first say "what are the chances?" and then explain the implementation. Will it convince people who are not sure whether the radical steps will lead to a positive outcome?

Design

Utopian idea The proposal is the Burning City program. This program gives a chance for the city to be reborn like a phoenix and become a better city. This program allows people to create the city for themselves and their families, in this lifetime, and create it sustainably for the highest good of all and for future generations to enjoy as well.

The link The Burning City has a device, a time ball, which is the device used by many ports to help the sailors to set an accurate time, but here the time ball sets the time until the city is burned.

Implementation of the link The time ball starts to descend, thereby warning the people that the time for the city to burn is imminent. When eventually the ball hits the ground, it creates a circuit and when the first storm with the lightning comes, the city burns. The cycle of burning and rebuilding to suit the needs of the city and its inhabitants begins.

Distinctive feature

Example of critical design The project's aim is to answer the current but timeless problems—not to solve them but to initiate discussion. Facing the question of equality in society, contemporary input in historical structure, sustainable development of the city, the team proposed fire as a hypothetical solution.

Link: past & future—time ball The most important part of the process of burning the city of Rothenburg is the time ball—a device that provides the connection between the past and the future. When the ball goes down the mast, the first storm's lightning burns the city. Every ten years, inhabitants of the district have an opportunity to rethink past solutions and devise new ones for the only just beginning future.

Exhibition Design — Contract An essential part of the design is a contract: everyone who signs it, agrees to belonging to the Burning City program. They have both rights and duties upon signing the contract. The way of presenting the design is in the propaganda style of the 1930s.



Aleksandra Sliusarenko

B.I.S.S. is my first international collaboration experience. As like everything that happens with people for the first time, it changed my way of thinking. It showed me perspectives and gave me inspiration to make my utopian-urban planning dreams come true. And what's crucial, it has taught me how to do it.

Martin's comments on B.I.S.S. 2016

The B.I.S.S. is more than a summer school. Integrated in a research project based on the possibility of teaching interdisciplinarity, the summer school is a laboratory and a testbed for ways of bringing closely related, but different disciplines into productive communication. While the summer school in 2015 introduced the topic and was the first test of the different ways to teach, this time, it was the first where specifically developed approaches and methods for this case could be applied and tested. As a participant of the first summer school, but more so as a participant in the intense reflections and theoretical workshops between the two summer schools, it became very clear to me how the summer school as a project has evolved, nourished from the organizational experience derived from the previous summer school and the methodological reflections and discussions among the teachers. On the level of organization, the smoothness of the previous summer school could be continued and improved in terms of material access, support of the groups within their studios and the appropriate modifications of the breakfast talks. Also cutting back some elements like the experts' question round enabled a much more vital group process. This was one of the very few formats from 2015 that did not live up to expectations.

Anna Antonova
Rational Fighter—
Sound Editor
Engineering, Aalto,
Helsinki

Anna's most distinct attitudes are joy and realism. Always with a smile on her face, Anna's input often related to feasibility, structural stability and innovative ideas. She was the grounding anchor of the otherwise "in chaos-floating" group and worked as our sound engineer.



Aleksandra Sliusarenko

Chaos Provider—
Film Director
Urban Planning, GASU
(SUACE), St. Petersburg
 Alek's ability to combine serious thoughts with irony refreshed our group work on a regular scale. She scored with profound knowledge about city environment and created the storyline of our video. During production she showed her skills in directing the video and impressed us all with her drawings, critical computation and digital technologies.



Yao Yuchen
Task Achiever—
Chaos Idea Creator

Architecture, Aalto, Helsinki
 Without any knowledge of video editing or recording, Yao dived into this matter overnight. With calm discipline and continuous dedication, he became the key developer of our successful video. With great patience, he kept up his performance right up to the ultimate finale on Saturday.



Gabriel Niessen
Poetry Manager—
Communications Director
REAP, HCU, Hamburg

Equipped with magic access to unlimited coffee and beer, Gabriel supplied the large group around the Critical Design contestants with liquid brown gold. He took care of the equipment required and the philosophical input. Together with Yao, he invented the iBubble idea and structured the work.



The results of the intense discussions among teachers and researchers during the year could be seen in the acceptance of the multi-disciplinary approaches and topics proposed by the mentors. As an extension to the first summer school, the partnering of mentors in pairs of two as a social mix as well as a two-dimensional vector of research directions seemed to me a very apt improvement, though arguably an improvement with some quirks. To name the most obvious one, this constellation resulted in final works of the project groups that are hardly comparable. From this point of view, the element of the jury/competition might be worth discussing for future workshops.

Overall, the second edition of the B.I.S.S. summer school was in my opinion an immensely valuable development from the already good first start in 2015 and I feel very glad to have been part of it.



Context

Historically The core part of this area used to be Hamburg's second most important shopping district until the beginning of the previous century. War brought destruction and chaos. Beautiful buildings were not rebuilt, but the residential use of the industrial part was prohibited. In contrast, the northern part became a place only for country houses, mostly created in materials taken from destroyed buildings.

Socially The territory under discussion can be divided by its main function into three principal parts. Each of them is considered as a place of living or working for different types of people. An enhanced diversity of the members of local community creates its main social problem: segregation. Regardless of their role (house owner on the northern part of the site, or an immigrant shopkeeper on the southern part), each member values his personal space and his own future.

Structurally and architecturally As was mentioned earlier, the main structural characteristic of the site is its split-up into large segments without a strong connection between them and any functional versatility inside. A proposal should thus either target a large general scale or a small scale in answer to the present situation.

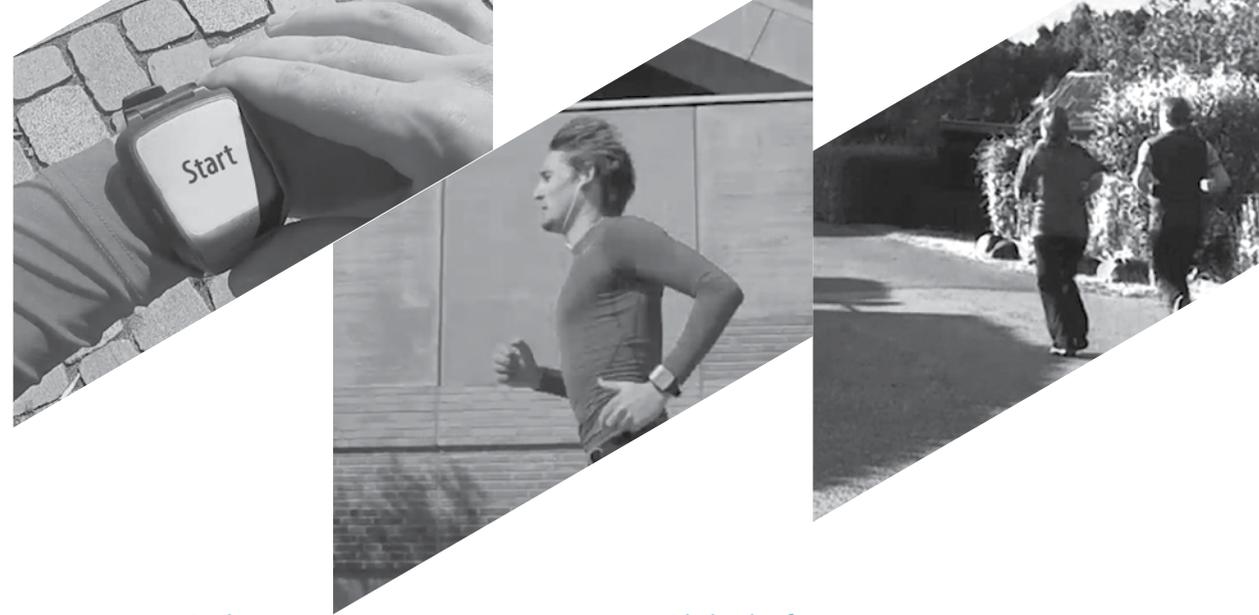
Site

Infrastructure The territory under consideration consists of three sections that are divided by water and partially connected by a few bridges. This area translates its segmented structure on every layer of urban analysis. The railway going through the southern part of the site is a delimiter, as are the canals.

Missing links Rigorous definition of each part creates missing links not only on a build-a-bridge layer. Lack of connections between those parts, chaotic self-developing structure inside, deficit of vacant land for a new construction—these are main features of the site from the “problems” point of view. The lack of connections keeps down any possible systematic development of the territory as an area in one piece.

Utopian potential As a fragile unsustainable system, this part of Hamburg causes no end of problems, but also much room for improvement. Deficiency of control gave this site an advantage to grow up in pursuance of needs and demands of local people. Beside the chaos it obviously brings, it shows precisely what is important for society, and its visions and beliefs. All predictions our team had before the poll of locals were confirmed by the results.





Theme

Conceptional idea and development The project's concept is based on a human desire to be individual and different from other people. Strong averseness to any changes of the site combined with an aspiration to be separated were used by our team as a base for an inventive concept: a personal product that will satisfy everyone personally and without any real process of change.

Interpretation of "link" iBubble is a small device that can give its owner the freedom of how his or her own reality should look like. Whether it is a housekeeper from one of those lovely houses in the north who wants to save the soothing nature of the paradisaal island or an immigrant who has set up a small shop in the industrial part and is tired of the animosity he feels every day from the locals: iBubble will be a real catch for everyone.

Relevance for future cities Universality of iBubble is provided by its small scale and ability to be individualized by everyone's needs, desires and prejudices without any direct offensive effects on its surroundings. This product doesn't pretend to be the last gadget in the line of personal or virtual reality devices. Quite the opposite: we create a next logical step in a development of this sphere with the option of it being improved or used as a base for future progress.

Katre Laura

I believe this method of working and especially working in groups with people from different disciplines was very beneficial, as architects coming straight from education are not used to working and collaborating with other disciplines.

Mentors' comments on iBubble

The film made by the students shows how the understanding runs strangely in tune with the contemporary desire for isolated physical communication via individual digital devices.

Design

Utopian idea Increasing tempo of social mobility and growing diverse demand for making an urban space flexible enough to correspond with changing interests of everyone. It should be precisely defined and more personalized than ever needed before. How can we make our reality personal?

The link A poll of local society on the site found that 100 percent of the people there considered that any change in the urban structure of this territory was something undesirable. Regardless of their role, respondents value the importance of private space.

Implementation of the link iBubble is a small device with an app that goes with it. You can easily turn it on or off, and customize your personal settings with your smartphone. A wide variety of options make the product absolutely personal and flexible. With iBubble, what to see or not to see is only your choice. Anything or anyone you dislike: irritating objects, disturbing noises, people you don't want to see—are simply blended out.

Distinctive feature

Scale The chosen scale of the project seems to be unpredictably small. Why? Thorough and astute analysis of the site showed us a growing importance for local society to live and work in a personal protected space. As a result, a tendency of separation has appeared. A personal gadget that will satisfy individual needs is a logical solution for those who would rather customize the reality than try to find a compromise with everyone else.

Be careful about what you wish for The critical base of this idea is to make people think twice about their wish to close their eyes towards something they dislike. If it would be possible to get what you want, would you be ready for its result afterwards? Hiding unpleasant reality, or rather, hiding yourself from it, will lead to a bigger separation. Do you want to live in an empty world?

Is it our future? The next question we raised in terms of the possibility of hiding unpleasant reality was: "Is it our future? Or is this future already here?" Looking at the communication problem of the site as a common social problem today makes our project a universal device for anyone who wants to be different. At the same time, this product will become just yet another way to disconnect oneself from reality.





**Hanna
Obracht-Prondzyska,
Mentor
Gdańsk University of
Technology**

After her studies in Vienna and at the Gdańsk University of Technology, where she is doing her PhD, she began work at the Space Syntax Studio in Bucharest, which focuses on city planning. Currently, she is working on spatial development planning for the Pomeranian region and the Gdańsk metropolis where she combines both professions of regional and urban planning.

Treating the city and its surroundings as an organism is a concept that fascinates her. Currently, her objectives focus on the impact of metropolitan growth on the small towns in the region. She is an “animator” involved in academic and social projects, both on an international and local scale. Within the ISOCARP (The International Society of City and Regional Planners), she coordinates the Mentor & Student Research Lab program, where international teams work on the research related to the topic: Vibrant Urban Solutions for Baltic Cities.

She believes that when working with architecture-obsessed students, the innovative findings, recommendations, as well as planning and design solutions spring up easily. She believes that B.I.S.S. offers a form of working together that immediately puts the team in contact with a particular problem and that it’s a rare occasion for interested students to think outside the box.

Martin Schmidt Lauridsen

I believe I will be more tolerant of personal and professional differences, so as to not inhibit but strengthen one another. I have learned to utilize a larger palette of tools which means I will be able to design at a higher level.



**Joanna Kordemets
Architecture
TUT, Tallinn**

Joanna is very skilled in graphic design and in creating presentation material. She is thorough in the design process and good at thinking outside the box. She has great confidence in her own abilities and is a steadfast person.



**Martin Schmidt Lauridsen
Architectural Engineering
DTU, Copenhagen**

Martin is very level-headed and manages to not get discouraged by anything. He sees every obstacle as an opportunity for new ideas to emerge and with this characteristic keeps the whole group going. He is great at working in a team and knows how to incorporate other people’s ideas.



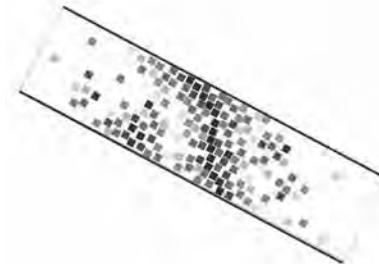
**Tristan Schmedes
Architectural Engineering
HCU, Hamburg**

Tristan brought an important technical aspect of design to the group. He is always open to new ideas and discussions and is skilled at seeing the practical aspects of implementing a project, while trying to optimize the concept.



**Natalia Lipczuk
Architecture
GUT, Gdańsk**

Natalia is a playful and optimistic person, who highlighted the importance of having fun during the project. She is a team player, always looking for ways to contribute to the group. She is highly skilled at designing and drawing.



06 The 2nd Movement



**Karl Eriksson, Mentor
Chalmers, Gothenburg**

Trained as an architect in Gothenburg and London. My interest has been guided towards the housing question and

the transformation of the contemporary European city, it especially lies in the meeting point between housing and urbanism where our cities are shaped.

In my research, I am concerned with the process of regeneration and how it influences our cities. How can we create beautiful and well-integrated new parts of urbanism that learn from the past but also anticipate what is yet to come?

I am a practicing architect working for London-based Karakusevic Carson Architects. Our work is part of a new wave of public-driven housing, especially focusing on social housing. Working closely together with local councils, our aim is to form sustainable and well-integrated neighborhoods that contribute to the wider city.

To test the “unforeseen solutions” and use architecture as an instrument that explores how the industrial harbor area of Hamburg can be transformed and adapt to the future. This transformation and the articulation of the post-industrial/post-capitalist city is without a doubt one of the most pertinent architectural questions of today.



Context

Historically You can't talk about Hamburg without mentioning the impact of water. The city has always been changed and formed by the water and is subject to the tides several times a day. As water becomes more important with the rising sea levels, we found it interesting to investigate ways in which you can utilize the water levels instead of trying to block or prevent them.

Socially As climate change and therefore an unpredictable climate becomes more common, there is a need to cope and adjust to the changes in a constructive manner. We found it interesting to see how people interact, move and escape when flooding is normal and happens frequently. Furthermore, how can we redefine our warning systems for people to project calmness instead of panic.

Structurally and architecturally The area of Rothenburgsort is currently defined by industrial buildings, combined with parks and garden houses. In future, the area is likely to contain more skyscrapers and narrow streets. In case of flooding, a transpiration system adjusting to the rising waters is needed.

Site

Infrastructure The site is located in the most southwestern part of Rothenburgsort: Entenwerder Elbpark. One specific site that was focused on is the “Haake,” a part of the site that is strongly influenced by the tide. Currently, the Haake is crossed by a pedestrian bridge.

Missing links The bridge is the only link between the recreational area of the park and the opposite industrial and residential areas in several hundreds of meters distance. In case of a flood, the Haake would separate Entenwerder Park from the opposite shore completely. The recreational area would only be accessible with great effort.

Utopian potential Due to the high tidal activity around the Entenwerder Elbpark, there is a lot of energy available. Thinking of energy or sound creation by tidal forces shows the utopian potential of the site. A link created by tidal or even flooding scenarios also gives great potential to the area.

Tristan Schmedes

On a personal level, I was lucky to get to know new cultures and their way of thinking, which initiated the start of a personal rethinking process about a number of today's political and social issues, but also about building-related topics.

Mentors' comments on

The 2nd Movement

The technically-oriented group decided almost immediately in which direction the concept was to be developed. This allowed the team to think about the technical solutions in detail. Both communication and cooperation problems resulting from the various disciplines of all participants involved were quickly resolved. Moreover, it can be said that the difficulties that appeared at the beginning forced the team to search for a compromise, which resulted in design solutions that satisfied all group members. The group deserves congratulations for their discernment and care for details in particular as well as their creativity. Without that, their work would not have been mentioned during the B.I.S.S. summarizing presentation. Noteworthy is the way of archiving the process of concept development all groups were asked for, where the team was using social media. In this way, we as mentors were able to learn from our students! The openness to criticism turned out to be the key to success and led to a good atmosphere.



Theme

Conceptual idea and development On the one hand, the concept embraces a creation of links over the Haake working with the water level. Depending on the tide, different floating parts in fixed columns are activated and create new pathways over the Haake with changing water levels. On the other, the movement of the floating bodies produce sounds creating awareness of incoming floods.

Interpretation of "link" In case of a flood, the recreational area is not accessible anymore to people. The flexible floaters create links to the park independently of the water level. Even during the daily tides, the different heights of the columns create new links to the recreational area. Furthermore, the sound-creating feature in the concept creates a link between people and the increasing number of extreme weather events in the future.

Relevance for future cities In the long term, the concept is imagined to be adapted in cities strongly influenced by floods or tidal changes. Thanks to the flexible structure, dikes will not be necessary anymore to protect important infrastructural links. The sound-creating effect is meant to be used as a wide-ranging flood warning system in cities influenced by flooding events.

Design

Utopian idea The use of flood in a pleasurable way already sounds utopian to us. That is why we wanted to create room where people can gain some profit involving truly continuous social aspects of life, even in the difficult event of a flood. Changing thoughts of society about floods is utopian, showing them "good" aspects of the inevitable.

The link Our link can be placed in several places. We created some "recipes" for different places all over the world. The project that we undertook can be treated as an example and of course be improved. Our exemplary link is placed to the south of the district and it creates a connection between two edges of canal.

Implementation of the link Although our project itself incorporates a relatively small area, it defines an idea that serves as an example to be used on a larger scale to recreate the connections that are lost in case of a flood and take advantage of the flood itself.

Distinctive features

Sounds of flood An important part of our project is the instruments that produce sound with the movement created by the flood. The sounds serve as a gentle alarm system for the flood and add a characteristic value to several areas around Rothenburgsort.

The pattern We were inspired by the site itself, more specifically the changing pattern created by the tides on the surface of the canal. Different water levels create different patterns of the columns, resulting in a continuously changing space.

The 2nd Movement The name of our project represents all the different aspects of our project—the movement of the columns, the sounds created by that and also the new path to cross the canal created by the flood.



Karl's comments on B.I.S.S. 2016

It was a privilege to be part of the bustling, challenging, intermingling, collaborative, upsetting, ingenious, thought-provoking, confronting, ambitious and utopian B.I.S.S. 2016—what amazing results that were achieved in the end! For me, the most apparent and noteworthy aspect of the B.I.S.S. is that it is so hard to tame and impossible to control—and that is its strongest merit. No one can anticipate—or even less try to influence—the outcome you get when you bring over 70 ambitious students from all kinds of different fields together in the same building for nine consecutive full-on days.

Bustling around the finissage—reading, watching and listening—I was confronted with one question after the other: how can we endure extreme conditions, can we live without possessions, how do we respond to global migration? To me, those questions read like newspaper headings—intermingling representations of the most thought-provoking questions that we, as humans, face today. In that respect, the B.I.S.S. 2016 was far more upsetting and ingenious than the outset hinted at. Challenged by the political awareness amongst the students and their fantastic ability to convey this through beautiful drawings, models and films, the B.I.S.S. 2016 made me stop and rethink what utopia actually means.



Justyna Bres

Architecture, GUT, Gdańsk

Justyna is interested in urban design and especially the functioning of public space and the social aspects of cities. She loves working in groups, joining vivid discussions and having fun.

Gabriella Høgh

Architectural Engineering, DTU, Copenhagen

Gabriella loves discovering new places and cityscapes especially the hidden ones. She is very discerning and likes to work on solutions that include a focus on sustainability and people.



Lotta Nylund

Landscape Architecture, Aalto, Helsinki

Lotta regards people as the most important thing in her work and is fascinated by how people use and receive their outdoors space. Innovations and great team work make her day



Daniel Granat

Architecture & Engineering, Chalmers, Gothenburg

Daniel likes to work with fonts, flyers and posters. He has a great sense of humor. Just look at the group photo and the two photobombs for evidence!

Gabriella Høgh

The B.I.S.S. gave me the opportunity to learn from and be inspired by experienced and passionate professionals as well as fellow students from other universities. It also gave me a more nuanced perspective on the working methods I have learned and utilized so far and how I can elaborate on them.

07 Get Public

Lotta Nylund

I learned more about my strengths/weaknesses working in groups, creative processes and in project management.



Mentors' comments on Get Public

The group accomplished an amazing piece of work resulting from well-organized teamwork. It was almost hard to believe that these people were working together for the first time. Definitely noteworthy was how all group members searched for methods to find a compromise. It was astonishing to see how competently they handled the various stages when working on the project. We were pleased to observe the involvement of students and the development of their concept. They drew on their skills and competences to the full, which can be witnessed in the final result, which is incredibly detailed and thoughtful. As mentors, we were positively surprised by the creativity and about the result of what the team achieved while

Context

Historically As people constantly move from suburbs and small towns to urban areas, city centers will become more and more overcrowded. The problem is well-known from dense cities such as Beijing, New York or Mumbai and Hamburg will also face the challenge of an increasing urban density. Since the 1990s, its population has grown by nearly 200,000 people and the number is rising due to immigration.

Socially Our cities are risking floods of people due to urbanization and migration. Cities are getting overcrowded while social interaction is moving to virtual realities. At the same time people living in crowded cities are facing isolation and the feeling of loneliness. It is a challenging paradox that we are trying to look at from new perspectives.

Structurally and architecturally We need a new approach in the creation of space within our cities so they can accommodate the masses of people moving in while maintaining a good living standard and at the same time provide places for interaction. Our focus is on the general characteristics of public and private space.

Site

Infrastructure We imagine Rothenburgsort—which is located close to the city center and has lots of post-industrial space to use—to be flooded with people. In light of the future problem of overcrowdedness, we need to use the existing space more efficiently and adapt it to upcoming circumstances preventing existing buildings and infrastructure from falling apart. We do not focus on one particular site in Rothenburgsort—our focus is to discover the overall new approach to create and understand public and private space so it can embrace the inevitable inflow of people to the city.

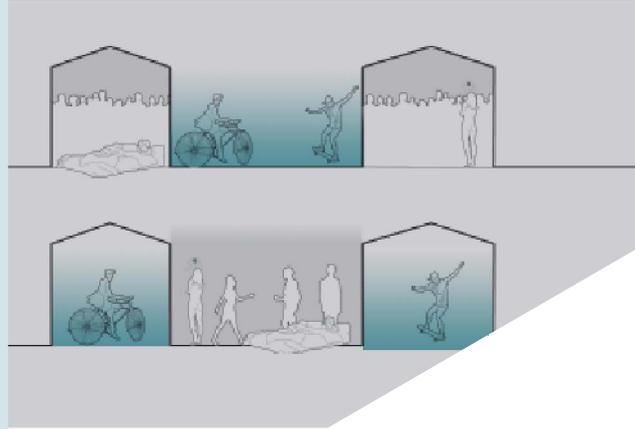
Missing links As our field research proved, the missing link is the interaction between inhabitants of Rothenburgsort and the city. Another missing link is the unused industrial space and facilities as well as old buildings that are falling into a more and more decrepit state.

Utopian potential Rothenburgsort—being situated close to the city center, having a large volume infrastructure and open spaces—has an immense potential to become a new living and socializing hub in future, when Hamburg will eventually run out of land to build on in the center. We imagine this district to be flooded with people with all sorts of different nationalities living together in the heart of the city, which on a small scale is the case at Billstraße.

Gabriella Høhg

The B.I.S.S. gave me the opportunity to learn from and be inspired by experienced and passionate professionals as well as fellow students from other universities. It also gave me a more nuanced perspective on the working methods I have learned and utilized so far and how I can elaborate on them.

working on such a difficult topic. The team deserves praise on how expertly they defended their concept. Despite many questions appearing as a result from controversial solutions, each group participant was able to justify and explain the project. Teamwork, aesthetics and the element of surprise in their project as well as the creative process as a whole and the culture of discussion within the group all deserve the highest approbation.



Theme

Conceptual idea and development We venture into a rediscovery of our cities. How can we create a city that can embrace overcrowdedness instead of avoiding the inevitable? By investigating advantages and disadvantages of the typical vertical city solution, discussing what is public and private space, trying to mix the two and even change the way we understand them, our group sought to cross the boundaries of traditional ways of solving the problem of overcrowdedness.

Interpretation of “link” Our link is the public space overlapping the private and encouraging inhabitants to socialize. The process of raising essential questions about living in cities and risking overcrowding was our focus. How can we deal with overcrowdedness while upholding living standards? How much space do we actually need? What would happen if the city was inverted and private and public space could overlap? Bearing these questions in mind, will we use the space more efficiently?

Relevance for future cities We imagine the urban world to change the way of thinking about public and private space in the city. Instead of focusing on our privacy, it will develop public space and promote “sharing” in a way that may be unthinkable for us at the moment.

Design

Utopian idea The utopia of our project is to “swap” public and private space. We place focus on sharing public space in the city and thereby enable the amount of private space to decrease to a minimum.

The link We suggest that the overcrowding of cities isn’t solved only by building more apartments, but perhaps by changing our way of living and thinking about society. What are the bare necessities for a good life? The things in life that cannot be shared are surprisingly few. How many things do you actually need? Do your things have sentimental value to you and could you live without them? Could we share a living room or our kitchen with other people and use our space efficiently and thereby be more sustainable?

Implementation of the link To implement the link we invert the way we think about our cities by mixing the functions of public and private space. To reset the norms of society and the needs that modern society entails, we flood everyday situations in life with overcrowdedness to be able to find the right questions to ask.

Distinctive feature

All about the questions The diverse opinions about the project made us realize that people are surely very different and so are dense cities and overcrowded places. This project does not aim to produce one solution as the “truth” and define the society, but rather to make people reflect on the way we live our lives in modern society today, whether it is sustainable or needs changes — if so, what changes and how?

Link: past & future—time ball The most important part of the process of burning the city of Rothenburg is the time ball—a device that provides the connection between the past and the future. When the ball goes down the mast, the first storm’s lightning burns the city. Every ten years, inhabitants of the district have an opportunity to rethink past solutions and devise new ones for the only just beginning future.

What is the bare minimum of personal belongings you actually need?
How many people can you fit into one square meter before it starts to feel overcrowded?

Hanna's comments on B.I.S.S. 2016

The second edition of B.I.S.S. in which I had the pleasure to participate, certainly proved that we all both students and mentors need more occasions for interdisciplinary teamwork. The organizers deserve a major thank you for taking care of the smallest details, meaning that the workshop was perfectly planned and could be held in a very good atmosphere—everyone involved had the chance to focus on having fun while working intensely. Having said this it would not have been possible without the positive attitude of all of the invited students whose involvement and energy for searching for the best design solutions made everyone forget how intense these two weeks were. Their enthusiasm confirms that as academics we should create as many opportunities as we can for interdisciplinary teamwork while providing a chance to work with teachers with different backgrounds on the most varied of topics. Each topic is new to students, but also, and perhaps more importantly to teachers, enabling us to fully awaken our creativity and forcing us to search for new approaches. It could be observed clearly during this year's edition of the B.I.S.S. that the utopian theme was a challenge not only for participants but also for mentors. Even though the event takes place more than once, each time it brings a new experience, knowledge and good fun for the whole B.I.S.S. family. Personally, I cannot imagine a year going by without B.I.S.S. marked in my calendar.

Nina Åström

The project was very different to anything I had experienced during my work before and it has certainly inspired me to continue the discussions and thoughts that were sparked off during the workshop later on. I will try to apply the new methods I have learned during the early stages of my next project.

Mariann Kruuse

Architecture, TUT, Tallinn

A person in tune with herself and the world around her. Has a good sense of quality and strives for perfection.



Jakob Bjellekjaer Winther Architectural Engineering, DTU, Copenhagen

A hard-working engineer with creative skills. Enriches the group work with his Danish mentality. Great personality, very imaginative and focused on his work.



Nina Åström

Architecture & Engineering,
Chalmers, Gothenburg

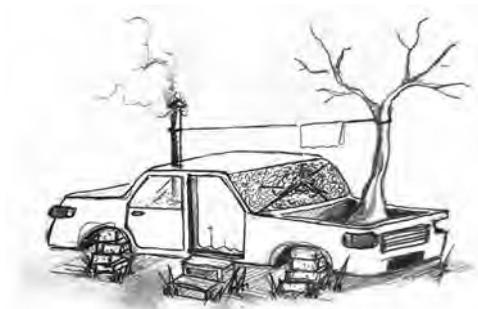
Enthusiastic and focused. Compassionate, precise in her work and very understanding. A great team player!



Staffan Linné

Architecture & Engineering,
Chalmers, Gothenburg

Interested in how and why we design. Intelligent and observant with a great sense of humor; has a profound understanding of the world around him.



08 Set the Pace



Context

The project is undertaken in the area of Rothenburgsort in the southeast center of Hamburg. The area is situated on the northern shore of the river Elbe and has over time served as a central part of the city, holding both leisure houses and commercial districts as well as light industry.

Historically Rothenburgsort used to be a part of central Hamburg and the site holds traditions of dock work, in as much as the river and canals were used for loading and trading goods. The northeast part attracted vacationers to its holiday homes for the greater part of the 20th century. The area was heavily bombed in 1943, resulting in over 20,000 deaths, destruction of the underground railway connecting the island to the city center and in almost total destruction of the existing buildings.

Socially Ever since the war, Rothenburgsort has struggled to find its identity after the dramatic change caused by it. Today, Rothenburgsort has been rebuilt into an area containing a lot of light industry, green areas and social housing quarters. The site seems to have lost its former social connection to the city even though the physical distances are short. The area itself holds some contradictions as well, as the different functions of leisure, housing, industry and commercial parts are separated.

Structurally and architecturally Many of the residential apartment buildings are three to four stories high with modest decorations on the façades. They are mainly located along a street that is aligned with tree.

Site

Infrastructure The infrastructure of Rothenburgsort is split in two by the many train tracks that go in east–westerly direction through the landscape. They create a barrier between the northern and southern part of the area, with only few roads connecting the two sides.

The water channels that flow around and partly through Rothenburgsort have a similar effect. They isolate Rothenburgsort from the other parts of Hamburg, even though the area is located close to central parts of Hamburg.

Missing Links Rothenburgsort shows a lack of connections and a variety of functions throughout the area. The diverse traits give the impression of a blurred identity, not giving a clear meaning of what Rothenburgsort is and what the area has to offer. The image of the site is somehow damaged due to this and the lack of connection between central Hamburg and Rothenburgsort is noticeable.

Utopian potential Through architectural reconstruction, Rothenburgsort has the potential to be transformed into a maze of green lush areas by allowing the channels to integrate with the environment. Converting the ways of transport from mainly land vehicles to transportation by water would redefine the pace of traversing through Rothenburgsort.

Theme

This project is interested in designs that happen on another timescale than that of the changing city of today. On what timescales are things happening? On what timescales could change occur?

Developing a place through a careful architectural approach, in which transformation is implemented during an extensive timespan, could complement the fast-growing contemporary cities.

How can the identity of a place, and the humans of that place, change, without neglecting the historical context?

Conceptual idea and development A contemporary city, which is going through constant rapid changes made by construction development, is in need of an alternative plan for future growth. As a complementary way of changing the city into the future, this project focuses on slow transformation.

Interpretation of “link” A link can be both a physical and an immaterial connection between objects. It may also be something that is missing, for instance a positive relationship between humans and a place. One of the links apparent in this project is the link between the design and the objects subjected to it. The design has to be humble and carefully considerate of its users, context and history. It is also important to preserve the inner links, such as links to our own awareness and our surroundings.

Relevance for future cities The question on how to change things is highly relevant for the future city. In certain contexts, the concept of slow design may be applicable in contrast to processes of gentrification or expropriation of areas. To both preserve and develop an area is an act of high precision and demands a thoughtful process.

Mentors' comments on Set the Pace

The group reminded all architects that sketching is a basic tool that helps us to communicate within this discipline. They deserve praise for hundreds of drawings made by each group member. It served as a great tool that helped to develop the concept, with the final version the result of long discussions about the sketched proposals. Thanks to the courage with which all participants presented their ideas, the final design differed decisively from the preliminary vision. The impatience and the need to achieve a satisfactory result as soon as possible was tangible in the team.

The group did not stop searching until they found what they were looking for, they were persistently trying out new ideas and we got the feeling that everyone was impressed with the project the group put together. Perhaps what the team needed was an extra boost of energy for more lively debates—although the work method that was chosen certainly influenced the main theme of the final design which, on the other hand, allowed to prepare a very interesting and thought-provoking project.

Design

Set the Pace The project aims to present a possible future that is designed and processed over a long timespan. The process is hereby interpreted as the slow growth of nature alongside the active city. The changes occur unnoticeably and it is not until you stop and remember the past that you realize that you are in a new place.

The link A new identity of Rothenburgsort is created and then cautiously changes together with its inhabitants. The site becomes a trail of nature that can represent the calmness of time in a vibrant city and creates awareness of the present. The site can therefore be seen as a link between the present and the future, as every change that is made is strongly connected with present objects. The park-like site will become a landmark that will attract visitors from all over the city.

Implementation of the link The reconstruction of Rothenburgsort is made real by a carefully thought out strategy of slow deconstruction. A network of specific and important parts are planned to change over the course of time with a few start-up points. The changes then slowly stretch out according to the design plan. The reconstruction involves new waterways along existing and new streets, new usage of empty space and buildings that are able to change with the spreading nature. New green areas are created as parts of the neighborhood without any noticeable change.

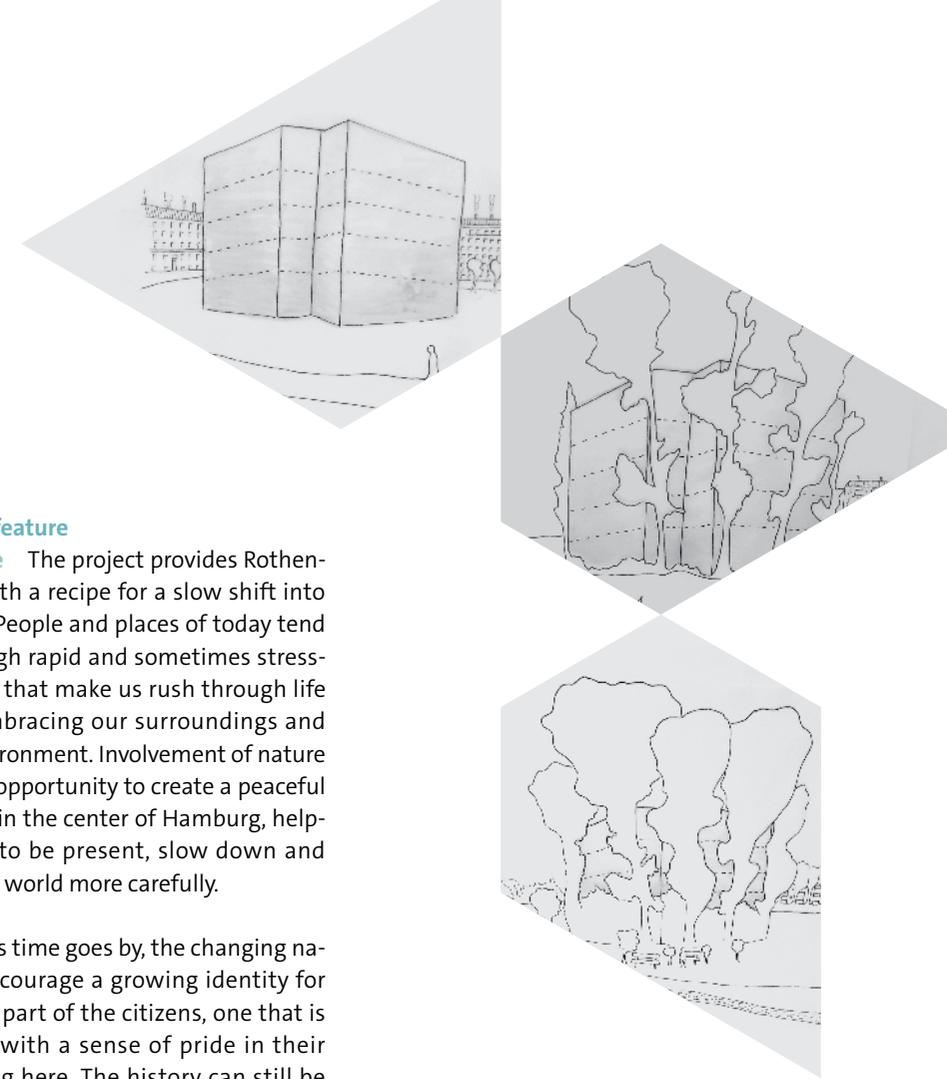
Distinctive feature

Set the Pace The project provides Rothenburgsort with a recipe for a slow shift into the future. People and places of today tend to go through rapid and sometimes stressful changes that make us rush through life without embracing our surroundings and natural environment. Involvement of nature gives us an opportunity to create a peaceful garden city in the center of Hamburg, helping people to be present, slow down and look at their world more carefully.

Identity As time goes by, the changing nature will encourage a growing identity for the area on part of the citizens, one that is associated with a sense of pride in their way of living here. The history can still be kept intact through the modest touches of the nature on important memories of the island.

Constructing with nature The progression towards a future Rothenburgsort is made real by careful design of a deconstruction, which will let nature run its course over the different sites across the island. The use of nature in this urban environment will set a

slow process into action, one that will proceed for a lifespan or even generations. During this slow process, there will be opportunities to change direction of the development as the city and the lifestyles of its inhabitants change. It also holds a recreational value, as it is common to seek nature outside the urban dwelling as a way of relaxing and taking a break from a normally busy life.





Dr. Markus Hudert,
Mentor

Aalto University

Markus studied Architecture at the University of Applied Sciences in Coburg and completed his postgraduate studies in Advanced Architectural Design at the Städelschule in Frankfurt. After several years of working with internationally renowned practices such as UNStudio and Bentham Crouwel Architects, he became a postgraduate research and teaching assistant at the IBOIS Laboratory for Timber Construction at EPFL in Lausanne, where he obtained his PhD in 2013.

His research focuses on experimental and innovative timber structures as well as material and assembly-driven design strategies, and aims to bridge the gap between architectural and structural design. Markus' teaching activities are an extension of his research. Most recently, he co-directed an interdisciplinary timber design studio at Technische Universität Braunschweig. As a visiting lecturer, he has conducted seminars on spatial design at Peter Behrens School of Arts in Düsseldorf.

The B.I.S.S. summer school is a unique opportunity to work with people from different professional and cultural backgrounds and to generate catalytic concepts for the future development of port cities in northern Europe. The intense and dynamic working conditions at B.I.S.S. will not only lead to one-of-a-kind design proposals for Hamburg Rothenburgsort, but also make an important contribution to the personal and professional development of the participants.

Karin Gunnergård

The experience has further enhanced my capability to work at a high pace when exploring a concept and uncovering its potential.

Emilie Bjørneboe
Architectural Engineering,
DTU, Copenhagen

Emilie is an engineer with major artistic talent. She has a logical approach to problem-solving, but keeps one foot in the world of aesthetics, always focusing on finding a practical and refined solution. She has a powerful drive and often takes the initiative. She is also the party animal of the group—without letting it stand in the way of work.

Karin Gunnergård
Architecture, Chalmers,
Gothenburg

Karin has a strong will and doesn't give up until she is happy with the result, often long after everyone else has left the building. She is the most experienced architect of the group, and with a B.Sc in Architecture and Engineering, she is also familiar with solving technical problems. She has a great sense of proportions and knows how to present a project.

Olof Holmblad
Architecture and
Engineering, Chalmers,
Gothenburg

Olof is a highly creative person, both in his way of thinking and in his practical accomplishments, such as drawings, building models and taking pictures. He is also good at taking the initiative and being responsible. Olof is a big thinker and often critical, which is a good thing. He does not agree with decisions until he sees a clear reason for why things are as they are.



Steven Collins
Structural Engineering,
Aalto, Helsinki

Steven is a PhD student who specializes in the reliability of timber structures and he is the laid-back engineer of the group. He is an expert in wood utility and properties and likes to work following a problem-based procedure. His special competence in wood structure helped the group make its quite utopian visions for functions plausible and convincing to the jury.



Drifting towards Utopia



**Jan Suchorzewski,
Mentor**

GUT, Gdańsk

Jan studied Civil Engineering in Gdańsk University of Technology till 2014. At the moment, Jan is working

on his PhD in experimental and numerical studies on size effect in concrete. The basis of his work is the multi-scale experimental study of concrete material properties (size changing from microns to meters). Moreover, he runs numerical studies using non-continual models (DEM) on micro-mechanics' influence on macroscopic material fracture. On top of this, he cooperates with architects in urban projects revitalizing green and industrial areas as a member of the downtown district council.

At the university, Jan teaches building design in traditional technology, which is the first project for students of Civil Engineering at GUT. In his research, Jan is most fascinated by discovering and understanding very basic phenomena and transferring knowledge of it to solve more complicated problems. He believes that it is very similar with teaching and he sees his purpose in equipping students with a few skills that will enable them to create something greater.

He expects an interesting debate, discussions and controversies on views that may well challenge those of an engineer's. He is also very eager to meet interdisciplinary people from the inter-Baltic cultural community.



Context

Historically Hamburg is a harbor city and it has always, since the ship was invented, been the norm to transport freight on the water. In the past, it was filled with industrial activity that utilized the well-connected water canals for shipping. The connectivity to the North Sea made the area very important for Hamburg, and Germany as a whole, for importing and exporting goods. Today, the industrial sector is diminishing and the water now provides the potential to be exploited by the citizens. By providing them the ability to access the water, they may connect with it like skippers before them did.

Socially Rothenburgsort is a very divided area with residential areas, industry and colony homes. There are public spaces in Rothenburgsort, but more public spaces are needed, so that people can connect and perhaps enjoy the water and nature together. There are very few attractions in the area as it lacks public functions such as parks, playgrounds and libraries, as well as private functions such as coffee shops and places of interest such as suitable fishing areas or music halls. It is an unwelcoming area for people to meet.

Structurally and architecturally Because Rothenburgsort is a part of Hamburg harbor, driftwood is a common phenomenon. Driftwood has always been present due to

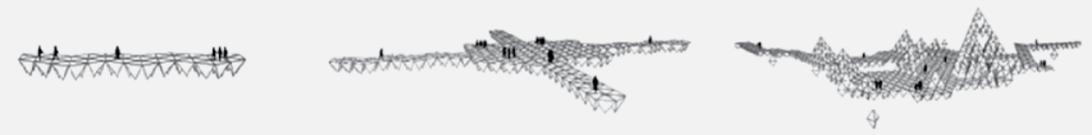
the mix of wood and water and it was a common sight in the area for the purposeful transportation of logs and the natural drifting of old fallen trees. The beauty and structural values that exist within wood are used to connect the areas together and allow them to develop with time. The industrial structures of the past, including the steel warehouses as well as the many bridges will be transformed as the adaptable, sustainable and useful modern driftwood modules take root in Rothenburgsort.

Site

Infrastructure Rothenburgsort offers the people quite a good infrastructure for vehicles, bikes and pedestrians. There is a good road network both in the residential area and in the industrial area. Rothenburgsort is in general well-connected to the rest of Hamburg with plenty of bridges. However, it is a peculiar place with its low density, declining industries and empty streets, in fact it has more of a rural feeling to it as if in the periphery of the city. It is designed for coming and going but not so much for staying and living.

Missing links The largest infrastructural problem in Rothenburgsort is crossing the railways. There is only one bridge that connects the two areas on either side of the rails. For this reason, Rothenburgsort is divided and there is a missing link to connect the areas and the people. There are also few connections directly to the water throughout the island due to many built and natural barriers.

Utopian potential Rothenburgsort feels like an isolated and disconnected part of the city, internally and externally, while exhibiting the attributes of a valued landscape. It is an area surrounded by water, with major unused space in the middle where the railways pass through. Today there is very little connection between the people and the water and by changing this and granting people access to the water, new utopian potential is unleashed. These areas can be used to connect people and gather them together to have them reconnect with people and nature.



today connections

future public spaces

utopia cities

Mentors' comments on

Drifting towards Utopia

This project was developed by Emilie Bjørneboe, Karin Gunnergård, Olof Homblad and Steven Collins, a group of students with backgrounds both in architecture and civil engineering.

From the very beginning, all group members were very proactive and demonstrated a high level of dedication. The distribution of work within the group was well-balanced and organized as such that each member could implement their individual skill set in the best possible way. When necessary, they were also able to share their expertise with other group members, for instance when it came down to the usage of specific software tools.

For the development of their project, they used a wide range of media, including drawings, diagrams and physical models. The latter were especially important for the exploration of the geometrical properties and spatial qualities of their project, a modular DIY construction system based on multifunctional unit cells in the shape of a tetrahedron.

Despite facing some technical issues towards the end of the workshop, the jury acknowledged their project with praise and honour.

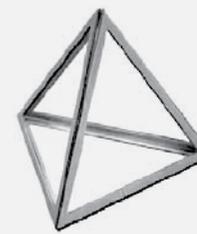


Theme

Conceptual idea and development Today, there is a need for better connectivity to the water. Tomorrow, the water will have risen. The design must therefore reflect the dynamic water situation occurring in Rothenburgsort and enable application in a multifunctional manner to benefit the various needs of the citizens. From technological advances to changes in water level, all change requires adaptation for survival, thus the structure aims at sustainability and adaptability.

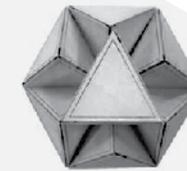
Interpretation of "Link" As the water level of the area rises in the future, the functions—links—that were previously available on land disappear and have to be achieved on water. From mobility connections to homes and public spaces such as parks, playgrounds and libraries, the needs of the citizens must all find their place in the floating utopia.

Relevance for future cities Flooding and densification of the cities will in future claim more and more of the public space. Public space will then expand out on the water and keep the cities floating. In utopia, cities will be dynamic societies founded by people who want to stay together. Friends, families, people needed in the societies and curious travelers will form nomadic communities.



The basic module

Each frame can be closed with a panel



Geometrical possibilities



Diversity in assemblance

Design

Utopian idea We developed a floating infrastructure module that is able to join together, separate and drift through the waters of Rothenburgsort, bringing the people along with it. The modules are built from wood with advancing properties that ensure it to be the most advantageous material for current and long-term use. They will progress with society and become self-sustaining systems that work on the ideology of cyclical society, circular economy and are naturally established. It is a general humanly designed system in which utopia is born out of simplicity.

The link The most crucial aspect here is that the single module can be built up from one simple shape to create any sort of larger structure or platform as desired—bridge, square or house. The panels are designed in such a way that they can be built by any individual, in any way they wish. As in the case in tying one's shoes, the structures are commonly understood by the whole of society and are understood as a general norm.

Implementation of the link The modules are free to move around individually or they can come together and form larger communities. They can be built upwards towards the sky or down into the water. They are dynamic in all directions. Imagine going to sleep in one place and waking up in a brand new environment. Imagine you never have to work in the same place or the amount of new connections you can make while floating around all day!

Distinctive features

Material Wood is a strong and light material parallel to the grain but weak in the perpendicular direction. Today, laminations of timber elements have reduced the effects of weakening factors. With improved technologies, the material's properties can be enhanced to greater extent by ensuring a more organized grain direction with more parallel fibers. In the future, the material will have reached its full potential with perfectly parallel fibers and an altered cell size, shape and length that maximize its strength.

Connections The connections need to resist lateral wave and wind loading forces between modules. From hardwood dowel connections and beech plates with corrosion-resistant steel dowels, the connections will develop into ball joints with electromagnetic forces. Further into the future, subatomic strong attractions will substitute all connections.

Functions A mechanical water filtration system is created within the cell structure of the wood fibers. The kinetic energy in the water is harvested and can then be transformed again into other forms of energy needed for the citizens. The structures are designed to be carbon neutral and nutrient sequestering.



Jan's comments on B.I.S.S. 2016

Last year, I participated in B.I.S.S. as a student and this year as a mentor. I am very happy that I could experience the summer school once again. This year was different than last year because of the different people, but the great atmosphere has not changed. I really liked the new format of choosing not only a mentor's team but also a topic of the project. I am convinced that it served to enrich the final presentation with the many different approaches to the same problem of utopian future design. I found the groups' work presentation mid-way through the workshop very interesting and inspiring, both for myself personally and for the groups I mentored. The groups themselves integrated well socially and in their work environments, choosing their own style of teamwork, some having a strong leader and others being more consultative in style. In general, I believe the final result was highly impressive with the detailed models and very strong ideas expressed in innovative and artistic ways. I hope I will be able to join again next year!

Nikolai Medvedenko

It was a great experience for me to observe how other teams work, as I was given the chance to see how everyone cooperated with each other. Students get used to working from different universities. This summer school helped me to understand the importance of other subjects apart from architecture in a project.



Helina Niitvähi
MA Architecture and Urban Planning, TUT, Tallinn



Nikolai Medvedenko
Design of Architectural Environment, GASU, Saint Petersburg

I enjoy working on projects with a human scale. I believe that we can predict human emotions and feelings that relate to the environment. Communication and relationships with the environment are our life.



Kristaps Sveisbergs
MA Architecture, Aalto, Helsinki

I focus on climatic design, sustainable building materials and technologies, and emerging technologies. I believe that in future we will need to solve our global problems with a holistic approach. People's lives will be more closely linked with processes in nature.



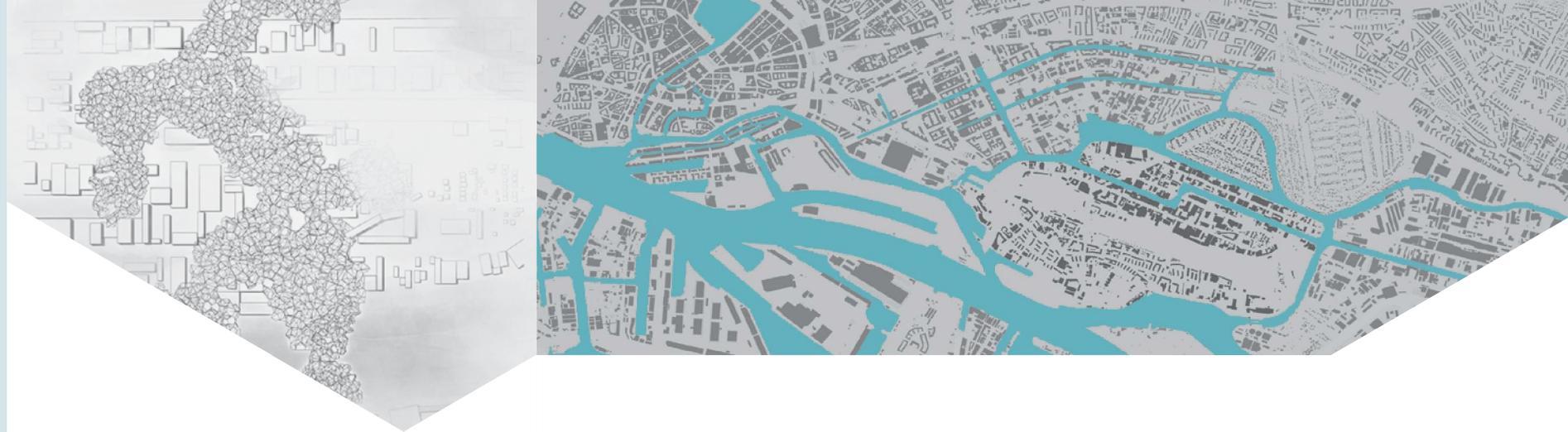
10 Organic City

Mentors' comments on Organic City

The team behind this project consisted of Kristaps Sveisbergs, Nikolai Medvedenko and Helina Niitvähi. After a short phase of non-communication and non-collaboration, the team members managed to turn their initial skepticism and reserve into mutual respect and appreciation.

Based on this, they could establish an efficient collaborative decision-making process and a well-structured working method. While being receptive to both internal and external input and criticism, they managed to focus on their core concept and gradually enrich it. They resisted the temptation of pursuing each and every idea that came to or was brought to their mind. Due to the group's limited manpower in comparison with the other groups, this was also a necessity.

The resulting project was truly visionary and addressed, among other things, questions related to current developments in bioengineering and how these might affect our relationship with nature and the way we live together. During the final presentation, the team impressed with high-grade models and drawings as well as a computer animation. One or two additional drawings or diagrams would have helped to make the project's quality and originality even more visible, especially to people who were not present during its development process.



Context

Socially After visiting the site, we came to the conclusion that it had three different main functions, thereby inducing separate social aspects. This separation is visible on the map in building scale and tangible in the streetscape. There are residential areas that seem to lack a centre, any cultural activities or points of interest. The industrial areas are mainly designed for cars and leave the impression of being cut off. The garden houses share similar social aspects with the afore-mentioned areas of the different building scales.

Structurally and Architecturally The structure is dependent on the needs of the city and will be transformed depending on these requirements in answer to the objectives. When the main system of the solved tasks is set up, the structure will continue to transform depending on the emergence of new city requirements. The structure is capable to further program the urban environment for development and control of the city. What will lead to high-quality and structural changes of available resources? At the moment the site isn't capable of corresponding to the modern needs of the city. It doesn't support the functioning of city life and drops out of the general city fabric. The location of the site bears in itself potential for establishing stable relations with city life, where the structure becomes a possible method of connection and sewing together

Site

Infrastructure The researched site is separate from the rest of the city. The best connection to the research site and from it is by water, but even this connection is limited by two exits with gates. The road infrastructure seems to be overdesigned, as it was created for an industrial region with heavy-load trucks. Most importantly, all connections and roads don't appear to be pleasant for pedestrians or cyclists to navigate through.

Missing links At present, the project area pulls away from city life and does not correspond to the criteria of intracity standards. The area is not aimed at developing and preserving the city and is an enclave with different neighborhoods negatively affecting each other. Sharp rejection of the modern way of life in the region may impair the continued functioning of users.

Utopian potential In future, the self-supporting structure can provide good to the environment and with time, transform the area to become a resource producer. Programmable growth can begin in problem areas and thereby introduce them back into the fabric of the city. This sort of thing brings construction to a new level of significance. The structure becomes a remedy for the city and a place for a new lifestyle, which will support the city and provide a strong bond between people.

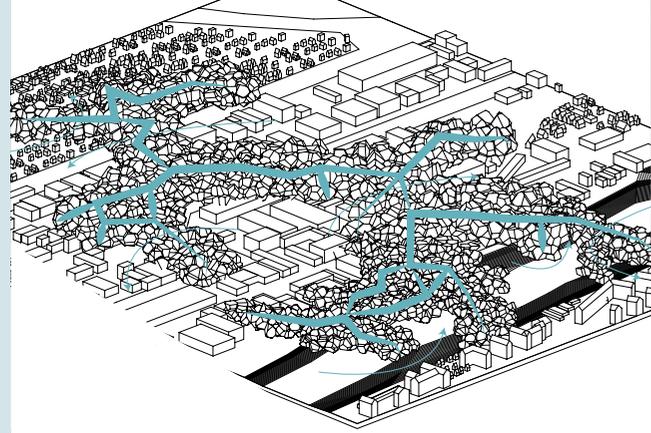
Kristaps Sveisbergs

This summer school gave me the opportunity to meet new people and therefore the possibility to create new professional contacts. It was good to experience the intense academic environment as we addressed utopian questions.

Markus's comments on B.I.S.S. 2016

The B.I.S.S. summer school was an intense and above all an enriching experience. This was largely due to its unique set-up and the highly motivated organizing team. Just like in the previous year, the B.I.S.S. 2016 did not only bring together students from different countries and universities, but also encouraged exchange and collaboration between students of different disciplines.

The participants were provided with input and feedback in various ways and formats, such as the inspirational lectures in the mornings, the expert critiques in the afternoons and the keynote lectures in the evenings. Without doubt, the combination of these formats largely contributed to the high quality of the final projects. However, the full impact of this summer school will only unfold in the future and will continue to benefit not only the students, but everybody involved.



Theme

Conceptual idea and development

Focus on an appropriate dialogue with the space helped to understand the components of the space. The first is the physical manifestation of the necessary human place in a certain position. The second is the original environment, which is nature. The aim of the project was to find the right connections of these components.

Interpretation of "link" Sensible connections are when two systems can be useful to each other when they interact correctly. We chose a system of society and the system of nature. When they are separated from each other, we can observe a detrimental effect. Society is reduced due to a lack of natural resources. Nature dies, taking on with it human waste. But with the right dialogue between these systems, we are able to notice an increase in the average person's age and the emergence of new native species.

Relevance for future cities By ceasing to perceive the environment as an empty space of regular shape, we need storage space that corresponds to our needs. Nowadays, the possibility of cultivation and programming natural elements develops grown elements that are capable of self-control, which is an advantage.



Design

Utopian idea The changing complex systems should include facilities that are adapted to the needs of the city. Now scientists are adapting plants and animals in order to answer to the needs of the consumer. But they always forget about the consumption of space.

The link The structure allows taking the question of links to a new level. The structure changes understanding of housing, work, transport and lifestyle. Also, the structure anticipates any global changes in climate and society.

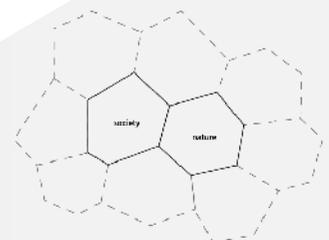
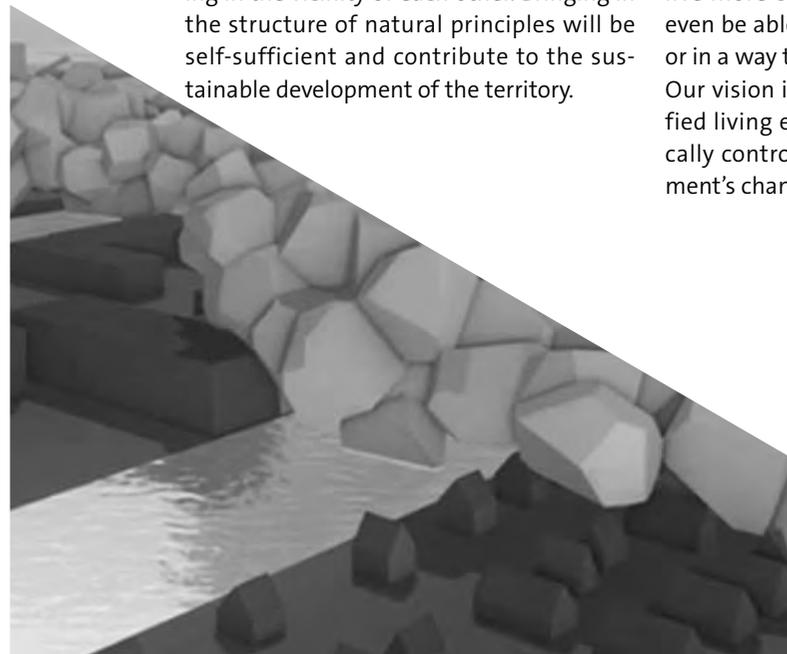
Implementation of the link The organism grows in the area, provides people with space and supports the livelihoods of our species. There is a separation between humans and animals to avoid difficult situations, but they will retain the benefit of being in the vicinity of each other. Bringing in the structure of natural principles will be self-sufficient and contribute to the sustainable development of the territory.

Distinctive feature

Detailed concept The use of well-functioning systems already existing in nature helps the project to be active. One example is the temperature preservation systems: inside the vertical transport corridor the air circulates; on the lower ground floor of the object, there is a layer with a different cross-section of the air that expands and shrinks; on the upper levels, the collected moisture evaporates.

Unexpected connections The new structure can support all required connections in the city and increase its mass towards where there is a bigger flow. It provides needed space with required parameters.

Controlled growth Nowadays, programming in a genetic way is a topical subject. When we imagine future life in cities, we believe the cities will be greener, people will live more closely with nature and maybe even be able to influence it in positive way or in a way that suits human needs. Our vision is an organic biologically modified living environment that is parametrically controlled to suit the living environment's changing needs.





Mathilde Landgren,
Mentor

Technical University of Denmark (DTU)

BEng and MSc in Architectural Engineering at DTU (Technical University of Denmark), focusing on Energy Design and Indoor Climate. During her studies, Mathilde participated in Solar Decathlon Europe 2012 and 2014 as both Decathlete and Work Package Leader of "Architecture." Her research is based on developing a method for Integrated Sustainable Design (ISD).

As the cities worldwide are undergoing climate changes of different types, the need for solving these complex problems has increased. The sustainability perspective is central as a way to increase the living qualities and avoid further climate changes. These have been a high priority for her and she hopes to facilitate a design process where sustainability is a priority as well as excellence in architecture. From the B.I.S.S. 2016, she expects a working sphere that hums with the interdisciplinary sharing of knowledge, respect and understanding among the different professions and cultures.

Matthias Dexheimer

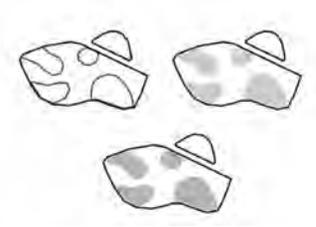
Participating in the B.I.S.S. was a mind-opening experience. The interdisciplinary and multicultural workshop was a perfect opportunity to get to know the international working situation that most of us will face in the future.

Laugren Ilves

Architecture, TUT, Tallinn

Laugren is a very positive person and highly committed to in the assigned tasks. She is skilled in 3D modelling and keeps a clear head even in stressful situations. When something seemingly can't be done, she still finds a way. Quite unexpectedly, she revealed oratorical skills during the group presentation.

11 Landscape of the Future



Magdalena Apollo
Civil Engineering, GUT, Gdańsk

Magda is very well-organized and a methodical person whose main task was to acquire various types of data for the group project. Nobody can research as well as she does. Wonderful at organizing the work and bringing architects back to reality. Also the master of the terrain's physical model.



Matthias Dexheimer
Architecture, HCU, Hamburg

Matthias is a talented artist and visualization designer. He supported the group in obtaining materials necessary to complete the presentation was our guide for making things happen at HCU.



Claudia Schmidt
Architecture, KADK, Copenhagen

Claudia is a very creative person, who perceives the surrounding reality in an unconventional way, which is reflected by the interesting solutions she comes up with in terms of architectural and urban design. Chief graphic designer of our group.





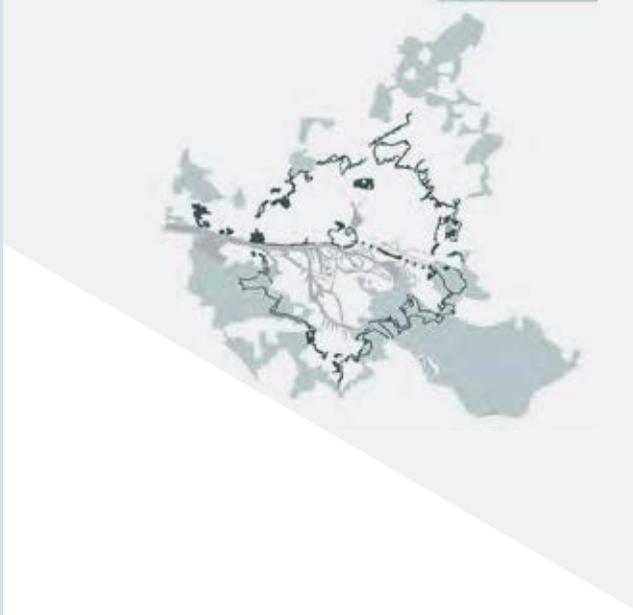
**Amelie Rost, Mentor
HafenCity University,
Hamburg**

She studied Architecture with a main focus on urban design at the University of Applied Sciences, Nuremberg [Dipl.-Ing. (FH) Architecture] and Architecture at HafenCity University, Hamburg (Master of Arts).

In her teaching experience, she has been involved in: Urban Planning (urban design projects and different projects in urban planning), Architecture (building theory) as well as interdisciplinary design projects.

It was inspiring for her to see the variety of projects that were developed at last year's B.I.S.S., especially to see how the method chosen by the mentor due to his or her disciplinary background influenced the students' work, leading to interesting final results.

As there are also mentor groups working together this year, she looks forward to learning more about the methods used by the other mentors and expects enriching teamwork.



Context

Historically The area of Rothenburgsort has always been surrounded and shaped by water. Canals give the area a characteristic identity and landscape as well as providing a unique way of transportation. Although being the heart of the area, canals and water are now more disconnected from the area than ever.

Socially Rothenburgsort used to be a place where people from all over Hamburg came to when they were on vacation. The area was in touch with the nature and the water it was surrounded by. Today, the water and people are disconnected from each other. High dikes cut the visual connection with the water from most parts of the area and the controlled water system has made people oblivious to the natural tides.

Structurally and architecturally The protection from the rising water levels includes building higher dikes and a controlled canal system inside the area. While these measures keep the area safe, they also keep the area isolated and disconnected.



Site

Infrastructure Research site is separated from rest of cities. Strongest connection in research site and from it is by water ways but even this connection is limited with two exits with gate. Road infrastructure seams over designed as it is designed for industrial region with heavy truck load. Most importantly all connections and roads seemed not hospital pleasant for pedestrians or bikes.

Missing links The area in question disconnects two sides of Rothenburgsort from each other. There are only two ways of getting over the railway from one area to the next. Tracks disconnect two different parts of Rothenburgsort both structurally and visually. The area is not observable from almost anywhere inside the district and is therefore considered a dead area (white space). There is a missing link in the relationship of people and water. While walking in the streets, it is hard to imagine being surrounded by canals and water, as they cannot be seen.

Utopian potential The area is currently unapproachable and idle but it is a prospective area in the middle of Rothenburgsort and opening it to the public could be the missing link in bringing Rothenburgsort together.

Theme

Conceptional idea and development We identified one large, already existing resource on the site, which we called white space, full of unused train tracks and unbuilt areas. The idea was to transform the white space into blue space and then into green space. The white space will serve a new purpose as a retention basin therefore making it a blue space. Blue space will protect Rothenburgsort from unexpected high water levels while opening a possibility for a green recreational area—green space.

Interpretation of "link" The new landscape will provide a visual connection as well as opportunities for crossing between the southern and northern part of Rothenburgsort. The water will work both as a separator between different parts as well as a connector and communicator. There will be a re-established relationship between people and water. The new green area will also serve as a missing link between the other green areas of Hamburg, connecting them into a unified system.



Mentors' comments on Landscape of the Future

The theme of the group was developed later in the process after a thorough analysis of the area and the relationship with the rest of the Hamburg city. The group focused on the future water raising in the Rothenburgsort area and how this can be seen as a quality by utilizing these sites of changing waters as re-creative green areas. The concept furthers the idea of the white areas turning blue and then transforming them to green areas.

During the process, their methods were mainly to conduct an analysis of the map and the water raising, and to walk and talk. To take the utopian idea a step further they were asked to play, which took them all out of their comfort zones, but enhanced the project. When the group had finally envisaged a structure for their final product, the more focused and productive work began.

This group consisted of different professions, which caused some challenges in the teamwork during the process. The group managed to cope with it by dividing some tasks and trying out new methods for working along the way, which proved fine results.

The general feeling of teamwork and responsibility for the final product developed slowly till the very end, which resulted in a sudden hectic finalization, which meant activating both mentors and the help from the other group. Despite the hectic final run, it all worked out well and at the final jury critiques, the group was mentioned for its simple concept and high-quality visualizations.

Relevance for future cities The usage of water has a lot more potential than is comprehended today. The canals will be used for more than just transportation. The areas in future will serve different purposes at the same time. There are already many different functions to the areas in Rothenburgsort—industries, businesses and living areas—that exist and work together in a synchronized way. The unused areas have the potential and vitality to bring the missing part of permanency back to the area through recreational greenery.

Design

Utopian idea The sea level rises about one meter every 300 years and the rising rate has been predicted to get faster. The most important area of the project—the space used as a railroad at the moment—is naturally the lowest part of Rothenburgsort, therefore making it a logical place to be used as a retention basin.

The whole area of Rothenburgsort is not dense, even though it is located in the center of Hamburg. The idea is to reserve this area for greenery and recreation for the future in order to densify the area without taking open spaces into use.

The link Rothenburgsort used to be the place where people from Hamburg went on the weekends to enjoy the countryside; creating a green mixed-use area will link it back to its own past. The area will add a link to Hamburg's green areas, thereby adding quality to the area and to all of Hamburg

Implementation of the link We believe that in future, due to lack of space, functions will have to be layered. The new park will not only be a retention area, but also used for agriculture, recreation and energy production.



Distinctive feature

The Landscape of the Future The landscape of the future will have to be flexible and adaptable due to the growing population and the lack of space. The new area in the middle of Rothenburgsort will serve a mixed purpose. The area will function as a park, a recreational area, an urban farming area and an energy production site. It will enhance the living quality of the people by giving diversity to the community in terms of the scenery and the different opportunities of spending time there.

White-blue-green Flexible landscape is constantly being changed by the water level. The tidal difference will create a daily landscape show. Observing the natural tides will bring people closer to the nature and to understanding its processes. The excess water will cover further areas of the park, but the highest points will not be flooded, making it still possible to enjoy the park and the constantly changing landscape from the connected dry islands.

Layered functions The area will have several different functions working together. The recreational aspect will be that the site serves as a park and there will also be pontoon planes that swim on top of the water at all times and can be used for sporting activities.

The salinity of the water around this area is below 0.1 percent, which means it is possible to grow plants in the water, thereby making urban gardening possible.

The sweet water mudflat is a biotope that only occurs at few spots alongside the Elbe, including Rothenburgsort. There will be an area for this special wetland on the site because it is a unique part of its identity.

Using sustainable energy will be an important part of the future's energy use. Rothenburgsort will be able to use tidal power plants to exploit energy drawn from the movement of tides to produce electricity. Oxygen producing algae and water-stirring fountains will be introduced to the area to keep the water quality good and clean.

Amelie's comments on B.I.S.S. 2016

An issue that really fascinates me is the present and the future role of architects, planners and engineers. The whole planning process has got and is still getting more complex and complicated and there is an increasing need to work in interdisciplinary or disciplinary, but specialized, teams to develop architectural or urban planning projects. A question that arises is how to teach students working in such interdisciplinary and sometimes also intercultural teams. How can they be taught an awareness of the other disciplines, of their special knowledge and their working methods? That is what B.I.S.S. gave to me—I learned a lot about that here.

We dealt with the topic “**Energy Flow**” and our approach was to “work with the existing resources” and to “change perspective.” We gave the students these two aspects as first rules for their visit of the site. Whereby “work with the existing resources” meant not only working with existing buildings, it meant working with everything. What exists here, what is specific to the site and what could be seen as a resource for the development of Rothenburgsort?

And then, the next question, how to deal with this, was to be answered in consideration of the next rule, “change perspective.”

In consideration of those two rules, the students started the “walk-and-talk”, which meant a very careful visit to the site, of the whole of Rothenburgsort to find the existing resources. Back at the university, they presented their findings and we started the first discussions about these.

For continuation of the work, we gave a guideline to the students. We asked them:

to analyse the place, but also report on the findings they had already made,

to play, which meant to develop first concept ideas and

to dream, which meant to cast a twist on concept ideas, keeping in mind that the big overall topic was to “think the

Trine Juul Pedersen

Working in the groups at the B.I.S.S., I learnt that there is a part of a design process that I had not used before ... the B.I.S.S. gave me the opportunity to work alongside architects and learn from them and all the other great students and mentors that attended.



Trine Juul Pedersen

Architectural Engineering, DTU, Copenhagen

Trine studies structural design and is both creative and technical. She is a real team player and is fun to work with. As the engineer of the group, she worked with several modelling programs and was good at bringing some concrete matter to the abstract ideas.

Lisa Harseim

REAP, HCU, Hamburg

Sustainability is by definition the crucial premise to further humankind's existence, which is why Lisa is compelled to use every available tool to enable positive change in our prevalently destructive behavior. She is a curious explorer and creative analyst: thinking through problems and coming up with solutions are what come naturally to her.

Iulia Radion

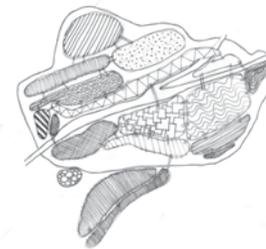
Architecture, Aalto, Helsinki

A true brainstormer and not afraid of expressing any idea that comes to mind. For this reason, she is often very funny. Enjoys conflicts as ways to create and combine new ideas and to develop great group projects. Main favorite tool: Photoshop. And she is not afraid to use it! Is always in search of what is authentic, in people, places and architecture.

Elin Lidén

Architecture and Engineering, Chalmers, Gothenburg

Third-year bachelor's student with an artistic, literary as well as technical background. The main tool Elin uses is sketching: by hand, in words and in coding. Her personal skills include sorting out and pinpointing core ideas from large discussions and communicating them in a simple way. Also, she is able to change perspective from the details to the overall picture, while not losing sight of the core ideas as a red thread—a very useful trait indeed.



Utopia is Here! Contrast as a Method

link in urban future,” so it was about creating a vision, a utopian vision for the future.

I learned a lot about mentoring and supervising groups with very different and strong individuals here. To bring the individuals together, to make a group out of them and to keep the group spirit up till the end through all the heavy discussions and problems was a challenge and I really learned a lot!

Mentors' comments on Utopia is here!

Utopia is Here! was the theme of this group, which came together from a thorough understanding of the area Rothenburgsort. From the very first site visit, the contrasts of the area were seen as an important identity for Rothenburgsort and therefore this was a key element during their work.

Their main methods during the process consisted of walk-and-talk site visits, discussions, sketches and visualizations, all with high intensity and a sense of dedication. The group worked with the main topic Energy Flow with the flow of energy between the contrasts of utopia and dystopia as the basic definition for utopia.

As a group with high individual expectations and at the same time eager to discuss different points of view, there were intense moments, but nevertheless the group soon used this in itself as a strength for taking its project a step further. The mentor's guidance was well accepted and invited further discussions, also lending support to solutions and plans for further steps.

The students' final output was a toolbox to play with combinations of contrasts in future scenarios within the frames of conserved energy flow. The toolbox contains all contrasts and is applied for all areas. From here, a sustainable conservation of the area can be conducted, while still preserving the identity of the contrasts.



Context

Historically The area of Rothenburgsort has had very different faces throughout its history. It developed from a rural area to a dense residential area and was then largely destroyed in the bombings of the Second World War. The resulting gaps were slowly filled with various—sometimes contradictory—uses while none in particular was given preference. Rothenburgsort kept scars as well as treasures, giving it a unique patchwork character.

Socially Despite being located not far from the city center, Rothenburgsort seems to be out of the focus of public interest. This lack of interest provides a certain amount of freedom—for thriving creativity on the one hand as well as businesses of unknown legal status on the other. Additionally, low rents attract artists, elderly residents receiving pension, young families, immigrants, small businesses of all kinds and start-ups.

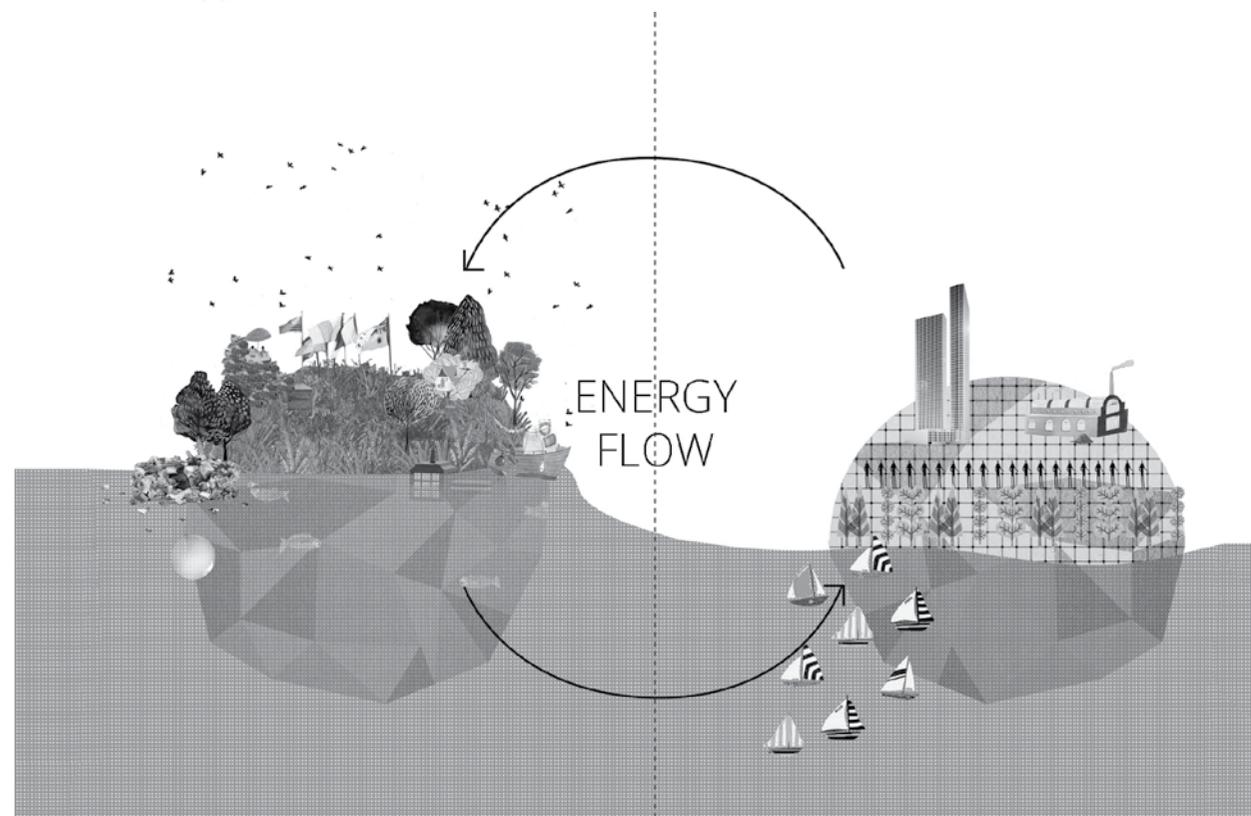
Structurally and architecturally Due to its ever-changing history, architectural styles show lots of contrast, sometimes existing next to each other in close proximity, celebrating the juxtaposition, or on real or virtual islands, separated by physical borders like the railway, canals or rivers, or gradually changing along a dominantly used road in one area.

Site

Infrastructure In the project, the focus is on the area shown above. The special thing about this area is the large contrast between the garden/allotment area on one side of the water and the industry area on the other side. Being in the two areas is like being in two totally different worlds.

Missing links In this project, we take advantage of the missing link. In this area, you could say that there is a missing link between the two worlds. But if we work with the water canal as a border between two contrasts, we can allow the utopia to unfold.

Utopian potential This area wouldn't have had the same impact on us if the two contrasts were not separated by the water canal, and the one site could not exist without the other site. One of the many impressions you get from the area of gardens and allotment is the smell of petrol, which is now an identification of the area and wouldn't be there if it wasn't for the industry next to it. Utopia is here because the two totally different worlds actually can live right next to each other.



Mathilde's comments on B.I.S.S. 2016

The B.I.S.S. held a great atmosphere full of excitement, intensity and commitment. Throughout the process, the entire B.I.S.S. team came together as one with good relations between students, mentors and professors, which created a unique atmosphere.

Formats within the process included both lectures and discussions all together, which was important for the students to open up to discussions in larger groups. Many students reflected upon the eagerness to discuss in plenum as a good experience and inspiring to feel the excitement of other students for their profession as something they will bring home with them. It was not just a daily routine as usual but an actual passion for their work, which many students were inspired by and this passion will give them yet more drive in their studies after B.I.S.S.

It was interesting to follow and form the groups from individuals and to the step of actual group work. It was clear that not all were used to working in interdisciplinary groups and therefore did not know how to bring their own knowledge to the group. It could be interesting to bring the interdisciplinary elements to the foreground even more and thereby help the students to realize how their confidence in their own discipline can take the group work a step further.

The short process of the summer school showed impressive results, which grew from nothing to fine presentations in a few hours and days. The intensive and compact program really challenged the work flow and group work to the limit, which opened up for spontaneous decisions and even more impressive outputs.

Theme

Conceptual idea and development The site research showed us that this area consists of a fascinating mix of extremely different worlds, held together by the borders between them. This is an exceptional situation, that we want to preserve and study. Moreover, the main purpose of our project is to create a method. A method that responds to the outside requirements — densification — but also keeps the utopia alive.

Interpretation of “link” What links the whole area together and the only identifiable character present all around is the contrast. We have used this link as a way to gain knowledge of the site, to identify how contrast sustains the utopian features. If you have two identical entities living next to each other, there is no energy exchange between them. However, when there are two different worlds—when contrast is present—the energy flow allows them to balance each other out. The two worlds still keep their character, but the contrasting energy allows them to become utopian worlds in themselves. Nevertheless, the utopia really happens in that in-between space.

Relevance for future cities We have to learn to appreciate the differences in order to still preserve our diversity. This project, and this site as a whole, shows that living with differences is not only possible, but ideal.

Design

Utopian idea Utopia is here (1). It already exists in the area in the balance between completely different worlds with great contrasts living side by side in harmony. This is stated in the first part of the storybook (2).

The link The link already exists. It can be found in the energy flow created by the contrasts in the area. But what happens in the future when the city wants to densify the area? The product of the project—the method—for letting the area change without losing its contrasts and energy flow, is described in the second part of the storybook (2).



Implementation of the link The method is then applied: first in the mapping of contrasts that creates energy flow in the entire area (3). This information is then used in a case study of a specific area (4). The specific contrasts present are pinpointed and placed in categories. Future scenarios with conserved energy can now be created by keeping different combinations of contrasts from each category. The method is a creative tool that can be implemented in any part of the area. Imagine the future with conserved energy—or create energy where there is none today.

Distinctive feature

The discussion The aim, the purpose is to raise discussion. Rothenburgsort was presented as a problem area in need of change, preferably in extreme ways as the assignment was a utopian solution for the future. Our impression visiting the area however was that it is a rich patchwork of contrasts with inhabitants being perfectly happy with how things are. The problem is not the area itself, but external forces bringing inevitable change. Does the area need to lose its identity for a new utopian idea, when utopia is already there?

The Method The discussion is crystallized in an alternative solution, The method, a practical creative tool for working with what exists today. The method takes on the complexity of the area, as site research, mapping and quantifying of qualities and contrasts in Rothenburgsort is the main toolbox needed. However, in a case study, The method sorts the complex contrasts into a matrix of simple categories. The complexity has turned into practical parameters, rules that can be combined in different ways to imagine change in the area within the frame of conserving the contrasts.

The playing Applying the method works by combining any parameters of contrasts and imagining the future within these rules. For the presentation, two proposals of combinations were suggested and could be singled out to cover the present situation. A third scenario is left free for people's own imagination. There is not just the one suggestion, but a number of them. The method is only the tool. Have fun!



Emanuele Naboni,
Mentor

KADK, Institute of Architecture and Technology

Principal fields of interest: Creative Sustainable Design, Sustainable Architecture Languages, Soft and Social Sustainability, Sustainable Cities, Green Buildings, Performative Façade, Sustainable Design (Strategies, Processes, Methods and Tools), evidence-based Design, Performance Simulation, Data Visualization, Parametric Design, Building Energy Efficiency, Embodied Energy, Indoor Environment Quality, Data Monitoring, Daylighting, Outdoor and Indoor Comfort, Building Certification Systems, Education in Sustainable Design.

He is since 2010 Associate Professor at the Institute of Technology of the Royal Danish Academy in Copenhagen, School of Architecture. He teaches and researches in the field of Architectural Technology and Environmental Sustainable Design. During this period he was a Visiting Scholar at the Center for the Built Environment, College for Environmental Design, University of California Berkeley (USA) (2012), the Environment and Energy Technology Department at Lawrence Berkeley National Laboratory (LBNL) (2011) and Visiting Teacher Program at the Architectural Association in London (2013) and Nottingham University (2014). In 2007, he was awarded his PhD in Building Science at the Politecnico di Milano and University of California, Lawrence Berkeley National Laboratory (LBNL) with a thesis focused on the simulation of sustainable architecture.

Energy is the primary concern today, while ecology will be the focus of the

Veronika Ignataviciute

The use of visual media communication methods meant that all members of the group were able to get involved, regardless of language abilities. It was easy to collaborate, share and critique ideas and this was to the benefit of group sketches and research.



Teodor Petrov
Computation in Architecture, KADK, Copenhagen

Teodor is an excellent sketcher and artist. He showcased hand drawings for our final presentation that could convey our architectural proposal. He is also proficient in CAD modelling and has a very good eye for visuals, which quickly moved our group in the right direction before the deadline.

Allar Esko

Architecture and Urban Studies, TUT, Tallinn

With the most experience in urban design, Allar lead the master planning within the group. He has a very good eye for details and a great understanding for building performances, able to bring all aspects of our design into one interesting and coherent architectural proposal in response to the given scenario.



Veronika Ignataviciute
MA Architecture and Extreme Environments, KADK, Copenhagen

Veronika has previously been engaged in architectural proposals relating to extreme climates. She comes with skills to design devices and creative details that can assist potential façade systems to perform more efficiently and is well-acquainted with simulational and climatic performance software.



Arvid Söderholm
Architecture, Chalmers, Gothenburg

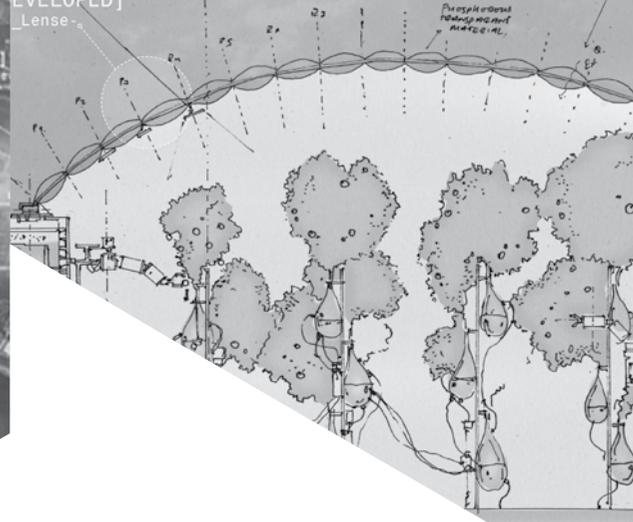
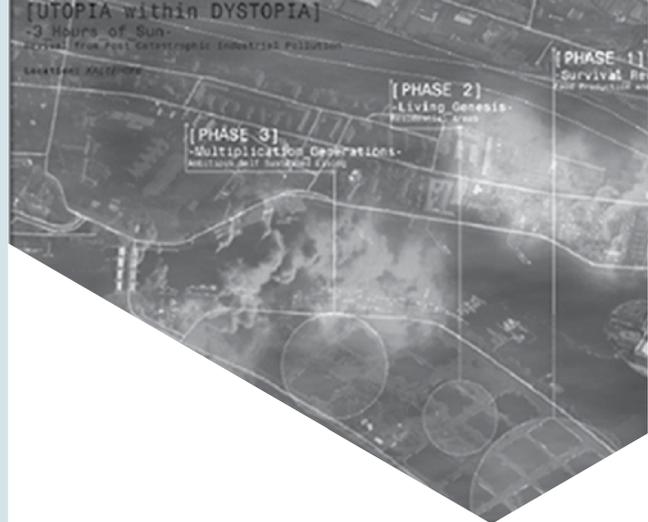
Arvid comes from a background of structural engineering and was the most experienced in building physics from our team. He is proficient in CAD, able to set up rendering software for high-quality post-production visuals. And a genius in Photoshop, too!



13 3 Hours of Sun

years to come. Building design will be performed with emphasis on the interrelationship of buildings with their occupants and the larger environment. This will represent a radical shift from the energy-driven and carbon-centered notion of sustainability that, for a long time, has myopically informed the design of the built environment.

The workshop is an opportunity to design regenerative and restorative sites and buildings improving the surrounding environment such as restoring a site's natural hydrology or providing for lost wildlife and plant habitat. The design will be integrated into the natural environment and designed to improve damaged surrounding environments.



Context

Scenario Consider this: “In the 19th century, the pace of economic and trade globalization began to quicken, driven by colonialism and economic liberalism, and boosted by industrialization, new technologies, more extensive production, the division of labor, and the ability to transport goods more rapidly. This development not only had a major impact on the global economy, but also, amongst other things, prompted a change in the urban development on the world's port and trading cities.” In our hypothetical situation, we consider that the statement has a different ending: “development not only had a major impact on the global economy, but also on global pollution.”

In respect to location and context, the south of Hamburg, currently the Hafencity development, Hamburg's old 19th century sand water filtration island site “Kalthofe,” now a museum and green site, once filtered water for Hamburg using sand as the main ingredient in this process.

Site

Scenario dealt with As part of our architectural proposal, we created model cubes showing the current situation and the visual scenario where three hours of sun becomes the environment, due to pollution accumulated over 100 years. The latter scenario is represented by a dark sky, thick smog and damage to surroundings as soil becomes dry and animals die.

Missing links We begin to plant. Regenerate the site to make an oxygen park with a food supply and hydroponic vegetable patches. Then, later on, residential housing. In the process, the first step we would take to tackle catastrophic pollution would be inventing ways of using natural air purifiers: plants. Plants (especially aloe vera), are natural air purifiers, and they are the medicine for air high in carbon dioxide. However, generally plants need sunlight and this is the limiting factor to natural growth. This is why we invented “Regeneration through Illumination.”

Utopian potential The project aims at constructing a utopia within the dystopia created through years of industrial pollution. In three phases, we aim to create a sustainable site that invites vegetational functions and utilizes the historical function of existing water filtration systems.

Theme

Conceptual idea and development Imagine the place as the user: only three hours of possible sunshine, between 11 a.m. and 2 p.m., and the rest of the day is dark, cloudy, not suitable for reading without artificial lighting. Plants don't grow because the soil is dry, the water needs to be filtered to sustain life and psychologically, the world is not much fun.

Genesis—our link We assessed the situation and decided to develop a series of devices to utilize the small supply of natural light to begin growing plants. Hydroponic vegetable gardens were proposed to take place in the existing water ponds used for water filtration. The existing water pipelines will be used to supply the plants with water and minerals. Large amounts of sodium and nitrogen are present in industrial polluted air, therefore they could be harvested to enable plants to gain some free nutrients.

Relevance for future cities It takes people to make it work. Not so much a social experiment, but the community would begin with an oxygen park (an Idea: hey guys, let's go get high on oxygen!) Something as necessary as clean air becomes no longer a requirement taken for granted, as people appreciate purified air in smoggy polluted atmosphere. Could planting aloe vera heal the environment?

Design

Ideas As a group we decided to represent our project and ideas with a mix of media: hand drawings, renditions, potential details and a “news report” to deliver the contextual idea. The utopian idea was split into three phases and we represented what each is, its potential for the future and the progress needed for the utopia to take place.

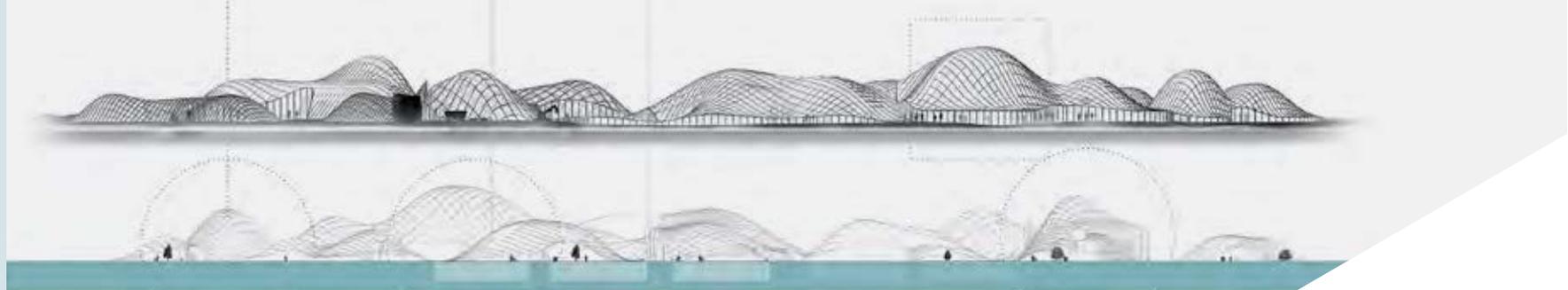


Mentors' comments on 3 Hours of Sun

This group formed a strong multidisciplinary culture while working on their project during the B.I.S.S. It felt like they had been part of an integrated team for a long time, even though they had just come together from different cities to meet at the B.I.S.S. During the very early stage, they developed a shared vision and worked intensively to present the idea of an utopia within a dystopia.

It was a rewarding experience to see how the dialogue they established with us led to a creative interpretation of the given concepts of “three hours of sun” and how the four words evolved into a holistic concept of living where future technology, such as robots, is part of the idea. They used the limitations of the scenario to come up with futuristic possibilities that serve the inhabitants in the future.

The widespread, yet well-structured outcome used different techniques of representation that highlighted the strengths of embodying multidisciplinary thinking.



Concept outline The scheme aims at reviving the island of Kaltehofe from industrial pollution accumulated through the 21st century since the industrial age. Due to the smoggy atmosphere and pollution, the air has become so thick that light from the sun is diffused and only penetrates the land at the highest point in the sky. The environment has become a zone of health hazards, suffocating its surroundings. The development of a garden community and oxygen park is proposed. Community enclosures allow for air to be purified in small areas and light to be collected and dispersed, facilitating the vegetation grown in the food production chambers, making the most of the three daily hours of daylight available.

Implementation of the link With the addition of aloe vera roof devices, the air can be purified while aloe vera is grown in order to produce gel for health problems. Given the scenario, the aloe vera plant is the most effective natural method of purifying polluted air.

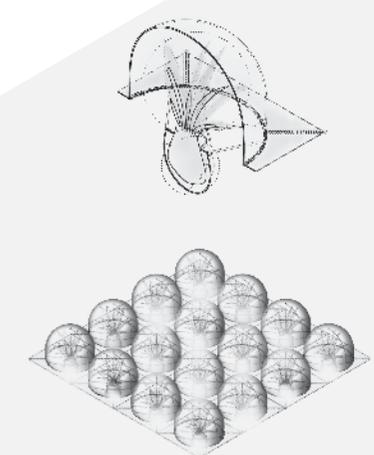
Distinctive features

Oxygen dome vase Aloe vera is part of the growth food strategy, since air pollution is the significant issue at the beginning of the redevelopment. The growing aloe vera plant purifies air, and light is able to penetrate into the space below. Aloe vera can be used as treatment, medicine and in the process of generating micro organisms. As the plant grows and clears the air, light can also be refracted through its hydroponic

mineral sack. The light plant sacks can be applied to the roof and façades of the building.

Fly-eye lens Inspired by the inverse natural phenomenon of the eye of a fly, light can be intensified and reflected, lighting up a space. Together the lamps can create a well-lit atmosphere, without using artificial lights. In other words, sunlight passes through “iris” lenses and is intensified when light is diffused.

Light in a bottle This device is a sun collecting skylight, which directs rays to the gardens, walking paths and residential regions. Direct and indirect light rays are saturated to the center of the lens directed at the end of a glass tube. The tube is dipped into water within the bottle (alkali can be added to the mix to sustain the water clarity) to refract light further, illuminating the areas below.





Kai Schramme, Mentor
HafenCity Universität
Hamburg

Kai graduated with a bachelor's degree in Civil Engineering and a master's in Architectural Engineering. He also did an Erasmus stopover in Stockholm. His academic interests are algorithm-generated structures, parametric design and folded structures. He just got started, but his research is all about folded shell structures. It started with rigid-foldable origami structures during his master's degree and next, he will be analyzing the load-bearing capacities of more complex folds and research on how the overall structure can be improved.

He holds exercises to teach the load-bearing behavior of spatial and shell structures during the summer term. During the winter term, he gives lessons on how to digitally design, analyze and optimize complex structures and how to use parametric design as a method for engineers. He loves the ability to work on projects that focus on great ideas and explore the possible. Without the requirement that everything has to actually be built, there are no restraints set by a client or the profitability of the project. Also, the processes he works on, and with, are still being explored and are open for others to participate in.

He likes to leave the comfort zone of his own discipline as often as possible and to get in touch with other people. The B.I.S.S. last year was a great way for him to meet students and mentors from abroad and it was very interesting to learn and share ideas.

Anastasiia Lapshina
Reconstruction and
Restoration of Architectural
Heritage, GASU,
St. Petersburg



Nastya is a sweet and caring team member. She always provided her genuine opinions and patience during discussion. She also thoroughly documented our whole design process, which contributed extensively to our final outcome.

Anastasiia Lapshina

B.I.S.S. gave me an excellent opportunity to practice my English and to get acquainted with clever and interesting people who willingly shared their experiences.



Jonatan Svensson
Architecture and
Engineering, Chalmers,
Gothenburg

Jonatan is a creative and quick learner. He skillfully combined his knowledge of engineering and architecture in our project. He is also a good communicator with a keen interest in the Russian language.



Kimmy Tsang Ching Man
Architecture, KADK,
Copenhagen

Kimmy is a good leader. Her ability to see the skills of the other group members made her a good organizer of the work. Kimmy is very focused when she works and she knows how to prioritize to finish the project on time.



Polina Gureva
Civil Engineering, GASU,
St. Petersburg

Polina is a calm and cooperative individual. She employed great effort to overcome the language barrier and to communicate ideas with her technical knowledge. She is also a skillful model maker and made a great contribution to the final model.

Embrace the Wind

Mentors' comments on Embrace the Wind

The scenario given to this group was “Wind, Storm, Hurricane”, which can be interpreted in different ways. The members of this group soon felt the urge to highlight the possibilities that arise from this scenario and to “embrace the wind.” They studied different versions of housing and power utilities as well as the performance of the mockups during windy conditions using wind simulation software. During the process of analysis they came up with various prototypes and different possibilities to show a positive interpretation of the extreme conditions by using the wind to be part of the design.

The pendulum was constantly oscillating between an artistic and a viable approach, driven by the great inspirations the group had. The representations show how these approaches can be combined to express a vision of a pleasant future life in an unpleasant environment.



Context

Historically The site that we are dealing with is the island Kaltehofe, which is a part of Rothenburgsort in the very central part of Hamburg.

Socially Rothenburgsort is an island of Hamburg with a low-density urban landscape compared to the central part of Hamburg. The residential area is rather spread out with mostly mixed light industries taking up a large portion of Rothenburgsort. The island Kaltehofe is a popular recreational area for the citizens of Hamburg, which they use for strolling, running and biking. In this way the site appears to have a great potential for improving the well-being of the locals.

Structurally and architecturally The island of Kaltehofe is mainly an open landscape with a couple of buildings on it. 15 ancient water reservoirs are regularly aligned on the island, with each of the water reservoirs having a small cottage, called “Schieberhäuschen” in German. Along the central axis of the island, there is a main road and a small green mount, which alters the landscape and offers great outdoor spatiality and diversity to visitors.

Site

Infrastructure Kaltehofe is mainly connected to the city through the bridge at the northern tip of the island.

Missing links Even if there is only one single bridge to the island, we didn't consider the island as a missing and alienated location. We were more concerned by the lack of visual connection with the rest of the city. The place is fairly hidden despite its central geographical position in Hamburg. We could barely feel the city when we were site-visiting.

Utopian potential It could be a demonstration for the city. An isolated generator against the extreme weather. It also has great potential for capturing the wind due to its unique geographical location.

Theme

Conceptual idea and development Our theme is to embrace the wind. By utilizing the wind force, we encourage humans to embrace the natural conditions rather than hide from them, as is the usual way of dealing with them. Our motivation is to create houses that do not only survive the extreme environment, but also generate an extra power supply to support the rest of the city. In addition, people can stay still, observe and enjoy the natural wonder brought on by catastrophe.

Interpretation of “link” The project “Embrace the Wind” strives to establish multiple “links.” The link between people and the forces of nature is one of the main focuses. The traditional way is to hide ourselves in

the shelters which “unlink” us with the wind. Therefore, contrary to this, we place the shelters up high in the air and allow them to rotate in the wind. By doing so, we establish a new physical link between man and nature. The shelters can move vertically according to the wind speed and the amount of energy needed to be generated. In addition, they create visual links where people can overlook the city from the interiors whereas themselves act as a wind indicator and a landmark for the city.

Relevance for future cities There will always be energy crises. Therefore we identify energy generation as our priority goal. Connection with community is another concern of ours.



Emanuele's comments on B.I.S.S. 2016

The program developed with Kai endeavored to explore the intersection between architecture, structure and the evolving climatic environment. Through a site-specific approach, students aimed at responding to the future climate challenges in Hamburg. In close collaboration, the teams engaged in a design that is sensitive and reactive to severe climatic conditions. The students sought to create the conditions for human presence allowed by adaptable structural thinking.

We took two perspectives of exploration: with Kai's angle of structural design, derived from his in-depth research conducted for his PhD, and mine in climatic design, derived from my involvement in the master's program Extreme Environments at KADK, it was possible for students to develop structural and climatic knowledge. Students focused on the local design of water purification infrastructures that have allowed for resilient environments in the very recent past. Students had a strong focus to connect the pre-existing solution to the assigned climatic, severe scenario.

We organized students' group design discussions, and frequent reviews were established in an open studio working culture. Sharing was considered key. Groups could collaborate among themselves and with others in other studios, thus blurring any type of boundary to knowledge transfer. This was a key component that the network acquired in the workshop. Experts from the Hafencity University and the invited external experts constructively challenged the students to refine their design. The several lectures stimulated the students' creative thinking process.

The proposed methods allowed for the innovative solution to emerge, where multidisciplinary knowledge was the ground for new collaborations across different backgrounds, cultures and domains. This experience not only led to a climatically adapted design, but also to an interesting

Design

Utopian idea Traditionally, the common way to handle extreme weather is to hide and escape from it, in caves or underground shelters. We want to propose an alternative. Instead of concealment, why not expose ourselves to the nature?

The link We want our site to be the activator and the future urban catalyst of Hamburg. Our idea is to manipulate the natural force that is the wind power and to generate benefits for the future city. Our aims are to protect humans from extreme natural conditions, to generate energy and to create a pleasant experience.

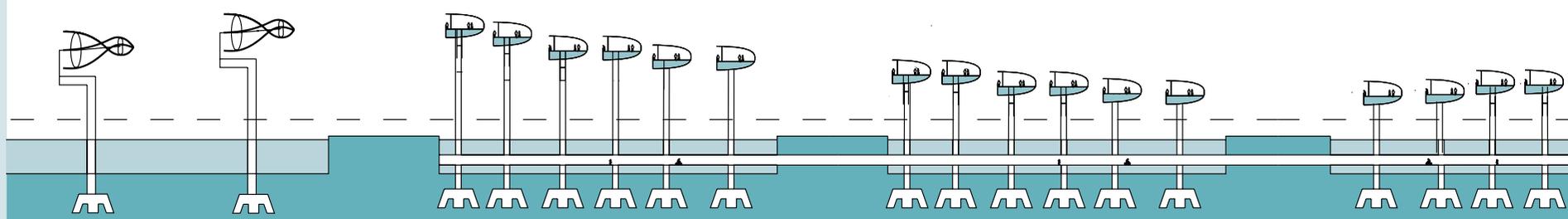
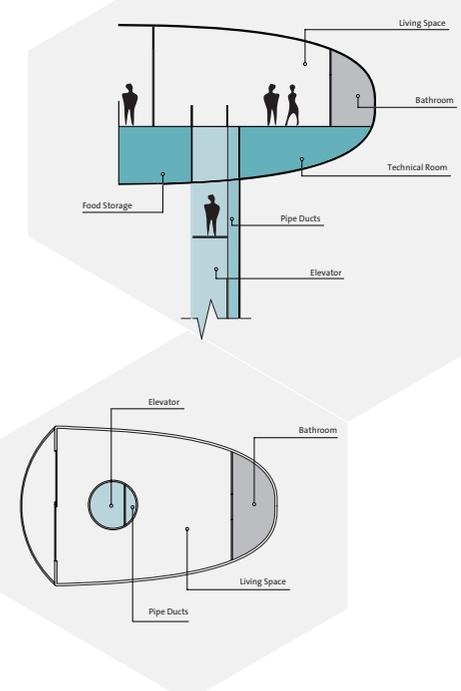
Implementation of the link Our design is a collective of individual submarine-shaped shelters on separate vertical circulation cores. They are able to rotate according to the wind direction, while producing power with the generators attached. An extensive underground network is also designed to eliminate the isolation in the traditional shelters.

Jonatan Svensson

B.I.S.S. has encouraged me to study or get an internship abroad.

Distinctive feature

- Equipped with generators, the shelter can support individual usage and also transmit extra power to the rest of the city. This is one of our main goals, to fully utilize the extreme environment and to benefit from it. Also when there is flooding, the energy can allow the submarine-like shelter to be detached from the vertical core and to float along the current or to sail to a safer place.
- Situated in an exposed environment, the shelters here aim to achieve a higher living quality for the users than the traditional underground shelters do. Not only do people have a better view, they can also experience the wind force in a safe way. Underground connection is provided to individuals so as to break the isolation.
- As a visual connection, the shelter is provided with a great view onto the city during the times of storms. Meanwhile, the collective of shelters serve as a wind indicator to notify the speed, strength of the wind or even to provide entertainment, i.e. sound or visual effects, to the rest of Hamburg.



palette of students' new methods and tools to achieve performances. Throughout the B.I.S.S. workshop, students were exposed to a site-specific yet multi-disciplinary design methodology that allowed for an architecture informed by local conditions and a diverse range of knowledge and solutions, which can in future be applied to many contemporary contexts.

Kai's comments on B.I.S.S. 2016

The topic of this B.I.S.S. asked for futuristic ideas directly inspired my thoughts. Even though everyday work of engineers is to find feasible solutions that are viable for implementation, it is the challenge of overcoming the laws of nature that leads to new innovations. The impossible must be thought of to invent the world of tomorrow. With that in mind, my initial idea was a flying city made out of the finest light-weight structures and that raised questions of public and shared spaces that lay in between the homes of people. Tragically flooded cities visualize that the layout of a city is connected to the medium the city lives in and a flying city could condense the issues of space configurations.

Teaming up with Emanuele, an architect working within the context of extreme environments, we combined both of our visions for the B.I.S.S. and formed a strong setting for the workshop we wanted to host. The focus was on different weather scenarios that could occur in the future of Rothenburgsort, or to be more precise, on the island of Kaltehofe. Each group was given a different scenario and their challenge was to imagine future living within that scenario and to use it as a catalyst for inspiration. The outcome was highly satisfying and also showed the positive influence on creativity by having strong boundary conditions.

As this was my second edition of the B.I.S.S., I was able to implement the things I learned during the first B.I.S.S. and I think the new setup of having pre-selected topics by each mentor couple is a good devel-

Svetlana Pushchina

I liked the experimental approach to learning that we students took as well as communicating with practiced experts.



Fahimeh Fotouhi

Master of Architecture, Aalto, Helsinki

Fahimeh is a master's student reading Architecture in a Creative Sustainability program. She likes to work in multidisciplinary teams in order to develop new ideas. She works with most architecture software. At B.I.S.S., Fahimeh did well in keeping the group dynamics up and a good job in rounding off and presenting the project.



Katja Virta

Master's in Architecture, Aalto, Helsinki

Katja has a very good ability to create and develop new architectural concepts and ideas. She has good computer skills and is able to work with the most useful architectural software. It was an enhancing experience to work with her.



Anastasiia Kirikova

Bachelor of Architecture, GASU, Saint Petersburg

Anastasiia is a very active and curious student, loves to learn and loves to express herself. She is kind and young—and with her curious, positive and contributing characteristics has all the potential to use her professional and social skills to the full.

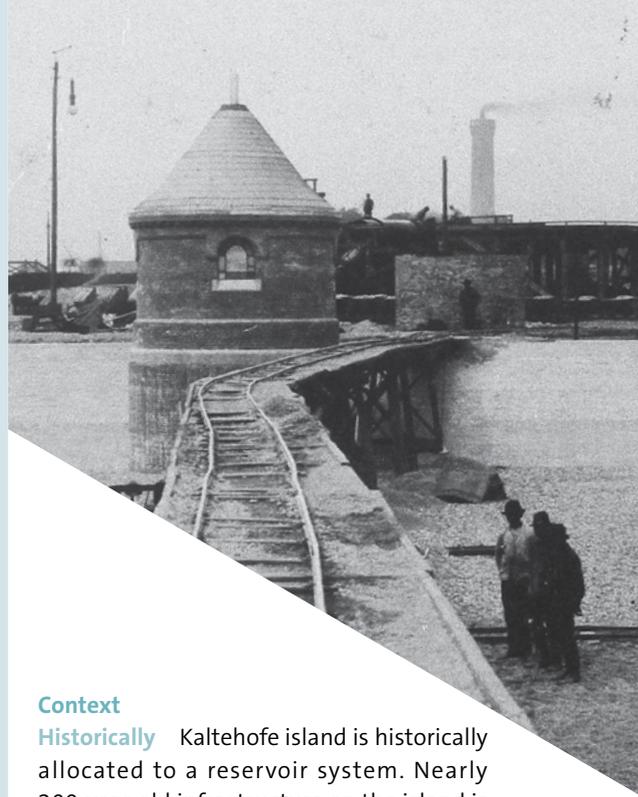
Svetlana Pushchina

Transport Logistics, GASU, Saint Petersburg

Svetlana has a very sweet and patient character. She is specialized in transportation security and is currently a PhD candidate at GASU University. She is an encouraging team member and even though she didn't have the skills to contribute to architectural design, she was a positive influence within the group and helped with any of the tasks she could.

Habitats for Humans 15

opment. This is visualized well by the strong and diverse outcome of the students' work. Having so many disciplines and characters within the mentors' groups allowed ideas to flourish and let me reflect on my own discipline in new light.



Context

Historically Kaltehofe island is historically allocated to a reservoir system. Nearly 200-year-old infrastructure on the island is preserved and currently part of a big open museum. The art museum building is also located in the middle of the island.

Socially The island does not have any residents. The museum and the relaxing space of the island attracts many people, especially on weekends. In addition, the main road of the island is used as a connection from south to north for pedestrians and cyclists.

Structurally and architecturally The ponds, piping system and old porches of the reservoir system are preserved. In addition, the building of the art museum is in the middle of the island. Apart from these, there are not any buildings on the site.

Site

Infrastructure In the historical water system, the pipes take the water from the adjacent district. The water is brought to the reservoir ponds and is filtered through layers of sand. The purified water gets out through the second piping system. The system's details are shown in the section below.



Missing links As the project is designed for an imaginary extreme climatic situation merging with an unknown future, we defined the Kaltehofe site as the sole shelter in an area of 100 kilometers. All the links occur inside the living complex; potential links to the outer world were not our focus. The design project utilizes the available water ponds to form the main residential space and employs the water infrastructure for cooling down the interior space during the hot days of the severe climate.

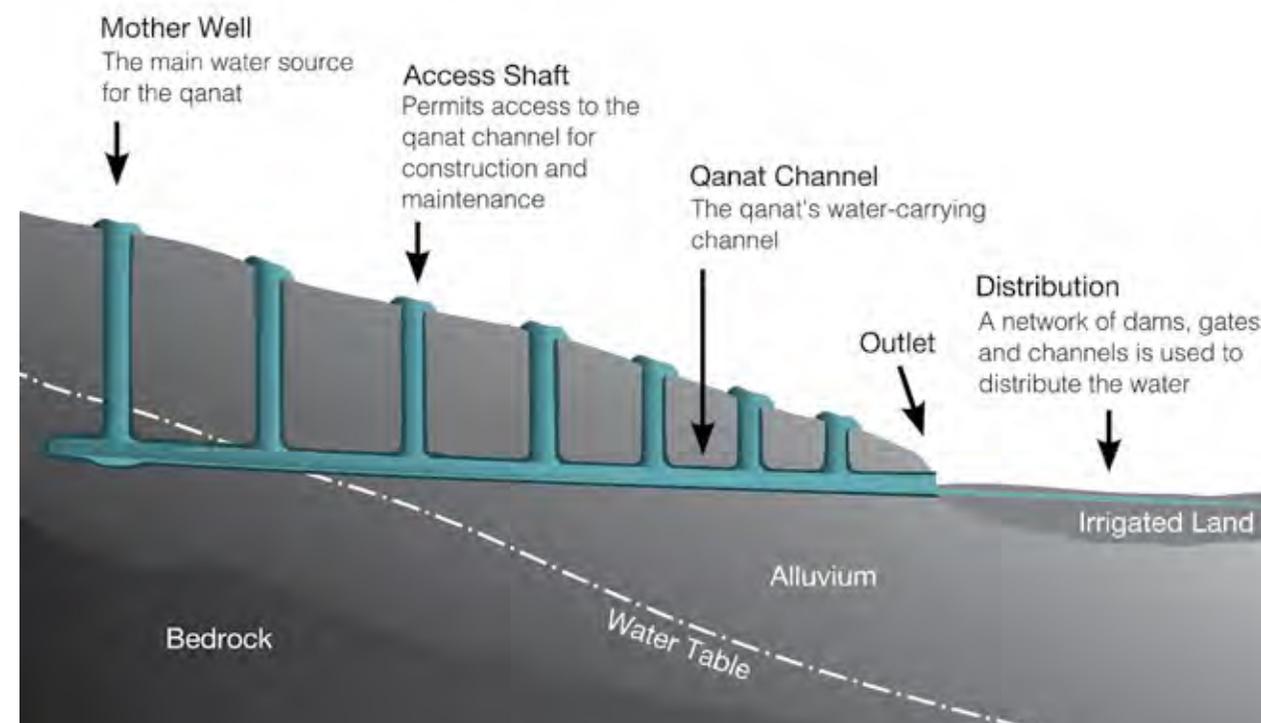
Utopian potential Various habitats were set up as a testing field for living on the Kaltehofe island, a former water purification field. The nearly 200-year-old Villa Kaltehofe was preserved as a museum to show how life here used to be. Its parks would later serve as the place for gatherings and exchange between the specialized habitats for the couple of happy hours that people could spend outside during the day.

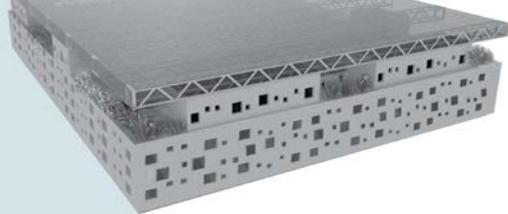
Theme

Conceptual idea and development The scenario is to design for an extreme climate in which the temperature varies from +75 °C to -50 °C between midday and midnight. The atmosphere is extremely dry. For human beings to be able to live under such harsh conditions, we decided to create large-size interiors that could accommodate all human activity during the hot days and cold nights.

Interpretation of "link" The existing ponds are chosen for development of the living units. Elements of water and wind flow were harnessed to provide various habitable microclimates inside. In contrast to the hostile outdoors, the village-like communities were to provide luscious views and resources for food production, while link the new construction to the historical character of the site.

Relevance for future cities This scenario stands to be able to confront any possible dramatic climatic change in the future and the Kaltehofe habitat is a testing field for living in such a dramatic climate.



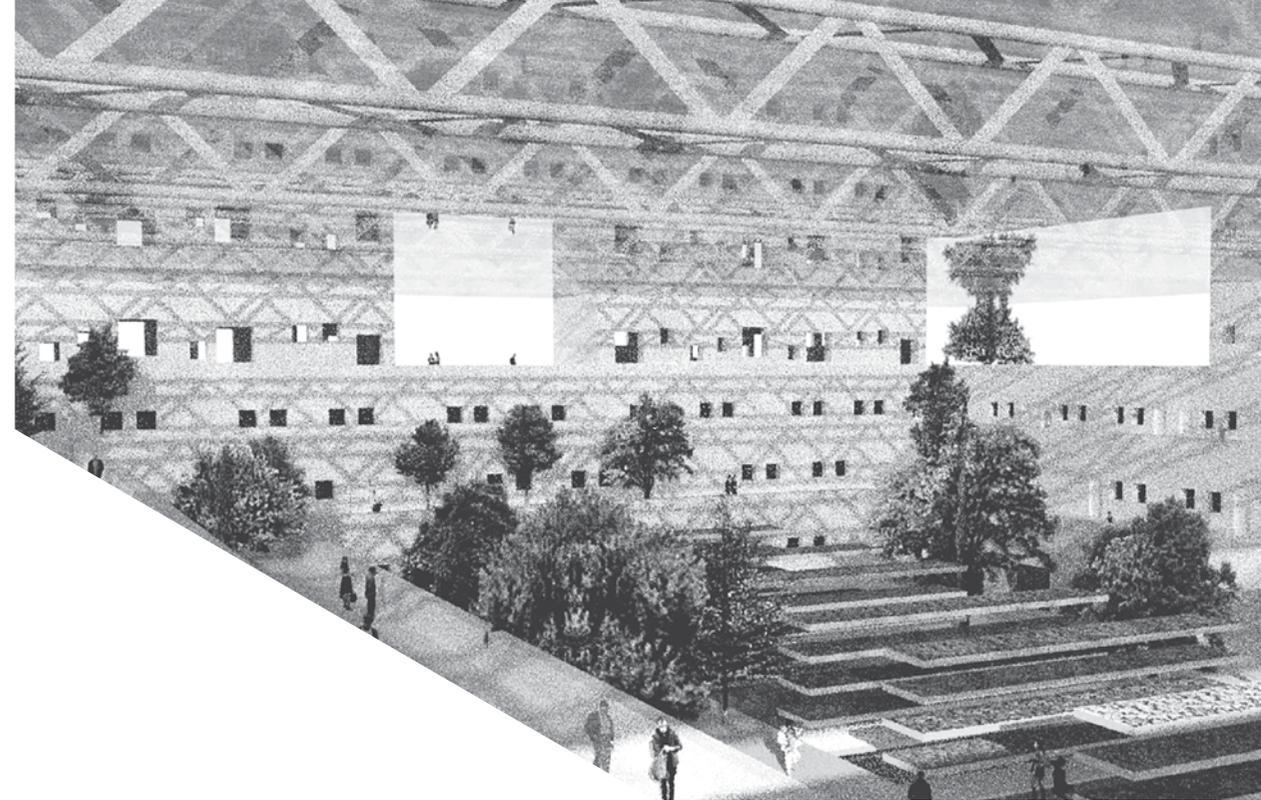


**Mentors' comments on
Habitat for Humans**

This group tackled the scenario “-50° to +75° C,” which can be described as a dry, reduced atmosphere with very cold night hours and extremely hot day hours. The challenge was to use these conditions and invert the negative environment to a beneficial habitat. The group’s response to this challenge was the “Habitat for Humans.” Lots of discussion evolved around the density of future living in either a compact city block or grouped buildings with or without special functionality. The given surroundings were analyzed to serve as part of a low energy supply for cooling the habitat. The possibilities that arise from the thermic behavior of energy stored in a mass were a constant topic on the agenda. The representation of the groups shows their vision for the future inhabitants of such extreme conditions.

Design

Utopian idea, the link and implementation of the link Each unit forms a special microclimate inside. These microclimates are multifaceted and accommodate different activities. A water tank is designed on top of each unit in order to create a buffer between inside and outside. The very first question is “Why Water?” The water layer helps to moderate and control the change of inside temperature in relationship to the dramatic temperature variation outside. This happens due to the high heat capacity of water. The thickness of water layer in the tank is different due to a different interior microclimate that is targeted to provide. The water layer prevents the inside from being exposed directly to the sunlight, however creates a translucent surface on top of the unit and does not block the daylight. Moreover, providing water does not need any extraordinary effort, as it is available all around the site. In addition, the existing piping system is employed in cooling the interior from the bottom of the units—as it happens in the traditional Qanat system invented in ancient Iran. (see sections below).



Distinctive feature

Sustainability The designed project is to be a self-sustainable system. In terms of energy, it uses the circle of absorbing—storing—releasing energy. It gets the heat from the sun, stores it in the water tanks on top and the energy storages on bottom of each unit, and releases this energy to warm up the interior space during the cold night. The inner yards of the units form small farms for growing food in different methods, like growing vegetables in water.

Saving different social communities The variety of the microclimates follows the purpose of creating different atmospheres for different people with different needs and doing different activities. The village-like units are meant to introduce a mixture of different human activities, living, working and leisure areas.

Renovation of the Heritage of a Place The design is planned on the basis of the historical water reservoir system existing on the site and employs the old system to create a high-tech, modern solution for living in extreme climatic conditions.





See you next year for
B.I.S.S. 2017

Experts

Toni Kotnik
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Morten Lund
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Piotr Lorens
Gdańsk University of Technology

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The professional reality is interdisciplinary!

When city transformation and evolution starts, what are the tools for successful strategies for urban interventions? How does digital planning for digital fabrication processes look like? How dedicated are the new professionals? And how does this all influence the future of bridge design?

More than 60 students representing various disciplines of built environment and working together in international and interdisciplinary mixed project groups at the second think the link—Baltic International Summer School (B.I.S.S.) analyzed these and other questions. The B.I.S.S., launched by the HafenCity University Hamburg together with eight international partner universities from the Baltic Sea region, aims to develop, test and implement new ways of interdisciplinary teaching, learning and designing. It also searches for ties and correlations between experiences, cultures and cities, in particular around the infrastructural juncture along the Elbe Bridges, which was chosen as the area to be explored and worked on for 2016's "Hamburg 2030—Urban Futures" topic.

This publication serves as a source book for fresh and unconventional urban development and intervention in harbor cities as well as an inspiration for successful interdisciplinary working, teaching and learning. On top, it gives a full documentation of the B.I.S.S. and expert comments on the 15 interdisciplinary projects that were devised during the ten-day workshop in Hamburg in 2016.

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