

# Fluid boundaries: architectural tool kits for water-lands

**water-lands  
boundaries  
emergency architecture**

**Carter, Doina<sup>1</sup>**

<sup>1</sup>Independent researcher, ARB | SFHEA, UK.  
doinacarter@live.co.uk

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This article is a commentary on natural border conditions between land and water, on how they and communities associated with them are affected by behavioural changes of the weather and how groups of architecture students responded to the challenge of conceiving ways to minimise, alleviate and even harness the effects of deluges.

The historic dependence on water of human civilisation is making us vulnerable to the impact of the intensification and rise in frequency of climatic or other natural events. Lack of planning, regulation, strategies are in some cases responsible for an increase in the severity of damage caused by adjacency to water. The groups of students engaged in the project analysed different site conditions across the globe, investigating extreme cases reported in the media or of personal interest. Their proposals are based on material, social, cultural research into the affected communities and demonstrate the future architects' awareness and their responsible, professional engagement with contemporary issues.

As a pedagogical exercise, the project demonstrated the students' ability to construct effective groups in a short time to propose solutions ranging from long term visions to pragmatic immediate solutions.

## PROLOGUE

Lao-tzu *'there is nothing softer and weaker than water, and yet there is nothing better for attacking hard and strong things'*.

In 1Q84 Haruki Murakami (Murakami, 2012) conceives two parallel worlds to allow a slowly unravelling love story to become what it needed to be. The narrative is densely phenomenological: Janáček's Sinfonietta fills a Toyota Crown Royal saloon taxi fitted with especially comfortable seats, expensive trims and an enhanced audio system. Immobilised in an uncharacteristic traffic jam on Tokyo's Expressway Number 3, it feels claustrophobic to Aomame - the protagonist, clad in a Junko Shimada light wool suit, Charles Jourdan heels and Ray Ban sunglasses - who very soon is revealed as not being what she seems. Sensorial details root the reader in a known, familiar world, at once universal as well as of its place.

It is however a piece of infrastructure that is used as the device to mark the passage between the two worlds: Aomame clammers down a metal service staircase, cold to the touch and strictly functional. The uncomfortable descent through this narrow staircase is the unlikely liminal space that allows the movement between the *real* world and the *other* one: as two temporal planes, these worlds are signified by two physical planes: the expressway (high z) and the city (low z).

Portals imply boundaries and in Murakami's novel, it is this lack of definition of the boundary which maintains the mystery. Chasing this ambiguity makes the story. This paper is about undefined or unexpectedly undefinable boundaries in *real life*, a state without mystery apart from its suddenness, that can have catastrophic effects.

## BORDERS

Borders divide. Some things are kept on one (in)side, the rest on the other. In or out. As a commentary on man-made borders, Christo



Hokusai's Great Wave. Photograph: British Museum.



Fig.1 - Christo and Jeanne-Claude, Running Fence, 1972-76, woven nylon, steel cables, steel poles, guide wires, hooks, earth anchors, 18' x 24 1/2 miles. Photos: Wolfgang Volz.

and Jeanne-Claude's installation 'The running fence' was a 40km of 5.5m tall nylon cloth running over Sonoma and Marin farmland in California, USA. With a few gaps to allow roads through, for two weeks it blocked views of the landscape and stopped the roaming of humans and cattle across their ancestral farmland (Fig.1). It was a mammoth self-funded project, finally up in September 1976, after almost 4 years in the making. Interestingly, Chamberlain (2017) remembers it as an exemplar for gaining public support and engagement, through sustained dialogue, from an unlikely American political demographic - farmers, landowners and small-town dwellers - who were the most affected, but who became the most ardent supporters of the project.

Christo and Jeanne-Claude created a border that unified.

Luis Camnitzer's open letter to Donald Trump in 2016 was a reminder of the installation's success, as well as political satire: *"Dear President Donald Trump: Please use this golden opportunity to commission US artist Christo with the creation of a new version of his Running Fence to separate the US from Mexico. His first project in Sonoma was completed in 1976 with great success. Though only 24.5 miles long then, in full-length today it would transform a racist project into a public art event and help improve the image of the US with an increasingly needed cultural veneer"* (Boucher, 2017).

Boundaries are about control, which is not necessarily about coercion - it might be about

governance and safety. The ancient Greeks developed geomorphic architecture which responded to nature and enhanced nature (Moholy-Nagy, 1968). Greek cities - their location, size and therefore boundaries - were about the ability to defend themselves and to conduct their affairs of state: 'in the Greek type of democracy all the citizens could listen to a series of orators and vote directly on questions of legislation. Hence their philosophers held that a small city was the largest possible democratic state' (Haldane, 1956, p.962-967).

When human-created, borders are constructs - physical (fortifications, moats, walls) or graphical (determined by geo-politics)- and imply gateways, as a way to move from the sides divided, protected, or rejected by the border. Gateways or portals or thresholds are special conditions, they mark the transition between worlds, they are 'near-universal expressions of social transformation, boundaries and liminality' (Eriksen, 2013 p.187). Gateways, thresholds, portals have the double function of *separating* and *connecting*. The most banal example in architecture is the door. Doors are 'hole-walls' hybrids. One can argue that the door is a precondition for architecture - in other words architecture cannot exist without doors (Johnson, 1988). If architecture is defined as the organisation and enclosure of space and if space is encapsulated by a continuous solid, impenetrable skin, without any punctures in it, there would be no way in or out: these structures would be tombs or mausoleums. Where there is a door, there is potential for architecture. In terms of semiotics, not having a door in architecture is a powerful message and the process of finding the entrance, without which the building would be unusable, is the start of decoding what its doorlessness signals. Libeskind's Jewish Museum in Berlin does just that: it does not have its own door, the access into it is through the old museum, from where visitors need to descend through the dramatic Entry Void. The new Jewish Museum is inextricably linked to the existing one but distinct, one cannot exist

without the other, signifying that the history of Berlin cannot be understood without taking into account the intellectual, economic and cultural contribution made by its Jewish citizens and that it is necessary to integrate physically and spiritually the meaning of the Holocaust into the consciousness and memory of the city of Berlin. Only by acknowledging and incorporating this erasure and void could Berlin and Europe have a future (Libeskind, 1999).

Natural, topographical borders tend to be different. They are mostly gradual, diffused, rarely clean cut, like walls or cliff edges. Even apparently clear-cut boundaries can be a matter of perception; often they can become non-borders when challenged by human need, ambition, ingenuity, endeavour. Many a daringly improbable escape succeeded and many a battle was won by the crossing of uncrossable rivers, insurmountable mountains, un-sailable seas, indefinite deserts. Thus, the gateways in natural boundaries are usually weaknesses in the quality which makes them a boundary, an anomaly in their physical characteristics or physics (solidity, dimensions, sheerness, velocity). Transitions between the two sides of the boundary are discrete, not obvious, sometimes un-repeatable.

## THE BRIEF: Before me, the deluge

How do we deal with borders that are amorphous or even aleatory? Like those of the seas that give Lemuel Gulliver (Swift, 1726) the unexpected experience of being at the extremes of a magnitude scale game, as if part of a *Power of ten* exercise (Eames, 1977). What if the transition space is undefined? Švejk (Hašek, 2005) wanders the lands of the Austro-Hungarian empire during the first world war, crossing new and old borders, which for good soldiers meant nothing in their relentless march to the slaughter and search for the next food ration. Before, during and after wars, borders are like tidemarks, continuously elastic, challenged,

dangerously liminal.

Man-made conflicts that result in ever-changing boundaries, defined and re-defined, are not too dissimilar to natural violence which at times tests or even ravages edges, be they liminal or clear-cut.

The discussion here considers the water-land edge and our relationship with it. Water is life's alma mater, we are around 60% water, the development of our civilisation depended on access to water and so on. As architects, we have a meaningful relationship with it, in all its states, because water needs to be kept in the right place, on the right side of our detailing: vapours should not traverse the vapour barrier in walls, precipitation needs to be guided to flow diligently, be collected and evacuated in a predetermined way, water raising from below has to be prevented from its natural disposition of finding fissures and porosities, while snow or ice ought to be counteracted so that they do not destroy roofs, materials. These are instances we know and have been planning for since the beginning of building, and Vitruvius was one of the first to codify engineering and architectural solutions (Vitruvius, 1998). However, water becomes devastatingly destructive, un-bridleable, in deluge mode, as sudden, unexpected, large quantities are ushered by movement, gravity, aeolian or seismic energy.

Are we, with our professional knowledge and understanding, able to do anything about such instances? This being a universal problem, albeit with local conditions: environmental, social, economic, cultural. Such was the question posed to two cohorts of UOU students in 2022 and 2023. The brief, *Before me, the deluge*, was a reference to the expression "After me, the deluge" (*Après moi, le déluge*) attributed to the French king Louis XV. His words referred to the biblical flood thought to be caused by the Hayley comet which, as a keen astronomer, Louis knew was approaching earth again, at a time when the French state

affairs were already in turmoil. The expression has been adopted in common use as representing a nihilistic attitude of indifference to what happens after one is gone, a disregard of potentially destructive consequences of one's actions. Karl Marx's thought it represented the defining, selfish, attitude of the capitalist society. However, the brief *Before me, the deluge* drew attention to the fact that we can see the literal deluge which might be caused by our inaction, selfishness (?), and we would do well to start thinking about solutions, as architects-thinkers-activists-world careers.

The brief suggested several potential conditions or site typologies for developing ideas:

*\_terra firma* – land that can get flooded by abundant precipitation (rising water, land not draining fast enough).

*\_edge* [limen = threshold] (e.g. rivers that burst their banks, coastal sites, etc.).

*\_island* - natural or artificial.

*\_open water*.

The pedagogical value of the challenge proved not to be limited to the quality and ingeniousness of the student imaginings, it was also manifested in their approach to the brief, in their critical appraisal of its terms and guidelines. At one end of the spectrum was the idea that the four site conditions could be the same spot metamorphosed by biblical floods - from terra firma to open water. Others considered that it is simply the boundary between land and water that was the subject of enquiry, troublesome for not being constant, predictable, manageable. Where this boundary was - flooded terra firma, edge of river, sea or island etc - had no importance. This approach made the choice of site to be led by research into communities which have become vulnerable because of their proximity to water.

All great early civilisations emerged around historic rivers - the Yellow River, Tigris, Euphrates, Indus, Nile - which stimulated

human ingenuity to ensure survival. On one hand the rivers helped make the land fertile, on the other they needed management – dykes, dams, banks, canals being some of the first forms of engineering (Toynbee, 1934). The planning of great river cities also relied on waterways for defence and transport, from Babylon to fortified capitals such as Vienna.

Rivers also had a metaphysical dimension. When the Nile flooded, annually, the elastic, modified boundary between water and land was a welcome reassurance in the divine order. Ganges is still of religious significance, waterside temples engage visually and physically with the transition between land and water as ritual enablers.

However, the historical dependence of human settlements on water is making them vulnerable today, when changes in weather behaviour means that ancestral wisdoms, habits, rituals of dealing with this adjacency are made ineffective, overridden by the magnitude of the effects.

### Energetic System for City

By installing hydraulic turbines down the streets that has an important slope. And provide that the water enter into this infrastructure. In that way we may wear a big % of water from the street and reuse it. Each tourbin has a proper filter, and depending on the necessary we'll take a water after 2 or 4 turbines. And do not forget we are generating the energy at the same time.

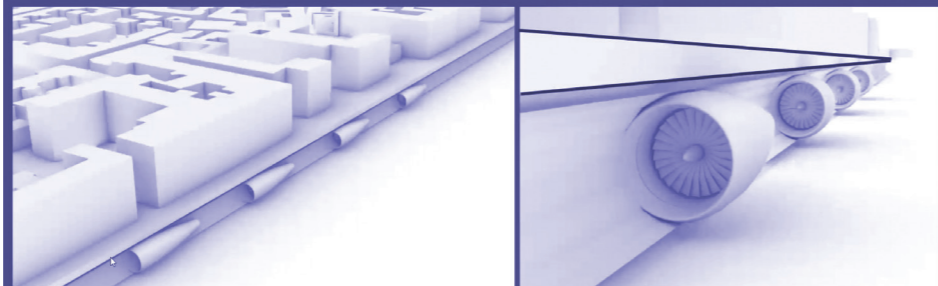


Fig.2 - Hydraulic turbines for high volume water management as part of surface water drainage system.

### Energetic System for City

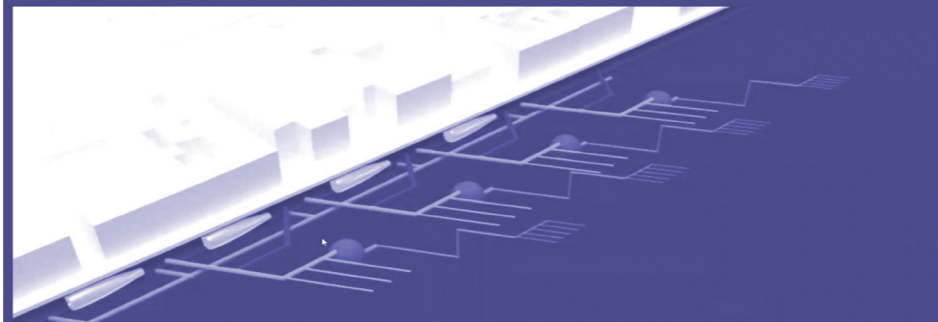


Fig.3 - Dendritic network with filter for water harvesting.

## PROJECTS:

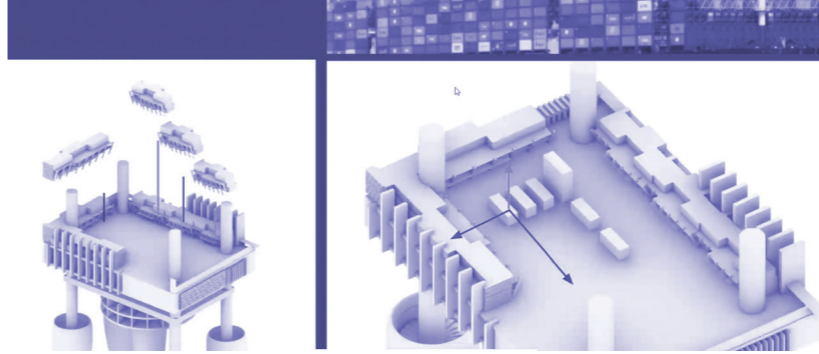
### THE POWER OF WATER

Igor Stepanov, Anhelina Budyk.

The vision of this project was bold because its starting point was to take the brief to one of its potential logical conclusions: deluge, welcome! The proposal was thought out, admirably for a two-week design endeavour, firstly at strategic and urban scale and secondly, at the more detailed level of an off-shore living concept.

In the first instance, the project took into account the kinetic energy of water at high velocity with the intention of harnessing it through sophisticated infrastructure and highly engineered gadgetry (Fig.2). A series of hydraulic turbines installed alongside road drainage systems, turbo-drained heavy precipitation to produce electricity, after which it fed it into a dendritic parallel network for filtering. This hidden complex circuit was conceived as an intelligent safety valve which took charge of high volumes of water to produce energy and harvest and recycle it (Fig.3).

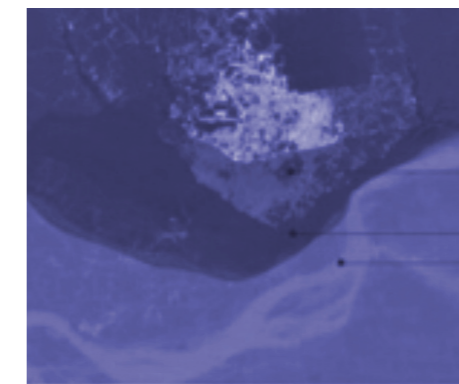
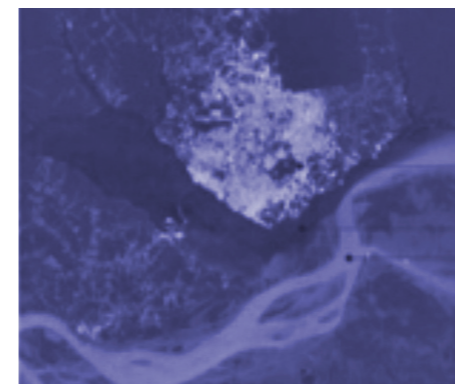
### Platform development



The proposal was also a commentary on the potential for more investment into hydropower, which comprised 15% of the world's total electric energy generation in 2008 (REN, 2009) and more specifically into *runoff (-river) power plants*. Their model acknowledged that climate change impacts on runoff in its quantity and seasonality – compared to *reservoir hydropower* plants whose production is more robust to climate variability due to the possibility of adaptation in storage management strategy.

Overwhelming, infinite availability of water was considered by their second proposal, which was about further climatic extremes, biblical floods, when only modern-day arks could provide relief. The blueprints used here were again hi-tech typologies, proposing a symbiosis between maritime oil rigs and shipping containers (Fig.4), powered by wave-activated turbines.

The group's proposed peninsula was reminiscent of Victorian piers, its skeleton providing the framework for crustacean-like containers which attached themselves and grew in response



to need. The brevity of the project curtailed their study, but the students began considering what the social structures and behavioural implications might be, how the isolated community might function or malfunction over time, with references to Ballardian dystopias.

### FLOATING CITY

Pierpaolo Visca, M.A., T.P.

This project looked at the potential an established city could have to adapt when affected by flooding. Their chosen site was Manaus, in Brazil, a metropolis in the Amazonian rainforest, situated at the confluence of the Negro and Solimoes rivers (Fig.5a). The group researched low-tech construction techniques, prefabrication, and standardisation of components to be used by the community. Their solution for the increasingly frequent floods was based on vernacular architecture, with a twist, deferential towards traditional materials and building techniques (the *visible*) while raising awareness of current environmental issues (the *hidden*). The visible, was the living quarters, to be built



Fig.5 - a (left) Manaus affected by floods and b (right) Research into local materials and construction techniques.

### Platform

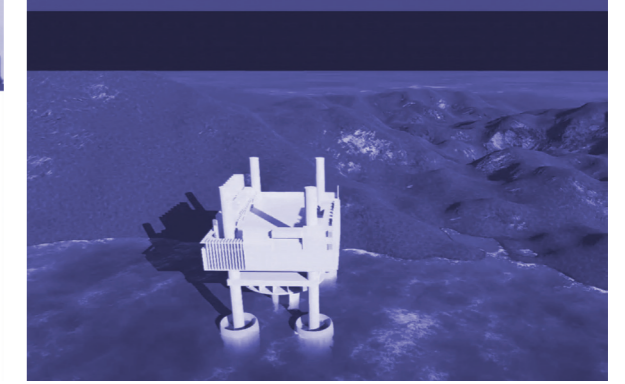


Fig.4 - Platform development and overview.

out of light, fast-growing natural materials, which had tactile, visual qualities, suitable for a domestic environment; using local materials relied on local knowledge and skills and by proposing modular systems, the project suggested that the wider community could participate in the construction (Fig.5b). The hidden, the infrastructure on which these light dwellings were installed, addressed the newest environmental threat to the Amazonian region: the plague of plastics.

Amazon ranks now as the second most polluted river in the world, in terms of plastic, only behind China's Yangtze River (Lebreton et al., 2017). The lack of urban planning and efficient waste management (Becker, 2005), combined with frequent and severe floods, result in the Amazon discharging in the Atlantic a lot of debris across its plume of 1500 km - it is estimated that 10% of plastics found in the oceans originate in the Amazon (Giarrizzo, 2017).

By using the qualities of plastics (impermeability, longevity, buoyancy) to create a floating

### 3 The project

Before me the deluge W3a

The idea covers the buildings as well as walkways between them, making a net of connections.

Living units and roads are placed on special construction of recycled plastic tanks.

Thanks to this, the city floats on the water.

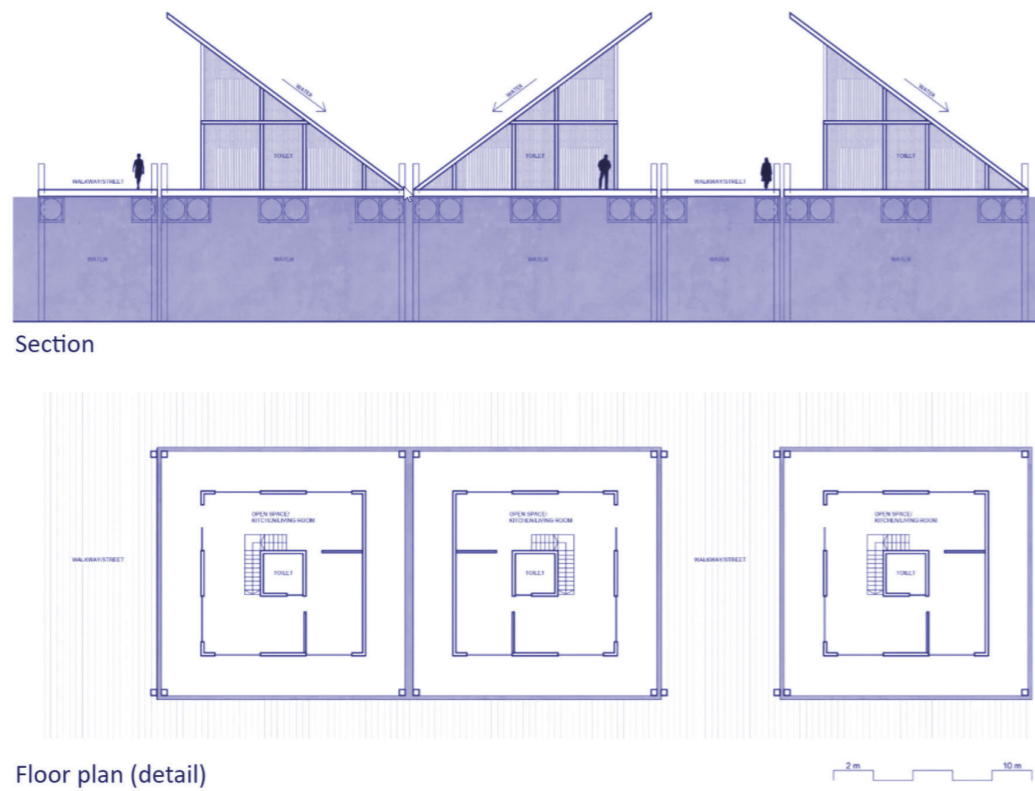


Fig.6 - The floating city.

platform, the problem of plastics infestation becomes, literally, the base of the project, as its unseen foundation (Fig.6). The platforms allowed for private, as well as public spaces.

### ANCA

Sofia Paya, Sergio Cabanyes, Mia Konjikusic, Jhoan Pena.

This project had a ludic approach to the brief. It started from the premise that the four site typologies, offered as potential starting points, were not mutually exclusive. On the contrary, they could have been one and the same place, what was different was the severity of the apocalyptic deluge that affected it (Fig.7a).

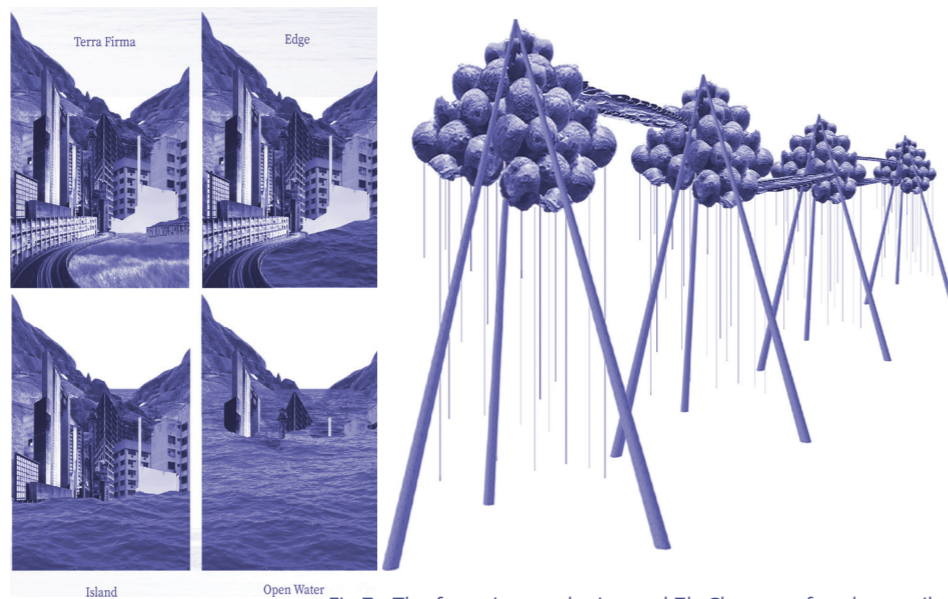


Fig.7a-The four site typologies and 7b-Clusters of pods on stilts.

suspended on stilts or parasitically perched on pillars (Fig.8a, b). The pod designs were eclectic, suggesting individualism resulted from makeshiftness or stylistic purposefulness. Biomimicry characterised the morphology of the pods, their materiality, physical qualities (Fig.8b). This imaginative project pays homage to visionaries such as Jules Verne – one can easily imagine captain Nemo and his precious library encapsulated in one of the shell-like pods (Verne, 1992). ANCA might also be a continuation of the Archigram Cities series, *The*

*amphibious city*, perhaps?

The measured drawings in the project reflect the original conceptual commentary: it is the section we are looking at, and the condition is the same, only the line demarcating the border water/air changes and the system adapts to it (Fig.9).

This is a strong statement as a reflection on the original question, saying that whatever we propose, needs to be continuously adaptable to be resilient.



Fig.8a – Parasitic pods on stilts and 8b – Suspended pods.

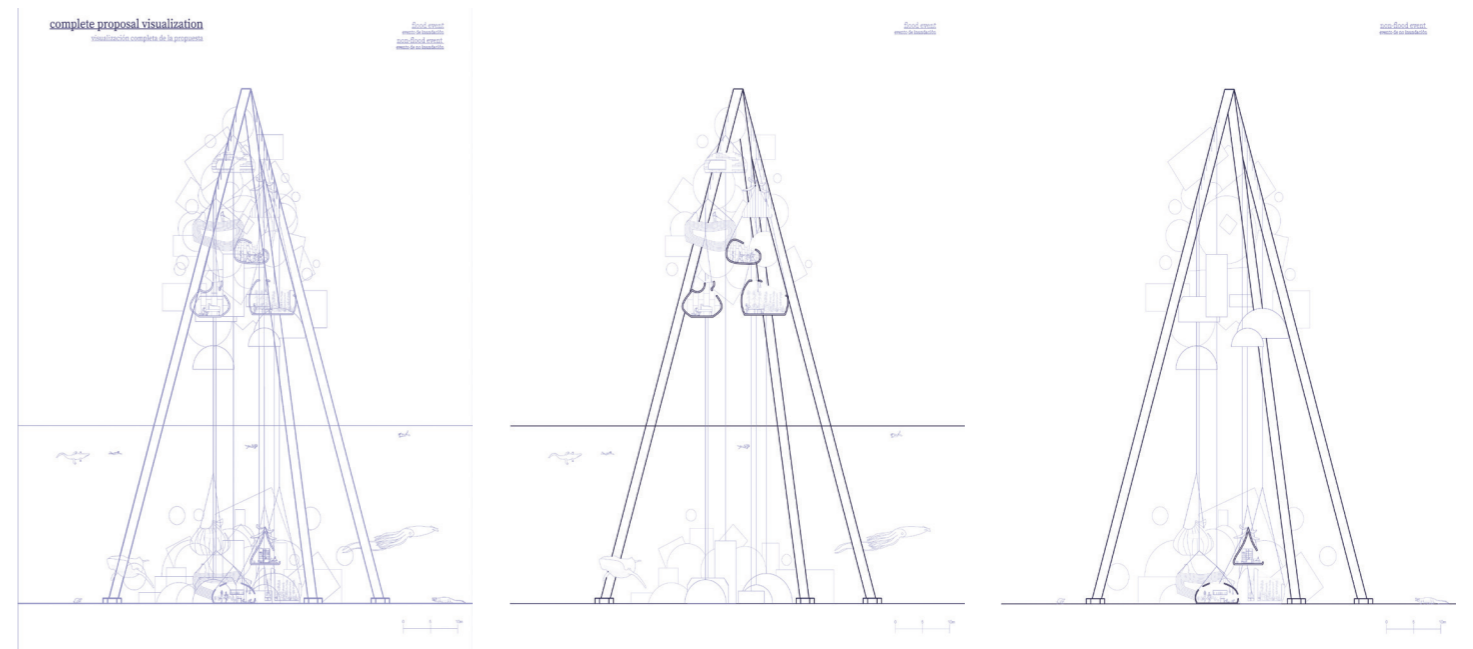


Fig.9 - System responding to variable water line.

If that were true, an escape solution had to be a flexible system able to be informed, deformed, and reformed by variable topographic and hydrologic conditions, for the survival of individuals as well as communities. This clarity of speculative thought reached logical conclusions: any escape capsules had to be nimble, kinetic, with amphibious qualities (Fig b). The conceptual response was an amalgamation of pods, reminiscent of fissured coconuts



Fig.10a – Advancement of sea in Orłowo (opposite Hel Peninsula), Poland and 10b – Proposal.  
<https://noizz.pl/ekologia/baltyk-porwal-plaze-kolo-ustki-brakuje-piasku-do-naturalnej-odbudowy/03hvhv37>

## MULTIPLIED

Anna Borkowska, Marcin Kasprzak.

A look at the threats to water-edged Polish lands gave this project a personal understanding of issues and their urgency. The starting point was the reality of coastal towns on the Baltic Sea and more specifically around the Hel Peninsula (Fig.10a), vulnerable to raising sea levels. BACCII (2015), the most comprehensive assessment of climate change in the Baltic Sea basin, acknowledges that predictions are difficult, given the past climatic variations in the area, but it postulates trends derived from empirical data. Scenarios, supported by recent research, show that the increase in air temperature results in the reduction of sea-ice cover and a rise in storm surges. This coupled with recorded rises of sea-levels causes the deterioration of the edging land. Land erosion and submersion are not exclusively due to climate change, disequilibrium between harsher hydrodynamics and weaker nearshore sediments are seen as factors for the accelerated decay (Różyński and Lin, 2021).

The first proposal of this project addressed this particular need to protect coastal edges, with full awareness that wave energy may be displaced in the process, as noted after 2015, when shore defences were constructed in and around Ustka. The design was of a modular system which could be multiplied as necessary (Fig.10b).

The team also considered inland

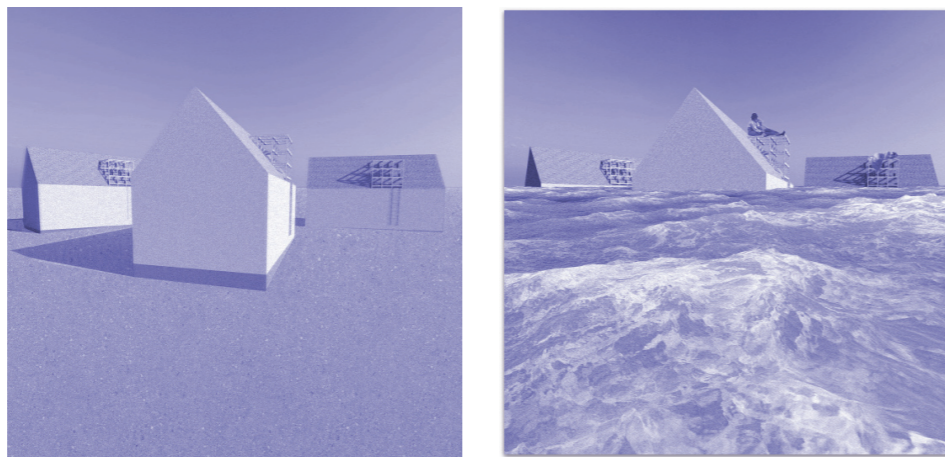


Fig.11 - Roof escape-rafts.

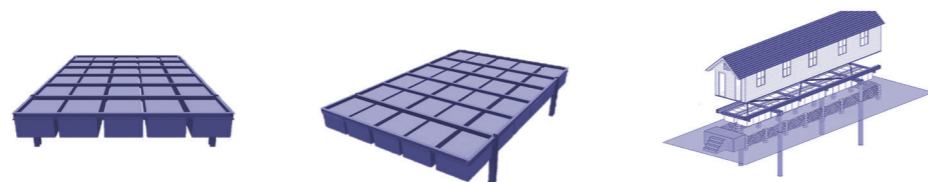


Fig.12 - Steel frame, floatation device and island house.

regions affected by rivers bursting their banks, taking the 1997 Central European flood as point of reference, because it submerged vast areas across three countries, causing a lot of damage. This time their design focused on saving lives. The launch pad attached to roofs was like a flipped venetian dock, as a just-in-case security measure, whose modularity allowed it to be multiplied (Fig.11).

The Multiplied proposal was at an embryonic conceptual stage, but the design of the 'roof dock' had the potential to be developed further into a dual purpose device: a balcony/attic amenity during normal times and a life-saving detachable raft in deluge mode.

## ISLAND ON LAND

Laura Oblak, Britt Lamein, Tom Smit and Jure Polanc.

The premise of the island house is once again ingenious: what if the house took off as soon as the raised water levels lifted it off the ground. The ability to do that relied on a buoyant raft base as shown in Fig.12. The team investigated technologies that could make their proposal feasible: a steel support frame as a base, a flotation device using expanded polystyrene EPS reclaimed from rivers and oceans and plastic bottles - all supporting the house in readiness to be lifted safely on guiding posts. Similar technologies have been used in realised projects, for instance in

the Amphibious House by BACA Architects (2019), but the idea of letting it float away on its own island (Fig.13) has references to the realities of the chosen site, Lokoja, on the Niger River. Researchers into the effects of the Nigerian seasonal flooding, which lately is more severe, note that most strategic actions are reactive, with little or no preparedness or mitigation and studies on exposure and vulnerability are rarely conducted with the participation of communities affected (Buba, 2021).

The group's own findings showed that on their chosen site, new local infrastructure work impeded the natural drainage of the land which, combined with climate change, made hydrologic events unmanageable, with floods so extreme that only the roofs of houses are left visible. Again, the students' appropriateness of response was a proof of their critical approach to research and understanding of their investigations.

## ADAPTING TO NATURE/GIVE MORE THAN TAKE

Zora Bogárová, Amber Breed, Francesco de Pretto, Hana Vyležíková.

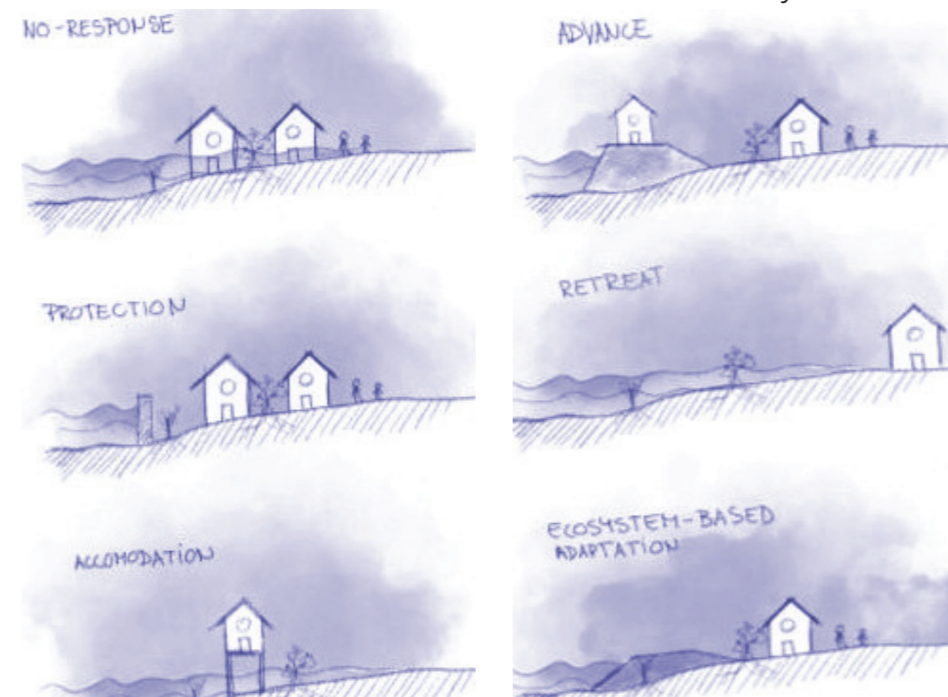


Fig.14 a, b – Analysis of water/land edge condition and 14c – Lake Baringo, Kenya, with surface in 2013 defined by red line, compared to extent of lake in 2020 (based on: <https://www.digitalearthafrika.org/media-center/blog/rising-lakes-rift-valley-kenya>).

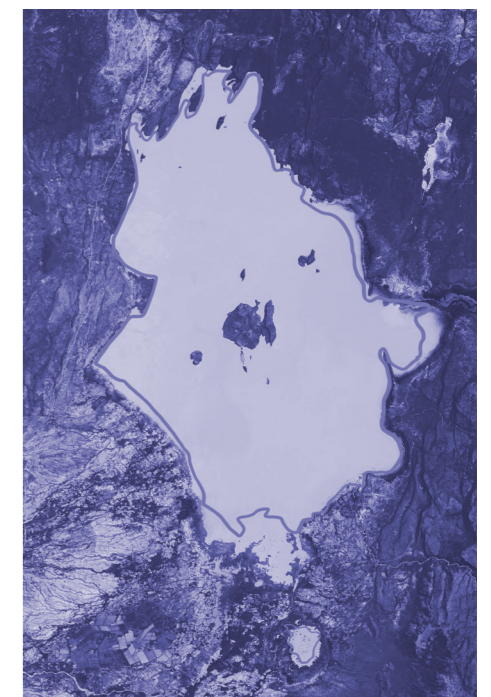


Fig.13 - Island house

The interrogation of the four suggested site typologies, resulted in the group becoming intrigued by *the edge* and the liminal condition of it. What we consider an *edge* between water and land, seen as a boundary, a topographical feature on maps, clear line, is in reality more ambiguous. The students' question was: where is the *boundary* or what is the boundary, can we actually define it with precision? Is the boundary the elastic limit of the water, advancing and retracting, is it a median line between these oscillations? The section (Fig.14a) reveals the flimsiness of the edge construct: water and land coexist, sometimes more *landy* sometimes

more watery, with a wide tolerance. The group was interested in this liminal condition, which must have a special habitat, with a symbiotic relationship, where neither land nor water is supreme.

This thought process gave the group their concept (last sketch Fig.14b). Lake Baringo, Kenya, became their site of interest, because it illustrated the imprecision and unpredictability of topographical boundaries (Fig.14c). For this project, the site, *edge*, was areal rather than linear. The solution proposed was to work with water and land simultaneously, treated as an ecosystem, with



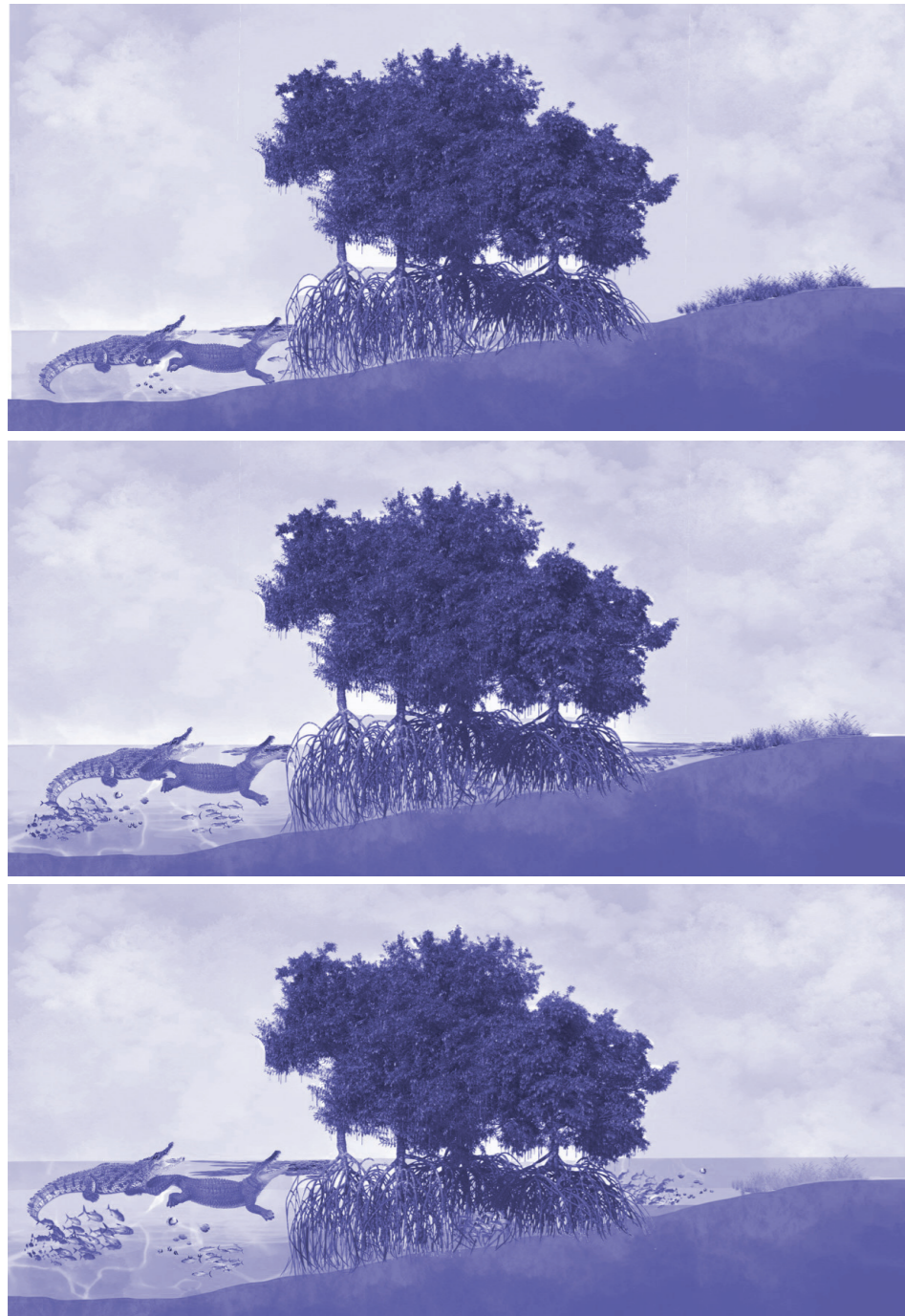


Fig.15. Amphibious mangrove-type planting forms a barrier between potentially dangerous fauna and habitable land, on which adaptable buildings can be developed.

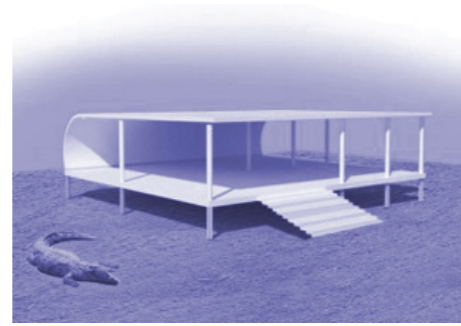
human interventions that learned from both, to achieve adaptations intended to thrive in a liminal environment.

To avoid inherent, potentially dangerous, transgressions (crocodiles versus humans!) banks of flora, of both land and water, were proposed as a protective intervention for the transitional, liminal territory (Fig.15).

The scheme was also mangrove-like, adaptability being its most important attribute (Fig.16).

## EPILOGUE

Educational theorists believe that complex problems require input from different disciplines and collaborative models have been adopted at all levels in education (Trist, 1983). Architecture is, intrinsically, a profession that relies on good working relationships between interdisciplinary teams, that is why the ability to be a good team member is a skill like all others, that needs to be taught and learned and honed (Homan and Poel, 1999).



SECTION AND MATERIALS



Fig.16 - Amphibious.

For an educator, leading the UOU workshops/projects is simultaneously business as usual, as well as uncharted territory: the interaction with students relies on the international, common language of architecture; what is unknown is the groups' performance, reliant on the mixture of value systems coming from different educational institutions across Europe.

The UOU experience confirms what the majority of current pedagogic research indicates: That group work strategies promote greater academic success through

strengthened social interaction, because students are placed in situations where they must cooperate with one another (Johnson and Johnson, 1991; Baloché, 1994).

The challenge posed by this brief could be read simply: are you ready for what is happening and what do you think about it? - as an individual and most importantly as an architect-citizen of the Spaceship Earth. The students' responses to the first iteration of the workshop (2021-22) clarified that the original ambition, for the brief to result in physical models for material testing, was not practical within the frugal timeline of the project. What emerged instead were imaginative propositions, decidedly pro-active conceptual frameworks based on research. This outcome was surprising, but according to Dewey, reflection starts with vexation and doubt, these are 'key moments for learning; we can reflect on these problems to solve the perplexity and learn from it' (Dewey, 1910, p.10). Reflection on the previous year's students' approach resulted in a revised brief proposed this year (2022-23), because in action and pedagogic research, evaluative practice alternates between action (setting briefs, teaching) and critical reflection (O'Leary 2004, p.140 cited in McGlinn 2009, p.34). The focus of the brief shifted to the edge condition between water and land, this *borderline* as a place: a historical prerequisite for civilisation -found, known, benign or, if not, managed- which has become so vulnerable. The intention was to encourage invention in response to extreme events, as this was something students found stimulating. Their responses this year were well judged, appropriate to the magnitude of disruption caused by broken patterns of weather behaviour, the projects acknowledging that the effects on the land/water border were substantive in such crises. Under normal conditions, transgressions -land on water or water on land- are negotiated through discrete, artificial interventions (bridges, piers, banks, dams, sea-walls, dykes) which, students discovered,

could be relied upon only as proto-typologies to inspire much more robust devices for deluge-mode. Natural or artificial borders are meaningful only when an understanding is being observed - in nature and diplomacy. Nature (like politics) in disarray results in new conditions for adjacencies: our physical constructs and rules are overridden, any response to ensure survival must start from the premise of a new reality and this is precisely what the projects shown here reflect.

The resulting schemes are not only testimonies of students' abilities as practitioners, but also of their criticality as thinkers. The work produced for '*Before me, the deluge*' brief answered my question: if the teams, with a large number of itinerant Erasmus students, thrust into the demanding activity of working together, have the time, skill and motivation to work through the stages of forming, norming, storming and performing (Mutch, 1998), considered essential for effective teamwork.

Having worked together, in the spirit of architects without frontiers, the answer is *yes*, they did.

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