Landscape Metropolis #9 Drawing Time

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SPOOL - Journal of Architecture and the Built Environment

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Front: *Deschampsia cespitosa* 'Schottland': Study of summer relations between form and atmosphere. (Lisa Mackenzie, 2021).
Back: The strong 6.3 magnitude earthquake hit New Zealand at 12:51 on 22 February 2011 and the centrepiece of panel 6 is a large clock tower displaying exactly 12:51, referring to the fact that clocks did actually stop working. Time becomes immediate and concrete.(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

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EDITORIAL

Drawing Time

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This issue of *Spool* – 'Drawing Time' – departs from the observation that the metropolitan landscape is subject to time, in many ways. The metropolitan landscape, as it has been studied in *Spool* over the years, is conceived as the interrelation between urban, infrastructural, rural and natural formations: a dynamic, intertwined and layered urban-landscape structure. The urban condition is viewed from the perspective of the landscape as a permanent underlying substructure and as physical open space with its own spatial, compositional and perceptual characteristics. Time aspects of the metropolitan landscape can be found in processes of growth and decay, seasonal manifestations, disruptive forces of wind and water and also in the ways in which humans inhabit and use space or in which urban development processes take place. Designing for the metropolitan landscape means dealing with a wide range of dynamic phenomena, unstable systems and variable conditions. It implies the exploration of future situations, bridging time spans from seasons to decades and design tasks from small-scale interventions to large-scale strategies. It connects landscape operations that build upon the garden, the park and the forest to complex, layered design strategies for transformation, migration and climate change. This *Spool* issue discusses the importance of time in such design processes, and its reciprocal relation to representation.

When forecasting dynamic external influences, exploring scenarios, pointing to if-then relations, striving for robustness, or framing change as an attractive factor, designers work with time. However, design drawings often follow a conventional scheme. Time aspects remain implicit, even though exploring issues of time in drawings in several stages of the design process could strengthen the position of those time aspects in the outcome. Yet, in the past decade, we have seen a tentative change and a theoretical and practical basis for incorporating time into the design process is emerging. The key question in this *Spool* issue is how strategies for visualizing ideas address time aspects, and thus inspire resilient, adaptive design, and enable the sharing of knowledge among the partners in design processes. This refers both to design processes and to design products; to drawing as a verb and to drawing as a noun. The aim of drawing time is to create awareness, understanding, documentation and representation and, most of all, to move beyond documentation and to inform the process, the focus and the intention of the spatial design itself.

Current discourse

A quick scan of today's literature on drawing time demonstrates a changing attitude towards the relation between time and its representation in the design. Several issues of time, representation and landscape are discussed from a theoretical, visual and practice-based angle. Some authors discuss how specific representational modes (the diagram, the transect, film) are in their own way capable of revealing, researching and presenting time. Others point to the act of drawing and its relation to observing and recording time-based phenomena in landscape. In addition, the design process itself is addressed since any design process unfolds in time. Moosavi (2021) speaks about 'stories of projects' because the making of designs is in itself often a fuzzy negotiation with dynamics and uncertainty. Some recent contributions state that uncertainty, dynamics and open-endedness have become more and more inherent to the spatial design

disciplines, and specifically to landscape architecture. This forces designers to explore new tools for handling uncertainty and to work iteratively and incrementally. This also implies taking a critical look at how we use drawings in the broadest sense. Traditional methods such as the plan drawing need to be enriched with test beds, prototypes and more. As Macken and Harrison state, a growing awareness of time-related issues is not yet always matched by the representational tools of design and that needs to change: 'time must be central'. Korneeva and Turanli (2021) even arrive at a new conceptual framework for landscape design and time, coining the term 'earth choreographer' to describe a notion that beautifully expresses the *who* and *when* in relation to changing landscapes.

Contributions

This issue is built around two types of contributions: papers and visual essays. The papers take a specific project as their point of departure, using it to deepen, comment on and add to concepts of the interrelation between time and representation. The visual essays are experimental design proposals or collections of student work that explore relevant ways of representing time. The submissions cover a range of approaches to the theme of drawing time. They address drawing as a vehicle for observing, understanding and exploring change per se, certain aspects of change, and the complexity of processes that take place in the metropolitan landscape, in its physical and societal dimensions.

The shift towards more time-based designs is already reflected in design education, as we can see in the first three contributions in this issue. Students were asked to explore *how* to research time-based phenomena by drawing, and to look for new, appropriate representational approaches. They experimented with representational modes, with the different roles of the drawing and with drawing media, and studied the ability of the materials used to display or generate change and unpredictability. The recent discourse as reflected in journals and books, and the way time issues are explored in student work, underscores a key observation: whereas traditional landscape architecture drawings build upon the notion of *what* and *where*, representational approaches that explore temporal issues shift attention to *who* has to act, and to *when* a certain action has to be performed. That does not replace the drawn research of spatial and compositional aspects, but it does put these 'fixed' parameters in a dynamic field of growth, evolution and change. Mateja Kregar, Valentina Schmitzer and their students show in their visual essay how the act of drawing can strengthen the observation and understanding of changes over time, such as the ephemerality and stadia of plant growth. The authors stress how shifting the focus to change over time creates attentiveness to the small, continuous and unstoppable transition of the landscape that often goes unnoticed in our usual presentation techniques. Students had to find a new and personal drawing language to be able to recorcd the perceived changes. Tomaz Pipan and his fellow authors address complex processes in landscapes and discuss how representation can be instrumental in understanding these complexities. Referring to professional history, the authors ask whether the limits of visual expression have already been tested. No, is their conclusion, and not in the experiment they describe either – the authors note that the drawings achieve 'with varying success' a relevant representation of time. There is still work to do. Interestingly, the scale and complexity of the subject leads to a shift of focus from the landscape to the actors and actants that cause or influence processes, confirming the important role of the *who* in time drawings. Luis Maldonado describes how students learn to work on the expression of landscape dynamics and temporality as a fundamental dimension of the discipline of landscape architecture. However, using art, cinema and comics as well as biology and ecology as inspiration demonstrates that dynamics and temporality play a role in all fields that deal with understanding, interpreting and transforming the world we live in.

The next section presents several design proposals that explore relevant ways of representing time, using the drawing as a tool for design, ranging from design experiments, to executed designs, to the construction site. Lotte Oppenhuis presents an experimental design proposal that explores possible connections between

humans and nonhumans, concentrating on three time-based design principles. She reflects on her design process, and how drawing time helped her gain new and necessary insights. She also discusses different modes of representation and their specific contribution to the exploration. Marijne Beenhakker, Jasper Hugtenburg and Jaap van der Salm search for forms of representation that can foster a better understanding of uncertain dynamics in large-scale landscapes. Inventions such as the 'water calendar' are used as analytical tools for understanding landscape systems rather than as components of the design and the design drawings. As they note, time is implicitly rather than explicitly present in the drawings. Lisa McKenzie examines the role of drawings in exploring possibilities, for example by incorporating dynamics into a design, and supporting a conversation with the audience. In her paper she reflects on the afterlife of the completed work and suggests new drawings that could have underpinned the continuing and relational opportunities of the space. Anne Wagner highlights the role of representation in situ. The drawings she discusses do not actively engage in the conception of the design, but play a role in its reception. While any drawing is by its nature an abstraction, in this case they are also concrete and real. Although the projected future and the present that will disappear are two different realities, their simultaneous presence in the situated drawings juxtapose what they are and what they represent, and what is there and what is projected.

The contributions identify concrete themes that time drawing can focus on, such as erosion, plant growth, decay or urban expansion. Directly related to this from a design perspective, are concepts such as resilience, adaptivity, robustness and what-if scenarios. What is little addressed is how designers can get a grip on the instability of complex processes of change in the landscape through the act of drawing, the drawing itself, and the necessary innovation in drawing forms. Is it perhaps not fitting in the culture of design disciplines to reflect on what may seem instrumental, which is to say the act of drawing, the drawing itself and the tools or techniques by which drawings are made?

The role of the drawing varies across the contributions. Those from the educational domain speak about drawing and drawings as a learning experience. Drawing is used to augment awareness of time aspects among future professional designers. Interestingly, the articles are less clear about what exactly supported this: the *act* of drawing, the knowledge explored in the drawings, the chosen mode of representation, and/or the materials and techniques used. Contributions from the domain of professionals and researchers also speak about drawing as a learning experience, but in their case it is a conscious act to stretch or confirm their expertise on the subject, or to look for new roads that seem to be important. Moving from education to experimentation, design and realization, the role of the drawing shifts to a communication tool to create public awareness of time aspects. Professionals have to interact with their clients and their audience. Therefore, drawing is also seen in its role of communicating very directly – see for example Wagner. Both McKenzie and Beenhakker et al. discuss the need to interact, via drawings, with the client and the audience, while noting that in their experience there are only limited possibilities for such interaction. Drawings openly discussing time aspects may be too difficult, disturbing or simply seen as off topic. In that sense, the authors also make clear that drawing time has yet to be conquered.

Future challenges

This Drawing Time issue of *Spool* poses the question how strategies for visualizing ideas address time aspects in the design process, inspire resilient, adaptive designs, and enable the exchange of knowledge between partners in design processes. The contributions show that this question can be approached from many, very different perspectives. As such, the contributions confirm that discussing drawing time is no longer viewed as exotic. A decade ago, confronted with the definitive takeover of the computer, not only in drawing but also in construction, the relevance of the drawing was questioned. Today we see that it is as relevant as ever. Drawing media, drawing techniques and the position of drawing in design and construction processes have changed and continue to change. This issue leaves no doubts about

the relevance of the drawing, whether by hand or digital. The contributions related to education in particular suggest that drawing, and more specifically drawing time, is nowadays integrated into design teaching. This issue also shows clearly that drawing time in itself is not difficult. Yes, one may venture into new territory and test out innovative representational options. But in essence, important questions related to time can also be researched using known vehicles such as the plan drawing or the section. It would seem that the first and most important step lies in the realm of attitudes and conventions: to embrace drawing time as obvious and as necessary.

There is still work to do. This issue of *Spool* shows that the theoretical basis is still in its infancy. Notions of how to draw time are emerging. But there is still no contemporary theoretical work to underpin this. That is the challenge we are facing and this issue is an invitation to scholars in this field to fill that gap.

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Captured Moments of Landscape Metamorphosis

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Abstract

Landscape architecture students at the University of Ljubljana were encouraged to prepare temporal series of landscape and plant drawings to sharpen their sensitivity to changes in the perception of a land motive and vegetation morphology. Students chose a particular motive, defined the frame of the drawing, and identified characteristic plants on site. The motives were sketched several times during the year to portray seasonal changes. Specific environmental conditions (fog, rain, sunny day) were captured in drawings, and in the case of plants, drawings revealed the transitions of selected physiological events (budding, flowering, fruiting). These transformations were discussed in connection with landscape perception and as a tool in the design process.

Keywords

On-site sketching, Vegetation, Transformation, Seasons, Phase drawing, Plant morphology

DOI

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Introduction

Landscape motives and in particular, the vegetation that forms them, are subject to successive metamorphoses. Van Dooren (2017) claims that landscape architects recognize time as a key component when referring to their profession and practice. Analyses, interpretation of the site potential and the conceptual design of any spatial intervention should also incorporate the temporal aspect. Observing and drawing the motive over time can serve as a tool to generate ideas and recognition of the intrinsic value of the land and its seasonality. However, this process is rarely implemented in commercial or private plans due to the deadlines or budget set for project proposals. We strive to equip students to be alert to the changes in landscape elements, particularly in vegetation, and this visual essay represents the teaching process, combining drawing studio and plant material theory.

As stated by Louis Le Roy, everything in nature is always under constant transformation (Rosenheinreich et al., 2003) and in wild nature, as in landscaped urban parks, nothing is static. The representation of temporal changes of landscape in drawing was being offered by landscape architects as early as the 19th century. Humprey Repton evaluated the role of time in design, Frederick Law Olmsted projected the development of his green open spaces into the future (van Dooren & Nielsen, 2018). When incorporating time into the design process, contemporary studies also acknowledge that temporal changes affect human perception of the space (Eroğlu et al., 2012). The experience of a specific site is different in a snow-covered terrain or when observing lush green tree canopies. In temperate climates, most woody plants are deciduous and undergo distinguishable seasonal changes. Plant morphogenesis represents an important factor in landscape design and the decision-making process as the feel of a place is closely linked to their cycles (Zhao et al., 2017).

An observer of a natural landscape motive, urban park or private garden may perceive the selected view as a frozen moment in time. However, what we observe is also linked to memories of the past and projections of the future (Bender, 2002). Particularly if the location is well known to us, former interactions with the landscape are intertwined with current attention to details we detect and apprehend. Individual plants, even the most inconspicuous ones, attract our interest if we have previously wandered through the landscape (Soukand & Kalle, 2010). Neuron connections in the brain inform the viewer of slight differences in the vegetation cycle or colour tones compared to the previous visit.

This ability can be developed or acquired through sketching on site. Freehand drawing is a powerful tool in landscape presentation as it creates a special bond between the observer and the motive, particularly in recurrent visits to the same site (Denerel & Birisci, 2019). It enables a selective vision of space and an analytical assessment of the motive in different situations, which can aid in planning for all seasons. In a design process, understanding seasonal variation is important for creating open spaces with optimal visual and functional attraction during different time periods. The principles of plant combinations in landscape design are thus often based on their phenological changeability (Eroğlu et al., 2012).

Due to restrictions linked to the COVID epidemics, the educational process at the Landscape Architecture school in Ljubljana, Slovenia, had to be modified substantially. As a part of extracurricular activities for undergraduate students, the professors suggested they draw the temporal evolution of landscapes and plants near their homes. In this way the students could sharpen their perception of a land motive or vegetation morphology. Each student chose a particular motive, defined the frame of the drawing (open landscape view, detail), suggested several situations and dates of sketching based on the most distinguishable changes in the motive and identified specific plants on site. In the initial step of the mentoring process the views were examined and, after preliminary sketches, the details of plants were

discussed and outlined. Compositions were observed from near (detailing) and far (abstraction); the experience of landscape was slowly transformed into the personal visual language of each participating student (Wylie et al., 2019).

Improving their skill in drawing *en plein air*, detecting the plant and landscape metamorphosis, was an appealing exercise for the students that improved their sensitivity to natural phenomena. Unlike architectural drawing, landscape drawing should incorporate time as well as space. Students developed their attentiveness to landscape components and proportions, as well as to small details that might go unnoticed in other presentation techniques. The process of sketching therefore not only reflected their personal style but also a particular awareness of the space that surrounded them. Time drawings noted the inevitable transformations of vegetation, which correlated with the impression of the landscape. By repeatedly drawing the same motive, accessing hilly sites, and slowly discovering various elements of their surroundings, the students incorporated information on different weather conditions, visibility and variation in highlights, predominant colour schemes, physiological changes, and the evolution of plant metamorphosis. The combination of all these factors shaped their experience of the space as they became aware of the importance of the yearly cycle. These personal experiences of landscape metamorphoses over time could be directly transferred to the design process and the students grew alert to the natural world dynamics, which are reflected in the atmosphere of the place. The examples presented here are typical: the regression and flooding of the Cerknica intermittent lake must be incorporated into the planning of recreational areas, trail systems and access roads; paths leading to Mount Saint Mary should be accessible in all seasons and the viewpoints set to frame wide vistas of the landscape below, even when the tall deciduous trees are in full leaf. The students discovered that the ambience experienced by the visitor changes dramatically depending on the season and that this changeability needs to be considered in landscape design if it is to be effective and site-sensitive.

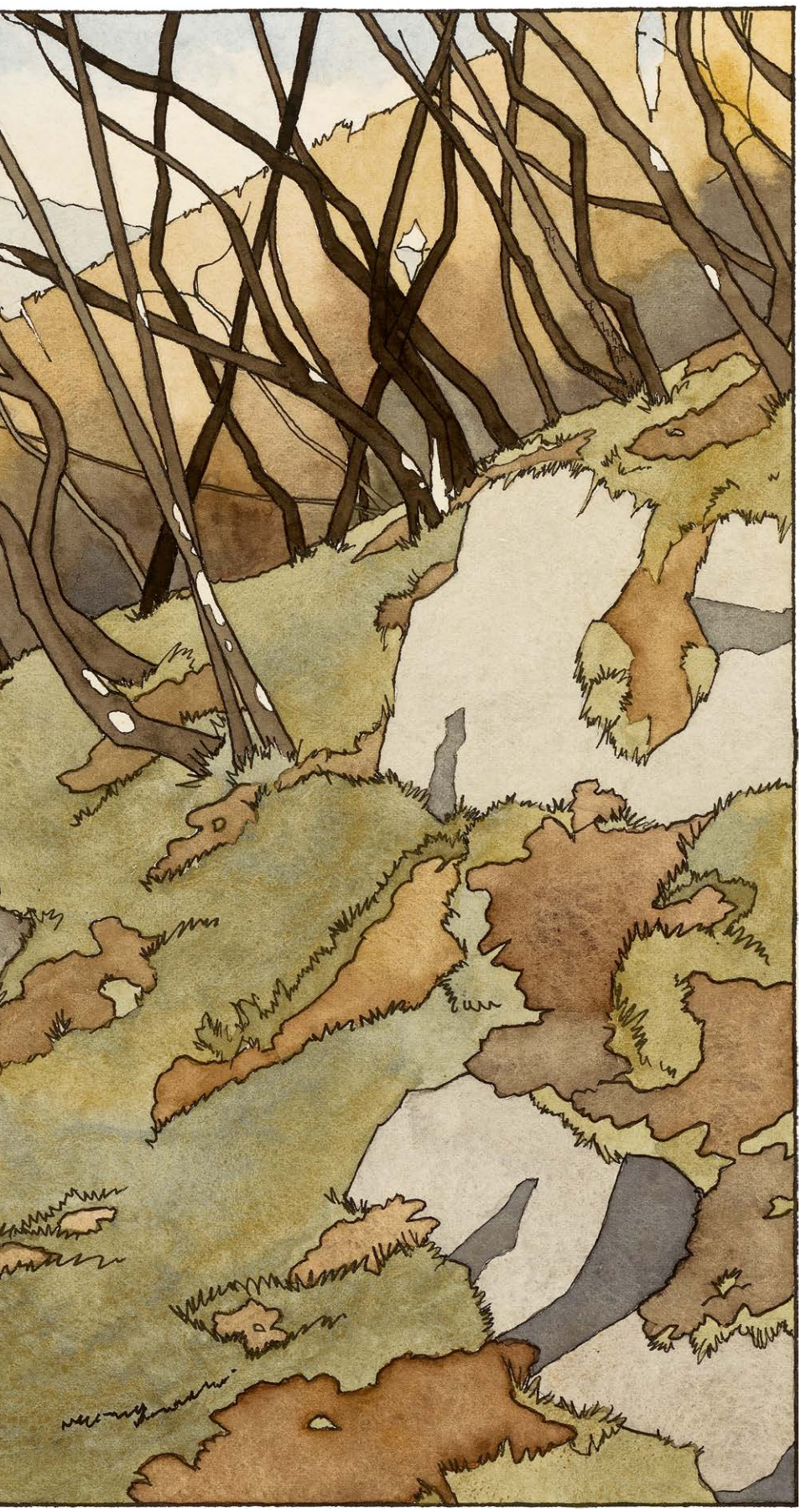

FIGURE 1

Winter drawing of the view from the southern slope of Mount Saint Mary.

The path becomes even harder to access as the ground is frozen, slippery and partly covered in snow. Dark tree trunks stand out, groundcover plants are dormant, only patches of low grasses and moss cover the rocks. Shadows in the background are interrupted as we move further, and the colour scheme of the foreground is repeated where the sun lights the hill in the distance. The information between near and distant segments are in proportion, the visitor to the site is encouraged to pause and observe. The feel of the place is melancholic, which is emphasized by the colour scheme, ranging from amber, dark brown and yellow to grey, black, and olive green.

(Drawing by Tim Gerdin, 2020)

FIGURE 2

The second in a series of yearly transformations of the view from the southern slope of Mount Saint Mary in Slovenia.

Access to the site is only possible via a steep path and by frequently hiking to the location the student grew attentive to the details and plant transformations on each visit. In the foreground the bare trunks of *Ostrya carpinifolia*, exposed carbonate rocks and yellow inflorescences of the groundcover plant *Euphorbia amygdaloides* stand out in detail during a visit to the site in spring. The drawing focuses on the foreground where the student used brighter colours which capture the attention of the viewer. Although the frame encompasses a distant view of the Sava River and cultivated land, consisting of cornfields and grassland, these sections of the drawing are not emphasized.

(Drawing by Tim Gerdin, 2020)

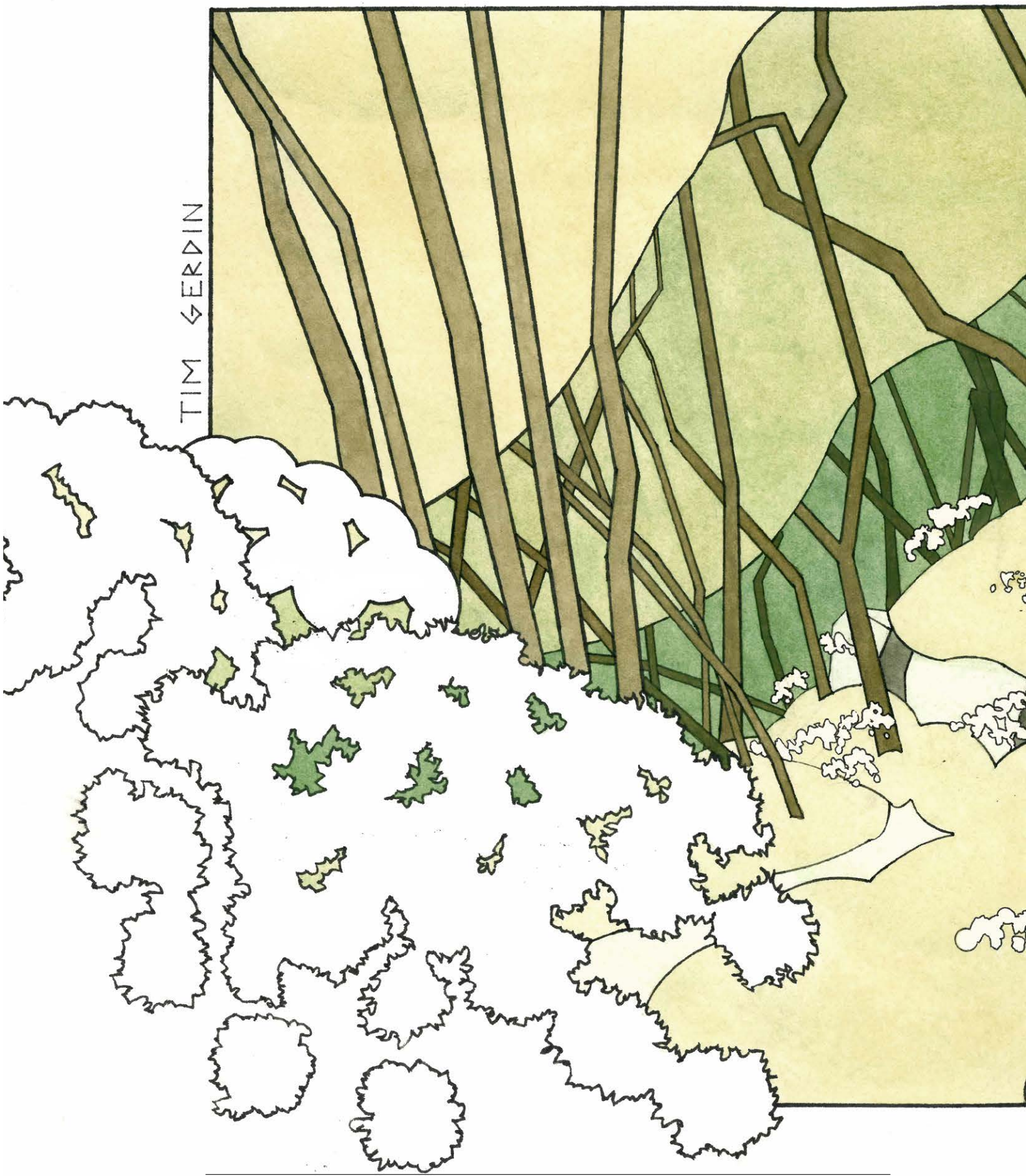
TIM GERDIN

FIGURE 3

The transformation of plants and colour during the summer months on the southern slope of Mount Saint Mary is reflected in a different presentation and framing of the drawing.

As if the burst of vegetation could not be contained in a strict rectangle, the student expanded the view by adding layers of *Laserpitium siler* inflorescences. Calm shades of yellow and green mellow the atmosphere. The distant view of the land below is obscured by the canopies of *Ostrya carpinifolia* and *Amelanchier ovalis*.

(Drawing by Tim Gerdin, 2021)

FIGURE 4

A series of drawings depict remarkable land metamorphoses in the Cerknica intermittent lake in central Slovenia.

The first one is a winter landscape; the lake's surface is iced over, silhouettes of sedges and reeds rise above it. The student emphasized the brown shades of the foreground, which are contrasted with dark green conifers encircling the lake. The student presented the view of a cold, cloudy day but chose to sketch soft lines of light shining on the ice. These make the motive transient and expectant of the future.

(Drawing by Ria Ilersic, 2021)

FIGURE 5

Spring in the Cerknica intermittent lake is the time when the water level is highest and darker blue and green shades prevail in the broad view.

Alder trees, willow, dogwood shrubs and numerous perennials start their vegetation circle, and the contrast between conifers and deciduous trees diminishes. The student chose to draw the motive on a sunny spring day; patchy clouds are mirrored on the lake surface and the feeling of the place is playful.

(Drawing by Ria Ilersic, 2021)

FIGURE 6

Intermittent lakes are often totally dry in summer but in Cerknica there is always a small stream meandering through the landscape.

The observer must study the drawing to detect it as the most apparent and emphasized characteristics of the motif are dry pits and depressions in the foreground. The colour scheme is of brown, earthy colours and green. The student's drawing did not focus on individual plant species as these are hardly recognizable; only the distinction between conifers and broadleaved trees can be sensed. The atmosphere is heavy, the heat of the summer day reinforced by the lack of clouds.

(Drawing by Ria Ilersic, 2020)

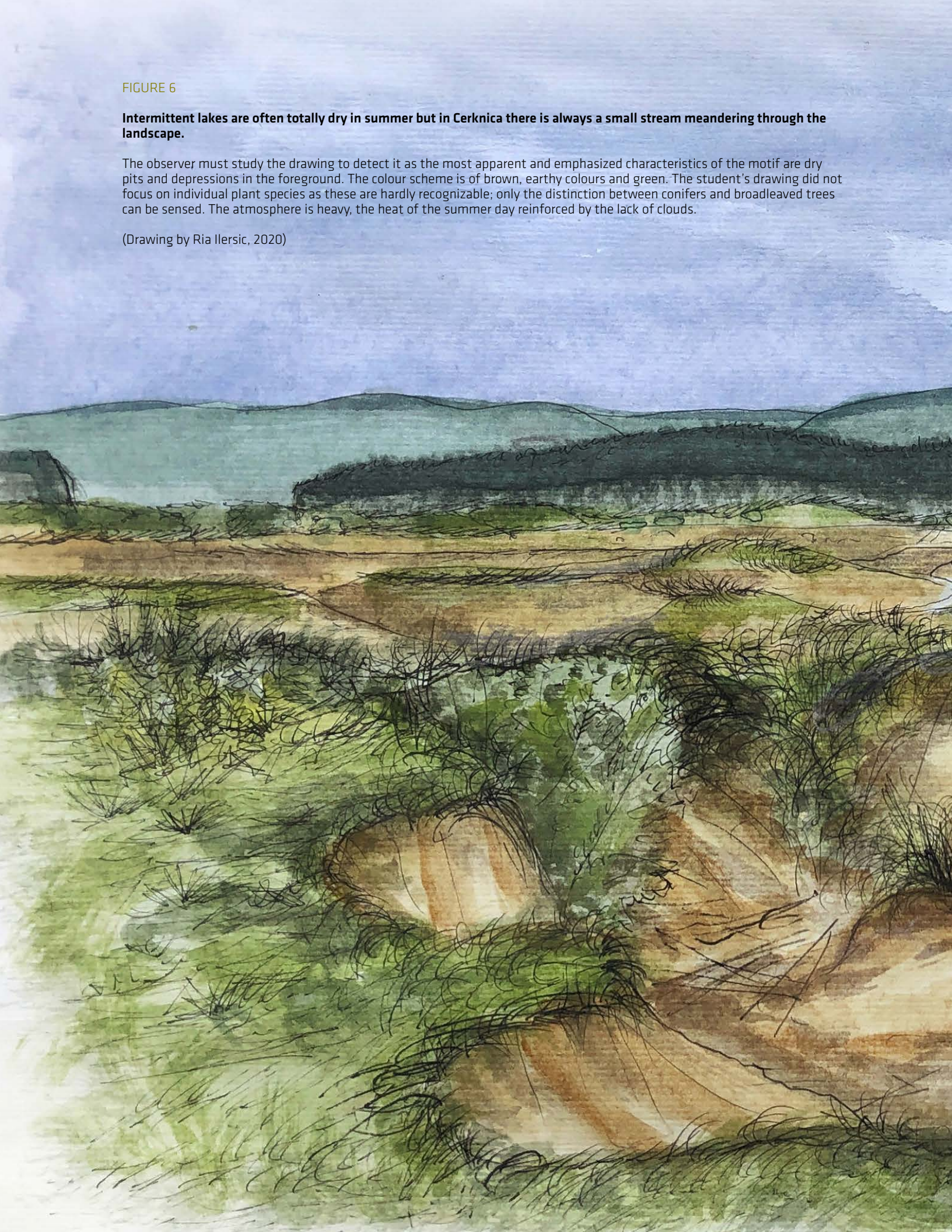

FIGURE 7

Autumn rains slowly fill up the Cerknica intermittent lake, the air is humid, the clouds cover the entire sky.

Deciduous trees and shrubs are partly bare, sedges and grasses complete their annual vegetation. The colours of the water surface change to dark blue, the shadows of the lakeside vegetation make the area gloomy. Designing the trails and other recreational areas of the Cerknica intermittent lake must encompass all the annual changes. The area's accessibility changes markedly and maps of trail systems in different seasons could be prepared based on the drawings.

(Drawing by Ria Ilersic, 2021)

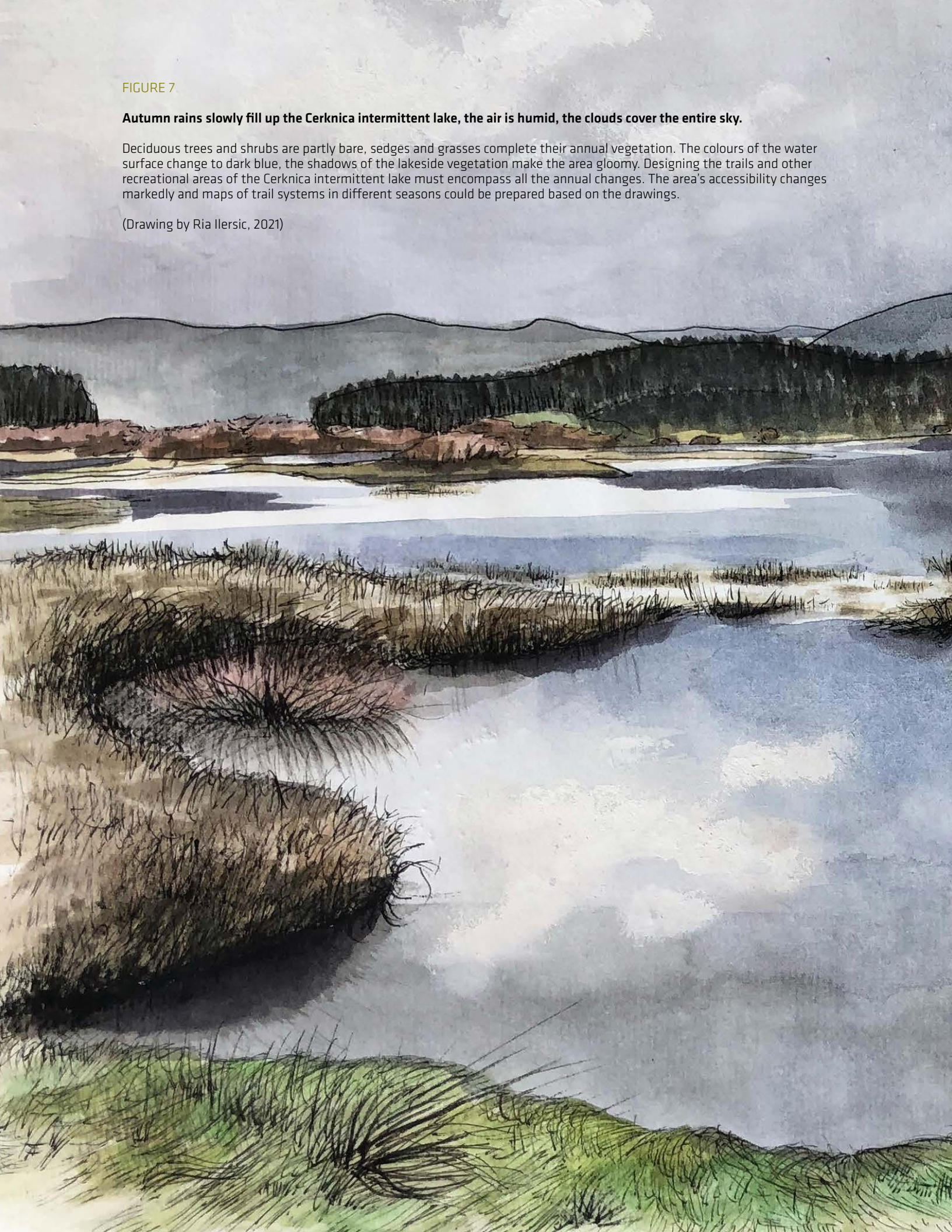

FIGURE 8

Deciduous plants undergo more pronounced changes in their yearly cycle and their transitions are considered when choosing plants for the design. The changes can be reflected in bright autumn colours, blooms, or fruit on bare branches. One of the students was fascinated by the metamorphoses of flowering and leafing in the black alder (*Alnus glutinosa*) and caught weekly transformations from flower buds (a, b) to fully developed leaves (c-f).

(Drawing by Anja Zaucer, 2021)

1

2

FIGURE 9

Changes in the atmosphere can be felt during the same day and are very dependent on current weather conditions and time of the visit to the location. Hilly grassland on the Mount Saint Mary was sketched in the early humid summer morning, after a night-time storm and then later, in the same hot afternoon. In the first sketch the student used soft strokes of grey colour reflecting the solemnity of the location (a). The path on the left is partly hidden, the trees blend with the surroundings. In the second drawing, the colours are intense, plant volumes cast darker shadows and the slope of the terrain is much clearer (b). This information can be incorporated into the design of the trail system to the hill.

(Drawing by Tim Gerdin, 2020).

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Time Drawing as a Key Practice for Beginners in Landscape Architecture

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Abstract

The subject matter of the Landscape Expression course for students starting the master's degree in landscape architecture at the Polytechnic University of Catalonia in Barcelona is the dynamic representation of landscape. Its objective is to introduce new students to changing and temporal aspects of the problem of its graphic representation.

In our case, few of the students have previous landscape architecture training. Most of them come from disciplines dealing with spatial development or space, such as architecture or engineering. Others come from fields of knowledge related to biology or the environment and are not used to design and the need to graphically communicate that it implies. The course confronts students with the contradiction between landscape – diverse and dynamic – and our flat and static representations.

Keywords

Landscape architecture, Drawing, Time, Change, Difference

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Introduction

Difference which occurs across time is what we call "change" (Bateson, 1987, p. 458)

The problem is seemingly simple: what makes the difference? Landscape architecture shares with other disciplines the need to describe the spatial configuration and the material construction of space or in space. What then makes it different?

From the beginning of their studies, students are required to represent the landscape in design studios and in other subjects. However, the Landscape Expression course does not aim to achieve a specific skill. Contrary to what happens in other courses, here the representation does not stand in for the landscape. The course aims to explore and make explicit what differentiates landscape architecture. It does not matter that dynamic representation is rarely evident in professional practice (Dooren, 2017, p. 233).

According to the development that Gregory Bateson (1987, p. 455) made of Alfred Korzybski's well-known statement, "The map is not the territory", what passes from land onto the map, its representation, is a difference. Bateson talks about "news of differences". As he points out, a difference in any language is significant because it provides information. It references a change (Bateson, 1987, p. 358). Korzybski's example and Bateson's development are concerned with the fact that language frames, and therefore limits, our capacity for expression and ultimately for thought.

If the graphic representation is our language, drawing time – the ability to deal with the dynamics of the landscape – would be a limit on landscape architecture design. It is, therefore, a statement: working with time is our particularity. It is what makes us different and powerful. And our ability to represent time is the limit on our ability to make design proposals. Without time our drawings are nothing more than green smoke, a fading illusion we cannot foresee.

The course consists of a series of short exercises of increasing difficulty that introduce the problem in a limited way. In the first, students must select or create an image that implicitly incorporates change or movement. The photographs documenting Eliasson's *Ice Watch* (2014) outside the Tate Modern and the "sailing stones" of Death Valley at Racetrack Playa (Lorenz, R. D. et al., 2014) are simple examples from art and the natural world. What makes these examples clear is that time is physically manifested. We can watch it in the slow, drip by drip melting of a massive, bizarrely located, blue block of ice. Or in the conspicuous trace of the stone on the sand, tracking its past displacement.

One of the surprises of the initial exercise is that, on the one hand, there are few situations in which we can show time as a crystal-clear factor in the description of the world. On the other, however, it is always implicitly present. We translate everything we observe into what we seek. To this we add the difficulty that, as with space (Casey, 1997), being out of time is inconceivable. So, any image, all of them, allows you to glimpse time.

A second exercise introduces students to those disciplines that have made temporal graphic expression their medium. The storyboards in cinema (Moure, 2004, p. 505) and comics (Goscinny & Uderzo, 1971) are the immediate references. The timing of the creation and delivery of "Le Garage Hermétique" (Moebius, 1979) or music scores and their translation into space by dance (Tufte, 1990, pp. 114-119) are another. Music is, perhaps, the only human creation that incorporates time into its conception and perception without generating doubts. To the outsider, the musical notation – the score – may seem traditional, regulated and closed. *Notations*, a seemingly simple collection of music charts by John Cage (1969), shows the opposite. Cage's example is revealing in our case. In his music, the leap from the temporal to

the spatial for composition and notation is outstanding. And likewise, from the spatial to the temporal, in his graphic work.

In the third and final exercise, students must document a complex and dynamic landscape process and make it visible graphically. The process is explained in class, as the students do not yet have enough experience or knowledge of this. In addition to scientific and technical literature relating to the study case, we begin with graphic examples based as closely as possible on the students' previous studies.

As a reference from biology and ecology, we show the work of Francis Hallé (2016). Hallé's evocative drawings are as rigorous and beautiful as an essential tool for deploying knowledge of a very complex reality. From landscape architecture, a recurring example is the naturalization of the Aire River, south of Geneva. The drawings by Georges Descombes and Atelier Descombes & Rampini are revealing. The initial drawing, resembling a chocolate bar, is cryptic and indecipherable (Besse, 2016). The plan does not represent, as usual, the finished proposal but the initial conditions that will make it possible to start the process by which the river itself will trace its new riverbed. The implicit but indecipherable time of the first drawing is explicit and evident in the series of computer drawings documenting the work process (Besse, 2016). Another significant aspect of the project is that it does not erase the old canal. It makes it possible to read the landscape before and after the intervention.

In the final exercise the drawings are the work of students working in pairs. From the outset of the course, the level of expression is not as important as the possibility of creating a work environment, a learning ecology (Frost, 2009), in which to discuss and jointly propose solutions to the problem. The diversity of previous training ceases to be a problem, becoming instead an advantage that balances the prior unfamiliarity of some students.

To conclude, using different graphic resources, series and hypotheses of change over time to illustrate landscape processes and dynamics becomes quite normal in the master design studios after the initial semester. We start by focusing on the representation of time and change, hoping to be able to design with them in the future.

FIGURE 1

Rotting lettuce over three weeks.

Black pen on plain paper and watercolour on tracing paper. Original 10xDIN A4. To simplify the relationships to be explained, we start from complex but repetitive cases of stable and undisturbed cycles or processes. Students represent, for example, a rotting lettuce over two or three weeks, drawing it for half an hour every two or three days on plain paper with a regular pen. As in any classic sketch from natural models, the exercise is not so much about drawing as learning to look. Students learn to focus, identify and show the gradual changes using series as a natural and intuitive representation of a temporal phenomenon. To throw light on our interest in documenting the passage of time through a simple lettuce, we use an opposite example. Quince, Cabbage, Melon, and Cucumber (c. 1602) by Juan Sánchez Cotán, is an astonishing display of pictorial technique. Part of its appeal lies in contrast between the vegetables, like sculptures, and what we know will happen. In our second exercise, we gaze at time passing. Laura overlapped watercolour on tracing paper in the first and the final drawings, adding colour change to open and close the series.

(Drawings by Laura Rodriguez Calzada, MBLandArch, 2018)

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FIGURE 2

Growth and displacement of a grove of white poplar trees.

Colour pencil on paper. Original 100x70 cm. The drawing shows the decline and rebirth of the group under study from 1994, in violet, to 2020, in pale orange. It is a particular group of trees. The new forest has spontaneously occupied an old building materials stockpile abandoned after the campus construction twenty years ago, and the margins of a more recently created new pond. On the built-up edge of one of the campus entrances, Populus alba shoots struggle to grow among seventy oddly aligned units of concrete New Jersey median barriers. Each one weighs up to half a tonne. Thus, the evolution of the forest is not only about plant succession or its deformations due to the particular conditions of orientation, light, soil or available water, and occasional disturbances such as frequent easterly storms. It is also about the slow displacement of the barriers and the power of nature. Students document a forest's evolution along with a ruin, a new monument (Smithson, 1967) that can also show the changes in our attitude and relationships towards our work and the environment.

(Drawing by Paulina Suescun and Eliana Vergara, MBLandArch, 2021)

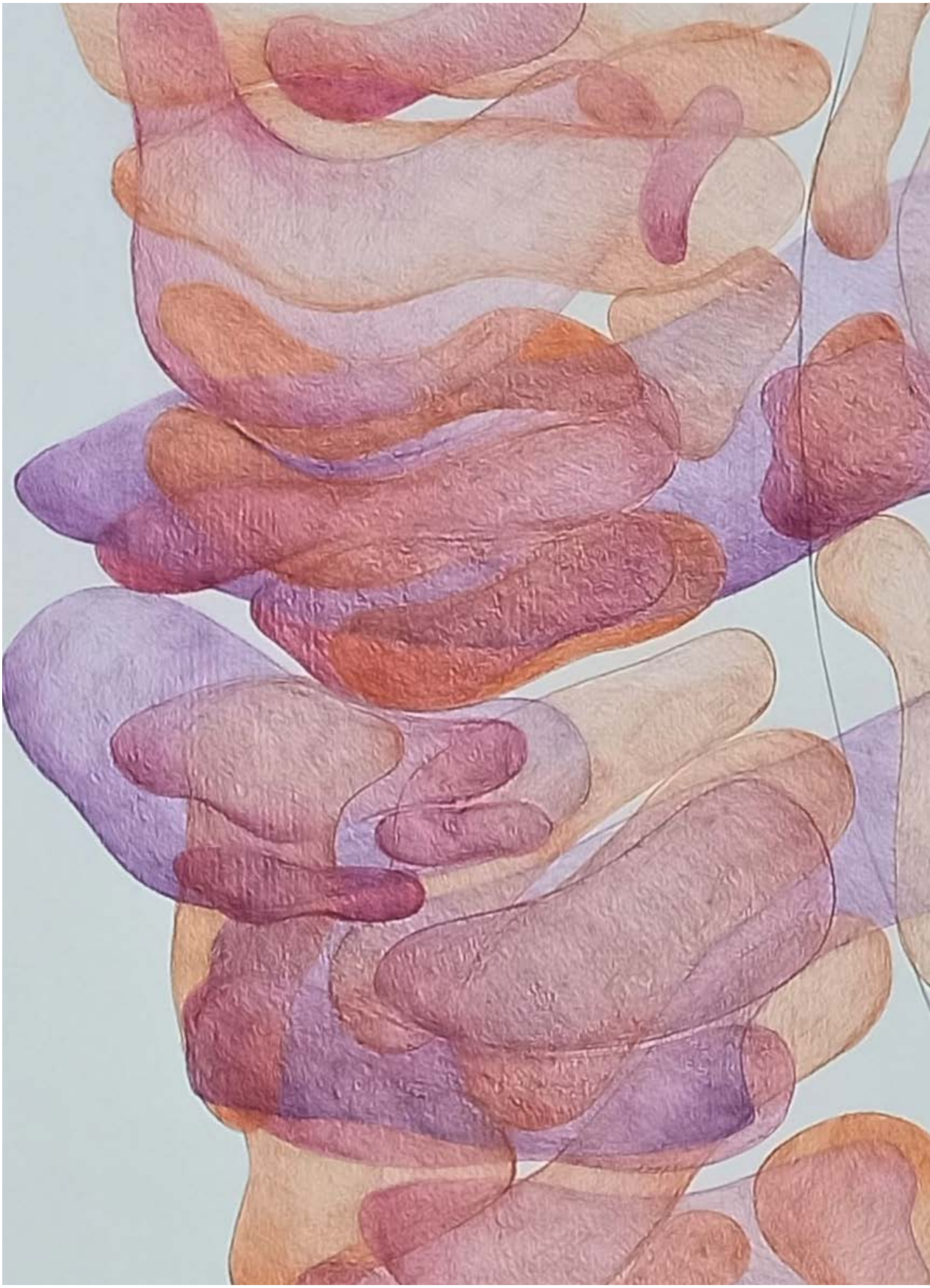


FIGURE 3

White Poplars and New Jersey barriers at the CBL-UPC Campus of Castelldefels.

Ink on tracing paper, 100x70 cm, and computer drawings. In the final assignment, the initial conclusion – we can always track time everywhere – arises as a problem. The beautiful view representing a shot of the tangle of relationships between young white poplars and the concrete barriers seeks to recall those images of Angkor Wat in which trees grow over the ruins making time visible. However, the time lapse is too short to be effective. The drawing can hold the explanation but it is no longer evident or clear.

(Drawing by Vivian Rotie, MBLandArch, 2019)

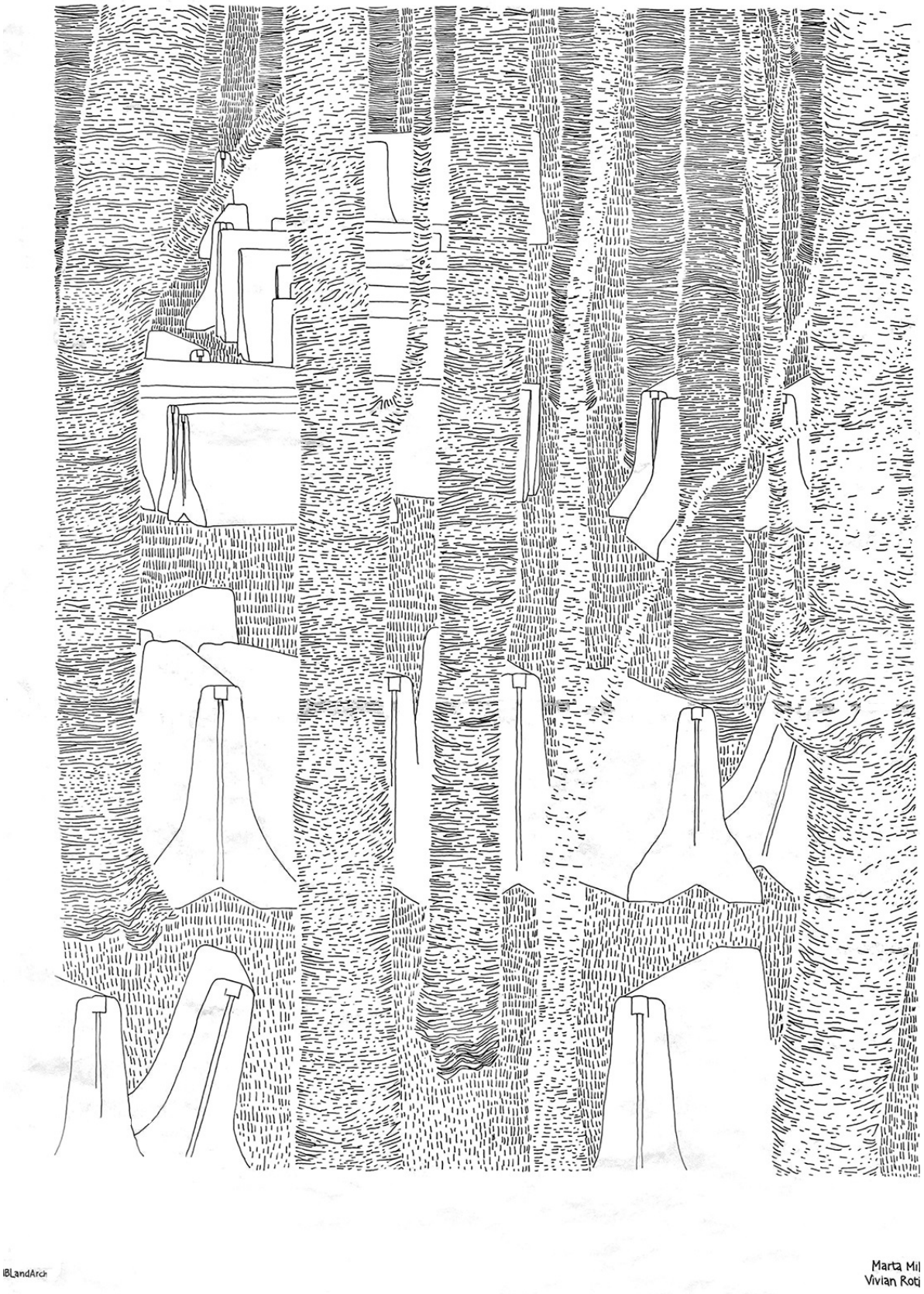


FIGURE 4

Field trips, dimensions and tree typologies.

The cartography represents the current state of the final stretch of the grove consisting of 48 white poplars and 71 New Jersey concrete barriers. The plan locates all existing elements delimiting the relation between them, their dimensions, heights and growth inclination. The horizontal sections show, at a scale of 1:3, the eight most representative trees to explain the progress of the set, overlapping horizontal cuts every 90 cm of height, which is the maximum height of the concrete barriers.

(Computer drawing by Marta Milà and Vivian Rotie, MBLandArch, 2019)

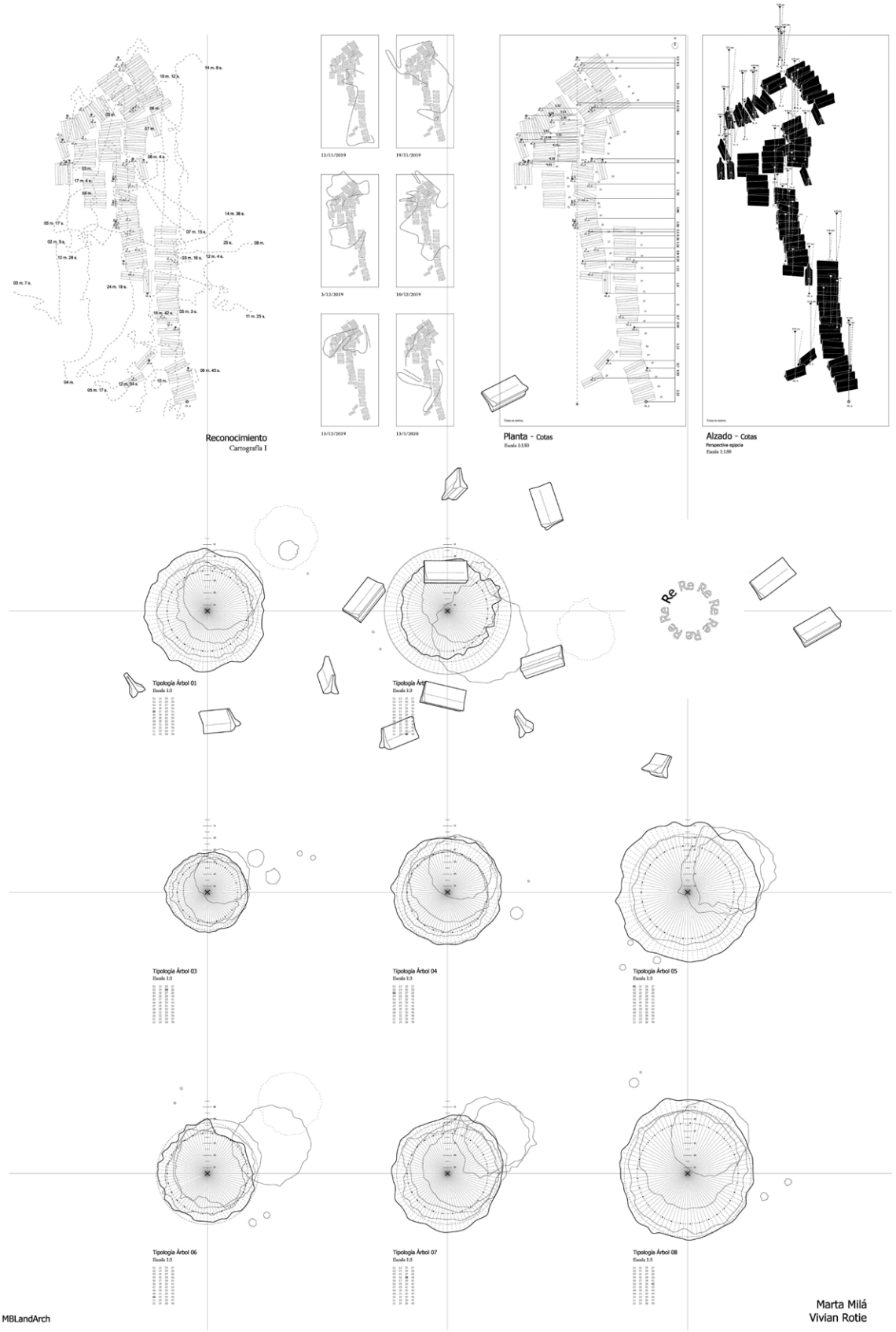


FIGURE 5

Position plan, tree catalogue and growth elevations and factors.

A second panel locates the selected trees and shows the growth and direction of each tree in elevations – at upper right end of the drawing – using the previous horizontal cuts.

(Computer drawing by Marta Milà and Vivian Rotie, MBLandArch, 2019)

FIGURE 6

Trees and barrier positions, species, canopy, trunk size, and horizontal displacement.

The drawing represents the stretch of forest on the site of the building stockpile. The diameter of the trunks and the size of the canopy show the age and growth of the trees. The colour differentiates species. Arrows indicate the inclination of the trees as they grow in search of light. The angle of inclination of the trees coincides with the growth direction of the set. Only heavy barriers occasionally disrupt the general trend. As in the two previous figures, we can track and explain time through the drawing by relating size, inclination and position to the ongoing expansion of the set.

(Computer drawing by Carla Compte and Carla Coromina, MBLandArch, 2019)

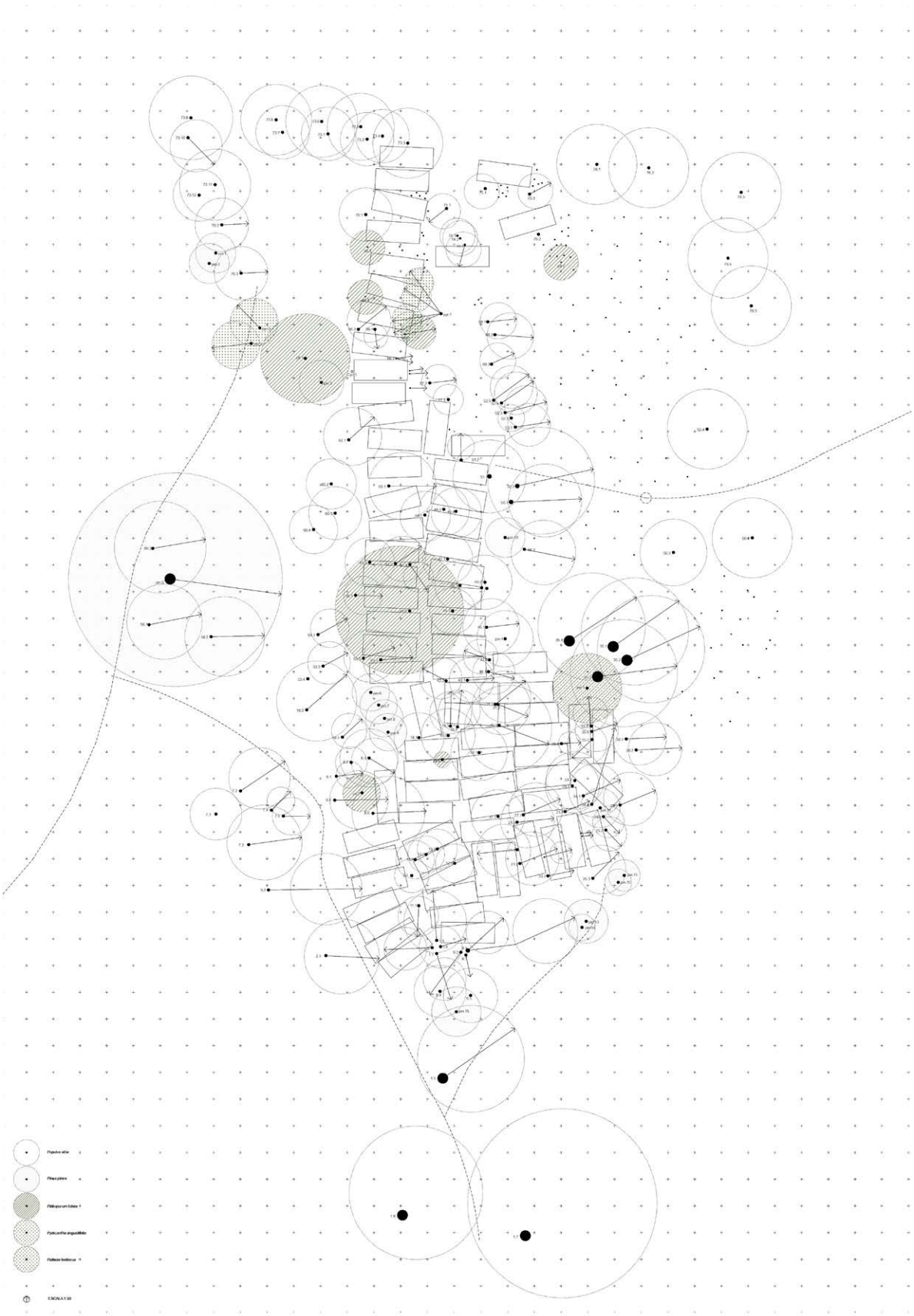
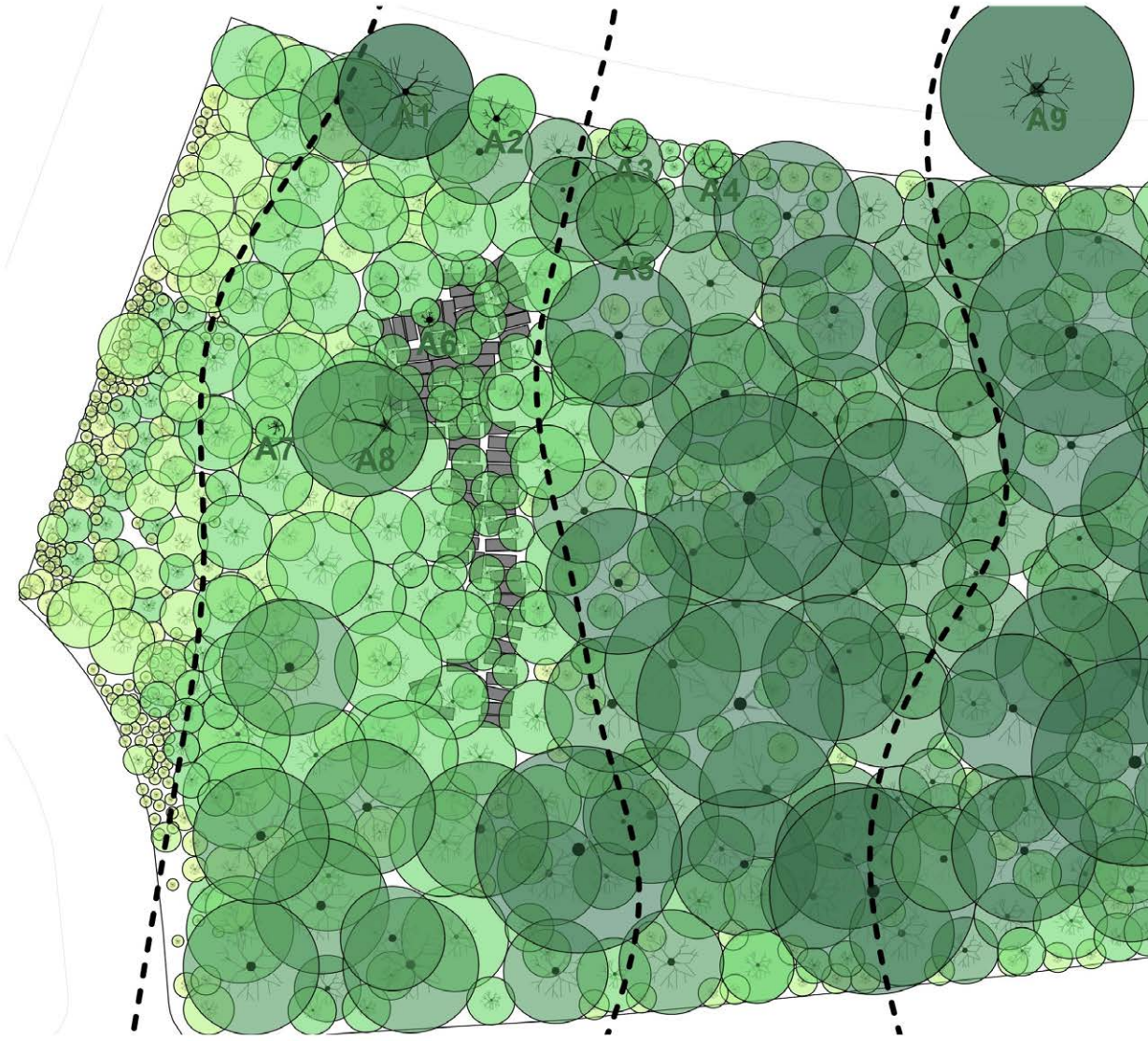


FIGURE 7

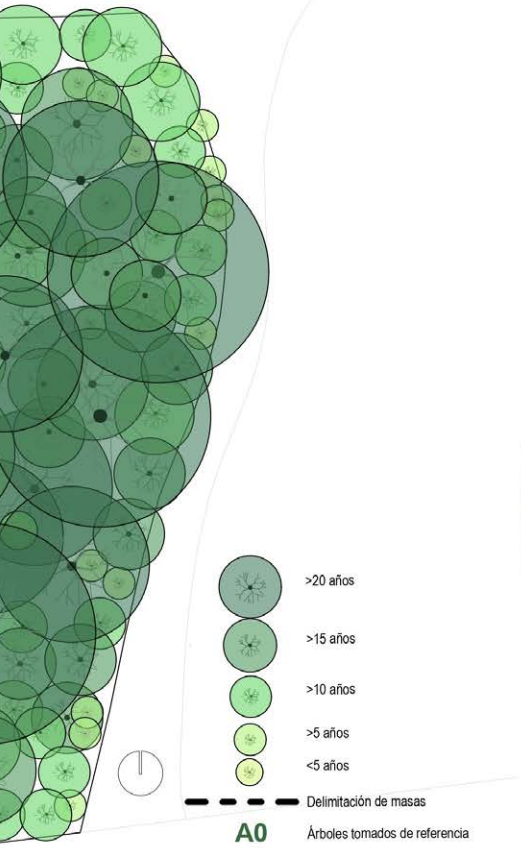
Canopy mass dynamics

Part of the problem lay in focusing on the stockpile. The plan shows the development of the whole forest, from the original plantation, on the right, to the new urbanization, on the left. The size of the trunks, their canopy and their colour reflect the age of the trees. At the bottom, the section represents the growth profiles and draws an expansion hypothesis through families or groups of closer trunks. The complexity of the whole set and the overlapping criteria conceal time, once again. As in all previous examples, the drawings are clean and sharp but do not show time clearly. We can infer time, but we cannot see it.

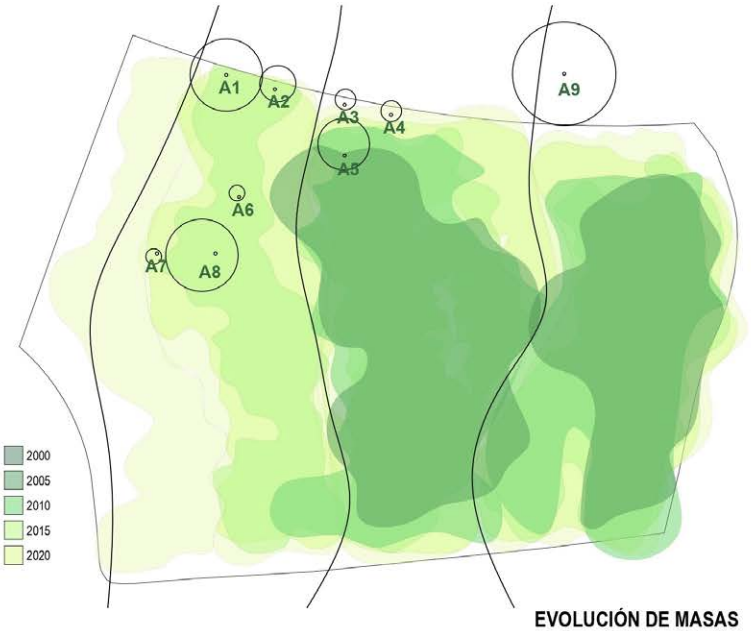
(Computer drawing by Juan David Castillo and Eftychia Zochiou, MBLandArch, 2021).



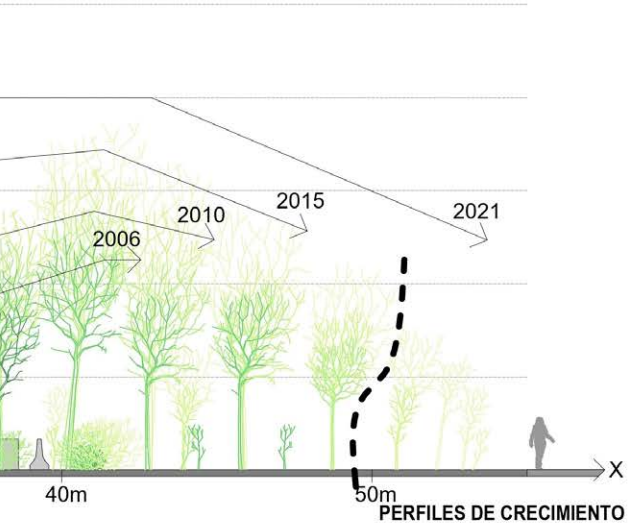
Juan David Castillo
Eftychia Zochiou



PLANTA GENERAL CON MASAS Y EDADES
ESC 1:150



EVOLUCIÓN DE MASAS
ESC 1:300



PERFILES DE CRECIMIENTO
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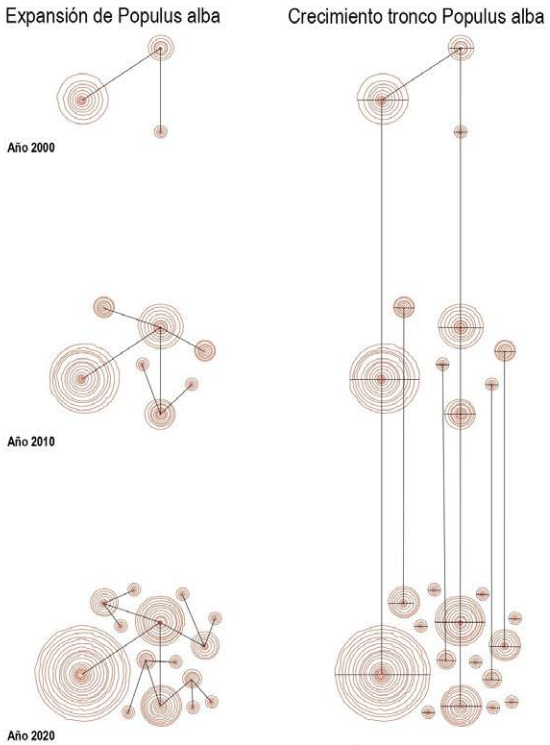


DINÁMICA DE TRONCOS
ESC 1:50

FIGURE 8

Canopy mass dynamics

Part of the problem lay in focusing on the stockpile. The plan shows the development of the whole forest, from the original plantation, on the right, to the new urbanization, on the left. The size of the trunks, their canopy and their colour reflect the age of the trees. At the bottom, the section represents the growth profiles and draws an expansion hypothesis through families or groups of closer trunks. The complexity of the whole set and the overlapping criteria conceal time, once again. As in all previous examples, the drawings are clean and sharp but do not show time clearly. We can infer time, but we cannot see it.

(Computer drawing by Juan David Castillo and Eftychia Zochiou, MBLandArch, 2021).

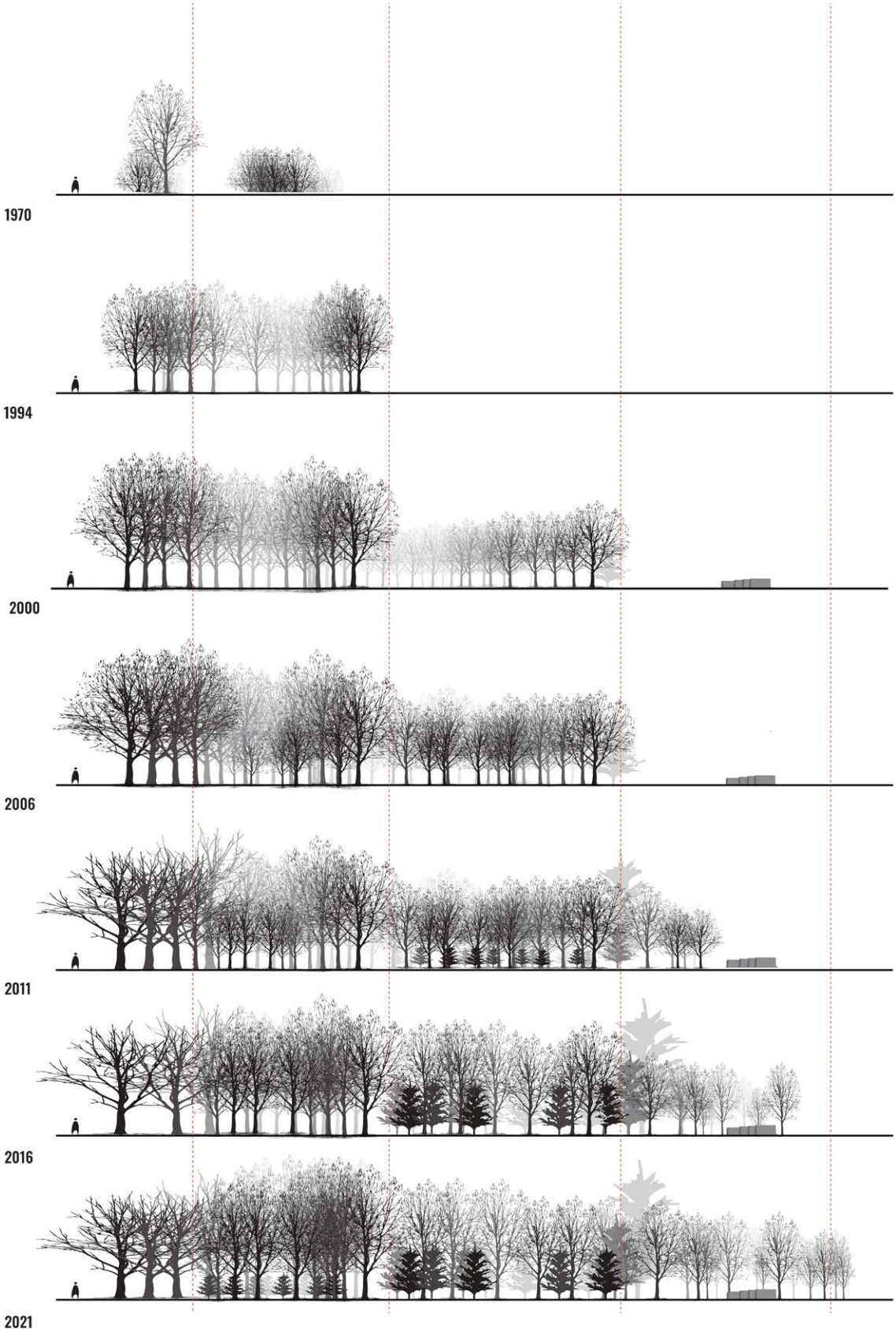


FIGURE 9

Five growth sequences over time.

In contrast to the previous image, reading top-down, from old to new, the order reproduces the analysis process to understand the evolution of the forest. The oldest trees are the first. The authors avoid the complexity of representing the whole set by selecting five meaningful sections that correspond to five fronts on which the trees have prospered significantly. In each cross-section, the plan and the elevation show the current state of the vegetation. This makes it possible to show the dynamics of growth among close trees, and from one to another section in time. On the left, the plan indicates the groups and the trees that compose them.

(Computer drawing by Maria Rogojina, Beatriz Saladich and Giuseppina Verduci, MBLandArch, 2021)

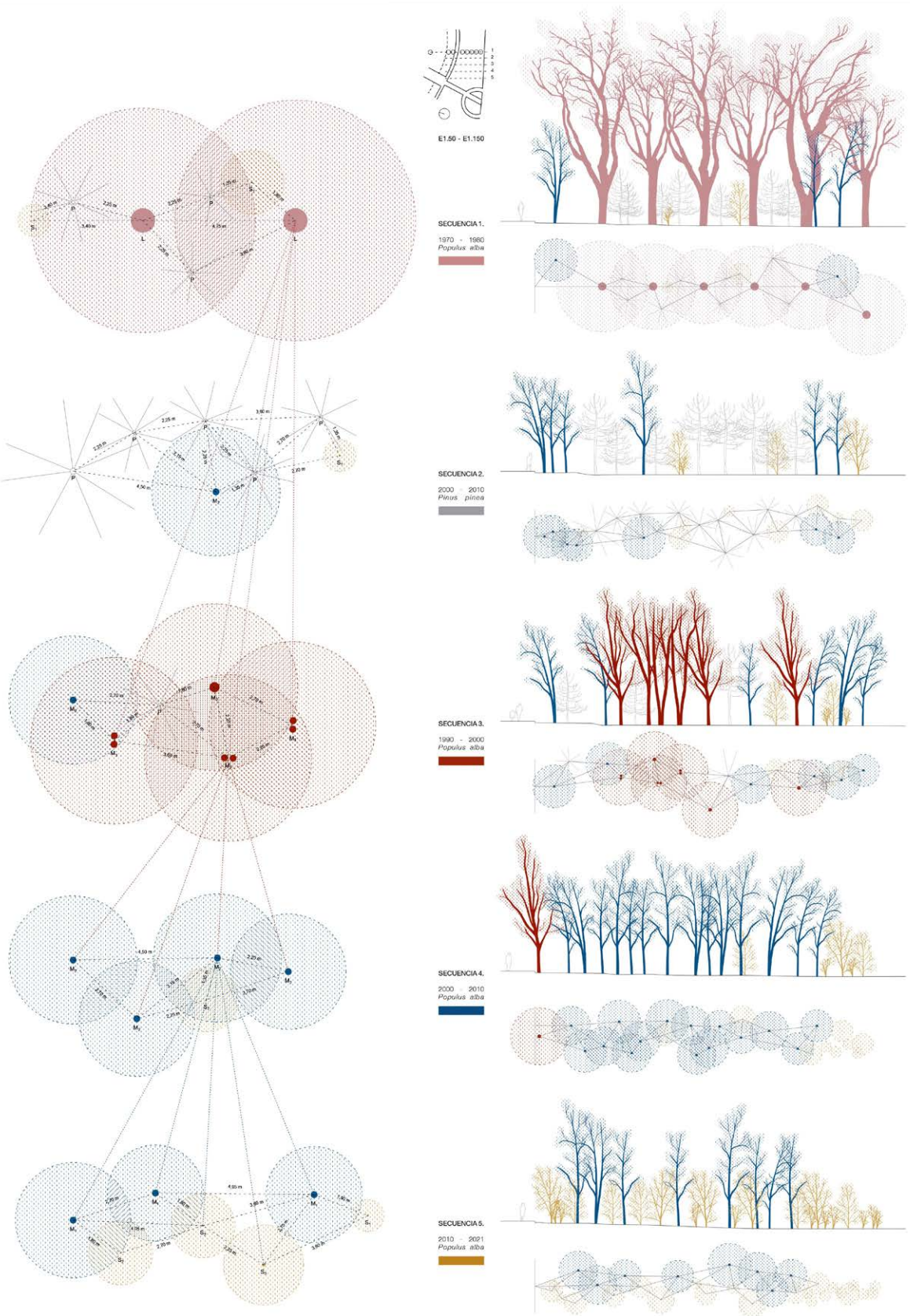
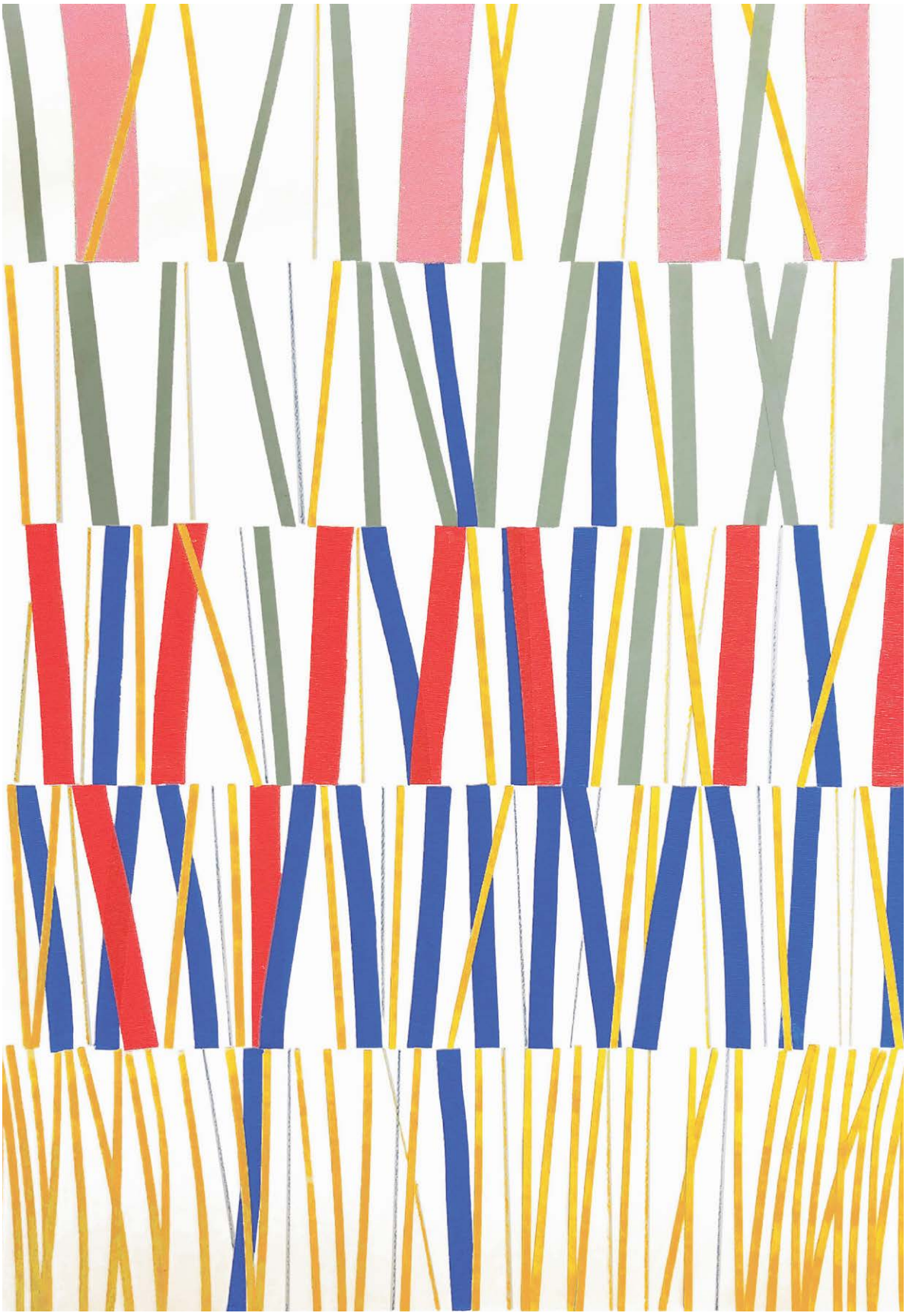


FIGURE 10

Back to the forest.

Colour and tissue paper and colour pencil on cardboard. Original DIN A1. The composition tries to restore a simple vision of the forestry mass over time. As a counterpoint, the colours of the previous plans and sections constitute a simplified image of the forest. The collage seeks to evoke the tangle of relationships over time when observing any stretch of the grove.

(Collage by Maria Rogojina, Beatriz Saladich and Giuseppina Verduci, MBLandArch, 2021)



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Cross-scale drawings of hidden landscape dynamics

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Abstract

The question of how to show processes that are by definition time-based has been one of the more intriguing ones in the field of landscape representation. With ever-greater importance being given to values of space that can be measured, we ask if new approaches to the drawing of space are needed to unveil these measured, sometimes hidden landscapes. With this in mind, students in the Department of Landscape Architecture at the University of Ljubljana undertaking the Visual Communication course were tasked with developing new techniques of data visualization focusing on (1) the spatial dynamics of landscapes and (2) on the multiscalarity of the representations.

The paper comprises a general description and discussion of the topic, accompanied by seven sets of drawings where the two above-mentioned aspects are briefly discussed in the drawings' captions. The drawings presented here push and question the boundaries of drawing conventions and consequently elicit uncertainty and encourage further enquiry. Exploring new drawing approaches is an important part of revealing contemporary landscapes.

Keywords

Cross-scale drawing, Capturing dynamics and time, Drawing as a diagram, Prediction of development

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Introduction

The question of how to show processes that are by definition time-based has been one of the more intriguing ones in the representation of landscapes. Starting with McHarg's *Design with Nature* (1969), where different landscape processes are used to define landscape values, the process-oriented approaches in landscape architecture have developed ever-new ways of representing time. Recently, under the loose term of 'landscape urbanism', we can follow various design-related disciplines that experiment with drawing spatial processes and time. From explicit Gantt chart-like representations of habitat phasing in Field Operations' Freshkills Park (James Corner in Mc'Closkey & VanDerSys 2017, p. 13), to more abstract and implicit representations of surfaces that can carry different meanings in competition drawings for Parc de la Villette by OMA (Waldheim 2006, p. 36). Can these representations be developed even further or are they already testing the limits of visual expression?

With ever-greater importance being given to values of space that can be measured, new professions are emerging that challenge the authority of the classical design-related disciplines in drawing space and time. Data scientists and graphical designers are creating new visualization sensibilities that are graphically pleasing. Such a one is the famous 'Mapping Facebook pairs of friends' by Paul Butler where myriad Facebook friend links create an outline of the urban areas in countries where Facebook is not prohibited. Yet these new representations focus on visual appeal rather than advancement of the drawing discourse. The latter should reveal, for example, new and hidden dynamics that govern such a phenomenon rather than only show the fact that different nodes are connected. Therefore, it is essential to deepen the investigation of visual / geometrical data representation by developing new methods of drawing and visual representation. These explorations need to shed new light on the representation of space and enable better interpretation rather than being an end in themselves (Hughes 2013).

With this in mind, students in the Department of Landscape Architecture at the University of Ljubljana undertaking the Visual Communication course were tasked with developing new techniques of data visualization. The goal was to create drawings that can (1) show the spatial dynamics of landscapes, and (2) focus on multiscalarity of the representations. Just as dynamics is hard to represent on a fixed sheet of paper, so different scales are hard to combine. In terms of spatial dynamics, the students focused on different types of processes that usually require time to be described and are therefore difficult to draw in a static frame. They range from more obvious ones, such as the yearly dynamics of ice movement in the Antarctic (Fig. 2) or the spread of invasive species along the Krka River (Fig. 5), to less obvious ones such as the transformation of a housing typology (Fig. 3). Here dynamics refers to the transformation of a housing type subject to seasonal cycles. In terms of multiscalarity, the drawings were presented as A1 physical posters where observing the entire drawing gives the viewer one type of information. Observing and examining details reveals a deeper understanding or additional topics. In other words, the drawings show time-based processes on different scales where the drawing medium and the detail of the drawing creates a dynamic representation revealing different understandings that are dependent on the distance / scale at which the drawing is viewed. Drawing is turned into an 'abstract machine' (van Berkel & Bos 2010, p. 227) that through its visual representation conveys an understanding that a written text cannot. Visual representation shows sizes, geometries and their relations. It shows the visual quality of a phenomenon, its shape, patterns and how they fit together. A drawing is a visual representation of complex spatial relations that are communicated to the observer instantaneously, something akin to the concepts described in Gestalt psychology where geometric patterns and configurations are understood as a complex indivisible whole.

The visual essay consists of seven sets of drawings where these two aspects, representation of dynamics and representation of the multiscalarity of a process, are briefly discussed in the captions.

Since the size of the drawings is crucial to the multiscalarity, each set of drawings consists of a scaled-down version of the complete A1 drawing, a detail of the drawing, and a legend.

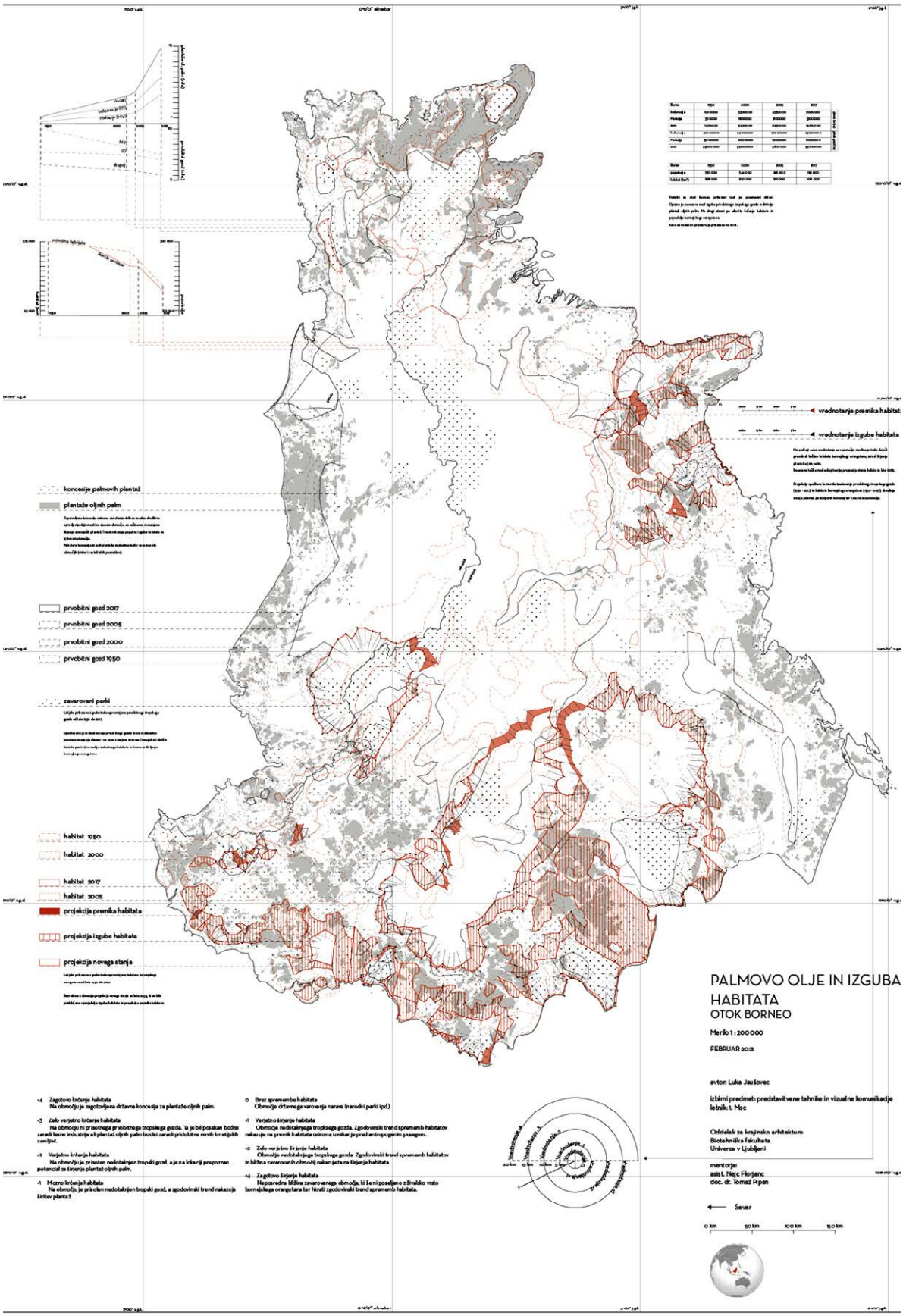
In reference to drawing spatial dynamics and time, the drawings presented here achieve this with a varying level of success. The most common approach is to represent time through successive outlines of areas representing change as in Figure 2 of ice movements and penguin migration in Antarctica. However, some drawings that embody dynamics yet are not directly drawing time should not be omitted. One such is the drawing of the Bovec house typology (Fig. 3) with its interpretation of what dynamics mean, or on the other hand the drawings of orangutan habitat (Fig. 1) and bee grazing (Fig. 6) that deal with drawing prediction procedures. Time can be drawn in obvious ways using different line qualities such as isochrons and changes of area. However, it can also be expressed in less obvious ways, as when it is used as a function of dynamic predictions where time is not directly expressed in the drawing. In terms of multiscalarity, the drawings manage to embody the concept to varying degrees. Some use the different scales to portray different facets of the story and use it as a narrative instrument (Fig. 7: Origin and spread of non-native species in the Adriatic Sea), others use different scales to portray different understandings of the same process, as in the drawing of invasive species along the Krka River (Fig. 5). However, some drawings, such as the above-mentioned Antarctic drawing, do not show any significant change via the scales. In general, the 'emergence' of deeper understanding for the author comes from the process of drawing each data set and detail. In addition, this creates a kind of palimpsest that, observed from afar, displays an abstracted quality and in detail a more 'nitty-gritty' understanding of the individual segment of the drawing. The drawings push and question the boundaries of drawing conventions and consequently elicit uncertainty and encourage further enquiry. If anything, they show that the limits of drawing representation have not been reached and that drawing is still an important approach to rendering and revealing contemporary landscapes. We should not be content with fanciful representations if they do not reveal any deeper meaning.

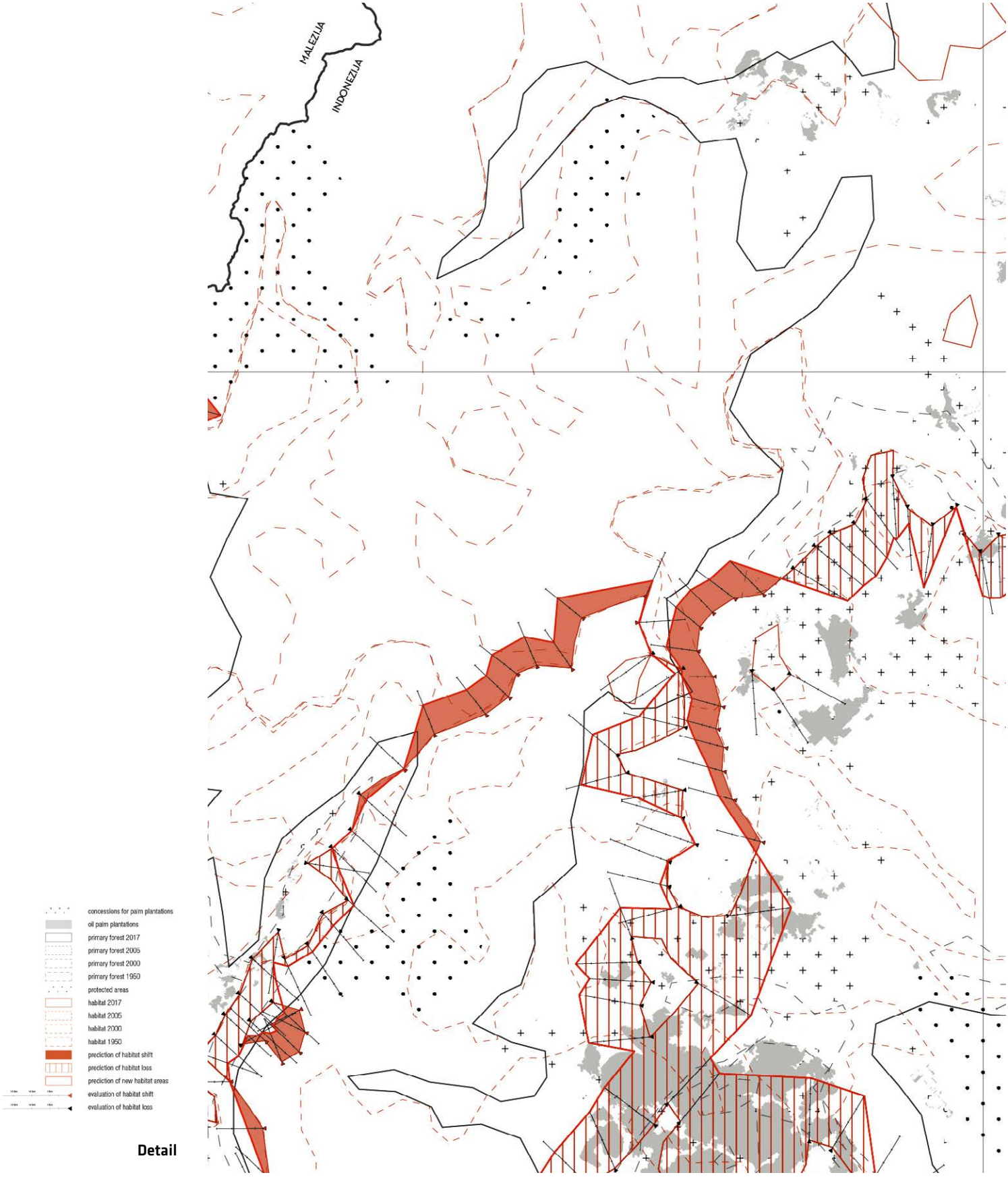
FIGURE 1

Shrinking of orangutan habitat due to deforestation of Borneo island.

(Luka Jaušovec, 2021)

The drawing includes graphical analysis of processes: oil plantation expansion, primary forest shrinkage and orangutan habitat shrinkage and shift. The act of drawing and overlaying these different processes enables the student to understand the dynamics between these processes. The drawing additionally shows the prediction of future habitat shrinkage. In terms of the dynamics, the drawing overlays several available data sets on orangutan habitat (from 1950 to 2017) and the current area of oil palm plantations. Based on the shrinkage of forests a drawing method was created that helps predict further habitat shrinkage and oil plantation expansion. In terms of multiscalarity, the drawing is simple as there is no differentiation of the topic addressed at different scales. The larger scale gives a general idea of retention of habitat whereas on the detailed scale the individual progression of the changes can be examined..




MALEZIJA
INDONEZIJA
concessions for palm plantations
oil palm plantations
primary forest 2017
primary forest 2005
primary forest 2000
primary forest 1950
protected areas
habitat 2017
habitat 2005
habitat 2000
habitat 1950
prediction of habitat shift
prediction of habitat loss
prediction of new habitat areas
evaluation of habitat shift
evaluation of habitat loss

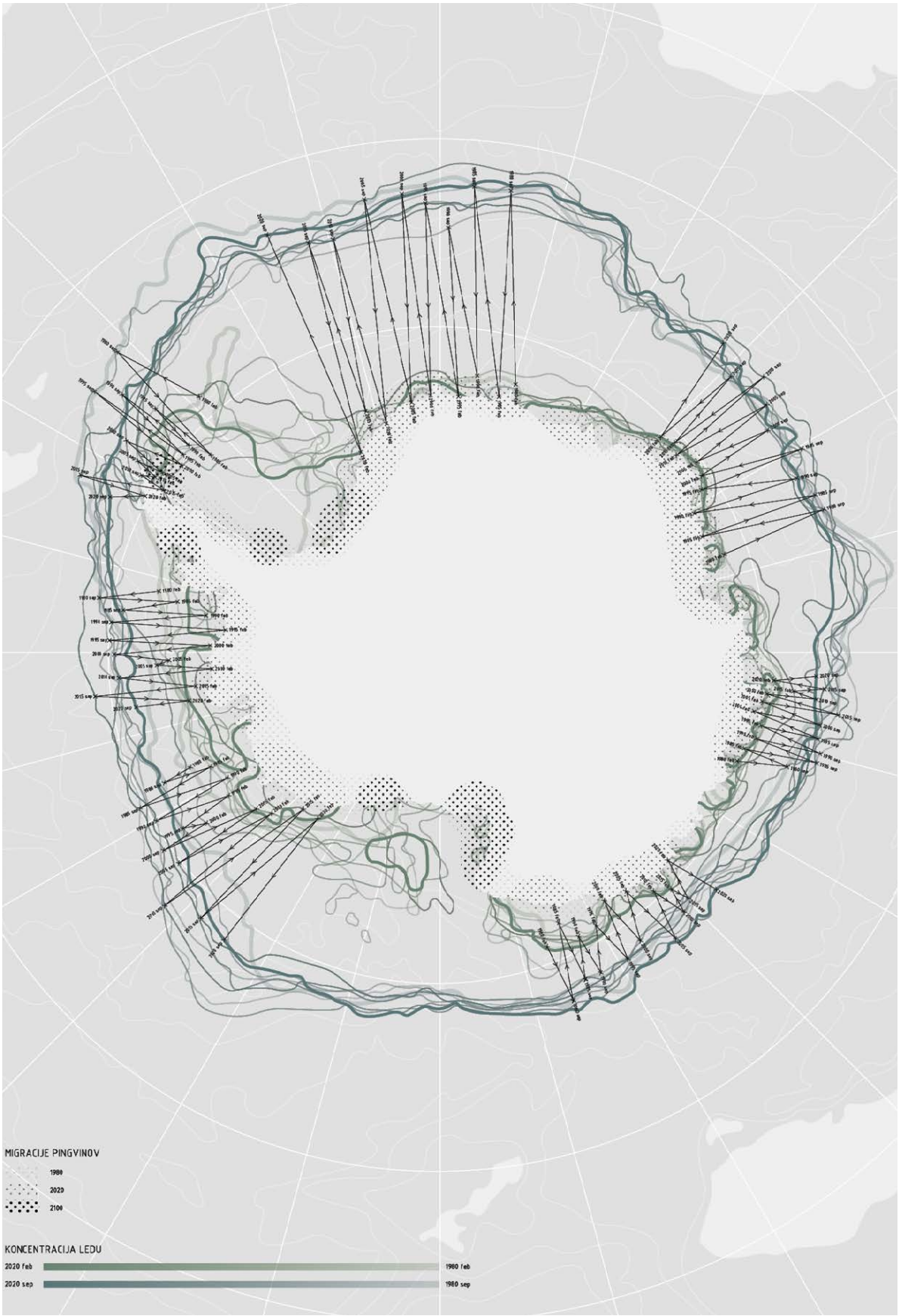
Detail

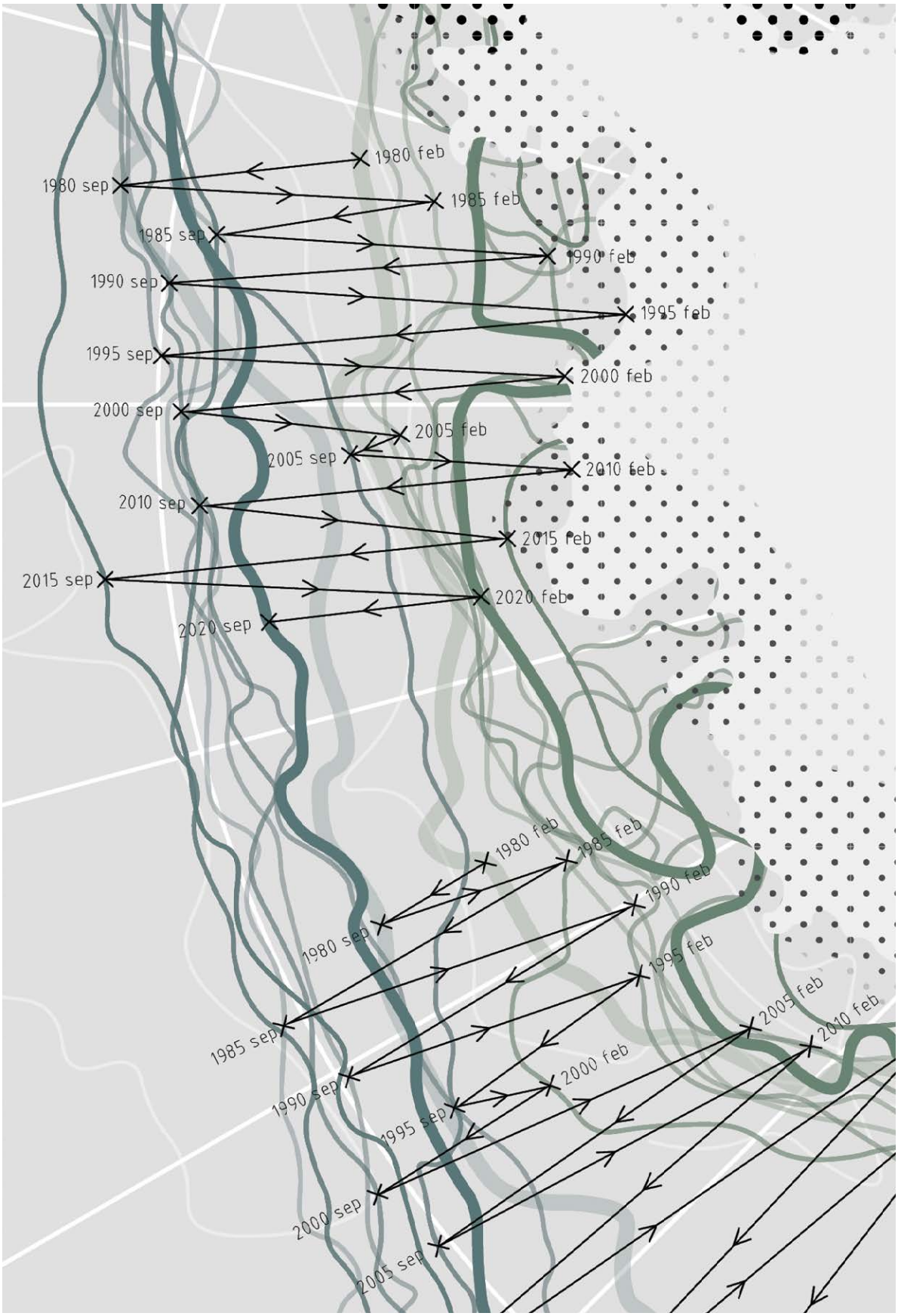
FIGURE 2

Ice movements and penguin migration in Antarctica.

(Magda Merhar, 2021)

The drawing deals with data correlation. The process of ice movement and its yearly fluctuation over several consecutive years is compared to the migration of penguins in Antarctica. The maximums (blue lines) and the minimums (green lines) of ice coverage from 1980 to 2010 are differentiated in time based on their transparency (less visible is older). The dynamics of its oscillation is additionally represented with jagged black lines following winter and summer peaks. The measurement areas display fairly even oscillation. The penguin migration throughout the chosen time segment is represented with thinner (1980) and thicker (2010) dots. The thickest dots represent a guestimate of possible migration. In terms of the dynamics, the drawing succeeds well, showing how the yearly ice oscillation happens and how the shifts of penguins occurred; however, the correlation between the two sets of data is hard to establish. More detailed data would be needed to start drawing any conclusions. In terms of the multiscalarity the drawing on the large scale shows the totality of the effect whereas at the detailed scale individual shifts can be observed.

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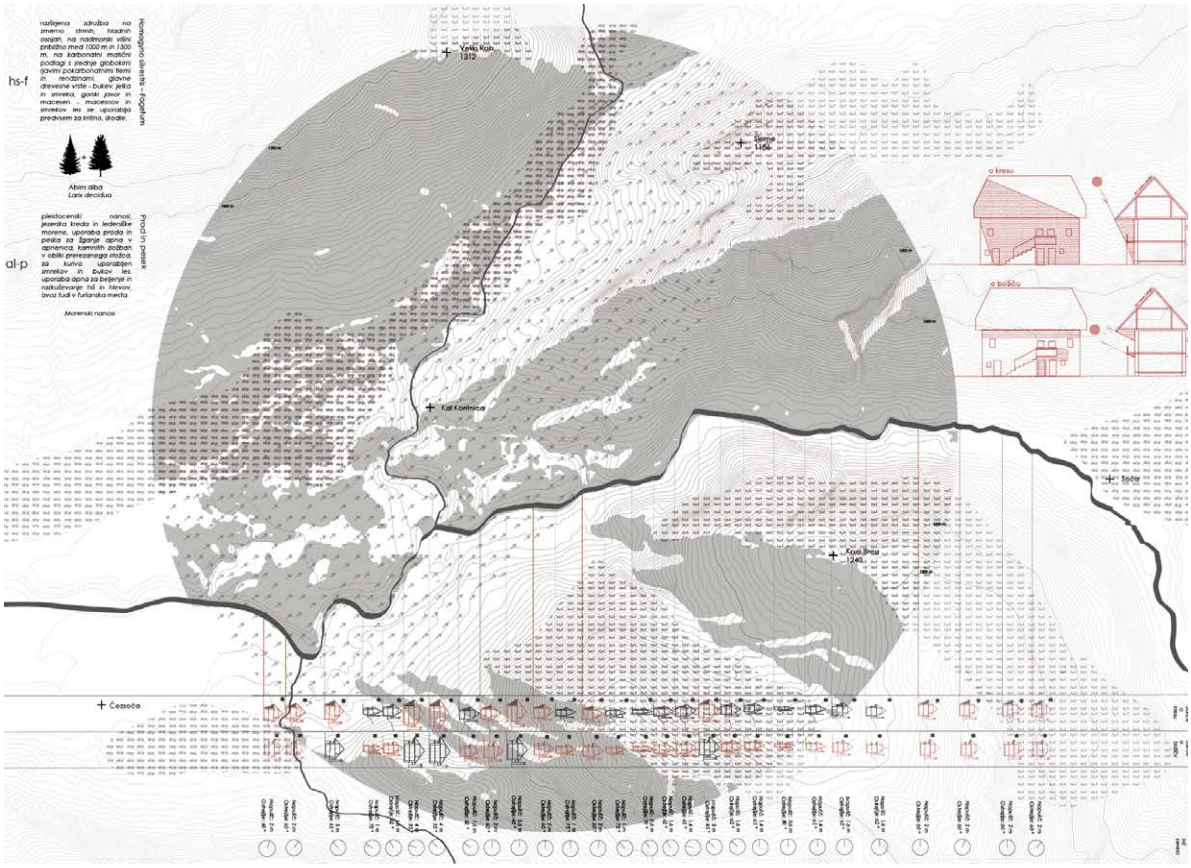
Detail

FIGURE 3

Transformation of traditional Bovec (Slovenia) housing typology based on micro-location.

(Ana Benedik, 2019)

The student devised a drawing method (a series of drawings steps) to re-examine the traditional typology of the Bovec house (Slovenia). The building's width is determined by the width of the alluvial terrace and the orientation along the river. Additionally, varying the roof pitch (ostrešje) and the roof overhang length (napušč) to create appropriate shadowing of the facade at the summer and the winter solstice, produces sections that can be evaluated against regional Bovec typology. The drawing does not draw time as such; however, it understands an architectural type as a function of seasonal cycles, evaluated against the extremes of the summer and the winter solstice. In terms of multiscalarity, the larger scale drawing shows the topography, prevailing winds and the natural resources on which the building of the Bovec house is dependent. On a smaller (architectural) scale, the drawing tests the transformation of the type and evaluates it. This is not an explicit correlation of the scales as the two different scales address different topics; however, it does give a narrative power to the drawing.



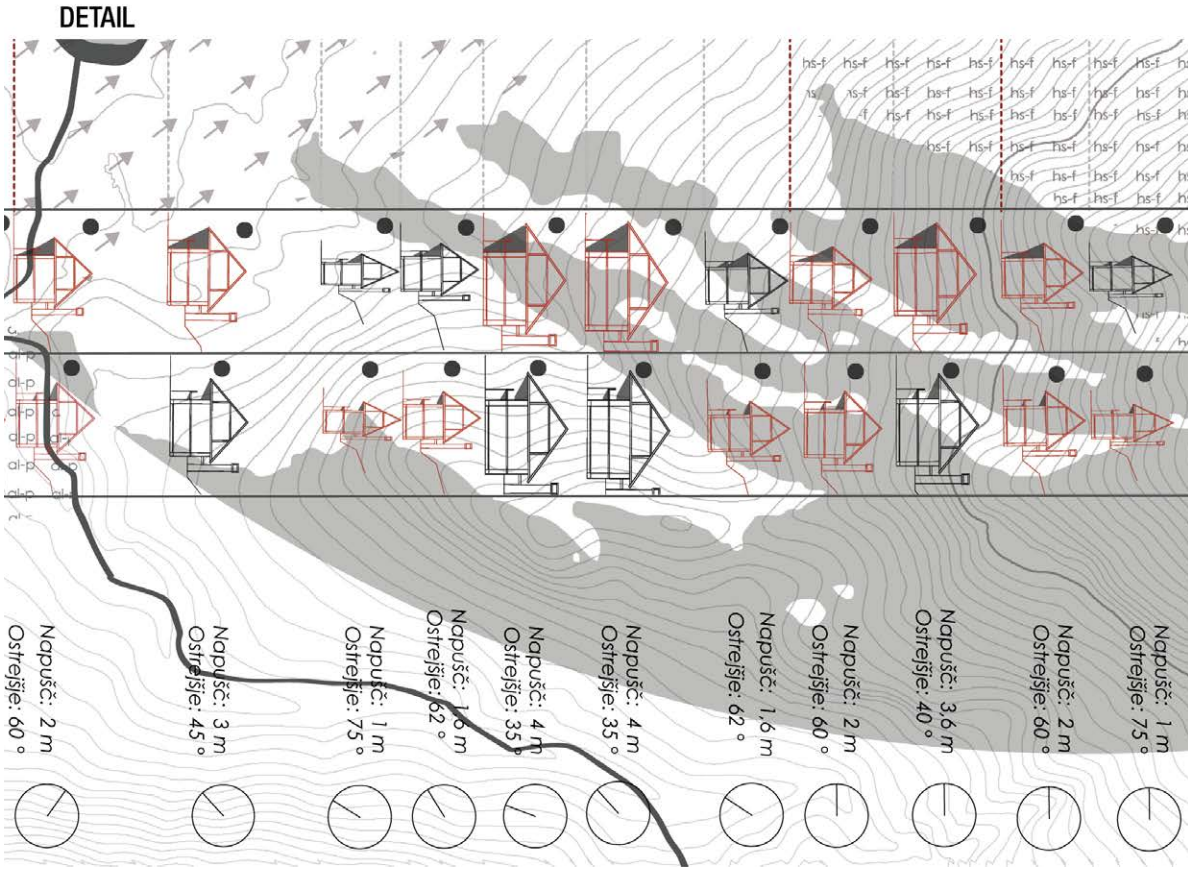


FIGURE 4

Pressures of summer tourism in the upper Soča Valley and neighbouring mountains (Slovenia).

(Meta Zgonec, 2019)

The drawing transforms the number of touristic overnight stays in the upper Soča River area (Slovenia) into a visual representation of spatial pressures, shown by the number of parallel lines. This is based on an assessment of the accessibility of local points of interest such as white-water rafting stops, difficulty and distance of neighbouring peak hikes, and the popularity of natural or cultural heritage spots. The resulting image shows how crowded certain areas in the Soča valley are. In terms of the multiscalarity, on the larger scale the drawing shows a more focused linear pressure along the valley and a more even, network pressure across the mountains. It also shows a dense cluster in the upper right corner due to the interaction between the geomorphology and the road. On a more detailed scale, the drawing reveals which points of interest are less frequented and could be better utilized to disperse the current pressures on overburdened areas. The drawing is less successful in representing dynamics and time, as it shows a static condition of cumulative summer stays. However, it does represent dynamics in reference to location, as the thickness and number of parallel lines change showing touristic 'load' throughout the landscape. For example, the river segment close to the town of Bovec is most heavily loaded due to a concentration of easier white-water rafting sections.

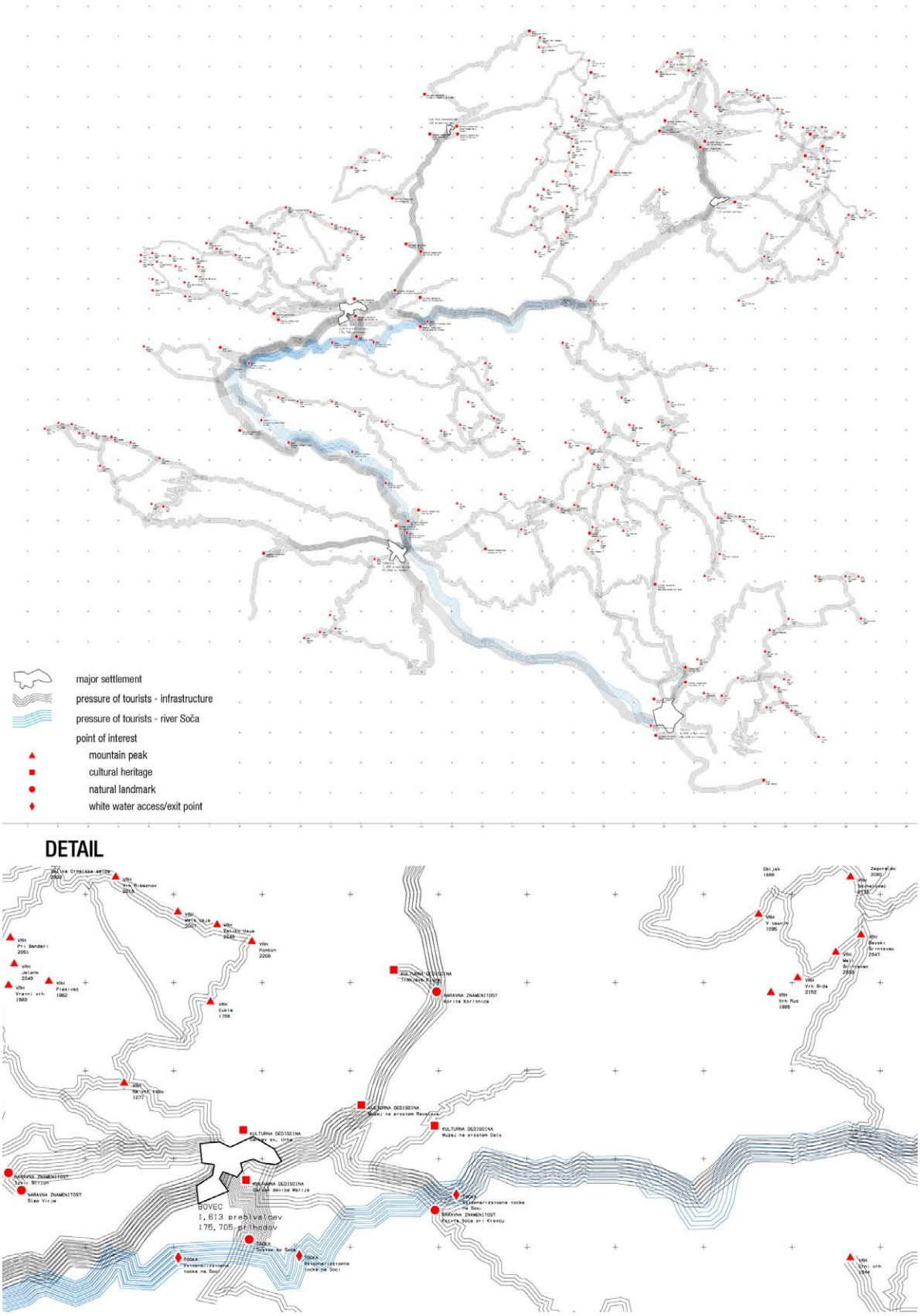
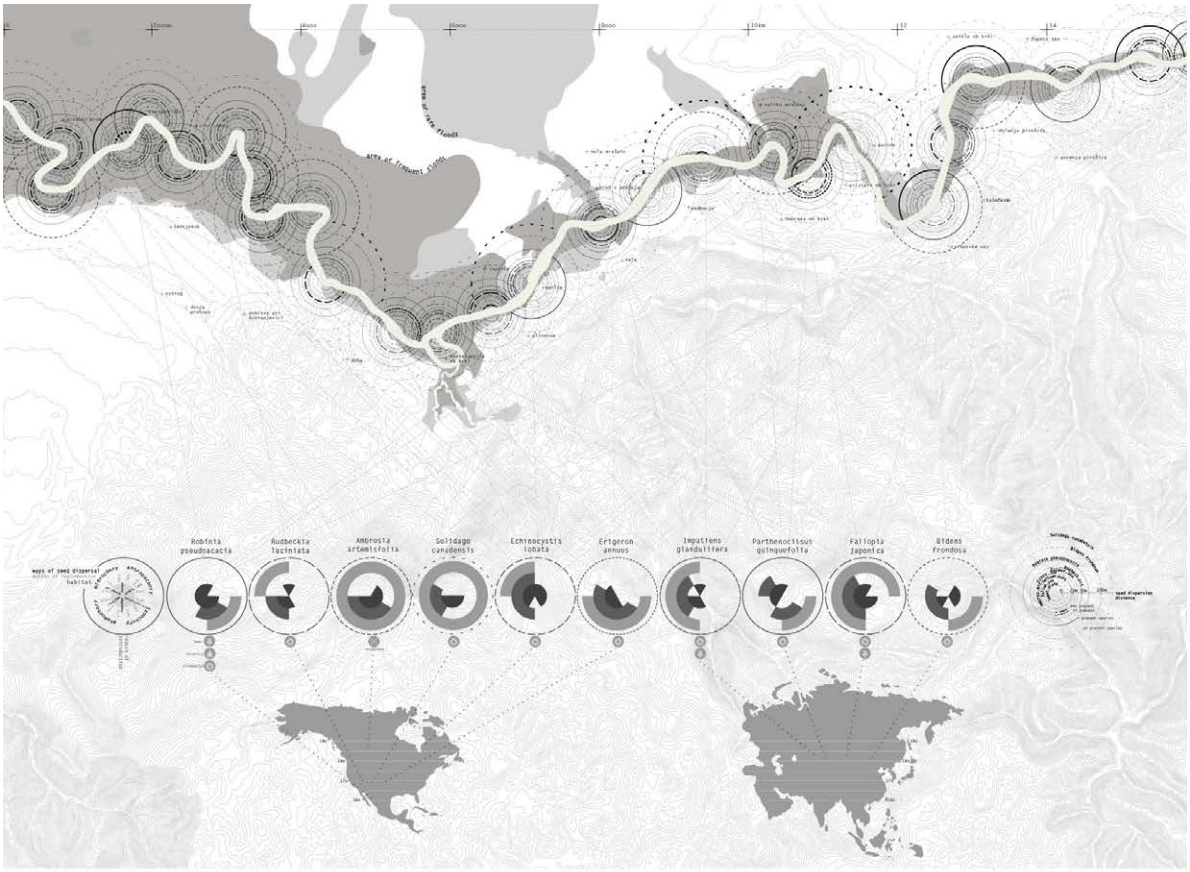


FIGURE 5

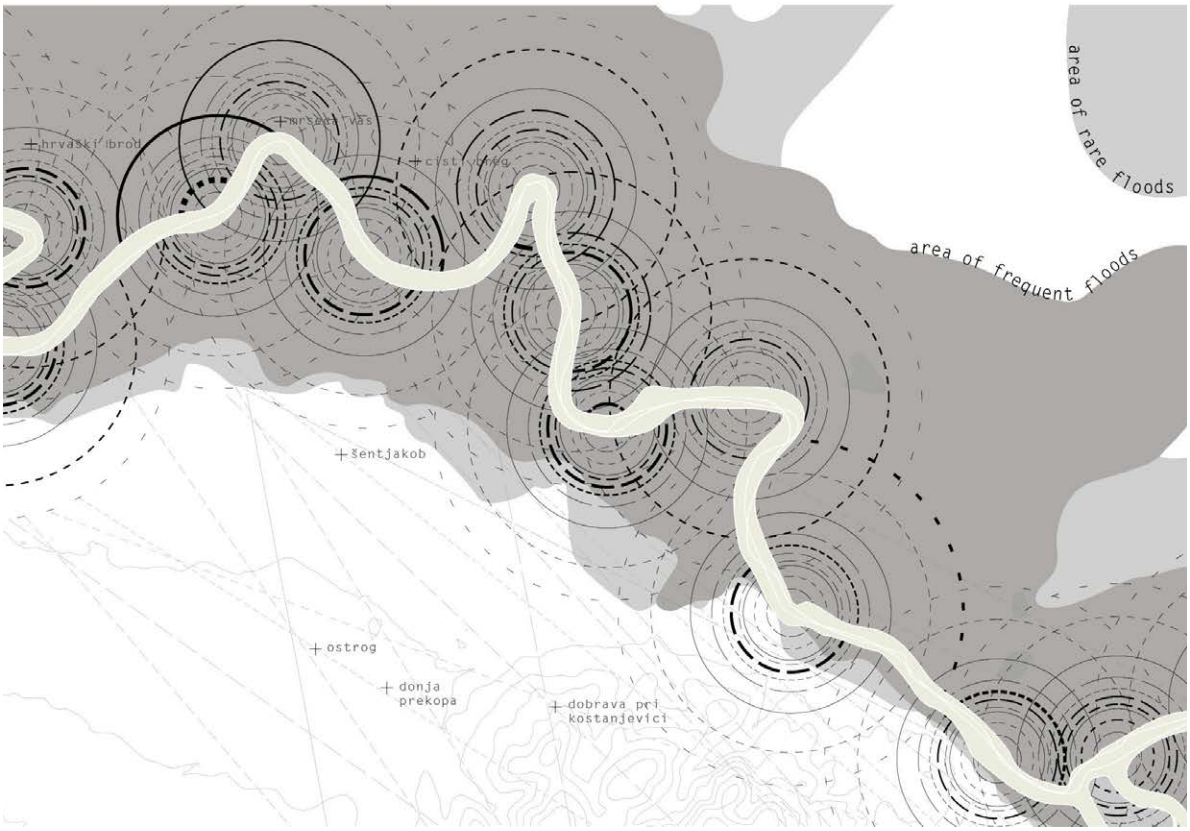
Globalization of the River Krka (Slovenia) – spread of invasive plant species and their origin.

(Filipa Valenčić, 2019)

The drawing investigates invasive plant species along the Krka river (Slovenia). In terms of the dynamics and drawing time, the drawing shows the possible spread of ten invasive plant species based on their habitat, modes and radius of seed dispersion. Based on the available data on species type and location, the thickness of the lines shows which species is more likely to be succeeding. The radii indicate the possible direction and distance of the spread. Since the scale of the river drawing and that of the spread radii are of different orders, the spread was multiplied (the radii are scaled up roughly 6 times). This shows how difficult it is to correlate different scales and remain consistent. The larger radii can be understood as the cumulative effect over many years of growth. In terms of multiscalarity, the detailed scale shows spread dynamics of individual plant species, while the larger scale represents spatial consequences of invasive plants dispersion over (roughly) 10 years. The global scale shows the origin of the species and their main characteristics. on the large scale shows the totality of the effect whereas at the detailed scale individual shifts can be observed.



DETAIL



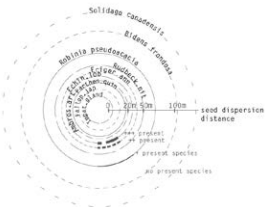
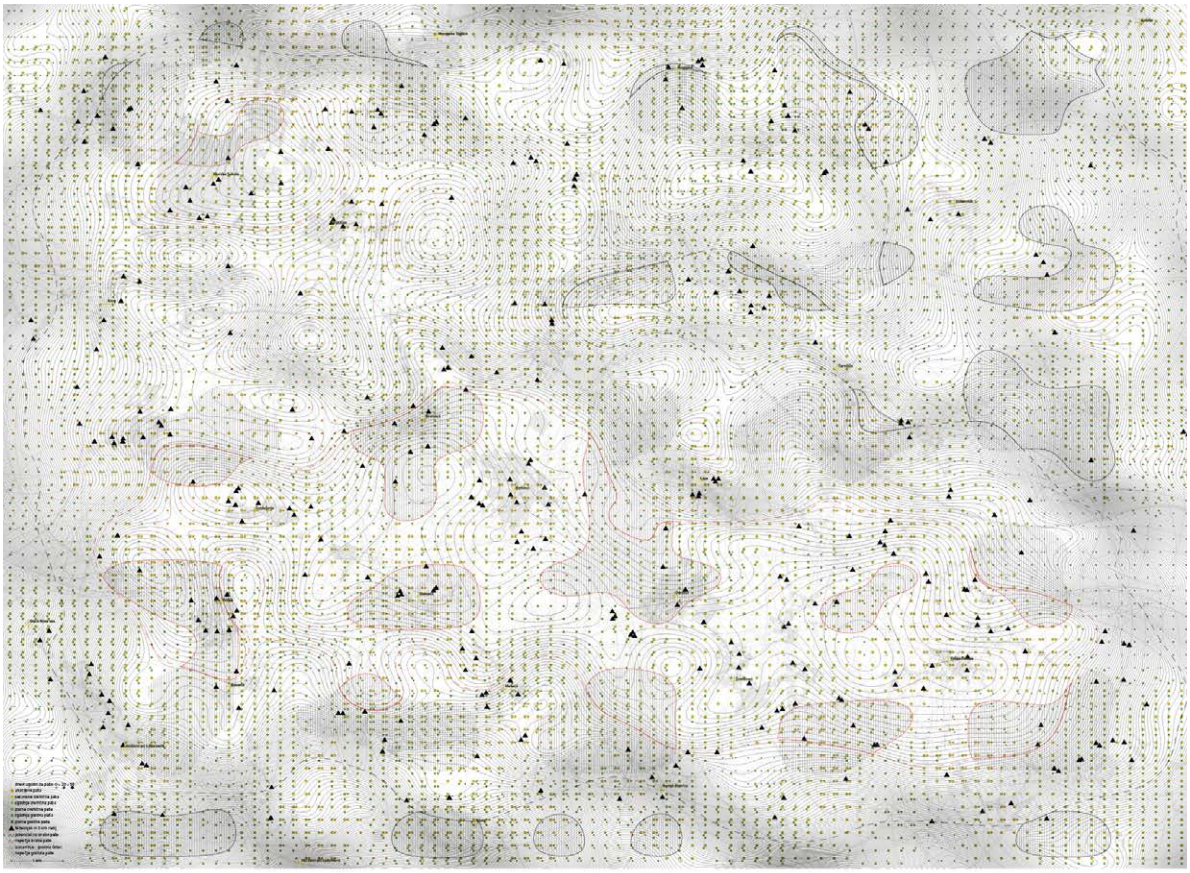


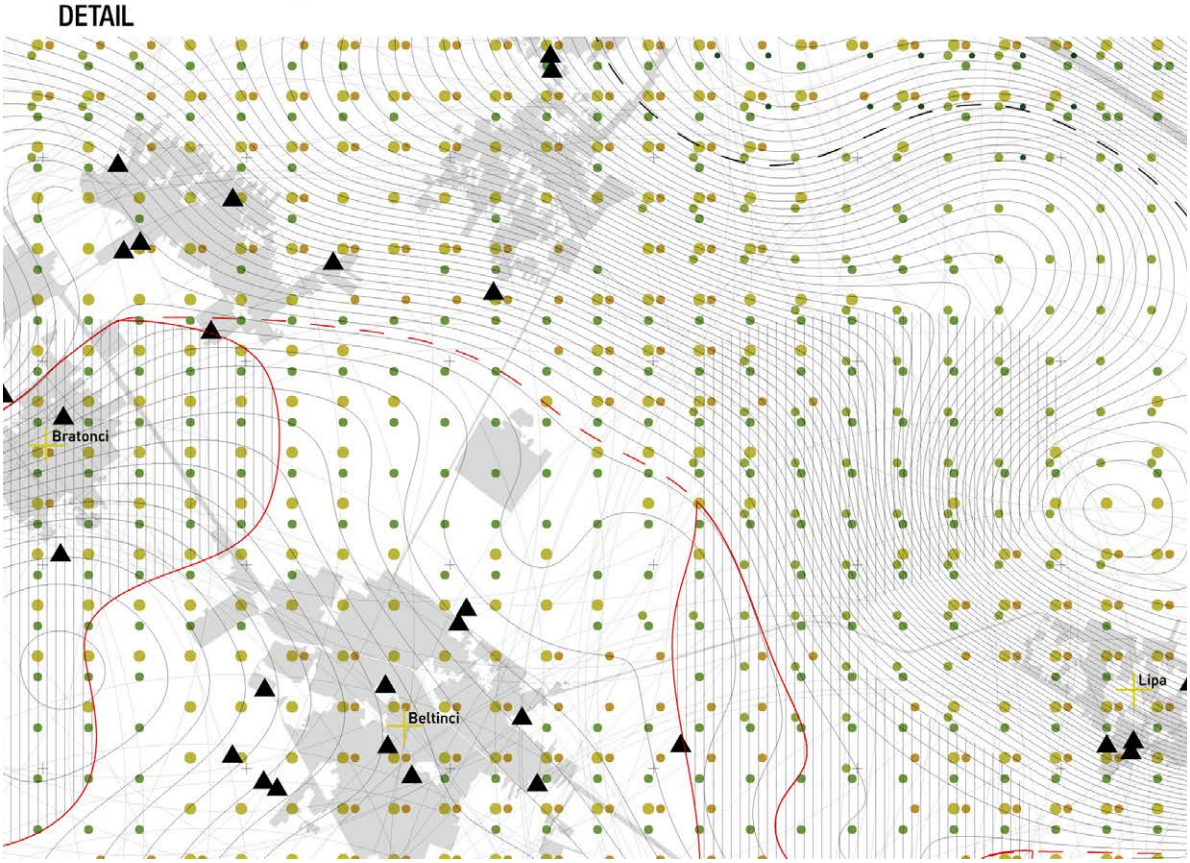
FIGURE 6

Bee grazing potential and beehive locations in Prekmurje (Slovenia).

(Kristina Oražem, 2021)

Graphical representation and analysis of several data layers allows the author to index bee pasture dynamics that are dependent on bee density (represented as contour lines) on the one hand and seasonal availability of pasture, volume and type of pasture (size, colour and number of dots in each grid cell) on the other. The author devised a drawing method to identify the most grazed (red-outlined) and the least grazed (black-outlined) areas. Knowledge so obtained can be used for new beehive locations and pasture planting to expand the seasonality of honey. In terms of dynamics, the drawing is very rich. It shows seasonal dynamics of pasture with dots and dynamics of the bee density with contour lines. In terms of multiscalarity, the overall regional scale gives an idea of the main overgrazed and undergrazed areas, whereas the more detailed scale can be used to review each area in detail to pinpoint possible new beehive locations or possibilities for pasture planting. The amount of data represented creates a less readable drawing. It is more of an expert's 'tool' than a communication device for a wider audience.





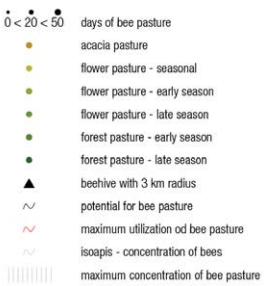
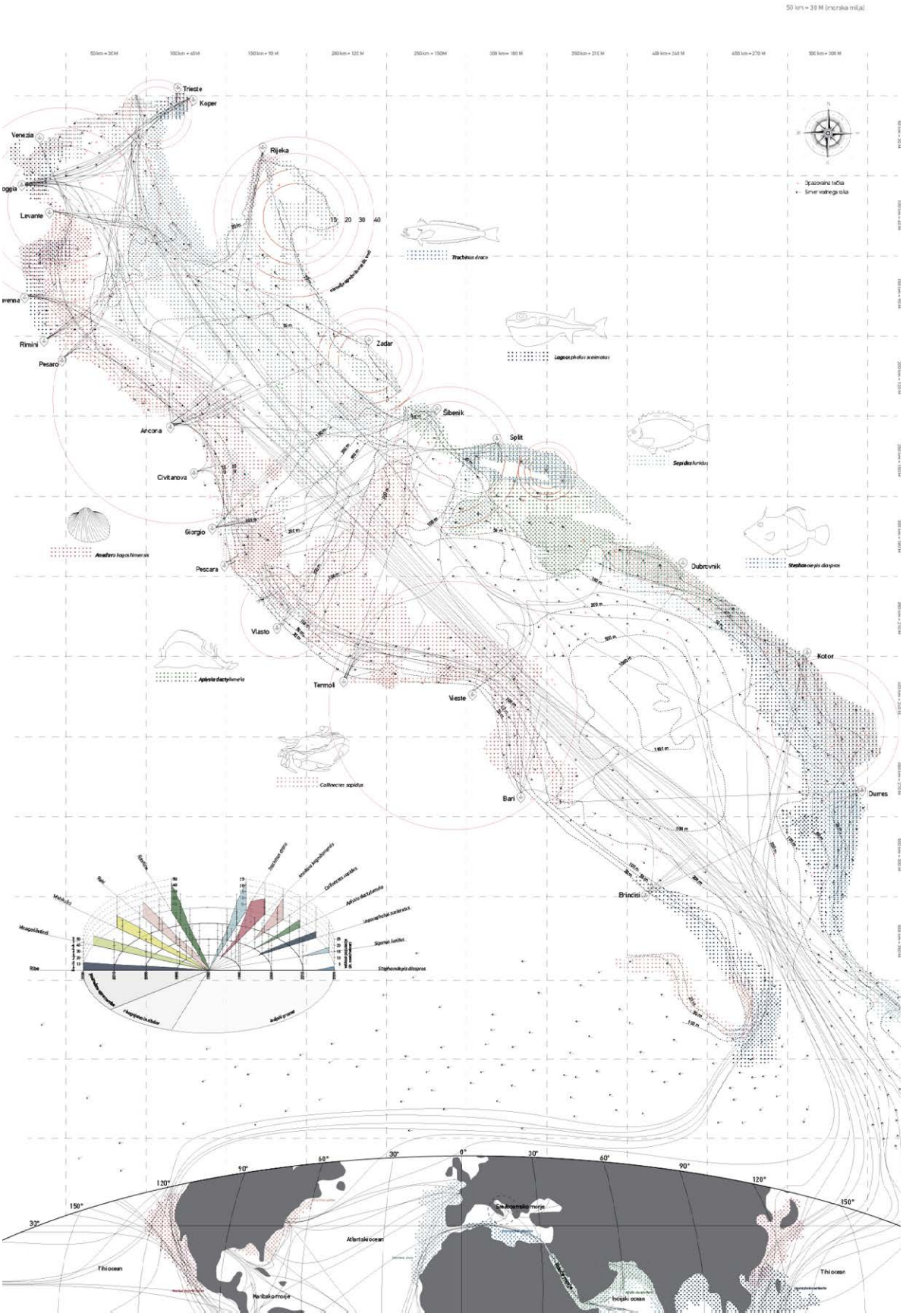
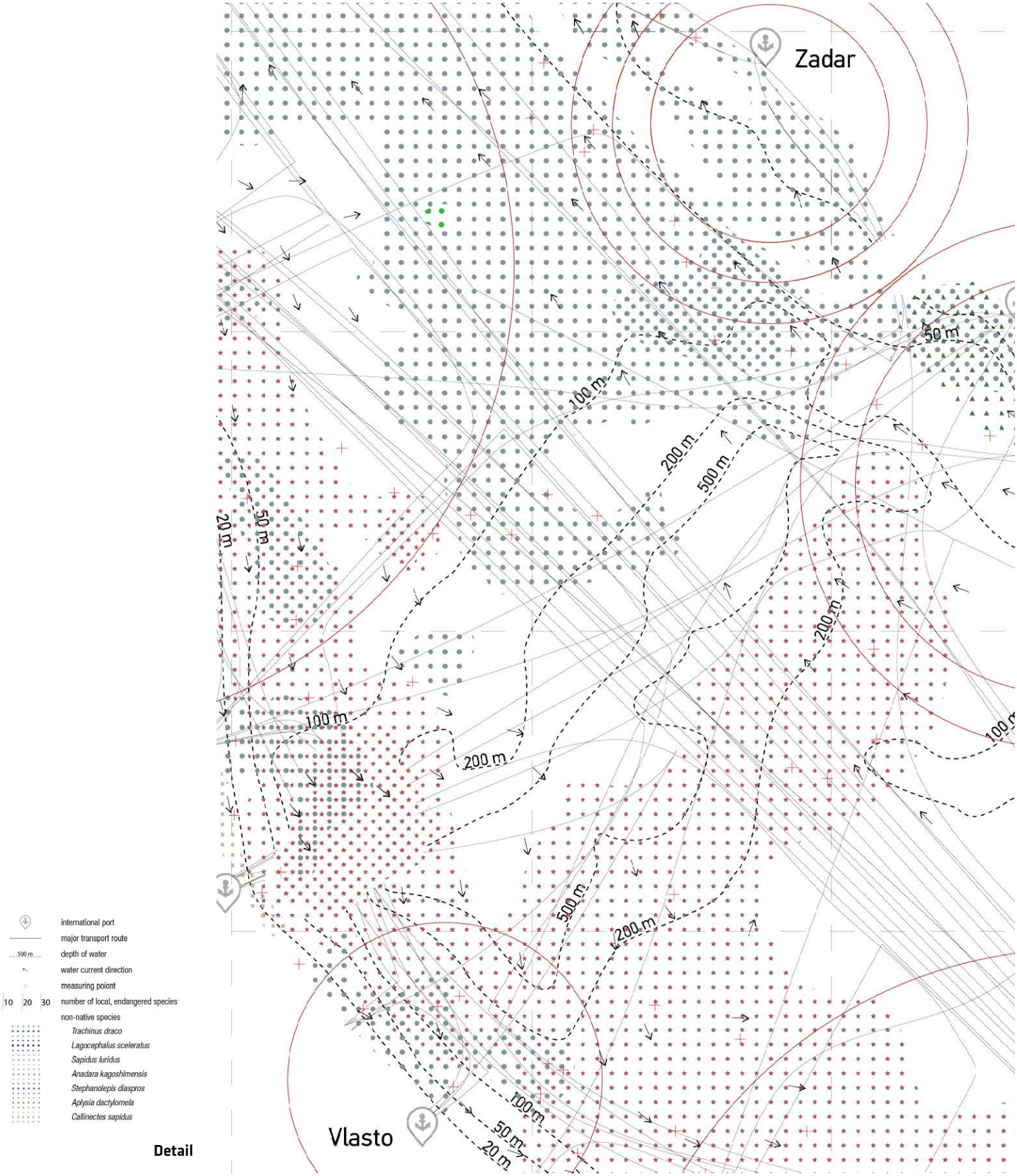


FIGURE 7 **Origin and spread of non-native species in the Adriatic Sea due to global trade routes.**

(Tilen Tamše, 2019)

The drawing overlays several different data sets pertaining to the spread of seven non-native species in the Adriatic Sea. Cargo vessel trade routes, predominant sea currents, location of international ports and sea depth are overlapped with the recorded areas of non-native species. In terms of the multiscalarity, the image on the global scale tells a story of where the species originate. On the regional scale the spread of these species and the direction of the spread based on the sea currents can be observed. On the detailed level of the drawing the individual regions and correlation to the endangered native species can be examined. In terms of dynamics, the drawing correlates the dynamics of trade and current to the spread of the non-native species – the species are more pronounced along the sea current directions, emanating from the port locations.

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international port
major transport route
500 m
depth of water
water current direction
measuring poiont
10 20 30
number of local, endangered species
non-native species
Trachinus draco
Lagocephalus sceleratus
Sapidus luridus
Anadara kagoshimensis
Stephanolepis diaspros
Aplysia dactylomela
Callinectes sapidus

Detail

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Drawing fixed moments in time

Repetitively drawing to understand and reveal consequences of growth, change, decay and idealization within the design

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Abstract

This visual essay discusses drawing time in relation to the author's graduation project, which is based on the paradigm of a multispecies world. Three design principles are derived from this paradigm: movement, hybrid and landscape as being. These relate to different notions of time and thus on drawing time. Movement means drawing the now. Hybrid is a material structure that shows non-human presence. This materiality implies that decay has to be drawn. The landscape as being is the ongoing landscape without end. In order to draw the three principles leading to the design intervention, fixed moments in time are chosen. In this visual essay 0 years, 20 years, and 30 years are shown. Time is drawn through a repetition of plans, sections and animation stills and through drawing specific human and non-human presence. In this way repetition, growth, decay and changing actors are shown. Drawing decay opened up new design possibilities. By comparing the repetitive animation stills, drawing time became a critical tool that showed idealization within the design. This visual essay shows both the repetition of drawings, as well as the discoveries it leads to.

Keywords

Movement, Hybrid, Landscape as being, Human, Non-human, Multispecies world, Drawing

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Introduction

This visual essay discusses drawing time in relation to the author's graduation project '(not) Our Forest: An Alternative Multispecies Approach to Forest and Landscape'.[1] In this project, drawing time was necessary and led to new discoveries. This visual essay focuses on both the necessity of drawing time and discovering through drawing.

The project considers an alternative to the forest strategy proposed by the Dutch Ministry of Agriculture. The goal of this strategy is to realize 37,000 hectares of new forest in the Netherlands before 2031 (Ministerie van LNV, 2020). This has the potential to mitigate climate change and generate healthy living environments (Ministerie van LNV, 2020). The strategy, however, is within an anthropocentric paradigm in which nature serves us. The project explores the possibilities of an alternative way of creating forest by locating the project within the theoretical discourse of a multispecies world. 'Multispecies world' is a term more commonly used in the field of anthropology and states that both humans and non-humans actively shape their world (Tsing, 2016). The term is often used in research that critiques large capitalist, even colonial, landscape structures, such as the Feral Atlas (Tsing, Deger, Saxena & Zhou, 2020).

On the basis of a study of this theoretical framework I chose to approach landscape architecture based on this paradigm with three main design principles: 1) Movement, 2) Hybrid, and 3) Landscape as being (Fig. 1). Designing with movement encompasses human and non-human movement. Hybrid is a term borrowed from Elizabeth Meyer and is a human intervention that emphasizes the presence of non-humans (2008). In this research the purpose of hybrids is to reveal landscapes and particular non-humans in this landscape, to human beings. The landscape as being is derived from the case of the Whanganui river in New Zealand, that was granted legal rights equivalent to those of a person in 2012 (Hsiao, 2012). Such a landscape as being should counterbalance economically driven landscapes.

Movement, Hybrid and Landscape as being relate to different notions of time. Movement is the present or the 'now'. Hybrids are, in this research, material structures with a lifespan that is considered to be about 30 years. A landscape as being is without an end, hence ongoing. Since the three are simultaneously present, they relate to one another (Fig. 2). Yet time has different effects on the total design intervention. Drawing time thus became crucial.

The site of the design intervention is the Amsterdamse Waterleidingduinen (Fig. 3). The site is part of the Dutch coastal and dune area. Water is purified here, and after purification piped to Amsterdam as drinking water. Water often originates from the great rivers in the Netherlands. However, along the Oosterkanaal, clean water is still directly retrieved from the groundwater level (Fig. 4). This is harmful to existing ecologies. Yet the main reason for its continuing existence is the importance of its buffering capacities for the economic viability of the adjacent flower bulb fields (Fig. 5). For the design proposal I decided to design a starting point in which: 1) water is no longer retrieved from the Oosterkanaal, 2) the groundwater level along the dunes rises as a result, 3) a new 'landscape as being' is defined on the now marshy soils by planting a boundary of trees and shrubs within which forest will begin to sprout, and 4) hybrids are placed (Fig. 6). From this starting point time begins to elapse.

This visual essay shows the final design drawings of the imagined passage of time. Since movement, hybrid and landscape as being correspond differently to time, I decided to show the effects of time at multiple fixed points in the future. In this essay the points shown are 0 years, 20 years and 30 years.

1 The graduation project was completed in June 2021, at the Faculty of Architecture and the Built Environment, University of Technology Delft, under mentorship of Saskia de Wit (section landscape architecture) and Luisa Calabrese (section urban design).

For the series of drawings inspiration was drawn from Michel Desvigne's series of plans for the Greenwich Peninsula (Fig. 7), which show the anticipated growth and development of the design (Duempelmann & Herrington, 2014). In addition, non-human (and human) actors are represented explicitly in these drawings. Inspiration for this was mainly drawn from the Feral Atlas, where specific non-human actors are linked to maps of imagined landscapes (Fig. 8) (Zhou, 2020).

The landscape as being is mostly portrayed at the larger scale. Growth in surface and in height is important here, since it is in the landscape as being that a forest will emerge. This also means that the main actors in the landscape change over time. Who these actors were likely to be was discussed with an ecologist. Both were portrayed by combining the previously mentioned techniques.

Drawing the hybrid at fixed points in time also resulted in having to draw various actors. Furthermore, the hybrid is a material structure. Therefore drawing the hybrid also entails drawing decay. By drawing decay it became explicit that this part of the design intervention has an end. This provided the opportunity to create an imagined reoccurring design intervention every 30 years for the hybrid. Through drawing time, a cyclical event could be imagined and used as a design intervention.

Movement is drawn by means of animation stills, which have the immersive qualities suitable for representing the 'now'. The stills are drawn from a human perspective. This was a calculated decision, since the project was only to some extent about how we can integrate the perspectives of non-humans. The main part of the project was about how we can change our human perspective. In the stills a human being therefore encounters other humans and non-humans. The same stills were made for 0 and 30 years in time, where the main differences between the stills are the different encounters. Drawing this way repetitively made for another discovery. Comparing the stills revealed that idealized situations of time had been drawn, in which a human both encounters and notices non-human presence. This made me question the limits of my design intervention. In order to represent this limit, another version of the present using the same stills was drawn in which a human being encounters nothing. The notion of idealized movements in the 'now' was discovered through repetitively drawing the stills. This way, drawing time became a critical tool that helped in analysing the design.

Drawing time in this visual essay takes the form of repetitive drawings of plans, sections and animation stills and through drawing different actors. The main elements of the design intervention correspond differently to time. Drawing with the techniques employed turned out to be successful in both showing and understanding better the consequences of growth, changing actors, decay and idealization within the design.

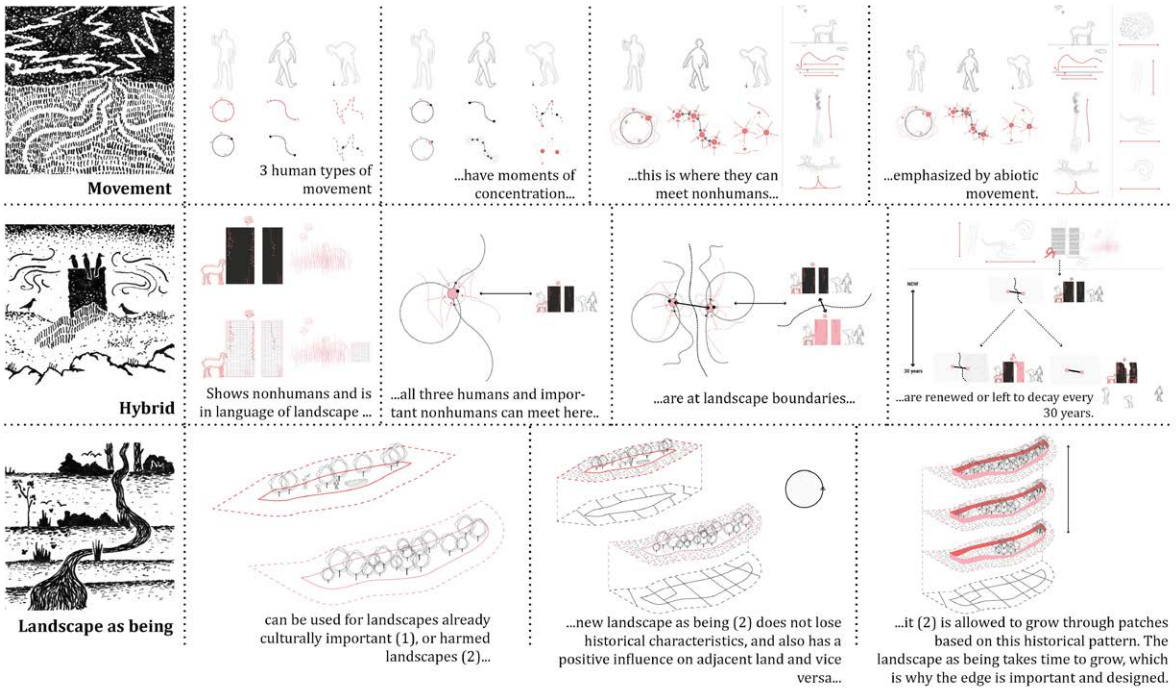


FIGURE 1
All design principles based on the paradigm of multispecies world. The upper row of drawings considers design principles for movement, the middle row design principles for hybrids, and the lower row design principles for the landscape as being.

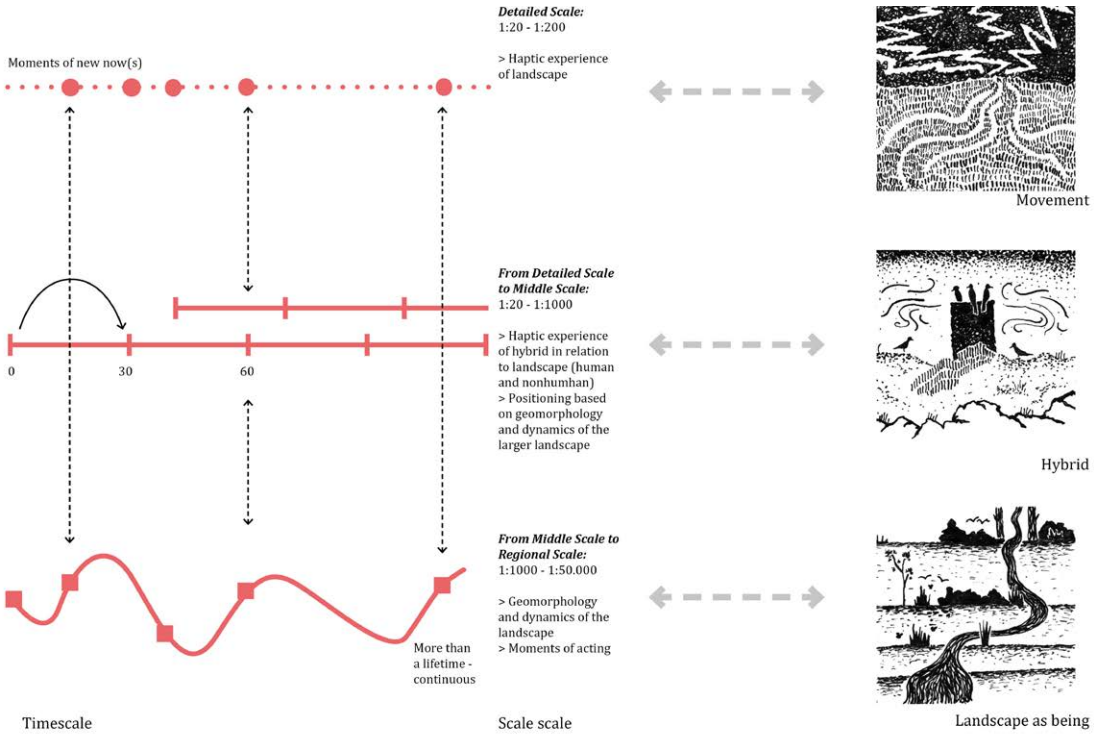


FIGURE 2
Relations of scale and time between movement, hybrid, and landscape as being. The diagram represents time in three different ways. The dots next to movement represent moments of now. The interludes next to the hybrid represent a renewal every 30 years. The curved line represents the ongoing time with events (squares) of the landscape as being. All these three times can happen similarly (shown by the vertical arrows) and are linked in that way..

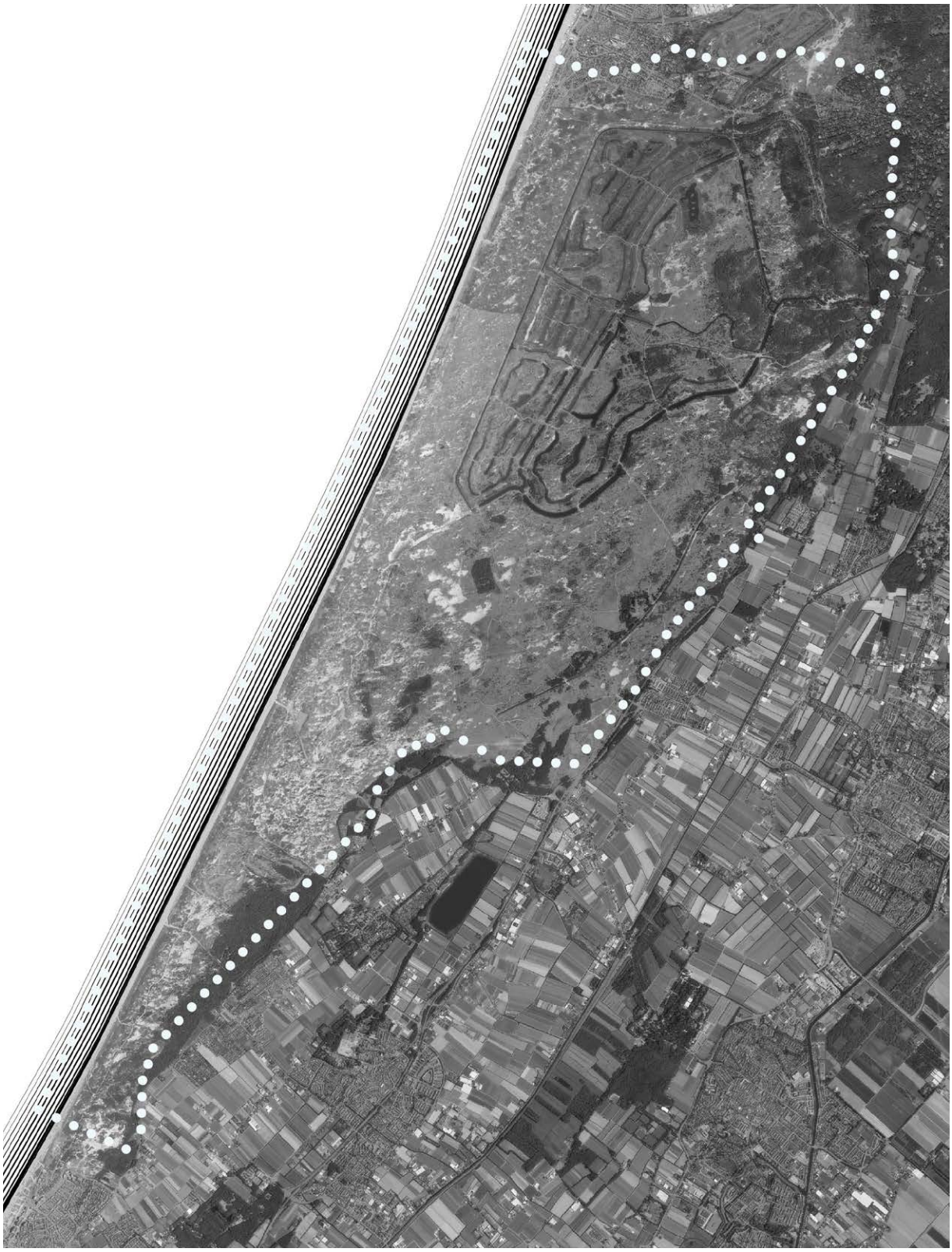


FIGURE 3
Amsterdamse Waterleidingduinen (1:50.000). The dotted line shows the boundary of what can be described continuously as dune area. The legal boundary of Amsterdamse Waterleidingduinen in fact covers a slightly smaller area (Aerial photo PDOK 2019, n.d.).

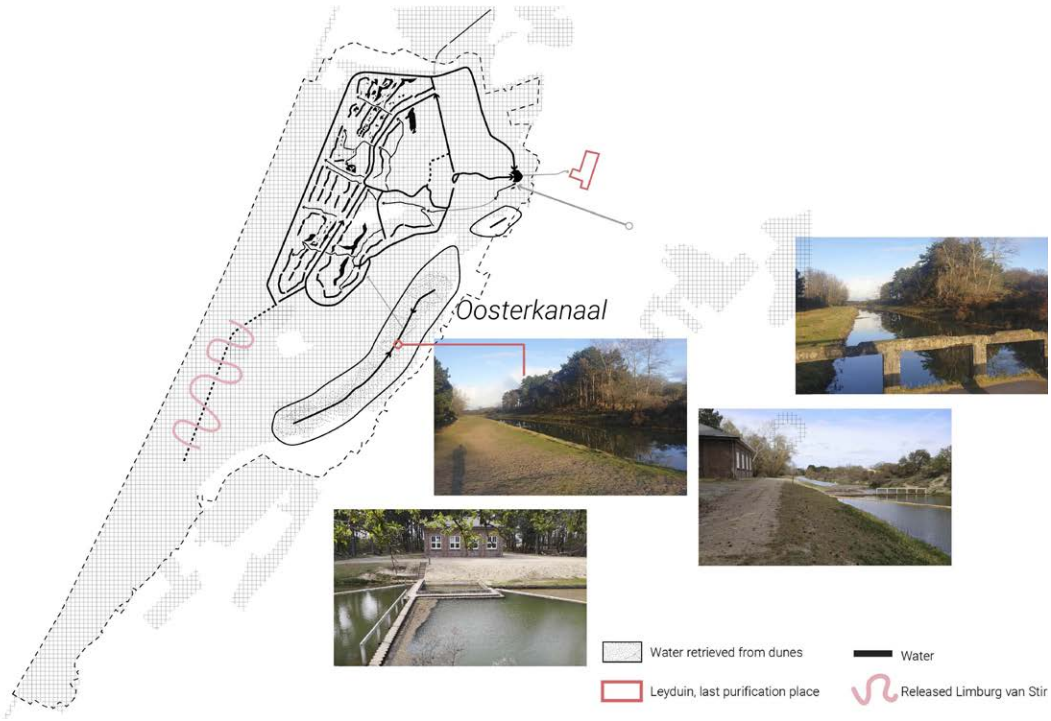


FIGURE 4
Location of the Oosterkanaal at Amsterdamse Waterleidingduinen (1:50.000).

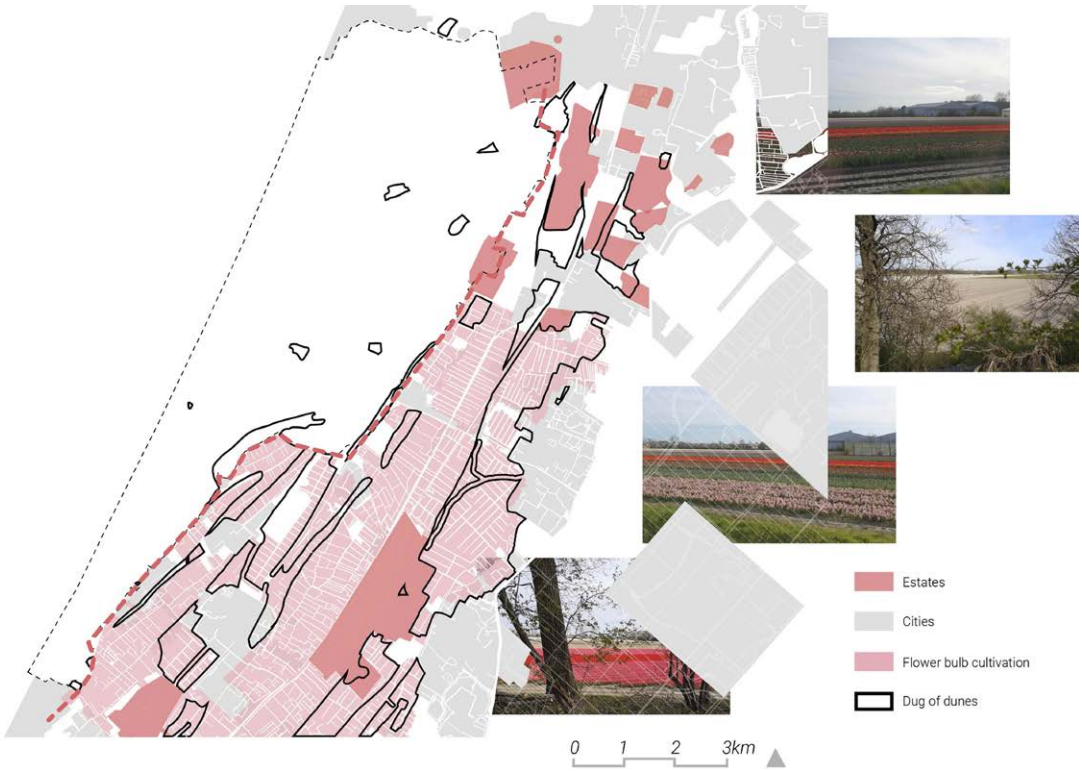


FIGURE 5
Location of the flower bulb fields along the Amsterdamse Waterleidingduinen (1:50.000). Behind the map a series of pictures show what the flowerbulb fields look like during flowering, and outside of the flowering season.

FIGURE 6
Starting point of the design (1:20.000). The design proposes the starting point mentioned in the introduction. The starting point consists of letting go of the Oosterkanaal, letting the groundwater level along the dunes get higher, setting the boundary for the landscape as being and placing the hybrids

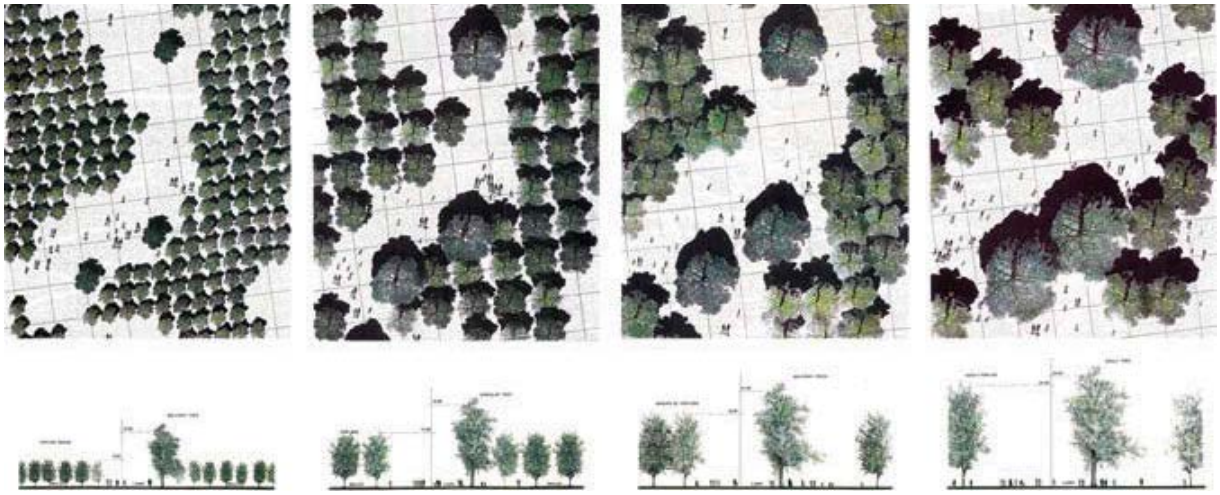
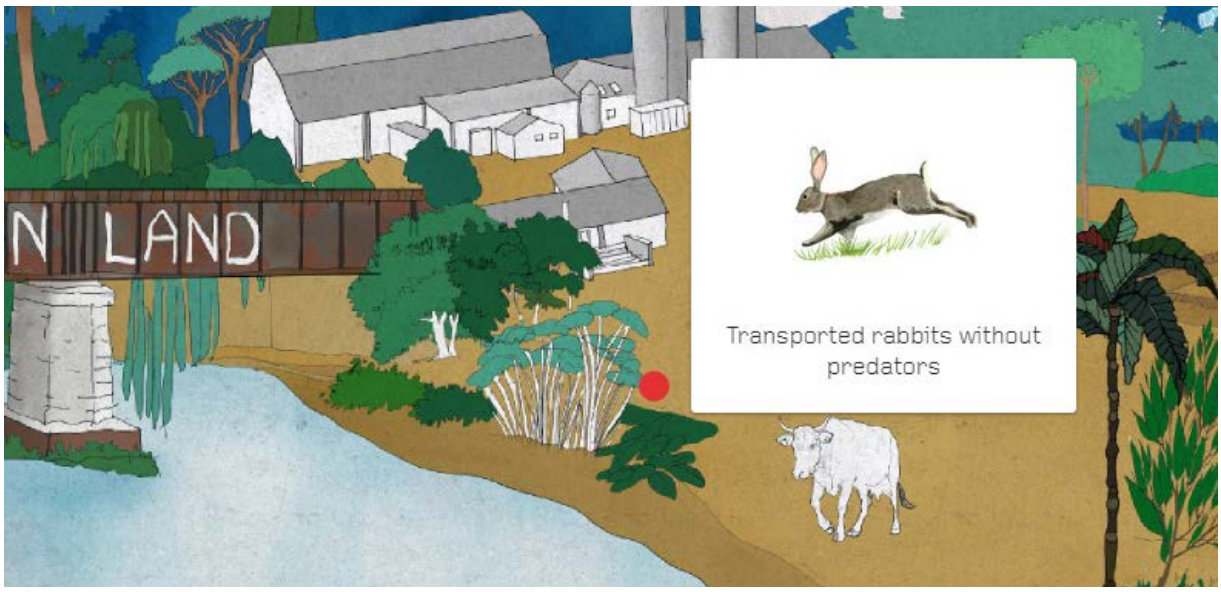


FIGURE 7
Design drawing for Greenwich Peninsula project by Michel Desvigne, 1997-2000 (Duempelmann & Herrington, 2014, 12). Time is anticipated in the design (Duempelmann & Herrington, 2014). The drawing shows this through the growth of trees and the number of trees. The spatial configuration of the design changes but remains visible.

a



b

FIGURE 8
Invasion by Feifei Zhou, 2020 & Detail of the mapping Invasion 'Transported rabbits without Predators' (Zhou, 2020). The mapping is a fictive space where multiple events in time happen in the same mapping. The mapping shows a landscape of (colonial) invasion. There are multiple dots found at the mapping that all relate to an actor. In the case of this mapping, the actor (often a nonhuman) is causing invasive problems through human made infrastructures. The mapping thus shows both a fictive space that analyses human invasive behaviour, and links this to actors operating in this system

Visual Essay
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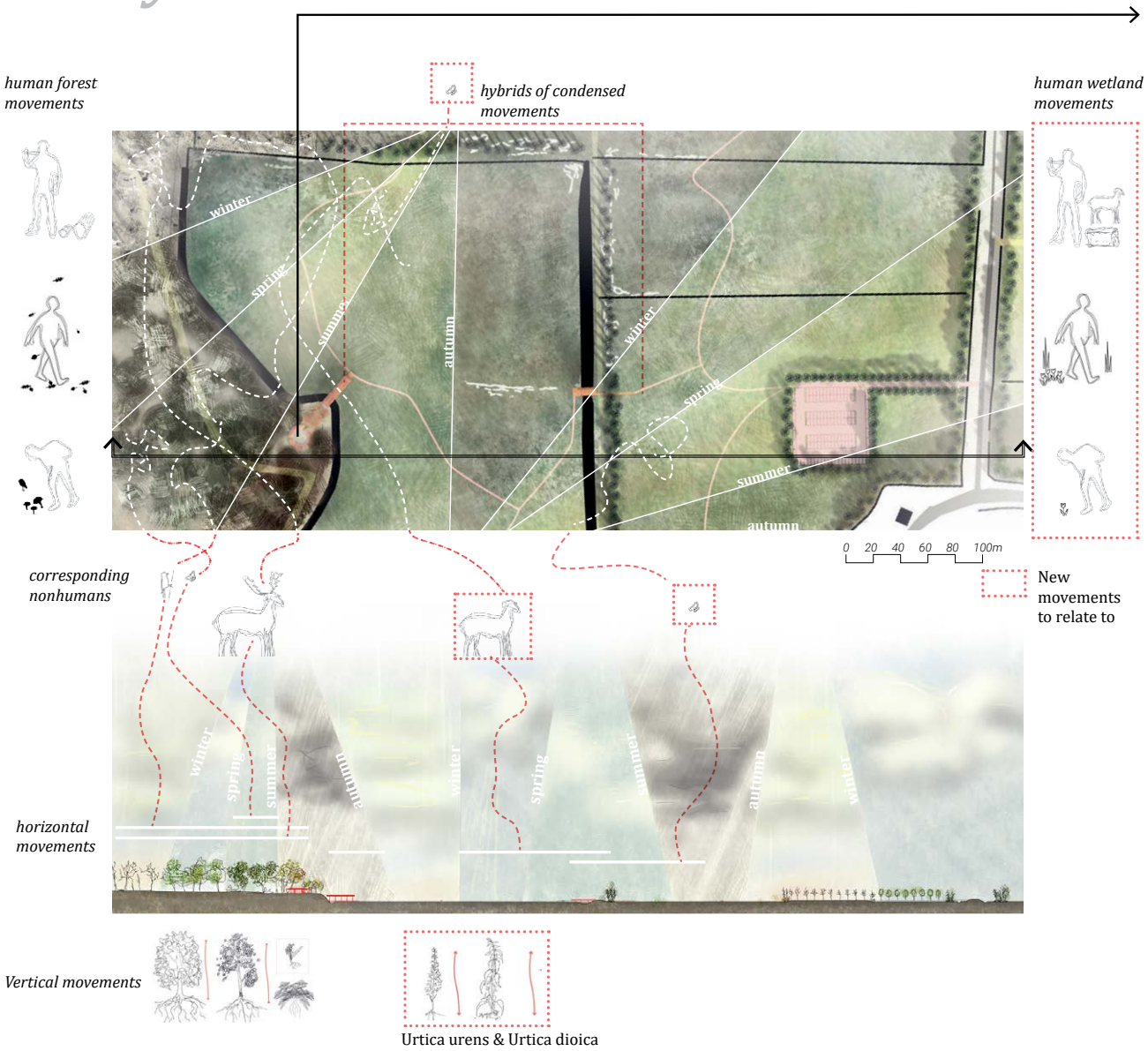

FIGURE 9
Drawing the starting point (1:1000) and accepting 'unwanted' moments of time. The drawings show the main area of the design as an open field. Yet, at the 1:1000 scale the drawings also show non-human and human actors that are present at this time. Since the design considers a beginning instead of a fixed outcome, the main non-human actors in some of the fields will likely be nettles (Urtica dioica & Urtica urens). By including them as an explicit intended consequence of the design, the usually unwanted nettle becomes an accepted part of the design.

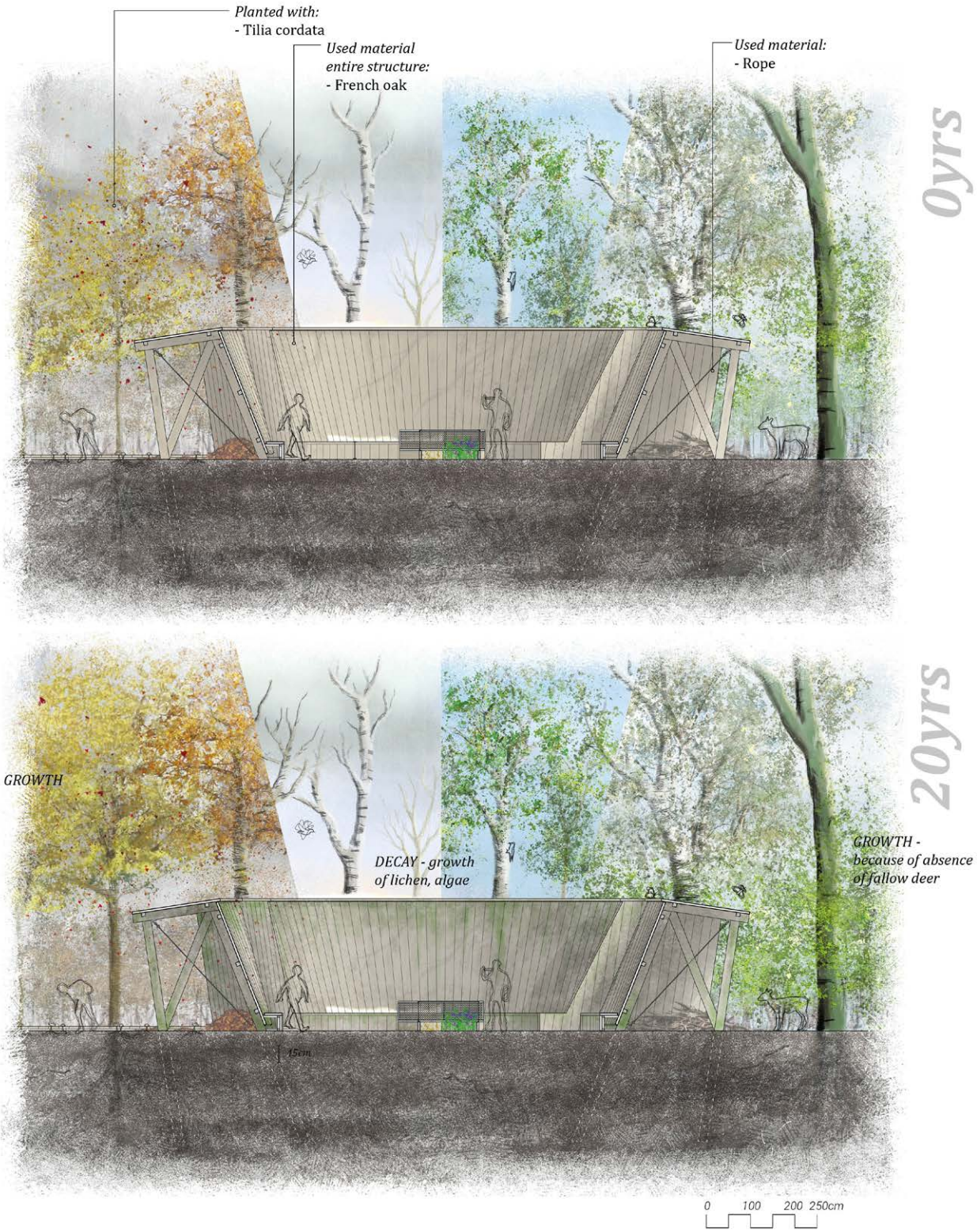

FIGURE 10
A hybrid and drawing decay (1:50); starting point and 20 years from the starting point. The hybrid when it is new corresponds to non-human species (sometimes wanted, sometimes unwanted). This particular hybrid corresponds to tree tops and to butterflies and birds present in these tree tops, fallow deer, the nettle and the Vanessa atalanta butterfly in order to raise awareness or acceptance of these. But the hybrid is a material structure, which means that it decays. Drawing decay showed how time, which is actually present in the form of non-humans (lichen, algae, mosses, fungi) takes over a wooden structure.

FIGURE 11
Drawing growth (1:5000). At the same time, the landscape as being, which in this case evolves into a forest, continues to grow. There is a particular patchwork of growth in the forest related to human intervention. Part of the design is that the landscape as being is developed in patches. This means that humans intervene by, for instance, mowing or letting sheep graze in parts of the fields. This is shown in a series of plans.

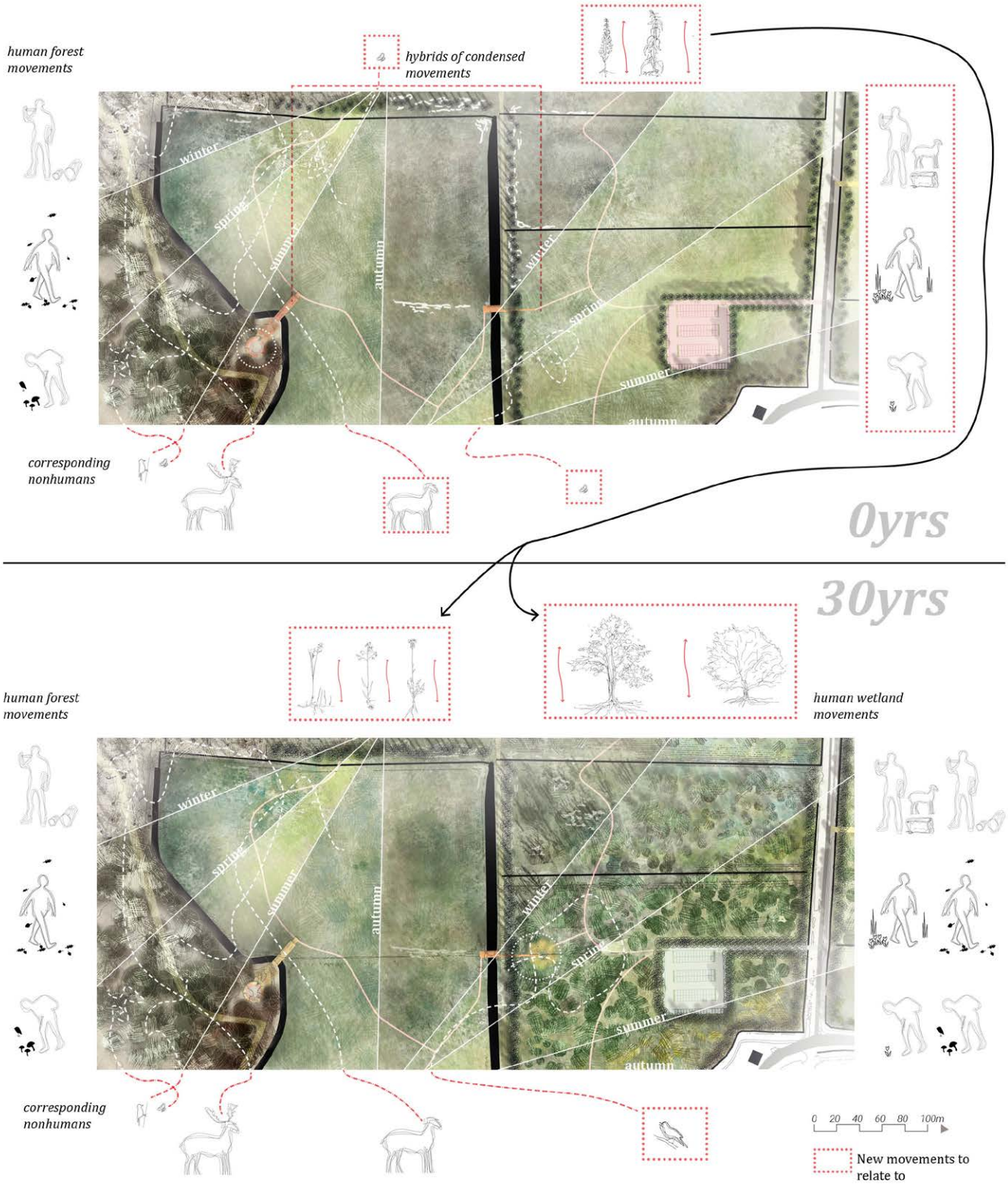

FIGURE 12
Drawing change (1:1000). The drawing of growth in terms of succession in a landscape also has to do with a change of actors. Succession also means that other non-humans arrive on the site. This is shown by drawing the species and linking this to where they are likely to arrive on the site. The seasons are drawn because not all non-humans are present on the site all year round.

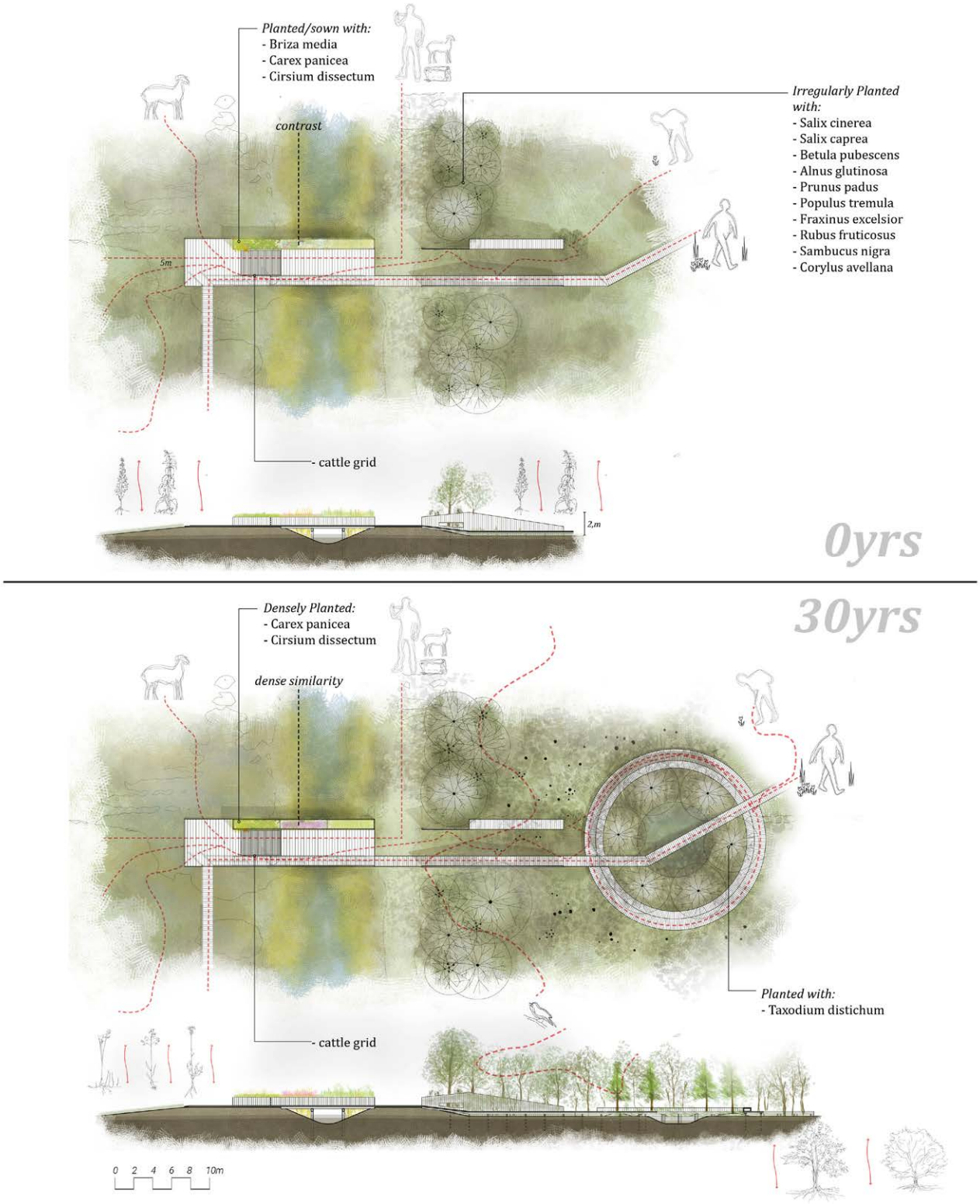

FIGURE 13
Drawing new hybrids based on change (1:200). Drawing decay led to the possibility of introducing a recurring design intervention every 30 years. After 30 years, different actors are present and through the hybrid a new way of relating to these can take shape. In the hybrids shown, this results in changing the shape of the hybrid after 30 years.

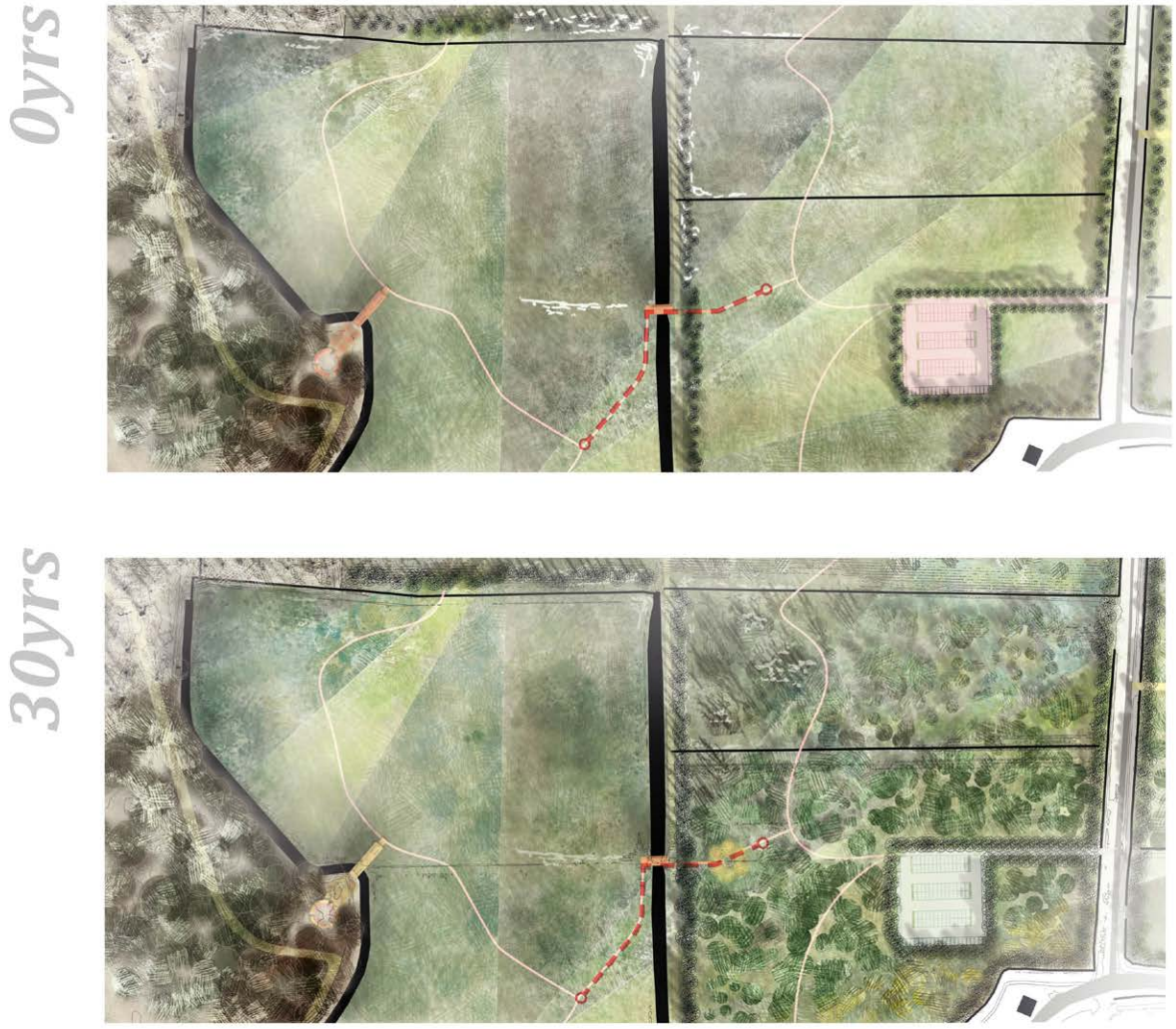

FIGURE 14
Part of the course of the walk that shows different moments of now. The walk remains the same.

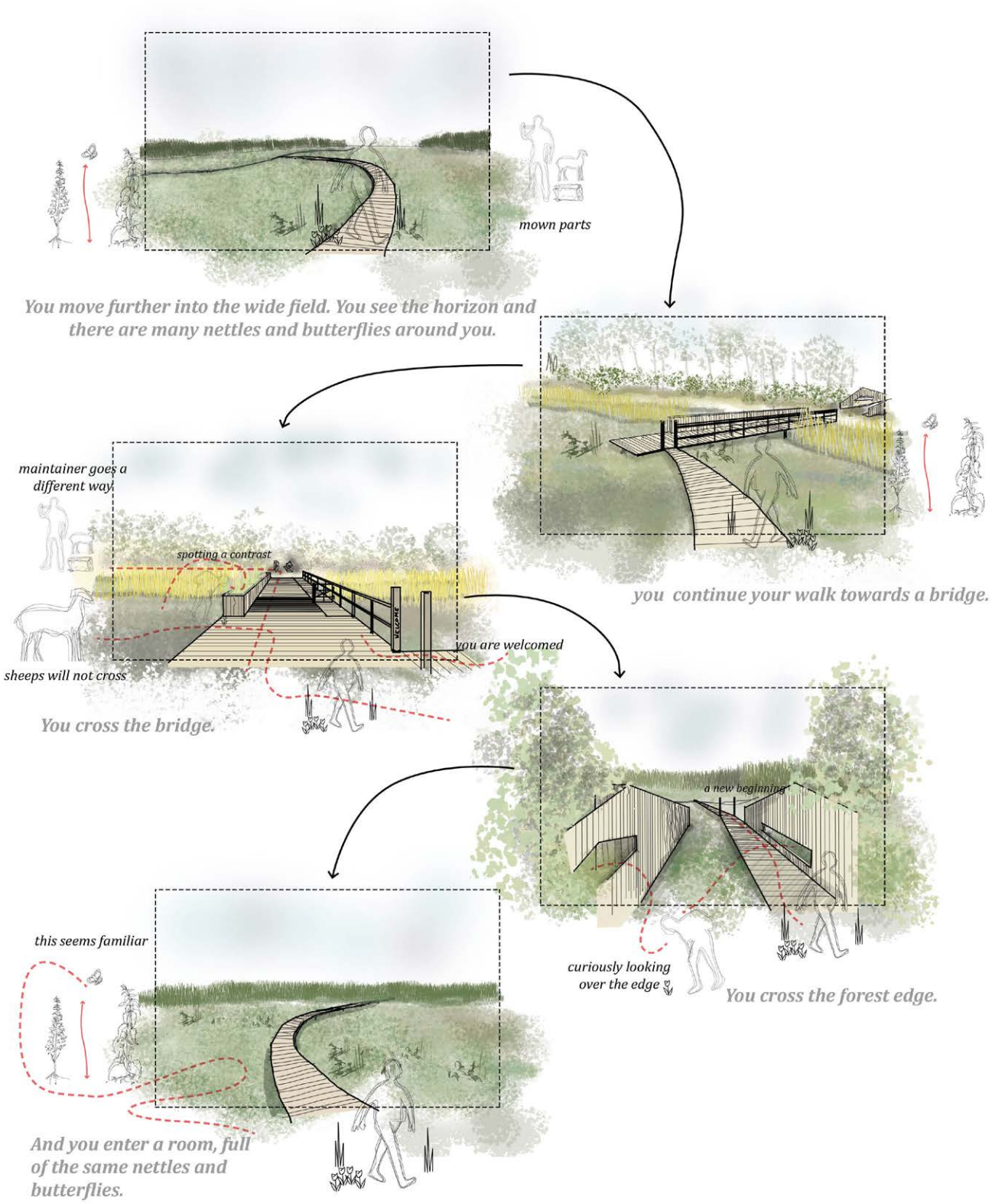

FIGURE 15
Drawing two moments of now. The same walk is drawn. Throughout the walk, all important non-human and human encounters are represented through drawing, sound and narrative. The landscape remains rather similar, but there are subtle differences. The non-humans change, and this is noticed by the main character: a visitor (layman) to the site. They notice how, after 30 years, there are different plants present and there is even someone studying this.

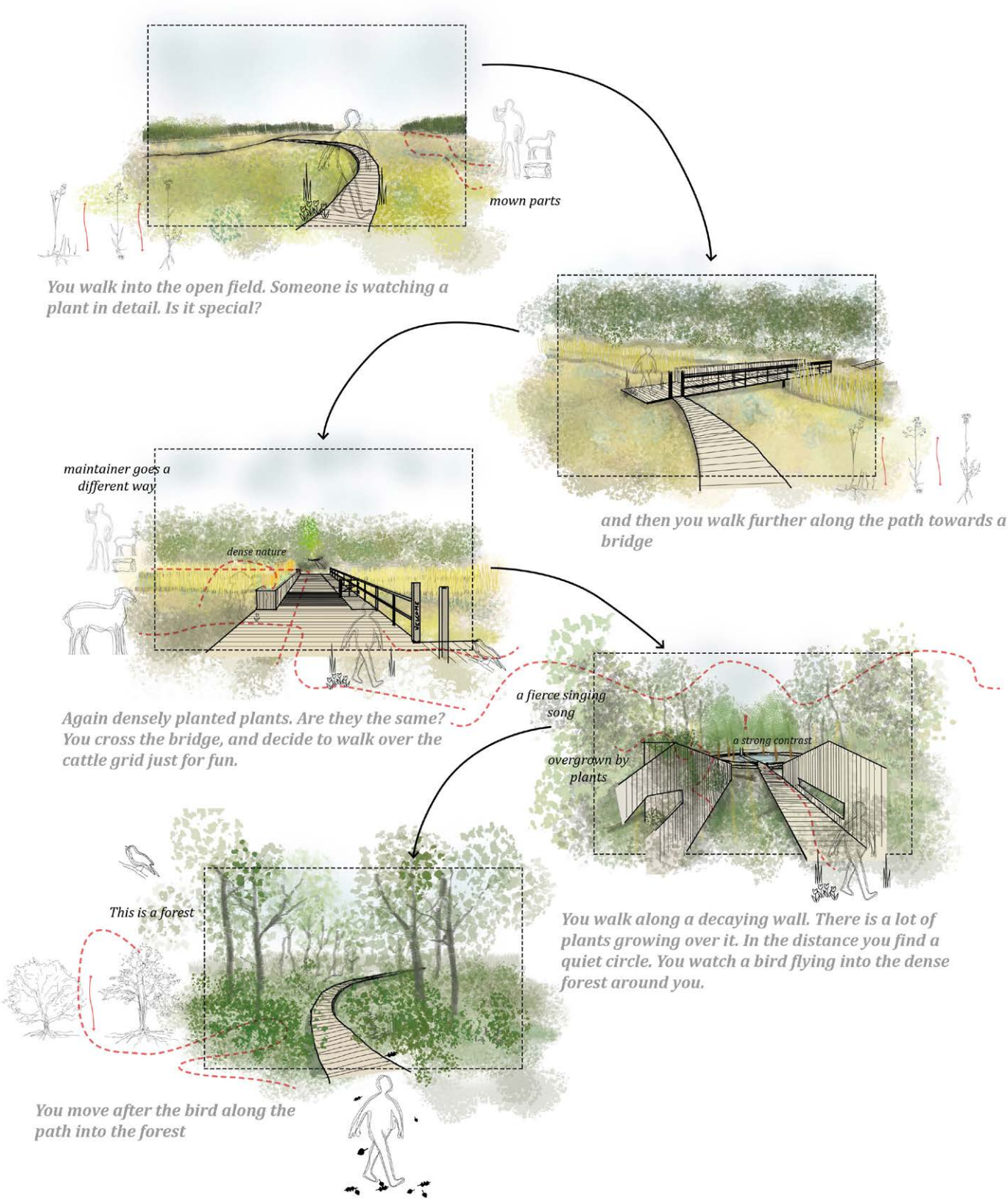

FIGURE 16
Drawing two moments of now.

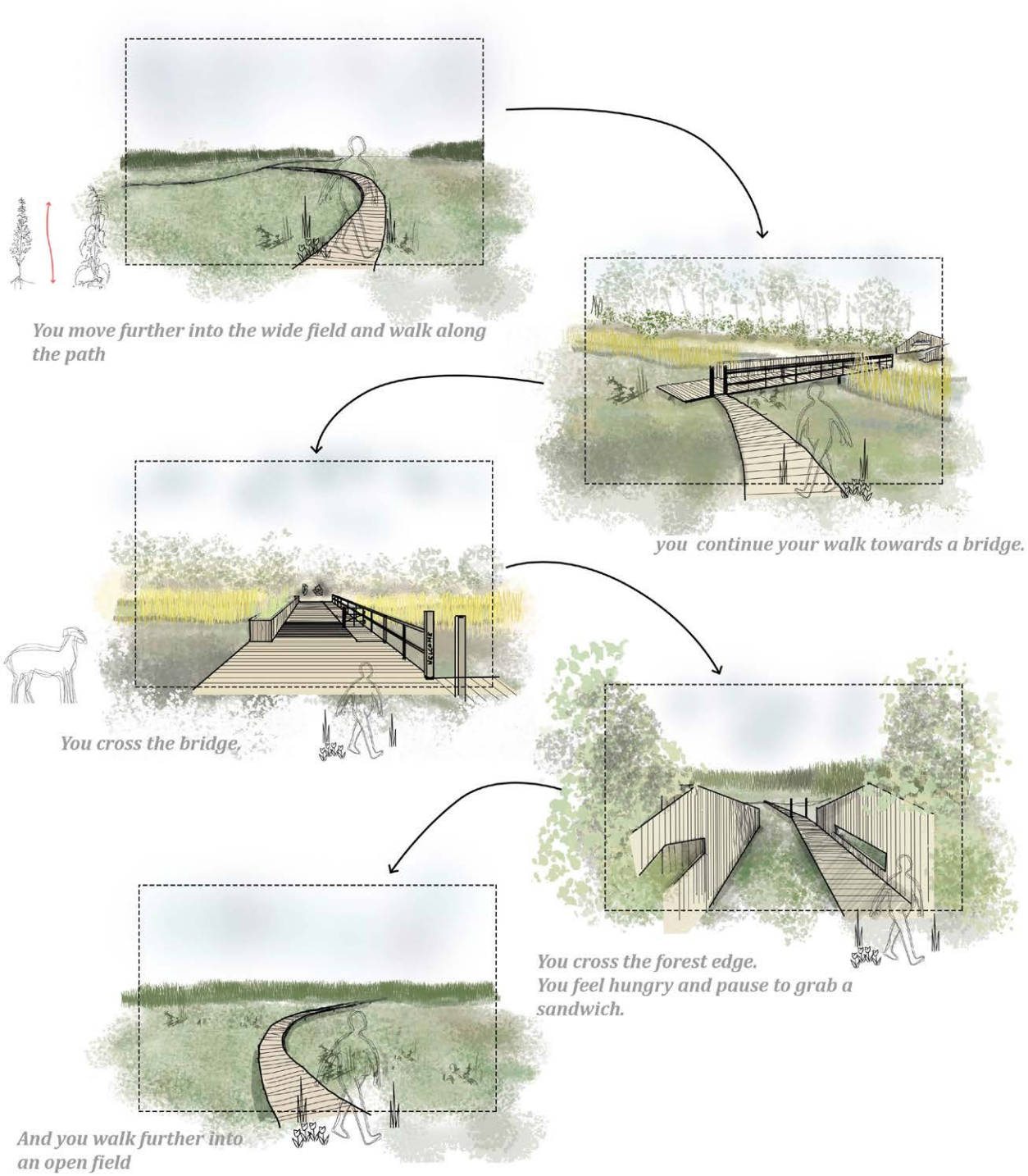

FIGURE 17
Drawing an unidealized moment of now. An unidealized walk shows few encounters with non-humans. The non-humans are hardly noticed by the human being who walks through the site. This was discovered by repetitively drawing different moments of now. Drawing this series in an unidealized way, made it possible to question whether the previous drawings of the design intervention were too optimistic. Drawing time thus became a critical tool by which the design could be analysed as well.

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Time Thinking and Drawing in Designing Dynamic River Landscapes

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Abstract

This visual essay explores the use of time thinking and drawing in the design process of the Ooijen-Wanssum floodplain widening project. Through a series of project sketches, final drawings and photos of the constructed project, the authors reveal the way in which time drawing has (often implicitly) given direction to the design process. The water calendar is introduced as a design tool that integrates time-dependent river dynamics into the design process and thereby informs spatial design choices that are considered in several design sketches. These design choices include interactions with dynamic processes such as erosion, vegetation dynamics and recreational use of the river landscape.

Keywords

Floodplain design, Water calendar, Vegetation dynamics, Erosion, Dynamic landscape management, Drawing techniques

DOI

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Introduction

When working on interventions in dynamic fluvial landscapes, time drawing is an essential design tool for both designing and communicating the changing nature of the landscape. Fluvial landscapes are affected by both cyclic and progressive water- and nature-related phenomena. Examples of cyclic phenomena are rising and falling water levels and seasonal changes in vegetation. Progressive phenomena include geomorphological changes like erosion and sedimentation, and vegetation growth and succession. Changes can be slow and gradual, with a high level of certainty and (in the case of cyclic phenomena) a certain regularity or rhythm, or they can be very abrupt and uncertain like extreme flooding events and wildfires (see Lynch 1972 and Zerubavel 2003). Time drawings should show the development of landscape over time. Purely temporal time drawings include score, timeline and film. This visual essay explores hybrids of spatial and temporal representations like the diagram, and a series of spatial representations that become a temporal representation when given a precise time tag (Van Dooren 2017).

At H+N+S Landscape Architects, time drawing has become a self-evident part of the integral research by design on dynamic water- and nature-related systems. In projects like these, uncertainty and surprise greatly influence the outcome. The designs made by H+N+S aim to set in motion a process of transformation (Van Dooren 2015). An early example of a time drawing, now known as a water calender, is the water peaks study of the Emscher river in Germany, for which a composite diagram was made to identify the space available for storing both regular water peaks and irregular extreme discharges (H+N+S 2002). Another example is an animated film made for a river bypass project south of Kampen (Netherlands) that shows how a flooding event influences the water landscape over time (H+N+S 2008).

While engaged in drawing projects that deal with landscape dynamics, landscape architects are continuously shifting between (combinations of) dimensions, and different scale levels, in order to understand the landscape and to discover its challenges and opportunities. All landscape architects architecte well versed in exploring spatial dimensions by shifting between plans, cross sections, axonometric projectections and perspectives. Moreover, drawing the dimension of time gives us an opportunity to anticipate the effects of different water levels, progressive changes to the morphology of a site by erosion and sedimentation as well as future changes due to ecological succession and thereby possible maintenance issues. All these are important components of fluvial landscape design.

In this visual essay we reflect on the role of time drawing in the design process of floodplain widening projects – the so-called 'Room for the River' projects – using the Ooijen-Wanssum project (designed and constructed from 2018 to 2020) as our main example. The villages of Ooijen and Wanssum are situated along the Meuse river in the Dutch province of Limburg. The core of the Room for the River concept is to provide narrow parts of the river with a wider flood plain to accommodate very large discharges and to reduce water levels during major floods.[1] The main objective of the Ooijen-Wanssum project was to connect a former river branch to the main river, the Meuse, in order to accommodate a large part of the river discharge during floods and at the same time to improve the ecological and recreational qualities of the river landscape. H+N+S Landscape Architects were asked to shape the future landscape and deliver construction drawings for its realization and we duly came up with strategic interventions to create conditions for the river to shape the landscape in a natural way and provide room for valuable natural processes. On the following pages we demonstrate how the awareness of time contributed to a design that interacts with the dynamics of the river landscape on different levels. By adding time

1 Source: https://www.stowa.nl/deltafacts/waterveiligheid/waterveiligheidsbeleid-en-regelgeving/room-river

to the complex range of dimensions in which the landscape is understood, new perspectives on the landscape were introduced. Although time drawing formed a crucial aspect of the design process, time is implicitly rather than explicitly present in the drawings. The sketches presented in this visual essay may be regarded as a 'backstage view' of the practice of H+N+S Landscape Architects: the drawings are mainly driven by their practical use and give insight into the process of understanding and intervening in the dynamic floodplain landscape. This involves a complex interaction between river gradient, barrier elevations, inundation frequencies and resulting ecological processes, which can be understood by drawing the way time alters the environmental conditions. The design outcome is widely appreciated as a new approach to floodplain widening, one that accommodates the unique, intrinsic characteristics of the landscape dynamics.

FIGURE 1

Water calendar for the Ooijen-Wanssum floodplain widening project.

The water calendar depicts the extent of flooding and water depths from average summer discharges to extreme flooding events. The water calendar is an important design tool. Drawing the system's dynamic in time engenders an understanding of the complex interplay between water level changes, in both space and time, and threshold elevations. The current and the design heights of the thresholds influence the frequency of inundation and thus water quality and ecological conditions. By drawing the inflow and outflow, by letting the area 'flood from the pencil' so to speak, the system is understood and potential interventions emerge. The inundation zones and frequencies are then used for the design of the recreational network, to create the right conditions for ecological systems in relation to the expected vegetation, and to enable the force of the river to shape the landscape in a natural way through sedimentation and erosion.

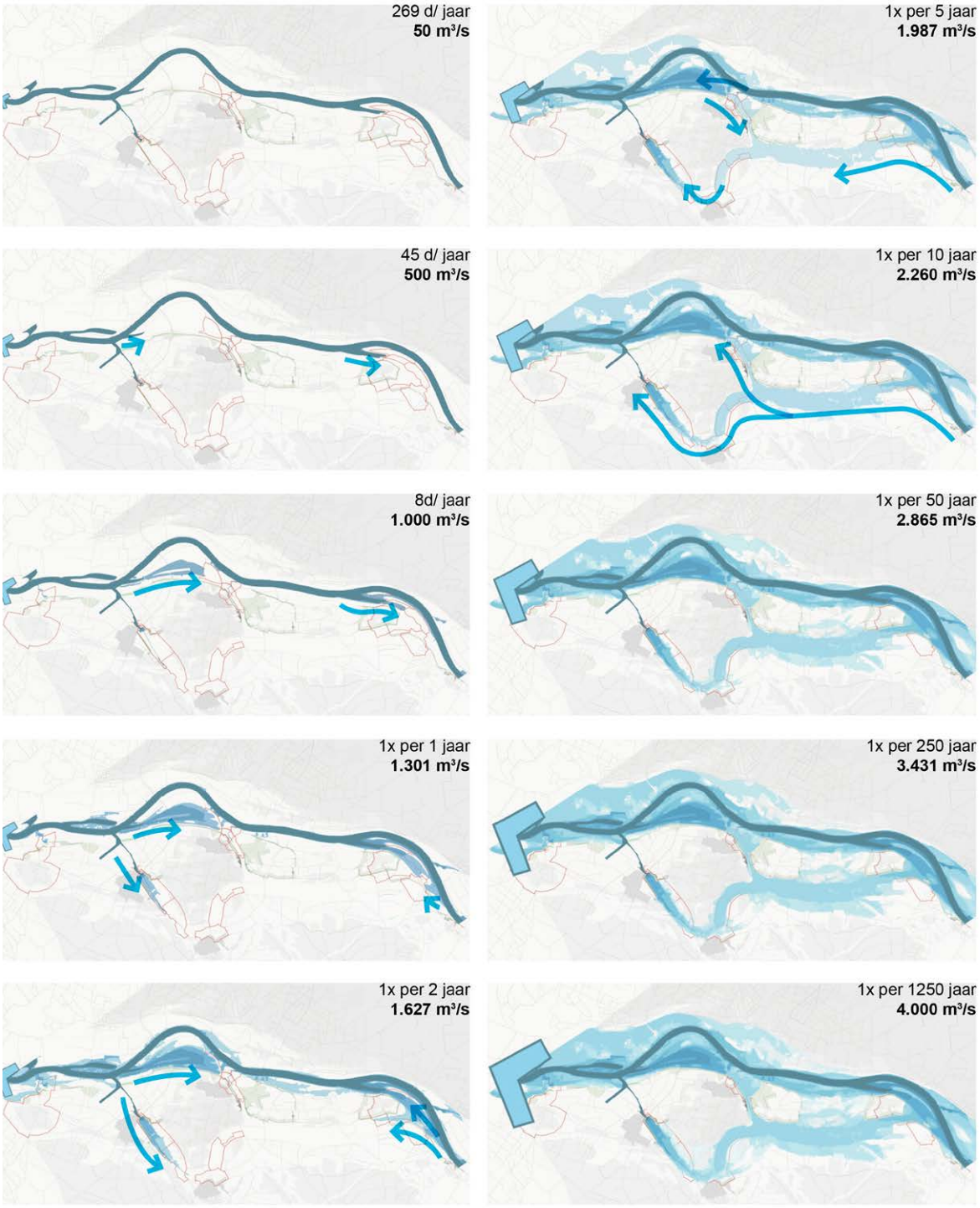
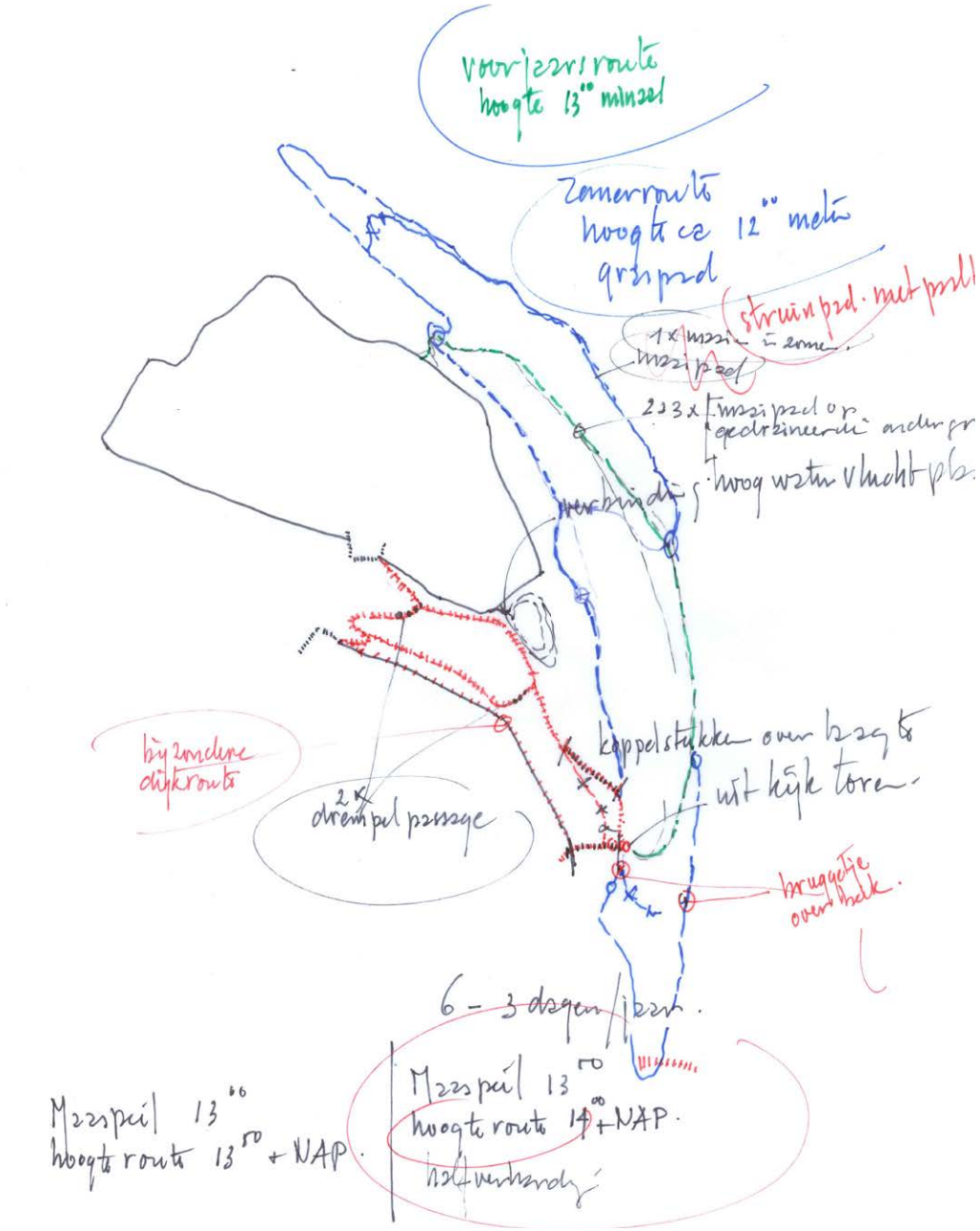


FIGURE 2 +
FIGURE 3

Sketch and drawings for determining a dynamic recreative path structure (recreatieve routing).

Based on the water calendar (*Maaspeil*), a dynamic path structure was created with different routes, such as the summer route (*zomerroute*), spring route (*voorjaarsroute*), special dyke path (*bijzondere dijkroute*) and a picketed roaming route (*struinpad met paaltjes*). These accordingord with the river's dynamic behaviour and an interactive experience of the dynamic river landscape. The goal was to provide different types of experiences over time. Some paths and small bridges (*bruggetjes*) that serve pedestrians and cyclists at average water levels will no longer be available at higher water levels. Stepping-stone crossings (*koppelstukken over laagte)* provide a final option for crossing inundated zones. The water calendar was used as a tool to play with different routes and their availability at different discharge levels, for an approximate number of days per year.



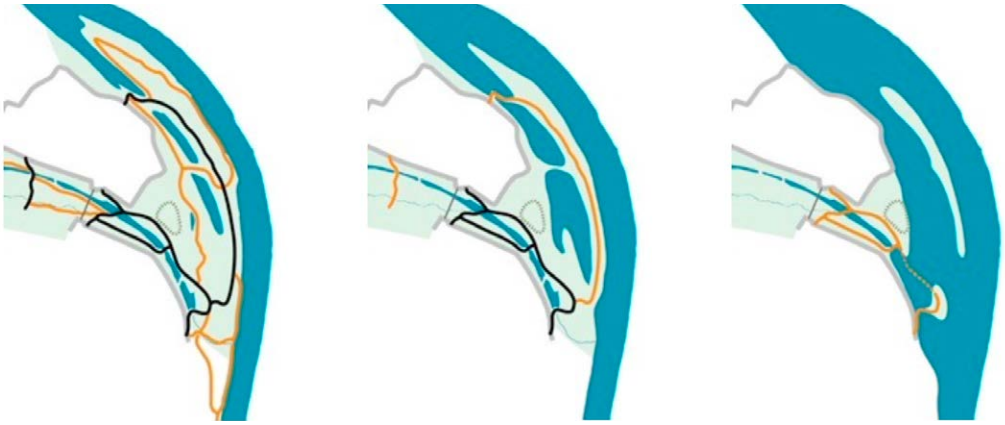
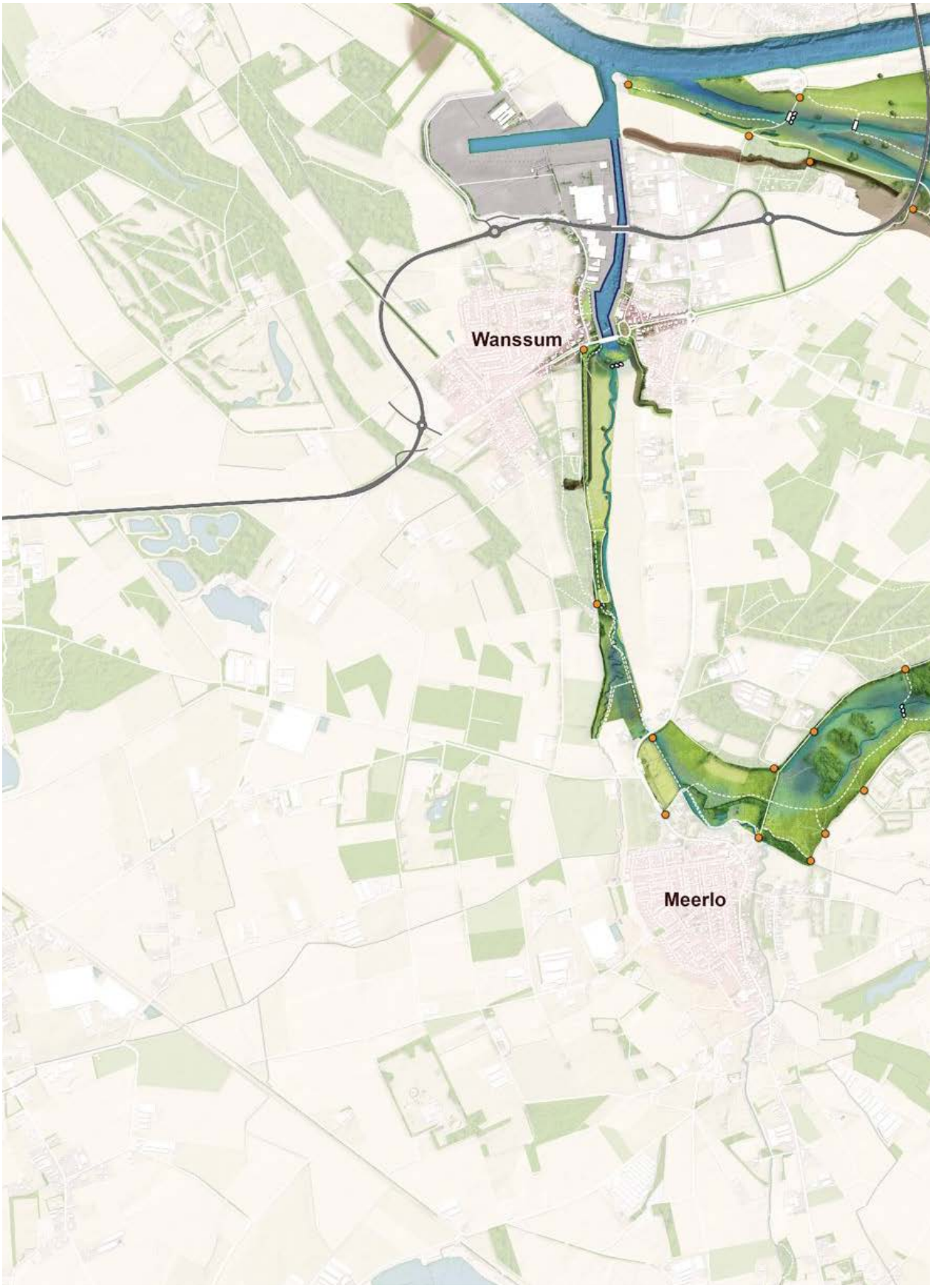


FIGURE 4

Plan drawing of the Ooijen-Wanssum project.

Blurred colouring is used to indicate the dynamic water level. Paths that will disappear under water during high water levels are dotted. This map focuses more on spatial dimensions than on the dimension of time. As for the principle of progressive change in natural landscapes, especially in river landscapes, there *can be no accurate* final project drawing of a morphological active fluvial landscape with continuously changing vegetation patterns. Rather, a combination of static and dynamic elements can be depicted so that the difference between dynamic and static elements is clearly represented.




Hoogwatergeul Wanssum
Blitterswijck
NATIONAAL PARK DE MAASDUINEN
Oude Maasarm
Ooijen
Hoogwatergeul Ooijen

FIGURE 5

Alternative plan drawing.

Result of a study to find better ways of representing the Ooijen Wanssum project (detail of Figure 4). In this map the constructed / designed layer is shown by digital drawing lines (hard constructions, elevation contours of excavation works). The unpredictable, natural landscape that will emerge on the basis of these conditions is depicted using a blurred, manipulated version of the aerial picture, suggesting how the area may develop naturally. This is a further development of this type of plan drawing that was first made for the Nijmegen-Lent floodplain widening project.

FIGURE 6

Photo of flooded paths near watchtower.

During floods with an approximate once per year recurrence, the watchtower is temporarily inaccessible. This contributes to awareness of the dynamics and power of water: the landscape is not always accessible via the same route.

(Photograph by Paul Poels, 2021)

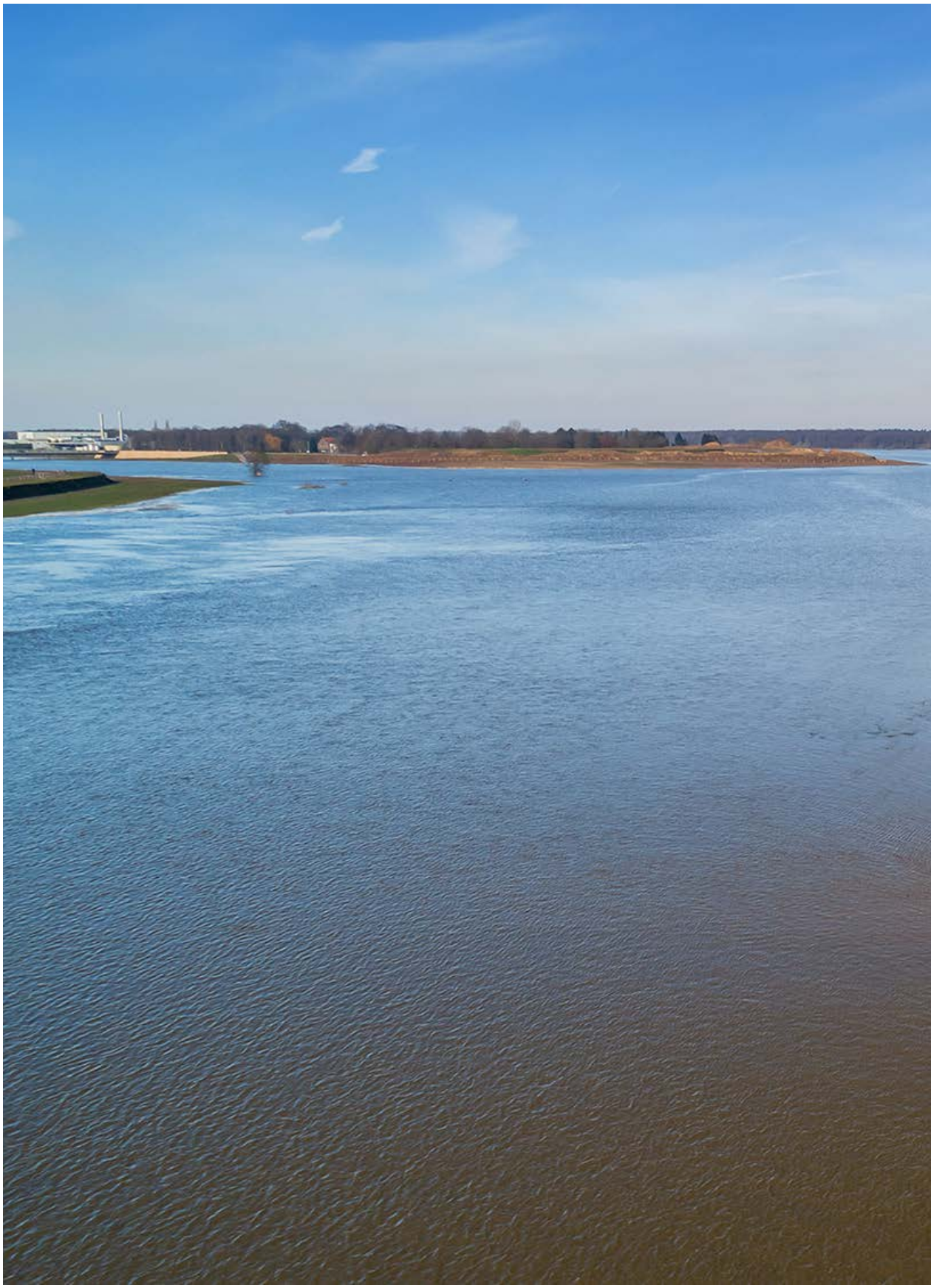
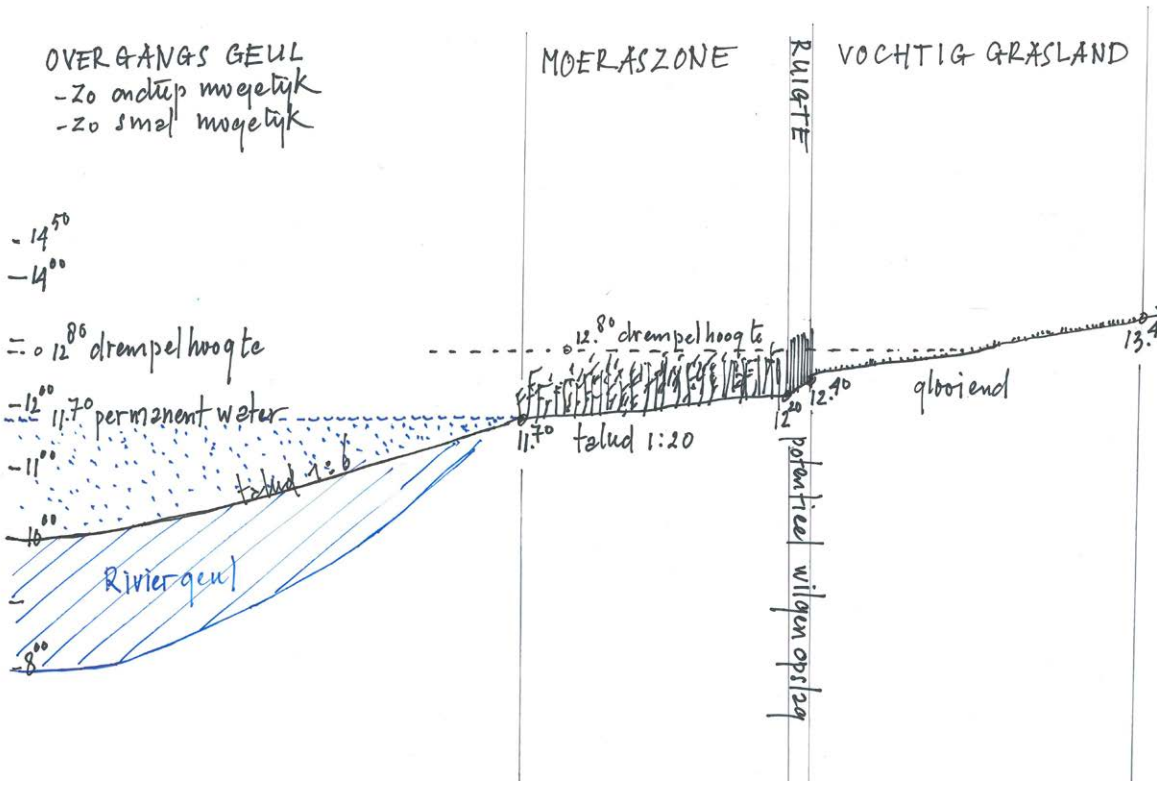


FIGURE 7
FIGURE 8

Sketch and drawing of dynamic vegetation management.

Sprouting willows (*wilgenopslag*) are a challenge in river widening projects. Over time, willows tend to colonize large areas that are supposed to stay open to keep the riverbed smooth. In the floodplain design, the water calendar was used to determine the extent of the zone in which willows sprout. It was then calculated that this zone was too extensive for maintaining the desired level of hydraulic resistance. This informed the design of a floodplain cross section with a distinct, relatively steep bank, minimizing the extent of the willow sprouting zone and generating a more attractive and manageable floodplain landscape



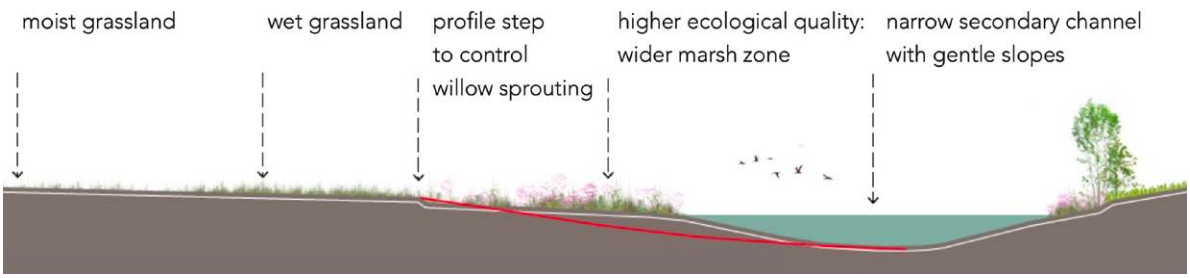


FIGURE 9

Diagram showing the river as a morphologic actor, using controlled erosion in the Ooijen-Wanssum floodplain widening project.

By removing stabilizing shoreline rocks, the natural process of erosion is reactivated. This allows the river to partially widen its own profile, which is both cost-effective and ecologically beneficial. The drawing attempts to capture all the stages in one drawing and shows the intervention starting a process in time. A natural process is given space, not through addition but through subtraction.

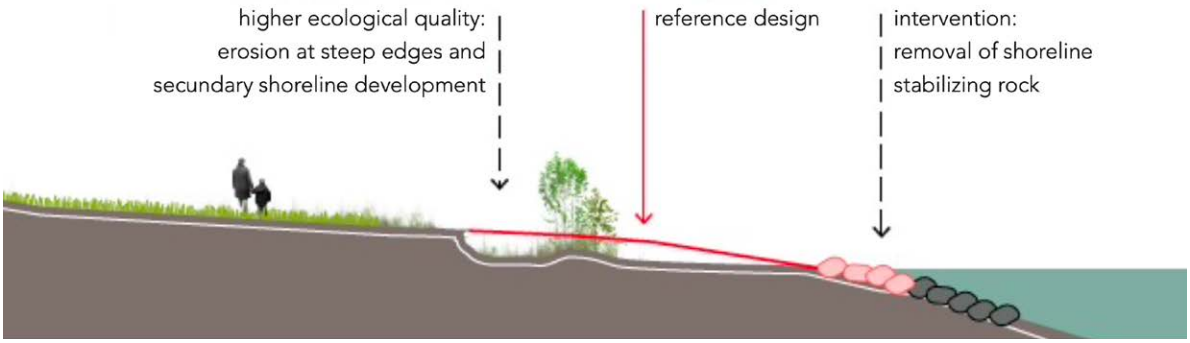


FIGURE 10

Riverbank erosion diagram for the Ooijen-Wanssum project.

This student exercise from the 2019 Drawing Time workshop conducted by TU Delft explores an alternative to drawing separate cross sections representing different moments in time. By projecting simplified versions of these sections in one diagram, the morphological changes become visible in a single time drawing.

(Image by Krit Thienvutichai, 2019)

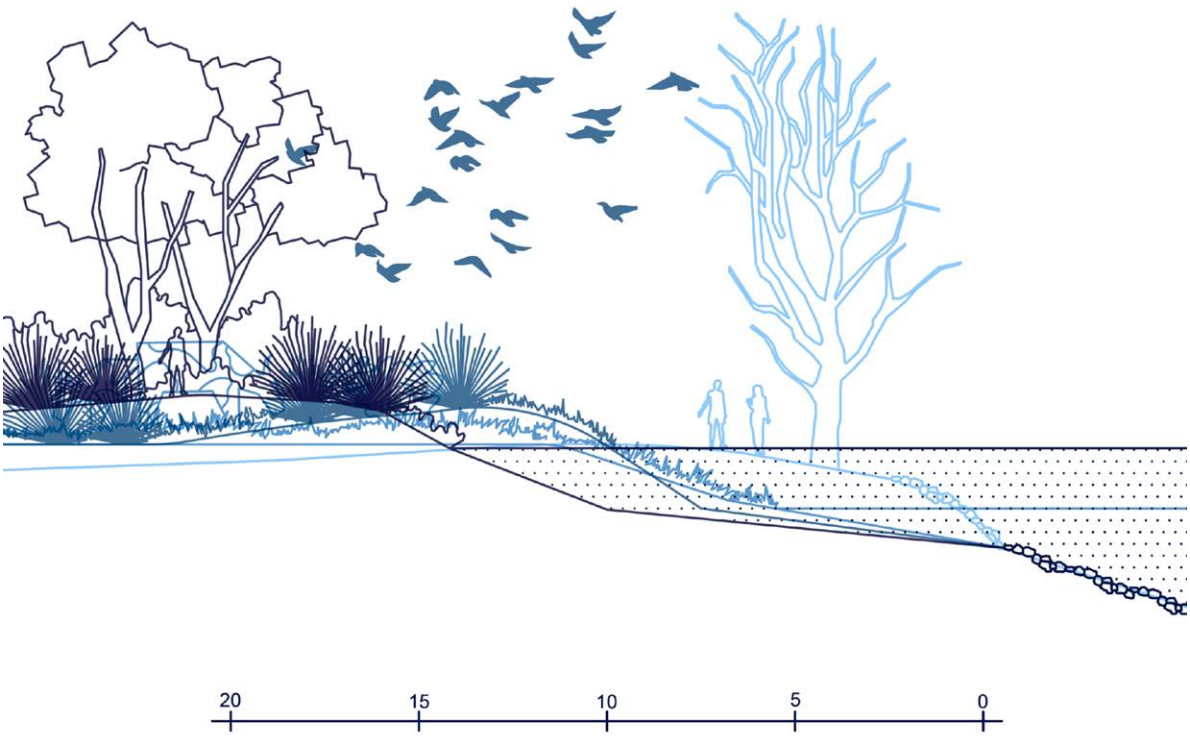


FIGURE 11

Result of the strategic morphologic intervention described in Figures 9 and 10.

Deliberate erosion was used as a strategy to develop a naturally shaped dike in part of the Ooijen-Wanssum project. Through time drawing it was determined how the intentionally unstable 2:1 slope would erode over time. In this way the extent of a buffer zone was determined, allowing enough room for natural forces to create an ecologically interesting profile but at the same time ensuring sufficient flood protection.

(Photograph by H+N+S Landscape Architects, 2019)

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The significance of time in the design of a public landscape

Exploring accepted, experimental and relational dimensions of drawing time

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Abstract

This paper revisits a built project to reveal a hidden and experimental ambition for a public space through drawing in time.

Behind the project's initial inception lay the designer's motivation to challenge, open and expand the consideration of time in the way in which public landscapes are invented, configured and received. As such, the project sought to attend both to the way in which time manifests as a design consideration through drawing and to the way in which time could be conceptually and experientially sustained in the afterlife of the completed work.

In the inevitable ebbs and flows of productivity and decision taking that ran through the project, the designer came to realize that the ambitions outlined above stretched beyond their client's comprehension of what the project could and should be. Instead, an aspiration to design "in time" became subservient to the client and stakeholders' focus on the material manifestation of the work as a visual object and to the project's public reception when it was deemed "complete". For the designer this meant that opportunities to expand design thinking into practices tied to the continuing and relational opportunities of the space remained disappointingly determinate and closed.

By revisiting the existing representations and by making new drawings that were more explorative and unburdened by the conditions of project delivery, new liberty was found, revealing a unique bond between drawing in time and the relational opportunities of the work.

Keywords

Drawing Time, TImescaping, Public Space Design, Relational Landscapes, Landscape Perception, Sensory Landscapes, Geographical Perception, Aesthetic Experience

DOI

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Introduction

As long as we structure our lives according to assumed parameters of a static space and a rectilinear time, we will be able to ignore or overlook, our thorough dependence upon the earth around us. Only when space and time are reconciled into a single, unified field of phenomena does the encompassing earth become evident, once again, in all its power and its depth, as the very ground and horizon of all our knowing (Abram 1996, p. 217).

An t-Eilean (The Island, Gaelic) is an open air space, 16 metres square, that occupies a central position in an educational campus in the Highlands of Scotland. The commission began in 2010 and construction was completed in 2015. The space unites sculpture, building and garden to form a unique landscape. Visitors experience An t-Eilean as a floating courtyard open to the sky with framed views to surrounding features of the landscape. The space is connected to the land by a slender timber boardwalk. As a project, An t-Eilean responds to questions of site and place by seeking to make manifest the distinctiveness of the highland landscape. A distinctiveness that, in the mind of the designer, hinges upon the contrast between the landscape's solidity (thick, gradual) and its atmosphere (faint, fleeting). The first design steps of the project trod a familiar path; plotting an orientation that would maximize a relationship with the sun whilst maintaining critical views back out into the wider landscape, in particular the mountain Ben Wyvis. Upon these foundational relationships with the wider world a finer mesh of more nuanced and time-based preoccupations grew that sought a more evolving and relational impetus for An t-Eilean as a project. In the writing that follows, the paper will address the way in which drawing supported the evolution of the design and the way in which it enabled explorations of the relational and time to converge, at the very least in the imagining of the project.

Context

Time's most compelling associations with our own sense of being in the world are undoubtedly puzzling and perhaps, for some, a utopian and fictional pursuit rather than a professional activity which is actualizing and real. In an attempt to determine the prospective dimensions of drawing time in relation to An t-Eilean (the project), the manifestation of time has been considered within this paper through the potential of the sky, light and shadow and to the representation of planting in time. Thus, An t-Eilean as a static and silent entity, that sought to draw in energy and make manifest the perceivable passing of time in the landscape within and around it, will be interrogated to understand where it might have succeeded and where and why its intentions fall short of the designer's ambitions.

Two sources offer an invocation as to the way in which time and space could be imagined as mutually sustaining entities as you read this paper. Firstly, in the final chapter of *About Looking*, John Berger (2009) writes of the significance of questioning the limits of a field and its seen and unseen beauty. As he lies in the field and engages with it as an "attendant" entity he wonders what lies beyond its enclosing sphere where "The wire around you is the horizon" (Berger, 2009, p. 199). With similar appeal for the design disciplines who deal with the affective realization of space through time, Nigel Thrift cites Humphrey Repton as an inventor of a "knowledge of disposition", able to "integrate broad lines and detail in order to produce aesthetic/affective effects which were more than their parts" (2008, p. 121). Thrift argues that knowledge and experience of site is a sixth sense that can sharpen our ability to comprehend what is really at stake as we shape the world around us. Of particular relevance to this paper is Thrift's reference to Repton's ability to develop *picturing practices* that represent "sites that are consciously meant to shift and change" (2008, p. 121). Thus, the idea that a public space could be "attendant" to the world around it

in the same way in which Berger's field is co-extensive with its context or in the way in which we might draw space as it shifts and changes in a way that unleashes its "thereness" (Thrift, 2008, p. 121) lies behind the motivation of the enquiry and the way in which time is represented through the drawings presented in the paper.

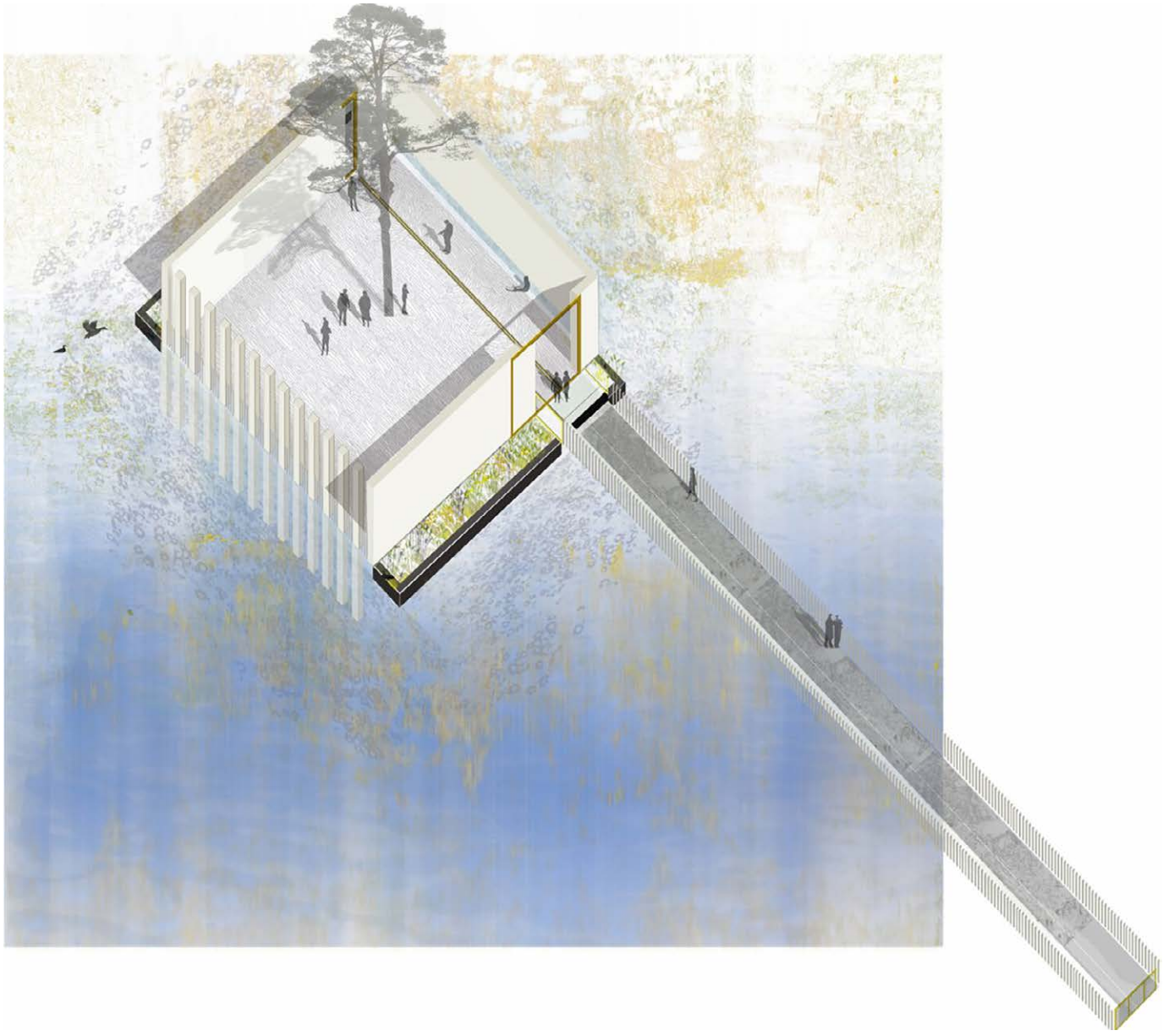

FIGURE 1 An t-Eilean: set in a loch within the campus. (Lisa Mackenzie, 2010)

When you step outside, your senses necessarily heighten. Exiting the threshold of your workplace or home, out you go, from A to B, and all of a sudden, the plethora of environmental stimuli that surround you increase and intensify. And yet, so often we advance through our working life in a state of distraction, too busy to look above us, to register the sky, to notice a shadow, to contemplate atmosphere, to appreciate the constant switches and changes around us. Many of us feel that in order to relate to our environment in a meaningful way we must exit the urban realm and the setting of our daily lives. An t-Eilean sought

to offer an alternative experience within the urban realm, in the immediate vicinity of workplaces, in the heart of a place designed for growing knowledge, where people are busy and distracted with the practices of the everyday. Although experiencing An t-Eilean offers a different contact with the environment to being in a forest glade or on a river's edge, the roofless space nevertheless "holds" visitors within its envelope, slowing people down long enough that they can register the passing of time. Figure 1 below is an early representation used to describe the idea of the project to the client. Although its depiction of time is not immediately apparent, the drawing was composed to convey the subtlety of relationships that exist between the bounding elements of the space (the walls) and its surroundings. Depending on the time of day, shadows soften the tectonic presence of the walls in the landscape as their existence merges into external planes of water or internal planes of stone. Although time is not represented directly, the intent of the drawing, through its texture and illusionary quality, is to draw the viewer into the possibility of An t-Eilean as an entity attendant to time: a space where you could actively register and unite with the changing atmosphere around you.

In the *Afterlife of Gardens*, John Dixon Hunt describes the "losses and gains in transferring 'landscape architecture' from painting or stage to a real topography" (2004, p. 84). The challenge being that one will never really know the way in which the visitor might behave within a designed and imagined space. Sharing Hunt's awareness as to the inevitable polysemic programme of a public space, An t-Eilean did not seek for its users to behave in a particular way towards it, either as a space or as an object. When its configuration first touched down on paper the intention was that it would allow for spatial discovery through a deliberate absence of programme. The way into the space, over water and then through the heavy portal of the northern wall, was designed to emit contrasting impressions of lightness and weight, the minimal aesthetic allowing attention, perhaps through a positive boredom, to inevitable interactions between form, materials and the atmosphere of the surroundings. Its siting in a mirror pool of water, replicating a secondary but dynamic reflection of form, An t-Eilean itself registers and traces time dynamically into its immediate planar setting.

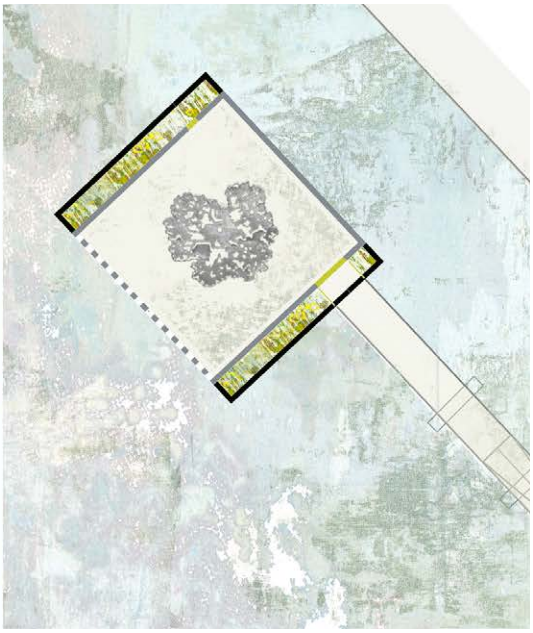

FIGURE 2 An t-Eilean.
FIGURE 3 Plan showing planting strips to the north and Drawing of the west columned wall. (Lisa Mackenzie, 2011) south of An t-Eilean's walls. (Lisa Mackenzie, 2011)

In Figure 2 and Figure 3, the representation of time is limited in respect of the design ambition denoted above. Although Figure 2 attempts to represent the qualities of winter light, it is likely that anyone viewing the drawing would need that interpretation to be made for them. Thus, the potential of An t-Eilean and its materiality and ideality is lost by failing to offer a counter drawing, as Repton might have done, to set the project in a different time, giving a different account of the atmosphere. The limitations in respect of evoking time in Figure 3 is determined by its omission of shadows which, had they been drawn, would have represented the unique agency of the space to draw and redraw its own outline into its context throughout the day.

In the environment of the campus, where people are largely confined indoors, within buildings designed to function determinately, An t-Eilean sought an opportunity to generate a different fitting-together of time and space. The landscape itself condensed into the form of a garden assigned to provide an experience of time that only a garden could, indeterminate in the exposure to so many variable and changing factors, but also reconciled through the simplicity of the sculptural courtyard form. Such an opening up of spatiality finds theoretical encouragement in the work of Doreen Massey and Chantal Mouffe: "The crucial recognition, from our point of view, is that the closure of structures is directly related to their a-temporality" (Massey, 2005, p. 42). In An t-Eilean, space, temporality and duration are opened up by designing an unroofed space where the visitor can interact with the movement of sun and shadow, with the highly varied and transitory presences and absences of the borrowed world around it. As a garden, An t-Eilean calls on the paradox of presence and absence, of open and closed, and of the embodied experience. After all "time is relative to the processes that shape it, the organism that experiences it" (Spirn, 1998, p. 89).

With these complex pursuits in the background, it seemed necessary that the form of the space itself should be straightforward and thus stage a minimal aesthetic. In this respect, the project draws on the origins of minimalism to offer a different kind of experiential interaction for the visitor and specifically the chapter by the artist Craig Staff in the book *Modes of Spectating* (2019). Here Staff's insights trace the way in which minimalism dealt with embodiment, ambulation and duration and the way "the experiential basis of the minimalist artwork entailed a kinesthetic exchange that unfolded within a set of spatio-temporal coordinates that were necessarily "real" or actual as opposed to being fictive or illusionistic" (Staff, 2019, p. 207). Emulating minimalist sensibilities, An t-Eilean's internal wall formations are rectilinear, perpendicular and repeating; formations achieved specifically through columns and pleats cast in situ as the walls were fabricated on site. These elements began to exceed their first drawn manifestation (Fig. 4) in the way in which they engage time when they were modelled three dimensionally (Fig. 5). The pictorial stills of the modelling process reveal tensions and movement generated by rhythms of sunlight and shadow that are held and intensified through the internal details of the space. An t-Eilean acts as an envelope and frame registering the slow passing of the day in the very fabric of the structure.

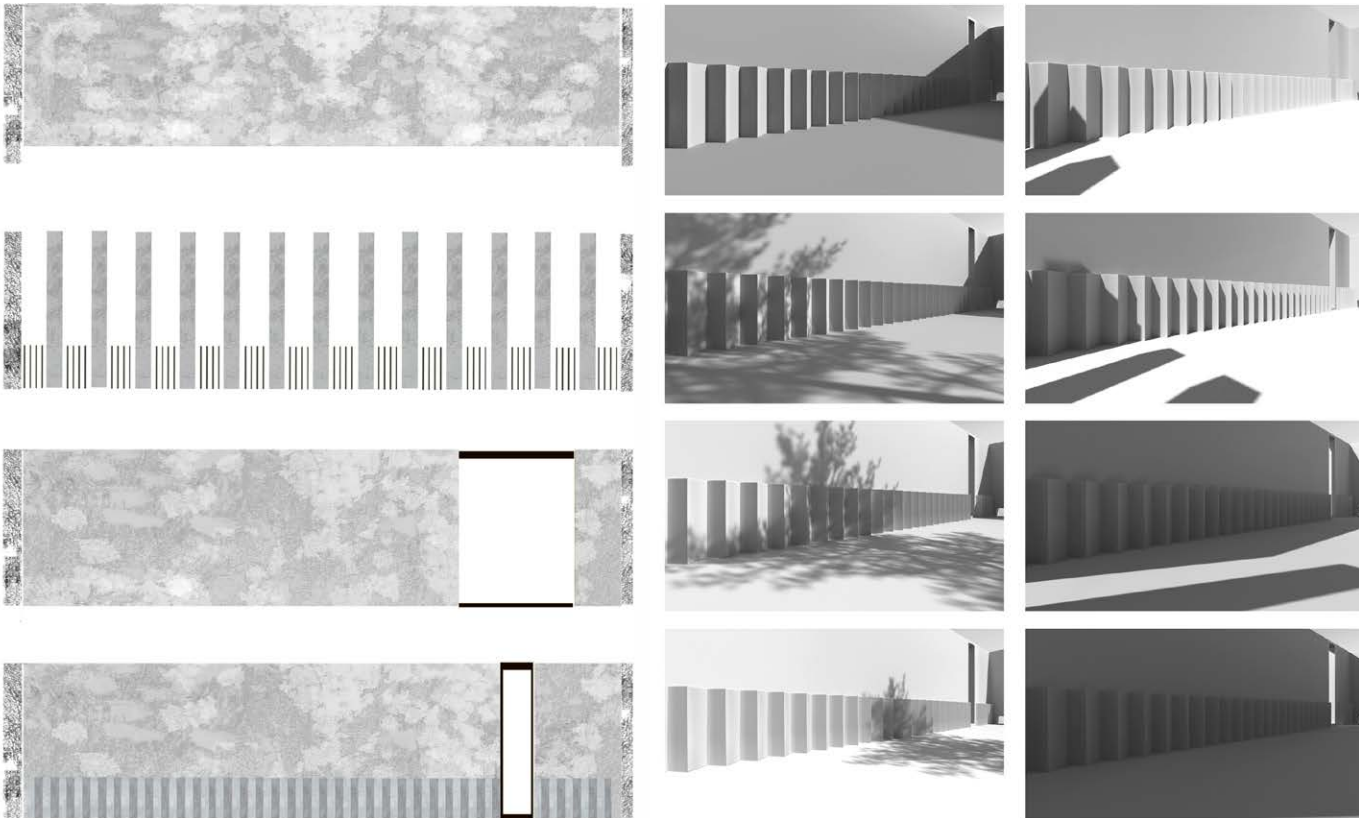

FIGURE 4 An t-Eilean.
FIGURE 5 An t-Eilean: wall form study in elevation. (Lisa An t-Eilean. Sunlight and Shadow Study: Mackenzie, 2010) north wall, internal concrete pleats and north portal. (Lisa Mackenzie and Lachlan Stariski, 2021)

Research

Although I had viewed time and the application of durational thinking as fundamental to the learning culture of the Landscape Architectural design studios that I taught, I had not deliberately tested my own assertions as to the significance of time in a project. Therefore, when the opportunity arose, it was vital that the space should manifest as a spatial experiment engaging design research to test the significance of time – the making of an interstice.[1] A space to counter existing landscape experience modalities and, as Staff (2019) puts it, "recast the categorical boundaries" that separate the "viewer from the viewed". (p. 207)

Clients do not often ask designers to make meaning or to meditate on what it means to be in the world. Very few clients, beyond asking for a maintenance plan that they can cost, ask designers to imagine the unfolding of a project through time, setting out a framework where its relational potential might change and progress as society itself evolves. In contrast, and at the extreme of timescaping theory, Vincent Ialenti argues for meaningful alternatives to "shallow time disciplines" where "forces of short-termism may seem so deeply rooted that, when reformers call for change, our guts tell us progress is impossible" (Ialenti, 2020).

1 Saskia Sassen's use of the term "interstice" (2016) is quoted in the text of this chapter. I would note that the term first came to my attention in the writing of Nicolas Bourriaud in his discussion of Artwork as Social Interstice in *Relational Aesthetics* (Bouriaud, 2002, p. 14).

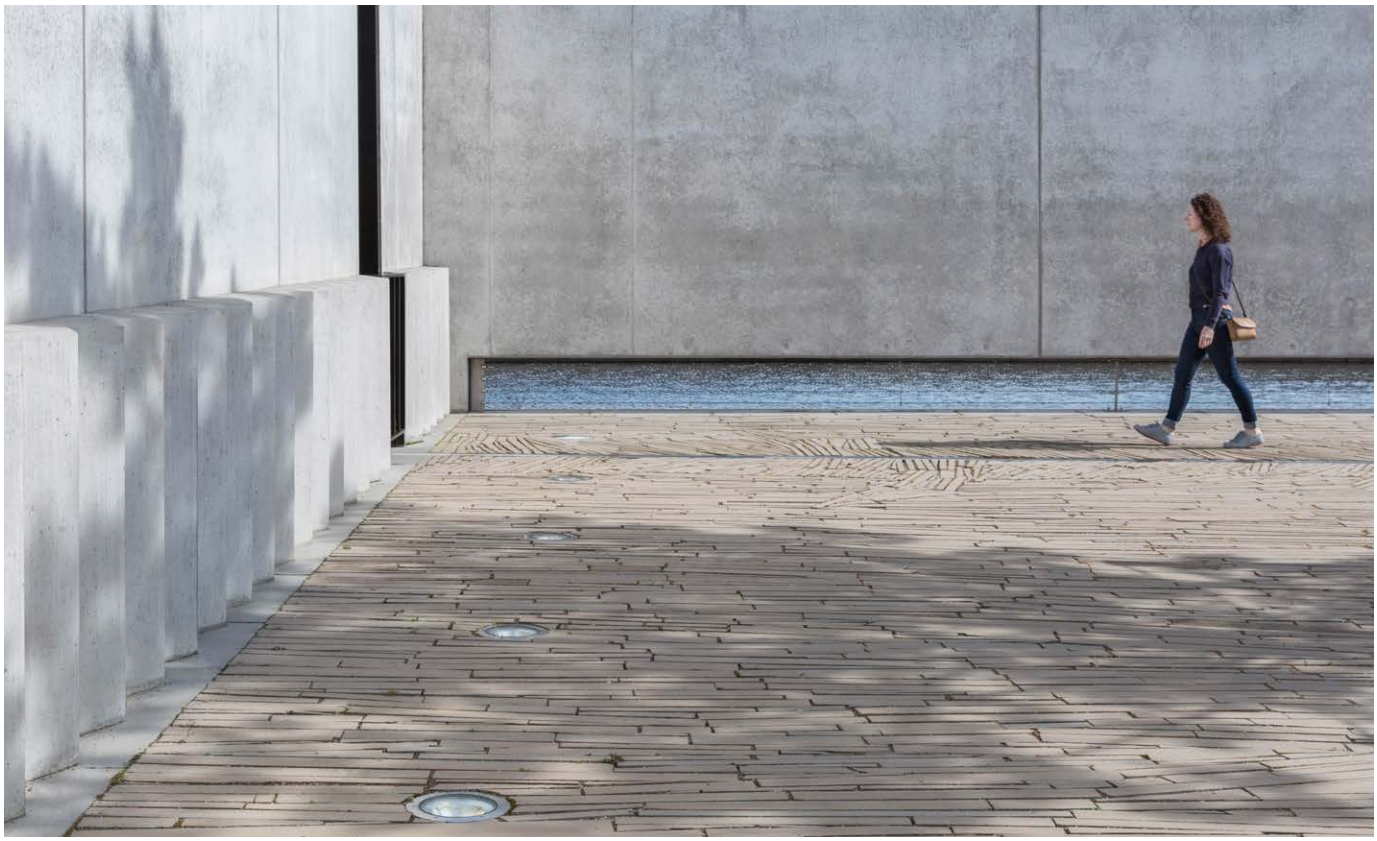

FIGURE 6 An t-Eilean. The slot in the eastern wall of the structure. (Gillian Hayes, 2015).

If we consider the professional practice of landscape architects today, although we may be well placed as potential reformers of time-based practices, it could be argued that we have been too timid in responding to the omission of thoughtful timespans in our work, or rather that we have lacked the means to represent the relational dimension of time meaningfully to society at large through our drawing practices. The following sections of the paper describe drawings that sought to relate to the earth, to the sky, to the elements, to atmosphere and to plants in time.

Drawing the sky, light and shadows in time

As light hits a landscape, it manifests in infinite ways. Sometimes it forms voluminous shapes that exist only fleetingly. The form of light changes as time moves forward and it has an inextricable relationship with landscape and with weather.

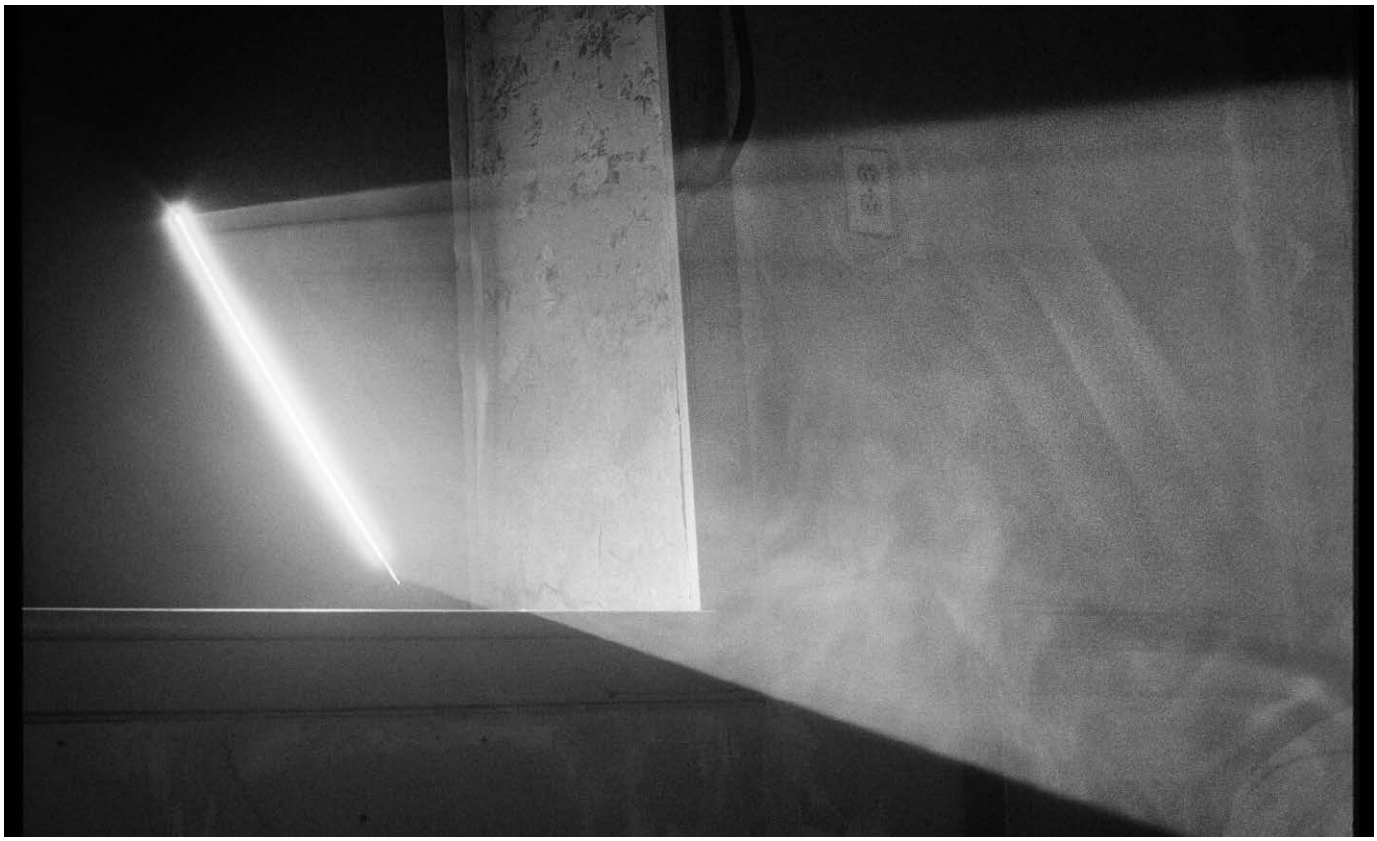

FIGURE 7 McCall, A. (1973/2018) Room with Altered Window. [Gelatin silver print]. (n.d.) Retrieved from: http://www.anthonymccall.com/prints[2]

The weather is dynamic, always unfolding, ever changing in its currents, qualities of light and shade, and colours, alternately damp or dry, warm or cold and so on. In this world the earth, far from providing a solid foundation for existence, appears to float like a fragile and ephemeral raft, woven from the strands of terrestrial life, and suspended in the great sphere of the sky. (Ingold, 2011 p. 73)

The structure of An t-Eilean was designed as a roofless box to hold light, shadow and colour and to make manifest changes in the weather from dawn, through twilight and into sundown. The way in which shadows grow and retract and finally dissolve into the night during twilight would find a presence in the space. Many of us may have been moved and captivated by artists who work with light, but it would be rare to hear a landscape architect talk directly to working with light and it would be difficult to cite representations. As the exercise of designing the volumes, absences and forms of An t-Eilean's walls progressed inspiration was sought as to the way in which light and time might co-relate through studying the work of artists in the California Light and Space movement, specifically J. Anthony McCall and his silver print image, *Room with Altered Window* (Fig. 7). Taking inspiration from McCalls' image, a slot was designed along the base of the eastern wall, running the length of An t-Eilean. It is with no regret that the majority of the project fee awarded to the commission was spent making this feature work structurally.2 Light from the east, captivating and unusual in the Highlands of Scotland, now ebbs up into the internal space through this slot (Fig. 6). At sundown, from outside An t-Eilean, light becomes a glowing absence along the floating eastern wall (Fig. 8). Illustrating that this characteristic has not been artificially manipulated and that no artificial lights are on inside the space, a glow of fleeting orange announces twilight's presence to the external world.

2 I hired my own Edinburgh-based structural engineer Tim Heatherington to work with me on some of the more complex intentions of An t-Eilean. The large multi-disciplinary 'official' engineering practice within the wider project team for the campus had told me that the eastern wall slot was not possible.

FIGURE 8 Twilight glow, eastern wall slot. (Gillian Hayes, 2015

The simple line drawings below (Fig. 9) represent sequential studies of light and shadow on the west-facing wall of An t-Eilean as the sun moves in the sky from the east to the west, lighting different parts of the structure. The drawings were made to experiment with the potential of ambient light conditions as light flowed through the southern entrance portal and to chart the changing consequences for the viewer inside the space through drawing in time. The selection of concrete as a material is attributable to the dependence of the concept on having a flat, uniform and lightly toned backdrop as a canvas to capture the qualities and movement of light. At sunrise in December light casts a blurred shadow of the Scots pine through the south entrance portal. A zig-zag cast by the columns forms in the morning light; the Scots pine breaks this line. The shape of the south portal is projected across the space in a thick fuzzy line that stands in contrast to the sharpness of the north portal. At 11 a.m. the zig-zag line of the columns spans outwards; the tree shadow oscillates around the north portal. On a September morning the pleated concrete creates a darkened replica of its form in shadow and thus the pleats dominate the space. The north portal is cut in half diagonally by the shadow projecting from the corner of the space. By 2 p.m. the shadows of the columns move across the floor of the gallery and the north portal appears to sink deeper into its concrete setting.

The images below (Fig. 10) represent the accurate positioning of shadows for 15 December 2021. In order to express the potential of winter sunlight in bringing the space to life, it was not considered enough to represent the mere dimensions and proportions of shadows. Therefore representations anticipating the way the spaces might transform and indeed the way shadows may bring colour and warmth to An t-Eilean were layered in.

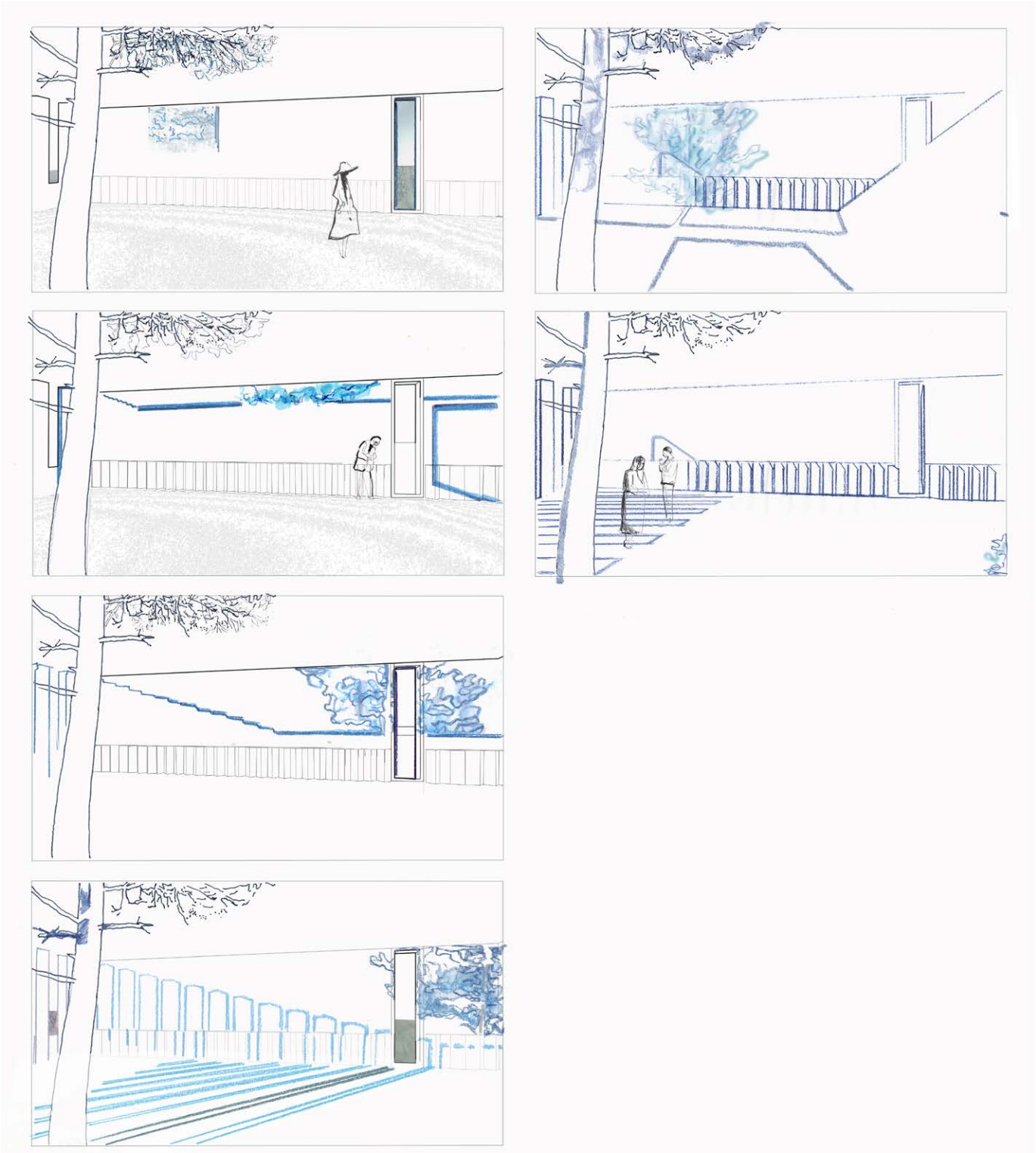

FIGURE 9 The north internal wall of An t-Eilean: six studies of shadows and chiaroscuro. Left-hand side drawings in December, from top to bottom, 06:30, 09:30, 11:00,12:00. Right-hand side in September, from top 08:00, 14:00. (Lisa Mackenzie, 2021

Shadows became rationalized once the outlines of their projections were determined geometrically. Eventually, the human experience of a world given, literally, by virtue of shadows – vibrant, imprecise, colourful and complex, resistant to geometric reductions because of diffraction – was relegated to the doubtful realm of subjectivity. (Perez-Gomez & Pelletier, 2000, p. 149)

The intention was to communicate the contradictory and unexpected occurrences inherent to working *with* the sky and with falling and rising darkness through time. In his book on twilight, the Scottish writer Peter Davidson describes our relationship to the lingering light of the day, noting that "the absolute adjustment of the eye to all phenomena of light can compensate and adjust what is perceived to a remarkable extent – an idea that sets up a tension between the claims of painting and photographs of twilight to represent justly what is *seen* as opposed to what may objectively be present" (Davidson, 2015 p. 24). The four images below were deliberately rendered to evoke a degree of uncanniness, generating a level of atmospheric uncertainty that would call on An t-Eilean's visitor to be alert to the power of their surroundings and thus consider them with deeper contemplation.

FIGURE 10 Four December shadow and atmosphere studies. Top left: 09:30, Lower left: 10:30, Top right: 14:00, Lower right: 19:00 (Lisa Mackenzie, October 2021)

Considering planting "in time"

In the January chapter of *Wood and Garden*, Gertrude Jekyll writes of a day of

thin mist; just enough to make a background of tender blue mystery three hundred yards away and to show any defect in the groupings of near trees. No day could be better for deciding which trees are to come down; there is not too much at a time within sight, just one good picture-full and no more. (Jekyll, 1981, p. 23)

In many ways, space–time configurations in planting are somewhat predictable. If we are accustomed to working in a particular location, we will be able to make general assumptions about growth rates and flowering durations and the carrying out of key maintenance interventions so that our design intentions are fulfilled. The quote from Gertrude Jekyll above opens up another important consideration of time, however: the potential interrelations between plants and the highly variable atmospheres that may share space with them or manifest around and through them. Jekyll in this statement captures in words a chance occurrence in time where the landscape *reveals* something to her. It is an alluring example of how decisions about planting and its maintenance may benefit from a wider acceptance of indeterminacy and be undertaken with patience and an open mind. In the context of this article, I see drawing as offering an important extension to this way of thinking.

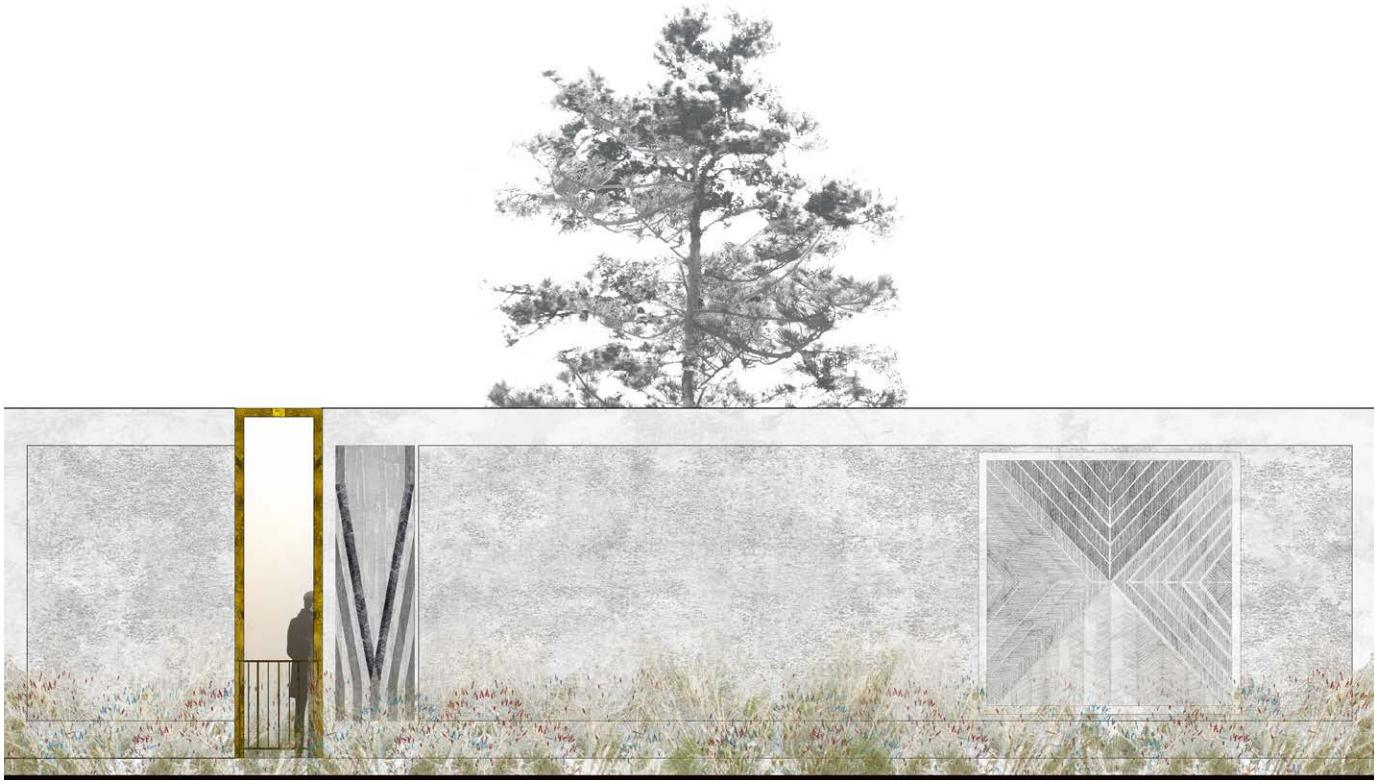

FIGURE 11 North-facing facade of An t-Eilean. Material study: grass, concrete, bronze. (Lisa Mackenzie, 2011)

Apart from the *Pinus sylvestris* positioned in the centre of An t-Eilean, the other plant species in the project are grasses. Grasses to inhabit the north and south shelves of An t-Eilean (Fig. 3) were chosen for the qualities of their durational switches through the seasons: from vigorous sky-surging green in spring to yellow blurs and hazes flushed with red in late summer, to the transparent golden veils they create in a border arrangement in the winter. Figure 11 was drawn in 2011. As in Figure 1, drawn at a similar time and described above, it was my intention to represent a space attendant to time. At this stage of the project, I proposed two concrete castings in the northern wall that made associations with time.

The square casting on the right is suggestive of An t-Eilean's intention as a space to draw in the four seasons. The casting on the left demarcates different intended constituent mixes in the concrete that would weather at different times, so that the banding intensifies in contrast over time. Neither of these features made it to construction, overruled in terms of additional time, challenge and cost for the contractor to implement on site. Planting was intended to generate a textured "veil" in front of this wall. Figure 12 is a photograph of the grasses on the north shelf of An t-Eilean at full height and in full girth in September 2016 before they began to fade back in the winter.

Figure 13 below, illustrates the way in which the planting design was initially considered in a matrixed sketch elevation. The larger grids in square intervals of 200mm and the smaller grids (for smaller plants with finer details) drawn in grids of 100mm. Once the grasses were selected for their form, structure and seasonal interest they were separated into the positional layers of the border. The drawings show plants in one season, at their full height in late summer. They evidence a predominance of consideration for form and structure which I now consider a failing in the way that I was using drawing to test the selection of species. Planting requires a complex plurality in terms of design approach, which I experimented with after the project was complete. The failing in the image below is that the vital association between plants and sky, with their backdrop, with light and shadow, is here overlooked.

FIGURE 12 North-facing facade of An t-Eilean. Grasses in summer contained in a shelf above the water. (Gillian Hayes, 2015)

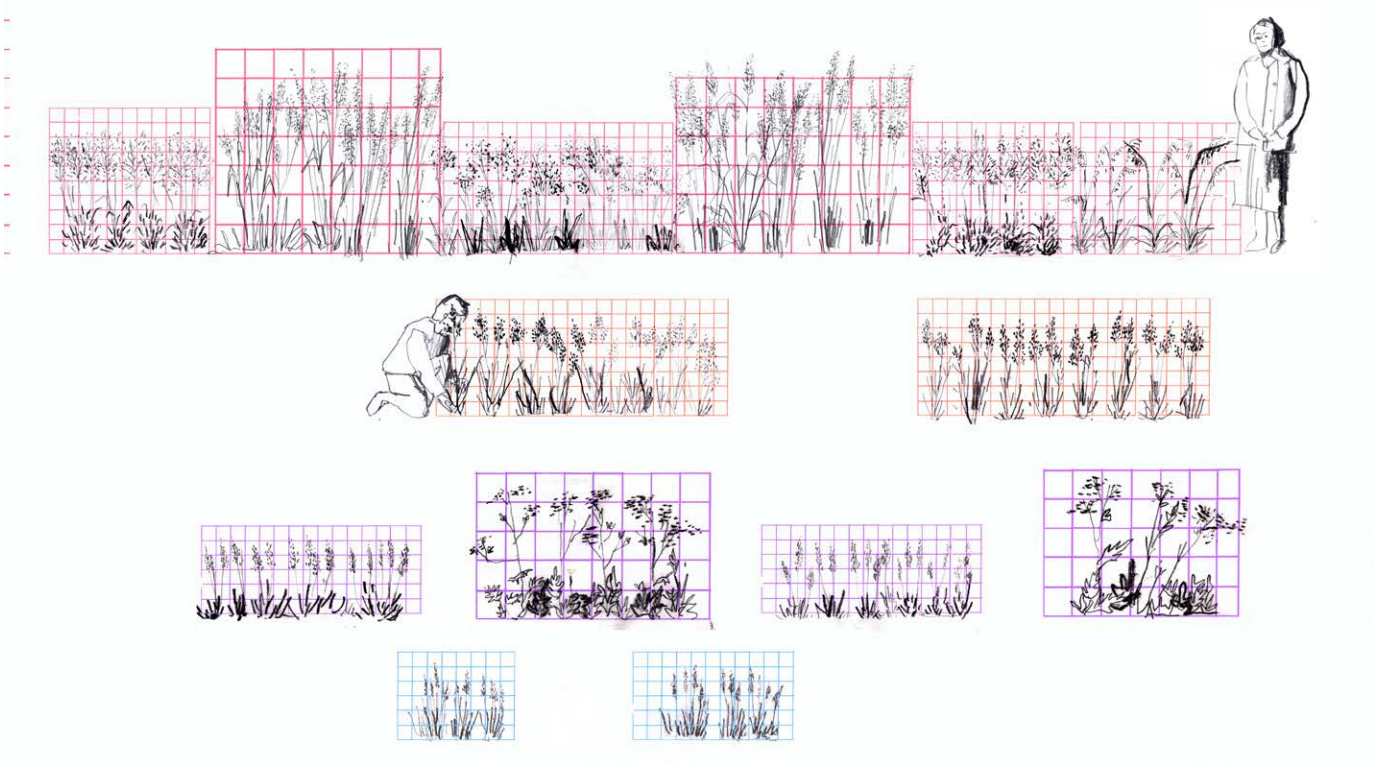

FIGURE 13 Scaled planting studies, the layers of the grass border. (Lisa Mackenzie 2012)

FIGURE 14 Layers of the border. Studies of colour and species interaction with light in late summer. (Lisa Mackenzie, 2013)

The drawings in Figure 13 were superseded in my personal catalogue of the project by the new drawings below in Figures 14 and 15. By "personal catalogue", I mean the drawings that I feel "hold true" or hold lessons in terms of the way in which I might approach design problems in the future. In Figure 14 and Figure 15 I was retrospectively interested in the way in which details of the grasses' inflorescence, panicles, spikes and racemes appear out of the blur holds much relational potential for the viewer and consequently demanded to be represented *beyond* a diagram. The studies of *Deschampsia cespitosa* 'Schottland' in Figure 15 examine the switch in the flowering character of the plant and the consequential change to the way in which it engages with its immediate atmosphere and conditions of light. In delivering the project for construction I did not consider making these drawings because I felt my client would not have understood the ambiguity and abstraction inherent in the drawing approach. As I wrote in the introduction, I felt bound by professional activities that were accepted as "actualizing". This tension highlights a challenge that we face in the representation of planting in time. How do we communicate clearly so that our ideas can be fulfilled on site and yet also represent more anticipatory and relational associations to our clients and stakeholders so that they can better understand a landscape's unfolding in time?

FIGURE 15 *Deschampsia cespitosa* 'Schottland': Study of spring (left) and summer (right) relations between form and atmosphere. (Lisa Mackenzie, 2021)

If we return to Jekyll's words above, we find guidance and meaning as to how we might draw planting in and through time. In Landscape Architecture our representations of planting tend to lack communication of associative volume and are still predominantly presented in plan with little representation of the durational and relational switches that occur as the year transitions through the seasons. This missed opportunity is difficult to comprehend as making a planting plan necessitates careful thought as to the emergent and associative patterns of growth and decline that occur both in the plant itself and in the immediate patch of earth and sky that the plant inhabits. Figure 16 illustrates studies of the grass borders that seek to represent interactions with the ground and sky. Planting arrangements, even when composed of a single or limited numbers of species, are dynamic and ever-changing and it is this cyclical mutability that makes designing with plants so endlessly fascinating.

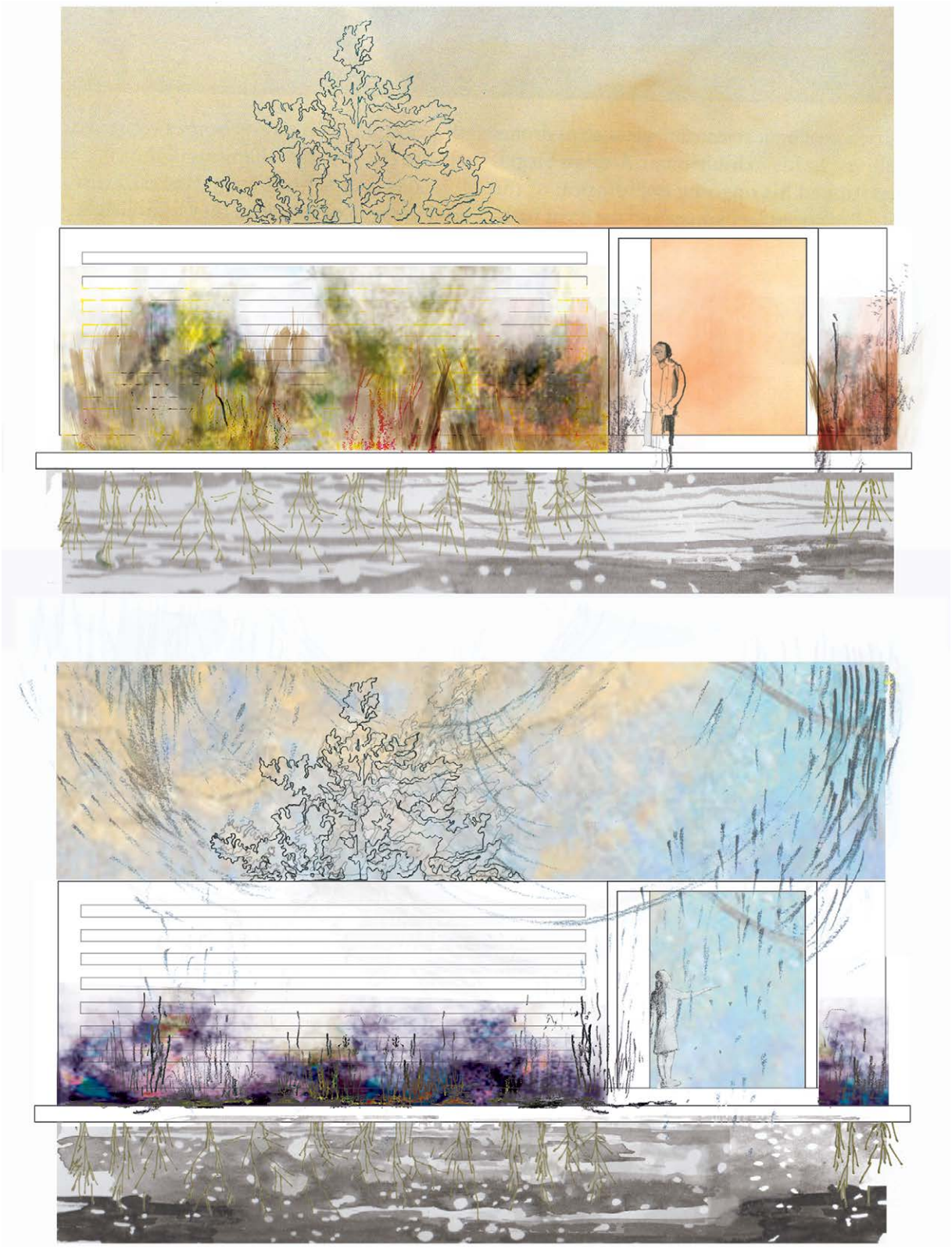

FIGURE 16 Late summer (above) and winter (below) interactions with the ground and sky in the grass border. (Lisa Mackenzie, 2022)

Plants have an inextricable relationship with the environment that unfolds and refolds through time, just as humans do. The scale of this relationship is intimate, and highly discernible. Therefore as designers we can take small but attentive steps in representing the opportunity to draw in time.

With a different intention for the way in which planting would contribute to An t-Eilean, the *Pinus sylvestris* situated in the centre of the space was chosen to introduce a very significant presence that could be further intensified through the mirroring of its shadow onto the concrete walls (Fig. 9). What these drawings do not capture, however, is the way in which *Pinus sylvestris* will drop twisted needles of three to eight centimetres onto the splintered stone floor[3]. The significance of this is that the needles will deaden and muffle the sounds of the space as the years go on. The representation of the idea in a drawing is an activity that I intend to revisit in the future.

Conclusion

To nourish design's potential for the transitions, however, requires a significant reorientation of design from the functionalist, rationalistic and industrial traditions from which it emerged, and within which it still functions with ease, towards a type of rationality and set of practices attuned to the relational dimensions of life. (Escobar, 2018, Preface p. x)

In this paper I have sought to offer a series of open reflections on the significance of time in a built project and to explore accepted and experimental ways of drawing that might allow us to bring time and the relational into a meaningful union. The reflections seek to embed practice on the ground into the theoretical context of calls such as Escobar's (2018) to reorientate our practices towards the relational dimensions of life or to Ingold's (2011) to be alive to what is going on in the world around us.

Those of us who design and conceive of projects in the landscape encounter proximity to the earth in ways that require us to situate our judgements very directly in and of the earth. In revisiting and making new drawings I have sought to carefully register that proximity but also look beyond it to understand more about the way in which time might meaningfully manifest "through" the drawing in a form that is perceivable and registerable. I have come to understand, through considerations of the representation of sky, light, shadow and planting, that drawing can help us to manifest time's "affectiveness", where we are attentive to the meaning of "affect" as an alteration, a change or an influence. Time in the landscape is never an ending. The act of drawing, from the moment the mark-making device touches the paper is similarly an open process that often grows out of itself, responsive, iterative, self-generating, involving tens or even hundreds of tiny, internalized decisions happening in the mind of the illustrator as the drawing grows, many of them intuitive and beyond conscious thought.

Making a landscape, as we learn from Gertrude Jekyll, deserves a similar openness to the processes of our own "involvement" with the landscape as it evolves in space and time. This necessary involvement cannot be oversimplified by including a rote timeline at the base of a drawing. This would degrade the opportunity of what it means to draw in time. The opportunity is rather embedded in growing knowledge about the landscape through a multi-dimensional involvement with "thinking in time" that oscillates between analysis and knowledge of an existing place, the materialization of new landscape conditions and the pictorial processes that we engage to register the prospect of change.

3 The floor of An t-Eilean is constructed of Caithness stone, "horizoning" long slender pieces of stone left over as paving slabs are cut for Scottish streets.

Making a drawing that successfully talks of time will have necessarily developed a sense of "affectuality" in the designer – cause, affect, effect fluctuating in the thinking approach as ideas are translated to paper. Receiving a drawing that successfully talks of time, will have an affective influence upon the person that receives it, leaving space for them to interpret it through their own subjectivity. To put it simply, the conclusion to this paper is that time can be given form and content through the making of drawings that are unafraid to harbour both the disposition and influence of time in the landscape. This means taking care as to the way in which drawn arrangements are made between visible and non-visible entities in the environment that sustain the planet, and the tensions and unions that exist between them as they form and subside in time.

As a consequence of writing this paper, these considerations will now always flow through the conceptual underpinnings of the way in which I approach a site. Not necessarily to change it but also as a means to record and understand what is already there that I may have failed to notice. I endeavour to continue to look for something "else" in the landscape by making drawings that consider the way in which time manifests, and in doing so, challenge my own regular lapses into obliviousness to the beauty and fragility of the world around me as I go about my everyday life. I will harbour hope in acknowledging that across the spectrum of disciplines tasked with attending to our external world, it is perhaps our inherent sensitivity as Landscape Architects to cyclical time and our capacity to relate to the environment that brings us up close to a sense of what could be done, through drawing, on the ground and through time in the planetary crisis.

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‘The Future is just around the Corner…’ – The construction of urban narratives through temporary supergraphics

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Abstract

Drawings play various roles in (and in-between) the processes of design, construction and the continuous use and appropriation of space. This article explores large drawing elements positioned at building sites. It discusses how decision makers, developers, planners and design professionals actively use such representational means to create site and project narratives for the site preparation and construction phase. Two projects and sites are presented here in order to illustrate and explore the role of large on-site supergraphics during site transformation. The main aim is to explore how they configure specific conceptions of time. The first is Ōtautahi: An Origin Story, a large comic strip mounted on the hoardings of the building site for a new convention centre in Christchurch, New Zealand, as part of the city’s post-earthquake rebuild. The second case is a ground mural in the Danish town of Køge featuring a map in a section of a temporary urban space called The Space of Time that is part of the town’s harbour transformation. The analysis engages with theoretical perspectives on visual culture, drawing and space – in particular urban comics, cartography, mapping, site thinking and transformation. It sheds light on an emerging phenomenon in contemporary urban culture – one characterized by hybrid authorships, ambiguous aesthetics and time-space constellations.

Keywords

Urban transformation, Narratives, Mediatization, Murals, Supergraphics, Comics, Cartography, Temporary art, Placemaking, Building sites

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Introduction: when the future is just around the corner

Redevelopment and large-scale urban transformation projects take time. Designers, planners, agencies and public authorities can employ a variety of strategies for continuously communicating, visualizing and contextualizing the (desired) changes, including newsletters, meetings, exhibitions, homepages, social media and flyers. They also have an opportunity to provide information on the ground. The building site – its fences, edges and borders – is more than a daily workplace for construction professionals. It is also a liminal zone between the construction work and the city. Along these edges we accept the logic of the functioning city being disrupted and pulled apart for a certain period (even for a long period, in the case of major developments and infrastructures).

Building projects and construction sites are an embedded part of urban life. That is not new. However, increasingly, it is the transient zones, where construction meets continuous urban flows, that are being actively communicated and performed. A display of what is to be built or what is already under construction, featuring basic facts such as what, who and when (companies involved, deadlines, primary layout and functions) has become a standard feature at construction site entrances. But other visual typologies may also be positioned in these settings, often in formats that are hybrids of commissioned artwork, branding, information material and physical demarcation. At times, these site-oriented temporary elements relate to – and resemble – the drawn, designed projects and their specific visual language. However, as is the case in this analysis, they also provide new and alternative constellations of drawn representations *in situ*. Here, the tool of drawing is used to bridge different time spans and narratives. This points to a need to consider the role drawings play in phases in which the ordinary design work is often considered finalized and the construction is beginning to take shape. In these phases the focus is on the mode of production and design decisions are most often communicated as 'done and dusted' to the outside world.

This paper begins with the analysis of two large-scale visual displays: namely, a long comic strip mounted on a construction site hoarding, and a horizontal ground-level mural covering a public square. Both projects are part of major urban transformation projects. The Ōtautahi: An Origin Story project (2017-2019) was displayed during the construction of the Christchurch Convention Centre (Te Pae), as part of the rebuild of the city of Christchurch (New Zealand) following the devastating 2010-2011 earthquakes.

a *b* *c*

FIGURE 1 Sections of Ōtautahi: An Origin Story. The panels have a particular focus on the post-quake rebuild. (2018)

The second drawing discussed is a large ground mural – a map that is part of a space named *The Space of Time* (2014-). This drawing is part of the harbour transformation in the Danish coastal town of Køge, south of Copenhagen. The development consists of a 20 to 25-year development process which began in 2009. What happens when these visuals enter the public realm as interfaces which belong neither to the specific sketching and design work, nor to the material construction of the built structures themselves? They are artefacts possessing their own visual language and role, inhabiting the transient zone of construction and transformation taking place on site. Communicative constructions of urban futures affect both space and

mediatization (Christmann et al., 2020) and how narratives concerning sites are selected, cultivated and distilled (Beauregard, 2020).

a

b

c

FIGURE 2 The 2030 project plan. The large painted graphic creates an entrance point to The Space of Time and the harbour development. (2015)

Drawing time: Design representation, temporality and emerging sites

In this article, the complexity of the *becoming* space (the site of construction and its activities) is the focus for a discussion on time and drawing(s). This is less about design drawings in a traditional sense. Instead, it is about considering drawings as interfaces that frame project communication and placemaking efforts through visual narratives. Most often, professionals produce and negotiate their design drawings off-site. Drawing content is informed by site visits, and by considering data on local conditions, but the visuals rarely have a direct physical relation to the site. This 'cleaving of field and work' (Emmons, 2011, p. 128) is a consequence of modern modes of production (Forty, 2000, p. 30). 'Projection' and 'production' belong, in most cases, to separate spatial spheres (Braae, 2015, p. 284). However, if project materials – such as plans and visualizations – are positioned *in situ*, they co-produce and engage with the space, as part of the site's material reality. How can we understand such on-site representations in relation to both spatial production and the construction of specific desired narratives and time perspectives? What ideas of past, present and future can we experience through these elements, and what do they do? How is time drawn, who draws it, and what does it result in?

Ichnography, comics and supergraphics

The two projects represent two well-known drawing typologies, the multi-frame comic and the ichnographic ground plan. Both drawing types have long traditions within visual culture and come with different sets of properties and connotations. The term 'ichnography' refers to the creation of a ground plan. The original term, first used by Vitruvius, comes from the act of tracing and imprinting a ground plan directly on the ground (Emmons, 2011, p. 119) and is a combination of the Greek word for tracing or outlining *Ikhnos* and the term for writing *graphia* (Pinto, 1976, p. 35). The making of 'footprint plans' as a site-based practical and ritual practice (Emmons, 2019, p. 21) developed further through the invention of new techniques and media (Pinto, 1976). Despite being a representation that can hold large amounts of data, the plan drawing is not an ideal drawing to represent temporal development, unless presented in a serial form (Van Dooren, 2017, p. 224). The plan as a projection of a desired future defines an end result or goal (Corner, 1999, p. 94) and needs additional information to convey something about processual aspects. Multi-frame comics, on the

other hand, are sequential and time-based representations (McCloud, 1994). As with storyboards, illustrated timelines, and film media, the viewer connects the frames into a continuous narrative flow. Comics theorist Scott McCloud uses the term 'closure' to describe the process in which the viewer connects the comic panels into a storyline, 'observing the parts but perceiving the whole' (McCloud, 1994, p. 63). Additionally, time indicators such as clocks, movement lines, sound expressions and text positioning the action in time, are prominent in comic strips. The scale of the two examples *in situ* exceeds the constraints of a comic book or plan drawing on a table. Similar to the original meaning of ichnography, they are drawings made or positioned on site, using the existing surfaces. They can be regarded as examples of supergraphics, a term describing the use of large graphics in architectural settings. The supergraphic has its origins in the pop art and architecture of the late 1960s (Juanes, 2018; McClelland Morris, 2020) and has since developed into a recognizable feature of the urban environment used for wayfinding, branding and decorative purposes (Adams, 2018). Supergraphics, as specific combinations of architecture and graphic design, are omnipresent in today's urban fabric, although they are often overlooked in research (Mikhailov et al., 2020). In this article, the two visuals are described as supergraphic elements due to their scale, their direct relation to a site and their obvious graphic concepts. Their locations add perspectives on supergraphics as storytelling tools in redevelopment settings.

a *b*

FIGURE 3

a. Aerial view of Christchurch CBD. The outlined area shows the convention centre site and its location in the city centre. (Google Earth/ Image 2021 © Maxar Technologies, 2021).

b. Christchurch Convention and Exhibition Centre. The site plan outlines the position of the facility and the adjacent functions and areas, such as the Ōtākaro/Avon River and major cultural facilities. (Illustration: Ōtākaro Ltd. | Woods Bagot | Warren & Mahoney | Kamo Marsh, 2017)

a *b*

FIGURE 4

a. Søndre Havn in Køge. Aerial view of the harbour development area.

b. Søndre Havn masterplan. The illustration shows the masterplan as published in 2011. (Illustrations: Køge Kyst and Vandkunsten, 2011)

Approach

Based on initial observations indicating that project visuals placed on site seem to reflect an active strategy in promoting specific time-narratives, this cross-case comparison looks more closely at the appearance, background and intentions behind these two initiatives. The aim is to focus on how temporal narratives are created in the visuals themselves and in their relationship to their context and how they can be conceptualized and point to an emerging field. To do so, the analysis comprises discussion of the drawing techniques, their cultural references, history and theoretical perspectives, supplemented with information on the local contexts of the projects, the drawing content and its background. The project material was collected during site visits in the period 2015-2022. This on-site field work has been supplemented with publicly accessible project descriptions and reports, websites and social media posts. Follow-up correspondence with project managers and local professionals provided additional data and clarification as well as project drawing material and preliminary sketches.

Ōtautahi: An Origin Story

The Ōtautahi: An Origin Story project (designed by cultural activist and self-styled 'un-artist', Felicity Jane Powell) features 115 metres of images on sections of the 400-metre hoarding surrounding the new Te Pae Convention Centre in Christchurch Central City. Ōtautahi: An Origin Story sets out narratives and information from the past, present and the future of the site, and the city in general. In particular, the city's reconstruction after the two devastating earthquakes in 2010-2011 plays a major role in its timeline. The work was commissioned by Ōtākaro Limited.

According to Powell, the idea of telling these stories was to share knowledge about the city and the site and to initiate a sense of a 'gathering space' and to narrate a 'superhero story' of the city (Ōtākaro Limited, 2017). The panels include 'selfie-spots' that invite members of the public to pose and share their images on social media. In addition to the physical on-location project, the anoriginstory.co.nz website displays the 18 panels as well as additional information about the project's development and content.

The narrative begins with a legend about the creation of the Southern Island of New Zealand (where Christchurch is located). The subsequent segments describe the main values, which, according to local Māori tradition, are to be incorporated into the new convention centre.

The middle section narrates the impact and redevelopment following the two major earthquakes that hit the city in 2010 and 2011 focusing on the new 'superpowers' (panel 6) and 'a city on the rise' (panel 12).

Moving towards the future, the story returns to the convention centre project under construction behind the hoarding. The frames focus on a recognizable perspective view of the convention centre and provide a tour into and around the auditorium.

a-b.
Panels 1-2:
Ōtautahi: An Origin Story.

The narrator, Koha, introduces herself and begins the storyline with a legend about the origin of the South Island of New Zealand.

(Drawings: Felicity Jane Powell/anoriginstory.co.nz, 2017)

c.
Panel 4:
Manaakitanga (charity).

Panel 4 features an explanation of one of the main values from The Convention Centre Narrative, used to describe the importance of hospitality. Different modes of transport that have been crucial for travelling to New Zealand through history are depicted.

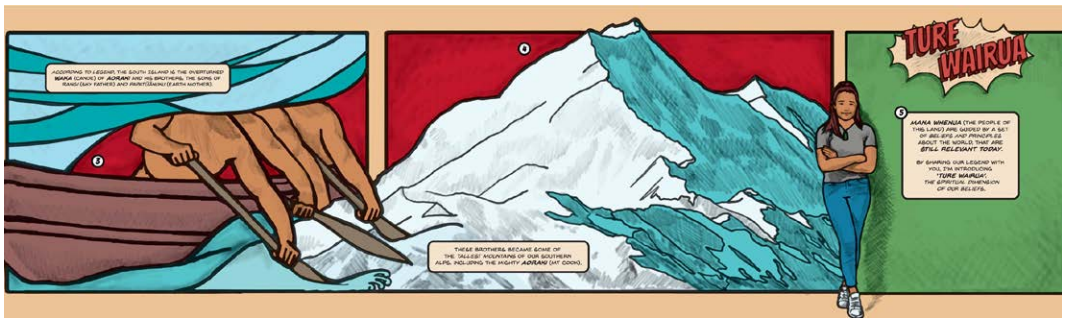
(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

d-e.
Panels 6 and 12:
The earthquakes.

Panels 6 and 12 narrate the dramatic events of the quakes and the following rebuild. The sudden and extreme event of the earthquake is illustrated with dramatic jagged lightning bolts and large yellow action bubbles. Rūaumoko, the god of earthquakes, volcanoes and seasons (panel 6) is shaking the ground and 'his kicks set the earth shaking' in the belly of the earth mother. The strong 6.3 magnitude earthquake hit the city at 12:51 on 22 February 2011 and the centrepiece of panel 6 is a large clock tower displaying exactly 12:51, referring to the fact that clocks did actually stop working. Time becomes immediate and concrete.

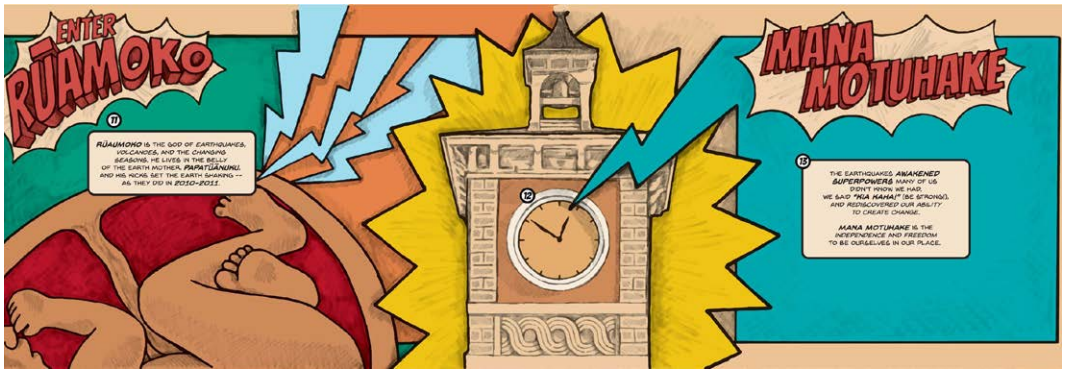
(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

a



b

c



d

FIGURE 5 Ōtautahi: An Origin Story

e.
Panel 12:
The earthquakes.

Panel 12 features a drawing of a demolished 1870 building that was located on a corner close to the Te Pae construction site

(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

f-g.
Panels 8 and 13:

The illustrations refer to well-known elements and places realized in the rebuild period, such as the striped 'street sheep' and the Dance-O-Mat, a popular open-air dance floor just around the corner from the construction site.

(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

h.
Panel 11.

Found structures and artefacts from archaeological excavation as messengers from the past. The earth cracking open in panel 11 and the bulldozer breaking the comic frame (panel 9, Fig. 2) are examples of movement and action, damage and demolition as temporal evidence of the devastating disaster.

(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

e

f

g

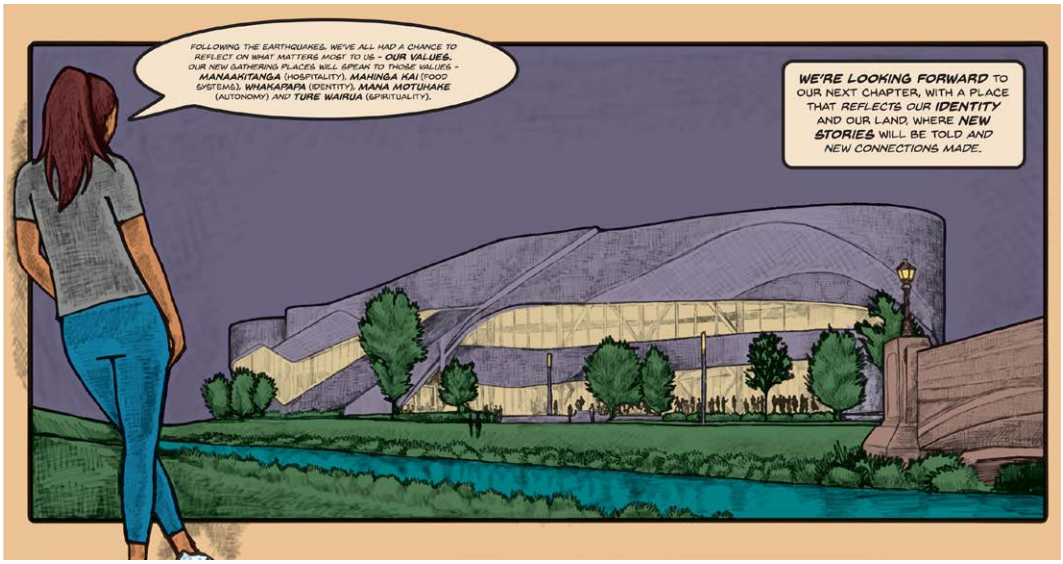
h

i-j.
Panels 14 and 15:

The panels transport us to the 'not-too-distant-future' of the city and its new 'gathering place on the horizon', the convention centre.

(Drawing: Felicity Jane Powell/anoriginstory.co.nz, 2017)

i



j

Telling time - From legends to insta-moments

Both the drawing style and the superhero narrative in Ōtautahi: An Origin Story refer to the well-known formats of graphic novels and comics. The inherent sequential structure of comic series is also clearly evident in this case. Different timescales are combined to narrate the city's story. Although the focus is consistently on the relations between human beings and place, the storytelling shifts in time and space and between different histories of Aotearoa (New Zealand), the city of Ōtautahi (Christchurch), and the recent Te Pae construction site itself. Traditional legends are followed by the sudden event of the earthquake. Personal stories from the creator's perspective and direct messages asking the viewer to share stories, are interwoven into the timeline with 'take a photo here' and hashtag labels.

The different temporal horizons and the transition between them are communicated by the way the graphic elements and 'iconic signifiers' (Fraser, 2019, p. 8) are positioned. The shapes and figures cross the borders of individual frames to illustrate time progression and change. For example, in the retelling of the creation of the South Island and its mountain range, the wavy pattern of the ocean segues into the mountain peaks in the next frame (Fig. 5 a-b). A multitude of references to things and places that had disappeared or appeared are incorporated into the panels. Visual and text-based descriptions of what is *not* present anymore affect both the way the present and the past are understood. Reappearing artefacts are also used narratively to link the past and the future, such as the discoveries from the archaeological excavations taking place in in context of the construction site work (Fig. 5 h). Narratives of the future are focused on the new convention centre building and panels 14-17 picture the finished convention centre and the conference activities expected to take place inside.

In his seminal book *What Time Is this Place* (1972), urban planner Kevin Lynch depicted how time and change manifest in our spaces and practices. He sketched two ways of considering the passage of time: as cycles and rhythms, and as alterations, ruptures and changes (Lynch, 1972, p. 65). Both types are inherent in both the controllable and the uncontrollable elements of our lives and environments. These diverging time conceptions, some belonging more to perspectives of the *longue durée*, others to perspectives of absolute eventual character, are linked and combined in *Otautahi: An Origin Story*. From the legend of land, the history of the city, its damage and reconstruction, to the specific building project and personal stories, different temporal narratives are nested and incorporated into one storyline. As a time drawing, the comic strip reflects an 'urban assemblage' of narratives and memories (Dittmer, 2014b, p. 499) or even a type of archival collage (Venezia, 2010, p. 190) with its arranged fragments of stories, figures and artefacts.

FIGURE 6 Te Pae Convention Centre: View from the Ōtākaro/Avon River Precinc. (Illustrations: Ōtākaro Ltd. | Woods Bagot | Warren & Mahoney | Kamo Marsh, 2017)

FIGURE 7 Proposed landscape concept plan from Christchurch Convention and Exhibition Centre Outline Plan Submission: Urban Design and Landscape Statement March 2017

Superhero city and hybrid hoardings

Stories featuring a superhero in action within the urban environment are well known. The 'superhero' in this case is the city itself. However, a close tie is made in the storyline between the city and its inhabitants. In terms of the Christchurch rebuild, this hero story depicts a challenging and messy situation, one which is nevertheless met with hopeful and proactive responses.

Political geographer Jason Dittmer points out that comic strip heroes are typically pictured as 'righteously violent' and protective of a good cause (Dittmer, 2017). In this case, however, there is no personified evil to fight, but rather a dramatic event resulting in a 'cataclysmic awakening' (Powell on anoriginstory.co.nz). The aim is rather to gather and combine encouraging narratives of place and citizenship. Critical responses to the rebuilding process, and the convention centre in particular, have been voiced in public. These include issues concerning the need for such a centre, the envisaged scale, as well as a lack of citizen involvement (Stylianou, 2015). More generally, as might be expected, the rebuild has also been a contested topic (Bennett et al., 2014) and the issues raised are not given space within this storytelling process. While the website text mentions the 'controversial beginnings' of the convention centre, the focus of the panels is on the broader history and culture, the rebuild as a collective effort, and the future facility as something that synthesises aspirations for the city. In its appearance, on site as well as virtual, the story generates a construct shaped by multiple and diverse narratives, from Māori myths and traditions and architecture history, through to contemporary urban subcultural references, personal anecdotes, information about facility, and project branding.

The aesthetic and style that may be experienced in the drawings, colouring and wording of Ōtautahi: An Origin Story are remarkably different from the design and language in the overall convention centre design presentations (Fig. 5 i-j). The colourful comic-inspired aesthetic, as well as the fact that the physical part of the project is mounted on the hoardings, instead creates a direct line of reference to the large quantity of graffiti, murals and street art that has emerged in Christchurch.

FIGURE 8 Artwork by Richard 'Popx Art' Baker (2011)

FIGURE 9 Artwork by Vexta (2015)

Street artworks have become prominent urban statements in Christchurch in the aftermath of the earthquake. (Photos:Lindsay Chan, Watch This Space - watchthisspace.org.nz)

Celebrated as a 'street art city', with mentions in the Lonely Planet guide, the subcultural art scene has become a principal tourist attraction (Woods, 2018; Anderson, 2019). Ōtautahi: An Origin Story is not a street artwork in its original form. Meticulously curated, permissioned and commissioned, and in its physical version printed on two slick exchangeable sets of PVC canvas, it fits rather into the category of advertising material – albeit with content of a more hybrid character.

As a drawing and a process, on site and online, *Ōtautahi: An Origin Story* does not actively engage in the actual *design* of the convention centre site, either in terms of the building or its surrounding landscape. On the other hand, as a representation, it goes beyond direct replication of the existing project drawing material. Rather, what is created may be described as a temporary, reconfigured and interwoven site narrative, positioning the final design signature in relation to selected relationships, stories and nested time perspectives, all unified by the graphic novel concept. Ōtautahi: An Origin Story functions as both a physical and a narrative buffer while the city is being transformed.

The Space of Time

The Southern Harbour in the Danish town of Køge is currently undergoing a major transformation from an active industrial harbour into a new, mixed living and working area. The development of the 15.2-hectare area, to be completed by 2030, is led by the consortium group Køge Kyst. The first step in the development plan is 'Phase Zero –The Life Before the City' that includes a cultural 'thread' with temporary urban spaces. It connects the city centre and harbour district. Phase Zero is a strategic testing and activation phase for generating attention and activity in the period before the construction commences. Moreover, the programme contains a set of strategic visions, plus a time schedule for the development and a final masterplan for the year 2030. The blueprint reveals a final status featuring three- to seven-storey building blocks, a clearly defined system of open spaces, and updated recreational facilities in the water and beach areas ((Køge Kyst 2011).

FIGURE 10 The Thread. The cultural pathway through the harbour transformation area in Køge. (Illustration: Køge Kyst,2015)

FIGURE 11 Aerial view of The Time of Space and its surroundings. The Time of Space and its large map are situated in the middle. (Illustration: Google Earth, 2021)

The temporary 'Phase Zero' spaces are located along 'The Thread' (Tråden) through the harbour area. This consists of a narrow pathway meandering through a mix of empty lots and still active businesses. Information signposts and panels about the transformation are distributed throughout the harbour. Five temporary urban spaces have been under development since 2011. These are, for the most part, located on sites which are intended for development in the later phase of the development, thereby reflecting more of a semi-temporary approach and character.

The temporary urban space known as Tidsrummet, *The Space of Time* (2014, BOGL/EVM Landskab), marks the entry point to the cultural path that then proceeds into the harbour area. On a vacant corner site, a 400 m^2 version of the masterplan has been hand painted on the ground. A dot accompanied by the text 'you are here' indicates the viewer's position on the map. A wavy line of thin metal poles with information panels mounted on them marks the edge of the square. Throughout the course of the project period, the information on these poles, which covers matters such as overall plans, event information, construction progress updates, archaeological discoveries and real estate promotion will be regularly renewed.

FIGURE 12 The masterplan 2030 at 1:100. The hand-painted plan outlines the square that creates the entrance to the cultural path through the harbour transformation area. (2015)

a

b

FIGURE 13 a-b.. The information poles. Panels mounted along the map-square feature a variety of information, from real estate promotion to archaeology. (2015)

a

b

FIGURE 14 a-b.. Information panel and play area. A large info panel and a playground area are located opposite the square (2015)

The square with the plan drawing acts as a forecourt and introduction not only to *The Space of Time* but also to the entire pathway that runs through the harbour. The final details of the painting were partly decided on site, based on sketches, and then hand painted on location. The graphic of the plan resembles a simple baseline plan with layers of streets, building blocks, trees and two types of green areas.

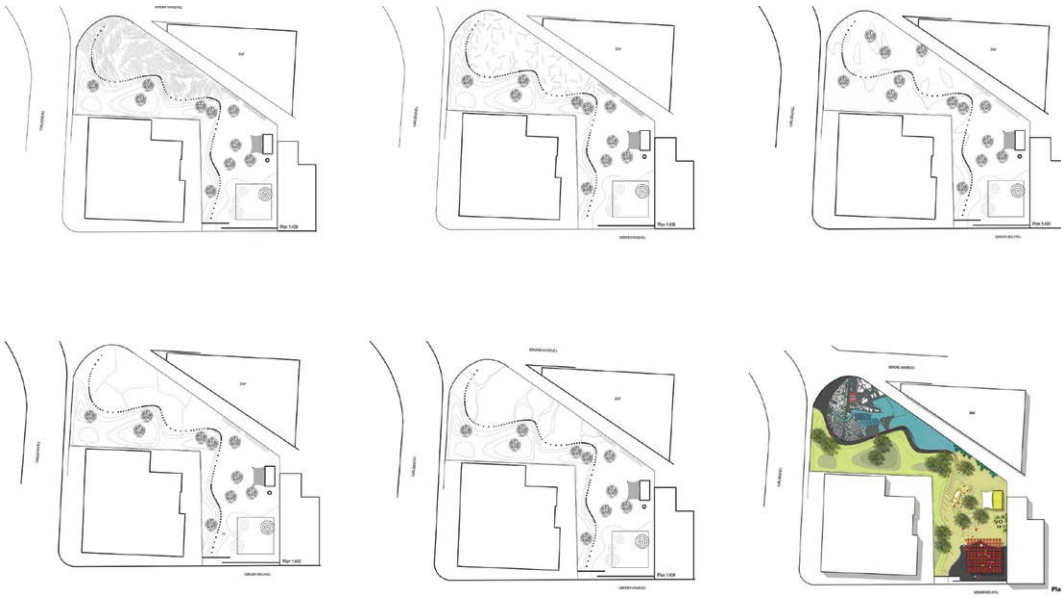


FIGURE 15 Sketches and final The Space of Time plan. The decision on the map concept was taken after a series of sketches had been made testing different decorative patterns. The map-square was then suggested as a good starting point for taking groups on guided tours across the harbour area, and as an important element of Køge Kyst's publicity work. (Illustrations: BOGL + EVM landskab, 2013)

The masterplan square – walking on the future

The map is a simple, rational masterplan display at a scale of 1:100. But it is also a fully designed urban square and scenography. While the masterplan is an abstraction, it is also very concrete and real, hand painted right in the middle of its own plan's content. It is an embodiment of a future place, but at the same time it is a physically situated element acting as a map, complete with 'you are here-dot' and directions to existing places in the vicinity. Similar to the referencing mentioned in Ōtautahi: An Origin Story, the map of Southern Harbour in 2030 is a type of hybrid projection, connecting different temporal perspectives. In this case, the temporal hybridity becomes evident through the interaction of content and context.

The plan is an abstraction, restricted to painted grey blocks, green areas, blue zones and dots representing trees at a scale of 1:100. The district as finally built will obviously not *be* the plan. According to its own plan, the painted masterplan itself will be gone by the time we reach the final state it projects. What communicates transformation and change is not so much the 2030 plan in itself, but the *difference* between this displayed future and the spatial setting of its location – the contrast between what is there and what is projected as an end result for the same setting – a temporal juxtaposition (Lynch, 1972, p. 173). Change and time perception are highlighted here, not by the representation and its properties, but by the very factors it cannot represent – the process and the 'in-between' period.

One of the basic relationships between the drawing and the spatial work it relates to, concerns the inherent translation, movement and oscillation between the drawing and the spatial situation and architecture. According to architect and historian Robin Evans, the 'recognition of the drawing's power as a medium turns out, unexpectedly, to be recognition of the drawing's distinctness from and unlikeness to the thing that is represented' (Evans, 1997, p. 154). In *The Agency of Mapping: Speculation, Critique and Invention*, James Corner also points to a necessary otherness, a level of abstraction and difference, required in a map (Corner, 1999, p. 222). A tension arises, because while maps are projections they also reflect back into the space and territory (Ibid., p. 215).

In one way, the 2030 map is just a simple display of a *future* masterplan. But since it is located on site it also becomes a floor pattern, a scenography for the *present* – an intentional part of the urban design accommodating specific practices. Furthermore, additional stories and time perspectives are gathered around the square on the panels. These are multiple and exchangeable, featuring stories about archaeological discoveries, event documentation, real estate advertisements, and much more. Just as in the case of Ōtautahi: An Origin Story, the masterplan square exists in multiple forms. It is an on-site supergraphic, enacted through performative use, and it exists in mediated forms online. While not being a design tool that engages in the actual design of the future plan, it is used to shape and enact the space while waiting. While the ground mural will be gone when its promise has been fulfilled, during the transformation process itself it conveys a projected future to those looking at it.

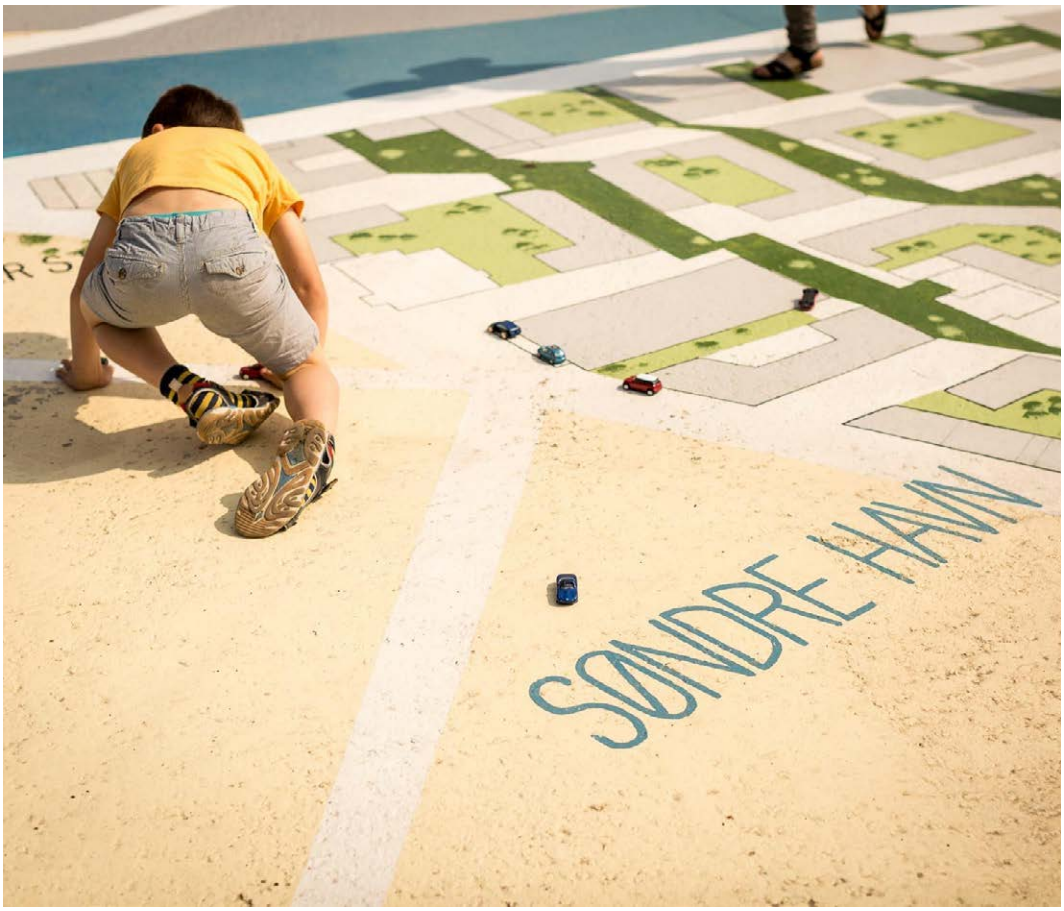


FIGURE 16 *Playing the future. Children playing with miniature cars on the painted masterplan-square (Photo: Martin Håkan/CoverGanda.dk for Køge Kyst)*

Conclusion: Story sampling

Cultural geographer Giada Peterle suggests looking at comics 'as both finished graphic narrative products and "emergent" objects which, like maps, need to be engaged with to achieve their unfinished, transitory and in-becoming realization' (Peterle, 2017, p. 49). While this characterization does not apply to drawings *in situ*, it does offer a perspective from which to explore the interactive and transient character of the works presented. The aim of this exploration has been to tap into a field where we can understand on-site representations in relation to space creation, time conception, and storytelling. Both Ōtautahi: An Origin Story and the hand-painted map in *The Space of Time* point towards close relationships between large representations *in situ* and urban space creation. As presented, origin and authorship, the aesthetic references as well as the time perspectives in these supergraphics do not adhere to one tradition or profession, but emerge in an overlap between different urban actors, practices and storytelling tools. In both contexts, the on-site supergraphics do not seem to affect the planning, design and future layout of their respective sites. The large map in Køge shows a final masterplan, and its role on site is to present the plan to visitors in a playful way. The Ōtautahi: An Origin Story educates us about particular values that will be integrated into the convention centre design and tells stories across different timescales. The stories presented are not integrated in ideation, participation or design-testing as such. Rather, they take on an outsider role as communicative interfaces and narrative buffer zones, sampling stories about the past, the present and the future.

This article contributes to the discourse on representation and time through a discussion of larger on-site supergraphics as specific interfaces framing new relations between time conceptions, representation and urban transformation settings. It argues for recognizing these hybrid elements as distinct communicative and spatial on-site elements. This article sketches an emergent field in visual culture, urban planning and design that is in need of closer examination and critique. It invites an interdisciplinary discussion of the role of these interfaces, the actors and agendas they engage and represent, and of what this sphere of action can mean for the design and planning professions.

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