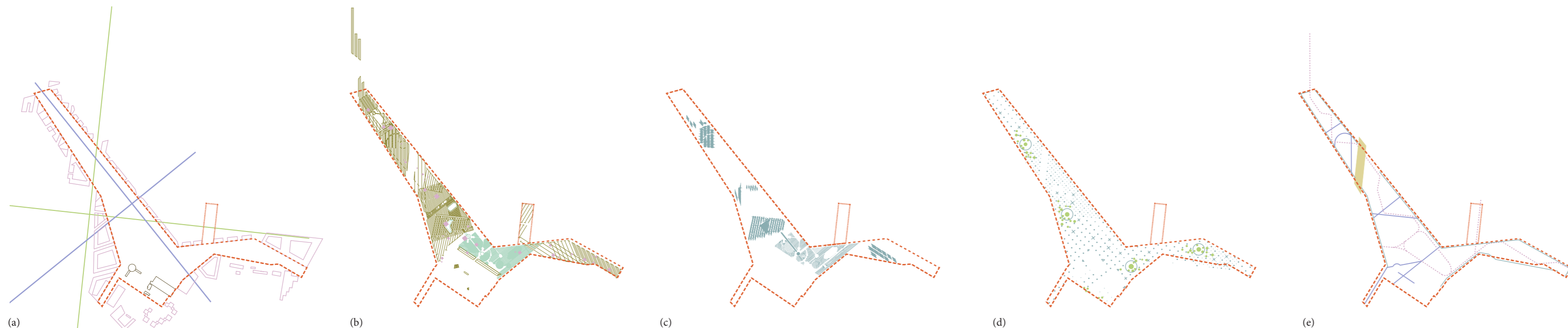


1. Vision. Malmi Lentoasemanpuisto by night. Lighting is arranged in a highly legible grid, following the lines of the former landing strip, recalling the site's historical use as an airfield.



2. Geometry. The geometries informing the design. (a) Key axes taken from historical landing strips and planned streets of the new development; (b) The ramparts follow solar angles, the key axes, and the production of heterogeneous ecological conditions; (c) Water follows natural drainage and the zoning of the site in terms of vegetation types; (d) Lighting and tree planting follow the historical traces of the landing strips; (e) Key pathways through the site trace lines of airplane taxi routes and weave between the ramparts and meadows (purple shows the skiing route which becomes active in the winter months).



3. Situation. Malmi Lentoasemanpuisto is located within a network of green open space in north-east Helsinki. The park forms a central node a broader "territory of care," which it will support ecologically and through maintenance functions.

EARTHWORKS

New relationships to landscape, ecology, leisure, work, and each other are required in the pressurized environment of the 21st century. Vision: EARTHWORKS proposes the construction of a new social and ecological terrain upon the old airfield at Malmi Lentoasemanpuisto. Formed by earthen ramparts, lush meadows, programmable surfaces, a network of pools, dams, and tracks which take visitors through a landscape that feeds the body, the imagination, and the earth itself.

A new terrain.

The world was not always flat. The product of the geological formation of a given landscape, "terrain" is not static but rather forms over long periods of time: River valleys haven't always been that way, rivers can change their course; the glaciers that formed the ridges that run as forested bands through Malmi Lentoasemanpuisto, the surrounding area of Malmi, and across Helsinki ceased to be glaciers hundreds of thousands of years ago and instead became ridges. To design a terrain, or to engage in earthworks, is to introduce a radically shorter timeframe than these natural processes, and thus to enter the Anthropocene (the era of manmade geology), but not to enter the terms of climate change and environmental destruction.

EARTHWORKS proposes a new terrain for leisure and ecological experimentation in an optimistic act performed in the spirit of ecological maintenance.

Terrain is a powerful concept for architects. In warfare, capturing particular types of terrain—higher ground, for instance—gives a tactical advantage (architect Eyal Weizman describes this as the "vertical dimension" of landscape). The invention of the elevator in the late 1800s enabled New York property developers to create such advantages from scratch, multiplying and stacking storeys, and making enormous profits in the process (as architect Rem Koolhaas notoriously notes in relation to Manhattan). Pier Vittorio Aureli and Martino Tattara argue that level ground "reinforces the contrast between the interior and the uneven topography of the outside landscape" and that this is the reason for its symbolic and ritualistic significance for architects, from Le Corbusier and Mies van der Rohe to Aldo van Eyck.

EARTHWORKS turns the old tradition of erasing the ground in order to create flat surfaces on its head, by erasing flatness in order to produce terrain.

This requires careful preparation of the ground. The proposal does this through a folded terrain of "ramparts"—a historical term for a bank or berm of earth, which etymologically refers

to the preparation of a ground for defence during siege. These ramparts make use of rubble from urban development activities on site and from across Helsinki (see the Technical Sections on Sheet 5). Like the wrinkled skin on a bulldog, the folded surface multiplies the surface area without losing contact with the ground, increasing the park's area by 20%. The multi-directional lines of the ridges, which were designed using a rasterization technique (see Geometry and Raster images on Sheet 1), follow the axes of planned streets and sun angles, providing multiple solar aspects and heterogeneous conditions for plants that vary in sun exposure, material, climate, habitat, and degree of disturbance. The park has been zoned by way of four key vegetation types—woodland meadow, dry meadow, wet meadow, and meadow on clay—which have been selected in order to complement local biotopes within north-east Helsinki and reflect these conditions (see the Network of Meadows on Sheet 5). Hydrologically, the overall structure created by the terrain—both the ramparts, indentations, and permeable hard surfaces—channel flows of water, with the ditches between ramparts, as well as the interior structure of the ramparts themselves, acting as retention basins capable of storing water in flood conditions. A series of dams accommodate 6,250 cubic meters of water, with the wetlands taking care of another 15,400 cubic meters (see Hydrology on Sheet 5).

EARTHWORKS provides a solidly researched foundation for the development of biodiversity, through the establishment of diverse plant species and ecologically important biotopes.

Image and memory.

Citing the example of the "plastic sea" of greenhouses that characterize the mediterranean temperate zones, Clara Oloriz Sanjuan comments that "...most of what we today refer to as landscapes are rather produced and not designed in the sense that the English garden or Versailles were"—rather, she argues we are surrounded by "consequential" landscapes. These are landscapes which, she explains, are "not designed as explicit visualisations of anything. Their appearance is a contingent effect of processes and techniques of production."

EARTHWORKS is unique hybrid: it is a highly productive landscape, ecologically, but it works intentionally with visualisation and symbolism.

Terrain forms an image that changes throughout the year. The ramparts of Malmi Lentoasemanpuisto are designed using a technique called "rasterization." Not always used to describe digital images as they are displayed on screens, etymologically "raster" is related to "rastrum" and takes its name from an agricultural

device of mixed character, a pitchfork-like rake used to break up soil in a pattern of parallel lines. The use of the term raster in computer graphics can be attributed to Philo Farnsworth, who took inspiration from the agricultural activity of "plowing" fields in parallel lines when developing the raster technique used in electronic television screens. The rastered design creates a sense of vastness at eye level and from the air. Like waves on a choppy sea or the rows of trees in an apple orchard, the linear form of the ramparts give a sense of spatial depth and distance. In-between the ridges, small pockets of intimate and protected space are created (see Raster on Sheet 1).

Whether blanketed with snow or with meadow flowers, the undulating terrain of EARTHWORKS forms an ever-changing scene when viewed from the apartments and streets that will surround it, at the same time retaining a unique identity as an object of landscape design and as a space to inhabit.

The pleated terrain is intersected and superimposed by a second layer of networks of circulation (walking and skiing paths), lighting (on large decorative X-shaped pillars), platforms, and kiosks/pavilions, which provide visitors to the park with a practical system of orientation and facilities (see Geometry on Sheet 1). These take their cue from the built heritage of the airfield itself, providing a memory of the space as it once was. Sylvia Lavin has written recently about the capacity of planting regimes to implant symbols and spaces within landscape, preserving them over time. She gives the example of a landscape garden plan drawn by architect Gabriel Pierre Martin Dumont in 1769, wherein trees trace the form of St. Peter's Basilica in Rome. Lavin reads this as an act of preservation by encoding symbols in the terrain. EARTHWORKS draws inspiration from this example, encoding the lines of taxi routes and stands for airplanes; the HELSINKI sign; and a baroque ruin (a fantasy figure).

The lines of the runways traced in lights across the site. In this way, EARTHWORKS takes care to remember the historical uses of the site, whilst it looks towards the future.

Work and leisure.

We live in a time of radical change. The form and content of daily life in Helsinki is shifting; daily routines, schedules, expectations, and needs are becoming more fluid, intensive, and extensive, as the relation between "home" and "work" is being reformulated. Through the input of non-human actors (industrial robots, algorithms, video conferencing software), work is increasingly performed in hyper-optimized bursts of activity, often in front of digital interfaces and at a distance from collaborators and sites of

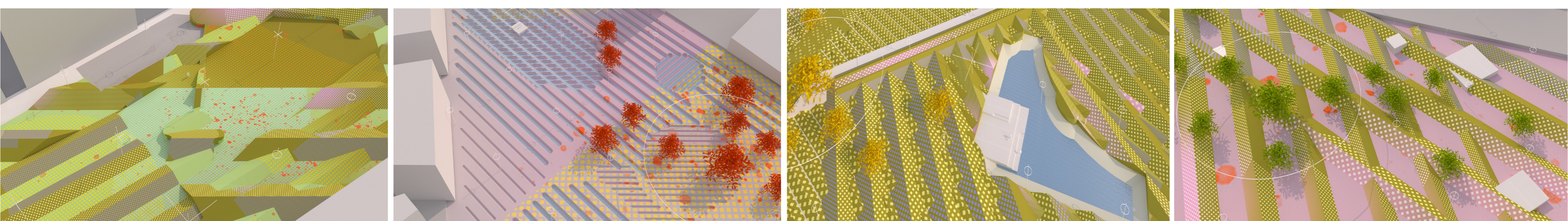
material production. Connection and isolation. Surveillance and self-scrutiny. Uncertainty and optimization. In the face of these developments, new practices of coming together, of resting/rehabilitating the body and the imagination, and of relating to broader ecologies—are urgently required—the proposal responds directly to these challenges, daring to leave its surface unprogrammed.

To open up for the new, the yet unthought, the design rejects the now-exhausted idea that urban landscapes shall form flat, unornamented, unobtrusive, and anonymous backdrops for predictable programs of temporary events. The square, the park, the field: most of us have a lifetime of occupying these terrains, of performing their choreographies. We know what a basketball court and a football pitch expect of us; we know how a flea market on a carpark works; we know what a food truck can offer. Forming new social, recreational, and ecological practices require a new "ground": a new terrain.

Through EARTHWORKS, the undulating landscape of Malmi Lentoasemanpuisto is envisaged as a space for experimentation with activities that do not yet exist, sports that have not yet been played, and social practices of gathering and exercising that stimulate the imagination as well as the body.

To make space is also a physical act of maintenance. Soils will be recursively moved and mounded, slopes and plots will be gardened by sowing seeds and planting vegetation by a team of gardeners. The biophysical structure of Malmi Lentoasemanpuisto will in this way be invited to interact and collaborate with the activities and rituals of users, natural processes, and management strategies. Involving the architectural disassembly and reassembly of grounds, interior grounds, ground as infrastructure, interior infrastructures, these alterations over time will form another layer in the process of rasterization. Acknowledging the importance of this work, the central flight terminal and hangar are dedicated within the scheme to research and work on ecological systems and gardening as an act of ecological maintenance. It is hoped that the expertise that is developed can see the whole site (all unbuilt areas and not just the park itself—see Staging on Sheet 5) as a field for experimentation. The embankments along freeways, and the open public landscape (see Situation on Sheet 1) thus become a part of the park, as the surrounding area is developed (see Staging on Sheet 5).

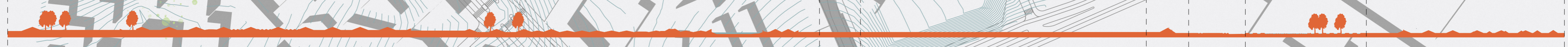
EARTHWORKS is to form the central point within a larger territory of care, enriching its surroundings ecologically, socially, and culturally, over centuries to come.



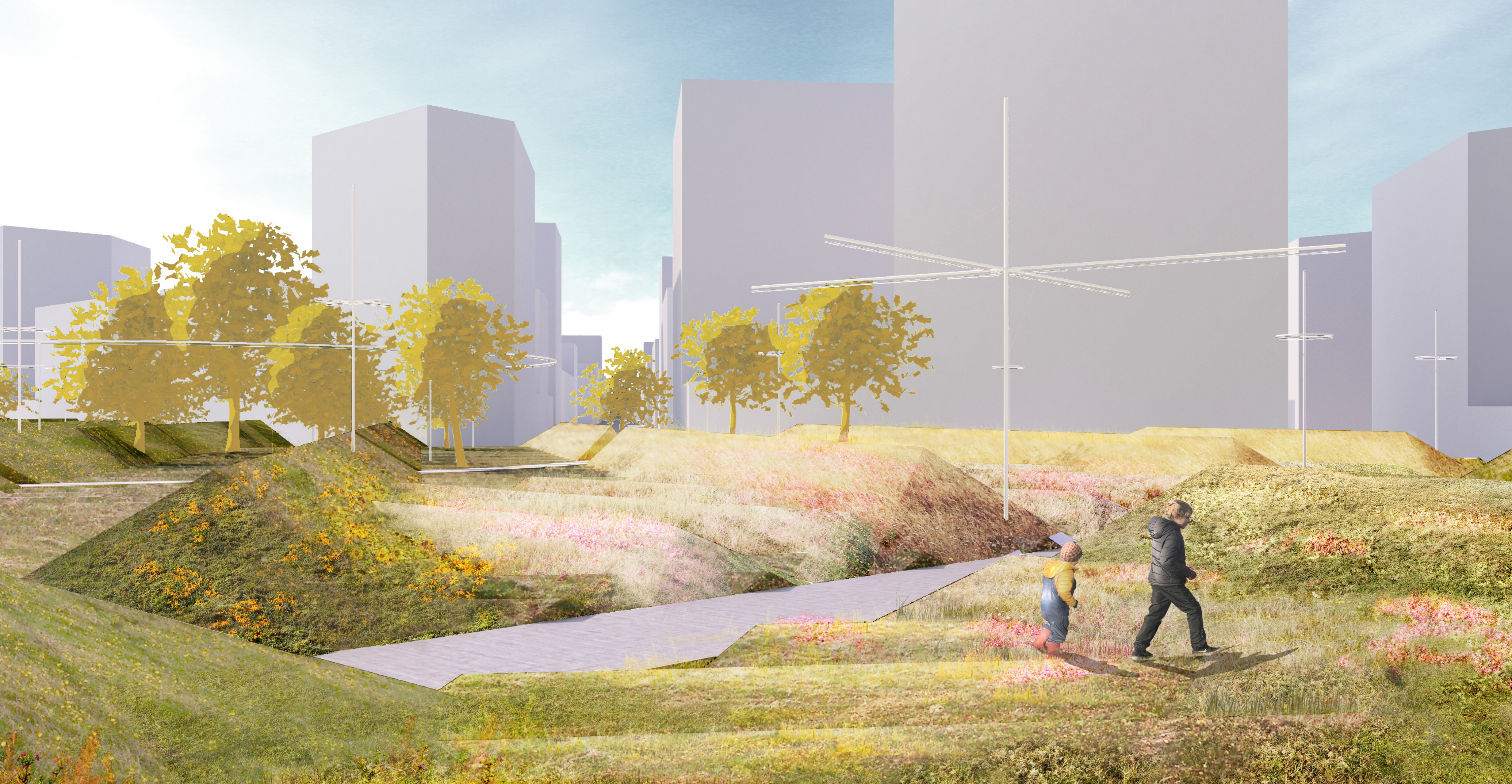
4. Raster. The ramparts that form the structure of Malmi Lentoasemanpuisto are designed using a technique of rasterization, which integrates familiar figures (axes from the old airfield, a baroque figure, the lines of streets in the surrounding neighborhood) into its complex weave.



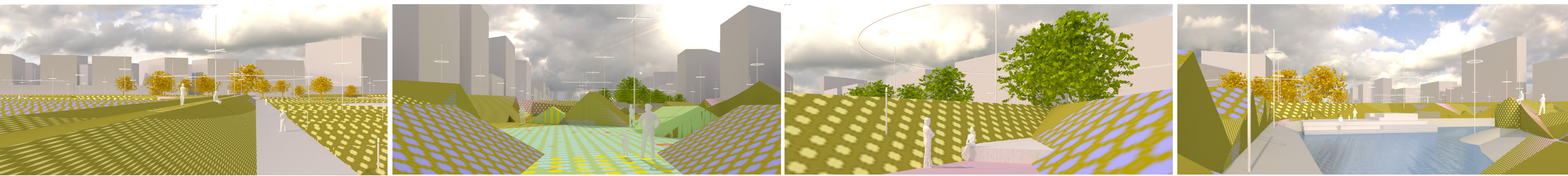
5. Overall Plan 1:2000
 Note: The sking route is shown in yellow (following the taxi routes of former airplane traffic); gas lines shown in a dashed line.



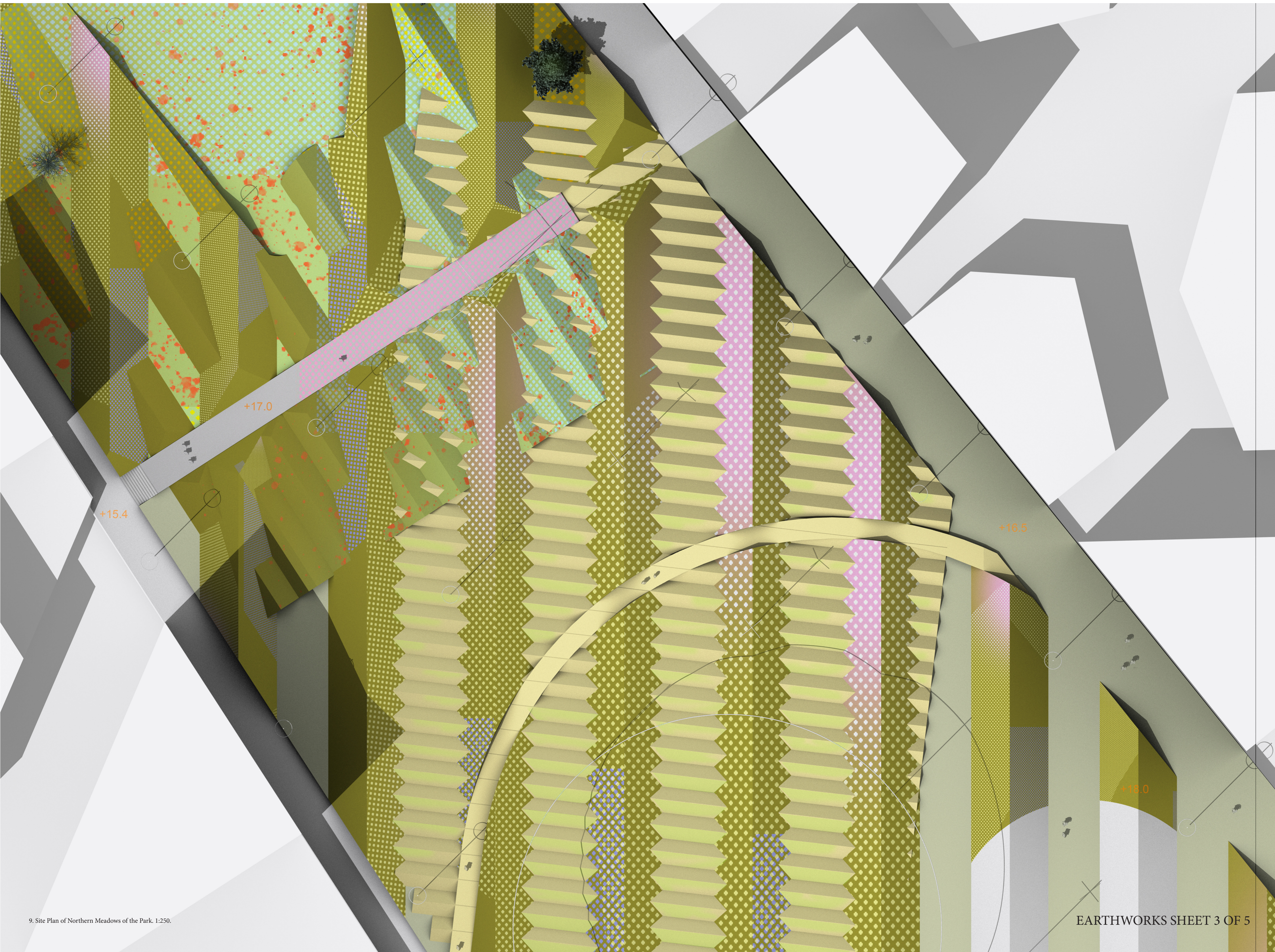
6. Overall Section 1:3000



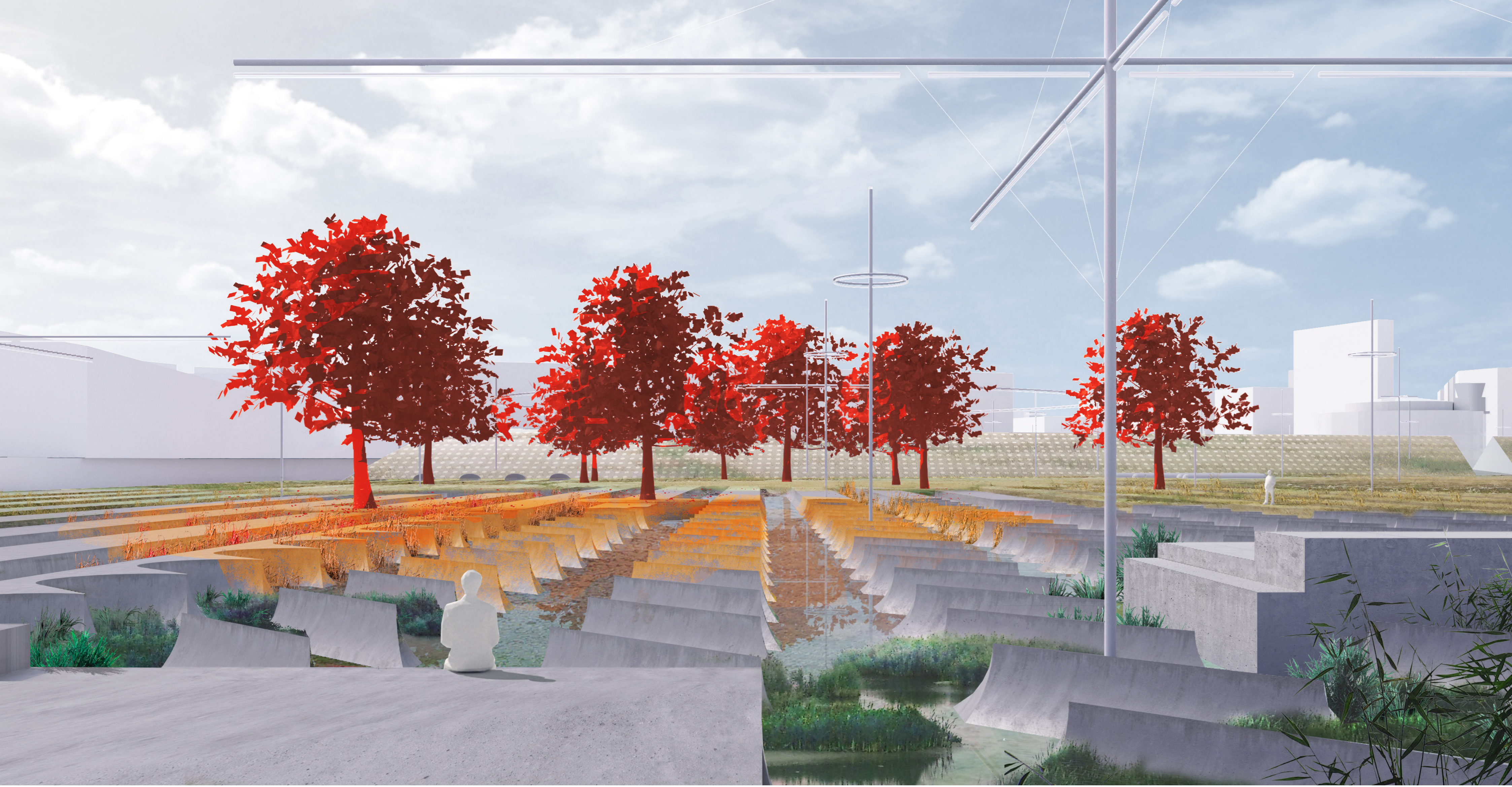
7. Vision. Within the undulating meadow landscape, visitors to Malmi Lentoasemanpuisto encounter a structure of interlinked, intimate spaces between the earth ramparts. One can choose between following defined paths (shown in gravel in this image) or tracing a journey across the terrain, through the meadows and up and down the slopes of the ramparts.



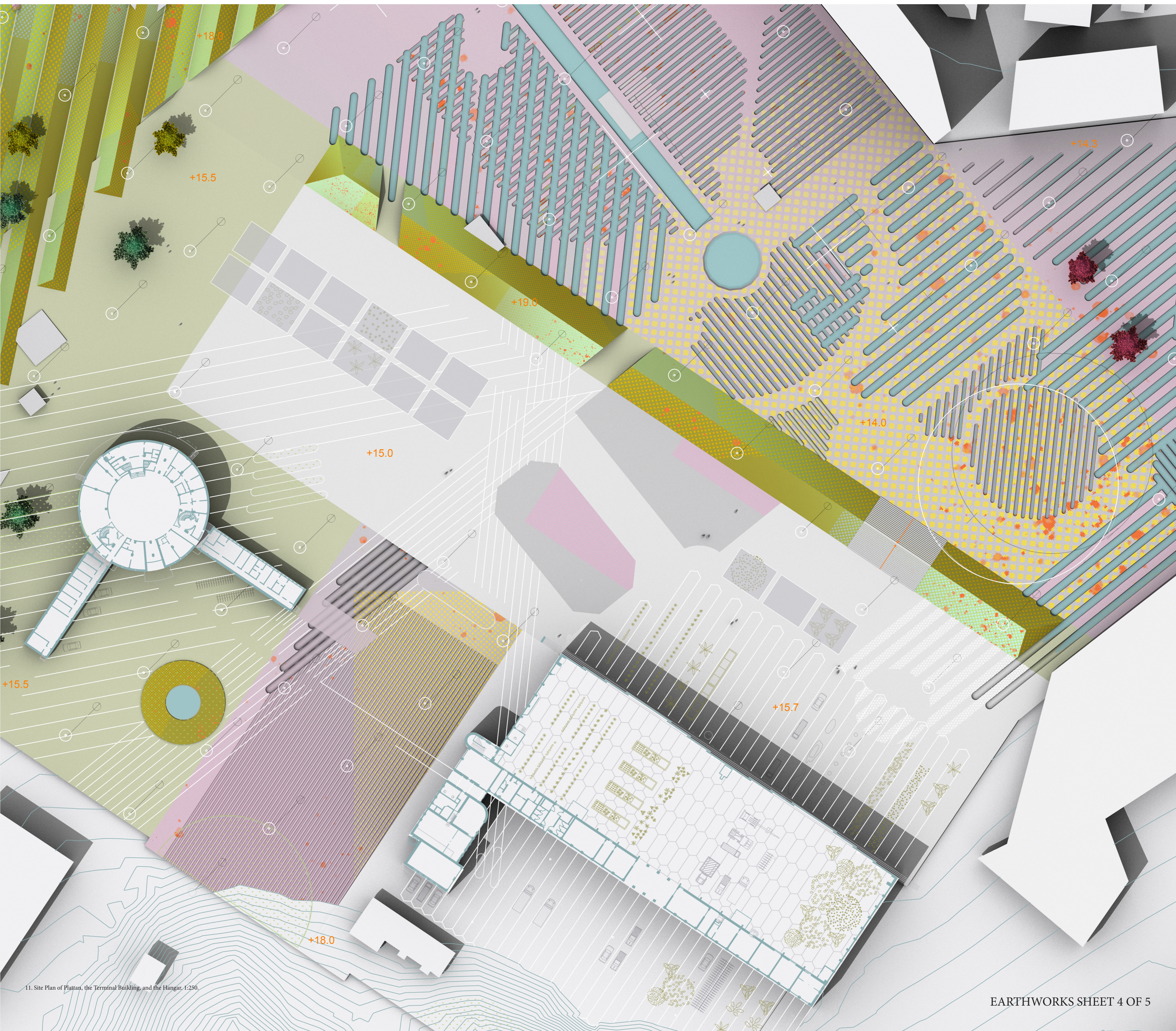
8. Schematic views from within the landscape reveal a range of different experiences, depending on which part of the biophysical structure one is traversing and whether one is on top of a ridgeline, or in the valleys and pockets between ramparts. This highly heterogeneous space produces opportunities for different forms of interaction and motion, and the experience of the park changes both by day and night and over the course of the year. In these images, planting regimes are annotated using a hatch technique. The slopes of the ramparts are to be vegetated in accordance with the biophysical structure design set out on Sheet 5.



9. Site Plan of Northern Meadows of the Park. 1:250.



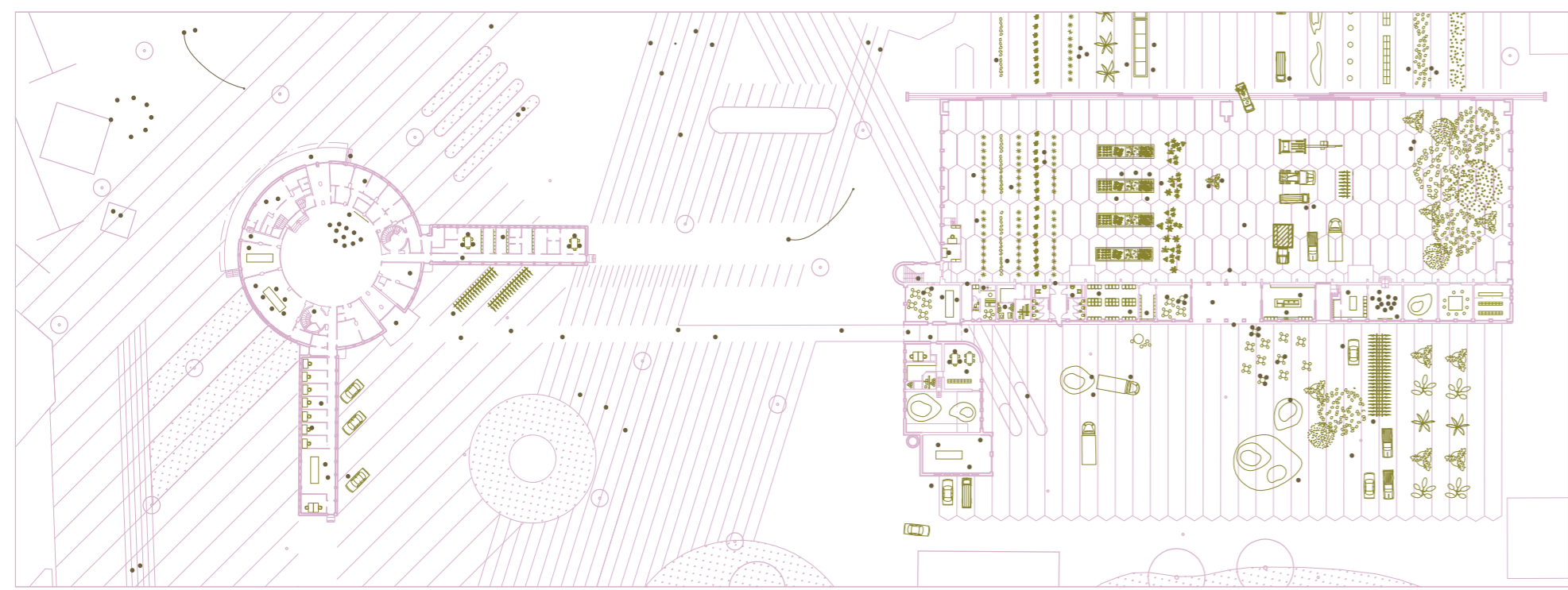
10. Vision. Adjacent to Plattan, the former airport apron which abuts the hangar building, EARTHWORKS proposes a wetlands that mixes hard surfaces and clearly defined geometries with long grasses, mosses, and other marshland species.



11. Site Plan of Plattan, the Terminal Building, and the Hangar. 1:250.



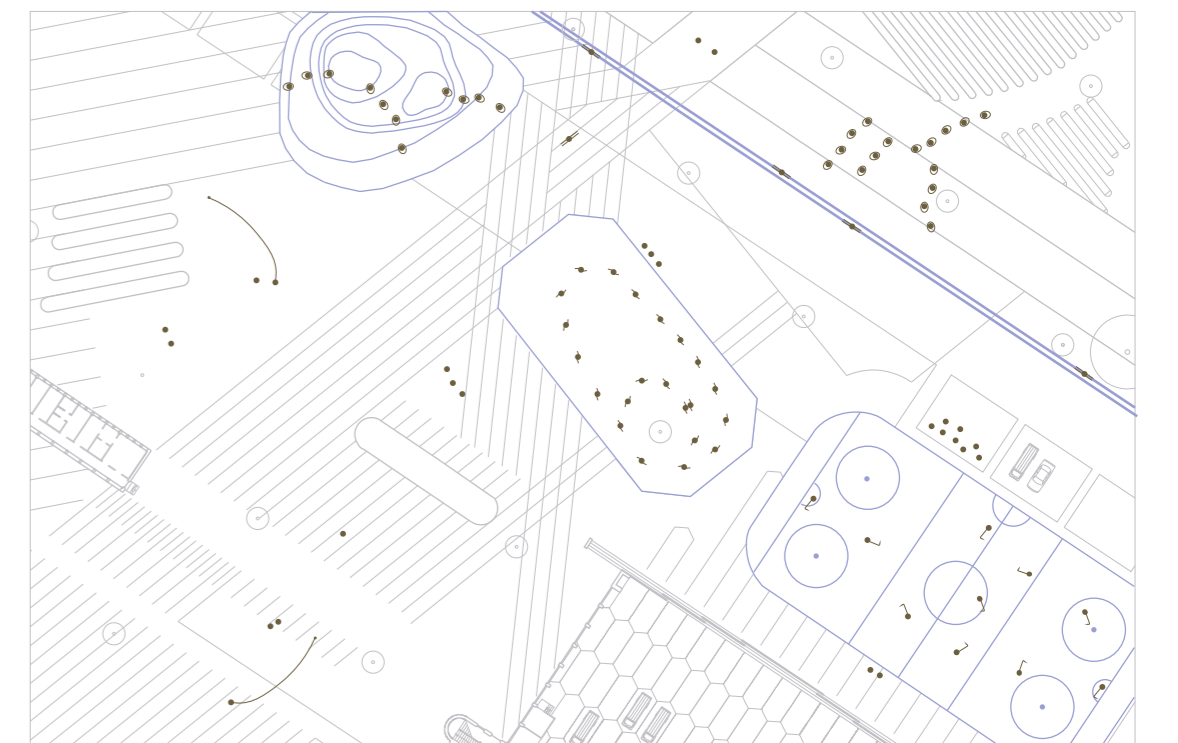
12. Aerial view. The park maintains a clear identity even from a distance, through the distinctive geometry of the rampart system.



13. Plan. The interior space of the hangar, the old airfield apron (Plattan), and the architecturally important Central Terminal Building are to be dedicated to park management activities. The Park will act as a center for horticultural knowledge and experimentation in the Nordic region, and through collaboration with tertiary institutions might offer residency and research programs.



14. The design of Plattan provides an attractive ground plane upon which various seasonal activities can be staged. Left: Summer activities might include concerts, promenades, picnics, a garden café, planting and gardening activities, a plant nursery. Left: Winter activities might include figure skating, ice hockey, dog walking, sledding and tobogganing, skiing, long-distance ice skating, and promenades, as well as winter storage.



Biophysical Structure

Existing Conditions

The northern part of the area contains rich humid meadows, as well as a low grass area with regular maintenance. Where the northern branch of the park site thickens, there is an area with low grass with sand and gravel topsoil. The middle or center contains low grass area with regular maintenance. The most southern part contains a rich humid meadow. In terms of soil conditions, the northern part of the park contains clay layer > 3 m. On the airfield landings, there is a filling layer of 1-3 m on top of clay. By the hangar, "platta," and by the southern part of the park there is a filling layer 1-3 m thick on top of silt, sand, or moraine layer.

Proposed Conditions

The banked landscape of ramparts will result in a network of areas of varying degrees of wetness-dryness. Some areas will be continuously inundated and some will be temporarily flooded, helping in reducing the runoff speed and intensity of stormwater flowing of hard surfaced areas. Reduction of runoff speed is crucial for reducing erosion and transport of sediment and associated phosphorous transport given the high clay content of some parts of the area. Streams and waterways will be complemented with physical structures such as rock edges, wood debris and stilling ponds to further reduce flow energy and clay erosion during heavy rain events and thereby protecting vulnerable recipients further downstream. Focus will be on the use of natural and local materials, avoiding materials geotextiles that otherwise risk to surface due to natural processes and park use. The proposal builds upon a network of meadows, with the following characteristics:

Wet Meadows

Vegetation: To be established partially spontaneously as well as with directed planting using native species. The planting stock will be developed in cooperation with the nursing industries focusing on natural material. The flooded meadow communities will be aimed at creating *Filipendula-Lysimachia-Lythrurum* communities, with more wet areas dominated by *Juncus*, *Carex*, *Iris*, and *Typha*. There will be a need for continued monitoring and removal of invasive species, primarily the Himalayan balsam (*Impatiens glandulifera*).
Colors: Whitish cloud forming flowers, yellow, pink.
Height: From low-growing half-grasses to higher 50-60 cm flowering plants.
Soil: Structure aims to break and slow down run off and water flows (for this reason, the filler layer on top is to be clay). Boulders to be inserted in order to produce microclimates and protection. The deeper the depression, the flatter the beach; different long wet zones to be encouraged.

Dry Meadows

Dry meadows are rare but particularly important for several insect and plant species. South-facing and top layers of the banks will have shallow soil layers and high exposure to sun, giving rise to dry conditions. The proposed vegetation systems are characterized by low-growing, drought tolerant species in pioneer type communities. The communities have a total plant cover of less than 50% and no tree cover. Bare patches are to be sustained through trampling and other types of disturbance.
Vegetation: Common plants such as succulent Sedums, Saxifrages, Rumex acetosella, Veronica verna, Viscaria vulgaris, Viola tricolor and several rare lichen and moss species.
Soil: Silt, sand, moraine on southern slopes and top of the banks; 20-30 cm soil, sand, Low slope and low to moderate ph. Crushed rock, relocated construction material 1-3 m; larger aggregate, with high water permeability, such as stone blocks, beneath.
Colors: Light-colored and silvery, white and pink flowering.
Height: Low growing and low cover. Most species below 20 cm but some higher in patches

Meadows on Clay Deposit

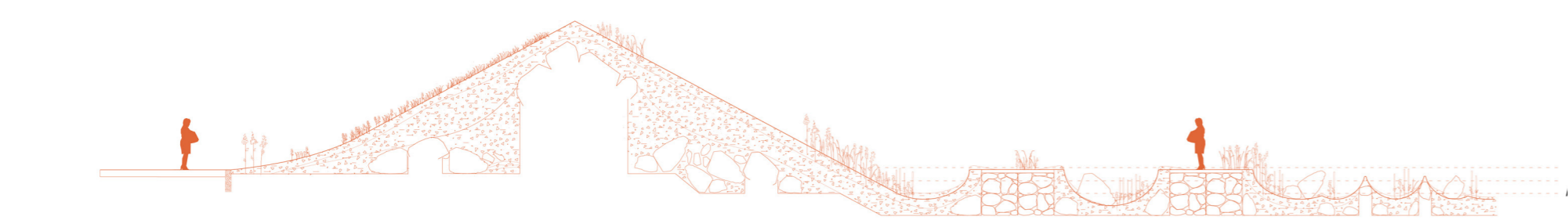
The large meadow systems existing on site have high ecological value that have developed during continued maintenance. Height will be influenced by the repeated maintenance regimes including mowing and biomass removal. Continued maintenance and biomass removal is important for maintenance and development of biodiversity. The main part of the meadows on clay soil will be preserved and maintained during development and continued park use. Soil will be stored temporarily if needed but only for a limited time in order to assure seed bank and propagule survival. Accessible water necessary.
Soil: Coniguous, fine-grained.
Colors: Clear seasonality with summer flowering, in primarily yellow and white and a clear autumnal dormant period with brown and grey color.
Height: Higher meadows with herb, and grasses reaching up to almost 1 m height. Height will be influenced by the repeated maintenance regimes including mowing and biomass removal.

Woodland Meadow

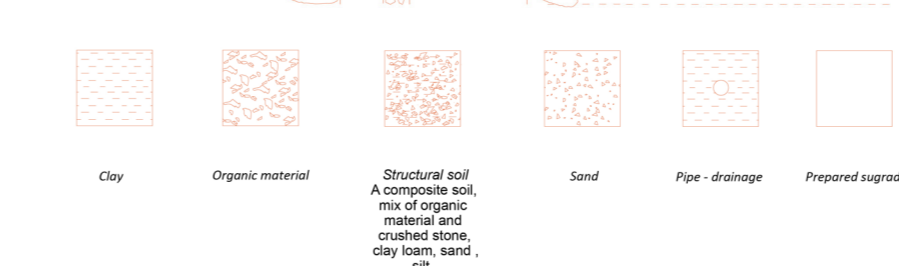
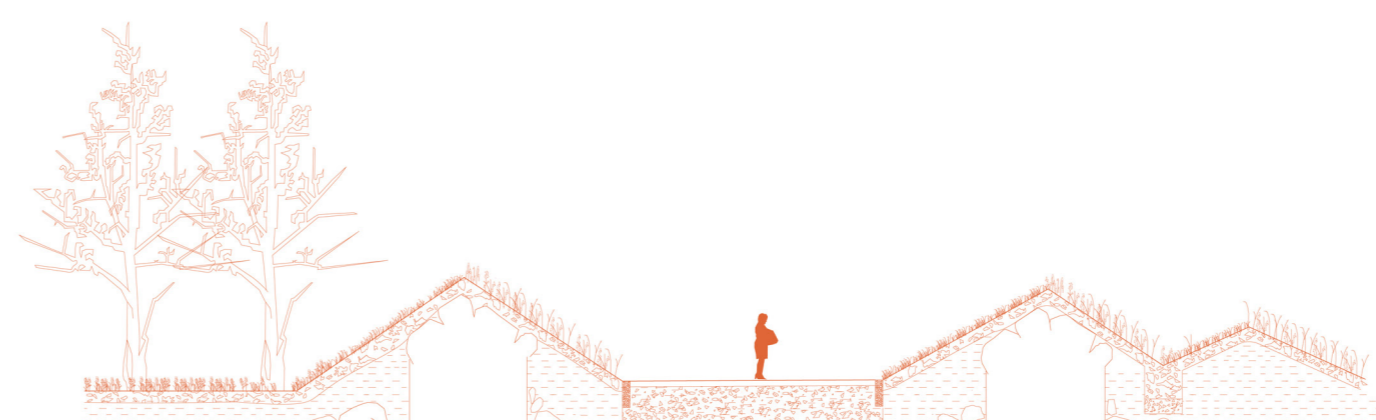
Vegetation: Birch, salix, larch.
Colors: Clear seasonality with summer flowering, in primarily yellow and white and a clear autumnal dormant period with brown and grey color.
Height: Smaller trees in groups reaching 5 to 10 m height.
 Note: Vegetation may spontaneously establish itself on site (to be encouraged). The tops and sides of ramparts are drier. Natural Meadows are to be conserved and protected where possible; if not possible (for instance on major thoroughfare), these are able to be relocated in pieces to another part of the site.



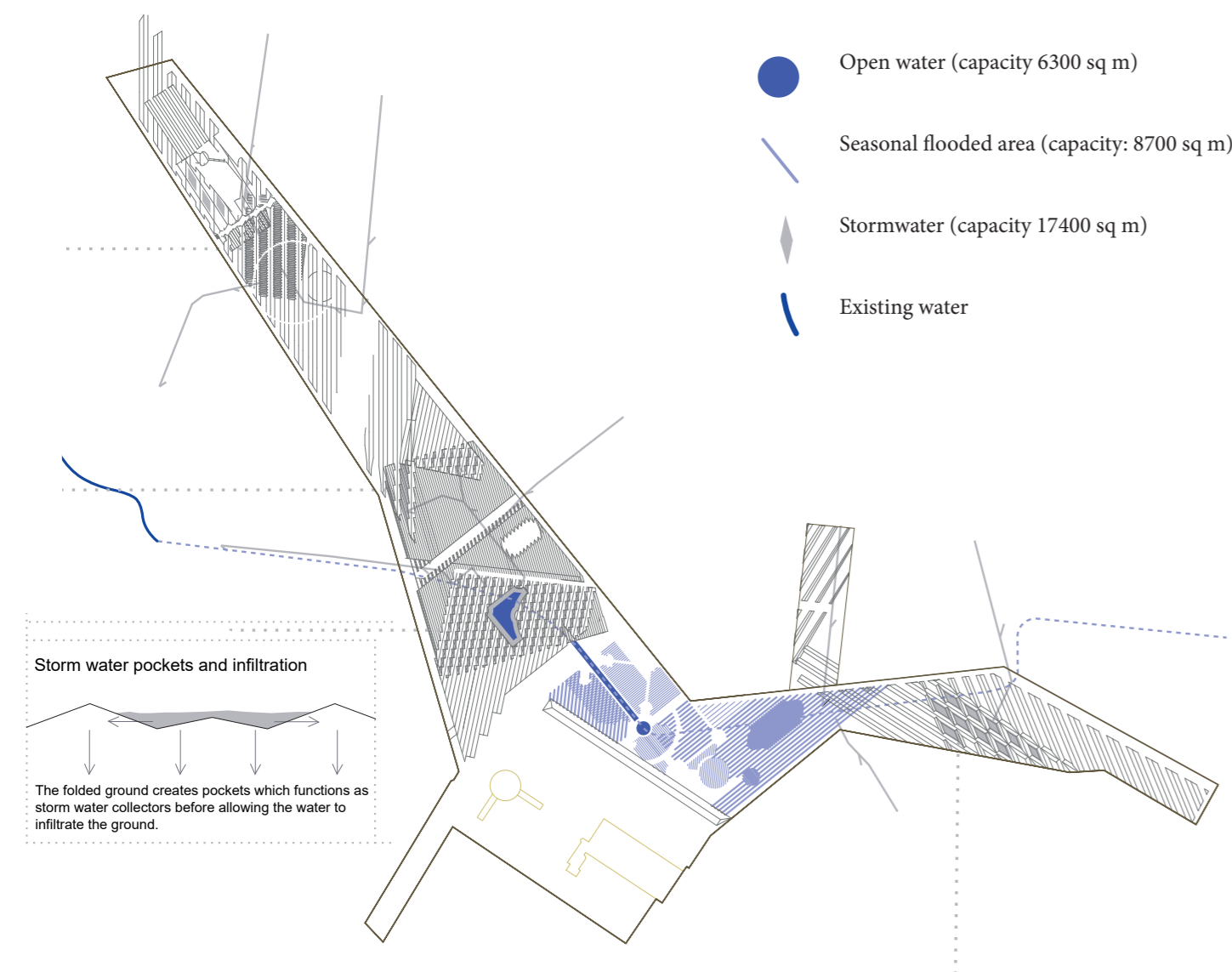
15. Biophysical Structure: Proposed Network of Meadows.



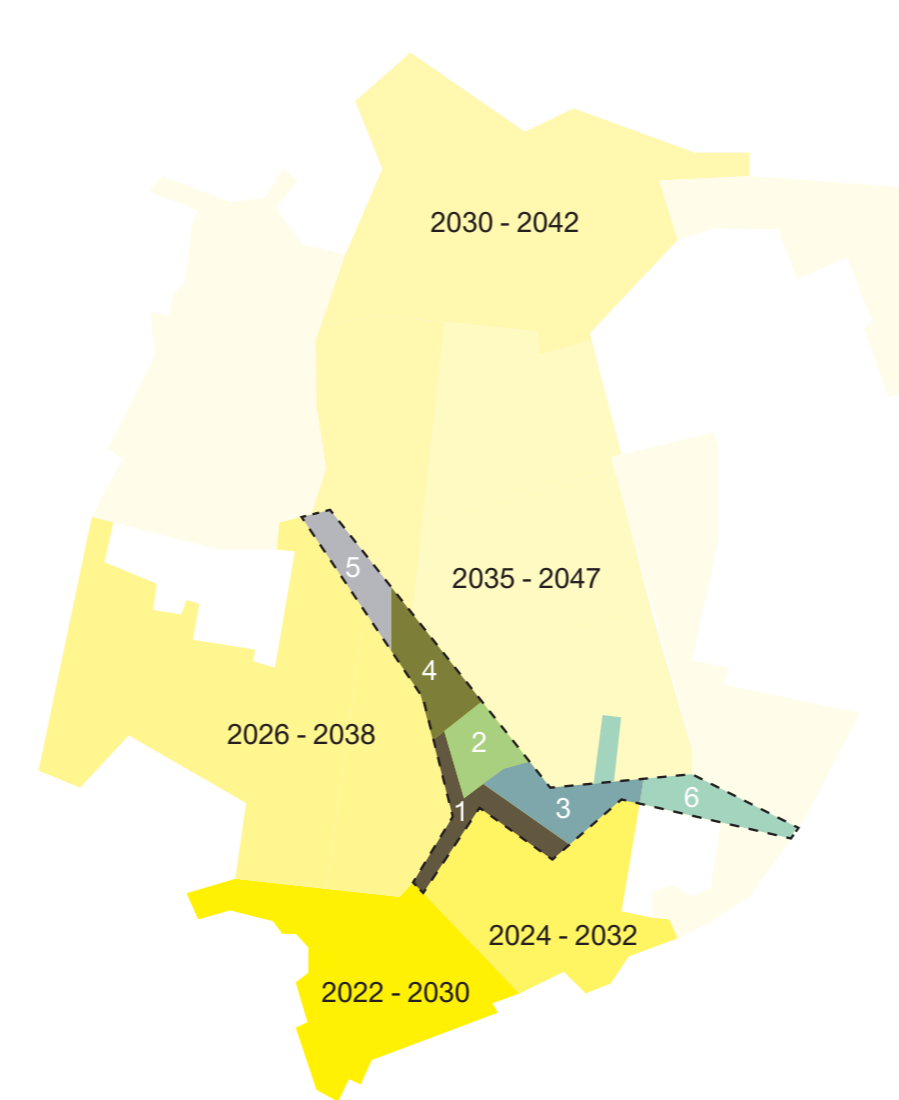
16. Technical Sections. 1:200



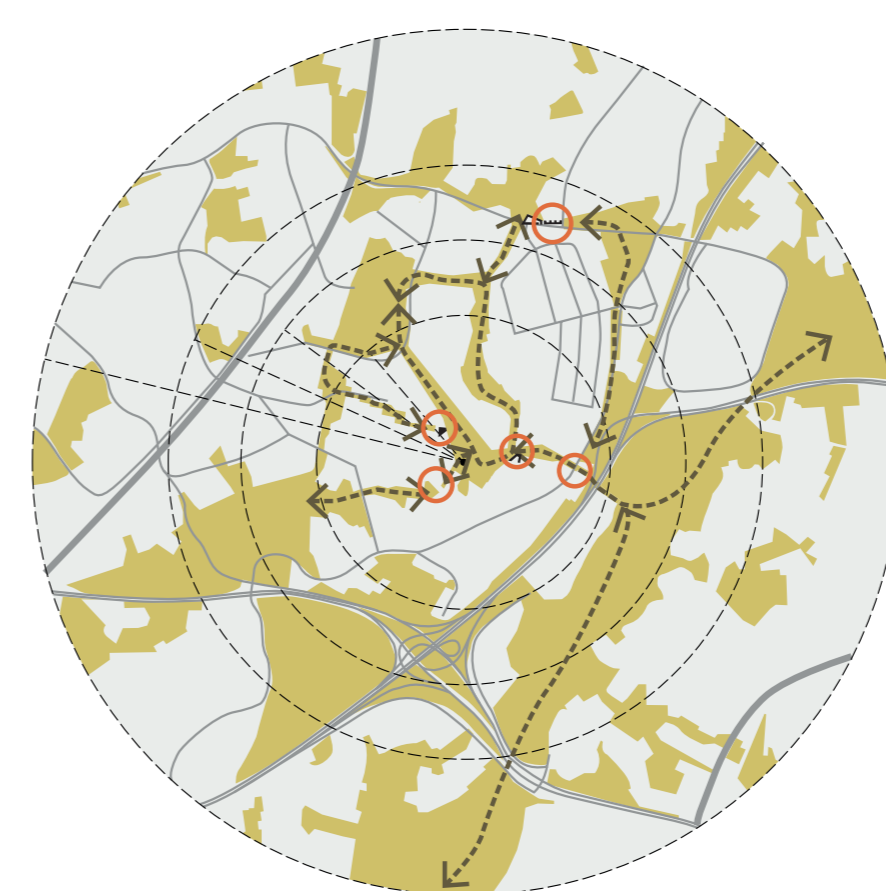
17. Seasonal Change. (a) Spring terrain, (b) Autumn terrain, (c) Winter terrain.



18. Hydrological Network.



19. Phasing Diagram.



20. Geographic Network.

