"The Agora *(/ˈæɡərə/; Ancient Greek: ἀγορά, romanized: agorá, meaning "market" in Modern Greek) was a central public space in ancient Greek city-states. It is the best representation of a city-state's response to accommodate the social and political order of the polis. The literal meaning of the word* ***"agora" is "gathering place" or "assembly".*** *It was the center of the athletic, artistic, business, social, spiritual, and political life in the city and was usually located in the middle of the city or near the harbor. Agoras were built of colonnades, or rows of long columns, and contained* ***stoae****, also known as a long open walkway below the colonnades"*

PROJECT

The brief for the "Tab" competition asks for an urban break space in Tallinn that offers shelter from the weather and a waiting area for public transport. The elongated and poetic site is located on the new square of Balti Jaam or Tallinn Baltic Station. It is the main railway station in Tallinn, Estonia, and also a public transportation hub for inner city buses, trains, trams, and trolley buses, as well as a destination for regional transport. Balti Jaam is located on the edge of the still largely intact Tallinn Bastion Belt, which encircles the UNESCO-protected medieval Tallinn Old Town. It is a busy area that daily brings together a wide array of Tallinn's residents who commute between the centre and further residential areas, who live in the nearby residential neighborhoods of Kalamaja and Telliskivi, students of the Estonian Art Academy, visitors to the Balti Jaam market and many others...

As a response, 'Agora Pavilion' seeks to create a multifunctional place and a platform for waiting, congregation, and dialogue.

The design of the pavilion is deliberately rudimentary and should be perceived as a space of potential and possibilities, an experimental structure that can provide not only shelter but also knowledge of basic forgotten building materials like rammed earth.

An elongated, down-to-earth structure is enclosed with a colonnade from all sides, and continues the modernist language of the existing station, complementing the firm rectangular front facade on the opposite side of the square, framing the space in between, and inviting passersby inside. A simple flat roof is suggested by its language, making the message it conveys manifest.

Inside, three long benches follows the shape of the pavilion's structure and allows interaction and panoramic views between the Square and the Bus Park. The space around the bench creates stoae, a walkable public space that creates a safe, enveloping, protective atmosphere, allowing for a high sensory experience.

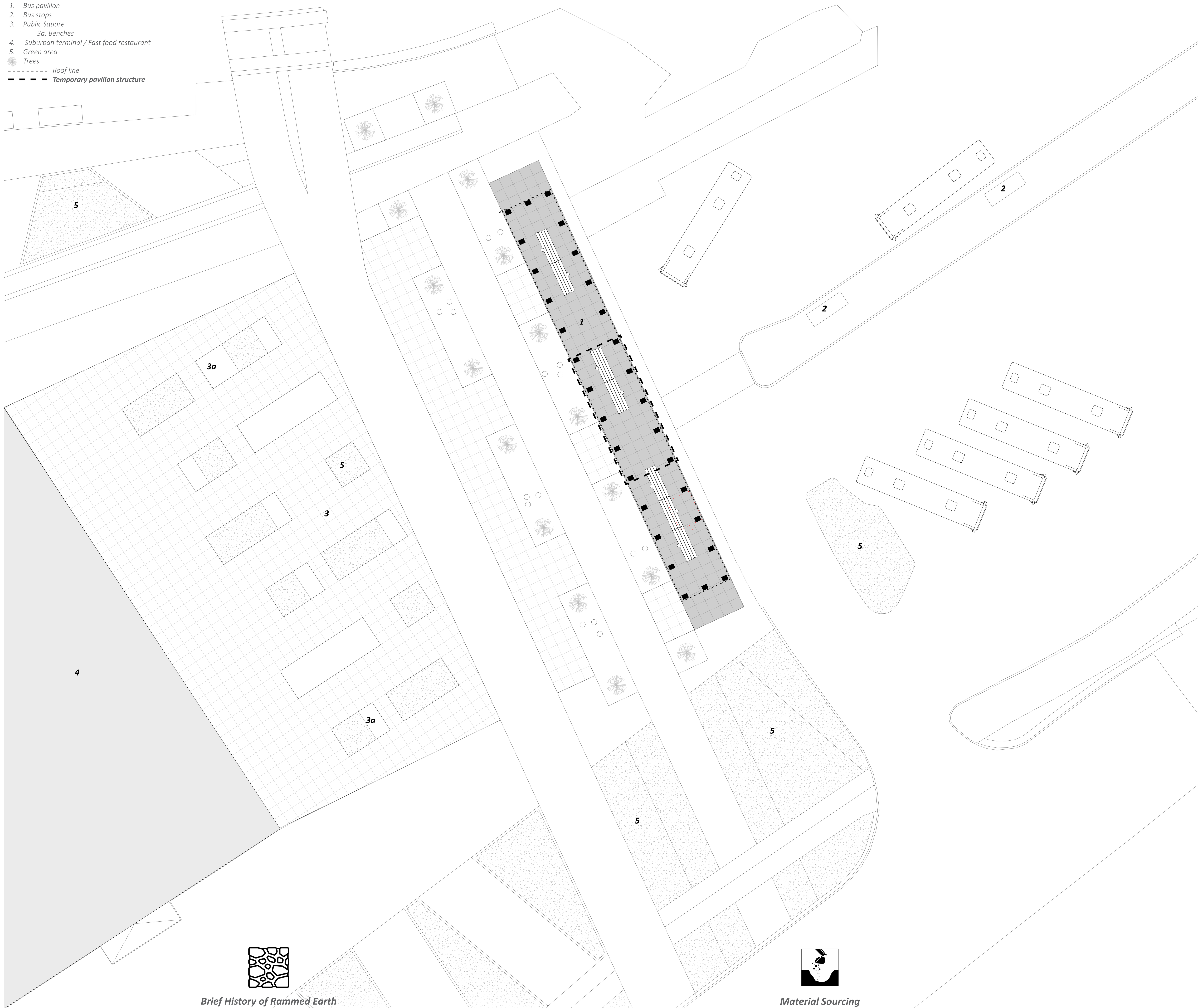
The pavilion references the architecture of a miniature temple, thus, creating an agora for thoughts to be discussed and debated within the public square landscape.

Conceived as a contemplative structure, the pavilion invites visitors to sit and watch by hosting events in the space around it, acting as an invitation to Tallinn's many cultural agents. Combining both a program of events and inviting spontaneous use, the pavilion creates a framework for conviviality, encouraging nearby residents, students, and passersby to stop and integrate the pavilion into their daily lives. This sort of urban device transcends the concept of a pavilion related to a specific cultural event becoming part of life in the city of Tallinn.

Envisaged as an open, democratic structure that invites passage or permanence, ***the pavilion simultaneously serves as a shelter, a stage, an exhibition space, and a materialization of circular economic practices, which connects the past, present, and future of the Telliskivi area.*** *It demonstrates a comprehensive approach to architecture, encompassing the utilization of local resources, environmentally conscious construction methods, and sustainable design features.*

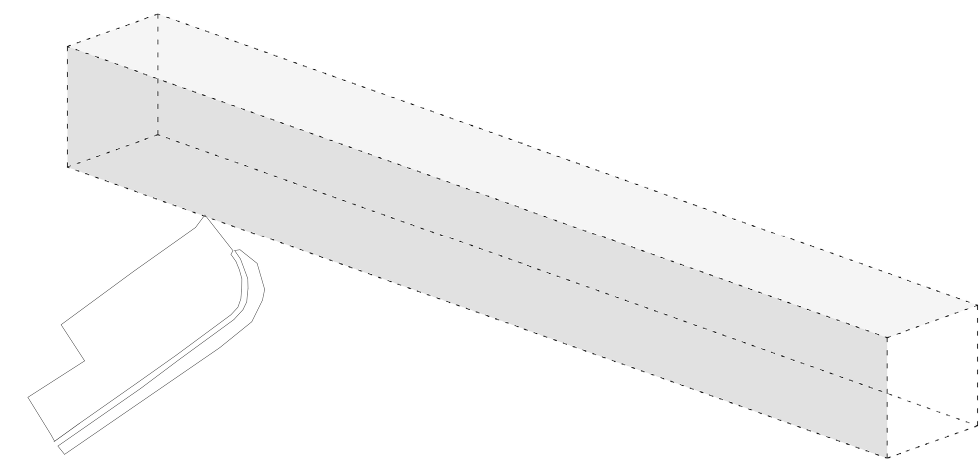
Site plan 1:200

1. Bus pavilion
2. Bus stops
3. Public Square
   3a. Benches
4. Suburban terminal / Fast food restaurant
5. Green area
- Trees
- Roof line
- **Temporary pavilion structure**



Site conditions

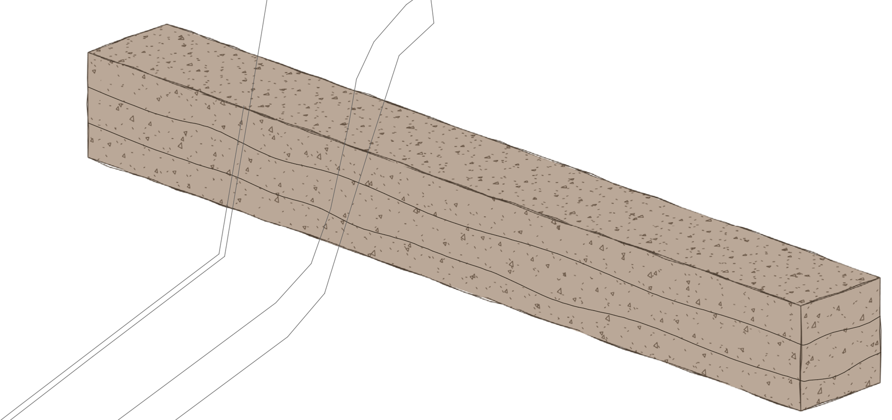
The **existing train station** comprises three interconnected terminals, unified by a **modernist aesthetic.** Its architecture features an ascetic rectangular silhouette, complemented by the iconic dome-shaped roof of the suburban terminal, which was listed as an architectural monument in 1997.
The **plot for the competition** allows to build a 45m long structure, 5m in width, and 5m in height. Originally, a long canopy along the given competition area was planned to frame the square physically and conceptually.
It is also necessary to take into account existing foundations and engineering connections for the WC.



Materiality / WHY?!

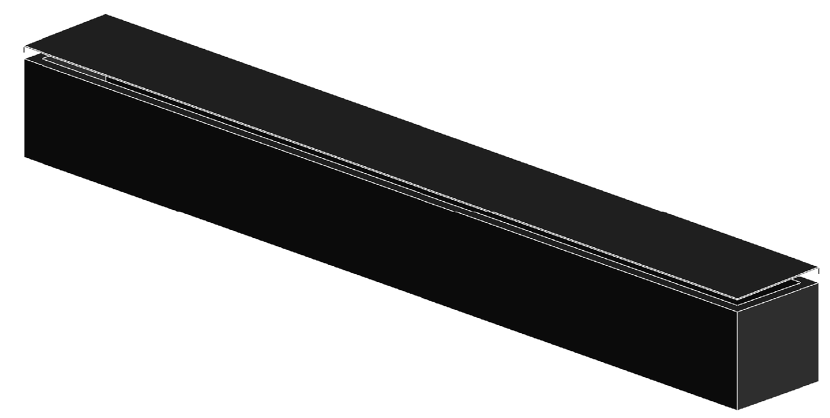
Today, the construction industry generates an immense amount of waste. However, we can significantly reduce this waste by adopting materials like rammed earth, which are 100% recyclable or biodegradable. **The idea is not only to find ways to repurpose leftover materials but to utilize materials that inherently minimize waste from the start.** Rammed earth, for instance, not only provides a sustainable building solution but also promotes a more efficient and eco-friendly approach to construction. By integrating such material, we can revolutionize the industry and substantially reduce waste production globally.

The goal is to show that basic materials such as rammed earth – which for many people are far from the idea of modern architecture – can appear refined and of high sensory value. How revitalizing historic building practices – materials and crafts - can be the key to future sustainable architecture, this proposal is a revival of the Estonian traditional method of earth building construction.



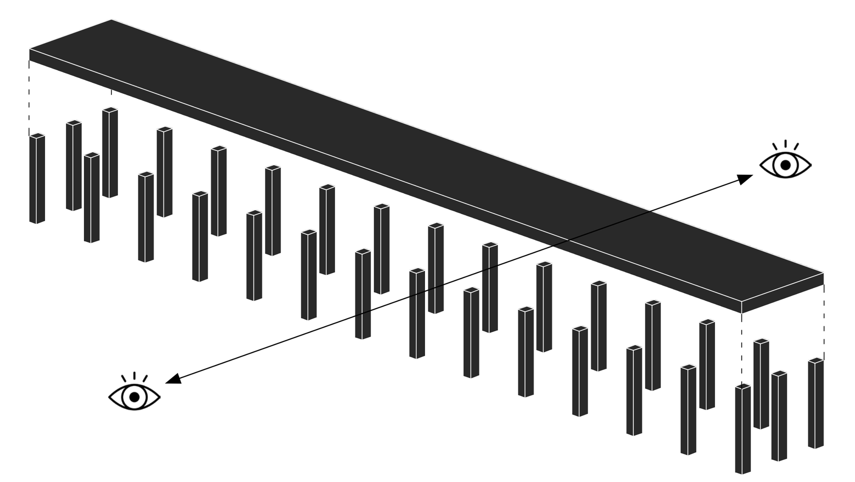
Shape

The new deliberately rudimentary volume corresponds to the poetic shape of the site. The pavilion echoes and continues the modernist language of the existing station, complementing the firm rectangular front facade on the opposite side of the square, framing the space in between, and inviting passersby inside. A simple flat roof is suggested by its language, making the message it conveys manifest.



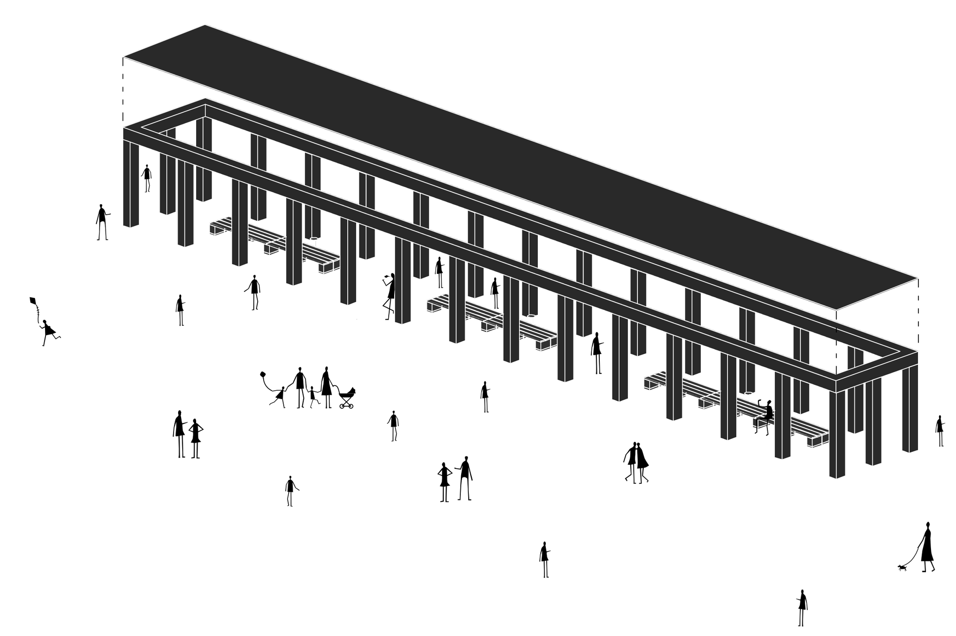
Architectonics

In order to establish a physical and visual relationship with the surrounding environment, an elongated down-to-earth structure is proposed to be open and only enclosed with colonnade from all sides.



Use

Inside, three long benches follows the shape of the pavilion's structure and allows interaction and panoramic views between the Square and the Bus Park. The space around the bench creates ***stoae***, a walkable public space that creates a safe, enveloping, protective atmosphere, allowing for a high sensory experience.
The pavilion references the architecture of a miniature temple, thus, creating an agora for thoughts to be discussed and debated within the public square landscape.



Brief History of Rammed Earth

Rammed earth is not a new material or building technique. In fact, the earth could be the first ever building material used by humans (Maachi et. al. 2020). Throughout history, it has been used on all continents in a wide variety of constructions. Many of these are still standing today, such as parts of the Chinese wall, Al Hmbra, and many residential houses around the globe. It is estimated that 30% of the world's population even today live in earthen constructions.

Although it is not common to see new buildings constructed with earth in industrialized countries today, the new materials from the Industrial Revolution took over completely, and earthen-building techniques were forgotten (Boltshauser et al., 2018, p.6). A big reason for this was that earth was hard to standardize and therefore hard to capitalize on in the same way as for example concrete and brick.

There is also a tradition of building with earth in Estonia, yet South Estonia is home to the largest concentration of them. The buildings have been erected for different purposes: there are manor houses and residential buildings, but different outbuildings – stables, barns, granaries, smithies, mills, and even saunas – dominate the scene (https://eestimaaehitus.ee/clay-plaster-workshop-for-professionals/).

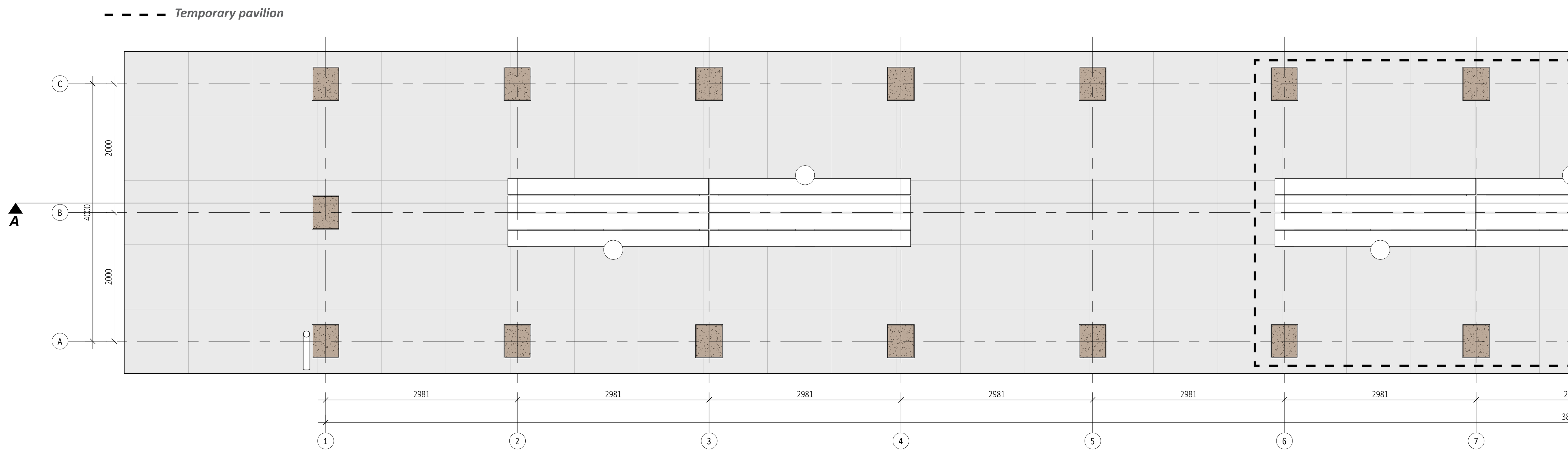
Material Sourcing

Ideally, the earth used for construction could be taken directly from the excavated earth of the buillding site, which would lead to less emissions from transports. This was done for Haus Rauch in Austria, where 85% of the material for the entire house was taken directly from the excavated pit (Boltshauser et al., 2018, p.178). Sometimes the earth on the building site is not suitable, and in that case, there is an opportunity to take advantage of the large amounts of excavated earth from other construction sites and infrastructure projects.

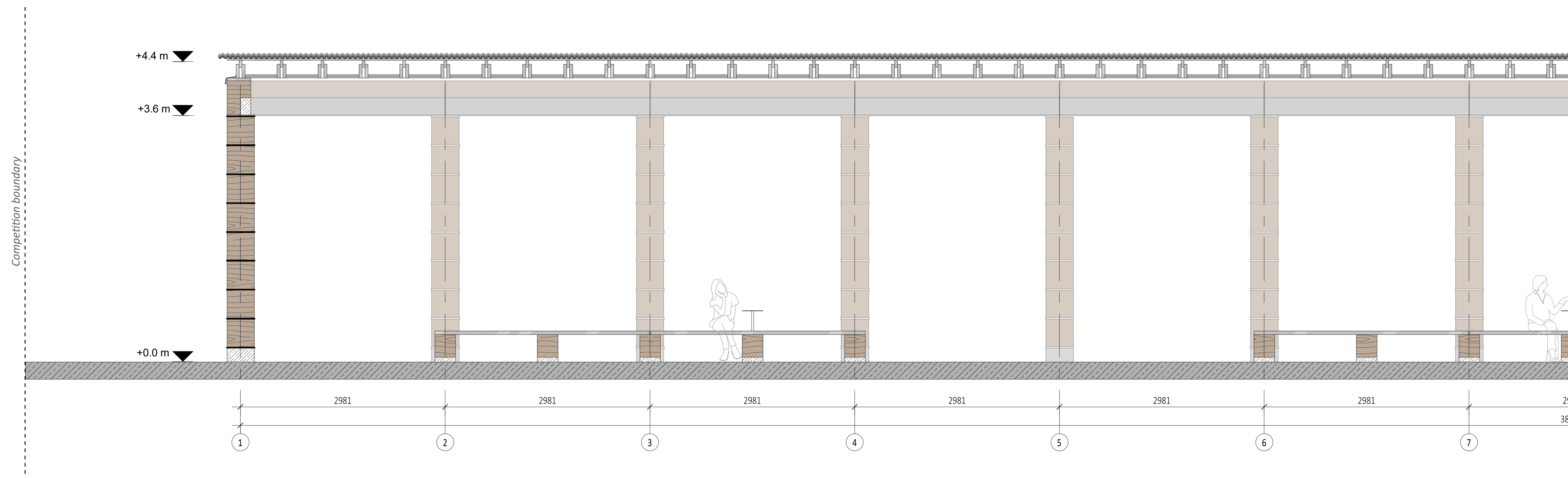
Earth actually represents the largest amount of waste material in industrial societies (Boltshauser et al., 2018, p.164). For example, over two million tons of excavated earth are transported out from Paris and deposited in landfills every year (Heringer et al., 2019, p 105). 90% of this is estimated to be usable for earthen constructions. In Switzerland, more than sixty million tons of earth and clay are excavated every year, most of which is used to landfill gravel pits.[https://issuu.com/tobiashelmersson/docs/tobias_helmersson-from_the_ground_up]

Finding new ways to use this unexploited resource would be an important contribution to substituting energy-intensive building materials such as concrete and bricks. Compared with conventional building methods, this would enable embodied energy savings of up to forty percent in new-builds. **For the new constructions, clay can be collected from building site excavations and the aggregate can be taken from demolition waste banks.**

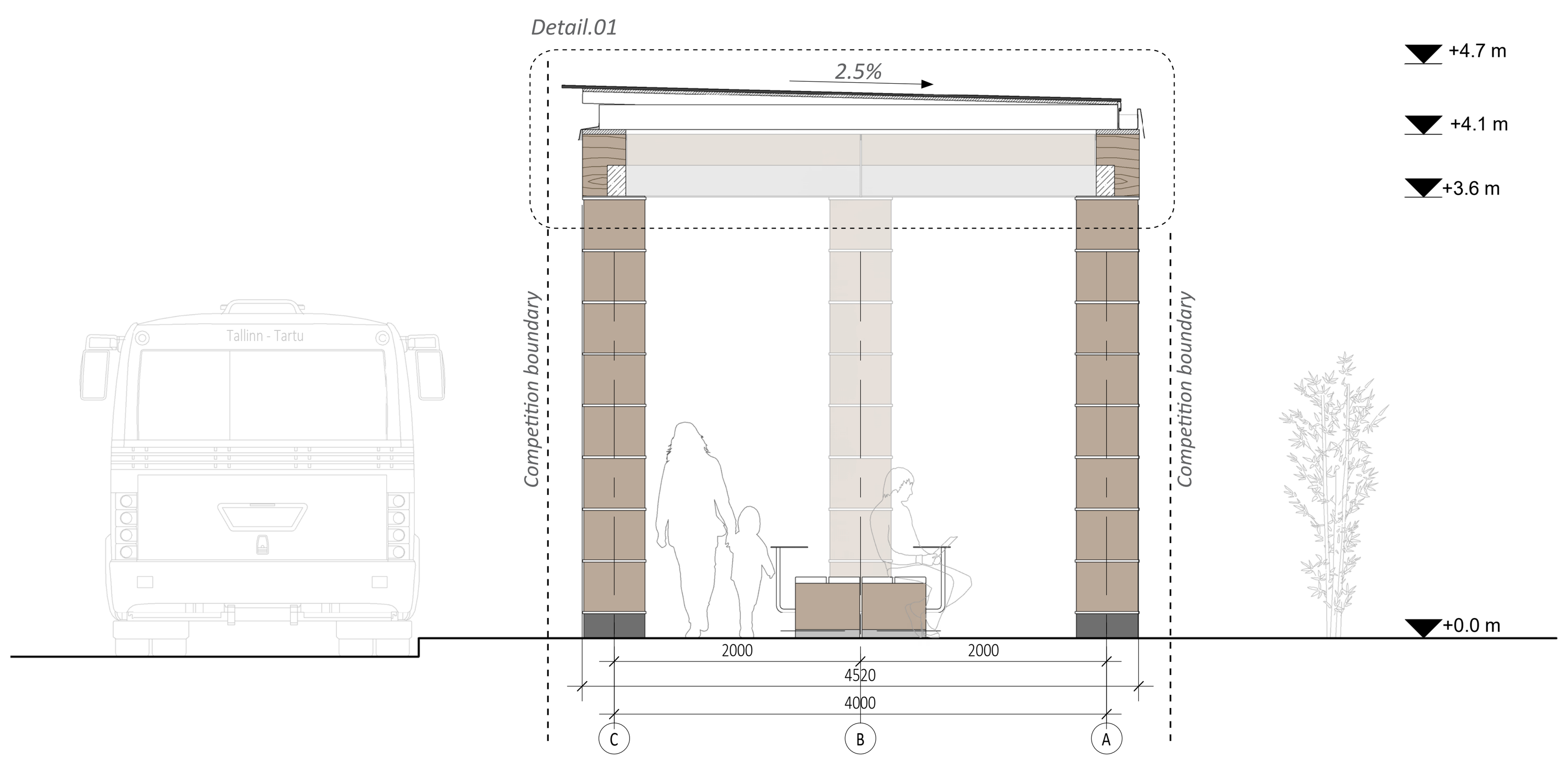
Plan 1:50



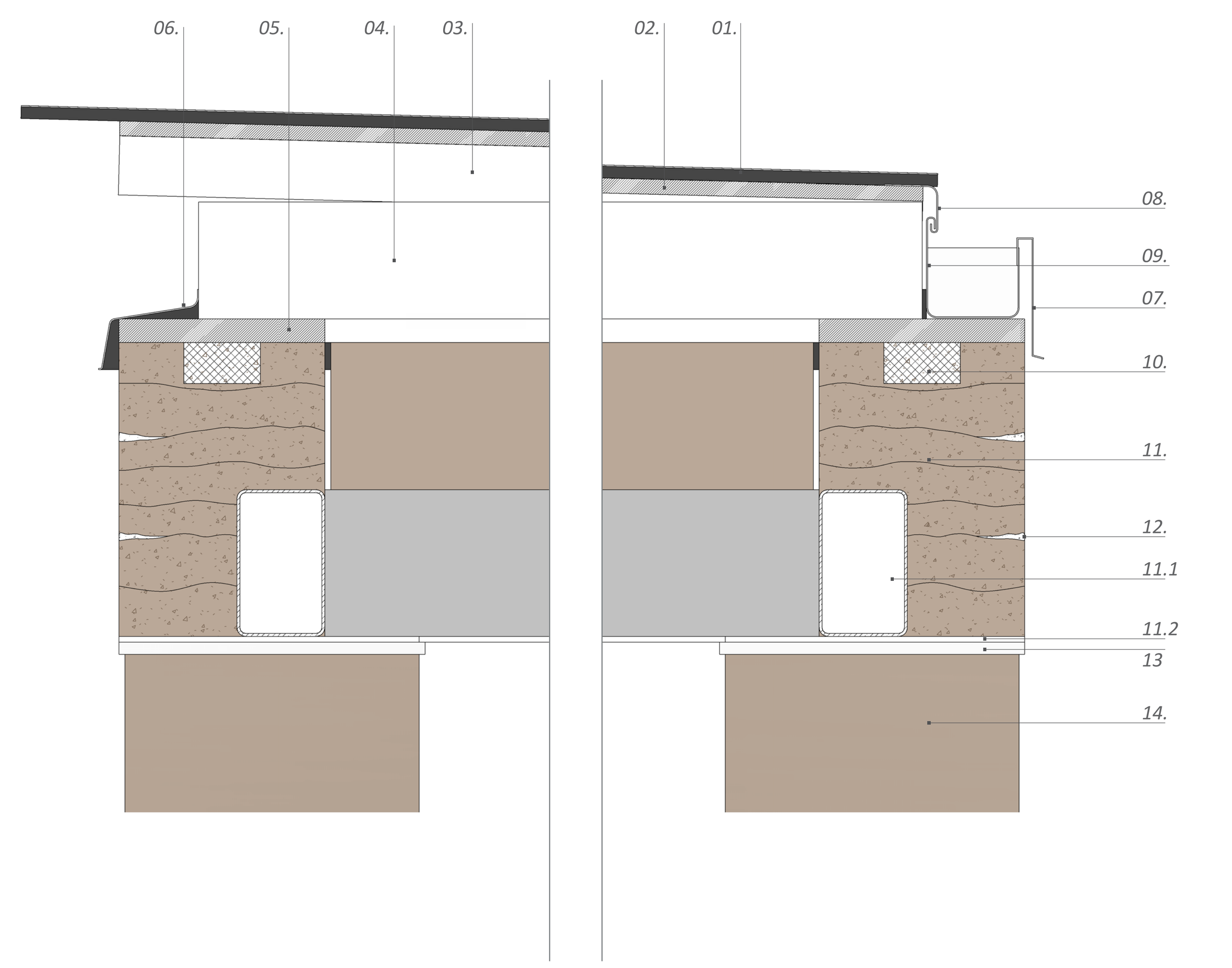
Section A-A | 1:50



Section B-B | 1:50



Detail.01 | 1:10



Embodied energy

Compared to other building materials, rammed earth requires minimal energy during construction.
The production itself does not directly emit CO2 emissions, as it is primarily composed of natural materials such as soil, sand, and gravel. *However, it's essential to consider the environmental impact of transportation, machinery usage, and any additional materials involved in the construction. But if to utilize locally sourced resources, it will also reduce transportation emissions as well. [https://issuu.com/tobiashelmersson/docs/tobias_helmersson-from_the_ground_up]*

In comparison to traditional building materials such as concrete or steel, rammed earth is often considered more environmentally friendly due to its lower carbon footprint. Also, the earth doesn't need to be fired like bricks or cement. For example, a production of rammed earth wall produces almost zero of CO2 itself, compared to softwood timber 110 kg, or a concrete wall 635 kg CO2 e/m3.

A study of the rammed earth facade of Ricola herb Centre concluded an 87% reduction in embodied energy compared to the average values of a conventional lightweight facade (Heringer et al., 2019, p.106).

Wood preservation

The ability of clay to absorb moisture is ideal in combination with wood and has been successful in practice for millennia. Clay's equilibrium moisture content is 6-7% while timber eventually balances out around 9% in construction (Rauch, 2015, p.108). This means that the clay will dehumidify the timber in the event of excess moisture.

Technique

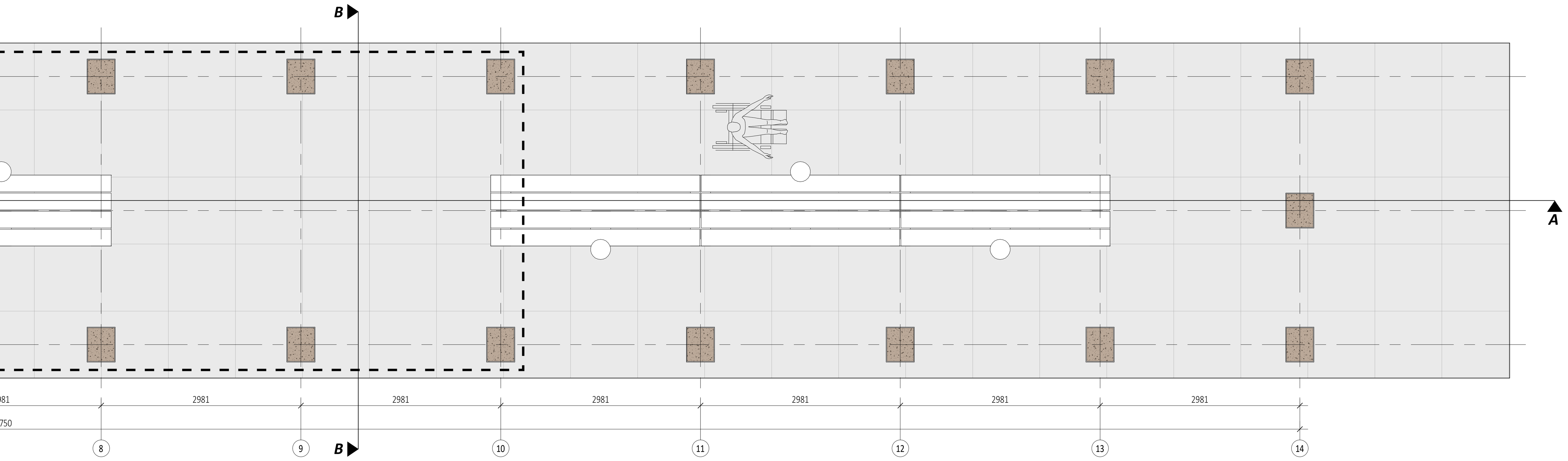
The earth is poured into 12-16 cm thick layers in a formwork, like the ones used for concrete, and then compacted with hand tools or mechanical instruments to half its thickness (Heringer et al., 2019, p.52). The process is then repeated to successfully build up the wall layer by layer. No firing is needed, the wall will gain strength by drying and can be built in its entirety in situ or by prefabricating wall elements in a factory. [https://issuu.com/tobiashelmersson/docs/tobias_helmersson-from_the_ground_up

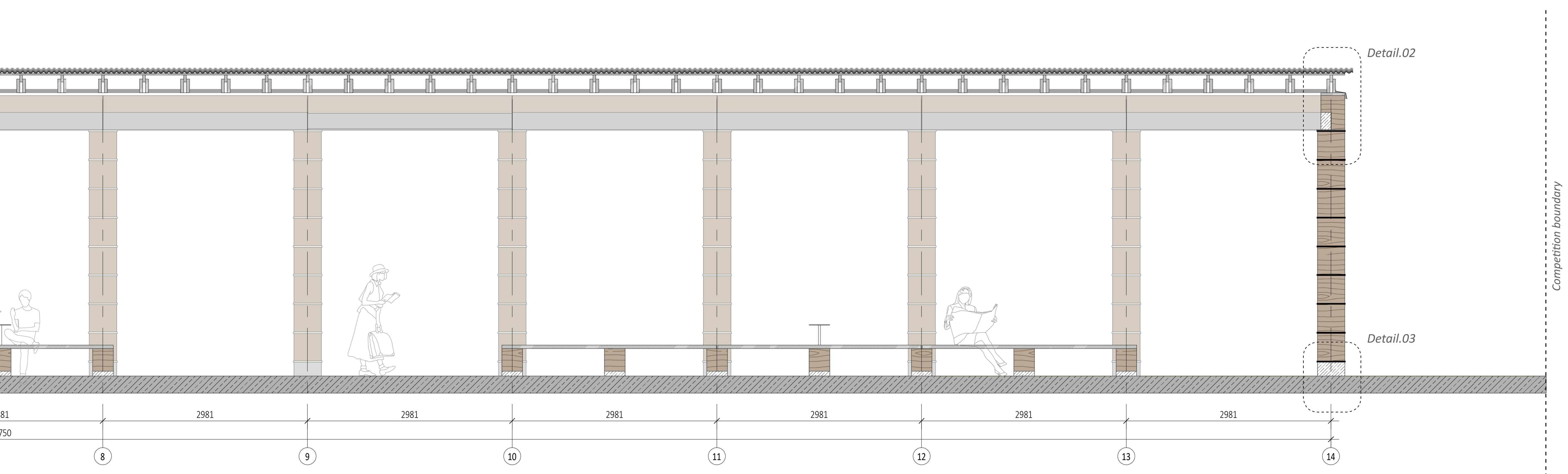
Revival

The revival of earthen building techniques has started to emerge. The Austrian company "Erden" has developed a technique for prefabricating rammed earth wall elements that can be stacked to construct large-scale buildings. This technique has already been used successfully in a variety of projects such as the Ricola Herb Centre, Alnatura Campus, and the Swiss Ornithological Centre. The projects of this company are located mainly in Austria, Switzerland, and Germany, and all of them are constructed with unfired earth without stabilizing additives (Erden, 2022a).

Rammed Earth + Timber

Rammed earth is a building material that consists of compacted clay, sand, gravel, and stones. It is a great option to consider for sustainable constructions, in combination with timber, since the earth is abundant almost everywhere and the technique requires minimal energy. However, today it is not used often as a modern building material in ***Estonia****, as it was in use in the past, before the Industrial Revolution.*
This project aims to spread knowledge of the material properties, architectural qualities, and practical applications for rammed earth and timber. *Timber is a lightweight material that can be used structurally in compression and tension, while rammed earth is heavy and can only be used in compression. These properties, among others,* ***make timber and rammed earth a good combination,*** *which is emphasized in the design as an objective.* ***The focus of choosing this material is not of course to push the structural abilities of rammed earth to the limit, but rather to introduce the material in an Estonian contemporary context, thus bringing traditional rural architecture to an urban setting for speculation and contrast.***

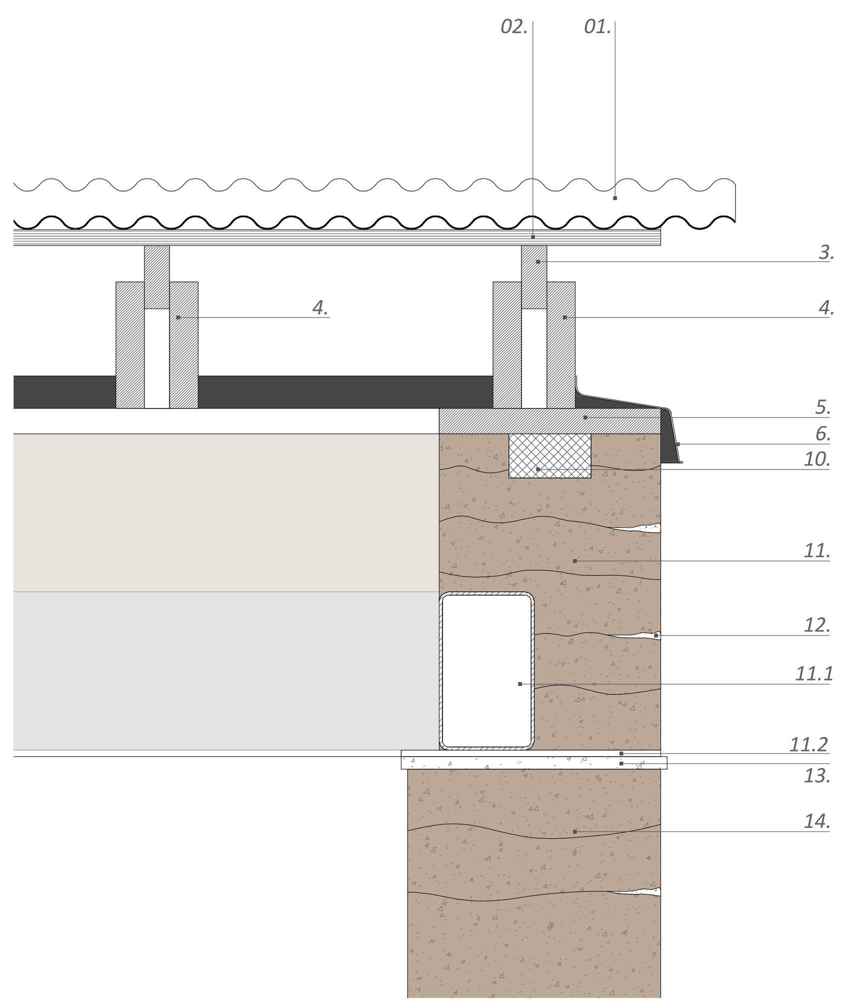




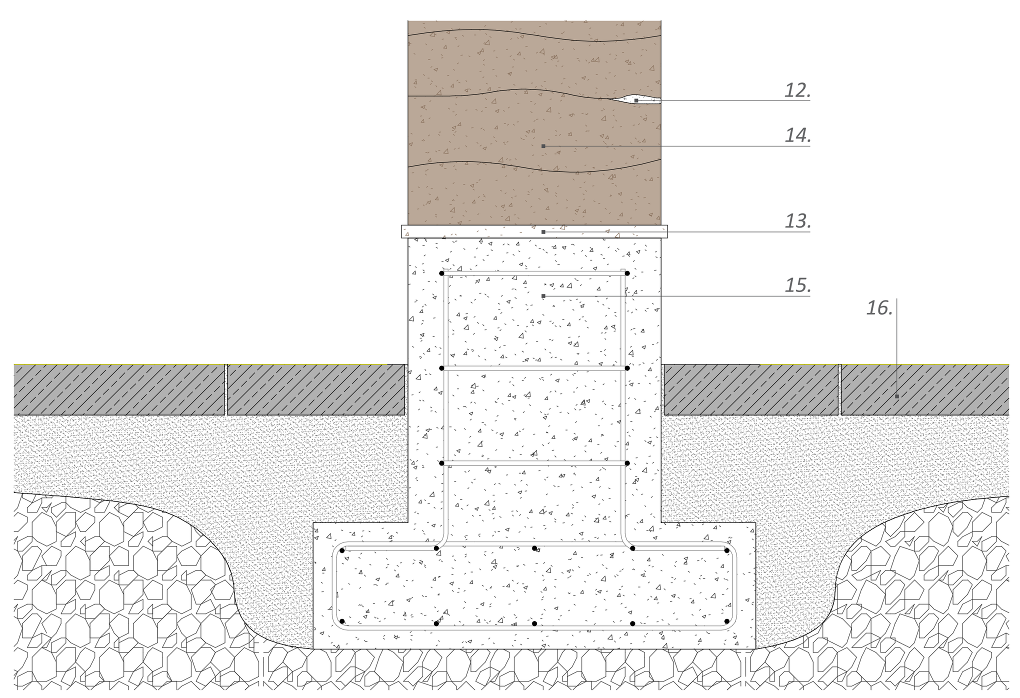
Legend

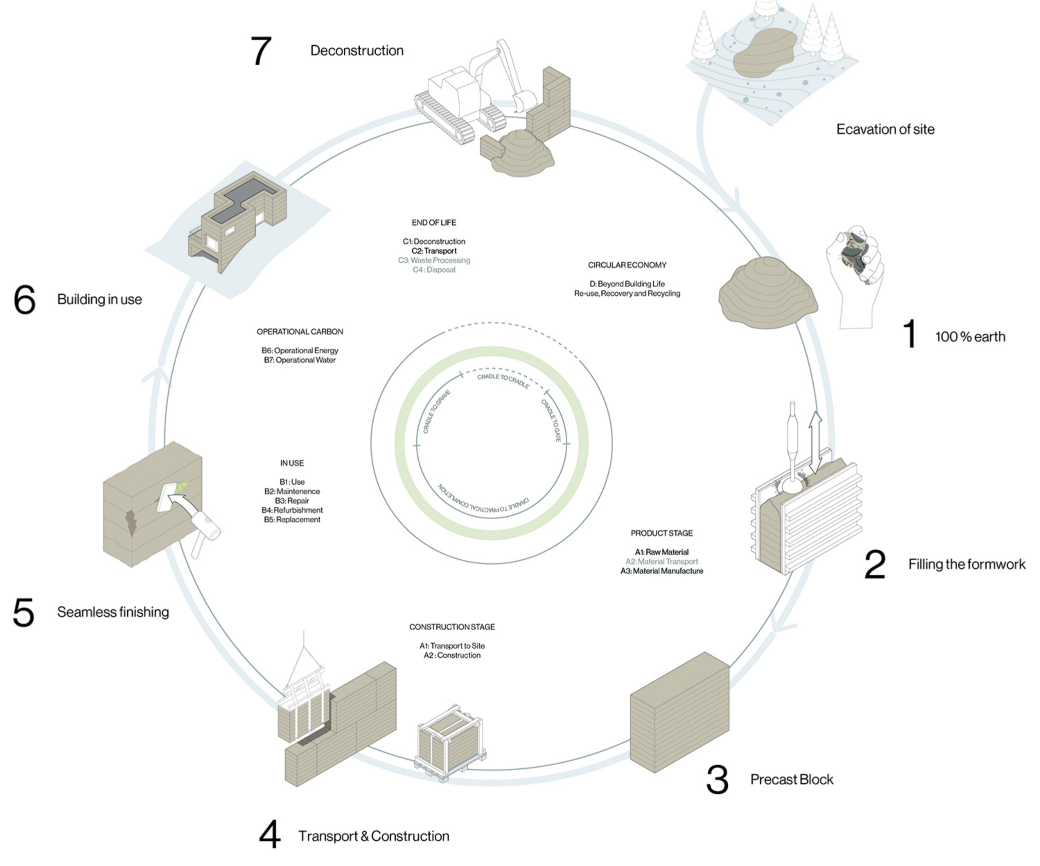
01. Corrugated sheet covering
02. OSB sub-layer 25mm
03. Rafter 100x45mm (fixed between ceiling double-joist)
04. Ceiling Double-Joist 200x45mm connected with middle inserts 200x45xL300mm
05. Top plate
06. Corten steel edge drip (1)
07. Corten steel edge drip (2)
08. Corten Steel edge drip (3)
09. Corten Steel rain gutter
10. Reinforced trass-lime ring beam
11. Prefabricated rammed earth element L2970xW350xH500mm,
11.1 prefabricated with incerted rectangular metal lintel (can be replaced with T-profile(beam)
11.2 prefabricated on corten steel plate
12. Erosion checks made from protruding ceramic tiles and fixed with clay mortar during prefabrication (not obligatory)
13. Metal top plate (5mm); laid on clay mortar
14. Prefabricated rammed earth element L500xW400xH400mm
15. Rammed concrete foundation with reinforcement (the solution is proposed for the permanent pavilion)
16. Existing granite pavement 1000x1000x80mm

Detail.02 | 1:10



Detail.03 | 1:10
(foundation solution for the permanent pavilion)





https://www.erden.at/Why-earth

Process / Prefabrication

The project focuses on utilizing local materials and labor, supporting the local economy, and streamlining the delivery process to the site, resulting in time and cost savings during construction.

Most of the elements for the pavilion, such as timber joists and rammed earth volumes, can be prefabricated and subsequently transported to the site, as prefabrication of rammed earth is advantageous compared to in situ construction since it is not dependent on weather or construction site schedules (Heringer et al., 2019, p.51).

!!! The process begins with preparing the material in the right proportions and building up a formwork, where it will be filled and rammed into separate elements. The elements are then dried at room temperature to reach their full compressive strength. Afterward, the formwork can be stripped off, and the blocks are transported to the site for assembly. ***They are stacked together with a mini crane on the construction site and fixed with earth mortar (Erden, 2022a).*** *As a final step, they are retouched by hand to create a monolithic appearance similar to that of in situ construction.*

Recyclability

Time doesn't alter any properties or chemical composition of the material (Heringer et al., 2019, p.107). ***If no additives have been added to the mixture, the material can simply be transformed back to its original form*** *by crushing it and adding water. This means that the material can be recycled endlessly without degradation, or just left on site to become a part of nature again. It is also simple to separate embedded installations and construction parts from earth which makes full recyclability easier. [https://issuu.com/tobiashelmersson/docs/tobias_helmersson-from_the_ground_up]*

Load-bearing capabilities

Rammed earth structures can withstand compressive forces of about 2.4 - 3.5N/mm2 (Erden, 2022a), this can be compared to 12.5 N/mm2 for normal concrete (Heringer et al., 2019, p.118). However, the lower strength of the rammed earth compared to concrete is not an issue as long as this is taken into consideration in the design. The tensile strength of rammed earth is about 10% of its compressive strength (Minke, 2006, p.33). To withstand intense tensile strength, rammed earth can be combined with other materials like timber.

Rammed earth's unique properties allow it to function effectively without the need for traditional rebar reinforcement. *It's compressive strength and cohesive nature naturally resist cracks and fractures. The interlocking particles within the rammed earth mixture provide inherent stability. Rammed earth's strength primarily comes from its compacted composition and proper construction methods rather than relying on external reinforcement (https://glsrammedearth.com/blog/rammed-earth-vs-concrete/).*

Calculated erosion

Earth is water-soluble which indeed makes it vulnerable to weathering and erosion. This form of abrasion occurs whenever water flows down the wall. If water drains from the facade too quickly, it will wash away particles of material, but if it drains more slowly, much more loam will remain. ***Between rammed earth blocks, horizontal lines such as erosion checks made of ceramic tiles, timber panels, lime, or metal can be implemented to protect the facade further.*** *They will reduce the speed of the water flowing on the facade and thereby reduce erosion.* ***The surface can be plastered at any stage of erosion if the rough appearance is unwanted. However, this is not obligatory. Just as the greying of timber, the erosion can instead be seen as something beautiful.***

They are integrated at staggered heights approximately every 40 to 60 cm. If they consist of bands of tiles made from fired clay elements, they will protrude from the plane of the facade, their presence accentuated by the shadow they cast. These are influential in defining the final appearance of the wall, dividing it into separate horizontal stripes (Martin Rauch refined earth. Construction & design with rammed earth, 2015)

When water flows on the facade, the outermost layer of finer particle sizes will wash away first (Rauch, 2015), where the ***bigger stones and gravel then get exposed and self-stabilize the surface of the wall.*** *When the clay particles between the stones get wet, they will expand and hinder the water from penetrating deeper, which will reduce the pace of erosion. [https://issuu.com/tobiashelmersson/docs/tobias_helmersson-from_the_ground_up]*

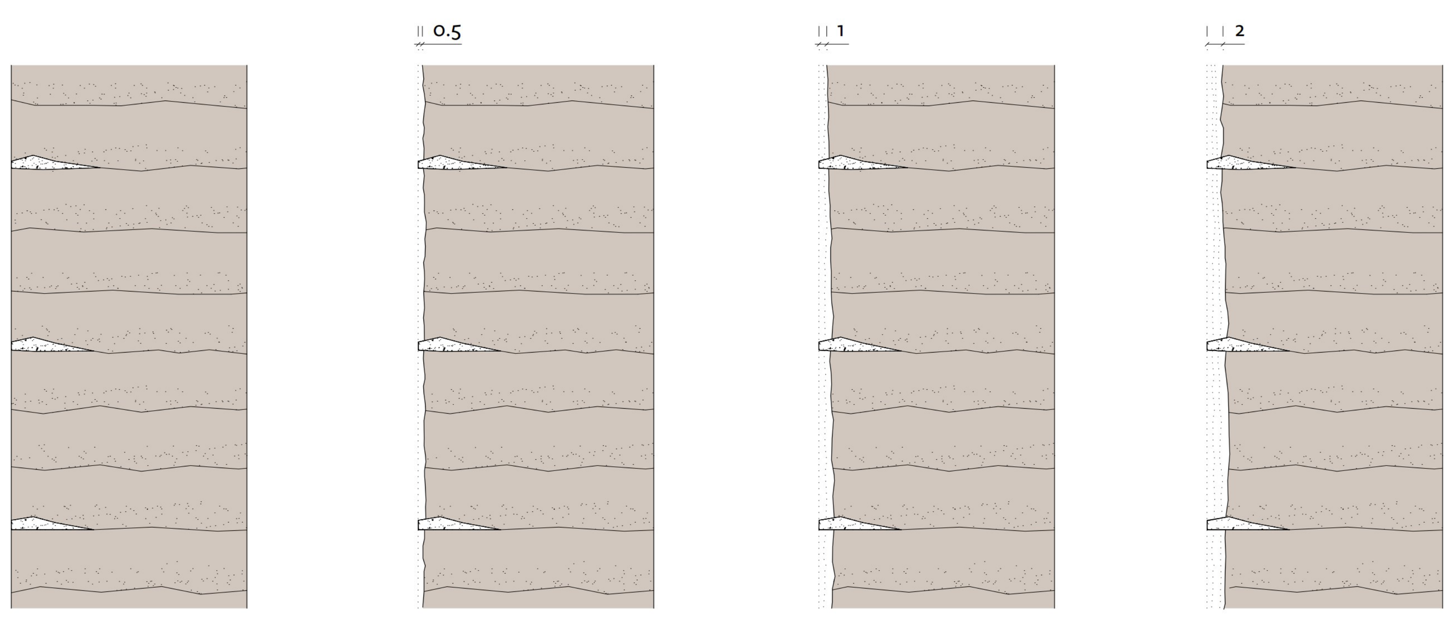
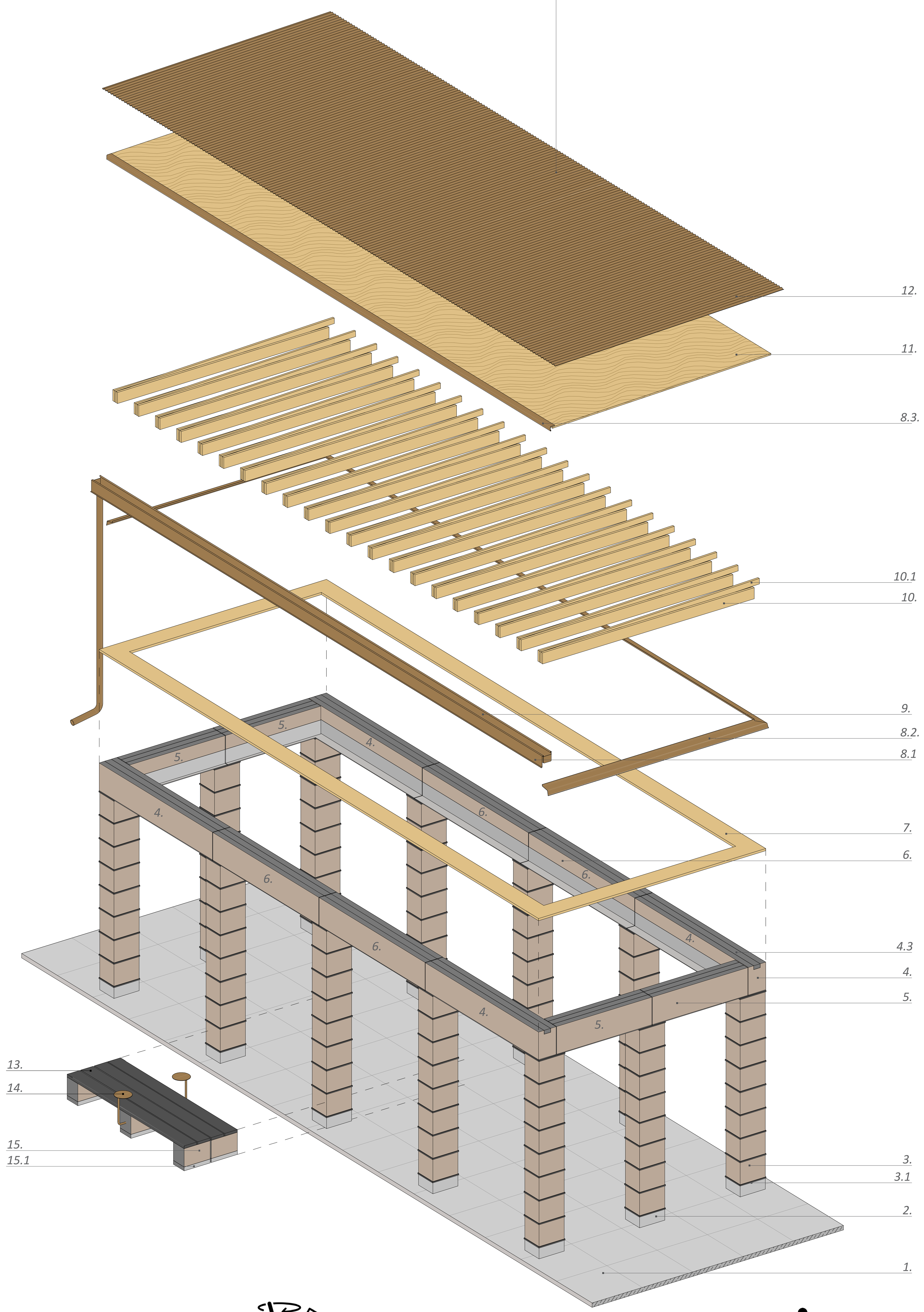


Diagram: "Martin Rauch refined earth. Construction & design with rammed earth, 2015"

Isometric view (exploded) / 1:50

Note
Conceptually, for the permanent pavilion, solar and photovoltaic panels can be considered for generating electricity, light, and hot water(WC), making the pavilion a fully sustainable structure.



Earth mixture

The earth mixture is crucial for the material's properties. The type and amount of excavated earth, as well as supplementary aggregates, determine these qualities:
Rich Loam: *High in clay, improves cohesiveness but weathers quickly and is harder to process than lean loam.*
Gravel: *Rounded and sharp-edged gravel stabilize rammed earth differently. A balanced mixture is necessary, requiring tests to develop an optimized formula for specific design and site requirements. At least 50%, and sometimes up to 100%, of rammed earth mixtures are composed of excavated soil.*

Defining Aggregates
Depending on the composition of the excavated earth, either loamy or gravelly material must be added, including both round and rough-edged gravel.
Round Gravel: *Integrates well into the material mass.*
Sharp-Edged Gravel: *Interlocking rubble (broken stones) helps strengthen the mix.*
Optimal stability requires both round gravel and sharp-edged crushed gravel.

Moisture Content and Soil Ratio:
Rammed earth requires optimal moisture content (~10% water), significantly less than concrete (Nicholas J. D'Ambra). A good soil ratio for rammed earth: 30-40% clays, 60-70% sands, gravels, and fines. Suitable soil types include sandy clays, gravelly clays, and clayey sands (Easton, 2007).

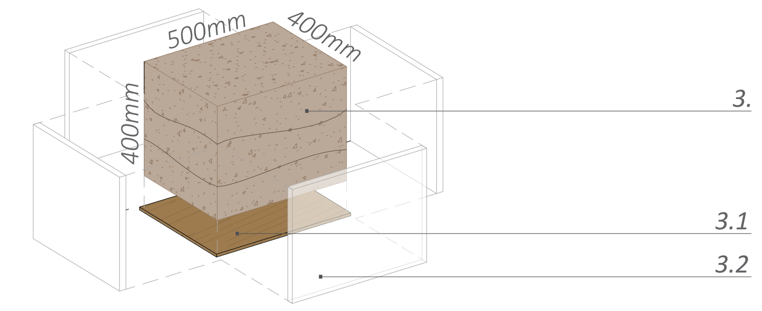
Testing Methods

The material is tested in three ways:

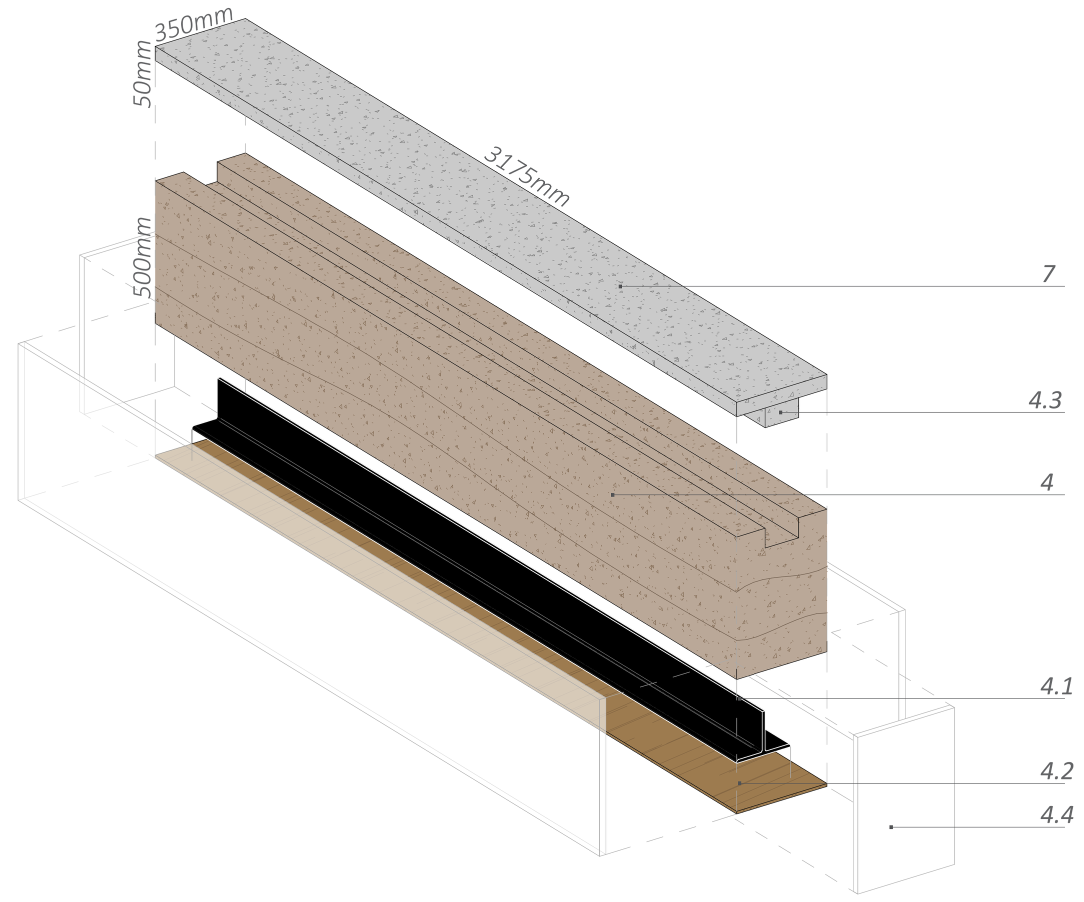
Hand Test: *An expert assesses if the material sticks together properly, is sufficiently damp, and has the appropriate grain. Generally, three to four different mixtures are prepared to find the optimal combination.* ***Rammed Test Specimens:*** *A small amount of earth is compacted under realistic conditions to evaluate its resistance, resonance during stamping, and visual appearance after removing the formwork.* ***Laboratory Test:*** *The compressive strength of test specimens is measured (Martin Rauch, 2015).*

Temporary Pavilion

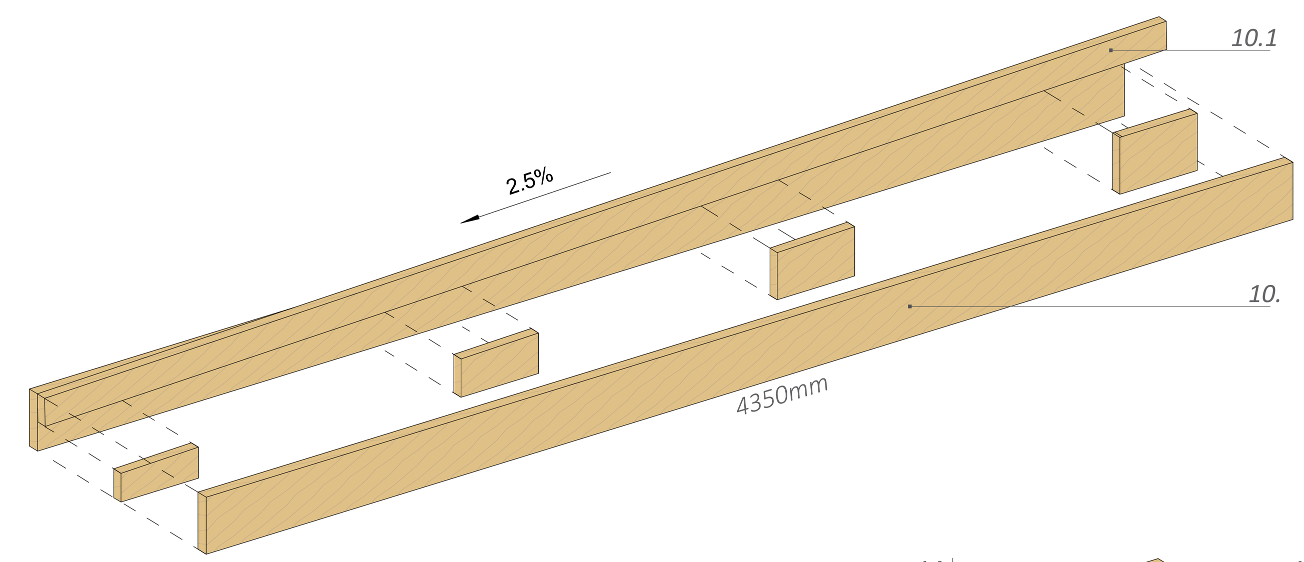
1. Existing granite pavement - 1000x1000x80mm
2. Re-used Concrete block/Paver for the foundation ≈ L500xW400xH200mm ***(12x)***
** Elevating the rammed earth volumes prevents cracks and damage caused by moisture. Instead of constructing new foundations for the columns and walls for the temporary pavilion, various concrete blocks or pavers sourced from construction waste banks can be repurposed for this function.*
3. Prefabricated rammed earth element for a wall-column L500xW400xH400mm (96x)
3.1 prefabricated on corten metal plate L520xW420x5mm ***(96x)***
3.2 ply formwork made of leftovers ***(96x)***
** The plate on which the block is prefabricated also serves as an erosion check!*



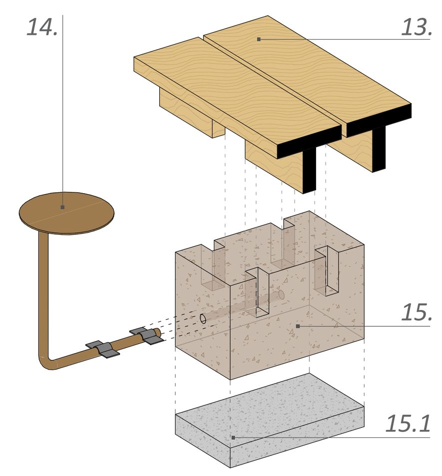
4. Prefabricated rammed earth element L3175xW350xH500mm ***(4x)***
4.1 prefabricated with incerted metal lintel (for ex. T-profile(beam), or with one rectangular 3075x250x150x8mm) ***(4x)***
4.2 prefabricated on corten steel plate L3175xW350x8mm ***(4x)***
4.3 reinforced trass-lime ring beam
4.4 ply formwork made of leftovers ***(4x)***



5. Prefabricated rammed earth element L1895xW350xH500mm ***(4x)***
5.1 prefabricated with incerted metal lintel (for ex. two L-profiles, faced opposite and connected together, or with one rectangular 1795x250x150x8mm) ***(4x)***
5.2 prefabricated on corten steel plate L1895xW350x8mm ***(4x)***
5.3 reinforced trass-lime ring beam
6. Prefabricated rammed earth element L2970xW350xH500mm ***(4x)***
6.1 prefabricated with incerted metal lintel (for ex. two L-profiles, faced opposite and connected together, or with one rectangular 2870x250x150x8mm) ***(4x)***
6.2 prefabricated on corten steel plate L2970xW350x8mm ***(4x)***
6.3 reinforced trass-lime ring beam
7. Top plate (treated timber) 30x350;
!!! Can be replaced with a layer of trass-lime during the prefabrication process to create strong protective top layer.
8. Corten steel edge drip (see Detail.01)
8.1 - 12.7 lm;   8.2 - 21.2 lm;   8.3 - 12.4 lm
9. Corten steel rain gutter ***(Horizontal part - 12.7 lm; Vertical part - 4.5 lm)***
****The design ensures that water flowing from the rain gutter waters trees through existing corten steel tree grilles. For the permanent pavilion, water can also be collected and used for WC purposes.*
10. Ceiling Double-Joist 200x45xL4200mm connected with middle inserts 200x45xL300mm, at calculated distances ***(21x)***
10.1 Rafter 100x45xL4350mm (fixed between ceiling double-joist) ***(21x)***



11. OSB/or PLY sub-layer 25mm ***(4250x12350mm)***
12. Corrugated sheet covering ***(4250x12580mm)***
13. Bench seating made of timber planks
(Top - 3300x250mm - 4x; Horizontal support - 3300x250mm - 4x)
14. Coffee table made of corten steel
(Corten steel sheet D300x7mm - 2x; Pipe 30x1000mm - 2x)
** A standard 30mm pipe can function as a leg with a plate on top, all obtained from leftover materials and prefabricated.*
15. Prefabricated rammed earth element for a bench L520xW300xH400mm ***(6x)***
15.1 prefabricated on top of concrete block/paver L520xW300xH50mm ***(6x)***



TOTAL AMOUNT OF EARTH IN RAMMED CONDITION:
$8m^3$ - Columns
5.35^3 - Lintels
$0.32m^3$ - Bench support
$13.67m^3$

Case studies and/or references *were deliberately chosen to focus on projects related to adaptive re-use and circular economy.*

Following basic research, rammed earth was selected as the main structural material for the pavilion. Selected references and case studies were then analyzed in depth to explore its potential application.

Below is the shortlist of references that contributed input to prepare this project proposal.

References/Theory on practice:

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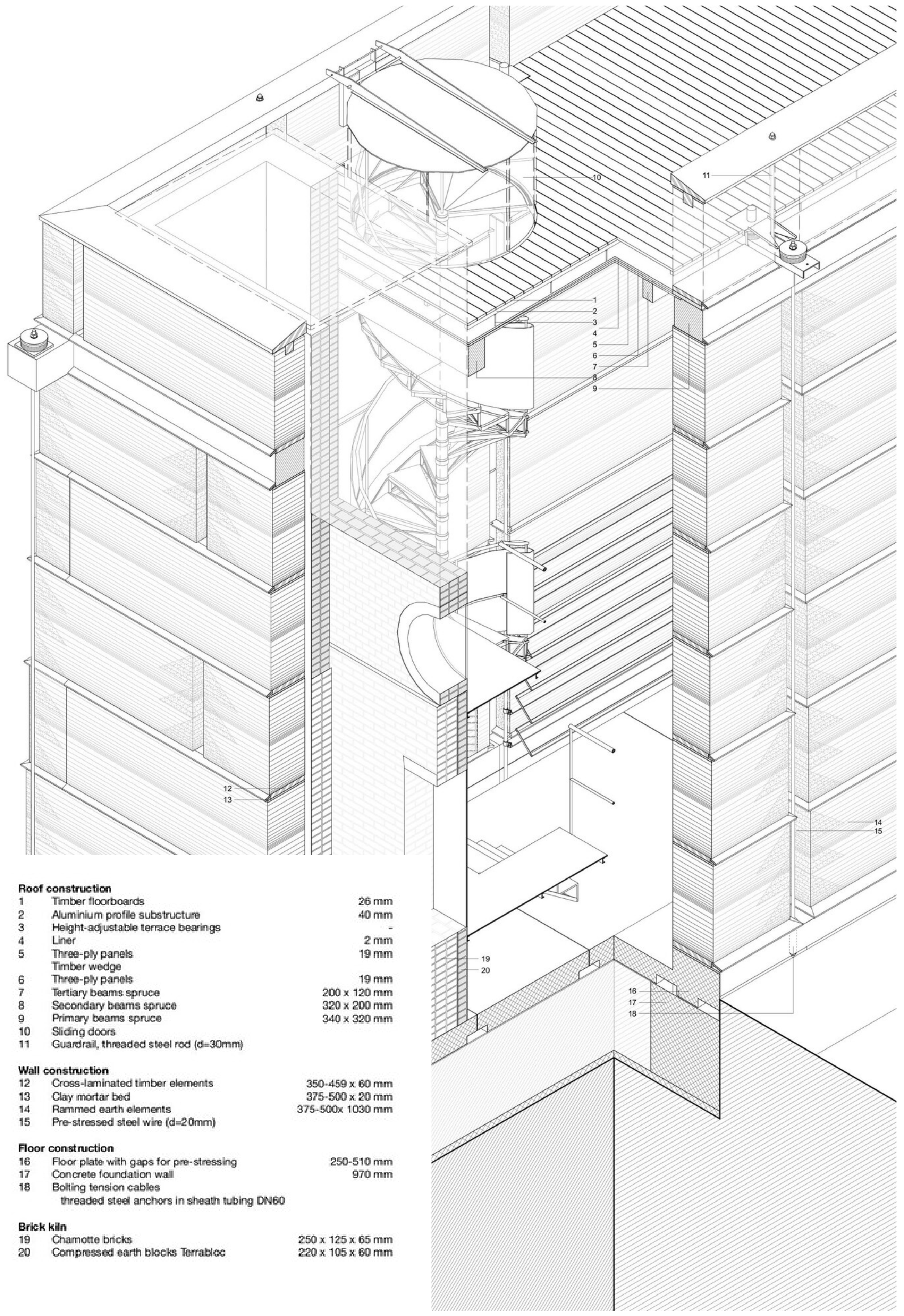
Suggested language

The existing two buildings closer to the competition site represent modernist architecture with pronounced verticality and linearity. Thus, the "Agora Tallinn" integrates into its context in a very harmonious way, continuing the fabric of the existing station and the city in general.
Natural shades of rammed earth are similar to the facade of the train terminals and will give another layer of visual cohesion to the overall design.

1. Kiln Tower for the Brickworks Museum / Boltshauser Architekten / Cham, Switzerland



https://boltshauser.info/projekt/ofenturm-fuer-das-ziegelei-museum/

Main outcome from this reference

Building with rammed earth presents several innovative and practical advantages, as demonstrated by the design and construction of the new kiln tower at the Brickworks Museum in Switzerland. Here are some key takeaways:

Sustainability: *Rammed earth construction utilizes a readily available material—earth—which can significantly reduce the embodied energy of buildings by up to 40% compared to conventional methods using concrete and bricks. This method also finds a productive use for the large amounts of excavated earth and clay that would otherwise be wasted.*

Structural Innovations: *The project showcases the world's first prestressed earth building, combining the compressive strength of earth with the tensile strength of steel. This innovation enhances the stability of the structure, making it resistant to earthquake loads and increasing overall durability.*

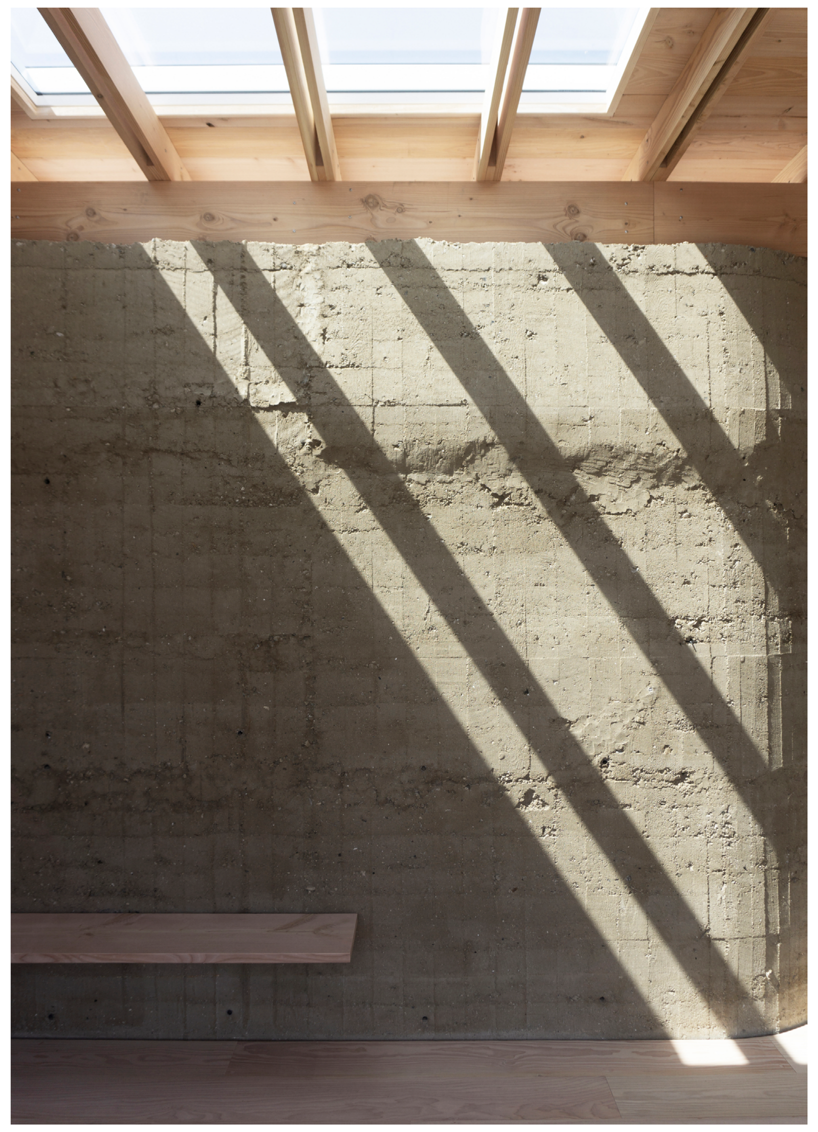
Efficiency in Construction: *The use of prefabricated rammed earth elements significantly speeds up the construction process. Prefabrication allows for precise manufacturing of earth blocks off-site, which are then quickly assembled on-site. This method minimizes the need for hand-filling and compacting the walls, reducing labor costs and construction time while maintaining structural integrity.*

Architectural Aesthetics: *The design contrasts the solidity of rammed earth walls with the delicacy of tension bars and open joints, creating a visually appealing structure that maintains the authenticity of the building material. Light slits in the joints and the integration of steel frames for exhibitions add functional and aesthetic value.*

Environmental Protection: *A weather drip installed on the timber base plates protects the earth walls from erosion, demonstrating a practical approach to extending the lifespan of rammed earth structures in various climates.*

Research and Development: *The project includes scientific monitoring to further understand and optimize rammed earth construction. This ongoing research contributes to the development of more efficient, sustainable building practices and promotes wider adoption of rammed earth as a viable alternative to traditional building materials.*

2. A Natural Pavilion / ReVærk / København, Denmark



https://www.archdaily.com/1004372/a-natural-pavilion-revaerk?ad_medium=gallery#

Main outcome from this reference

'A Natural Pavilion' showcases ReVærk's innovative housing concept 'NaturligRækkerne' as part of the '4to1 planet' project, funded by Realdania and Villum Fonden foundations. This pavilion aligns with the Sustainable Development Goals-pavilions, initiated by the Danish Association of Architects and the UIA World Congress of Architects 2023, in collaboration with Copenhagen Municipality and City & Harbour.

Sustainability: *The 'NaturligRækkerne' project focuses on environmentally friendly and indoor climate-friendly housing. The use of natural materials such as rammed earth, wood fiber insulation, and round timber emphasizes a sustainable approach to construction, reducing carbon emissions associated with development.*

Innovative Materials: *The townhouses are constructed using basic, natural elements: rammed earth for separating walls, internal load-bearing timber, and external biogenic insulation cassettes. These materials, though traditional, are used in a refined manner to create high sensory value and modern aesthetics.*

Revitalizing Historic Practices: *By revitalizing historic building practices and materials, 'A Natural Pavilion' demonstrates that materials like rammed earth and wood can be integral to future sustainable architecture. This approach leverages local resources and traditional craftsmanship, which hold significant potential for sustainable development.*

Architectural Exemplification: *The pavilion serves as a practical example of sustainable architecture in a Danish context, using wood fiber boards for insulation, local soil for tamping, and unsorted wood from Dinesen for various structural elements. It highlights the potential of these materials in contemporary housing, addressing the need for qualified architectural exemplifications in sustainable building.*

3. Quatre cheminées / Déchelette Architecture / Boulogne, France

https://www.dechelette-architecture.com/quatre-cheminees/

Short description about the project

The project, located in Boulogne-Billancourt in the Parisian suburbs, involves a building with eight social housing units, a caretaker's lodge, and a shop on the ground floor.

It is driven by a desire for restraint in design and the use of natural, bio-sourced, and local materials without ever losing sight of comfort for the occupants.

The structure will be built out of wood on a foundation of stone. The goal is to create a decarbonized building without concrete.

The façade at street level will be made of raw earth blocks, thus following the precepts of the "cradle to cradle" concept based on two principles: zero pollution and 100% reusability. The soil will be retrieved locally from the «Grand Paris» Metro borehole excavations.
(https://www.europeanarch.eu/europe-40-under-40-awards-archive/2022/04/06/17-rue-des-4-chemin%C3%A9es-2023-emmanuelle-d%C3%A9chelette/)