

(UN) HEALTHY VEGGIES



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01 IDEA DESCRIPTION

The trend towards a healthy and balanced nutrition through a variety of vegetables is on the rise.

Europe's vegetable garden lies under plastic tarpaulins. The cultivation of monocultures such as tomatoes, peppers, cucumbers are covered with a plastic film. Fertilizers are frequently used. Environmentalists warn that vegetables are heavily polluted with pesticides. Water consumption in the greenhouses is high.

The greenhouses are staffed almost exclusively by immigrants from Africa, some of whom live here illegally and have to work under horrible working conditions. People usually do not know where the tomato, pepper etc. they buy comes from. Small regional farmers make little profit and suffer from the mass production of these farms.

It's time to take a closer look at these (un)healthy vegetables.

Is what we eat really healthy for us and our environment?

02 CONCEPT

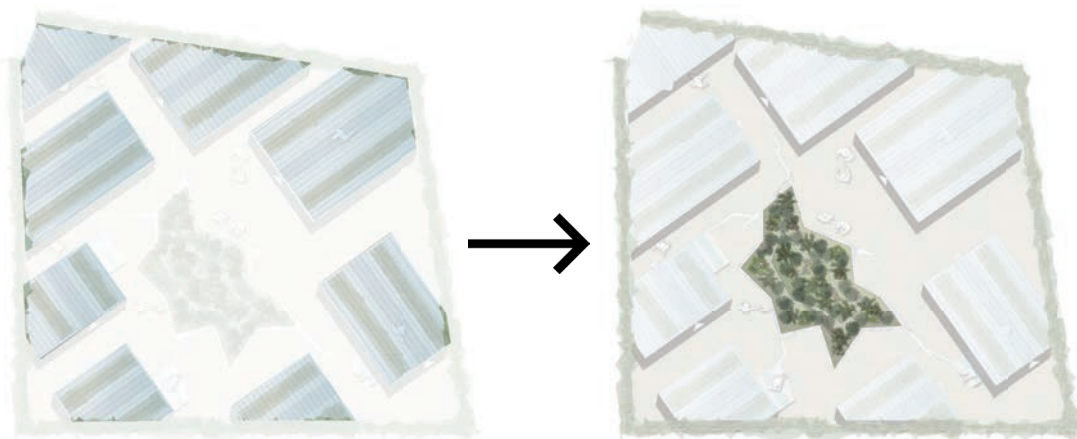
THERE IS A CRACK IN EVERYTHING
(L. COHEN)

The design is based on greenhouse constructions, located on the edges of the garden. Inside them is vegetable produced in unhealthy way.

At the entrance visitors have to walk through one of the greenhouses, to later see a crack between. This crack points on the healthy sustainable vegetable production, in contrast with monoculture and unhealthy way.

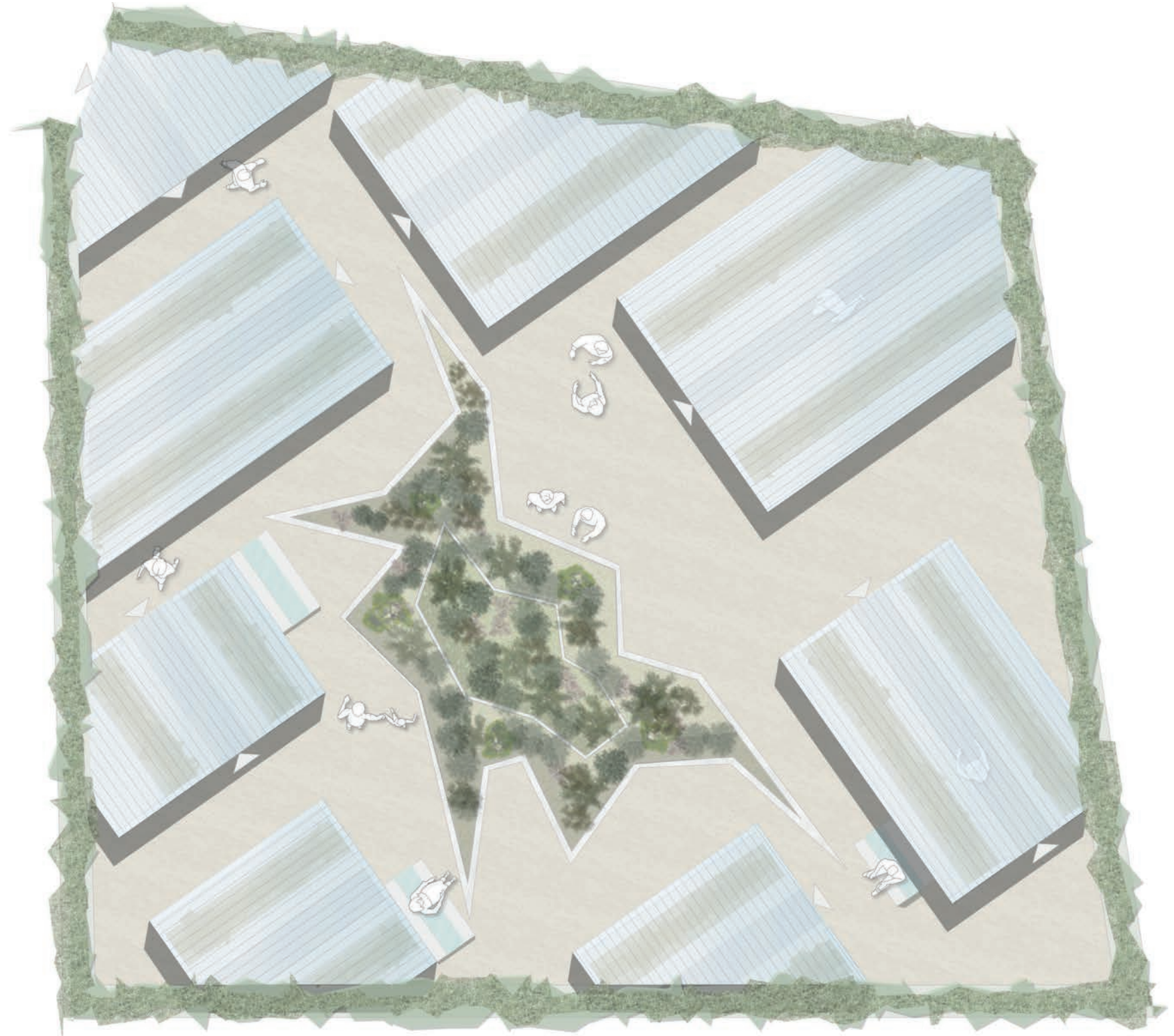
This closer look to (un)healthy vegetables is the main focus, which should evoke thinking about the problem.

There is a crack in everything, which testify to our imperfection, to our failures. However we can always learn and built new and better things on these cracks...



greenhouses

crack

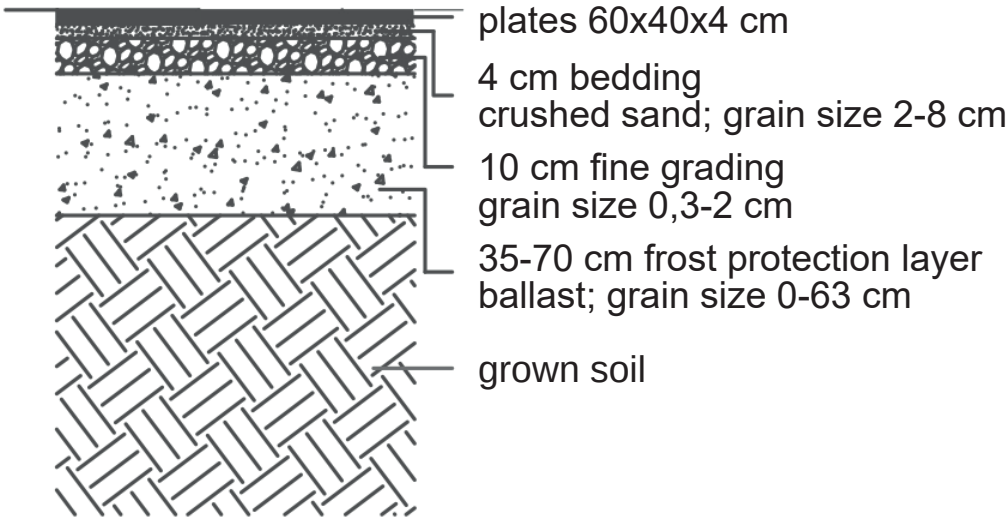


concept

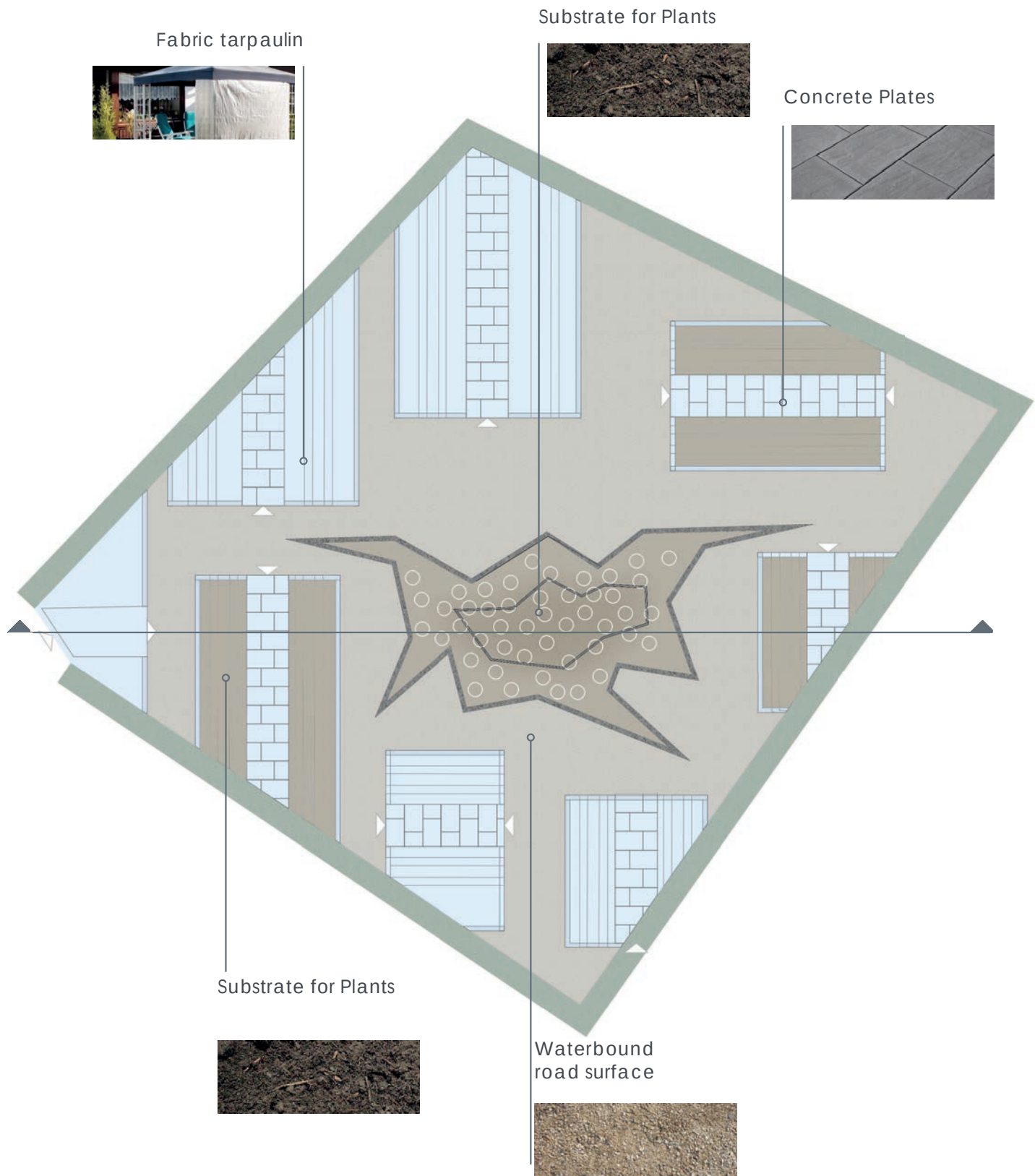
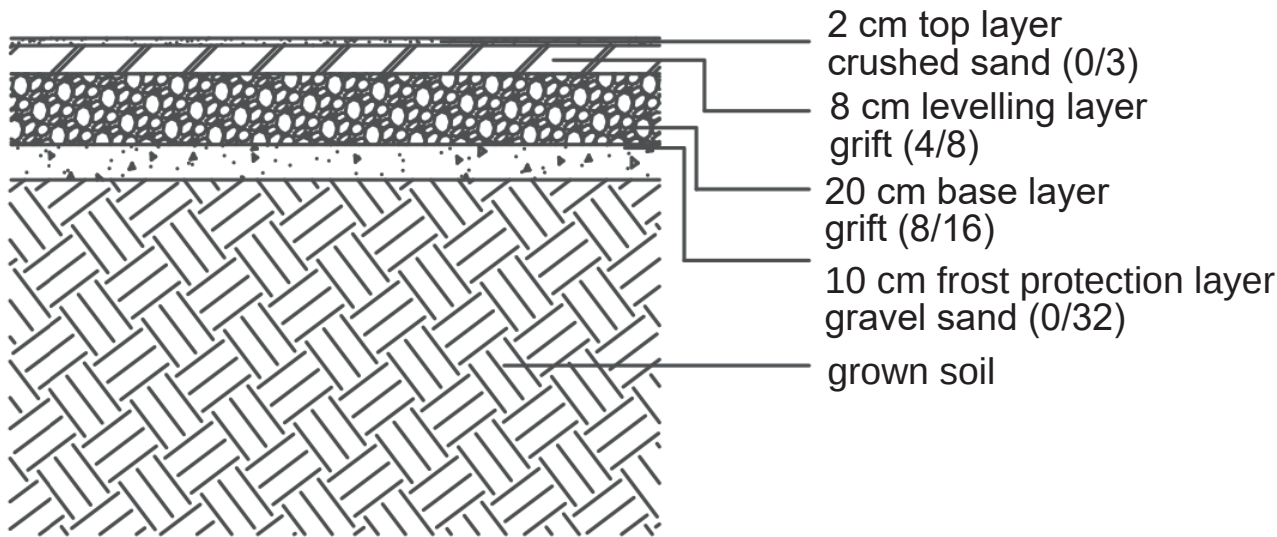
material plan, section M 1:100



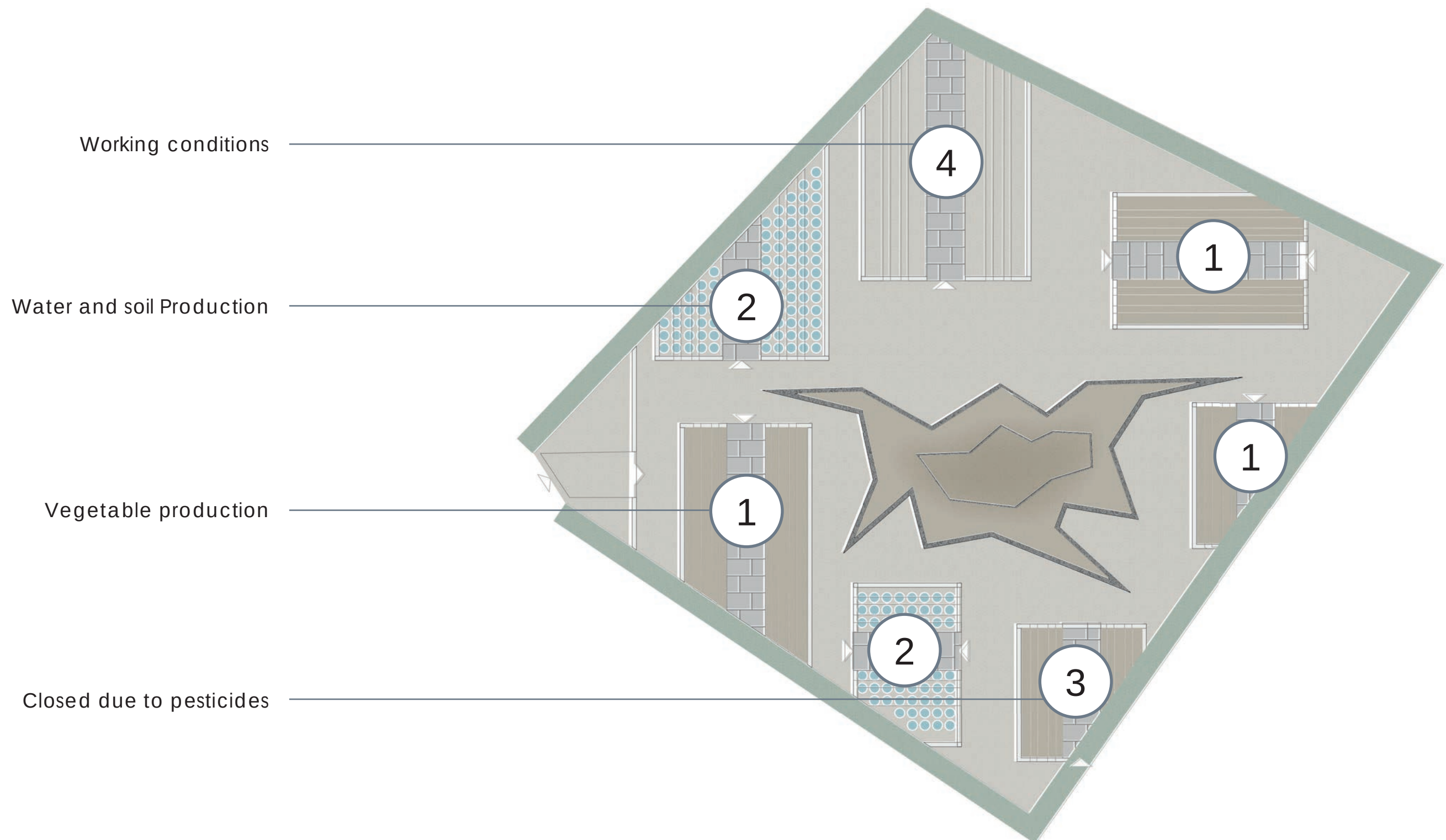
detail - waterbound road surface



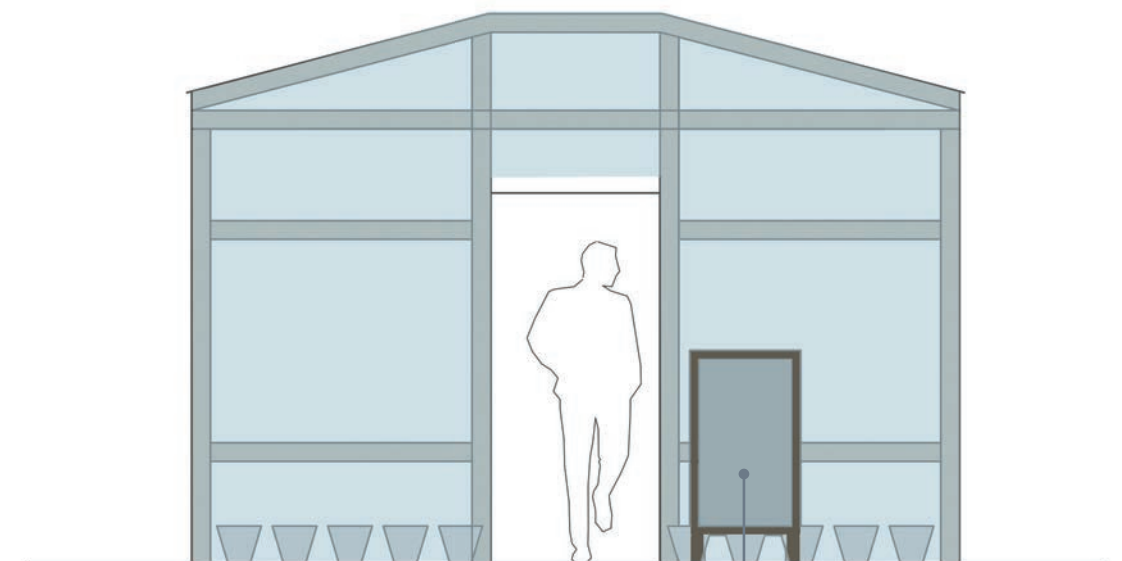
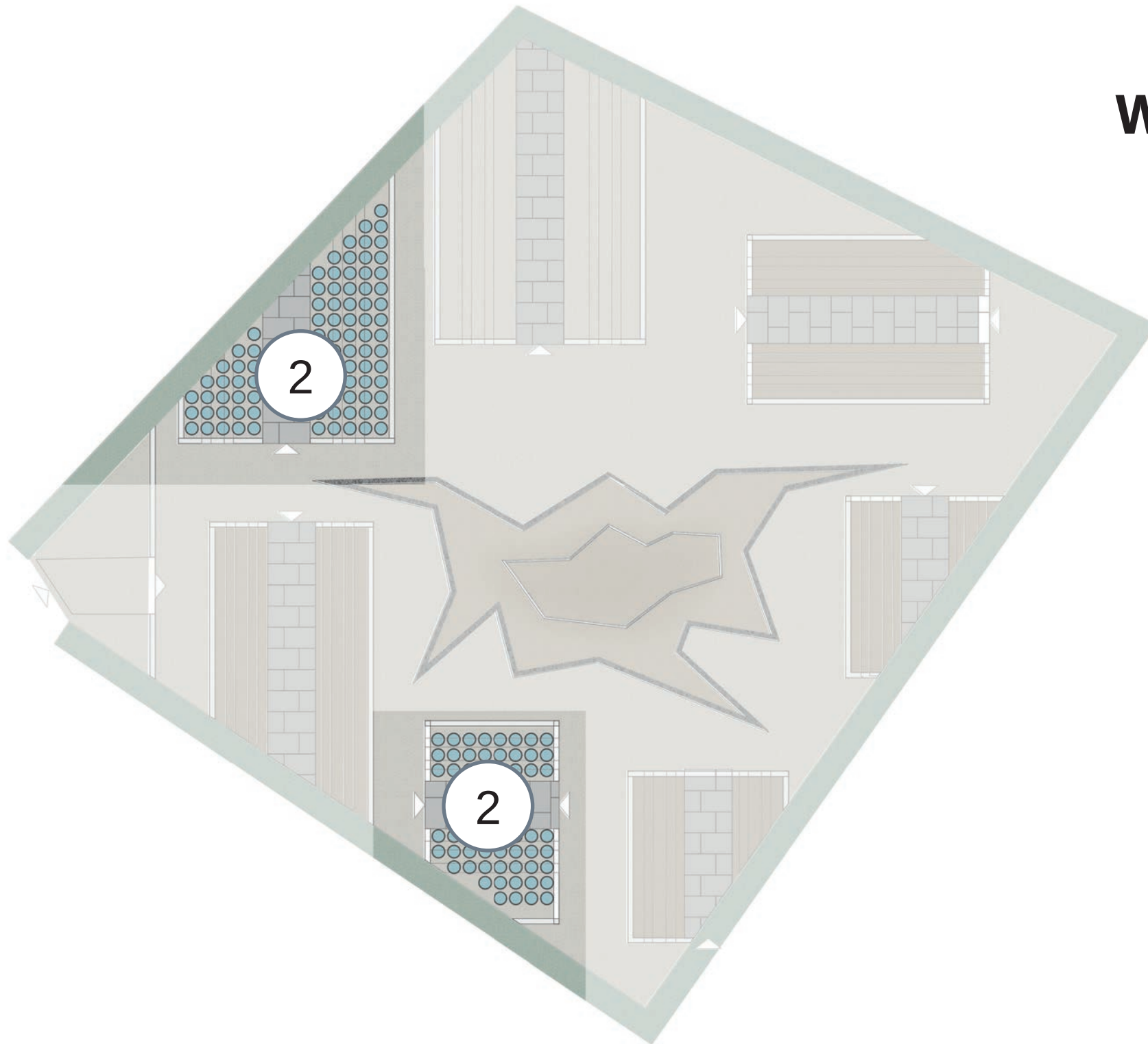
detail - concrete plates



topics of the greenhouses

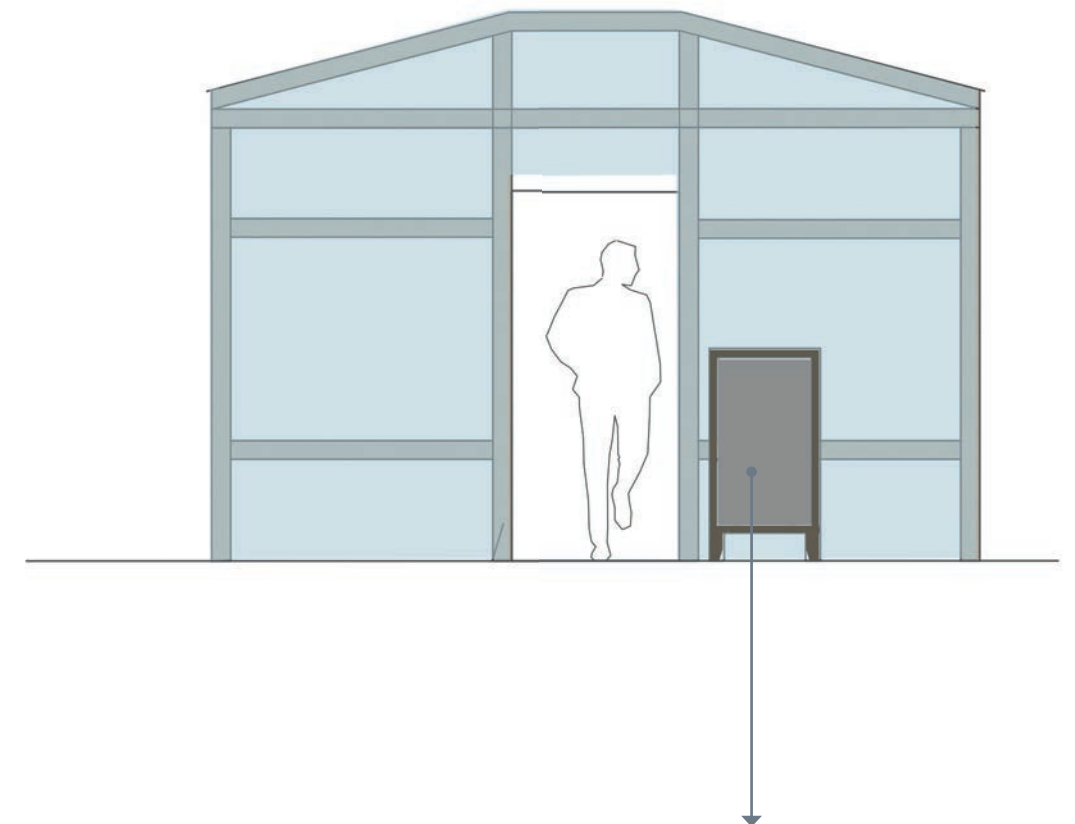
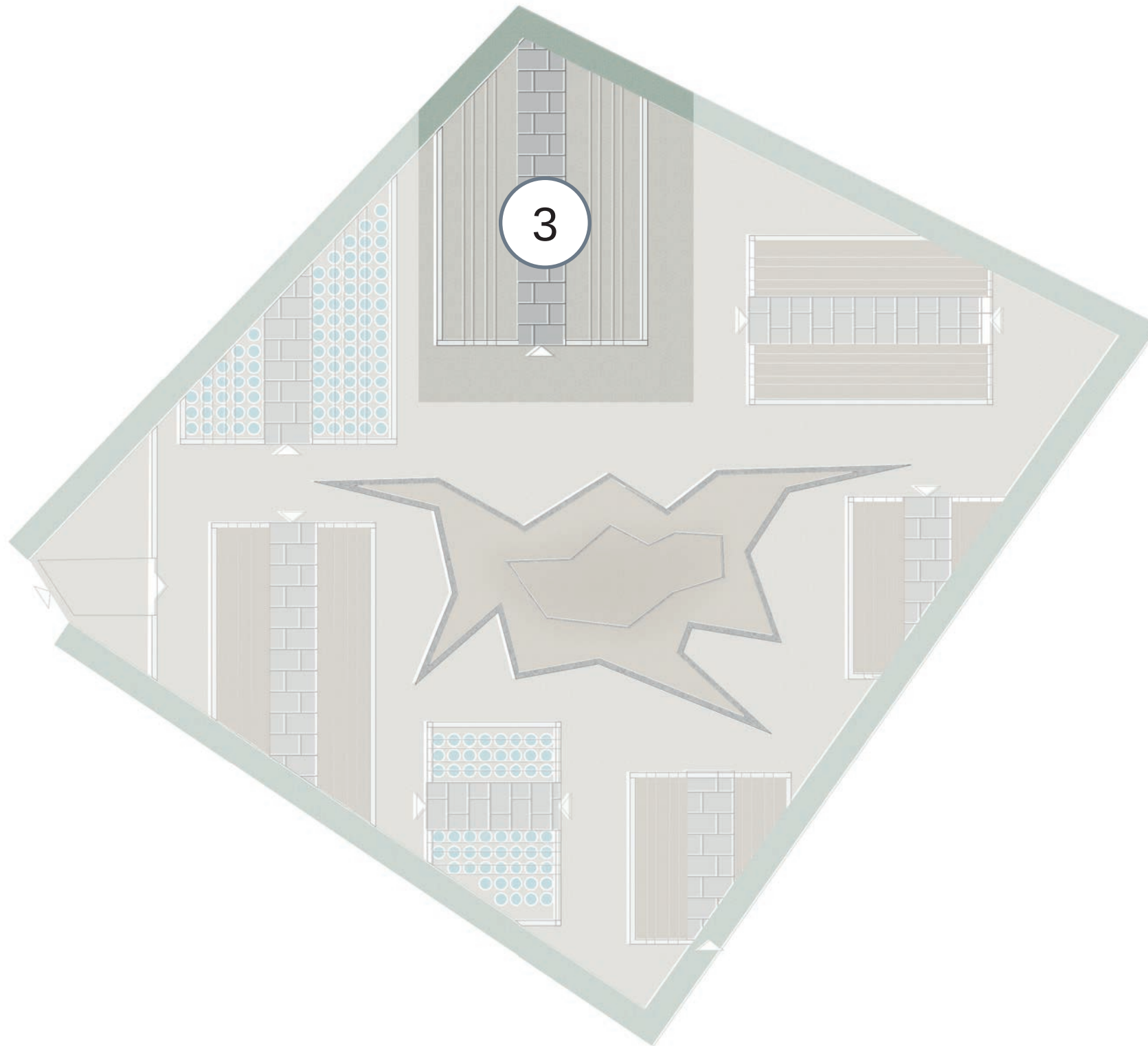


WATER AND SOIL PRODUCTION

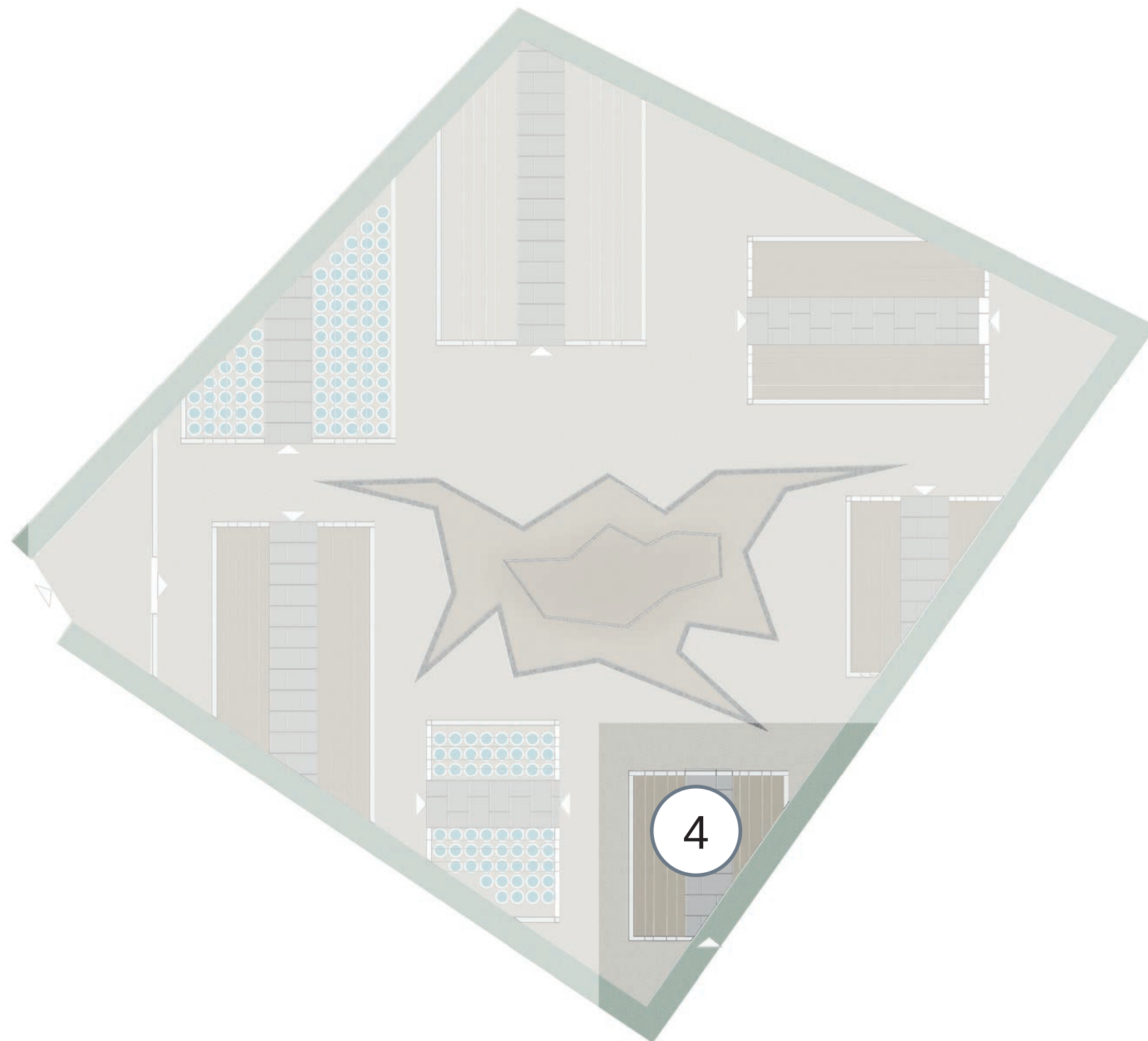


Almeria is located in a climatic zone that is characterized by periods of drought. The soil is very dry and there are few rivers. If there is little rain, the soil and groundwater does not recover. 80% of the groundwater is consumed for the greenhouses. The consequences are water shortages.

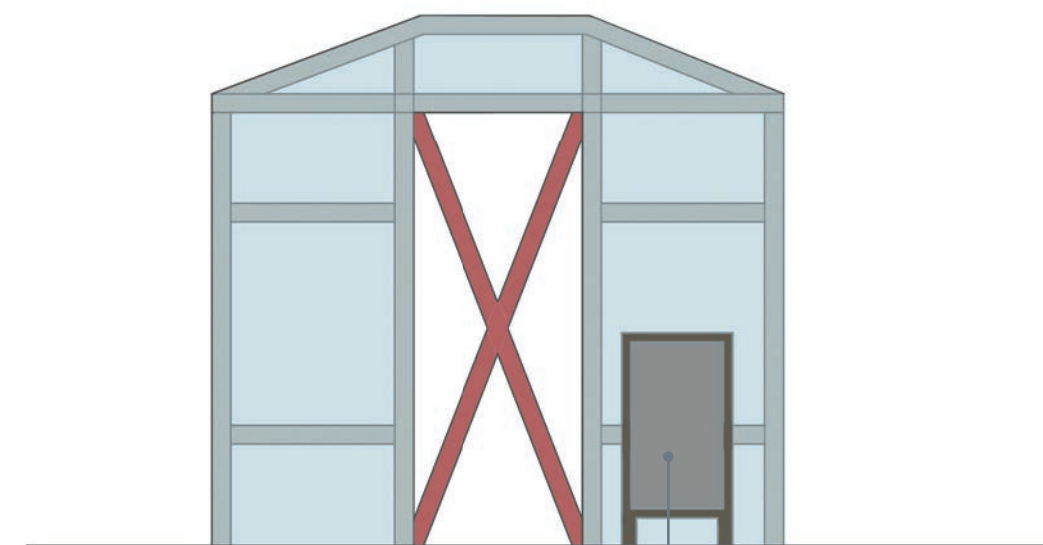
WORKING CONDITIONS



Workers in Almeria earn €25 per day, although the collective wage stipulates around €47 per day as a minimum and workers work up to 14 hours a day. Violations of occupational health and safety regulations, fraud with social security contributions and harassment can be observed here



CLOSED DU TO PESTICIDES

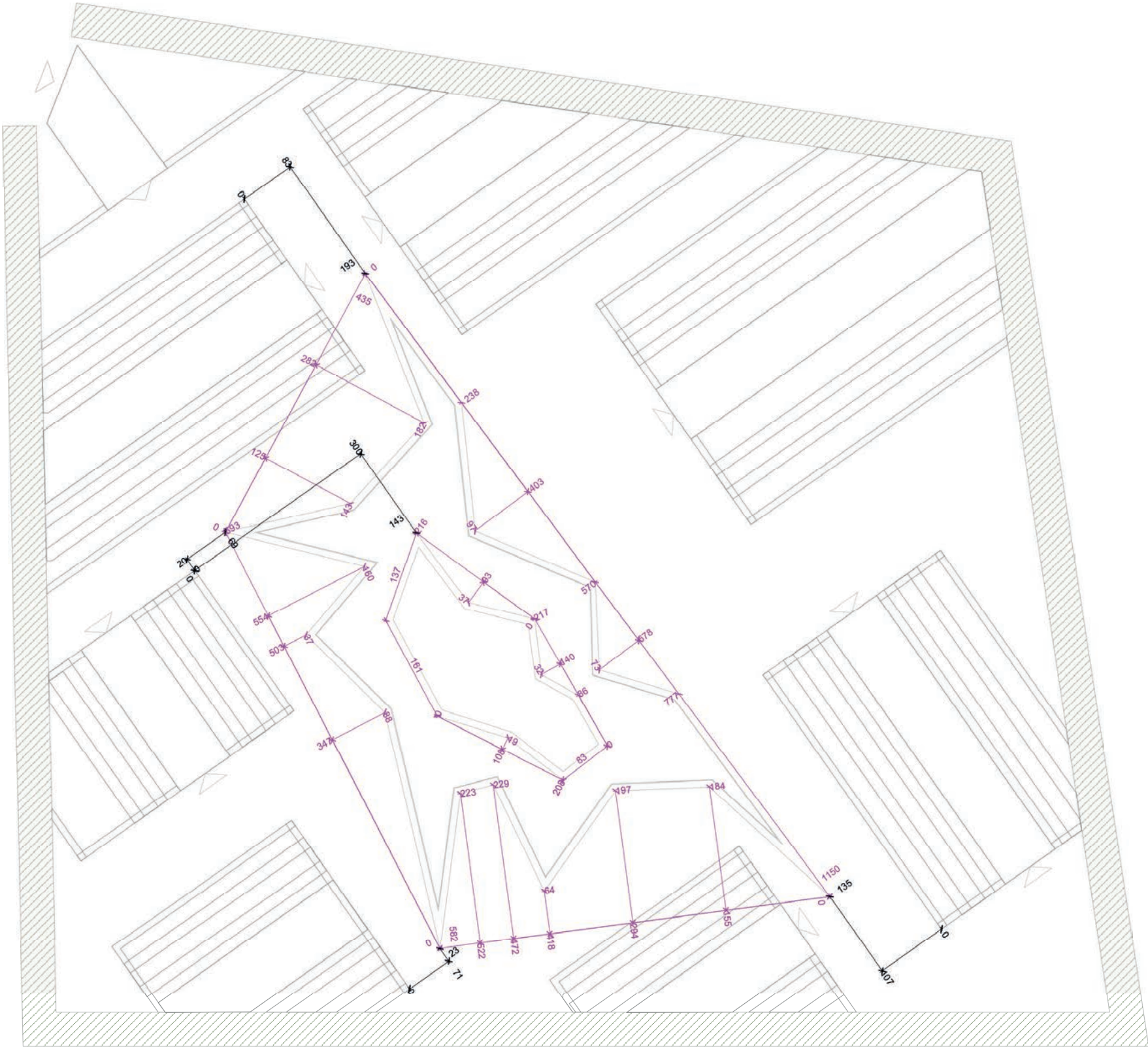


This greenhouse is closed due to high pesticide exposure and lack of protective clothing

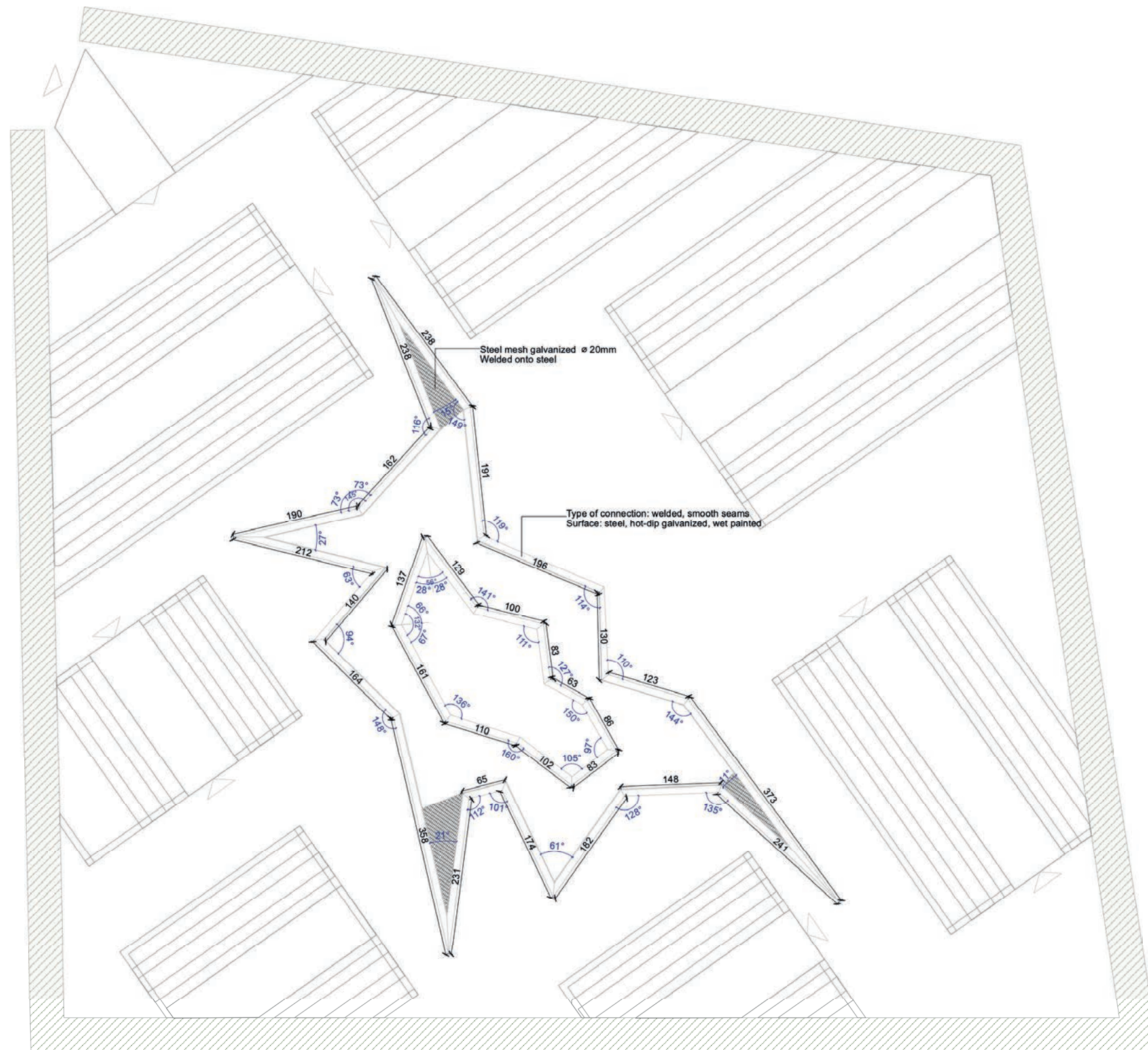
construction plan M 1:75



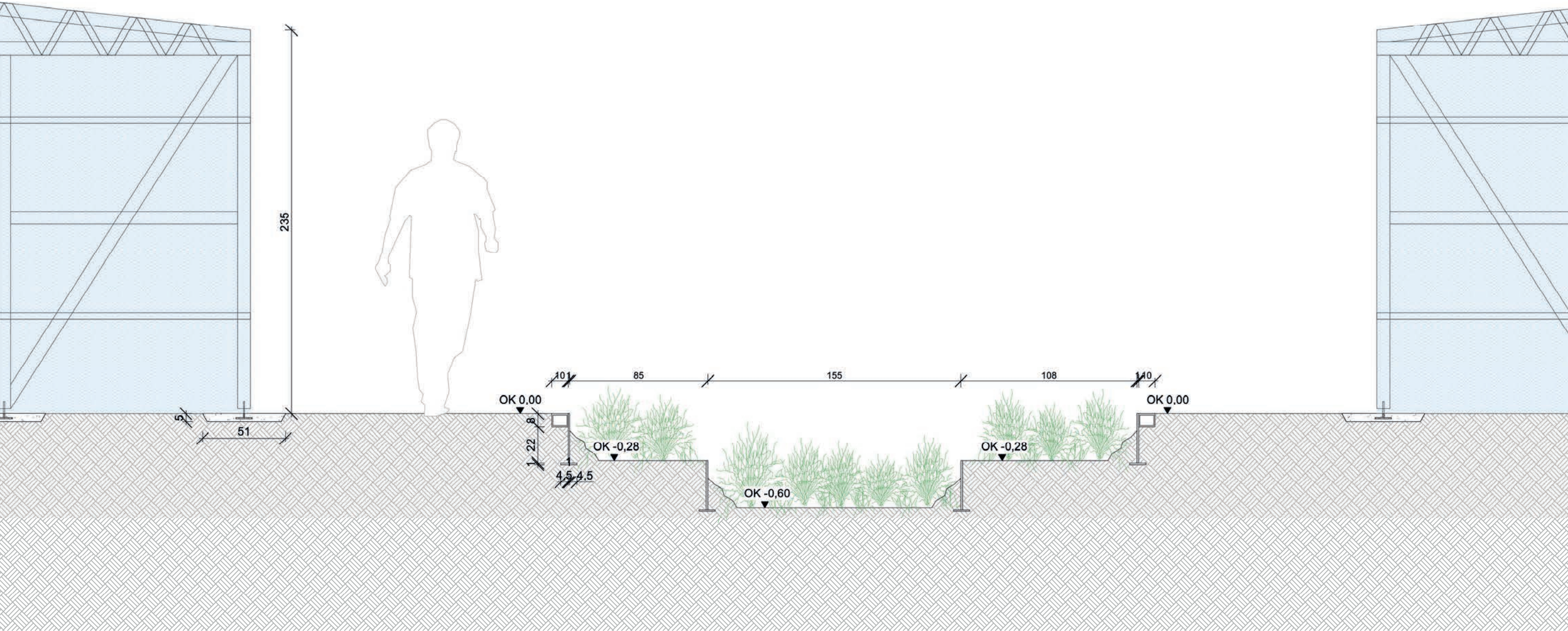
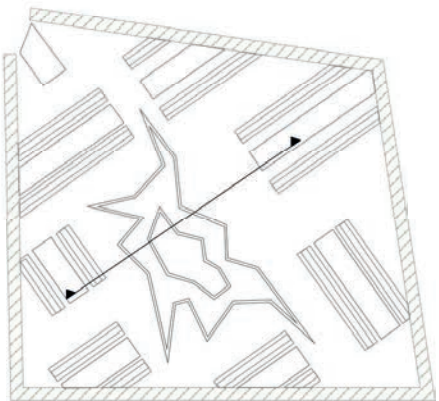
construction plan M 1:75



construction plan M 1:75

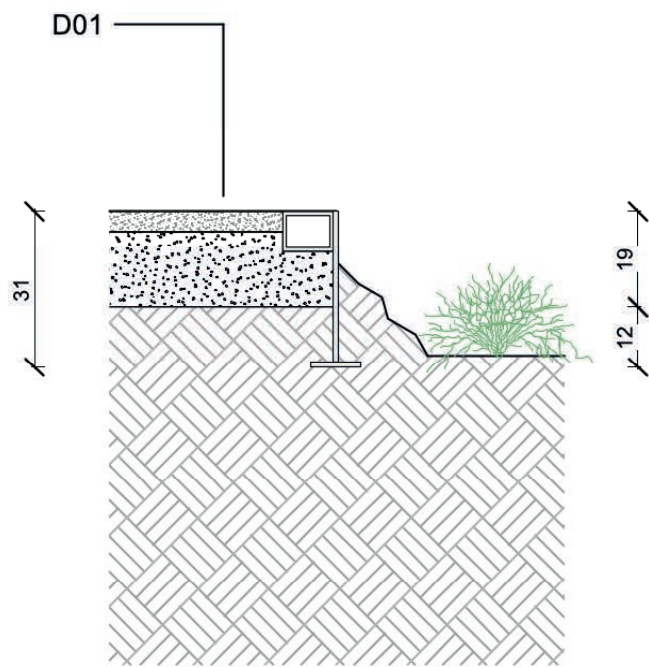


construction plan - section M 1:25

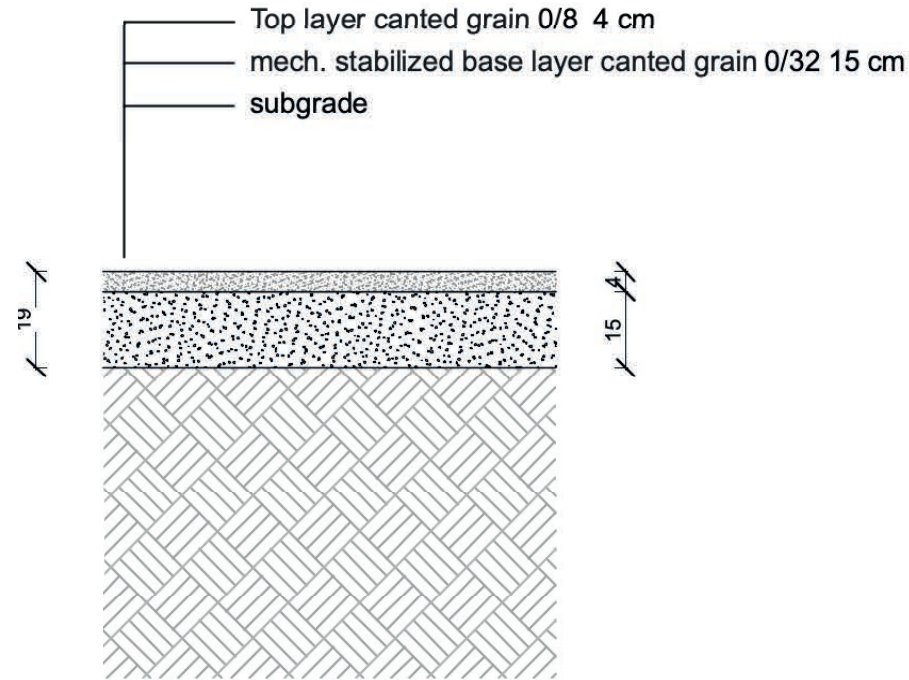


04 TECHNICAL DETAILS

technical details of the crack - structure and materials



Ü01 STEEL BAND ON
WATER BOUND
SURFACE



D01
WATER BOUND SURFACE

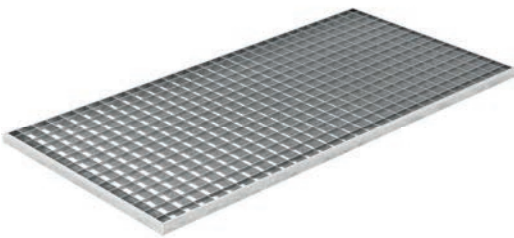
Steel Band



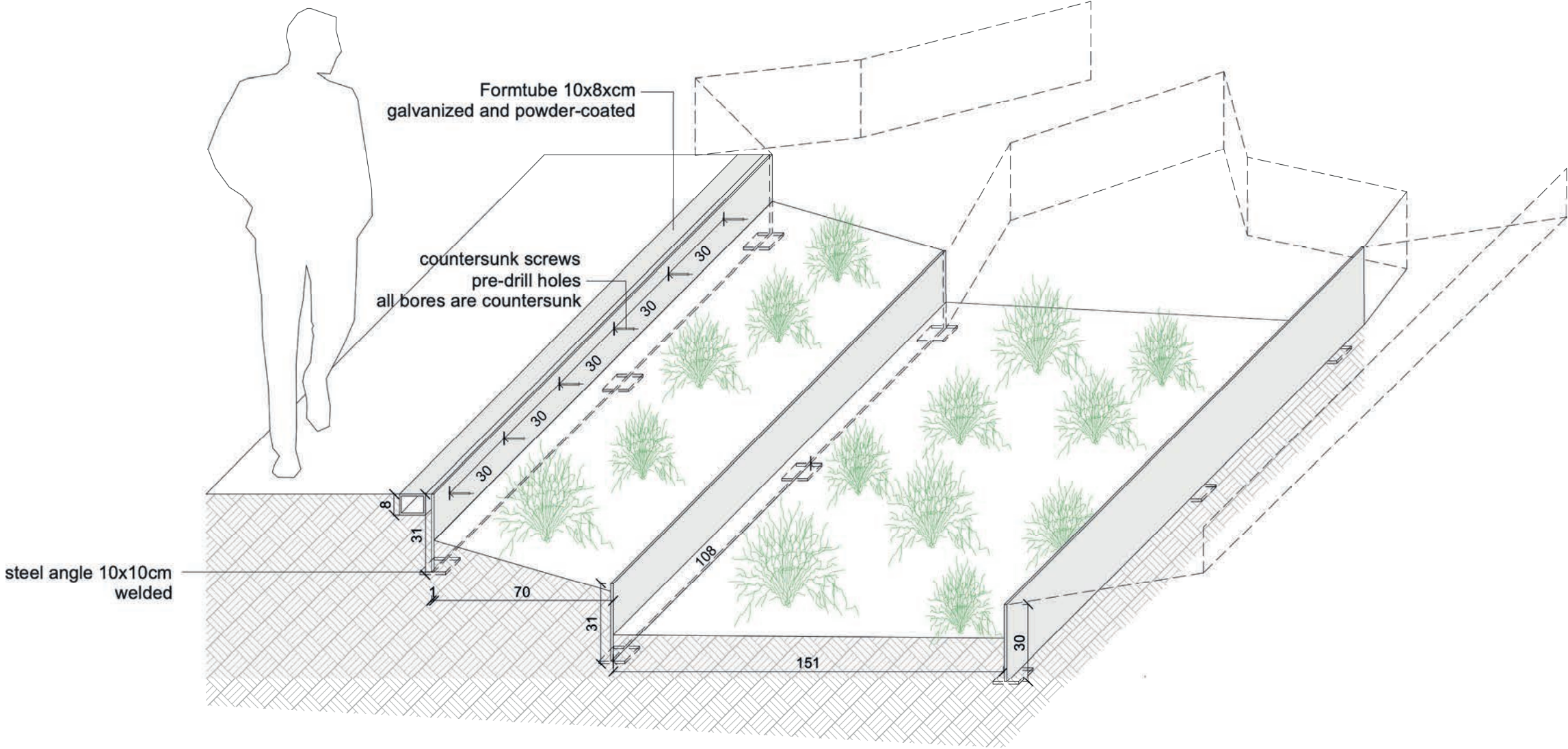
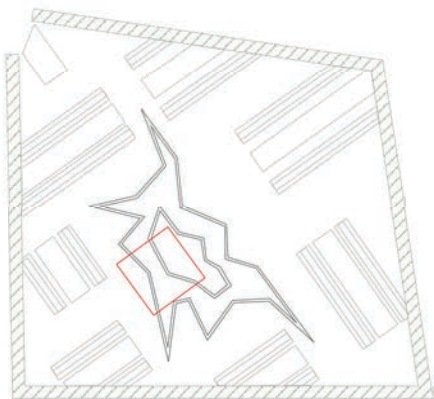
Steel Angle for construction

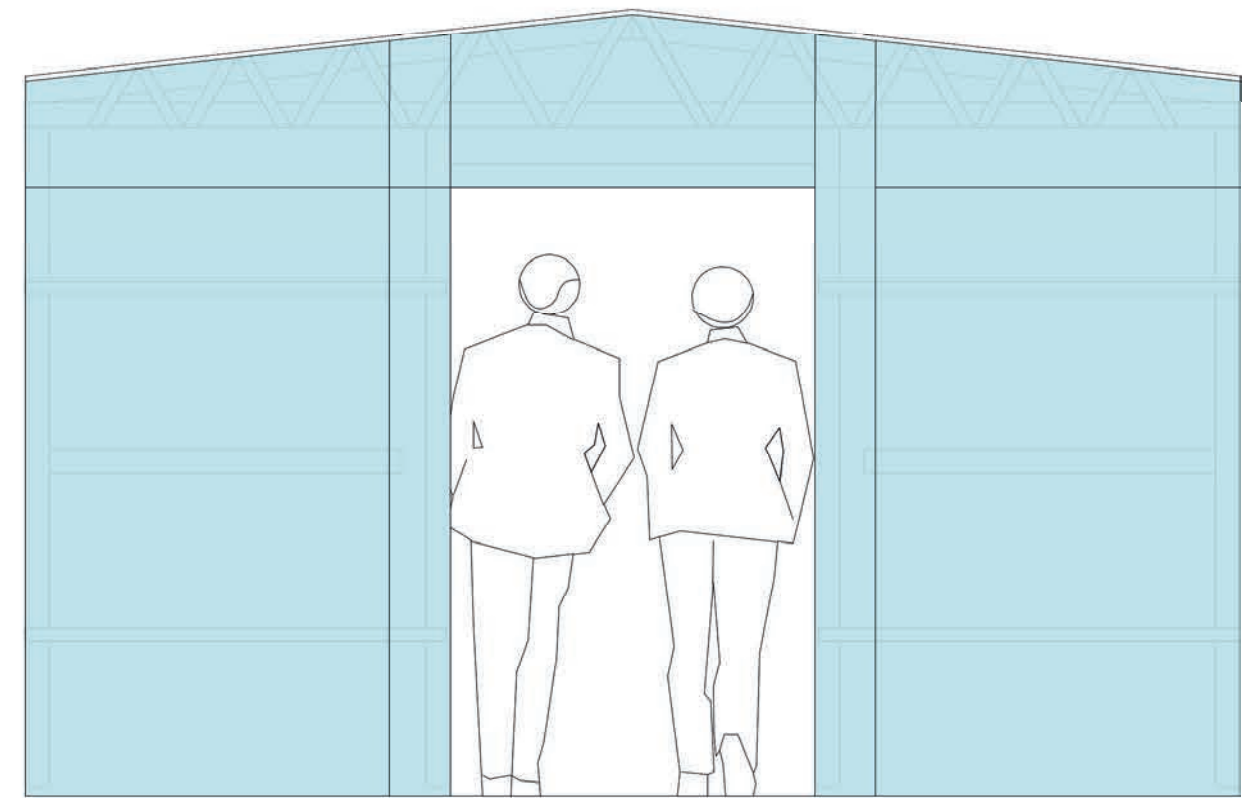
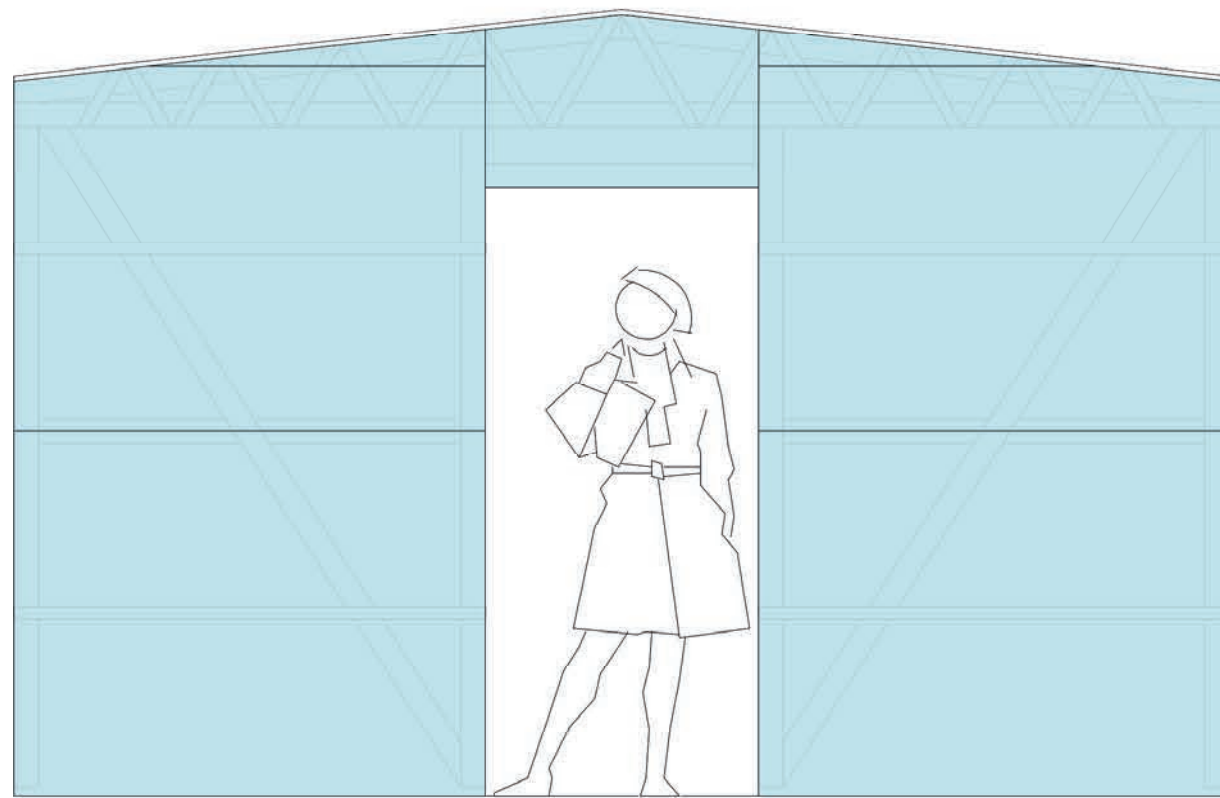


Steel Mesh

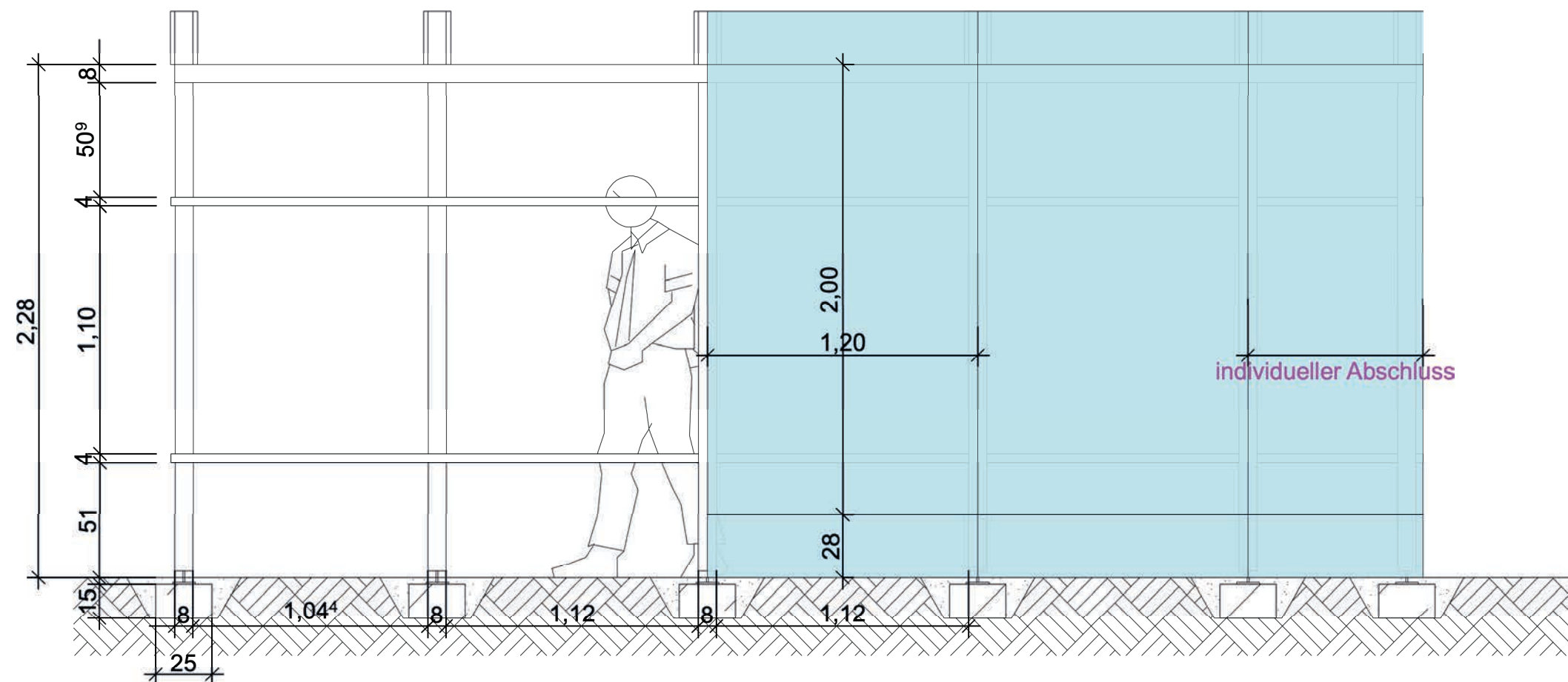


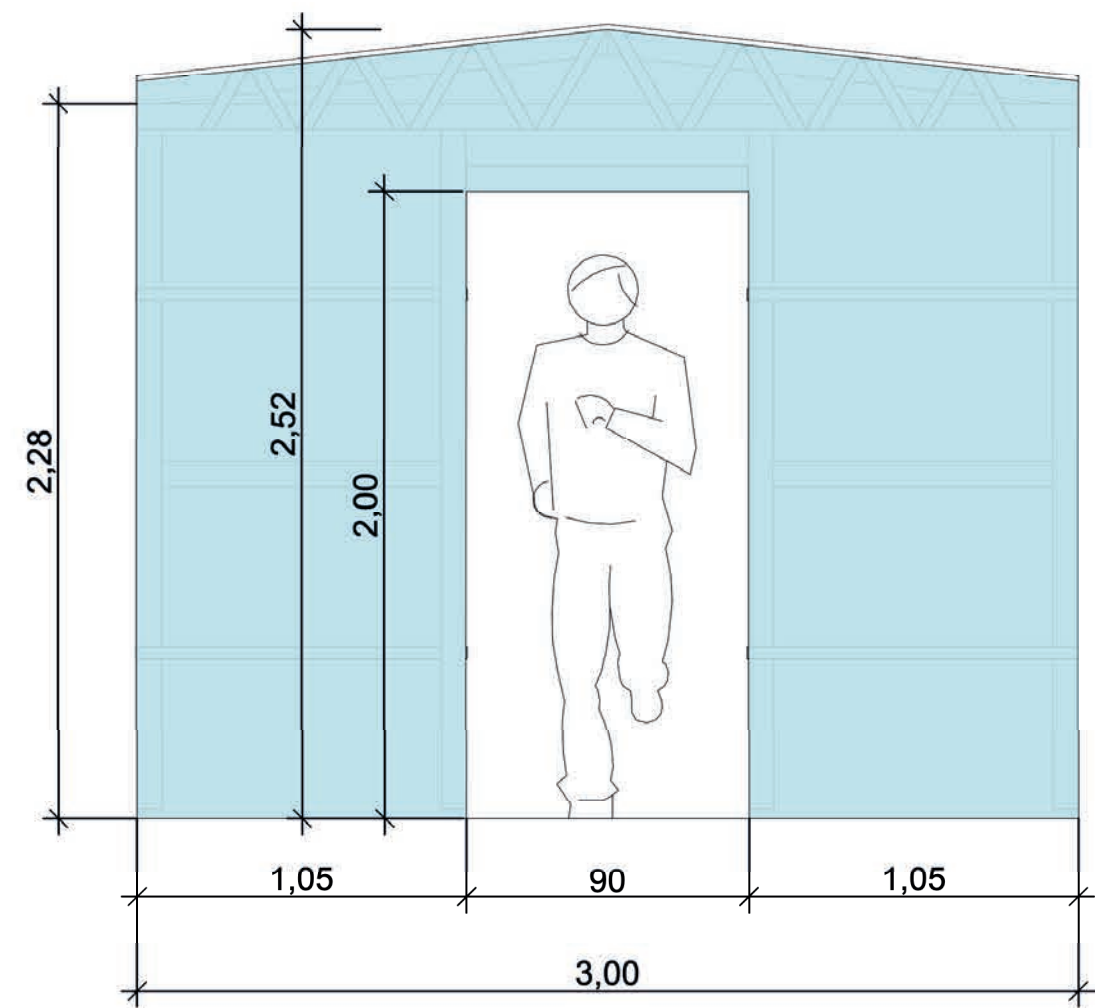
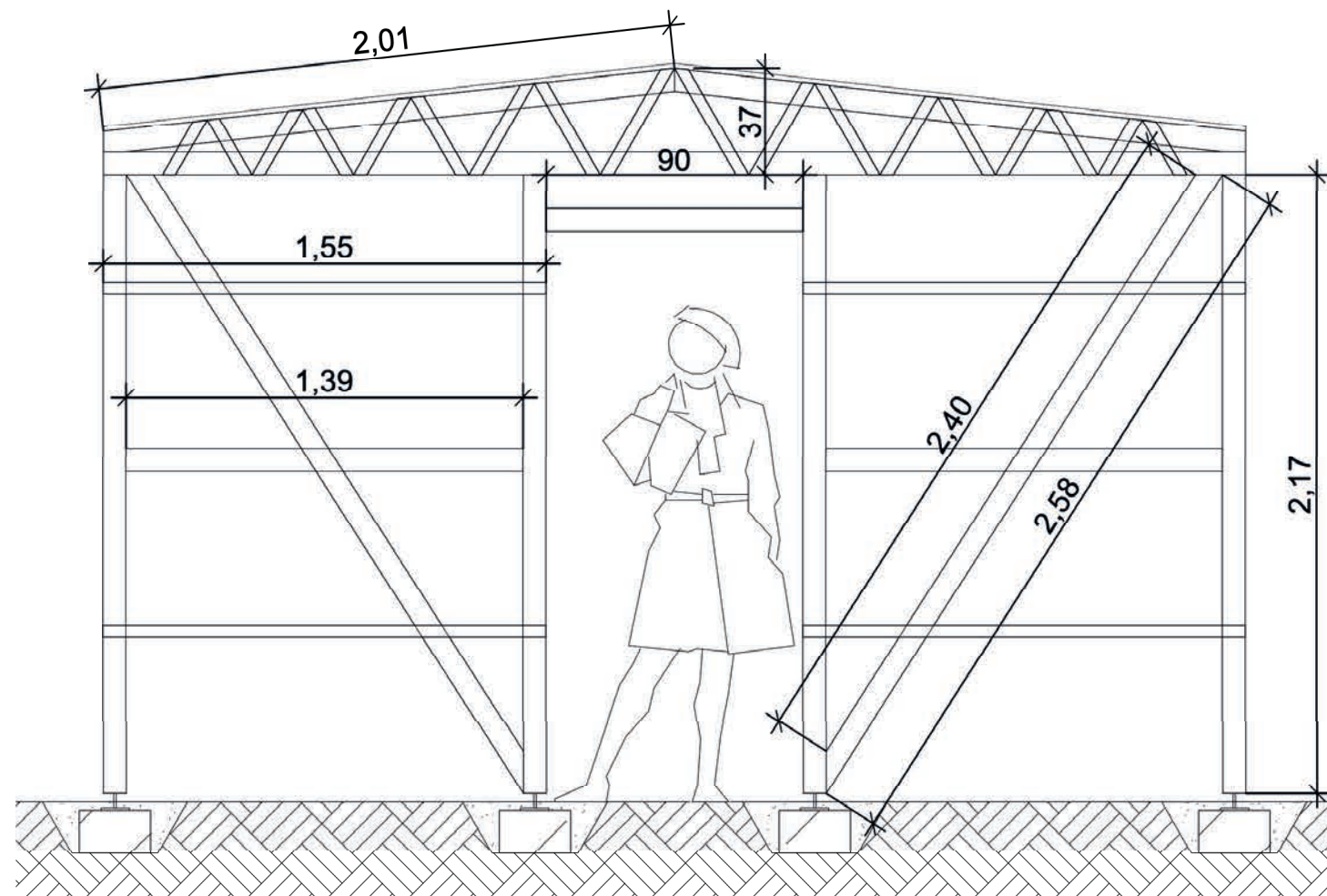
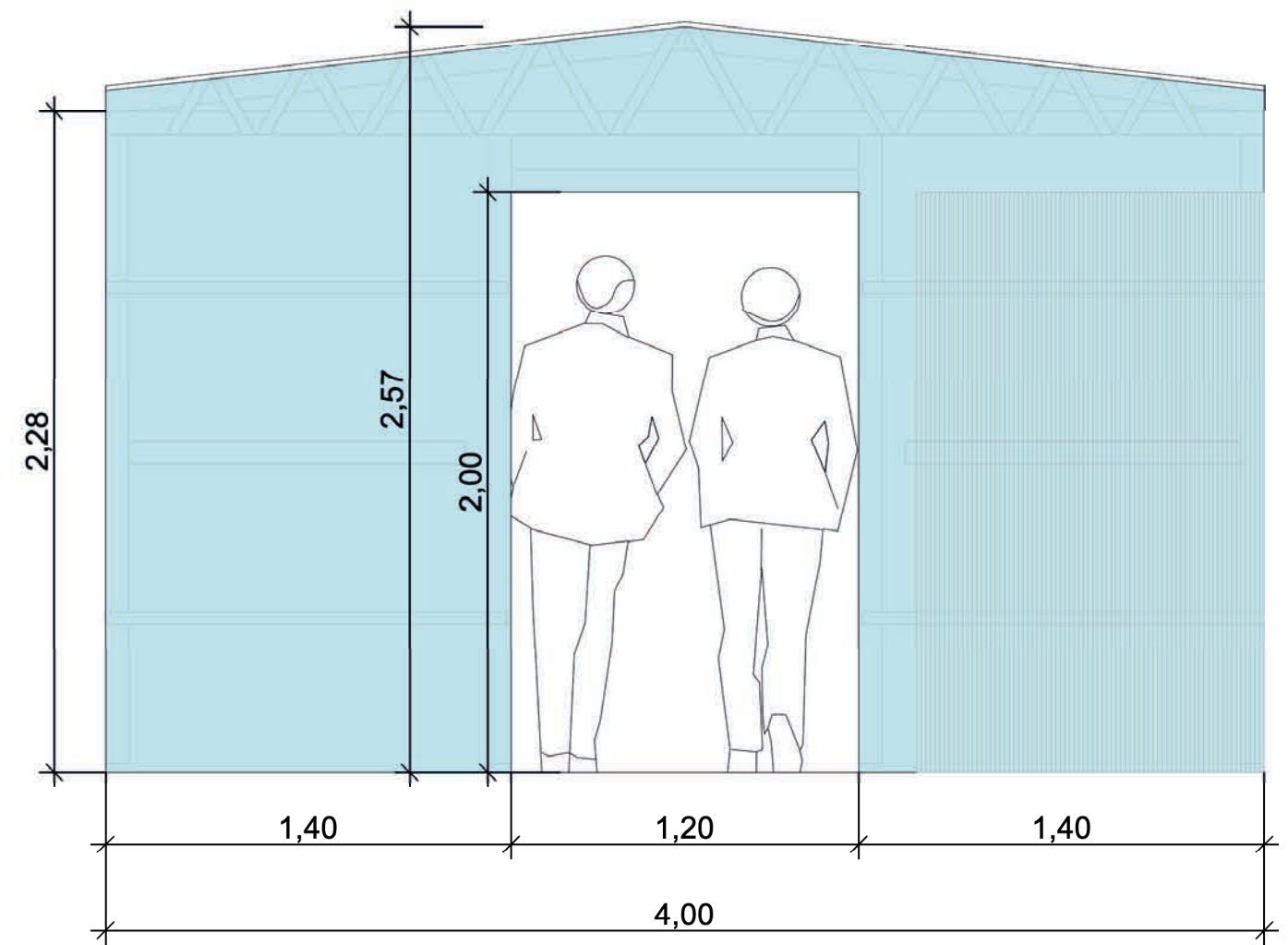
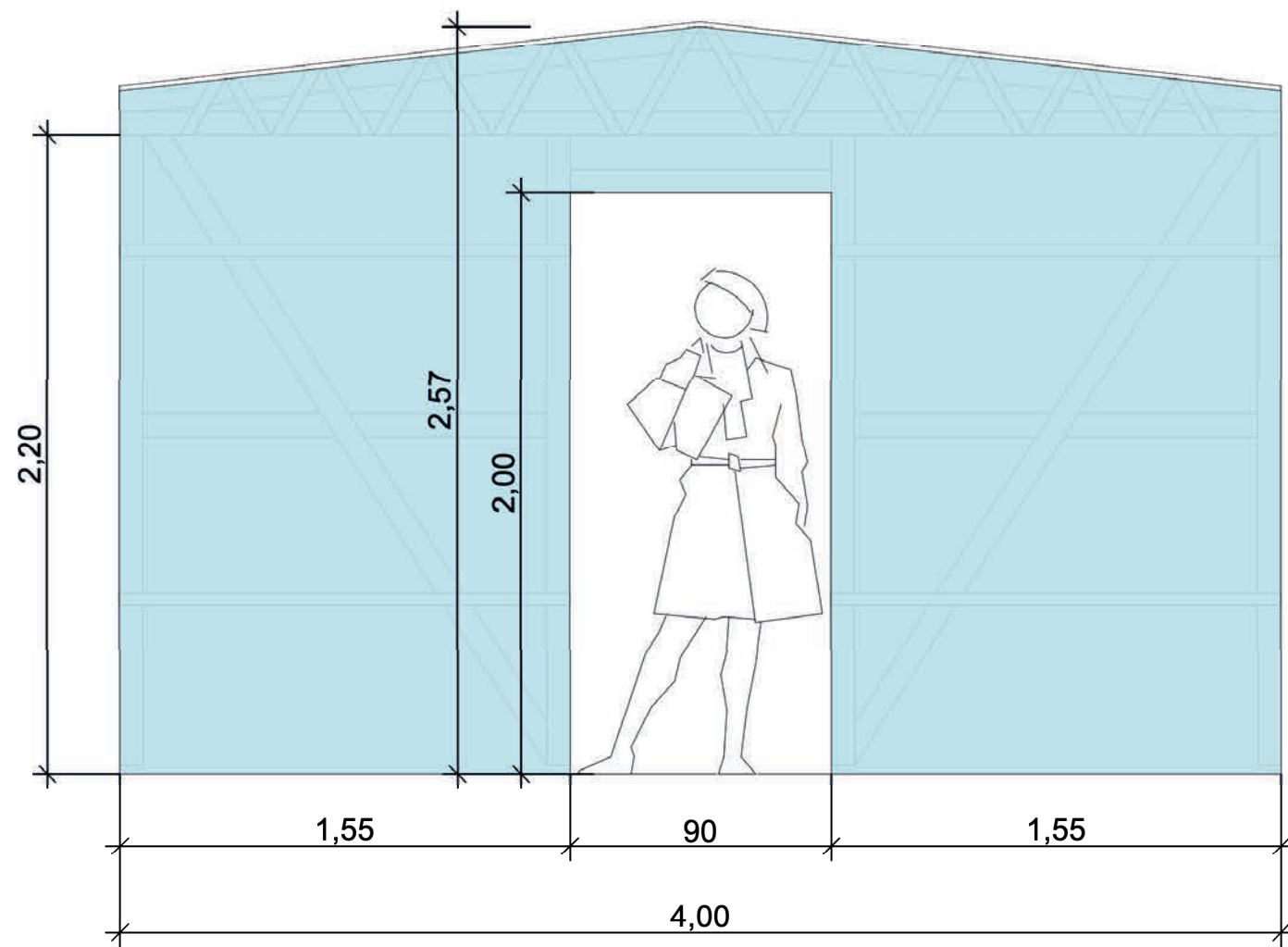
technical details of the crack - perspective M 1:20

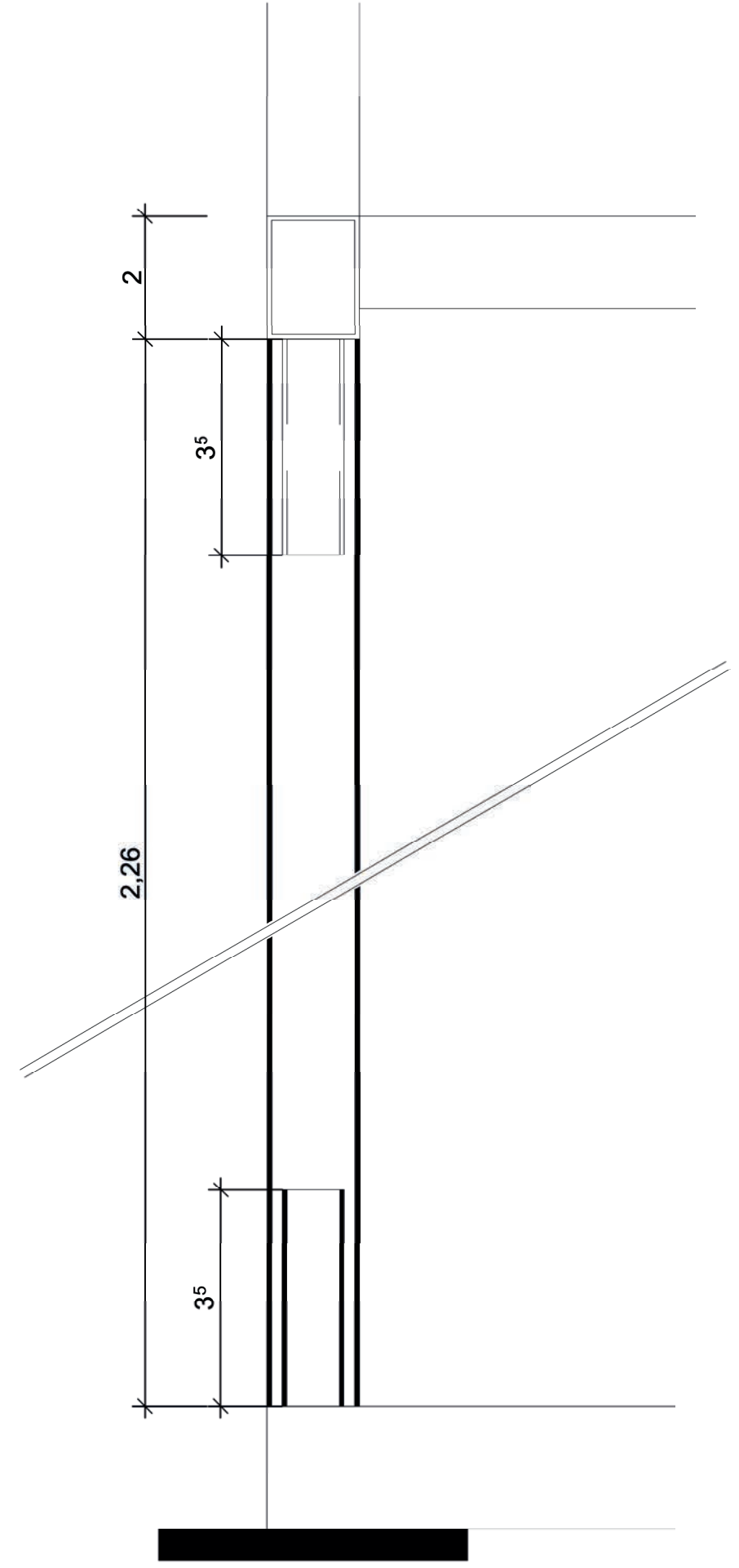
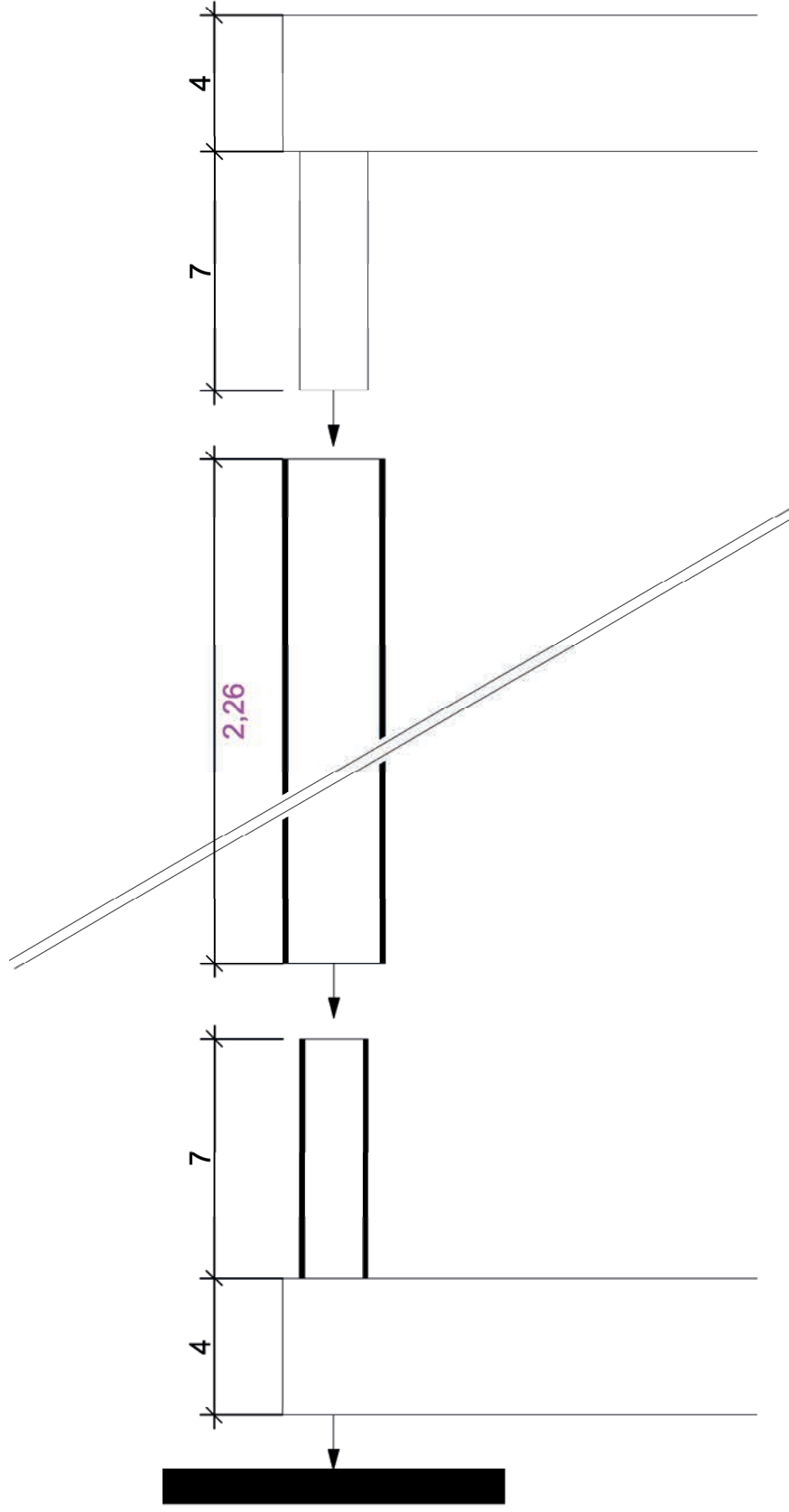


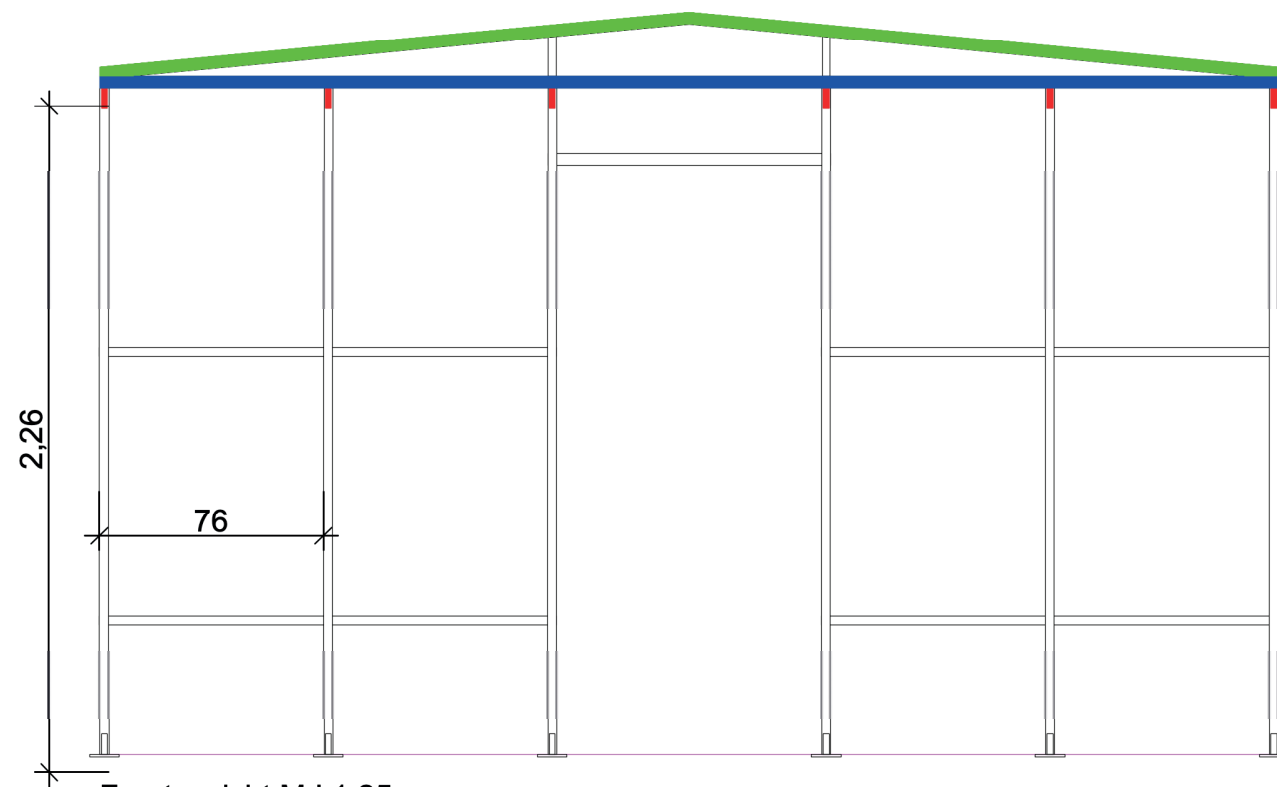


technical details of the greenhouses

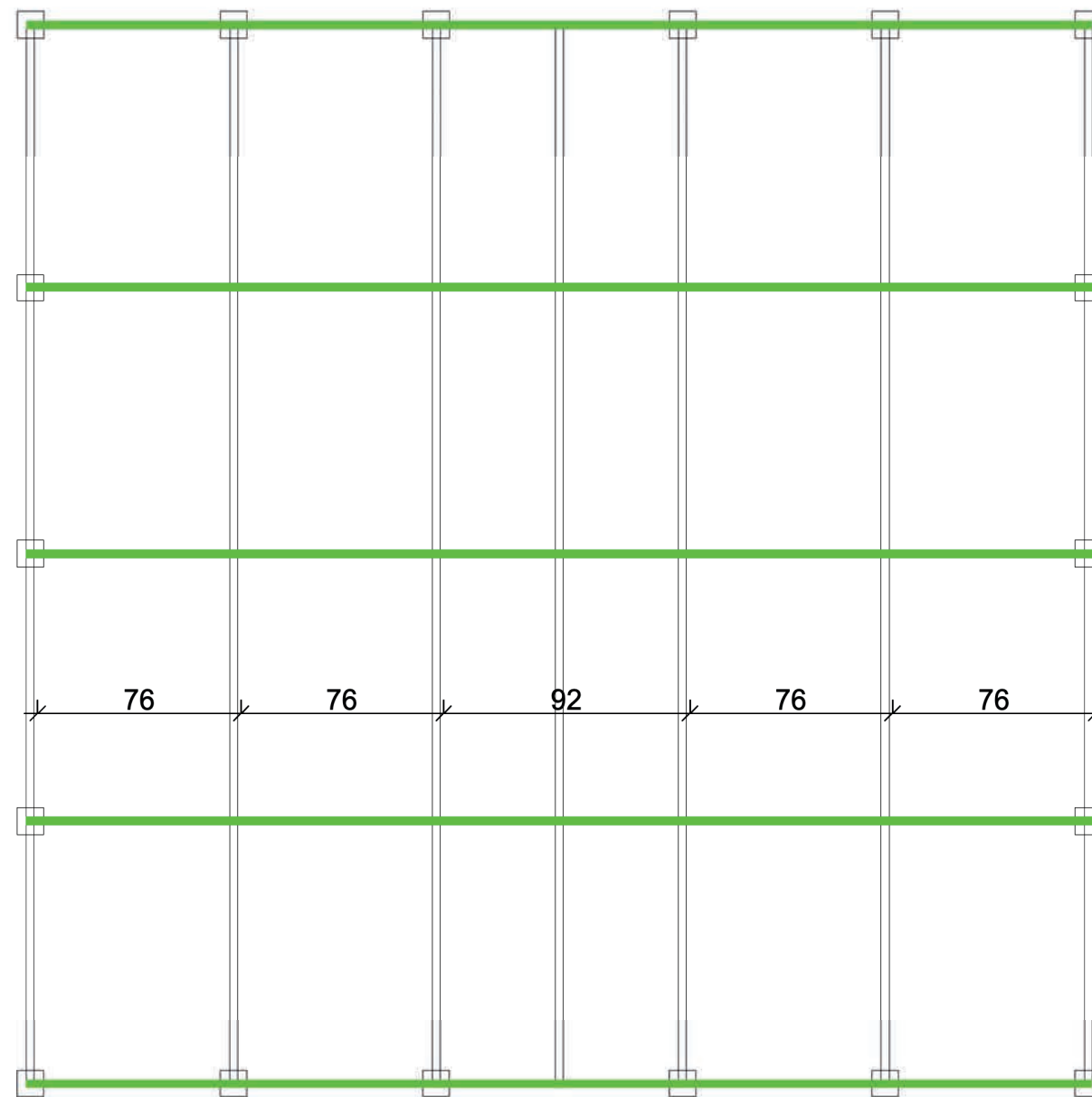








Frontansicht M I 1:25



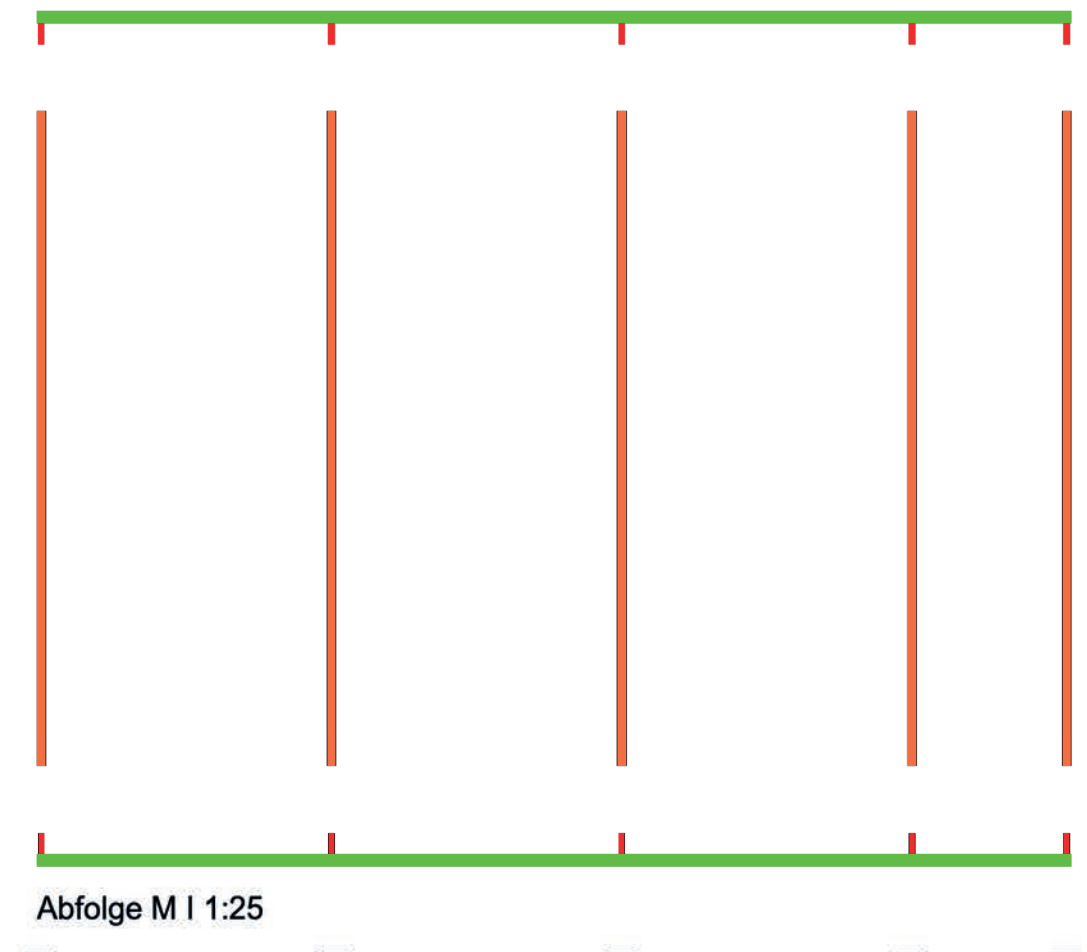
Grundriss M I 1:25



Seitenansicht M I 1:25

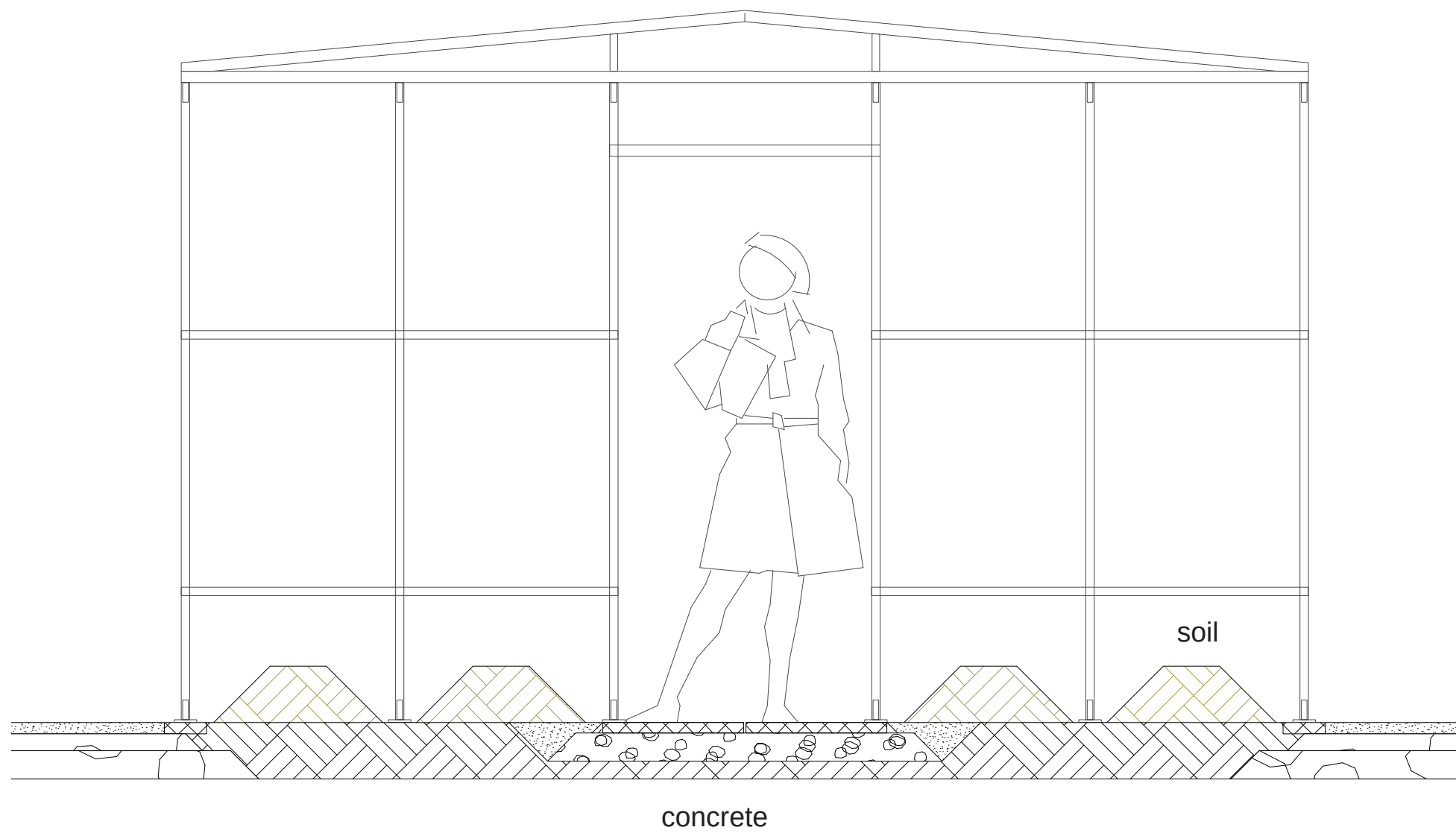
Formrohre Bauseits verschweißt und ineinander gesteckt

- Formrohre 40x30x1,5
- Formrohr 30x30x1,5
- Formrohr 20x20x1,5



Abfolge M I 1:25

technical details of the greenhouses - section



05 PLANTING PLAN

concept

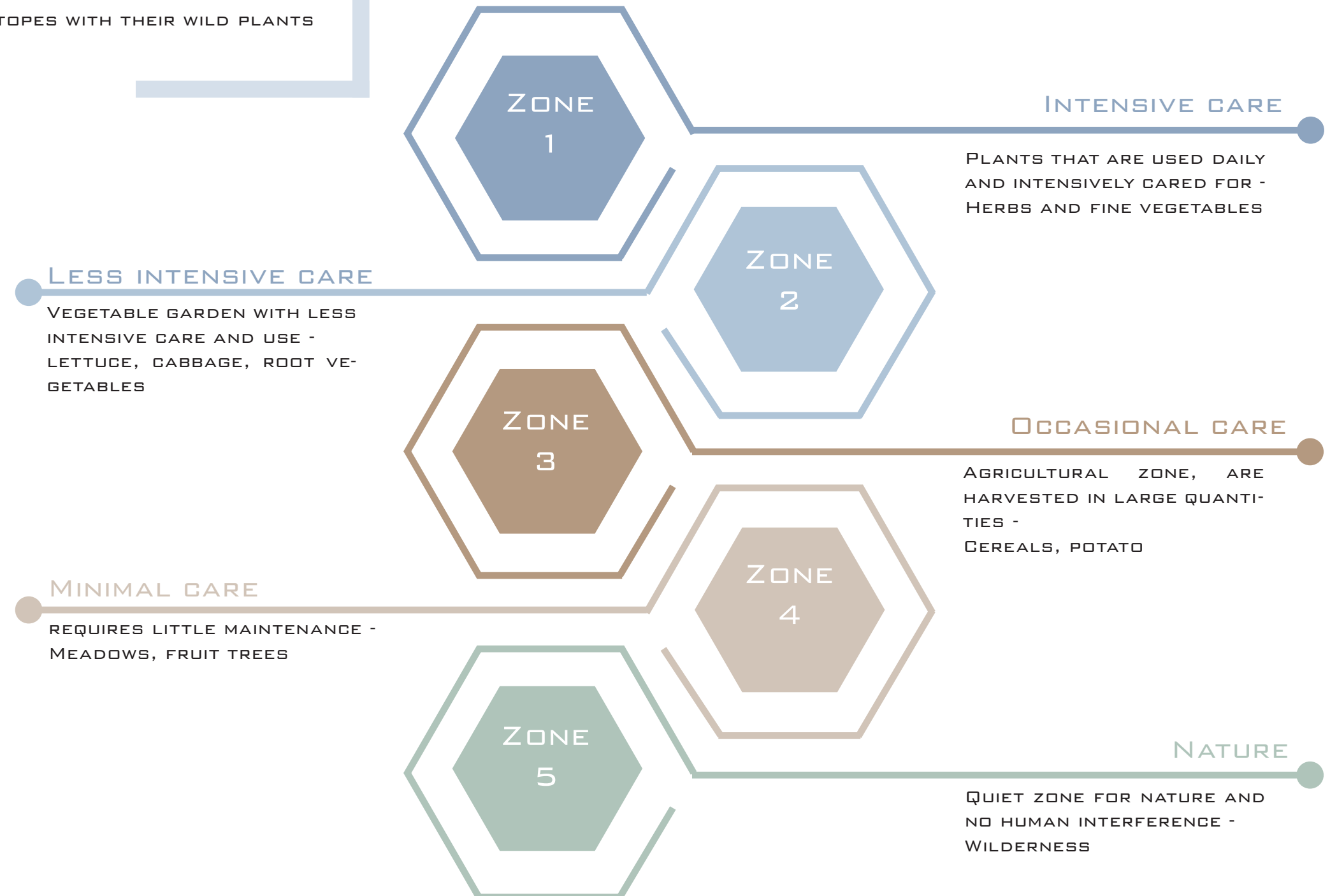
LEITSÄTZE DER PERMAKULTUR:

DIVERSITY INSTEAD OF MONOTONY: MIXED CROPS INSTEAD OF MONOCULTURES

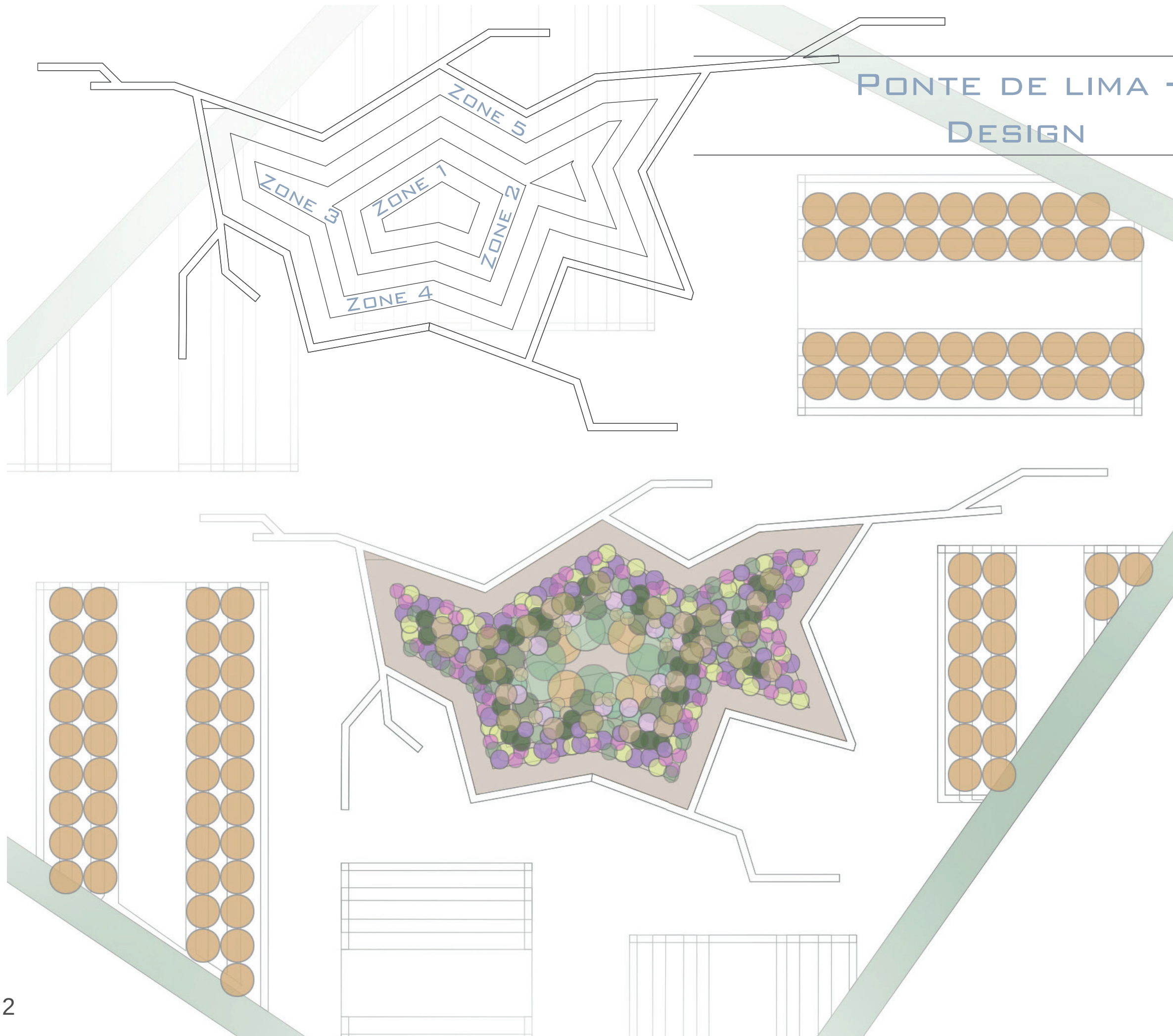
SPECIES DIVERSITY: NUMBER OF DIFFERENT PLANTS

GENETIC DIVERSITY: NUMBER OF DIFFERENT VARIETIES AND SPECIES

ECOLOGICAL DIVERSITY: ECOSYSTEMS/ BIOTOPES WITH THEIR WILD PLANTS



PONTE DE LIMA - DESIGN



 SWEET POTATOES

ZONE 1
 VEGETABLES

ZONE 2
 PERENNIALS
 HERBS
 GRASSES

ZONE 3
 PERENNIALS
 HERBS
 GRÄSER

ZONE 4
 PERENNIALS
 HERBS

ZONE 5
 VEGETABLES

plant selection



(Ipomea batatas)



(Cucurbita maxima)



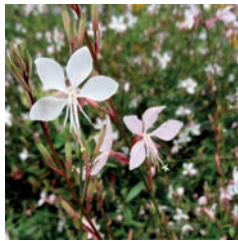
(Zea mays)



(Phaseolus vulgaris)



(Achillea millefolium)



(Gaura lindheimeri)



(Leymus arenarius)



(Miscanthus sinensis)



(Rosmarinus officinalis)



(Spodiopogon sibiricus ,West Lake')



(Artemisia santonicum)



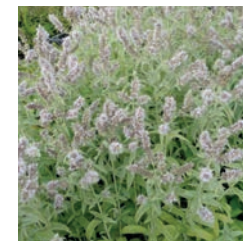
(Alchemilla sericata ,Gold')



(Briza media ,Limouzi')



(Lavandula angustifolia)



(Mentha spicata)



(Origanum leviosum)



(Pennisetum alopecuroides)



(Stipa tenuissima)



(Armeria maritima)



(Campanula carpatica)



(Origanum vulgare)



(Petroselinum Crispum ,Gigante d'Italia)



(Thymus cherlerioides)



(Beta vulgaris)



(Brassica oleracea)



(Pastinaca sativa)



(Solanum tuberosum)



(Viola odorata)

ZONE 1

PLANT NAME	HEIGHT (CM)	SPACE REQUIRE	LOCATION	I	II	III	VI	V	VI	VII	VIII	IX	X	XI	XII
Cucurbita maxima	80	100cm IN REIHE	○							●	●				
Zea mays	150-250	60cm IN REIHE	○						●	●	●	●	●		
Phaseolus vulgaris	BIS 300	50cm IN REIHE	○		●	●	●								

ZONE 2

PLANT NAME	HEIGHT (CM)	PLANTS/M²	LOCATION	I	II	III	VI	V	VI	VII	VIII	IX	X	XI	XII
Achillea millefolia	30-50	6	○							○	○	○			
Gaura lindheimeri	100	5	○								○	○	○		
Leymus arenarius	80	2	○							●	●	●			
Miscanthus sinensis ‚Adagio‘	100	1	○										○	○	
Rosmarinus officinalis	90	3	○				●	●	●						
Spodiopogon sibiricus	100	1	○								●	●			

ZONE 3

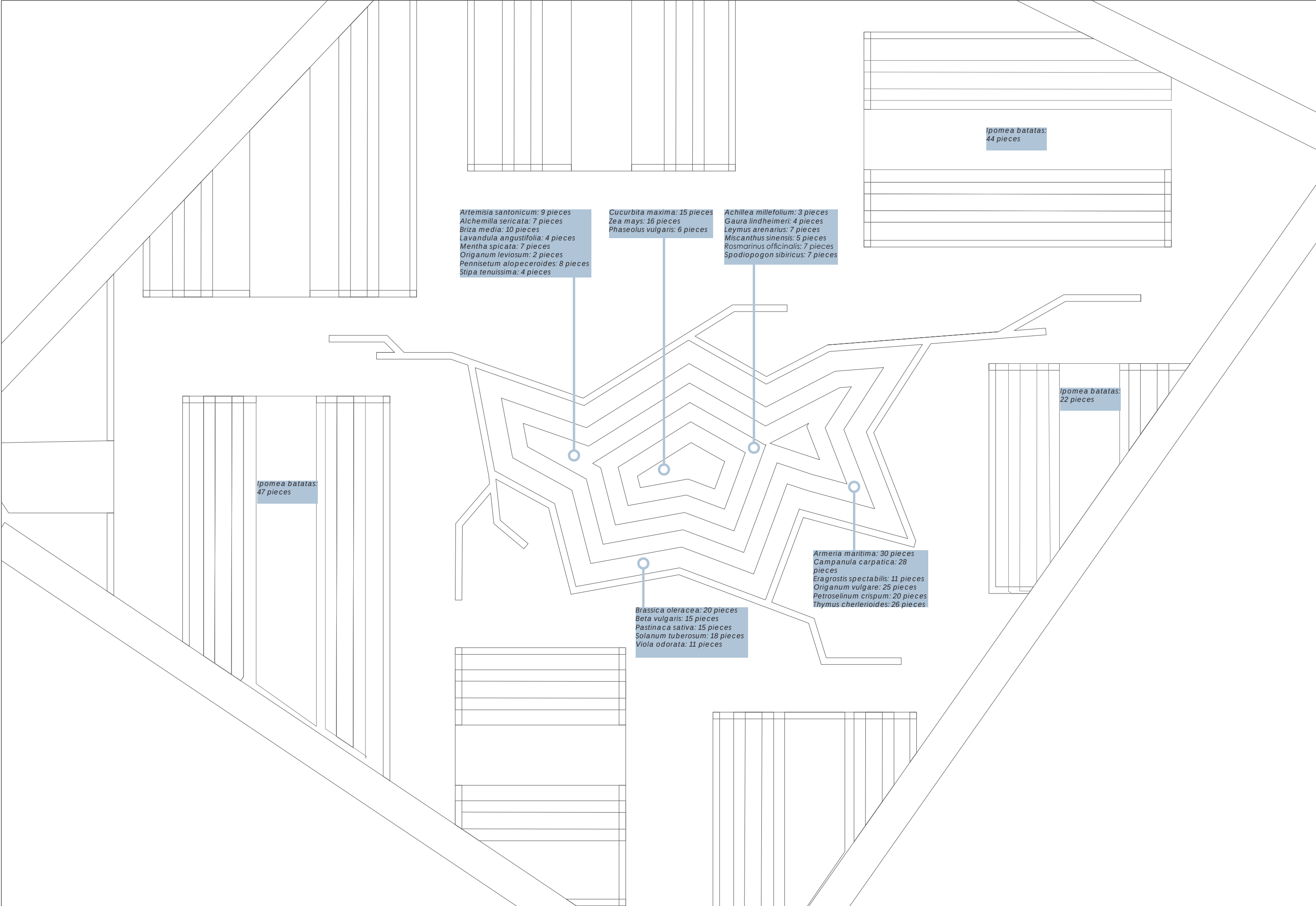
PLANT NAME	HEIGHT (CM)	PLANTS/M²	LOCATION	I	II	III	VI	V	VI	VII	VIII	IX	X	XI	XII
Artemisia abrotanum ‚Citrina‘	70	8	○				●	●	●	●					
Alchemilla sericata ‚Gold Strike‘	35	8	○●			●	●	●							
Briza media ‚Limouzi‘	40-60	8	○		●	●	●	●							
Lavandula angustifolia ‚Blue Cushion‘	40	6	○				●	●							
Mentha spicata	50	5	○				●	●	●						
Origanum leviosum	30-50	10	○				●	●	●						
Pennisetum alopeceroides ‚Compessum‘	80	3	○					●	●						
Stipa tenuissima	40	8	○			○	○								

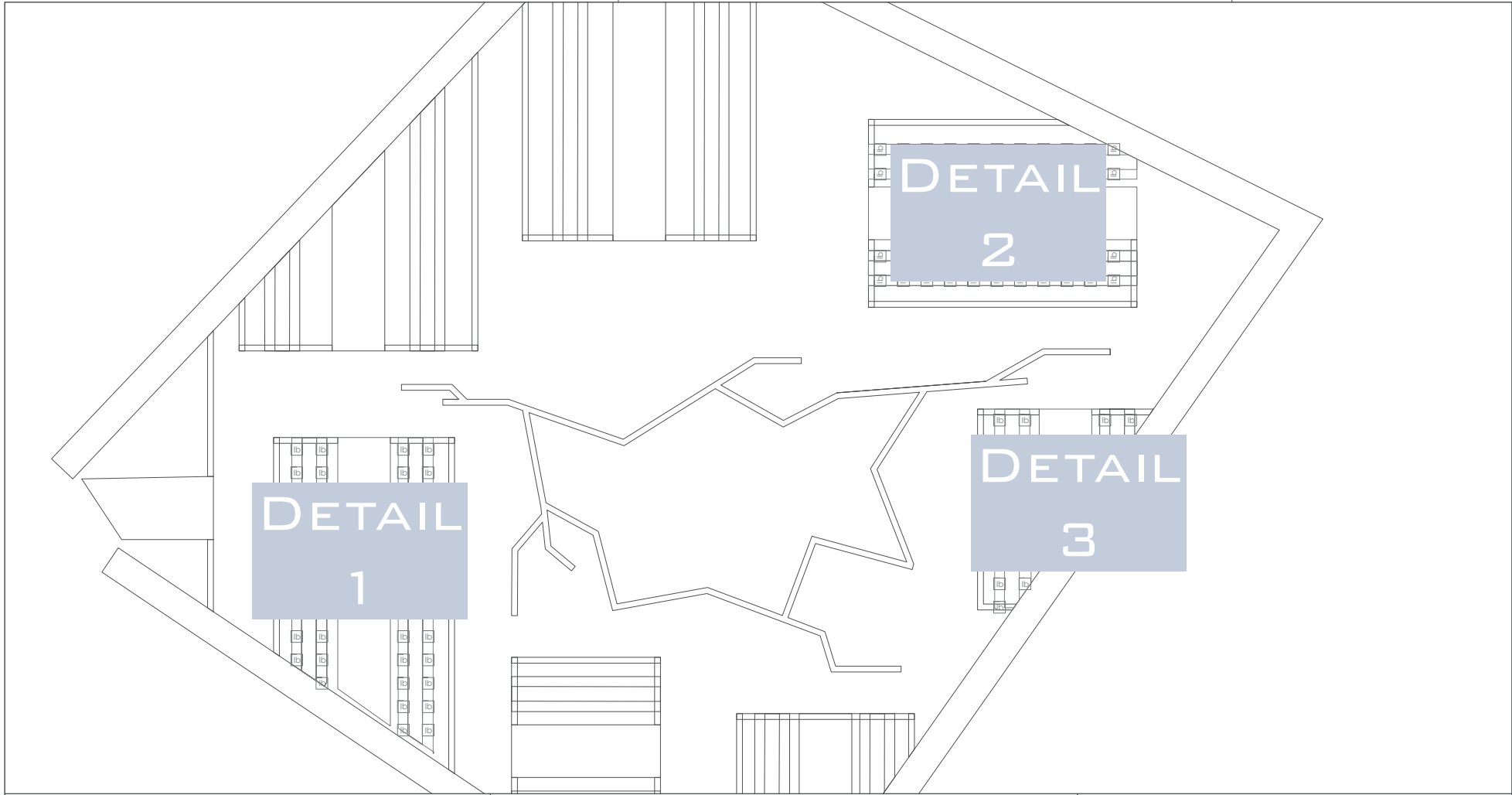
ZONE 4

PLANT NAME	HEIGHT (CM)	PLANTS/M²	LOCATION	I	II	III	VI	V	VI	VII	VIII	IX	X	XI	XII
Armeria maritima	20	15	○			●	●								
Campanula carpatica ‚Blaue Clips	20-25	15	○				●	●							
Eragrostis spectabilis ‚Purpurflirren‘	40	4	○						●	●					
Origanum vulgare ‚Marchants Seedling‘	50	10	○				●	●	●	●					
Petroselinum crispum	30	6	○			●	●								
Thymus x cherlerioides ‚Duftkissen	15	10	○				●	●							

ZONE 5

PLANT NAME	SPACE REQUIRE	LOCATION	I	II	III	VI	V	VI	VII	VIII	IX	X	XI	XII
Beta vulgaris	25-30cm IN DER REIHE	○●						○	○	○	○			
Brassica oleracea	50cm IN DER REIHE	○●						○	○	○	○	○		
Pastinaca sativa	30-50cm IN DER REIHE	○●									○	○		
Solanum tuberosum	30-50cm IN DER REIHE	○●						○	○	○	○	○		
Viola odorata		○●			●	●	●							



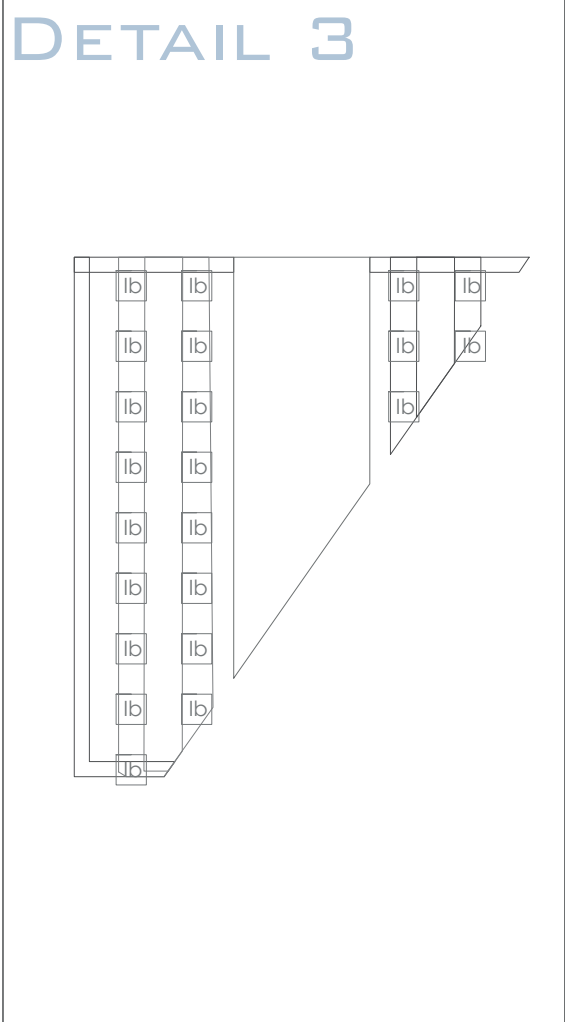
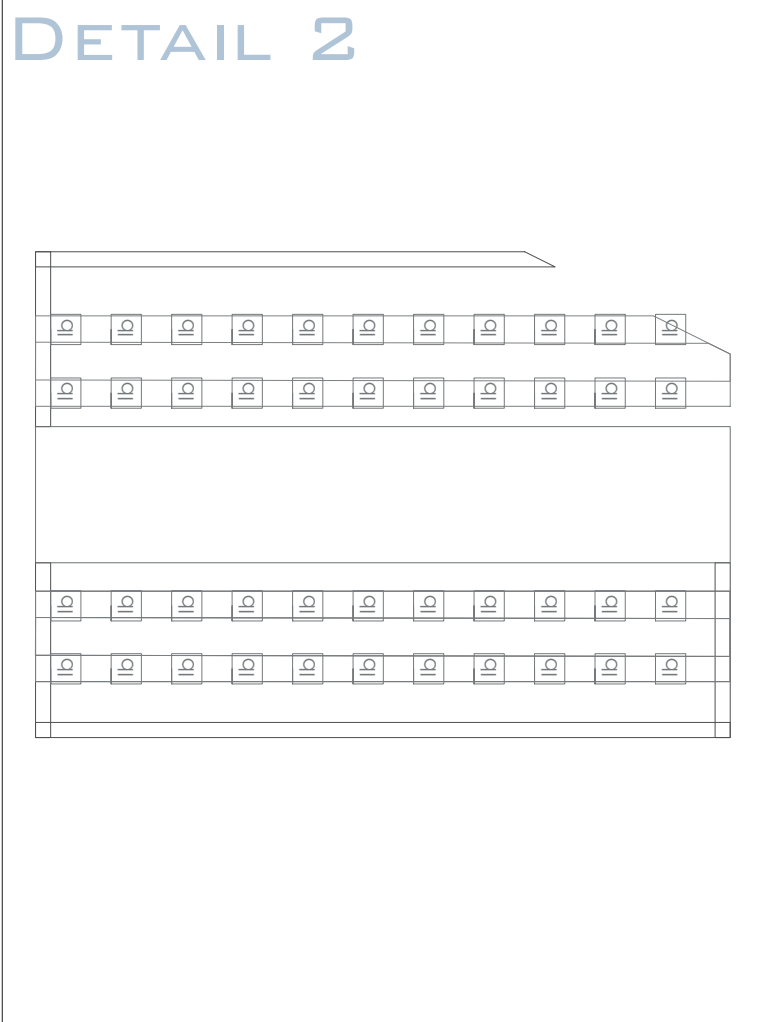
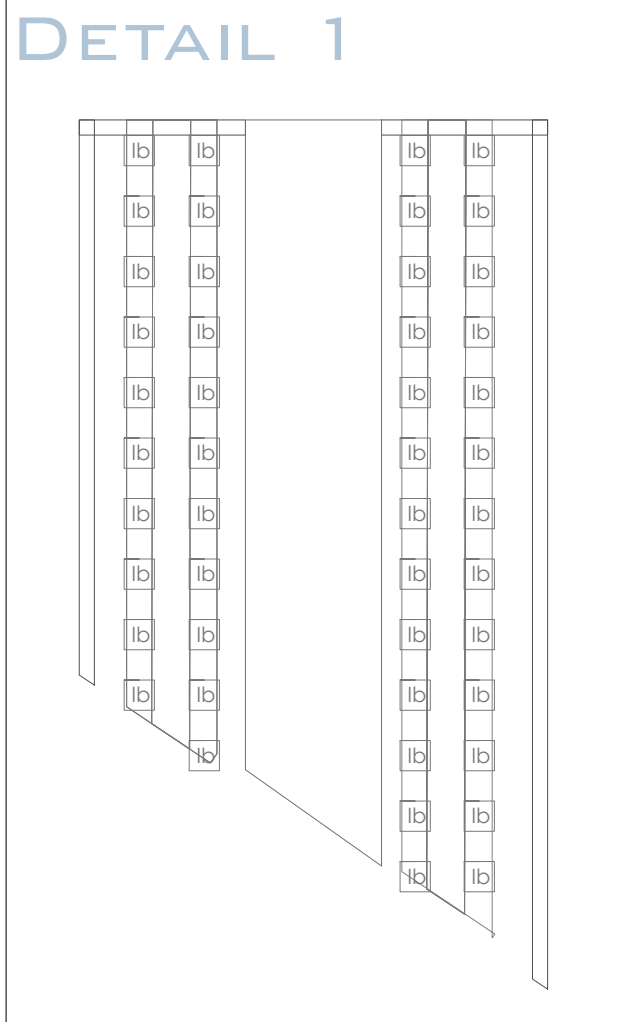


THE THREE GREENHOUSES ARE INTENDED TO SHOW THE VISITORS OF THE GARDEN SHOW HOW THE PRODUCTION OF VEGETABLES IN GREENHOUSES WORKS. THEREFORE, THE SWEET POTATO IPOMOEA BATATAS WAS CHOSEN FOR ALL THREE GREENHOUSES.

DETAIL 1:
GREENHOUSE AREA: 13.4M²
PLANTING AREA: 5.2M² UND 3.2M²

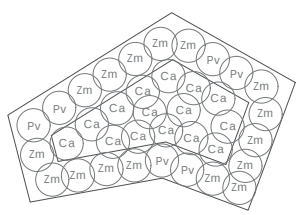
DETAIL 2:
GREENHOUSE AREA: 13.2M²
PLANTING AREA: 4.6M² UND 3.3M²

DETAIL 3:
GREENHOUSE AREA: 5.5M²
PLANTING AREA: 3.0M² UND 0.7M²

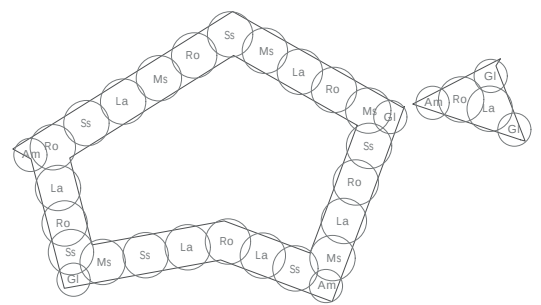


VEGETABLES:		
short	botanical name	Pieces
DETAIL 1		
lb	Ipomoea batatas	47 pc.
DETAIL 2		
lb	Ipomoea batatas	44 pc.
DETAIL 3		
lb	Ipomoea batatas	22 pc.

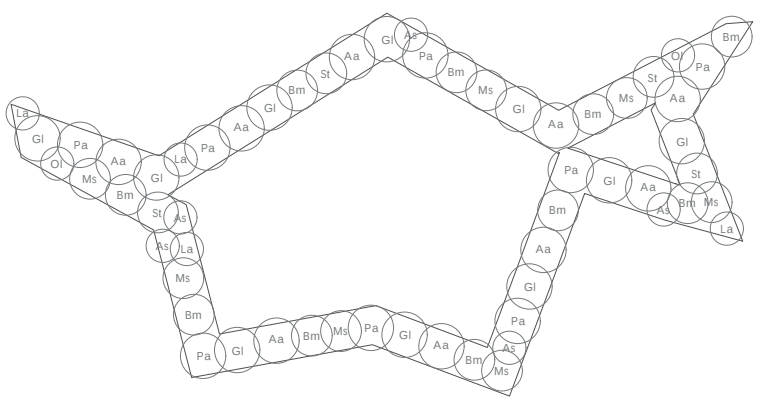
DETAIL 1



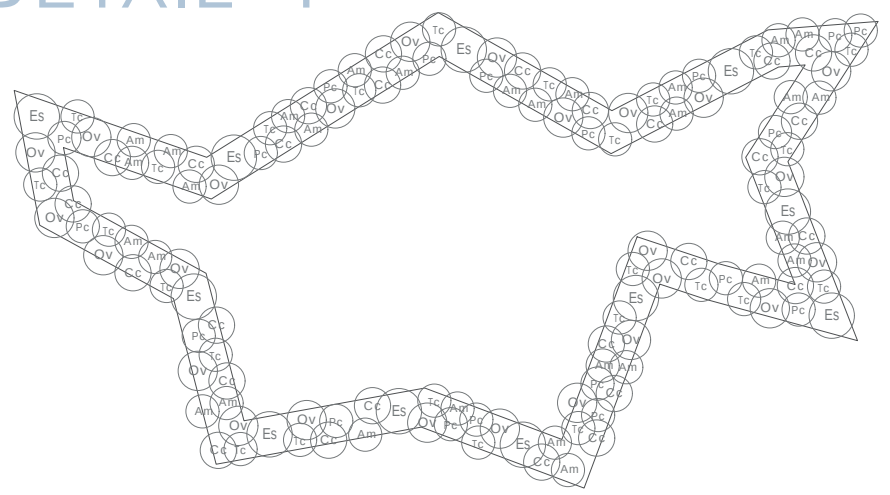
DETAIL 2



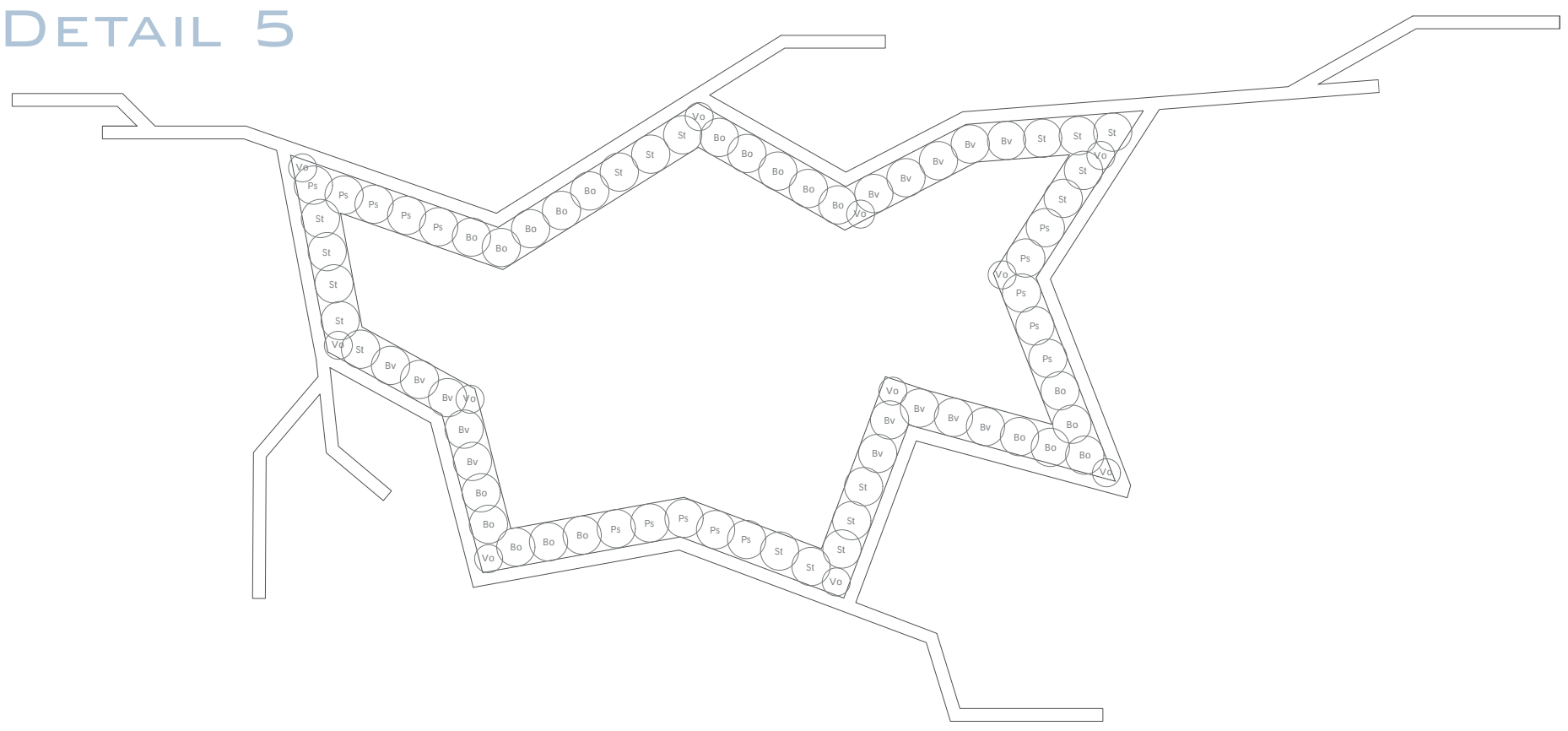
DETAIL 3



DETAIL 4



DETAIL 5



THE PLANTING IN THE „CRACK“ WILL BE PLANTED ACCORDING TO THE CONCEPT OF PERMACULTURE (SH. P.7). IT SHOULD CONTAIN A VARIETY OF DIFFERENT GRASSES, HERBS AND VEGETABLES. THROUGH THE DIFFERENT SPECIES A GARDEN WILDERNESS SHALL BE CREATED.

DETAIL 1:	
PLANTING AREA:	1.1M ²
DETAIL 2:	
PLANTING AREA:	1.7M ²
DETAIL 3:	
PLANTING AREA:	3.3M ²
DETAIL 4:	
PLANTING AREA:	3.9M ²
DETAIL 5:	
PLANTING AREA:	5.6M ²

DETAIL 1

VEGETABLES			
short	botanical name	quality	quantity
Cu	Cucurbita maxima		15 Stk.
Zm	Zea mays		16 Stk.
Pv	Phaseolus vulgaris		6 Stk.

DETAIL 2

PERENNIALS AND GRASSES			
short	botanical name	quality	quantity
Am	Achillea millefolium	P 0,5	3 Stk.
Gl	Gaura lindheimeri	P 0,5	4 Stk.
La	Leymus arenarius	P 0,5	7 Stk.
Ms	Miscanthus sinensis	P 1	5 Stk.
Ro	Rosmarinus officinalis	P 0,5	7 Stk.
Ss	Spodiopogon sibiricus	P 0,5	7 Stk.

DETAIL 3

PERENNIALS AND GRASSES			
short	botanical name	quality	quantity
Aa	Artemisia santonicum	P 1	9 Stk.
AsG	Alchemilla sericata 'Gold'	P 0,5	7 Stk.
Bm	Briza media 'Limouzi'	P 0,5	10 Stk.
La	Lavandula angustifolia	P 0,5	4 Stk.
Ma	Mentha spicata	P 0,5	7 Stk.
Ov	Origanum leviosum	P 0,5	2 Stk.
Ps	Pennisetum alopecuroides	P 1	8 Stk.
St	Stipa tenuissima	P 0,5	4 Stk.

DETAIL 4

PERENNIALS AND GRASSES			
short	botanical name	quality	quantity
Am	Armeria maritima	P 0,5	30 Stk.
Cc	Campanula carpatica	P 0,5	28 Stk.
Es	Eragrostis spectabilis	P 0,5	11 Stk.
Ov	Origanum vulgare	P 0,5	25 Stk.
Pc	Petroselinum crispum	P 0,5	20 Stk.
Tc	Thymus cherlerioides	P 1	26 Stk.

DETAIL 5

VEGETABLES		
short	botanical name	quality
Bo	Brassica oleracea	20 Stk.
Bv	Beta vulgaris	15 Stk.
Ps	Pastinaca sativa	15 Stk.
St	Solanum tuberosum	18 Stk.
Vo	Viola odorata	11 Stk.



06 CALCULATION

PLANTS					
Name of the plant	Quality	Number of plants	Price 1 Plant [€]	Price Total [€]	Notes
Cucurbita maxima	x	15	€ 2.99	€ 5.98	https://www.obl.at/
Zea mays	x	16	€ 2.99	€ 2.99	https://www.obl.at/
Phaseolus vulgaris	x	6	€ 2.99	€ 5.98	https://www.obl.at/
Achillea millefolium	P 0,5	3	€ 4.25	€ 12.75	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Gaura lindheimeri	P 0,5	4	€ 4.75	€ 19.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Leymus arenarius	P0,5	7	€ 3.70	€ 25.90	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Miscanthus sinensis	P 1	5	€ 6.20	€ 31.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Rosmarinus officinalis	P0,5	7	€ 4.40	€ 30.80	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Spodiopogon sibiricus	P 0,5	7	€ 4.75	€ 33.25	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Artemisia santonicum	P 1	9	€ 4.95	€ 44.55	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Alchemilla sericata ,Gold'	P 0,5	7	€ 3.00	€ 21.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Briza media ,Limouzi'	P0,5	10	€ 3.00	€ 30.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Lavandula angustifolia	P0,5	4	€ 3.55	€ 14.20	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Mentha spicata	P0,5	7	€ 3.25	€ 22.75	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Origanum leviosum	P 0,5	2	€ 2.50	€ 5.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Pennisetum alopecuroides	P 1	8	€ 4.40	€ 35.20	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Stipa tenuissima	P0,5	4	€ 3.90	€ 15.60	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Armeria maritima	P0,5	30	€ 2.75	€ 82.50	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Campanula carpatica	P 0,5	28	€ 2.20	€ 61.60	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Eragrostis spectabilis	P 0,5	11	€ 4.80	€ 52.80	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Origanum vulgare	P 0,5	25	€ 2.20	€ 55.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Petroselinum crispum	P0,5	20	€ 2.50	€ 50.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Thymus cherlerioides	P 1	26	€ 3.50	€ 91.00	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Brassica oleracea	x	39	€ 3.69	€ 3.69	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Beta vulgaris	x	57	€ 3.49	€ 6.98	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Pastinaca sativa	x	42	€ 2.99	€ 5.98	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Solanum tuberosum	x	18	€ 4.99	€ 9.98	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Viola odorata	P0,5	11	€ 4.99	€ 9.98	https://www.stauden-stade.de/shop-auswahl-filter.cfm
Ipomea batatas	x	113	€ 1.16	€ 2.32	https://www.obl.at/
Plant Soil	x	3480l	0,19/l	661.2	https://www.obl.at/
SUBTOTAL:			€ 1,448.98		

PAVING	€/to	Measurements of project	Amount needed [to]	Final Price (€)	Notes
waterbound road surface					
crushed sand (0/3)	€ 24.60	Area: 88,4m²; height:0,02m; volume: 17,86m³	28.00	€ 688.80	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
grit (4/8)	€ 13.40	Area: 88,4m²; height:0,08m; volume: 7,07m³	12.00	€ 160.80	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
grit (8/16)	€ 13.00	Area: 88,4m²; height:0,20m; volume: 17,68m³	31.50	€ 409.50	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
gravel sand (0/32)	€ 19.50	Area: 88,4m²; height:0,10m; volume: 8,84m³	15.20	€ 296.40	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
concrete plates	€/to	Measurements of project	Amount needed [to]	Final Price (€)	
Plates (60x40x3,8cm)	€ 31.21	Area: 22,79m²	22.79	€ 711.28	https://www.obi.at/terrassenplatten-gehwegplatten/bagattini-terrassenplatte-vintage-grau-gestrahlt-40-x-40-x-3-8-cm/p/8303125
crushed sand (grain size 2-8cm)	€ 10.80	Area: 22,79m²; height:0,40m; volume: 8,84m³	15.67	€ 169.24	https://www.rohrdorfer.at/658_DE Gebiet Zentral
fine grading (grain size 0,3-20cm)	€ 10.80	Area: 22,79m²; height:0,10m; volume: 2,279m³	3.91	€ 42.23	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
ballast (grain size 0-63cm)	24.9	Area: 22,79m²; height:0,40m; volume: 9,11m³	15.49	€ 385.70	chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/http://www.treulkies.at/preislisten/steyregg/1_Kiespreisliste.pdf
SUBTOTAL:			€	2,863.94	

CRACK	Length [cm]	Length/amount needed	Price/80pc (€)	Final Price (€)	Notes
Molded tube	100	70	x	485.1	https://www.cncshop.at/Aluminium-Formrohr-100-x-80-x-30-mm-Alu-Rohr-rechteckig-millimetergenauer-Zuschnitt
Countersunk screws	12	234	10.49	31.47	https://www.obi.at/spanplattenschrauben-universalschrauben/lux-tools-senkkopf-universalschraube-tx-antrieb-6-mm-x-120-mm-80-stueck/p/7621683
SUBTOTAL:				€ 516.57	

GREENHOUSES	Pieces	Price / piece (€)	x	Final price	Notes
Bucket	148	1,49	x	220,52	https://www.obi.at/baueimer-moertelkuebel/baueimer-12-l/p/1829407
Fabric tarpauline	324	1,5	x	486	https://www.obi.at/baufolien-planen/lux-gewebeplane-weiss-2-m-x-3-m/p/7509656
Blackboard (60x100)	4	43,9	x	175,6	https://www.kaufdeinschild.de/detail/275/aufsteller-kreidetafel-kundenstopper-holzaufsteller-beidseitig-holz-auch-farbig/?gclid=CjwKCAiAoL6eBhA3EiwAXDom5jM062i75TtG2x-slyP2rT58ekXOZD4jUatD5otoPYImiPgoNoy4xBoCOzgQAvD_BwE
Steel, wood, ankles, screws, ...	?	?	x	?	
SUBTOTAL:				€ 882.12	

TOTAL SUM: € 5,711.61