

Raumwandler

Space transformer



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 723375



Raumwandler

Space transformer



Idea



Build



Use



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Back in the days, streets were
for everybody !



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MPT (driver & passenger)

41,6%



Public Transport

19,8%



On Foot

19,3%



Bicycle

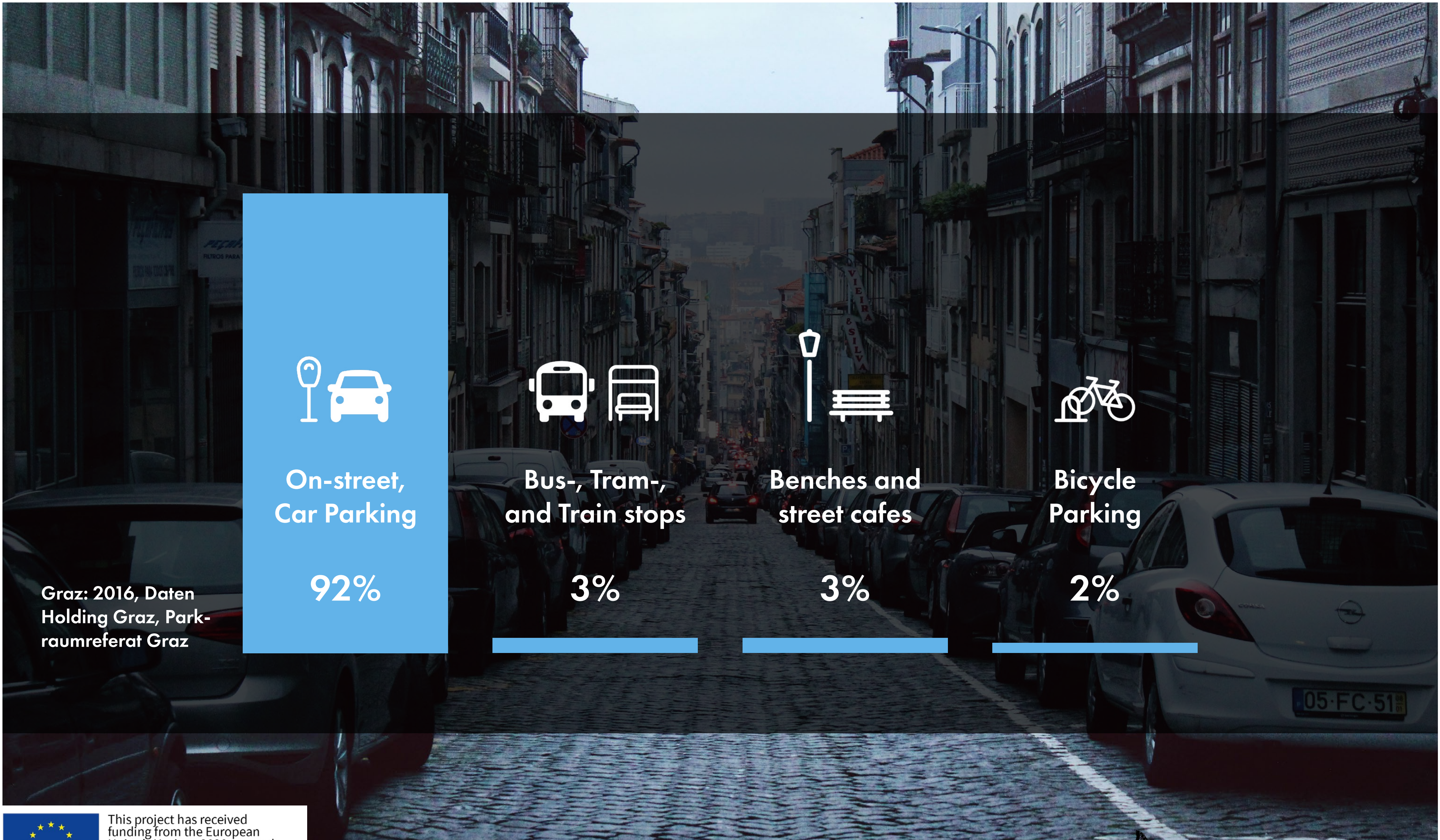
19,3%

Graz, ModalSplit:
2018, Daten ZIS +P



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Graz: 2016, Daten
Holding Graz, Park-
raumreferat Graz



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Is car-parking space really for everybody?



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Is car-parking space really open space?



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Parklet



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Parklet

- Street furniture on former parking lots
- to provide more public space
- You need a permission



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Das kleine Parkraumwunder

Gerhard Wollnitz - Stuttgart



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Parkraumwunder

Lendwirbel 2019



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Legal requirements of a Space transformer



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Legal requirements of a Space transformer



fulfills all the
(road) traffic
regulations



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Legal requirements of a Space transformer



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without TICKET!
(Austria,
Germany,...)



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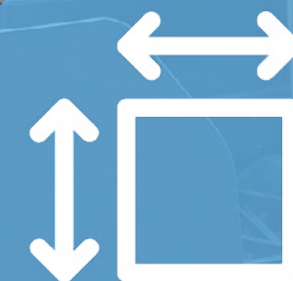
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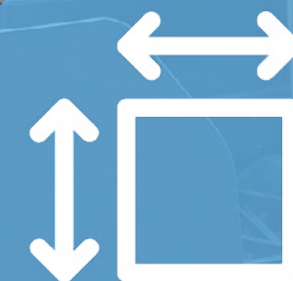
Legal requirements of a Space transformer



fulfills all the
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without TICKET!
(Austria,
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size limit
(Austria -
2.55m width)



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Build your own Space transformer



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Cargo Bike Trike - foundation



- rear-tire steering
- small tires
- heavy loads

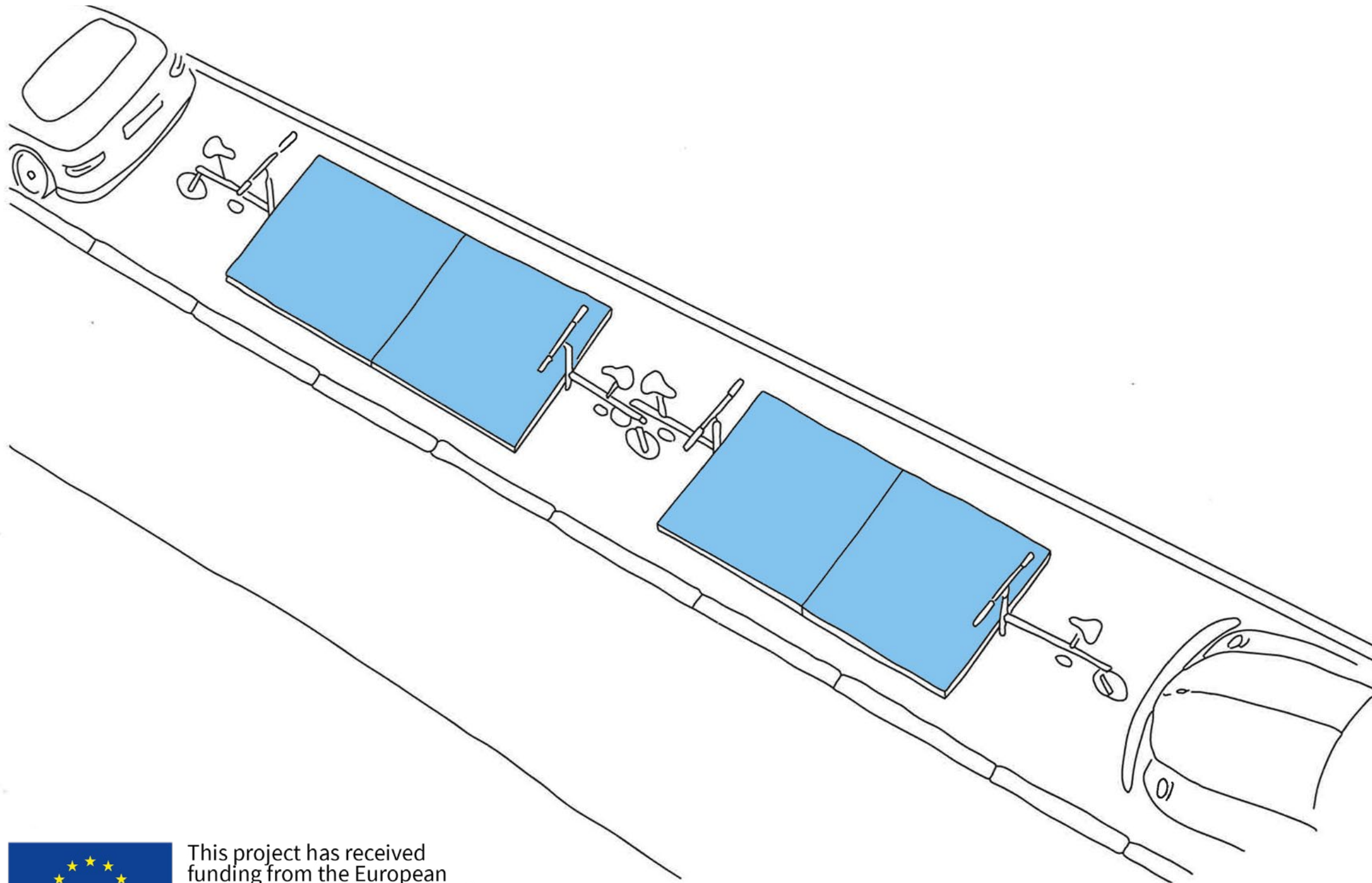


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Design process

Space transformer

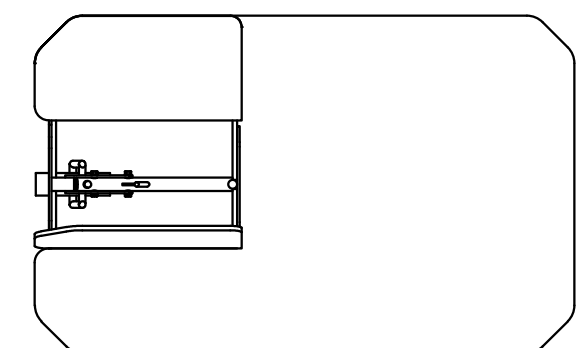
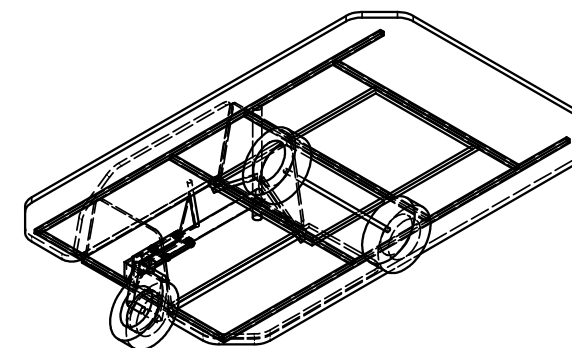
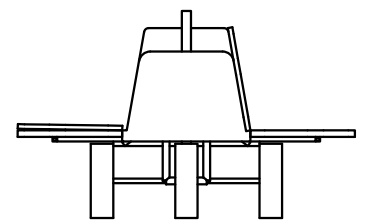
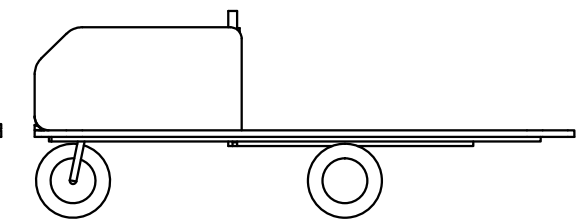
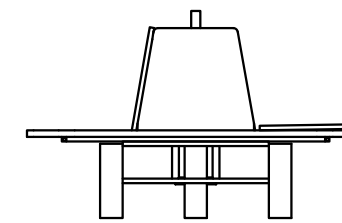
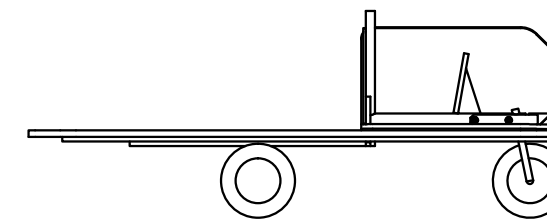
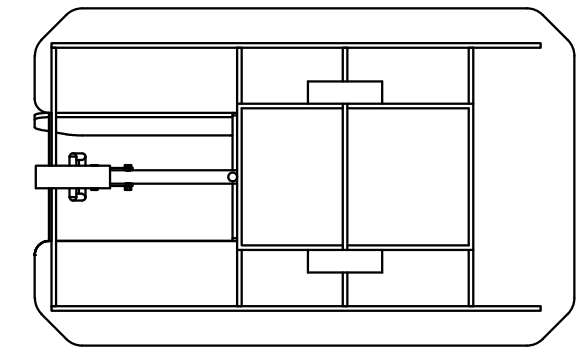
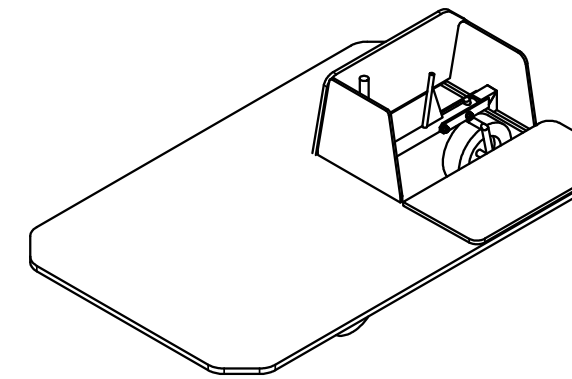
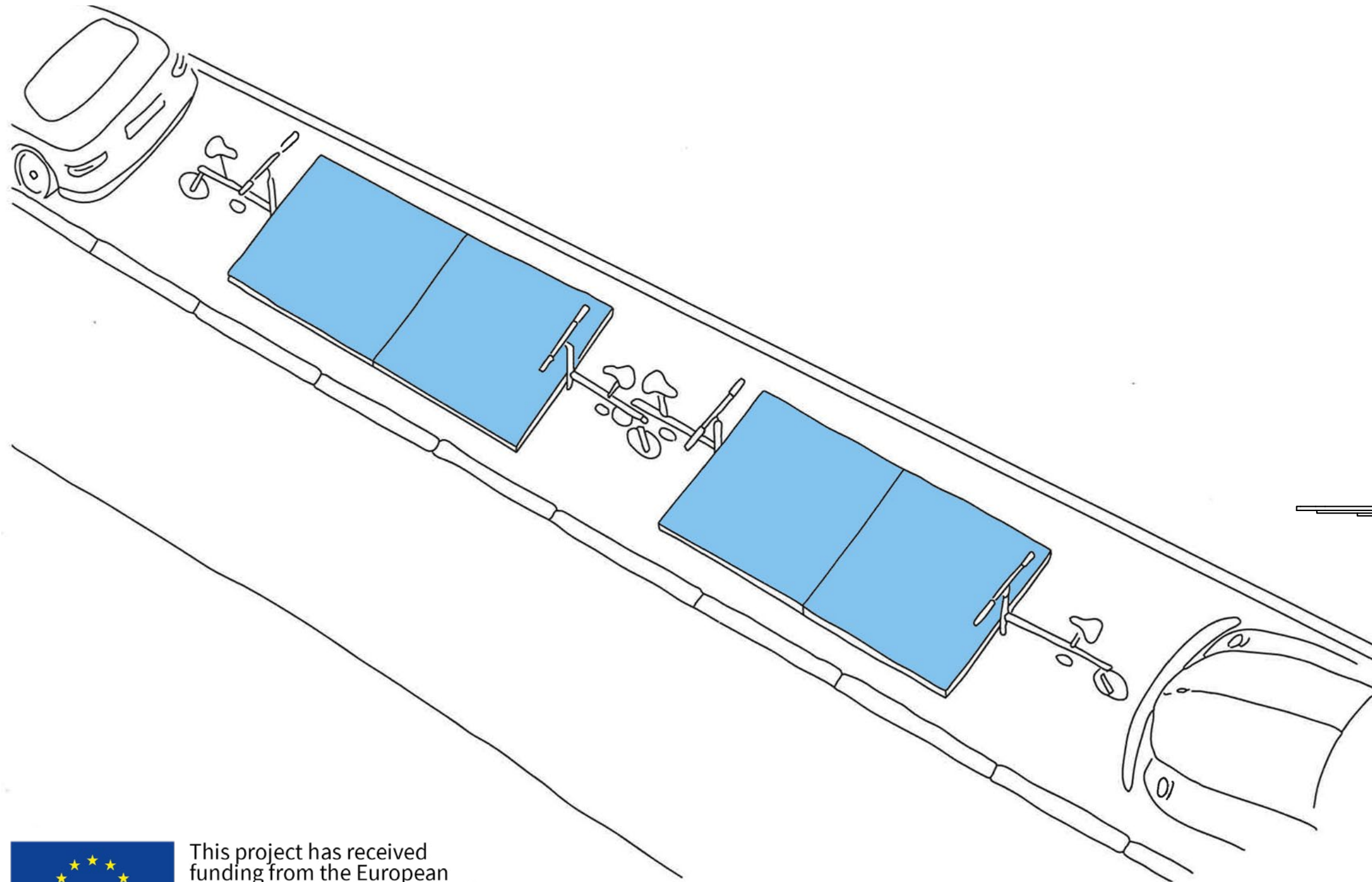
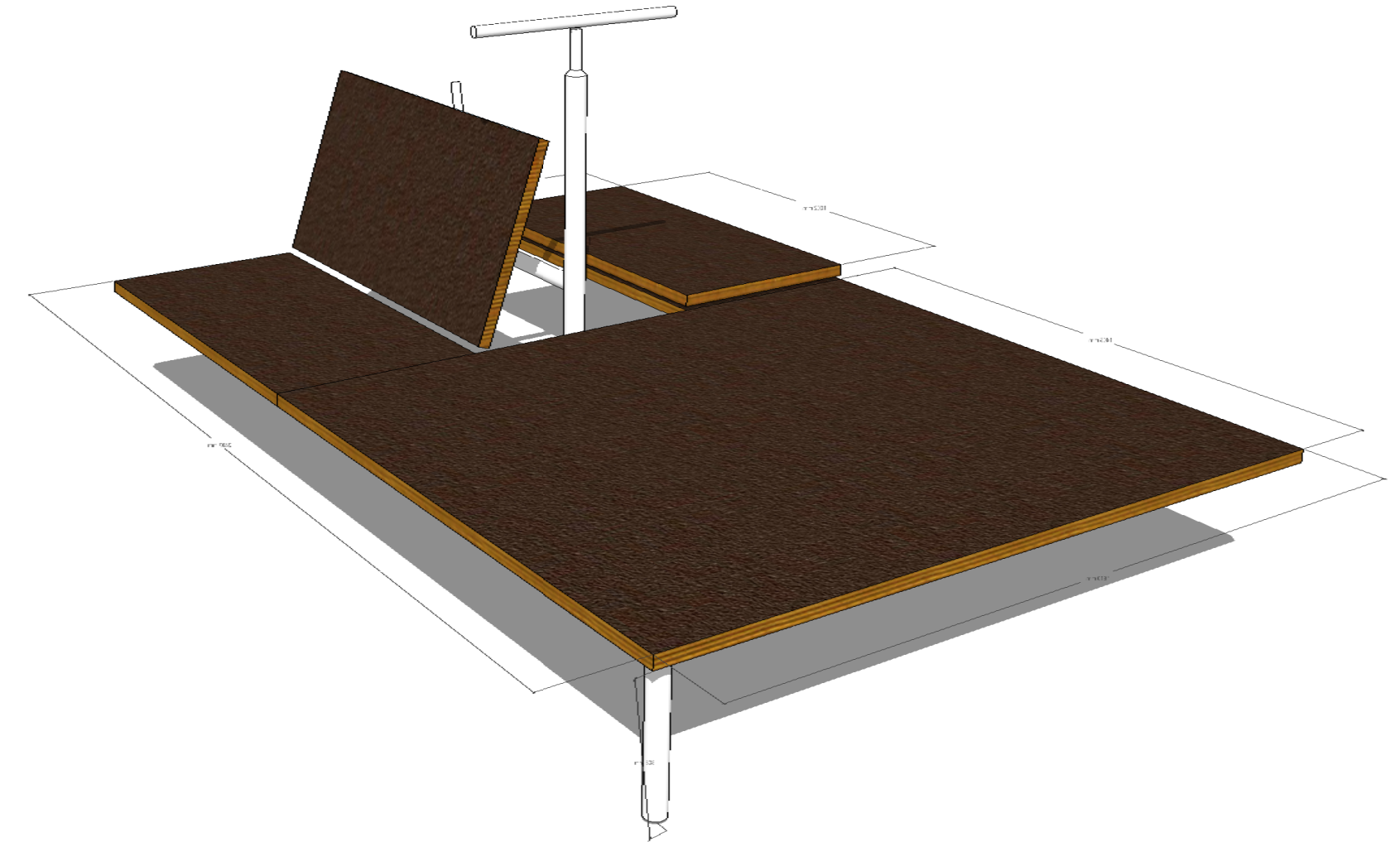


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Design process

Space transformer



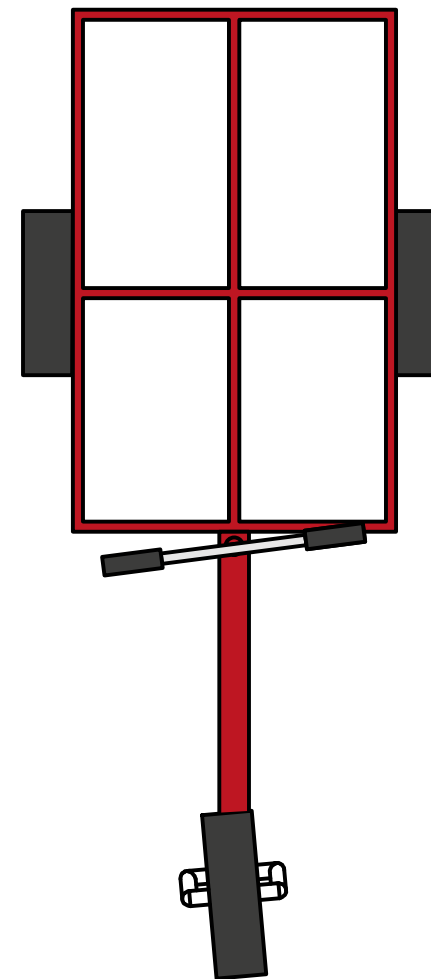
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Construction

3 main parts

cargo bike

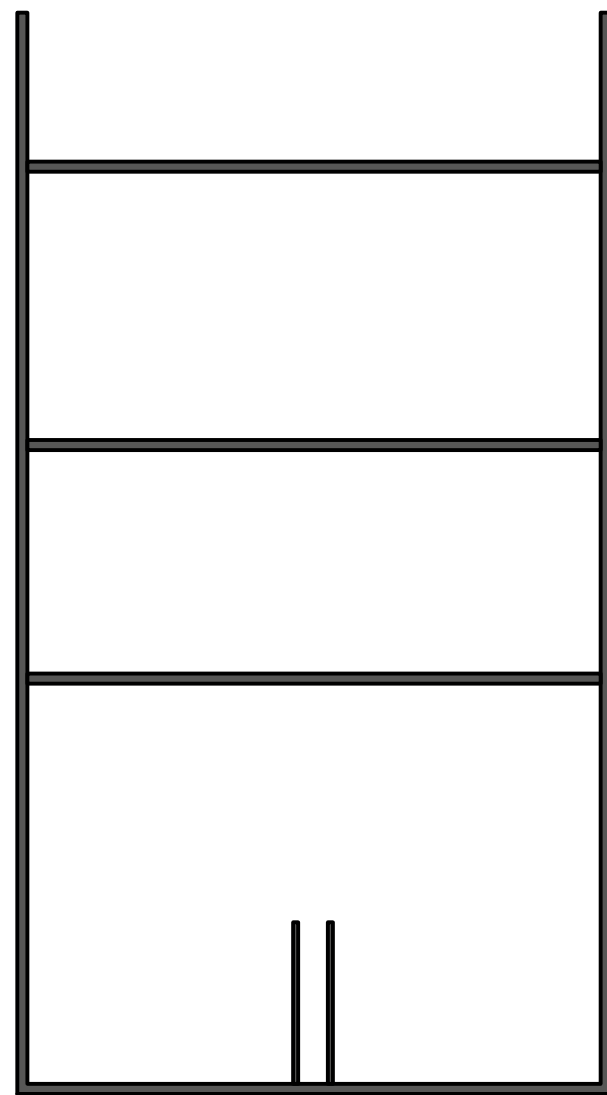


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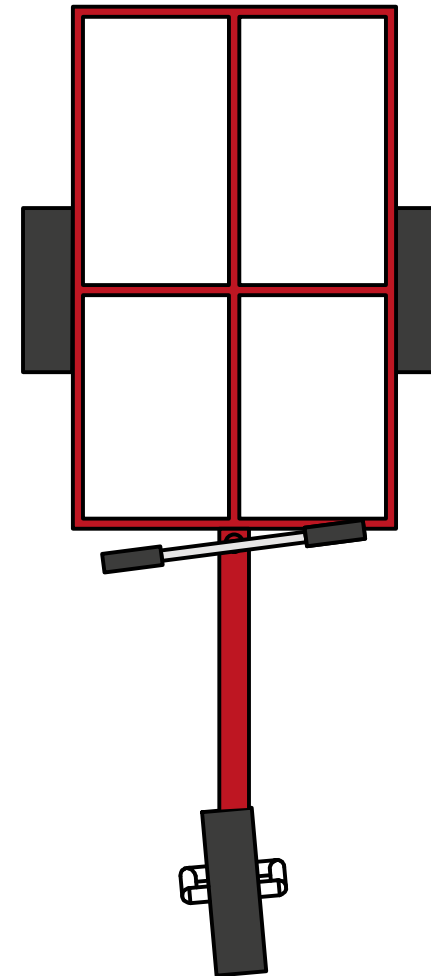
Construction

3 main parts

metal frame



cargo bike



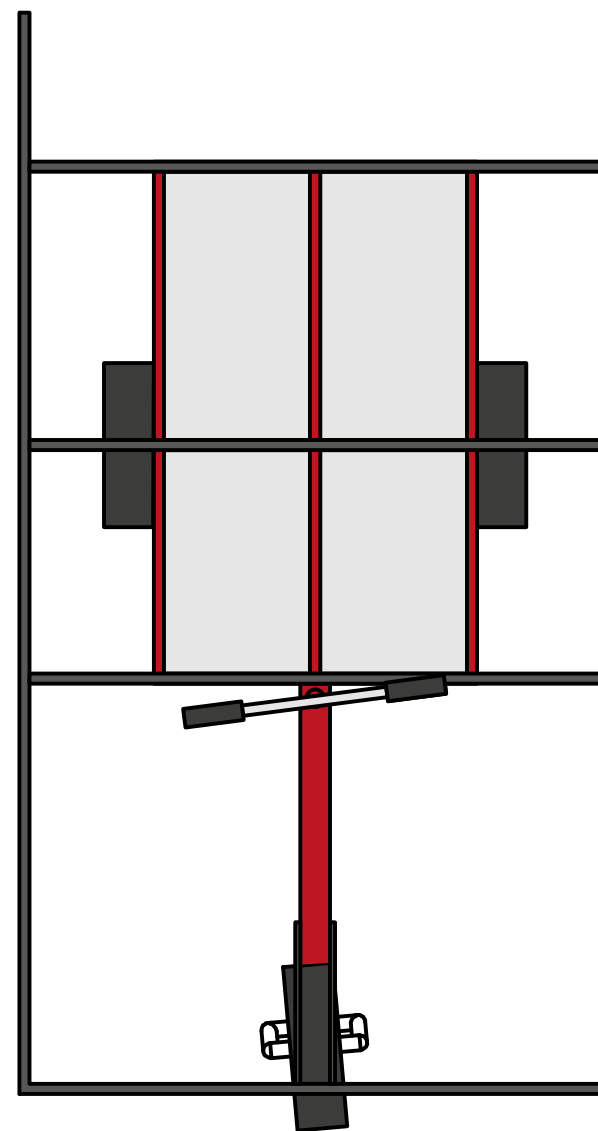
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Construction

3 main parts

metal frame

cargo bike



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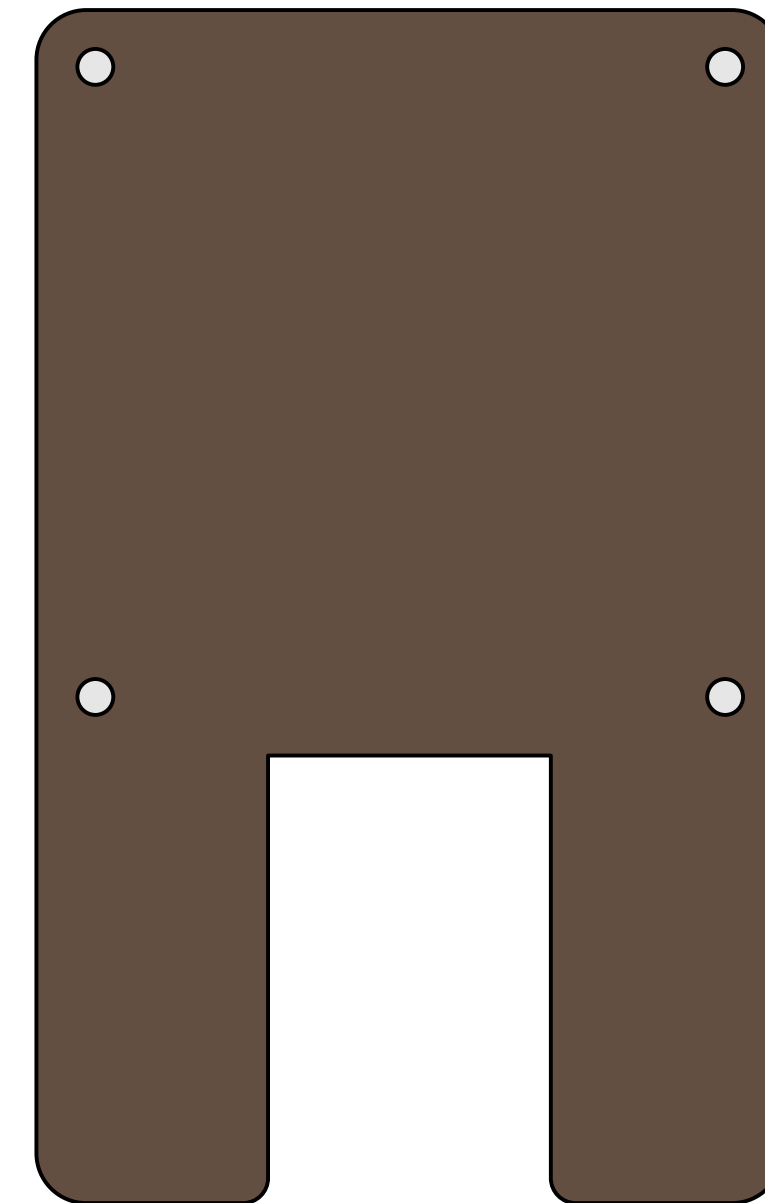
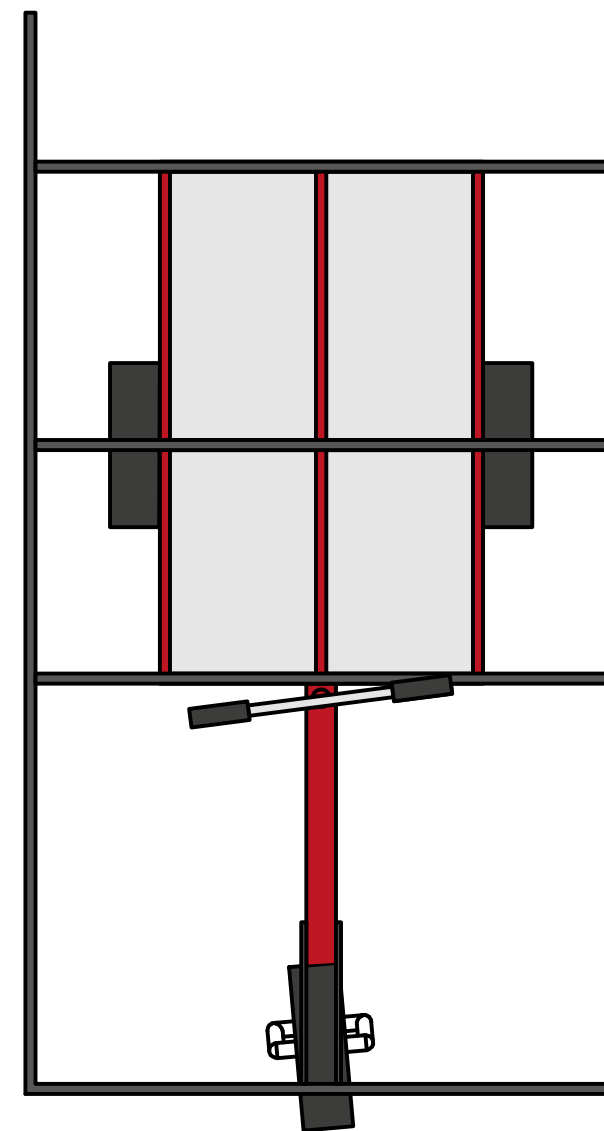
Construction

3 main parts

metal frame

cargo bike

wooden panel



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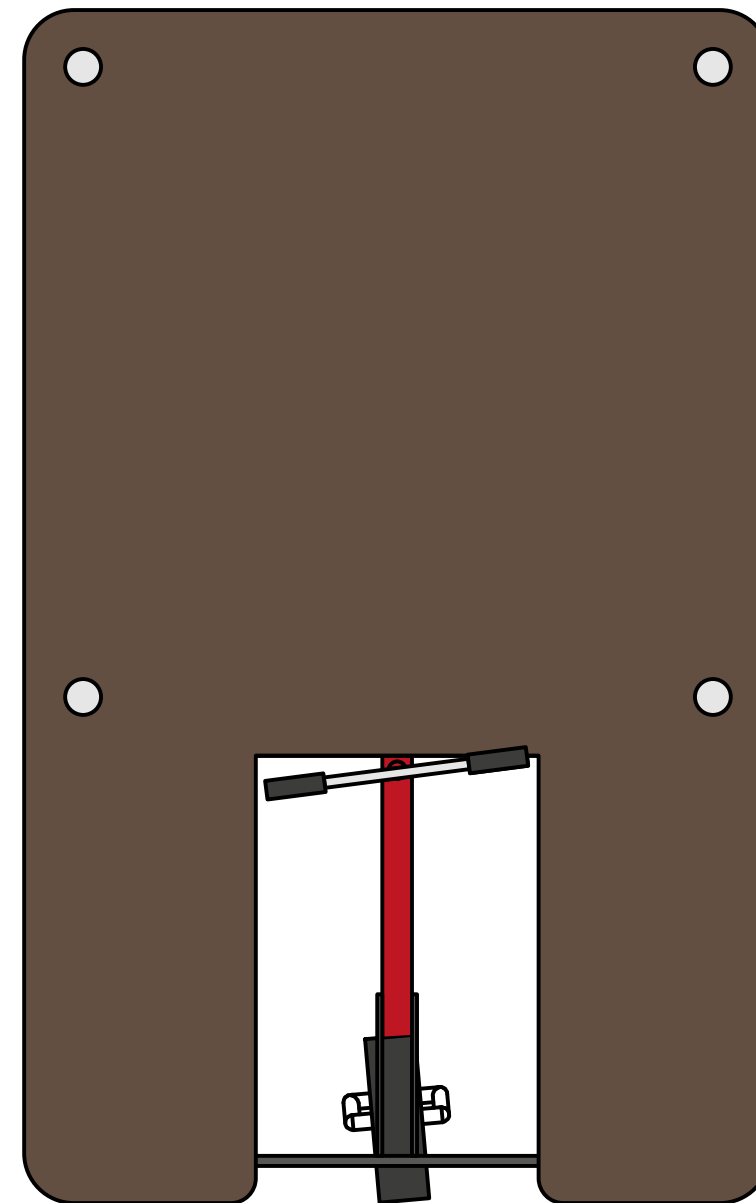
Construction

3 main parts

metal frame

cargo bike

wooden panel



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Hinged backrest



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Hinged backrest

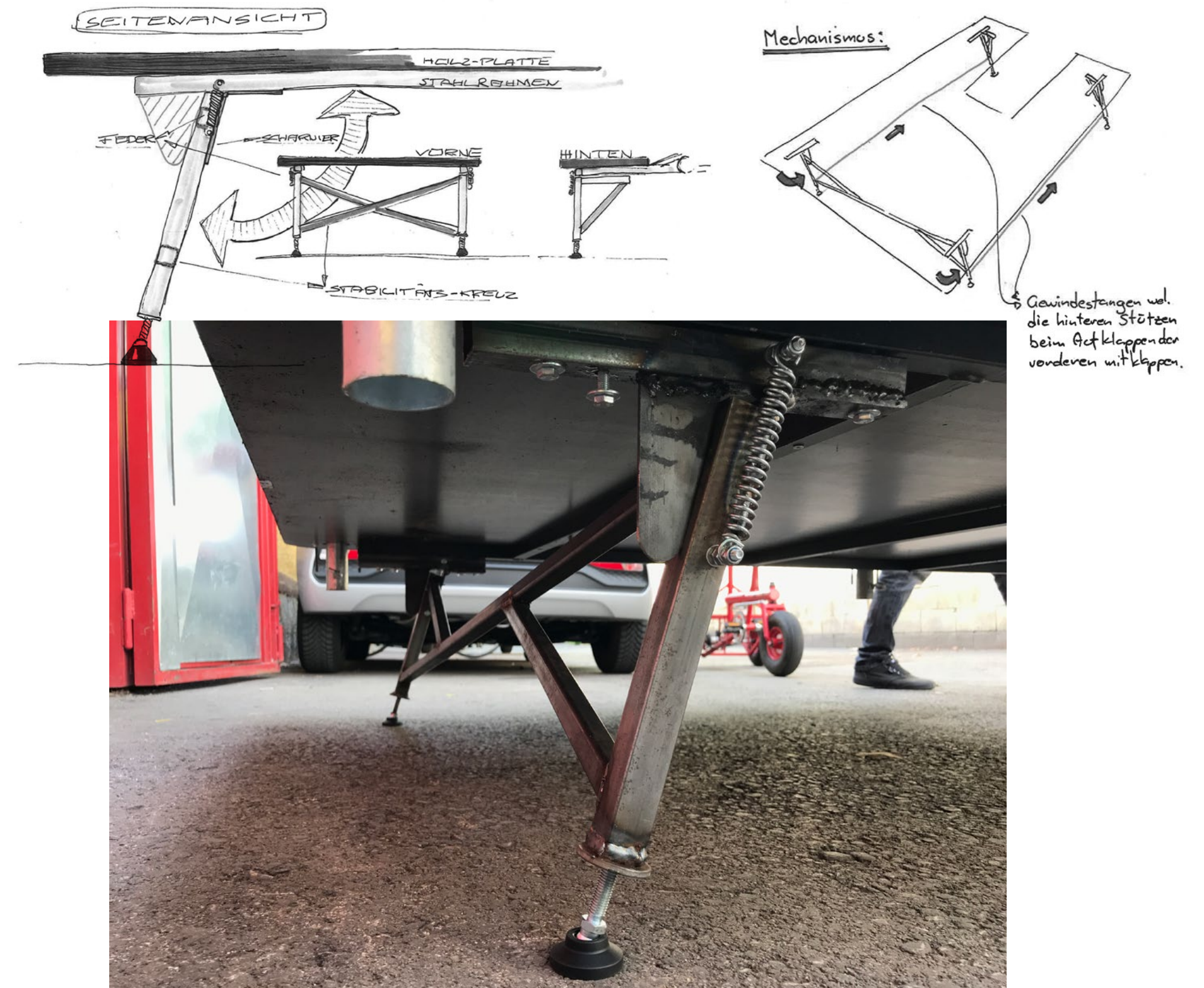


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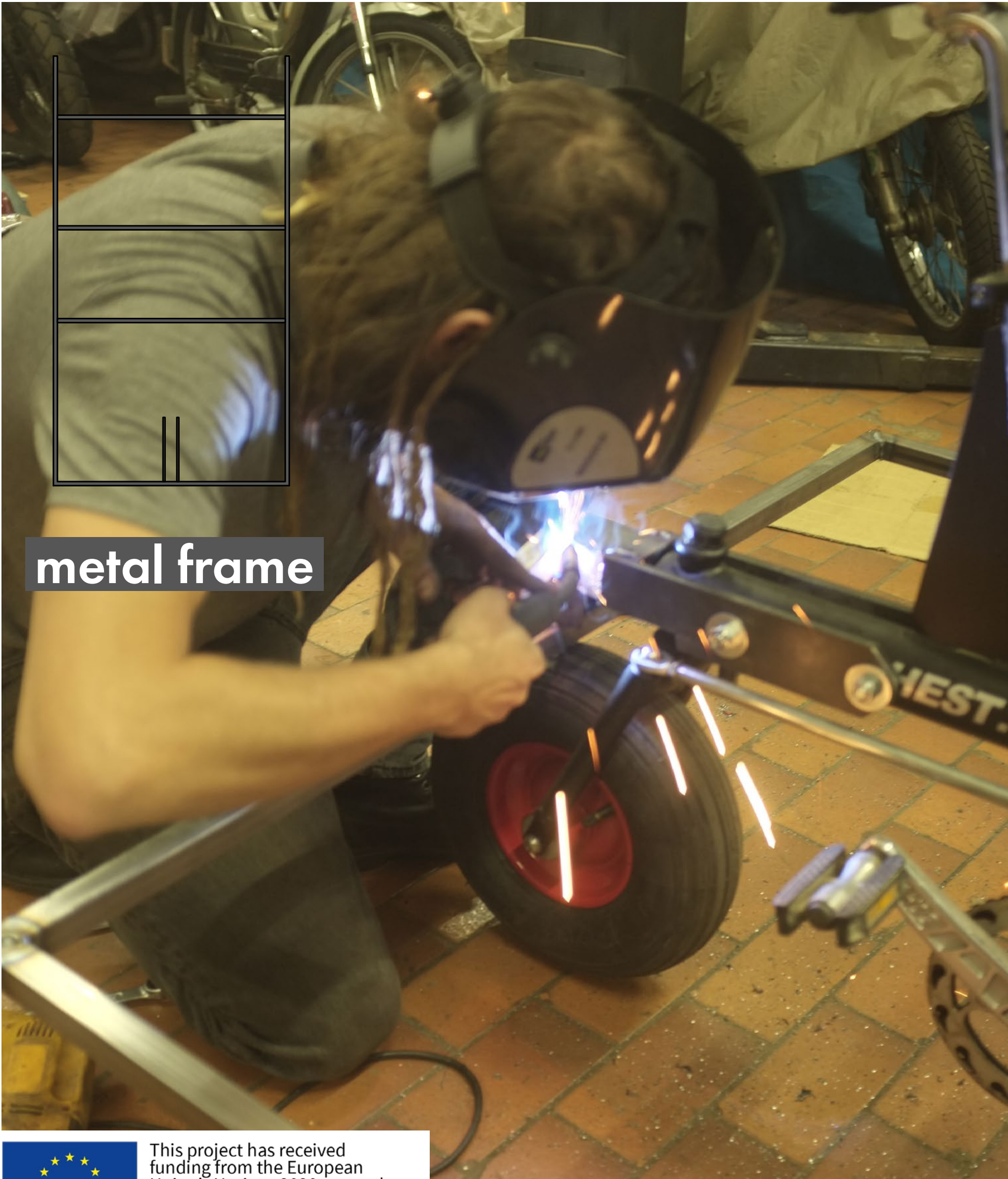
Hinged backrest



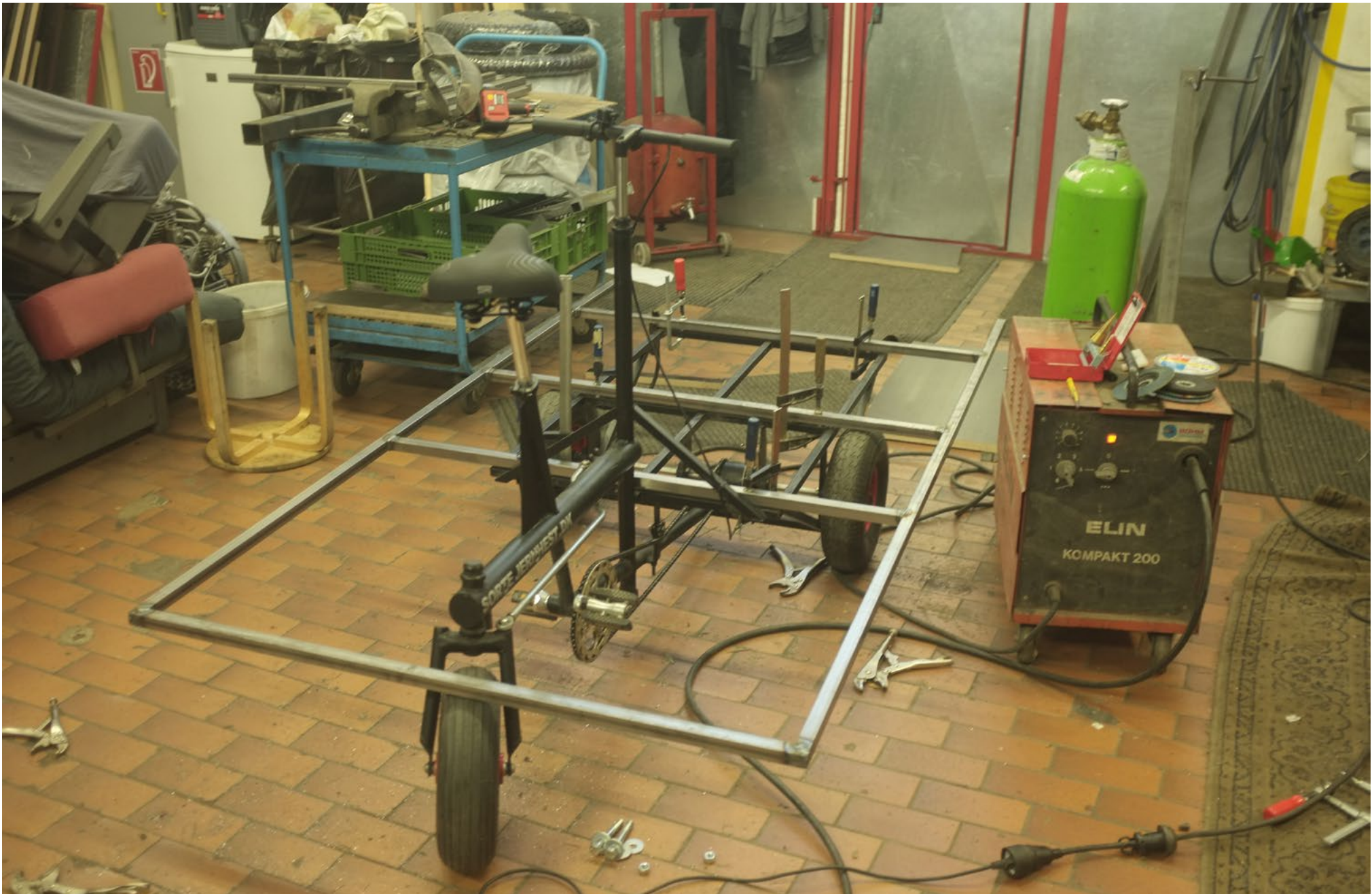
bicycle stand



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metal frame



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Material list

wood

- 1x 2500x1500x27mm
- 1x 1000x1500x21mm

steel

- 4x 3000x25x25mm
(1,5mm; square tube)
- 1x 3500x20x20mm
(1,5mm; square tube)
- 1x 800x60x10mm
- 1x 3000x30x3mm
- 1x 1500; Ø50mm
(2mm; round tube)

parts

- 4x heavy duty hinge
(for welding)
- 4x threaded foot (M12)
- 4x stand (umbrella)
- 4x small hinge
- 2x lock snapper
- 4x steel spring
- 1x billboard

screws

- 8x countersunk bolt
(M6; 60mm)
- 8x allen srew
(M6; 80mm)
- 14x carriage bolt
(M10; 80mm)
- 4x nut (M12; extra long;
for welding)
- wood srews
(various lenghts)
- secure nut
(various sizes)

service

- wood paint
(weatherproof)
- metal paint
- 10x brush
- 5x reflector

Material list

wood

1x	2500x1500x27mm
1x	1000x1500x21mm

200,-

steel

4x	3000x25x25mm (1,5mm; square tube)
1x	3500x20x20mm (1,5mm; square tube)
1x	800x60x10mm
1x	3000x30x3mm
1x	1500; Ø50mm (2mm; round tube)

95,-

parts

4x	heavy duty hinge (for welding)
4x	threaded foot (M12)
4x	stand (umbrella)
4x	small hinge
2x	lock snapper
4x	steel spring
1x	billboard

200,-

screws

8x	countersunk bolt (M6; 60mm)
8x	allen srew (M6; 80mm)
14x	carriage bolt (M10; 80mm)
4x	nut (M12; extra long; for welding)
	wood srews (various lenghts)
	secure nut (various sizes)

130,-

service

	wood paint (weatherproof)
	metal paint
10x	brush
5x	reflector

55,-



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Material list

wood

1x	2500x1500x27mm
1x	1000x1500x21mm

steel

4x	3000x25x25mm (1,5mm; square tube)
1x	3500x20x20mm (1,5mm; square tube)
1x	800x60x10mm
1x	3000x30x3mm
1x	1500; Ø50mm (2mm; round tube)

parts

4x	heavy duty hinge (for welding)
4x	threaded foot (M12)
4x	stand (umbrella)
4x	small hinge
2x	lock snapper
4x	steel spring
1x	billboard

screws

8x	countersunk bolt (M6; 60mm)
8x	allen srew (M6; 80mm)
14x	carriage bolt (M10; 80mm)
4x	nut (M12; extra long; for welding)
	wood srews (various lenghts)
	secure nut (various sizes)

service

	wood paint (weatherproof)
	metal paint
10x	brush
5x	reflector

total:

200,-

95,-

200,-

130,-

55,-

680,-



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Cost (total)



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Cost (total)

foundation

2000,- Black Iron Horse -
Trike

170,- Shipping costs

2170,-



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Cost (total)

foundation

2000,- Black Iron Horse -
Trike

170,- Shipping costs

- 1000,- FUNDING (city)

1170,-



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Cost (total)

foundation

2000,- Black Iron Horse -
Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

770,-



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Cost (total)

foundation

2000,- Black Iron Horse - Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

770,-

material

200,- Wood

95,- Steel

200,- Parts

130,- Screws

55,- Service

680,-



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Cost (total)

foundation

2000,- Black Iron Horse - Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

770,-

material

200,- Wood

95,- Steel

200,- Parts

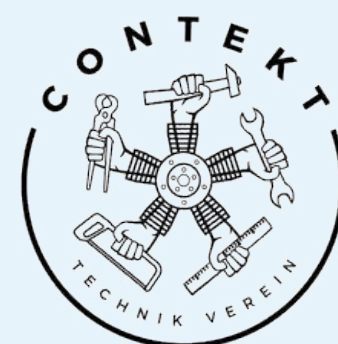
130,- Srews

55,- Service

680,-

rents

200,- Workshop
(including all the equipment)



200,-



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Cost (total)

foundation

2000,- Black Iron Horse - Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

770,-

material

200,- Wood

95,- Steel

200,- Parts

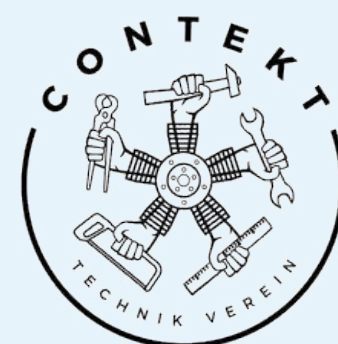
130,- Screws

55,- Service

680,-

rents

200,- Workshop
(including all the equipment)



200,-

service

Yearly costs:

- wood paint for protection
- spare parts
- pads
- ...

approx. **100,-**



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Cost (total)

foundation

2000,- Black Iron Horse - Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

770,-

material

200,- Wood

95,- Steel

200,- Parts

130,- Screws

55,- Service

680,-

rents

200,- Workshop
(including all the equipment)



200,-

service

Yearly costs:

- wood paint for protection
- spare parts
- pads
- ...

approx. **100,-**

total:

1.750,-



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Cost (total)

foundation

2000,- Black Iron Horse - Trike

170,- Shipping costs

- 1000,- FUNDING (city)

- 400,- FUNDING (state)

material

200,- Wood

95,- Steel

200,- Parts

130,- Screws

55,- Service

rents

200,- Workshop
(including all the equipment)



service

Yearly costs:

- wood paint for protection
- spare parts
- pads
- ...

work

3-5 day

total:

1.750,-

+

770,-

680,-

200,-

approx. 100,-



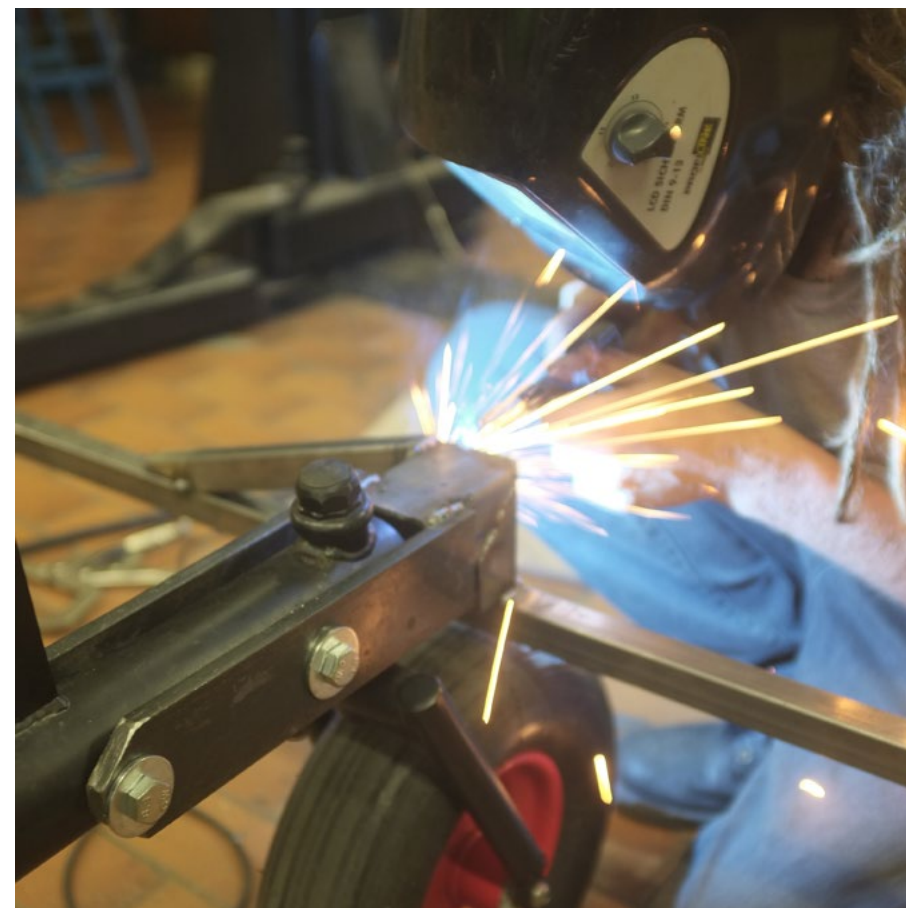
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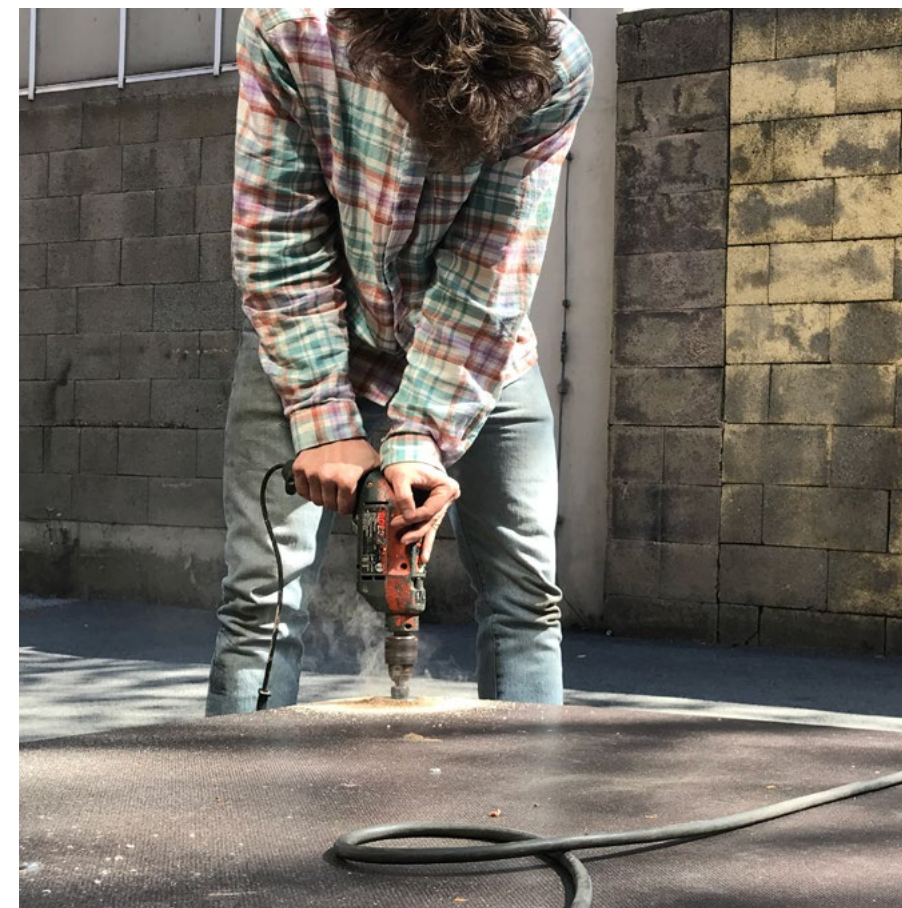
Skills needed



METALWORKING
intermediate



WELDING
intermediate



WOODWORKING
basic

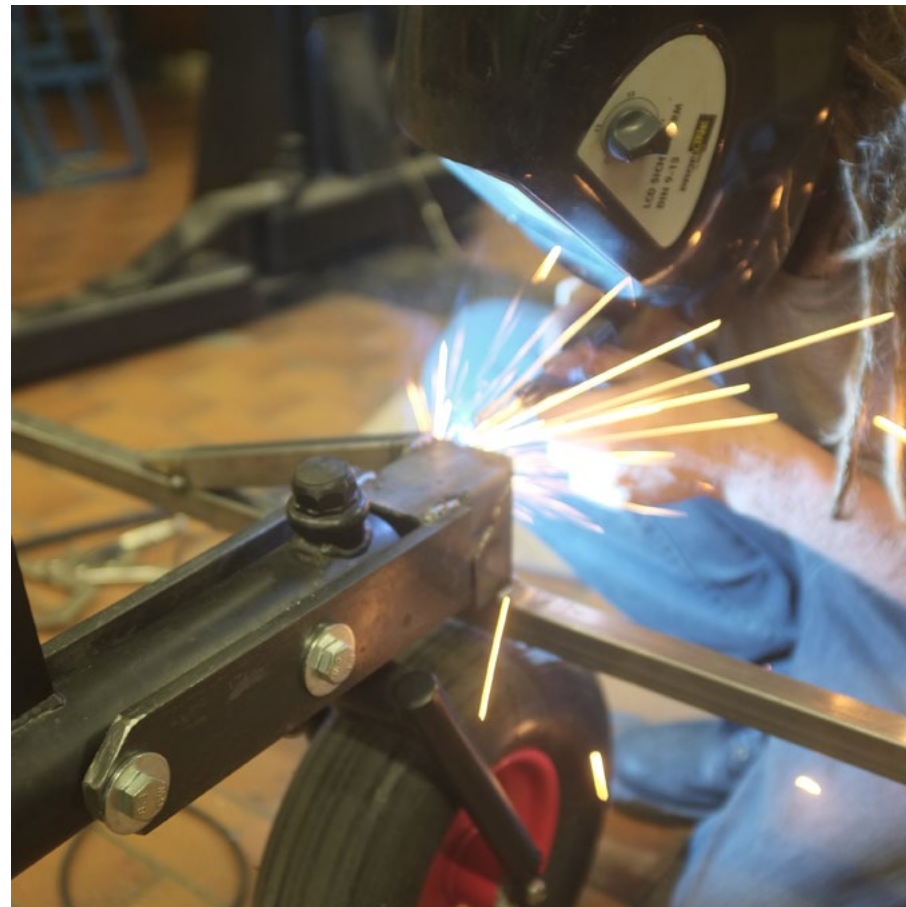


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Skills needed



METALWORKING
intermediate

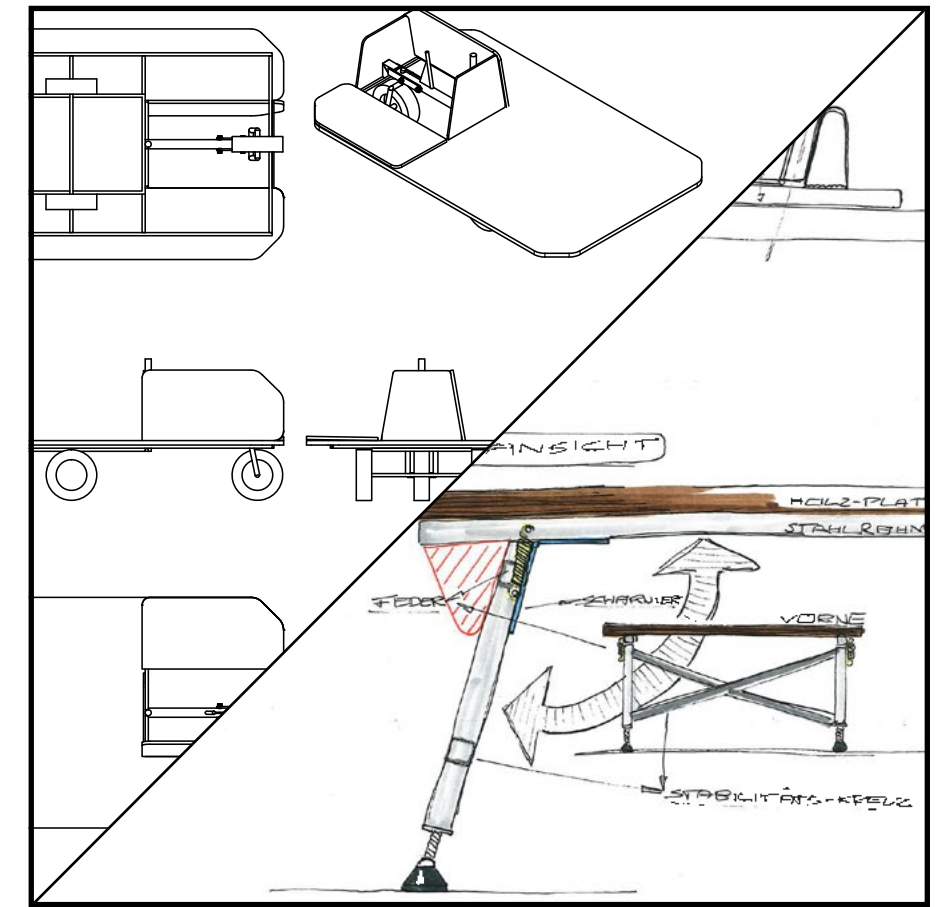


WELDING
intermediate



WOODWORKING
basic

+



**CAD/drawing &
DESIGN ABILITY**

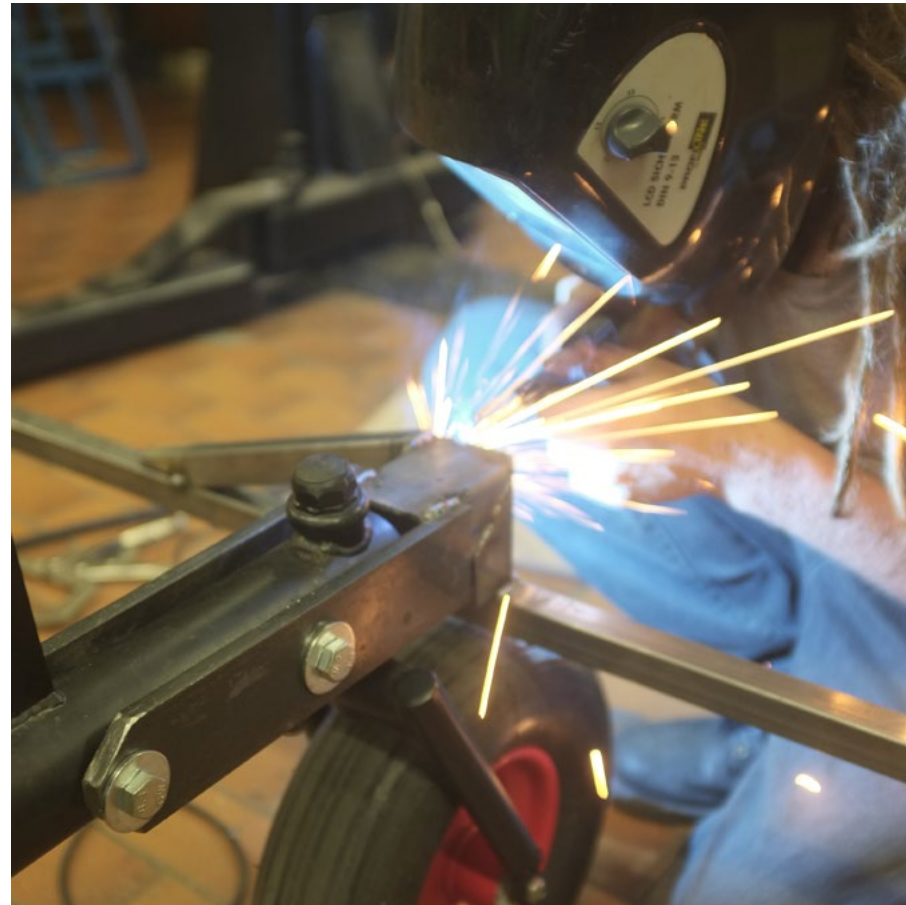


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Skills needed



METALWORKING
intermediate

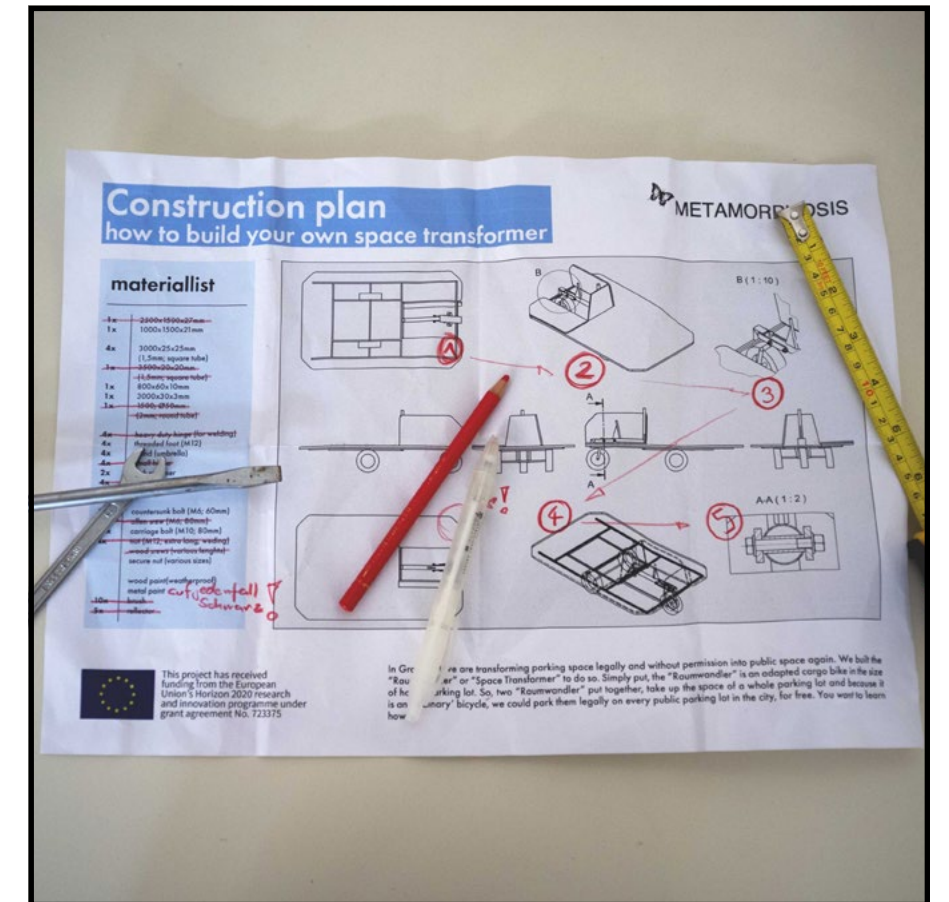


WELDING
intermediate



WOODWORKING
basic

+



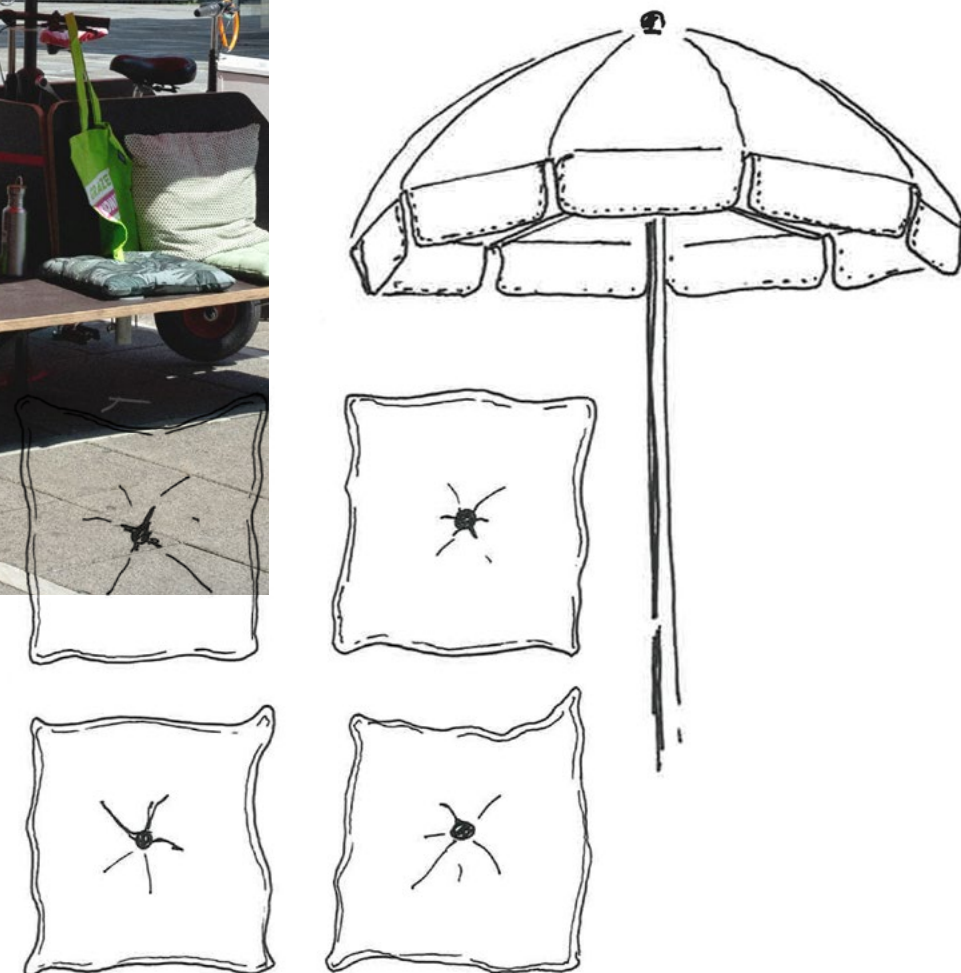
CONSTRUCTION PLAN

available for download
(early 2020)



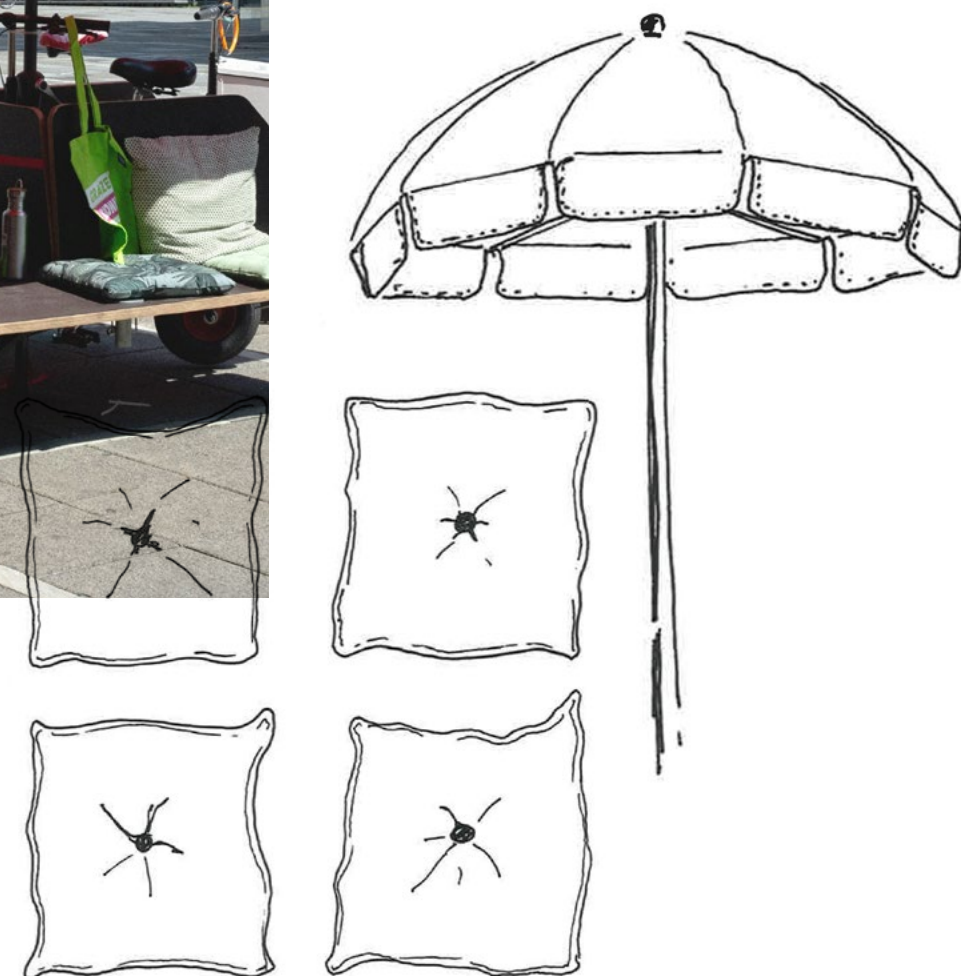
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Host



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Host



Social gardening



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Lendwirbel 2019



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Lendwirbel 2019



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Car-free-day 2019



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Car-free-day 2019



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**THANK YOU FOR
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