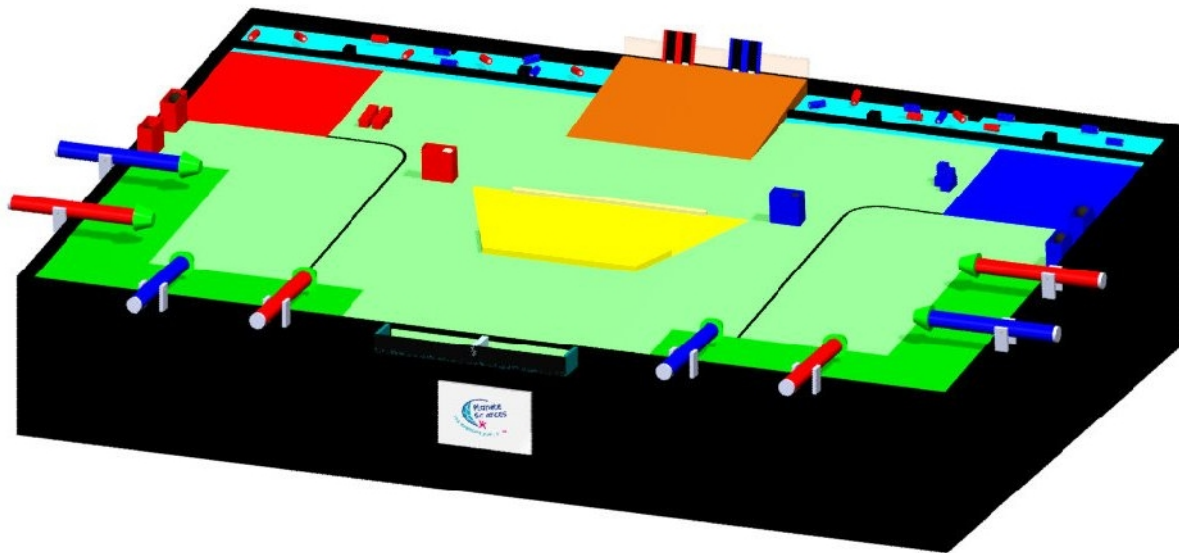


The planet all worked up



This year robots are going again to work for the planet! Many animals and plant species disappear each year. Robots are going to help to renew and to maintain the biodiversity of the earth. For that, they will clean a river in order to improve the aquatic diversity, will replant trees in order to fight against the deforestation, will seed fields with different seeds, finally will contribute to the pollination and the reintroduction of animal species.



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1. Generalities

Important : the playing areas have to be transportable and **montable by others people than those have built them**. In consequence, none of element has to exceed 2 metres of side and the whole has to be easily remontable (if necessary, write a simple and detailed operating method).

If specials feet are not realised with the playing area, this one has to be able simply rest on tables or trestles. This point has to be planned with the organiser **before the beginning of the construction**; being given the size of the game elements, it is strongly recommended to realise specials foots.

A black skirt hiding the foots, all around the playing area, has to be planned and fixed outside the borders.

Once on its foots, the playing area do not have to be taller than 80 cm high. In the opposite case, it will be necessary to have a podium, or chairs, for the smallest participants.

2. The playing area

The playing area is a wooden rectangular tray tilted at 10% as represented on the illustration in appendix, that the vertical projection is a rectangular 2m*3m.

The tray is surrounded with a vertical wooden border 50mm high in comparison to the game plane. The whole border will be painted in mat black. The logo of Eurobot Junior (format A5 minimum) will be at each end of the front border, either printed in colour on white back, either painted in stencil in white directly on black back.

The organisers promise to respect the greatest precision in the realisation of the playing area, but reserve a margin of +/- 2% compared with the dimensions. The organisers reserve the right to modify some elements in case of majors problems.

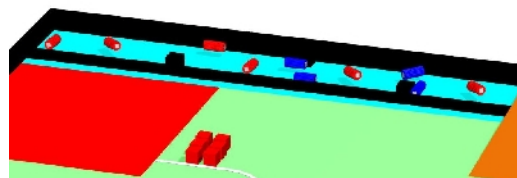
In cas of doubt, for all technicals questions,
write to
trophees@planete-sciences.org



3. The actions

3.1 Rivers remediation

- **The river**, figured by two clear blue stripes bordered by a small black edge. Rocks, figured by small wooden brackets, are fixed on the river. A small zone of overflow of water (area where water balls are allowed) is located along the river on the outside.

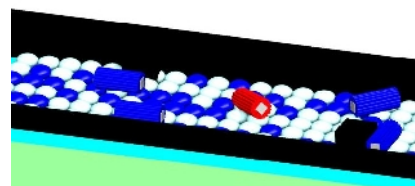


Element	Rocks
Quantity per table	6
Quantity of spare to plan	0
Remarks	The rocks are fixed in the river

- **The recycling bin** is located on the front edge (facing audience) separated in two parts by a partition, containing an empty part for each team and receive the polluting elements from the river. It is opened on the top and has a slot of a sufficient size for the passage of the polluting elements.



- **The water** is represented by flat glass balls, blue transparents or white, shape and variable dimensions between 15 and 20 mm height. They are commonly used in decoration for the fish tanks. The flat balls recover entirely the deep of the river including the two parts.





THE PLANET ALL WORKED UP

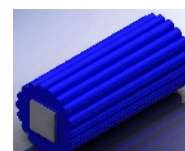
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Element	Glass balls
Quantity per table	Sufficient quantity in order to recover entirely the bottom of the river (one layer of flat balls for each part of the river)
Quantity of spare to plan	A small reserve in case of loss
Remark	The balls are available in the store of accessories for fish tank or on internet

- **Polluting elements** are represented by small pieces of wood fluted dowels painted in red and blue having at the two ends a piece of velcro (hook side).



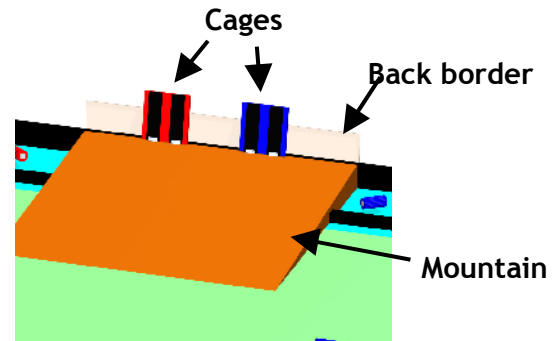
Element	The wood fluted dowels
Quantity per table	20 (10 red et 10 blue)
Quantity of spare to plan	20 (10 red et 10 blue)
Remark	The fluted dowels are available at resellers of diy for example Castorama (French supermarket) They have at the two ends a piece of velcro (hook side)

A panel will be placed in the front of the playing area (audience side) in order to signal that the cooperation is played or not. This panel will have a A3 paper.

3.2 Reintroduction of animals

- **The mountain**, located at the centre, back in the playing area, is represented by a slope with a 20% angle compared to the horizontal (including the 10% tilt of the general playing area).

The junction between the playing area and the mountain has to be precise; It should not have space between the slope and the border.



Element	The mountain
Quantity per table	1
Quantity of spare to plan	0
Remarks	The back border (a panel of PVC or wood for exemple) is at the back in order to put the cages against this one

- **The cage of the animals** to deliver, located at the top of the mountain are represented by two wood panels (one blue and one red). On each of them, we can find two stripes of black Velcro hook side. Those panels are located, at the beginning, in raised position, resting against a raised border.

Element	The cage of animals
Quantity per table	2(1 red, 1 blue)
Quantity of spare to plan	1(without colour)
Remarks	They are squares wooden swivel by a hinge. The panels swivel around hinges ; those ones do not have to be painted in order to maintain their property, so they can swivel well.



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3.3 Plantation of the seeds

- **The seeds**, 6 per team, are represented by small cubic sponges of team's colour. They are put in the start zone at the beginning of the game, which means that the teams can, if they wish, load the seeds in their robot

Element	The seeds
Quantity per table	12(6 red and 6 blue)
Quantity of spare to plan	12(6 red and 6 blue)
Remark	Classic sponge thick, cheap, yellow, without side scraper

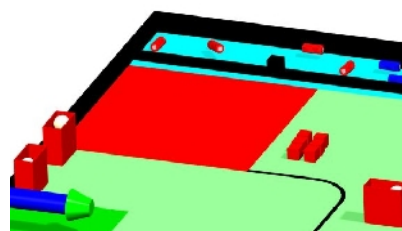
- **The field** is represented by a large central yellow trapeze. It is fixe and drawn on the playing area. The top and the bottom of the field are delimited by cleats of different sizes.

Element	The field
Quantity per table	1
Quantity of spare to plan	0
Remark	Part paint on the table with cleats and the fixed chopsticks that have to resist to the robots



3.4 Pollination of the field

- **The hives**, represented by small rectangular boxes opened at the top up of the beginning's colour. There are three hives per team. They are placed, at the beginning in the following way: 2 between the starting area and the forest and 1 near the field. They contain bees.



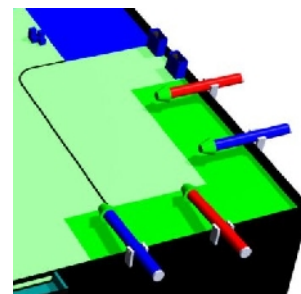
Element	The hives
Quantity per table	6(3 red and 3 blue)
Quantity of spare to plan	4(2 red and 2 blue)
Remark	Hives are wooden

- **The bees**, represented by tennis table balls. There are 4 per hive.

Element	The bees
Quantity per table	24 (yellow-orange)
Quantity of spare to plan	12(yellow-orange)
Remark	Classic balls of ping-pong, diameter : 40mm

3.5 Fight against deforestation

- The trees, represented by PVC tube, painted of the departure colour swivelling (between horizontal and vertical position). Each team has 4 trees (2 at each side of the playing area) surmounted of a pointed tip. At the beginning, the trees are placed pointed towards inside of the playing area and slightly bended towards the front.



Element	The trees
Quantity per table	8(4 reds, 4 blues)
Quantity of spare to plan	2(1 red, 1 blue)
Remark	none





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4. References of paint

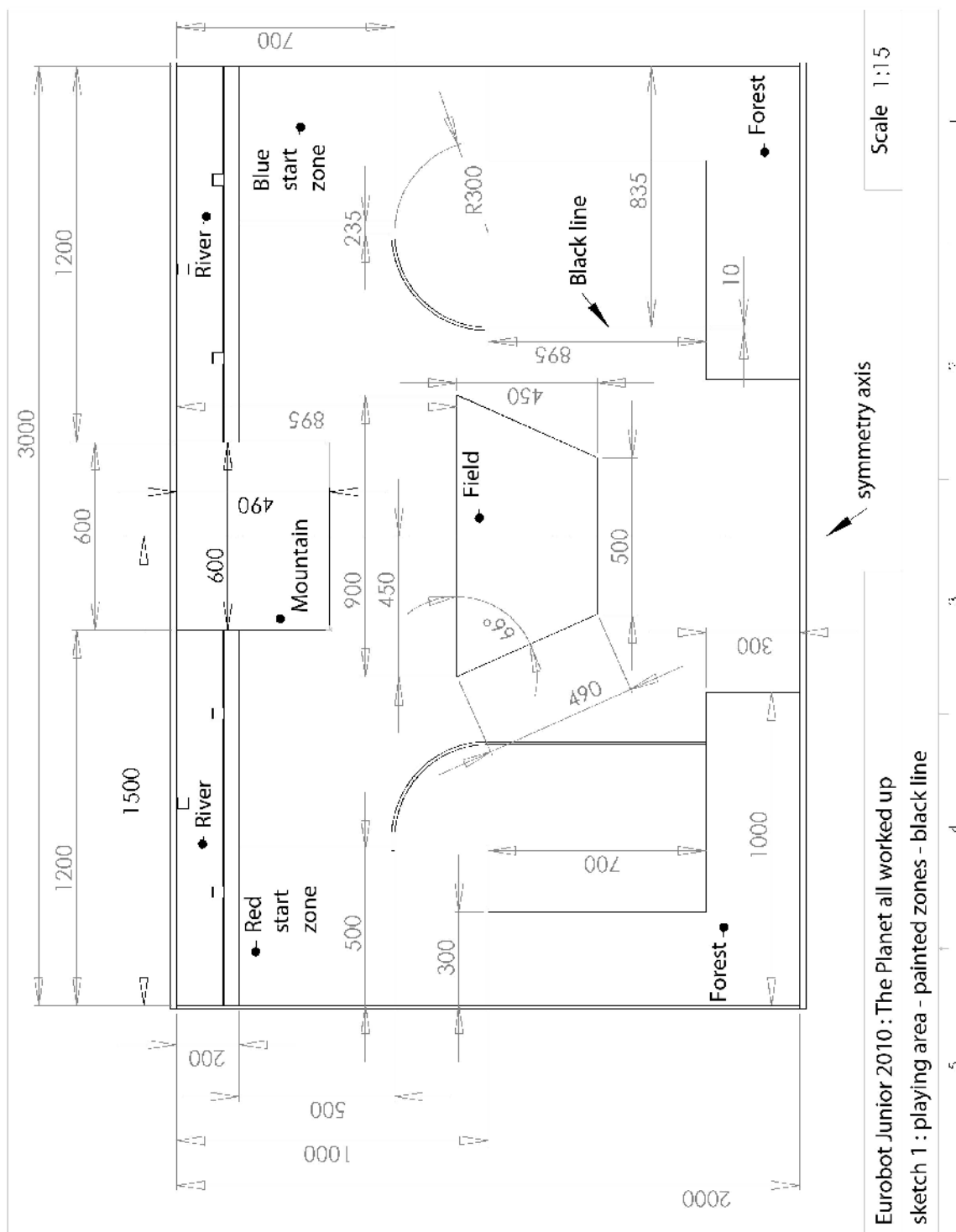
	Colour	Type of paint	Reference
Part Forest	Green mint	Satin-finished	RAL 6029
Border, river, line and rock	Deep black	Satin-finished	RAL 9005
Central field and cleat of the field	Cadmium Yellow	Satin-finished	RAL 1021
Red elements game	Fire red	Satin-finished	RAL 3000
Area of game (important for robots following lines)	Green Yellow	Satin-finished	RAL 6018
Blue elements game	blue	Satin-finished	RAL 5005
river	blue	Satin-finished	RAL 5012

Note : The references of paints are given as a rough guide titre except for the black and the green yellow. Those two colours have to be respected because some robots following line would be unhinged by the use of another colour the day of the meeting.

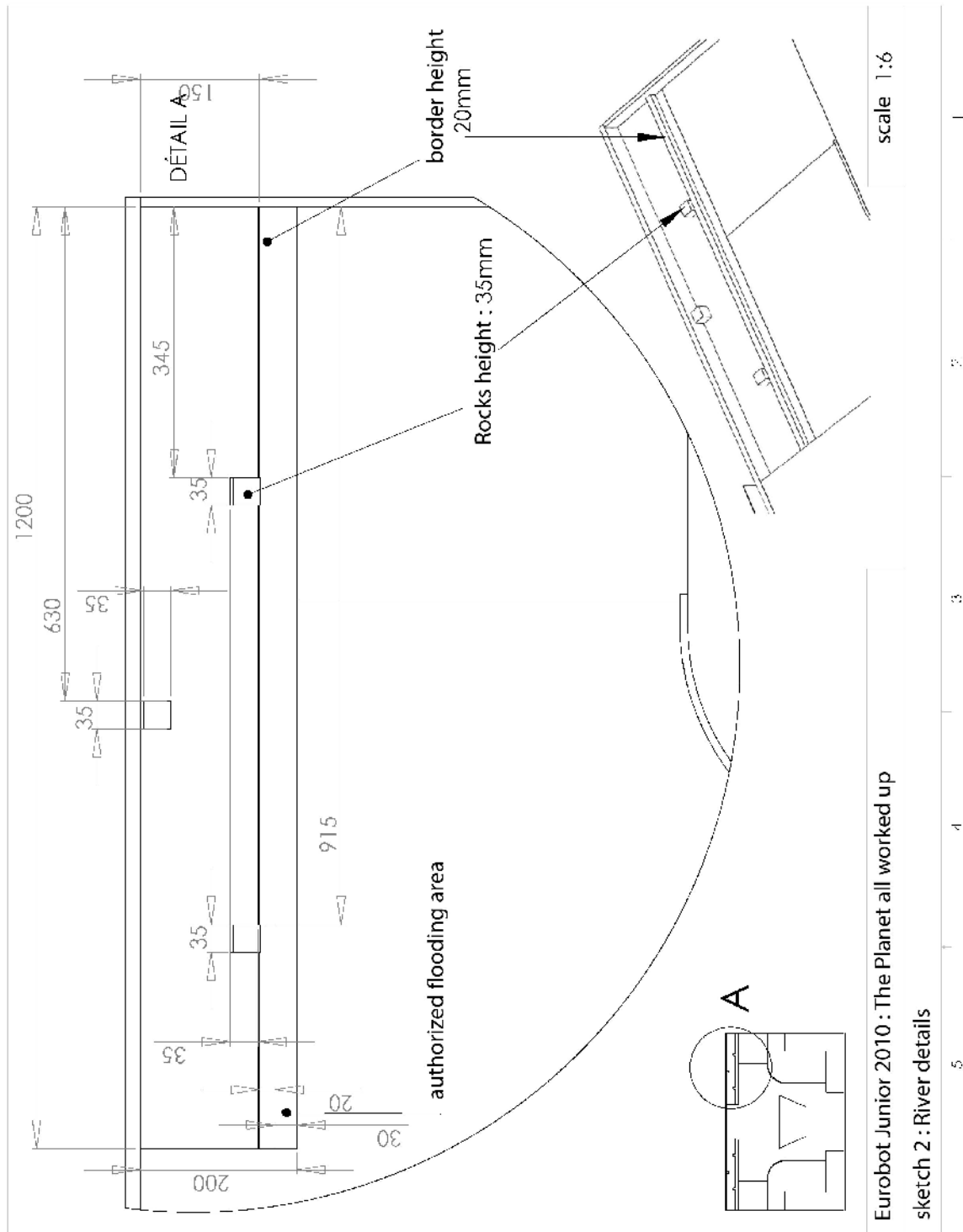


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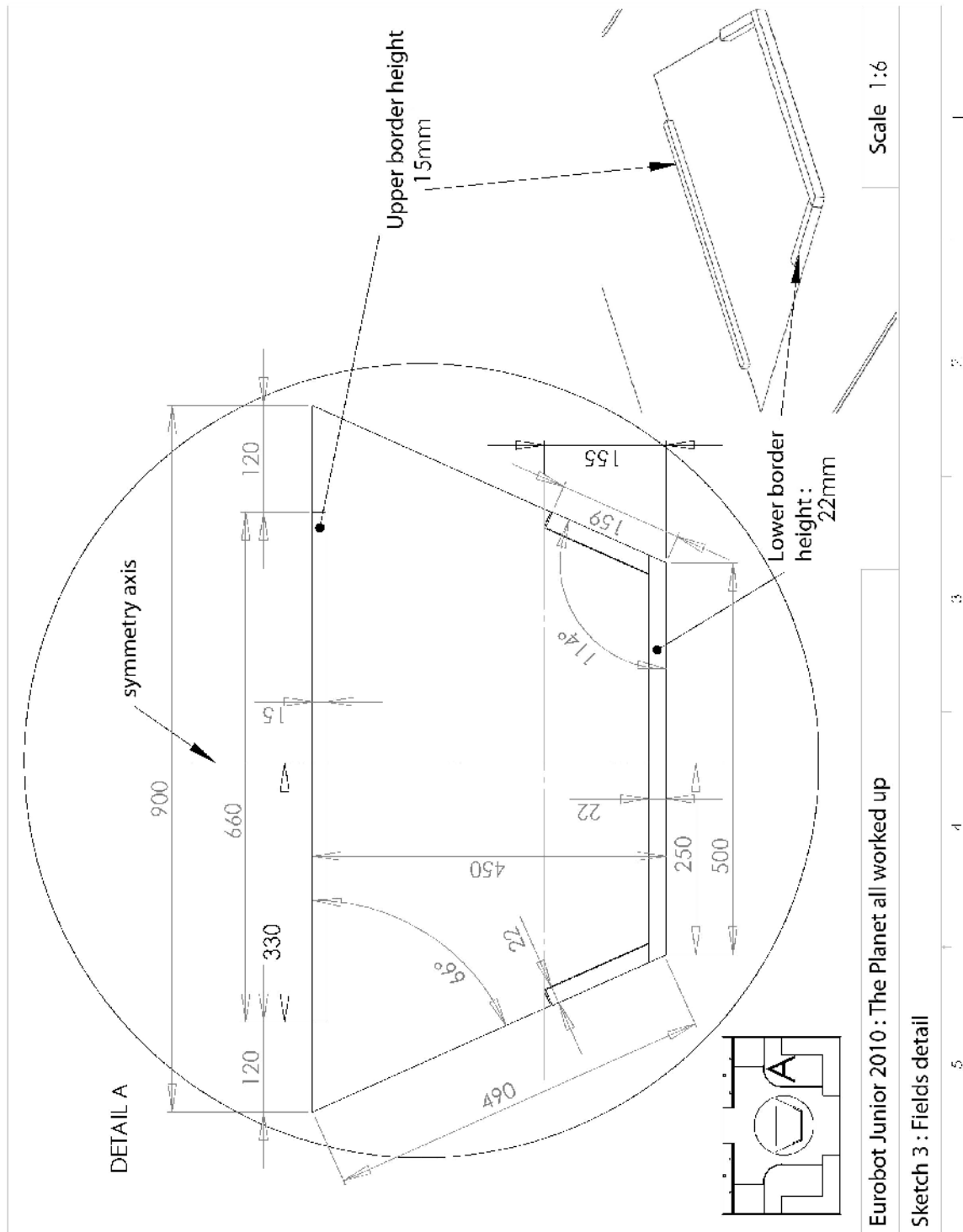
5. Plans



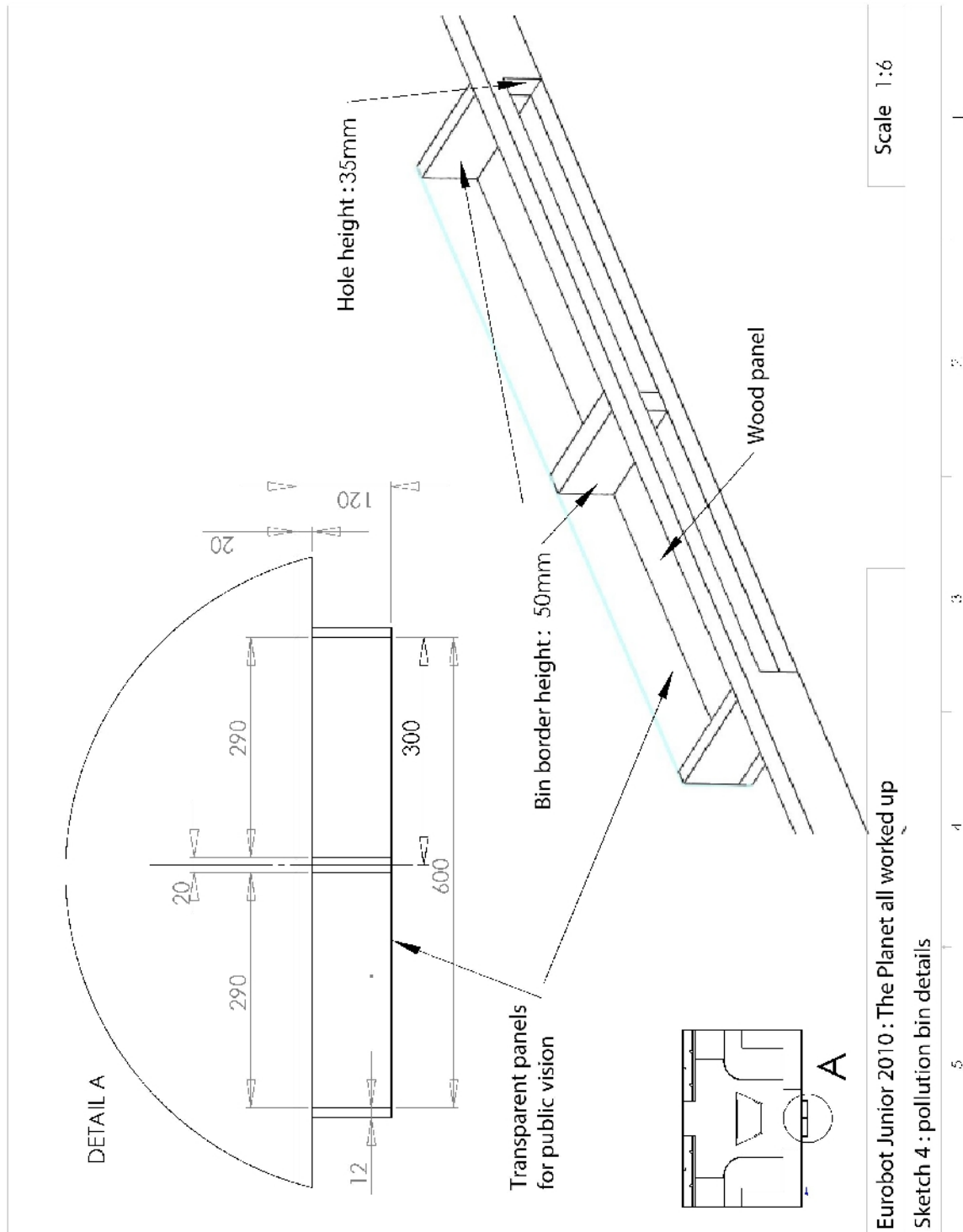
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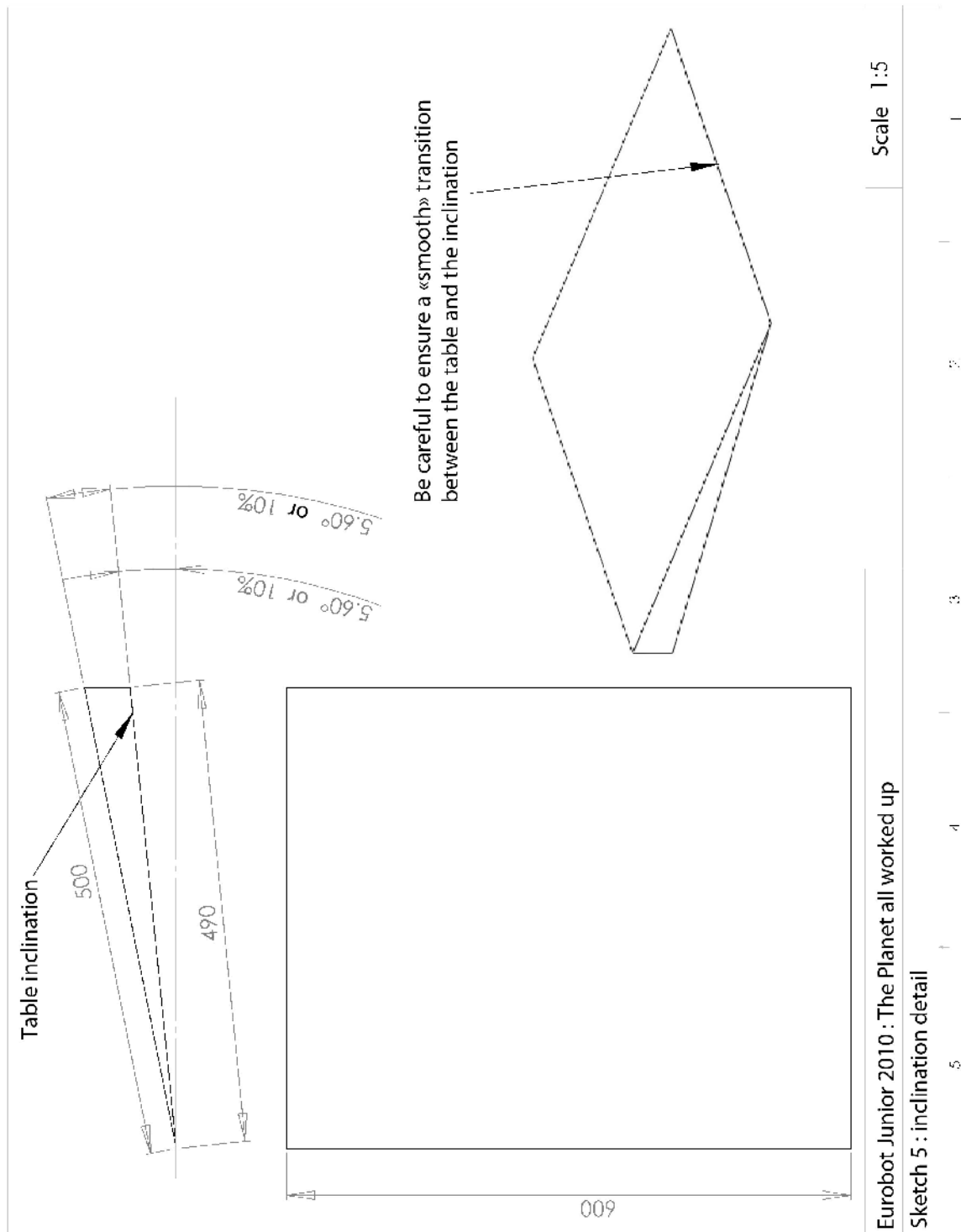
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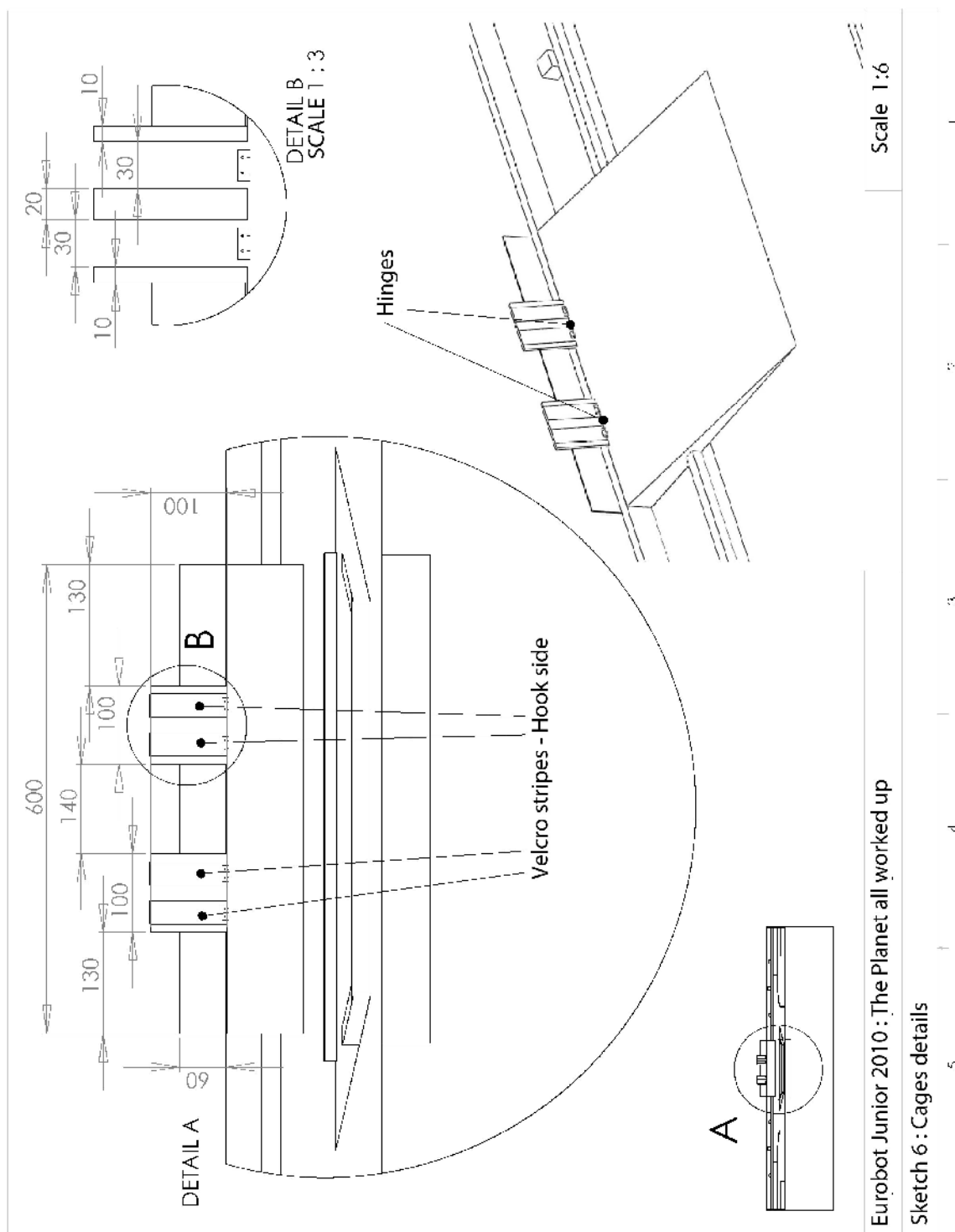
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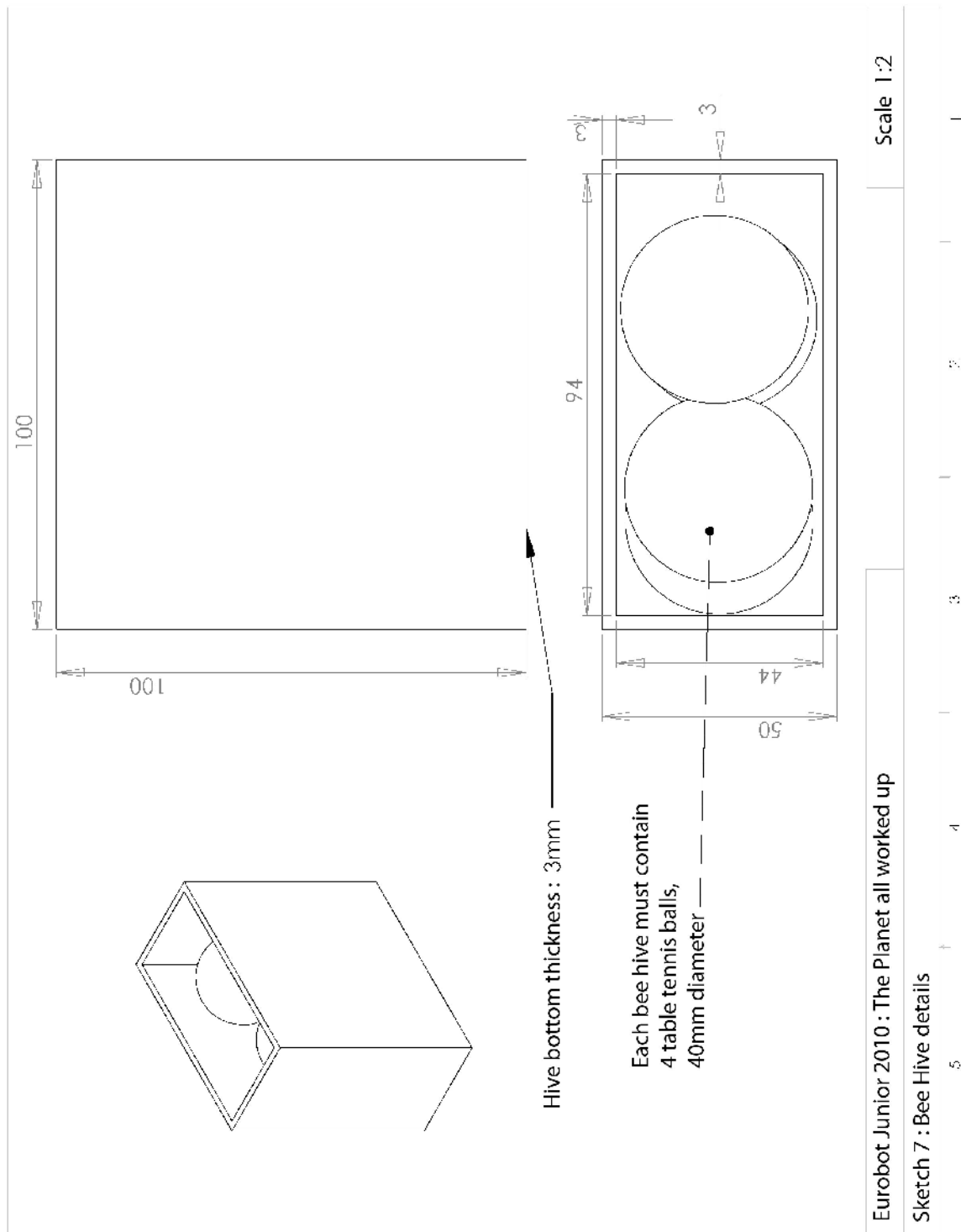
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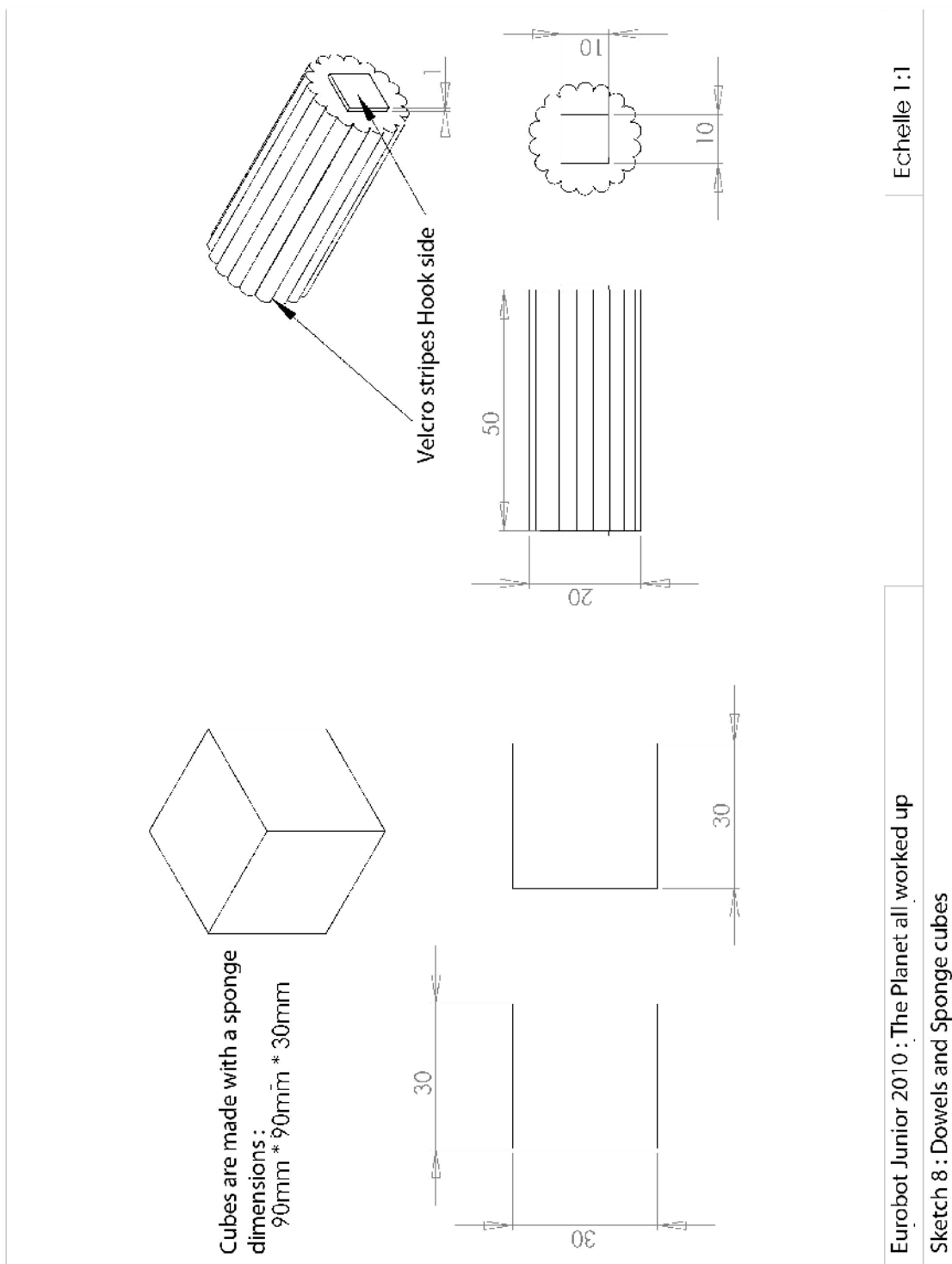
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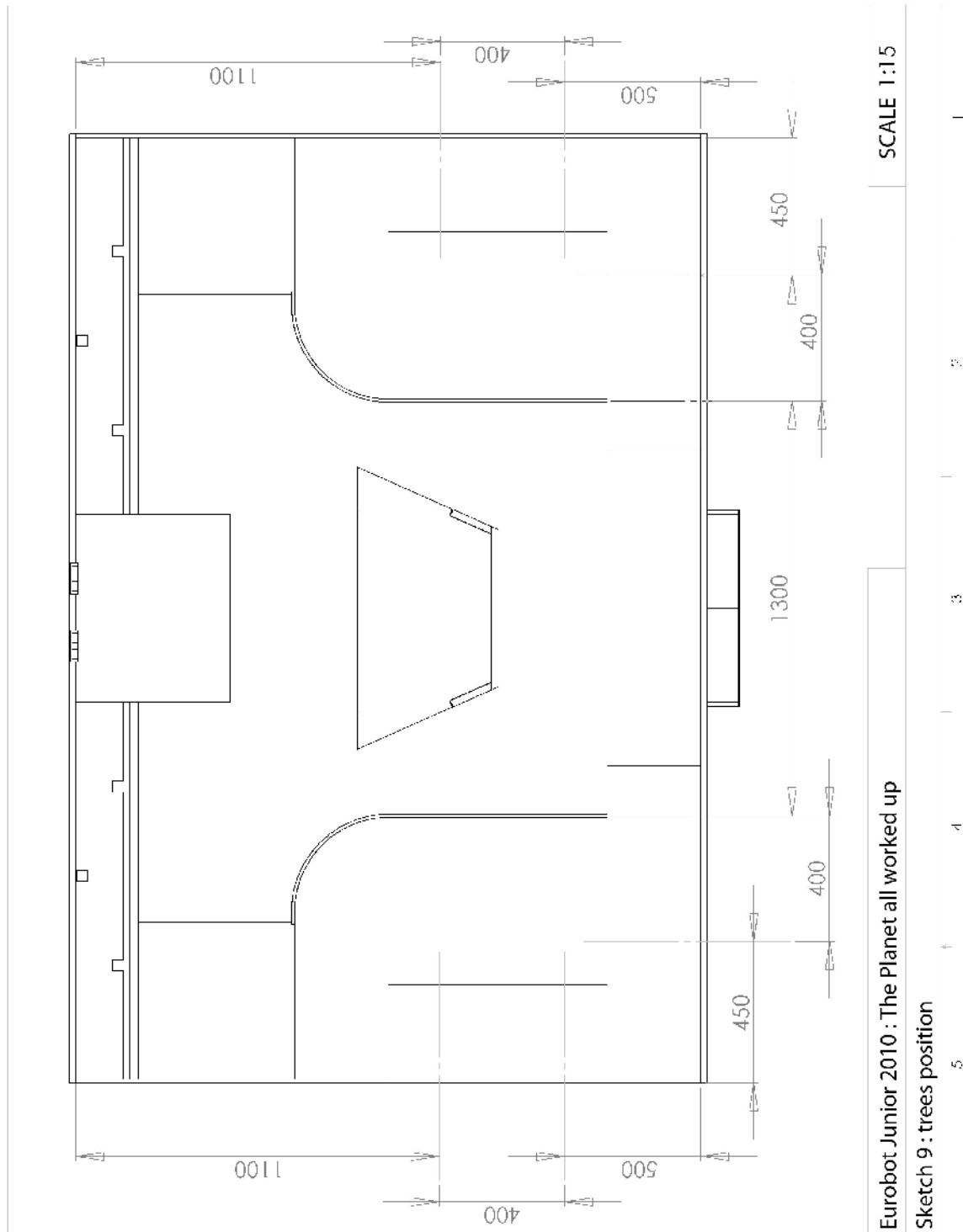


THE PLANET ALL WORKED UP

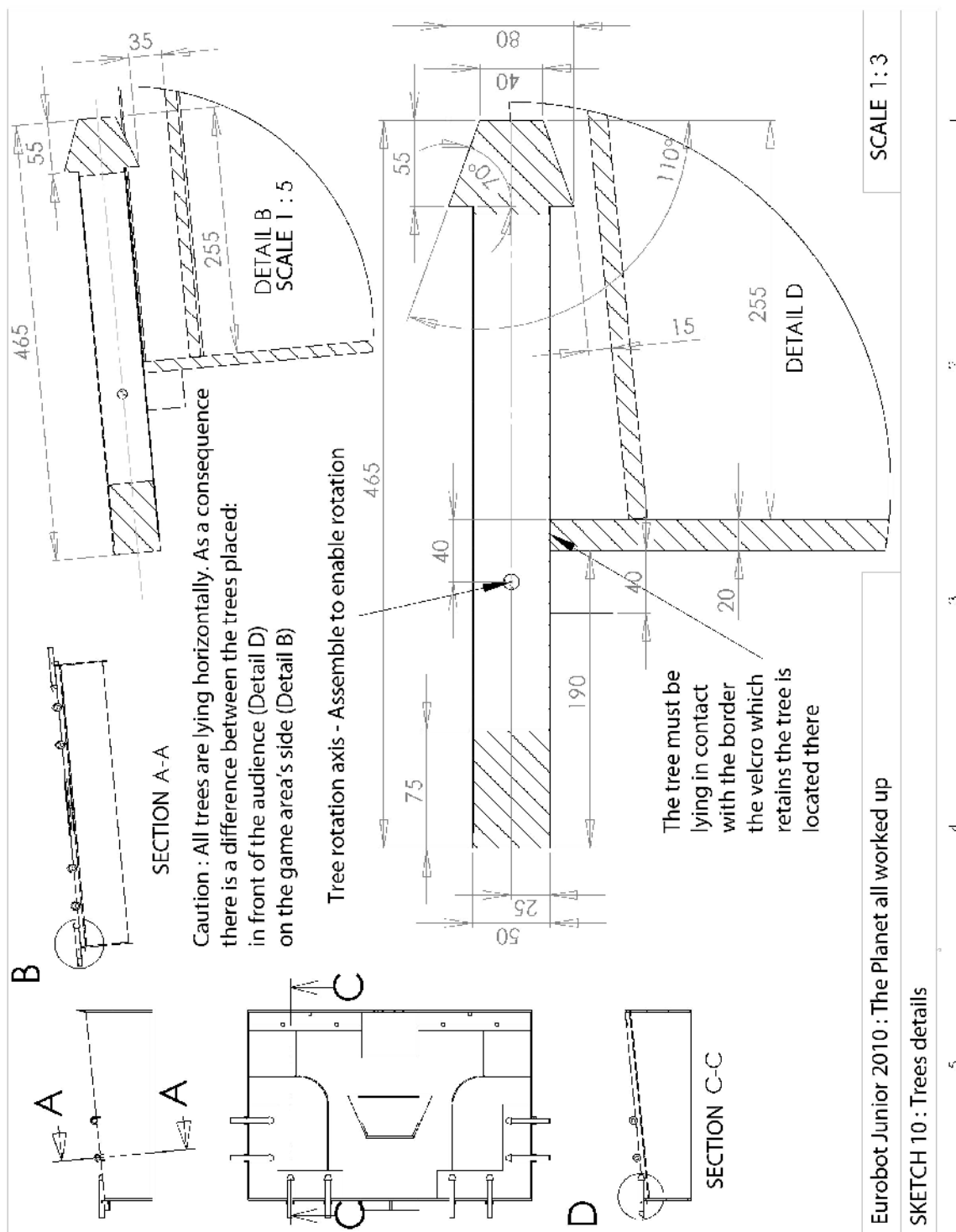
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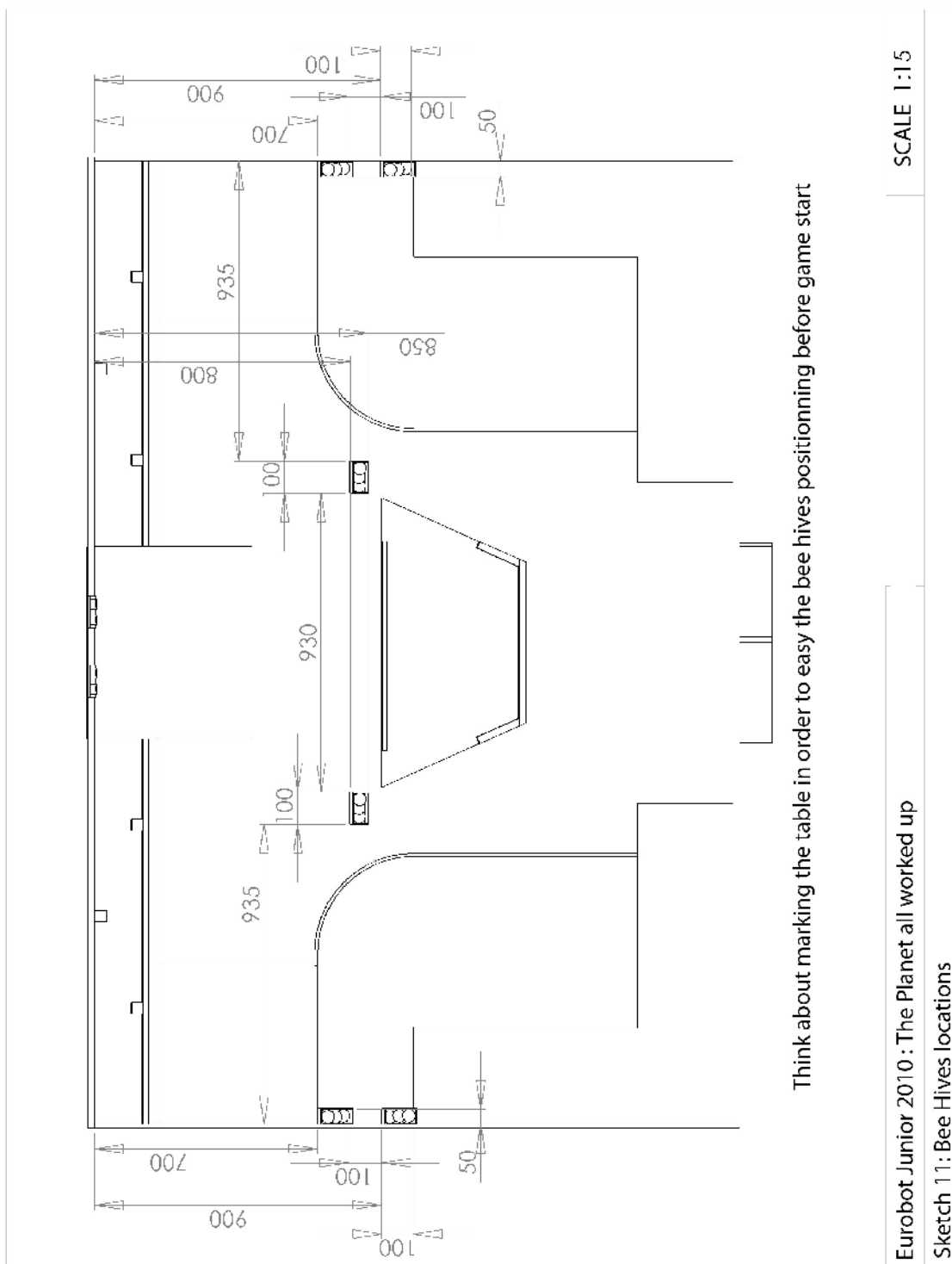


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SCALE 1 : 2

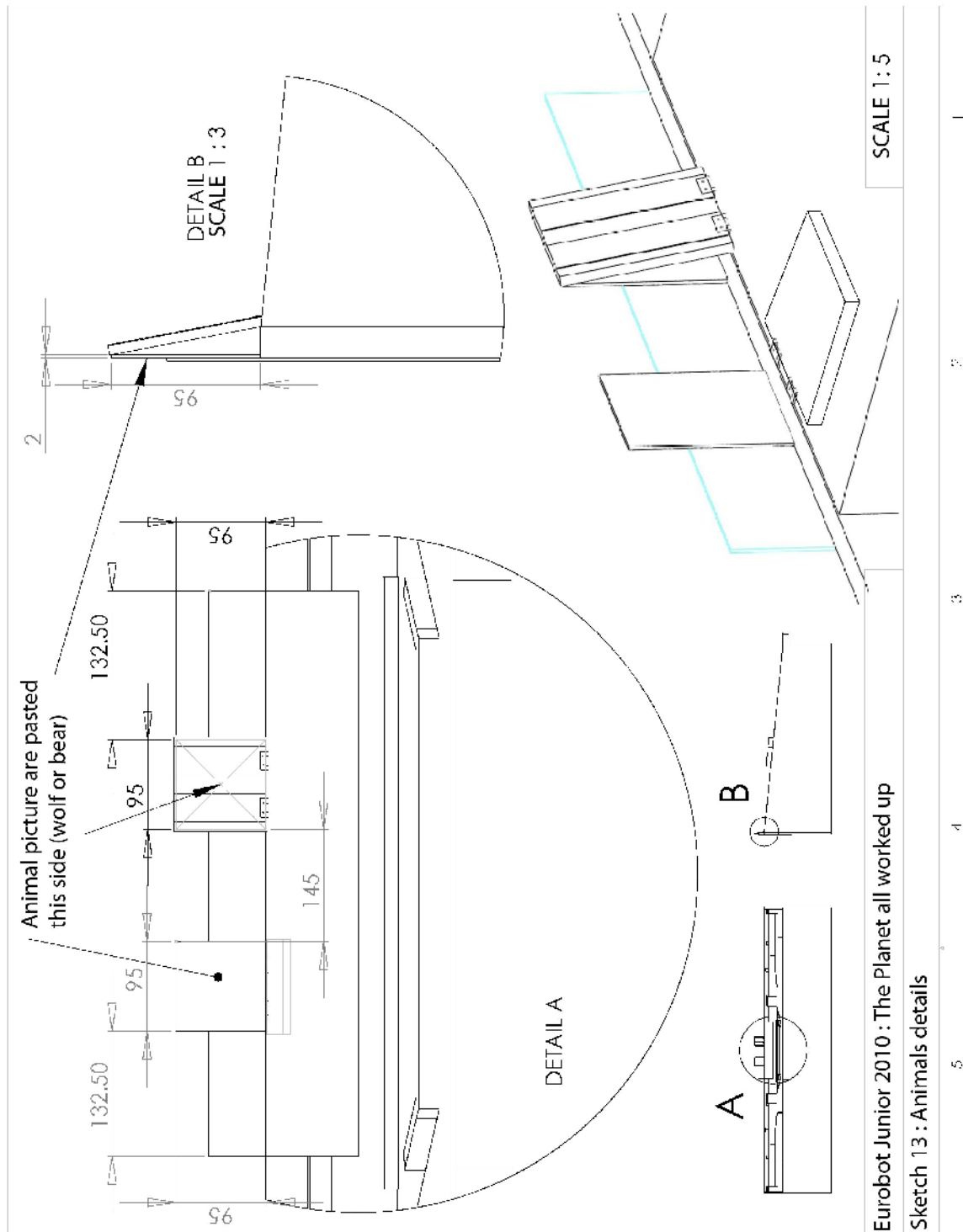
Eurobot Junior 2010 : The Planet all worked up

Sketch 12 : Cooperation panel detail

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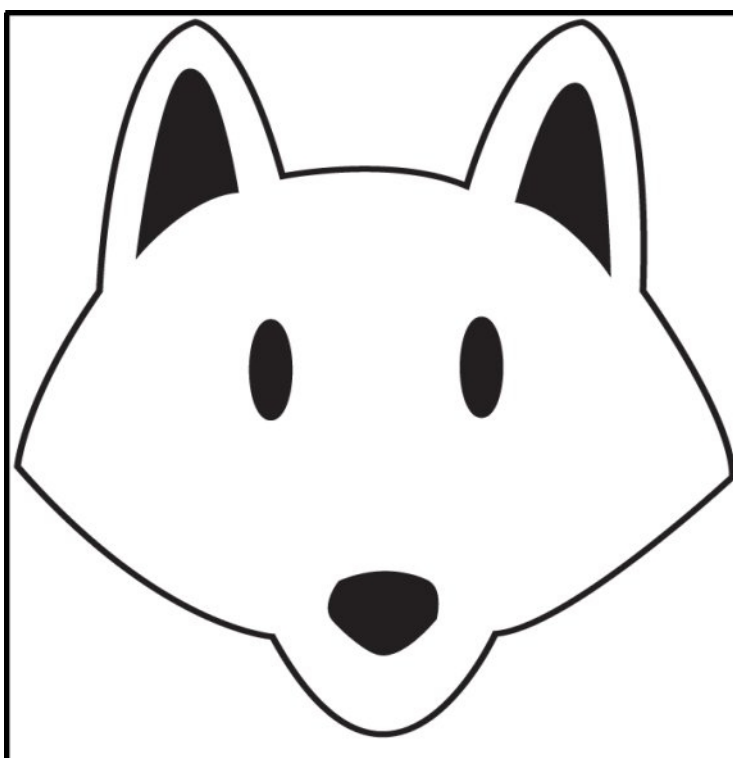
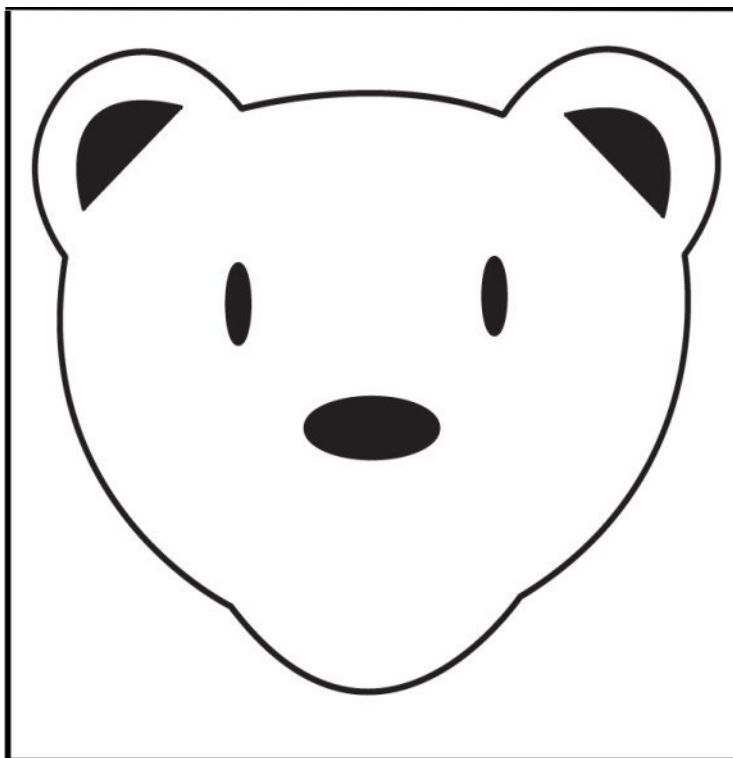
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Animals are at the
right size for the
panels