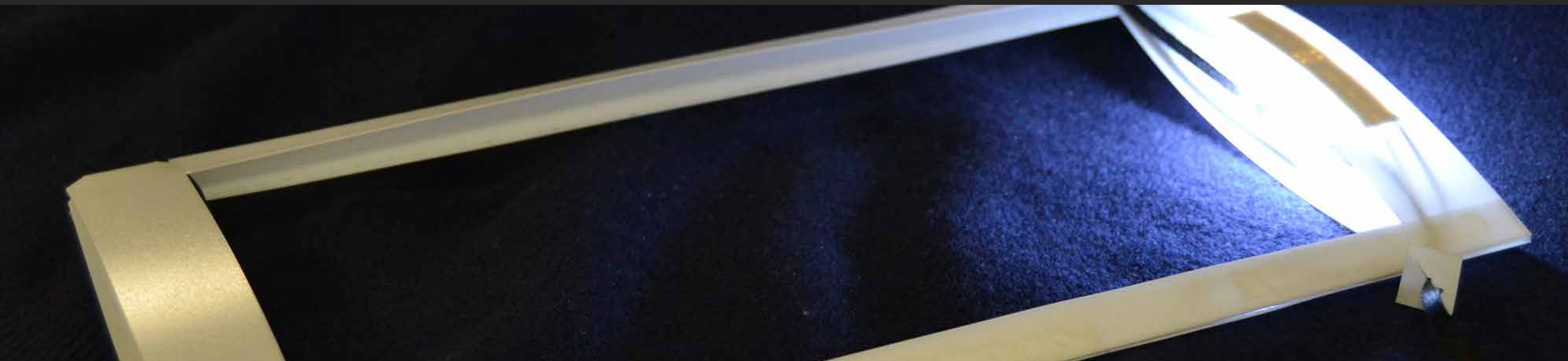


F R A M E

A sustainable showcasing concept



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Brief Description

The idea of the project is based on a structure made of plastic foils of extruded Polypropylene. The two side jambs are folded and welded together with the upper and lower bands. The structure is subjected to tension through three tie rods: one in the middle and two placed at the required distance in order to stick up a 800 x 2250 poster. These rods get fixed through cylindrical clamps which have an internal thread. The structure gains stability through the ogival section and two Polyethylene bags filled with water are used to load the base and weigh the structure down. Additional paper boards as support are not required as the poster hangs directly from the rods through some paper clips. A LED light can be attached to the top.



F R A M E



RA-2-A

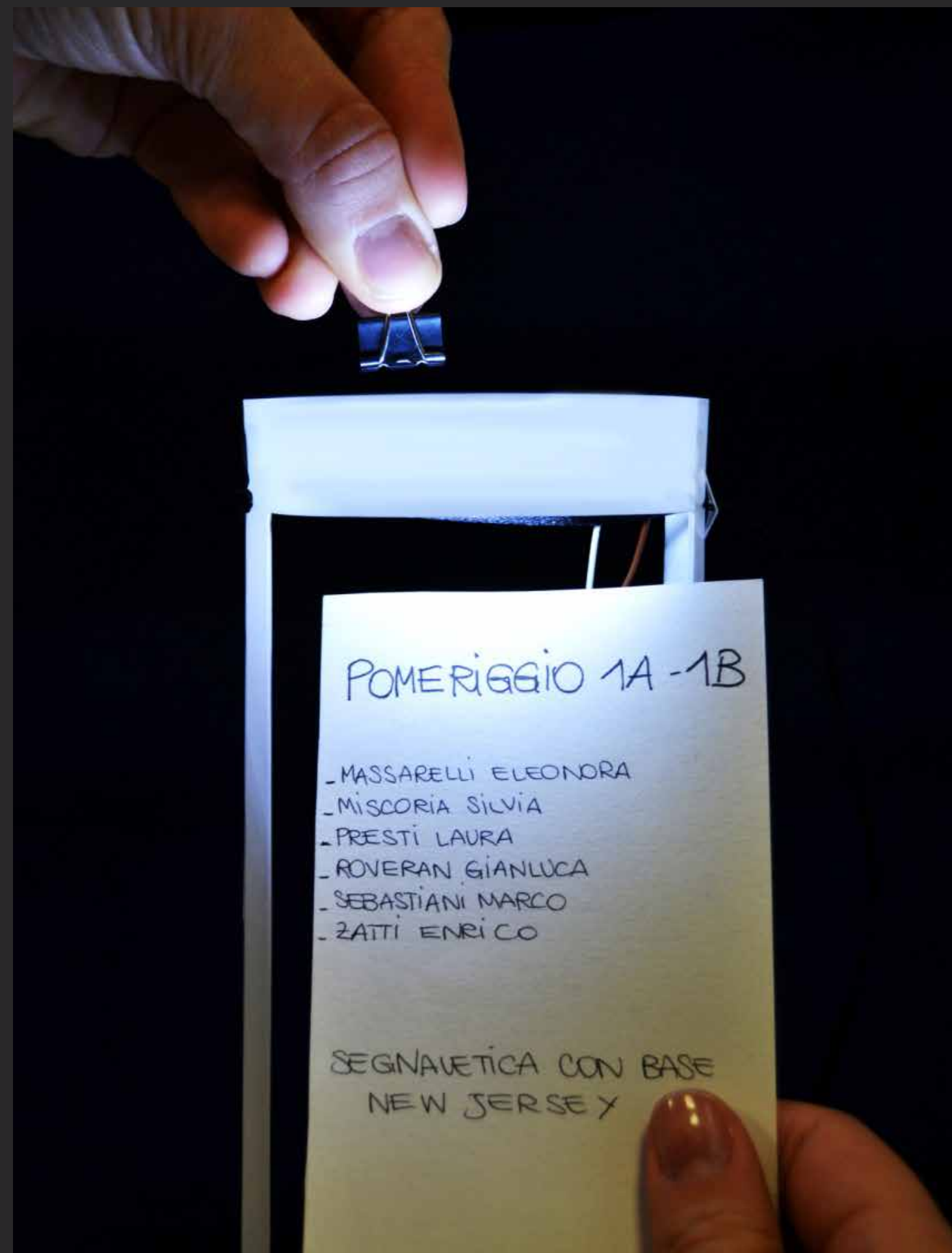
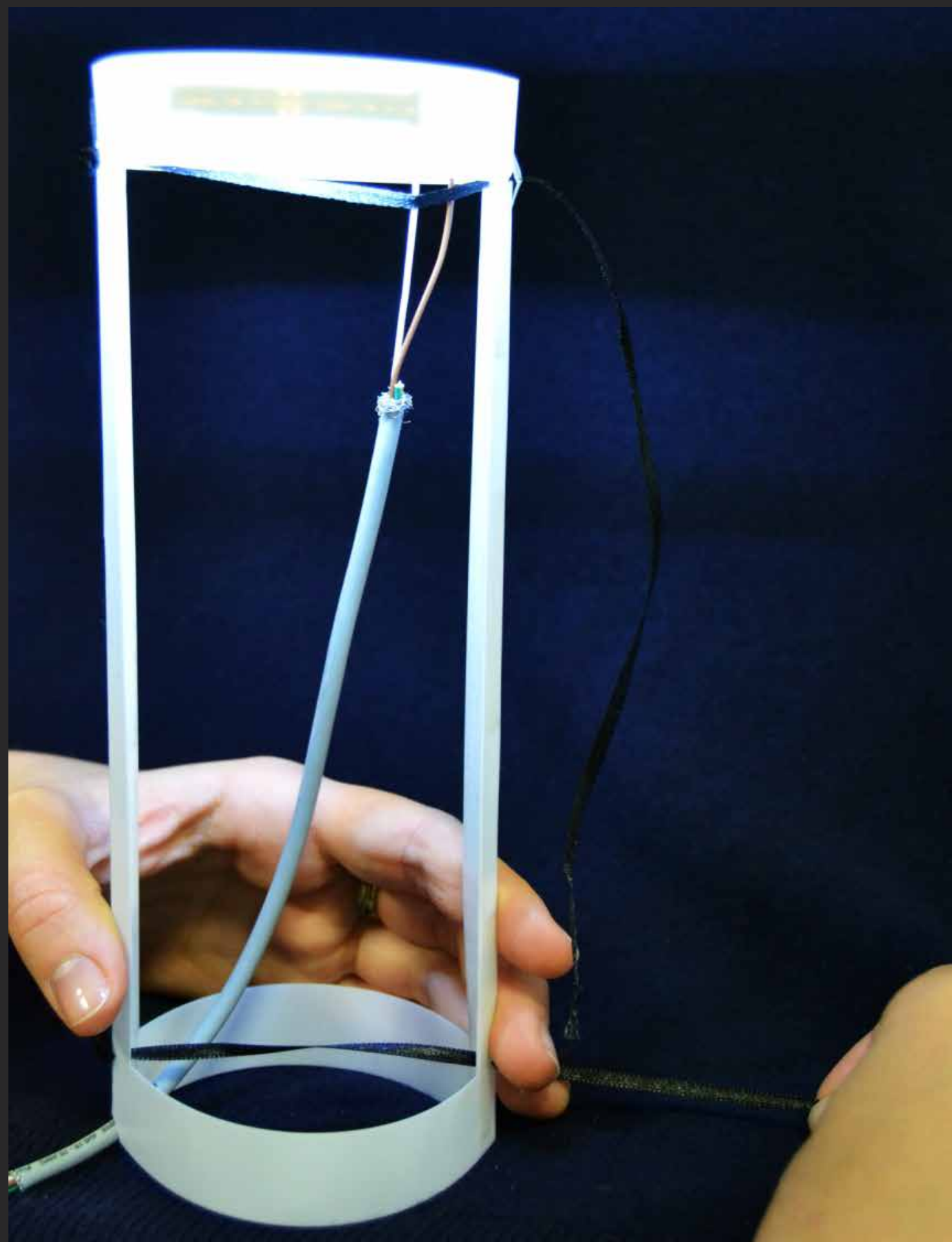
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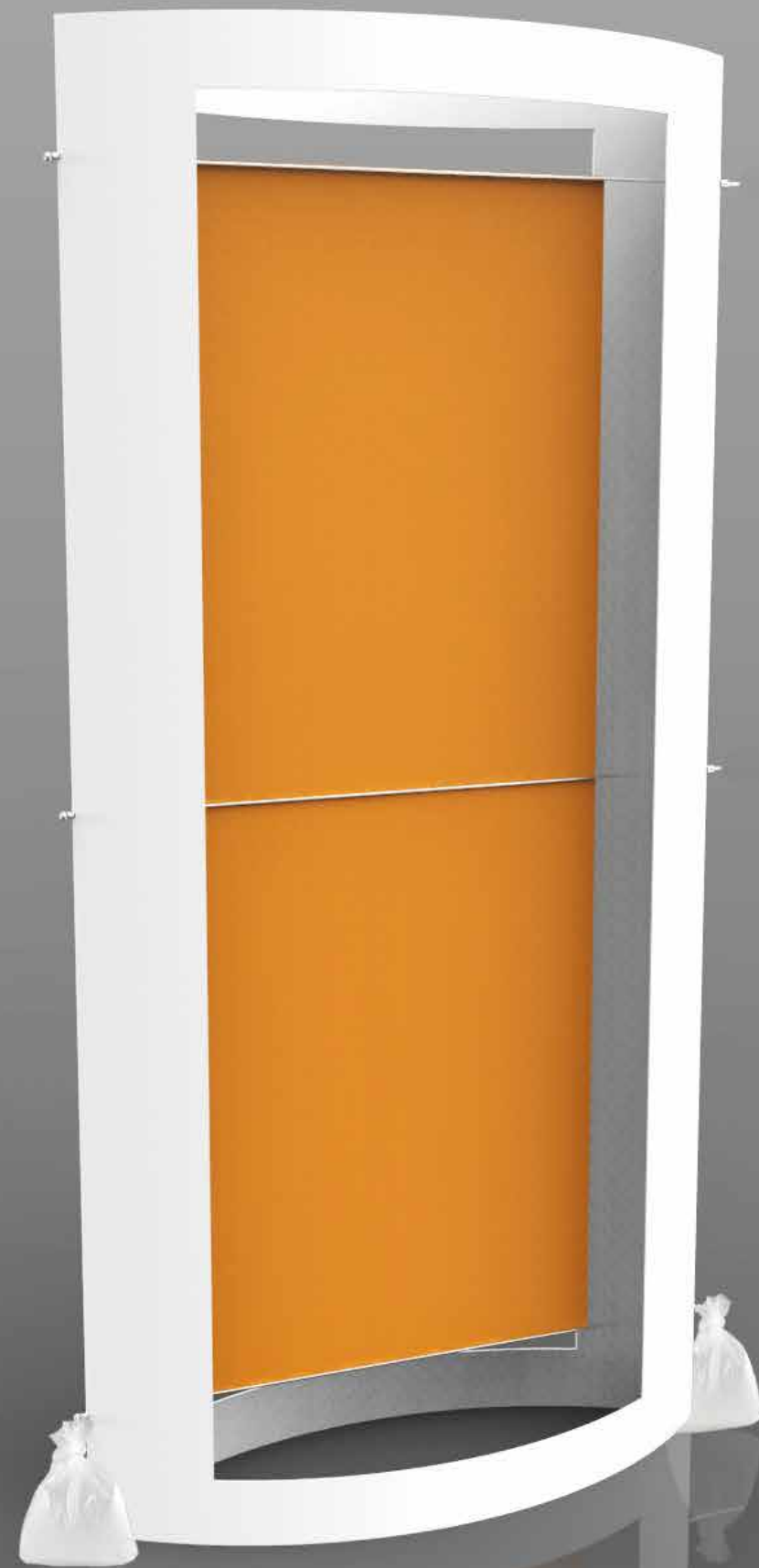
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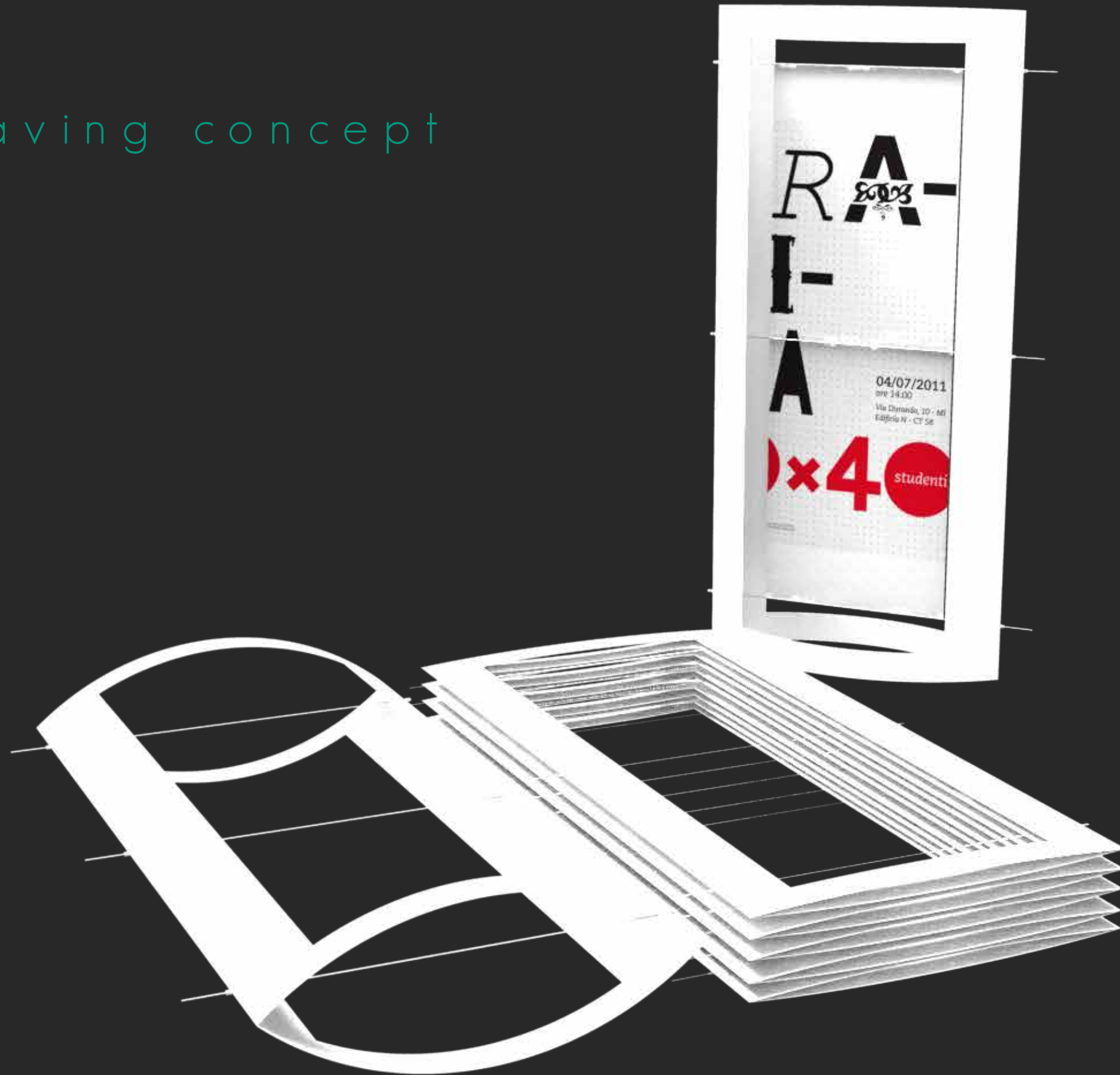
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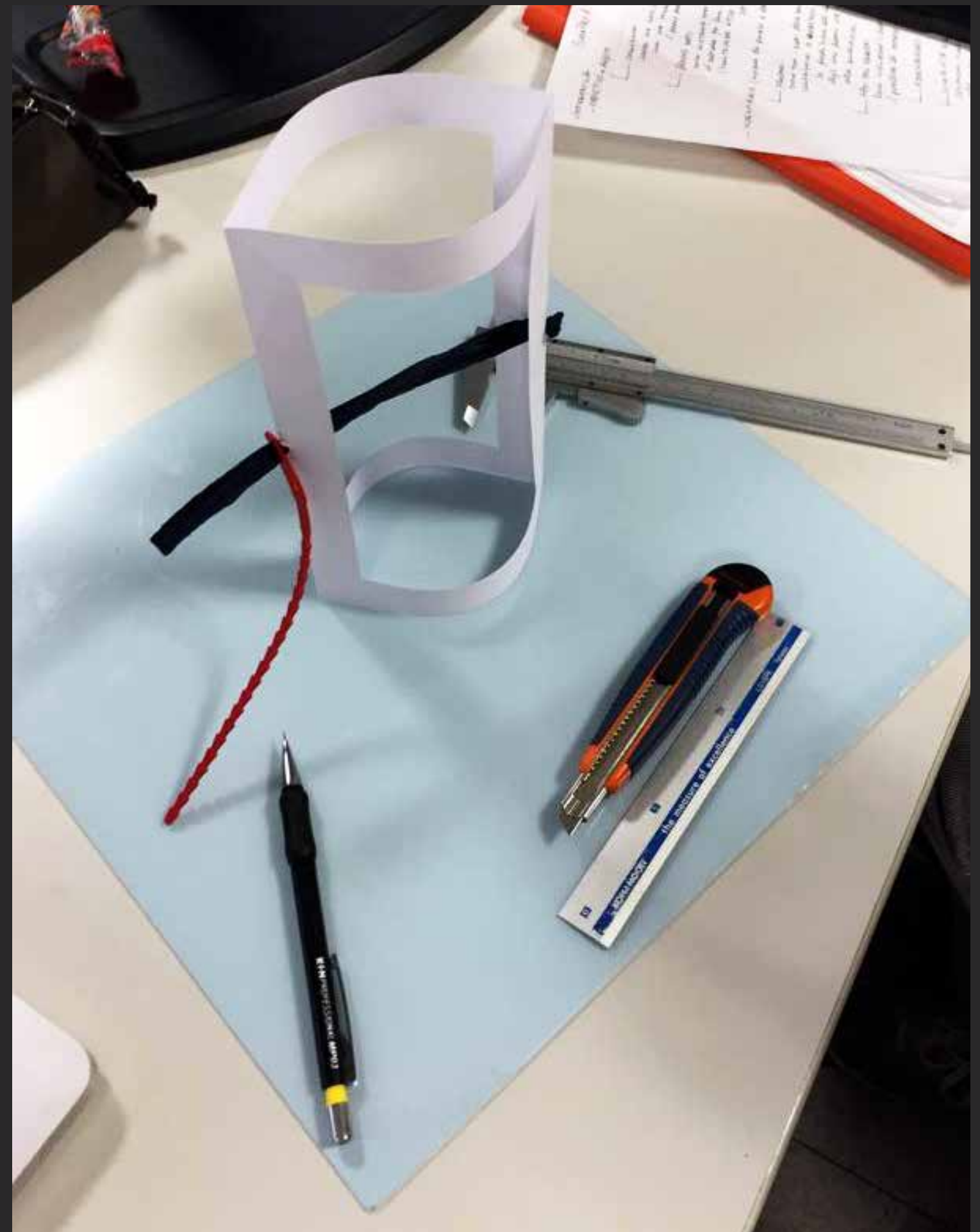
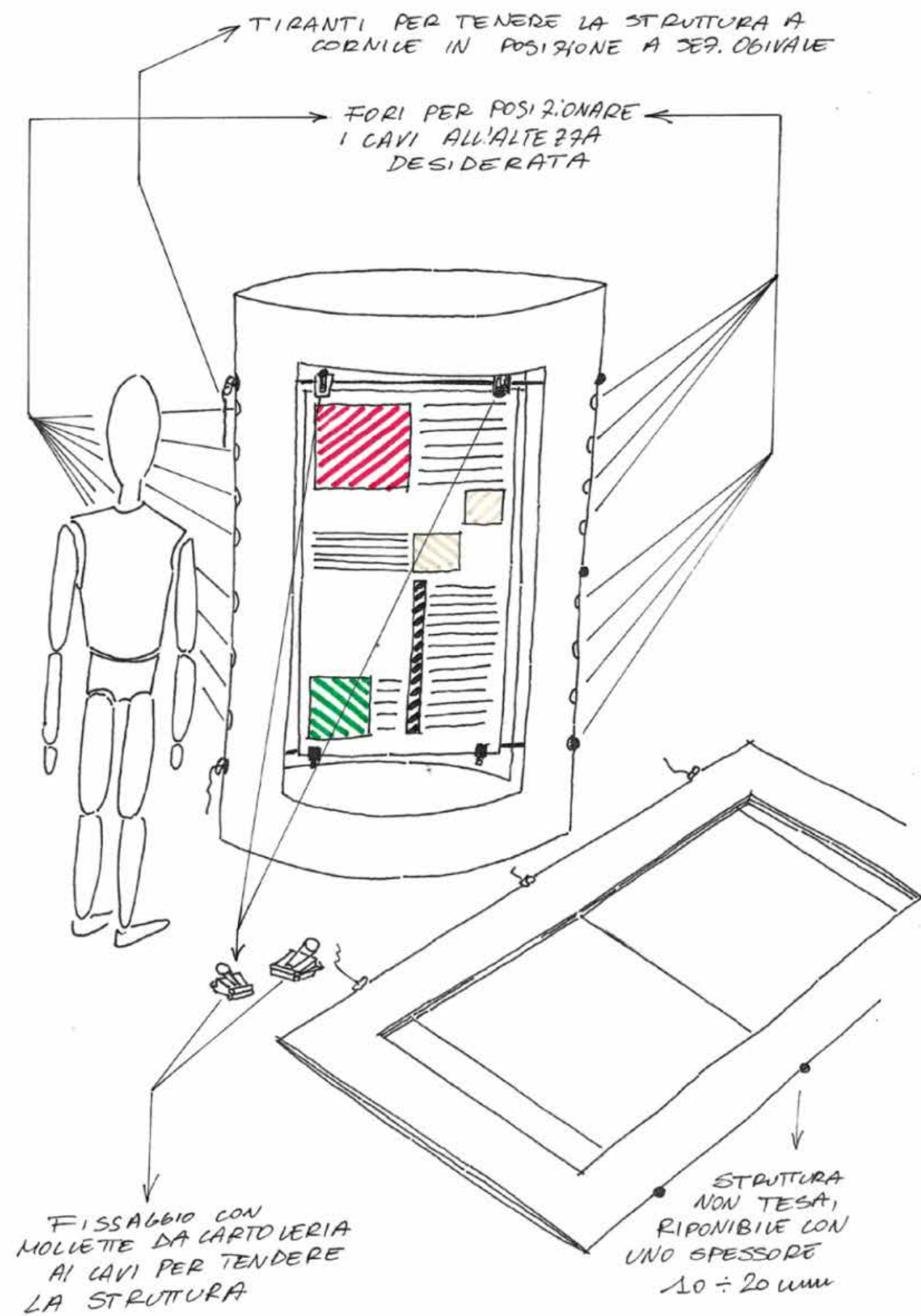




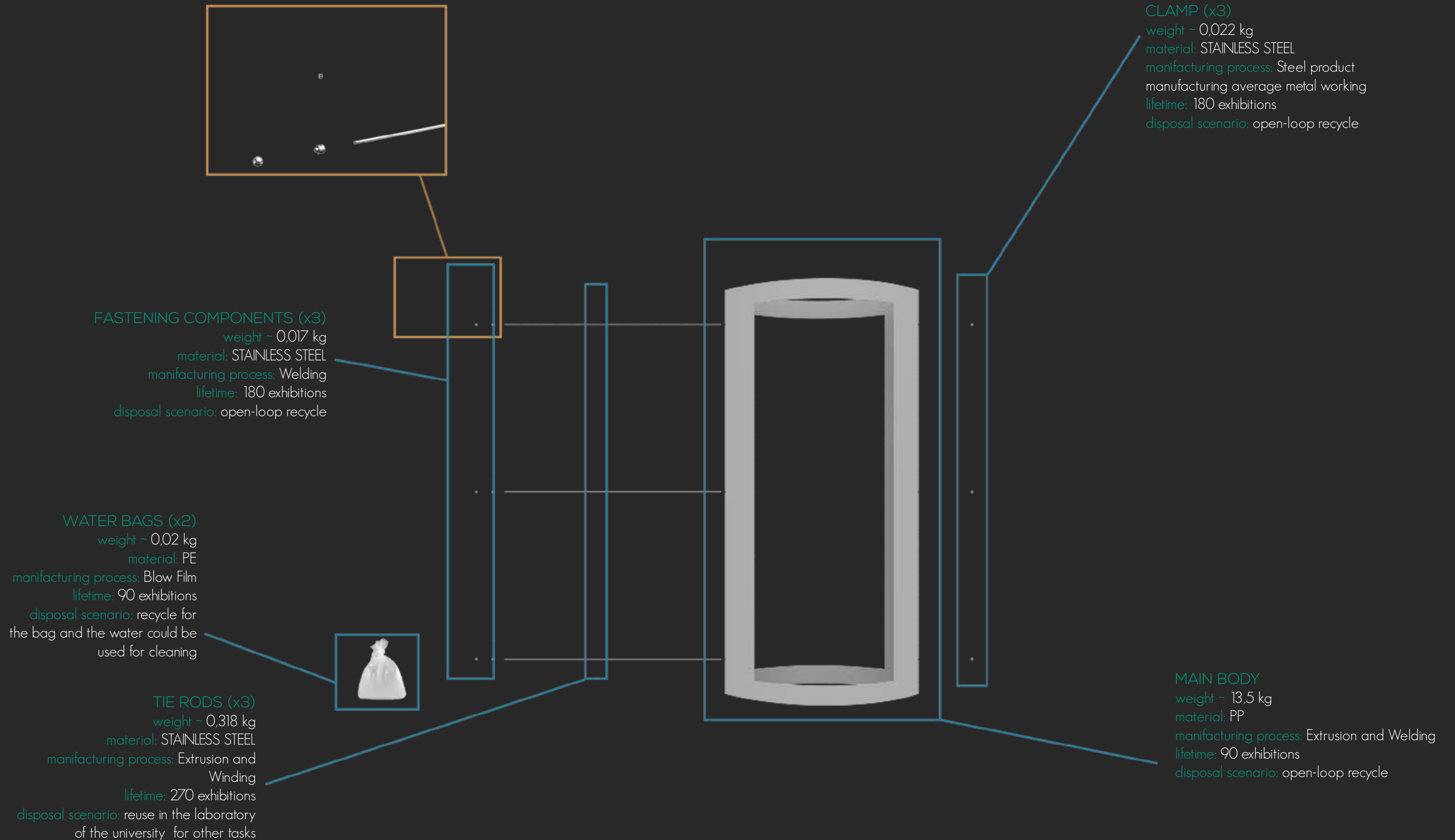


Space saving concept



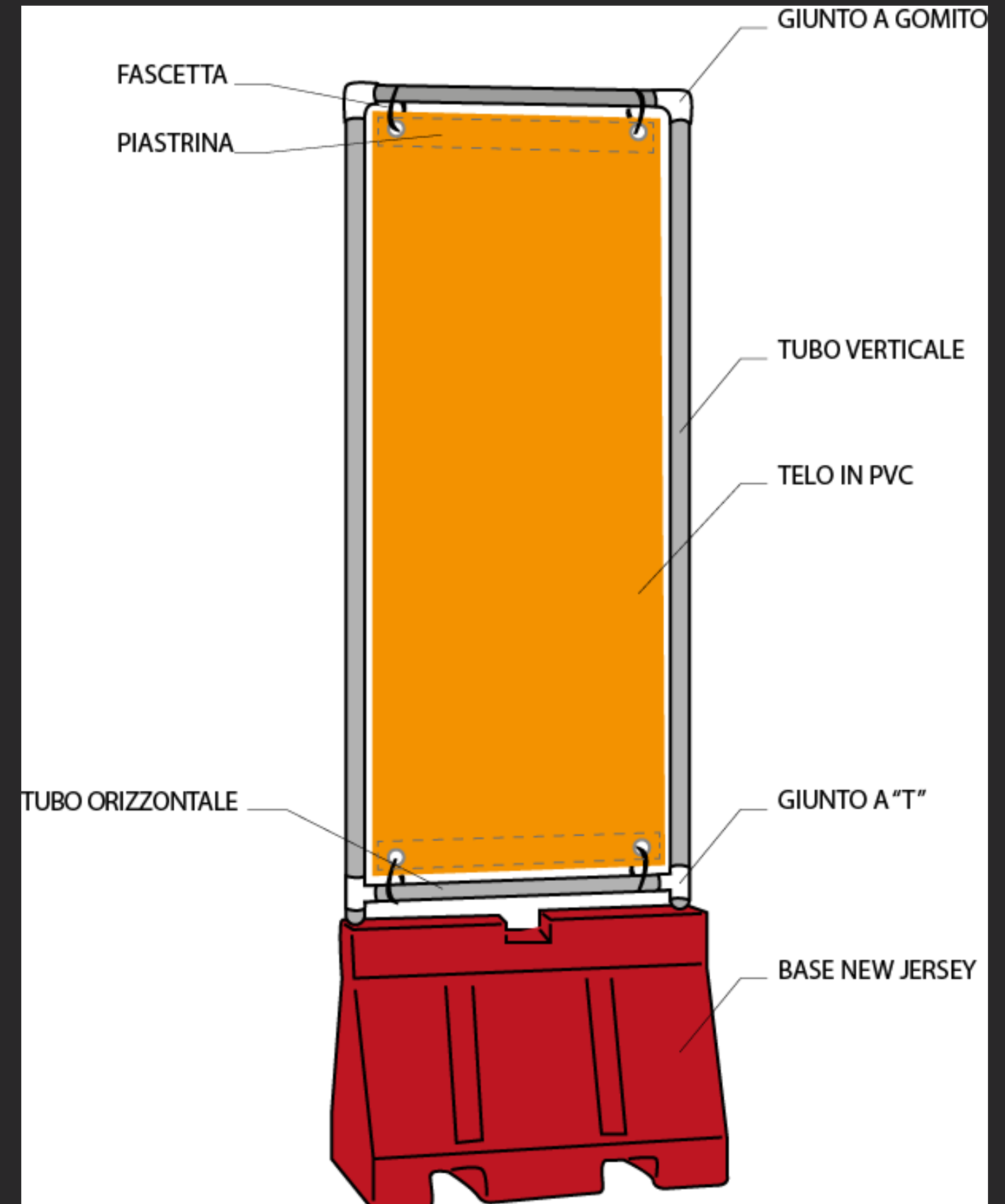


Exploded view



Comparing two systems

The project was born as a re-design of an old showcasing system already used in the university such as the vertical sign solution shown here with a “new jersey” traffic divider barrier as a base. After developing the final concept we compared the Life Cycle Assessment (LCA) of both system-products underlining in which areas of the analysis our concept could have better performances.



Verifying improvement-areas

MATERIAL MINIMIZATION !——

+

ENERGY USE MINIMIZATION !!——

++

RESOURCE PRESERVATION !——

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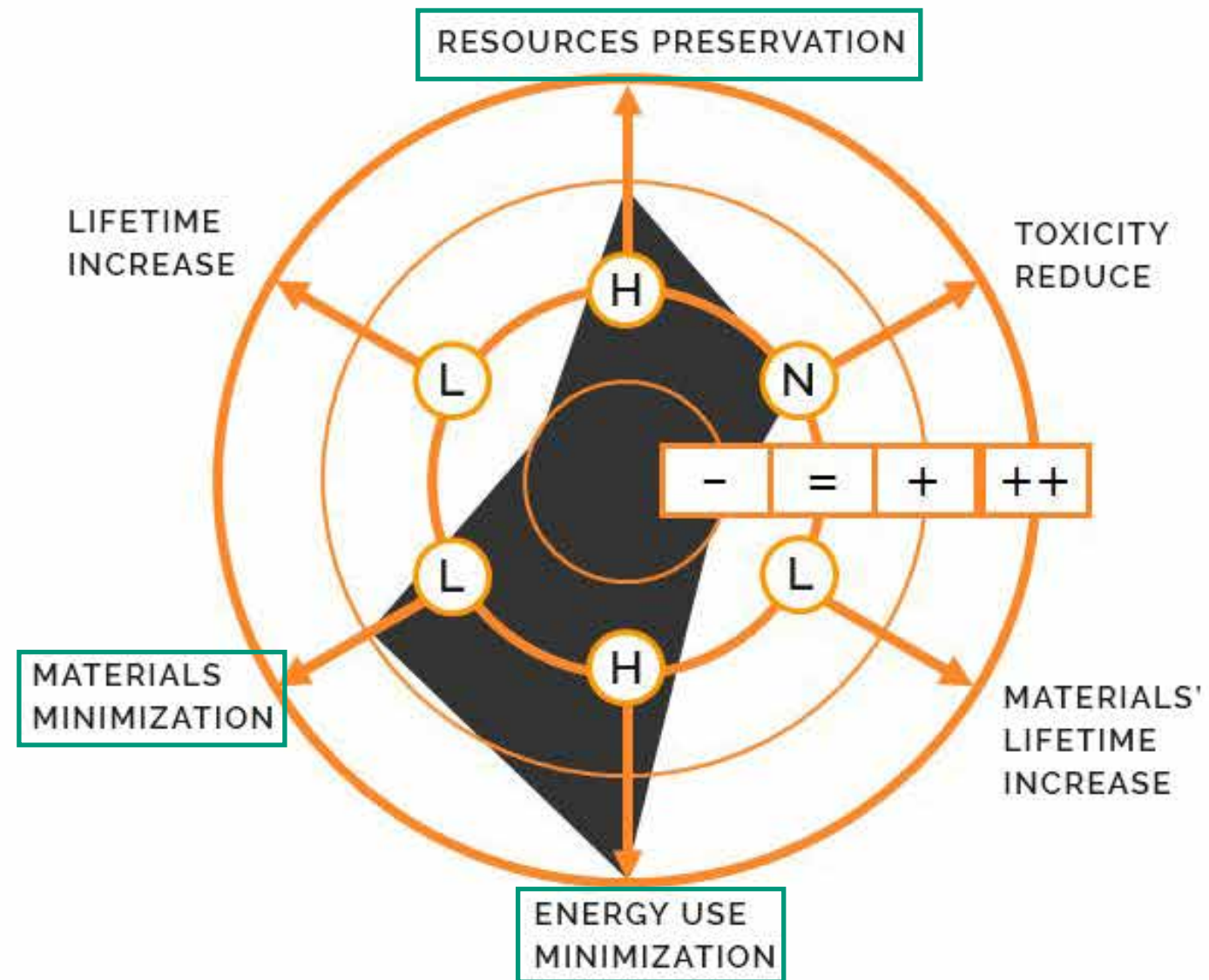
Strategia	formula IPSA	IPSA	IPSA n.	Priorità	f. m. r.	f. m. n.
Intensificazione/ estensione uso	$\sum fD_{pc,i} \times EI_{c,i} [PP + P + DT + DM]$					
prodotto esistente		0.05358	0.11	P: BASSA		
concept		0.0696	0.14		-	-
Riduzione materiali	$k \times EI [PP + P + DT + DM]$					
prodotto esistente		0.1424	0.30	P: BASSA		
concept		0.0696	0.14		+	+
Riduzione energia	$k \times EI [\text{energia per uso}]$					
prodotto esistente		0.4816	1.00	P: ALTA		
concept		0.111	0.23		+	++
Estensione vita materiali	$k \times EI [PP \text{ materiali in discarica}] + EI [DM \text{ materiali in discarica}]$					
prodotto esistente		0.0438	0.09	P: BASSA		
concept	$0.0437 + 0.00331$	0.04701	0.10		-	-
Riduzione tossicità	$EI.t [(PP + P + DT + U + DM) \text{ materiali/processi tossici}]$					
prodotto esistente	/	0	0.00	P: NULLA		
concept	/	0	0.00		=	=
Conservazione risorse	$EI.e [\text{energia consumata} + \text{materiali consumati}]$					
prodotto esistente		0.476	0.99	P: ALTA		
concept		0.182	0.38		+	+
IPSA max		0.4816				
LEGENDA:						
fDp = fattore Durata-uso potenziale = $1 - 1/n^{\circ} \text{ volte} = (\text{durata-uso potenziale} - \text{durata-uso effettivo}) / \text{durata-uso potenziale}$		fDp				
c.i = componente i		PP = Preproduzione				
		P = Produzione				
EI = EcoIndicatore = indicatore di impatto ambientale aggregato		DT = Distribuzione				
EI.t = EcoIndicatore tossicità [in Eco-Indicator 99: Carcinogens + Resp. organics + Resp. inorganics + Radiations]		U = Uso				
EI.e = EcoIndicatore esauribilità [in Eco-Indicator 99: Resources = Minerals + Fossil fuels]		DM = Dismissione				
k = coefficiente massimo di riduzione = 0,9>0,5; k = 0,7 in caso di incertezza						
IPSA n. = $IPSA_i / IPSA_{max}$		f. m. n. > 4: miglioramento eccellente (+ +)				
f. m. r. = fattore di miglioramento relativo = $IPSA_{esistente} / IPSA_{concept}$		4 < f. m. n. < 1: miglioramento (+)				
f. m. n. = fattore di miglioramento normalizzato = $1 / (1 + IPSA_{n. concept} - IPSA_{n. prodotto esistente})$		f. m. n. = 1: nessun cambiamento (=)				
		f. m. n. < 1: peggioramento (-)				



TAVOLE DI ECO-IDEE

RADAR

CHECKLIST



PRIORITY

H-HIGH
M-MEDIUM
L-LOW
N-NONE

IMPROVEMENT FACTOR

-=WORSENING
==NO CHANGE
+=IMPROVEMENT
++=STRONG IMPROVEMENT

Calculating the total impact

In comparison to the old showcasing system the new concept reduced the impact on the environment by the 84%!

