

MSC 1 HYPERBODY

MID-TERM - NOVEMBER 10TH

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Direction

1 CONCEPT

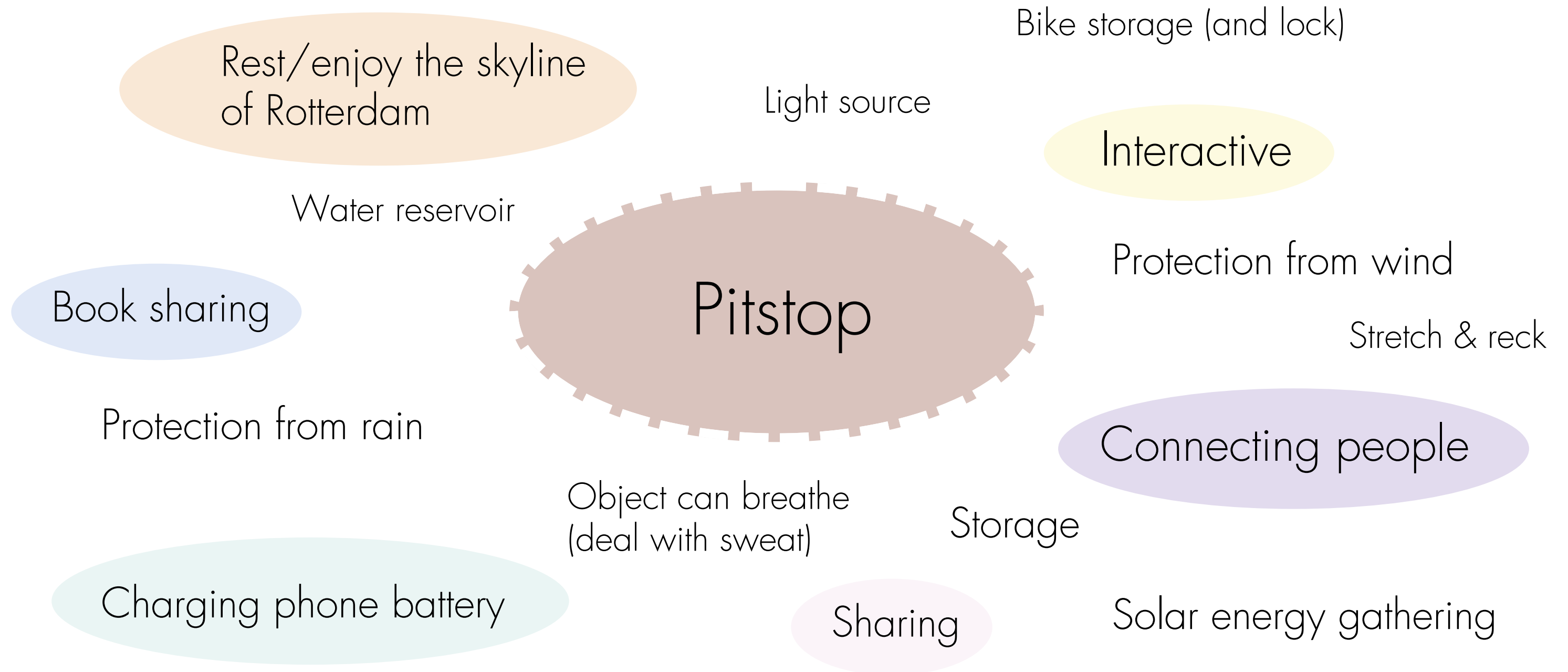
CONCEPT

1a Conceptual framework



CONCEPT

1a What do we want to achieve with our furniture?



CONCEPT

1b Program defenition



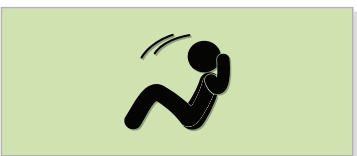
Sitting



Laying down



Stretch excercises



Sit-ups



Pull-ups



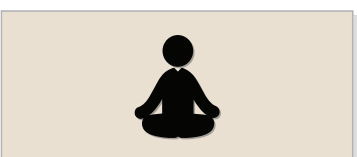
Leg-raises



Back pull-up (reversed sit-up)



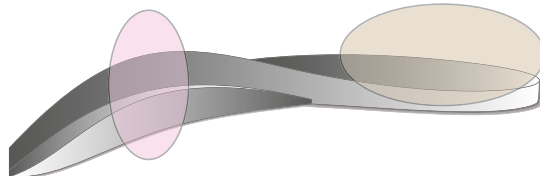
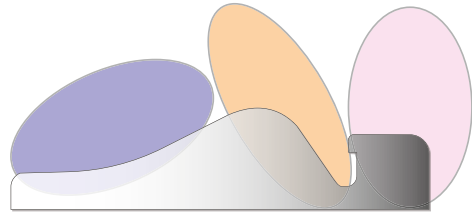
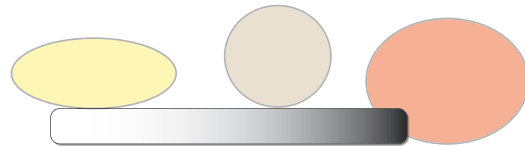
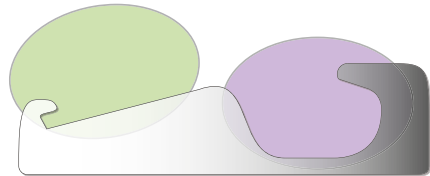
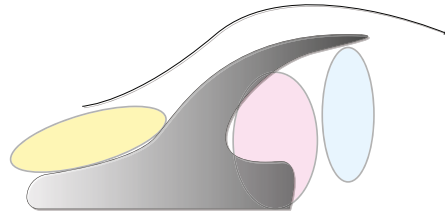
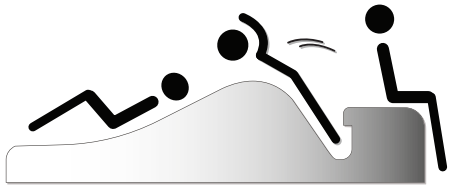
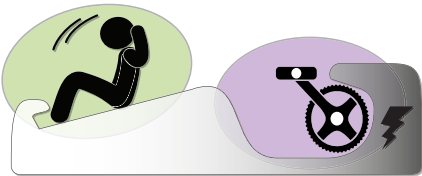
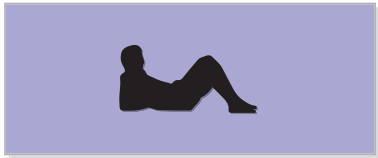
Bicycle (generates energy)



Yoga platform

CONCEPT

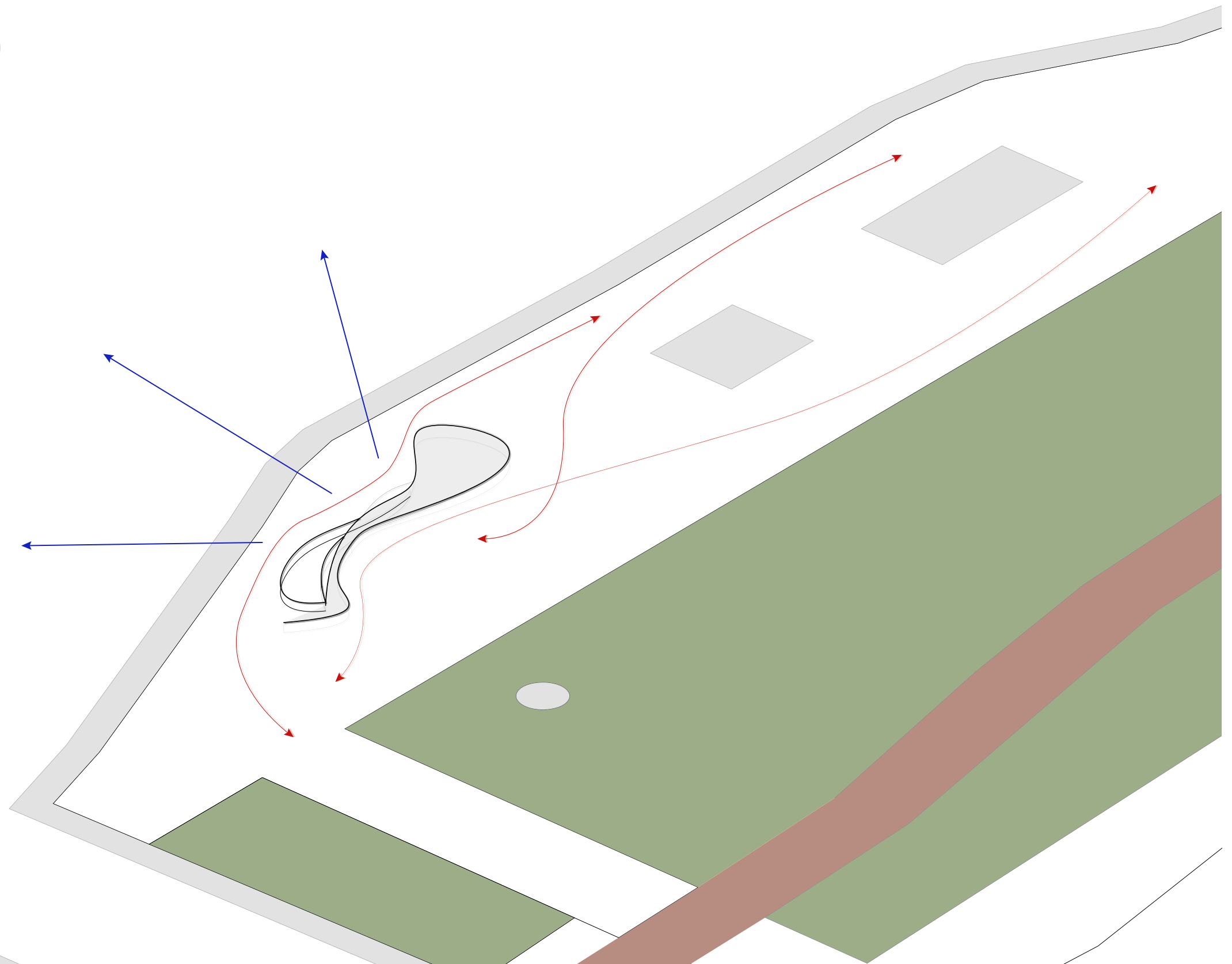
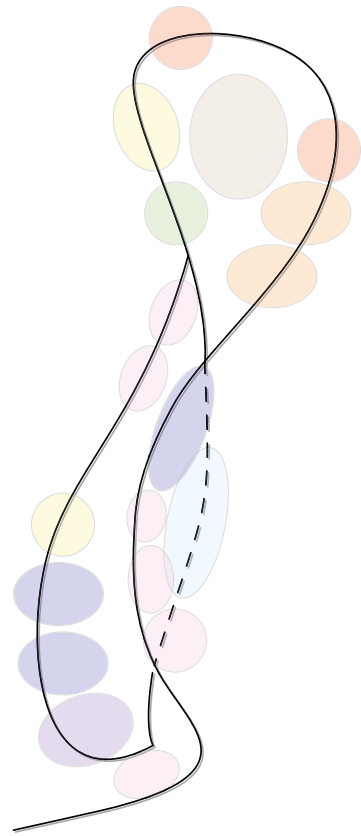
1c Program as form



2 DESIGN FORM

DESIGN FORM

2a Design proposal



3 PRODUCTION METHOD

PRODUCTION METHOD

3D-printing materials - Skelet

Objectives: Material has to be strong, durable, cheap, sustainable, demountable (maintenance), smooth texture.

Type	Pros	Cons	Cost per kg
ABS	Tough; Common; Non-toxic	High melting point; Unpleasant fumes	€20,- to €50,-
PLA	Easy to print with; Biodegradable	Prints degrade over time; Rough texture	€20,- to €50,-
PVA	Water soluble; Fairly easy to print	Expensive; Risk of toxic fumes	>€100,-
Nylon	Tough; Inexpensive	High temperature requirement	€18,-
HDPE	Easy to dissolve; Lightweight	High temperature requirement	€30,-
T-Glase/PETT	Food-safe; Glass-like look	Slow to print; Heated printing bed needed	€30,-
Wood Filament	Attractive wood-like look	Finicky to use; Requires sanding	€60,- to €100,-
Metal Filament	Attractive metal-like finish	Finicky to use; Expensive	€75,- to €120,-
Carbon Fiber Mix	Mimics carbon fiber's lightweight strength	Tough on extruders; Expensive	€50,- to €120,-
Flexible filament	Produces flexible prints	Requires tinkering with the printer	€50,- to €120,-
TPU95A	High impact strengt, durable flexible, chemical resistant	Not flexible	€75,-
CPE-FAMILY	Chemical resistant, tough and demonstrate good dimensional stability, higher temperature resistance and increased impact strength	High temperature requirement	€60,-
PC	Strong and tough parts that retain dimensional stability when subjected to temperatures as high as 110 °C.	UV sensitive	€65,-
PP	High toughness, exceptional fatigue resistance, and low friction. It also has good chemical, temperature, and electrical resistance.	Difficult to print	€80,-
RECYCLED	Prevents plastic waste	Adjustment process is not environment friendly	Depends

PRODUCTION METHOD

3D-printing materials - Skelet

Type	Pros	Cons	Cost per m2
MDF exterior	Cheaper than plywood, smooth surface (no knots). The consistency and smoothness of MDF allows for easy cutting of detailed designs	Soak up water and other liquids like a sponge, doesn't hold screws very well, very heavy,	€15,- to €35,-
PLYWOOD	Strong building material, less susceptible to water damage than MDF, It holds screws very tightly.	More expensive than MDF, finish off the edges is needed. Plywood will often splinter on the edges when cut.	€25,- to €50,-



MDF



Plywood

Exterior plywood,
water-resistant glued

PRODUCTION METHOD

Assembly and comfort

Objectives: Comfortable to sit on, weather-proof, durable, smooth texture for excercises, anti-slip, vandalism-proof.



—> Laser cutted plywood boards



4 DIRECTION

