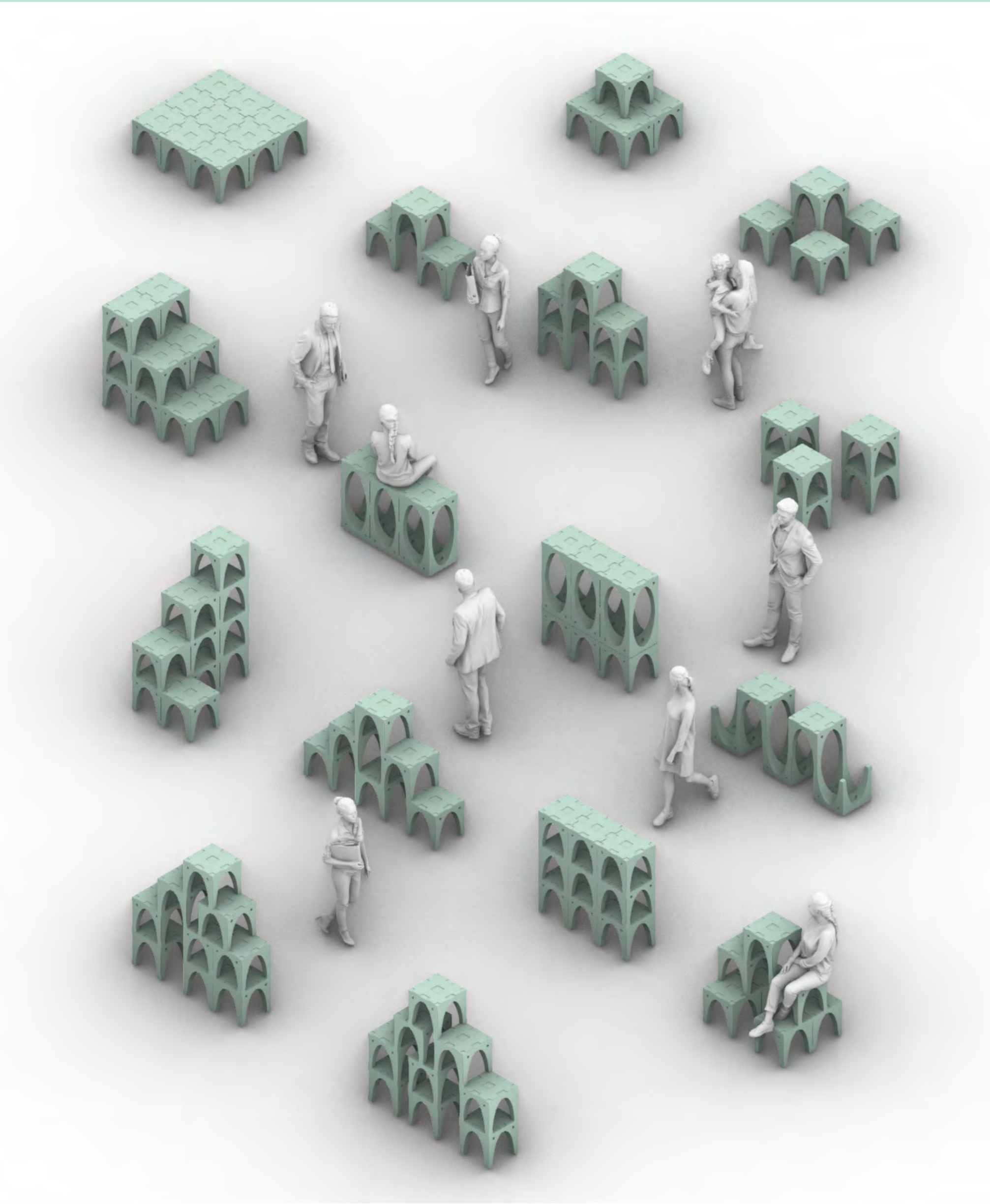
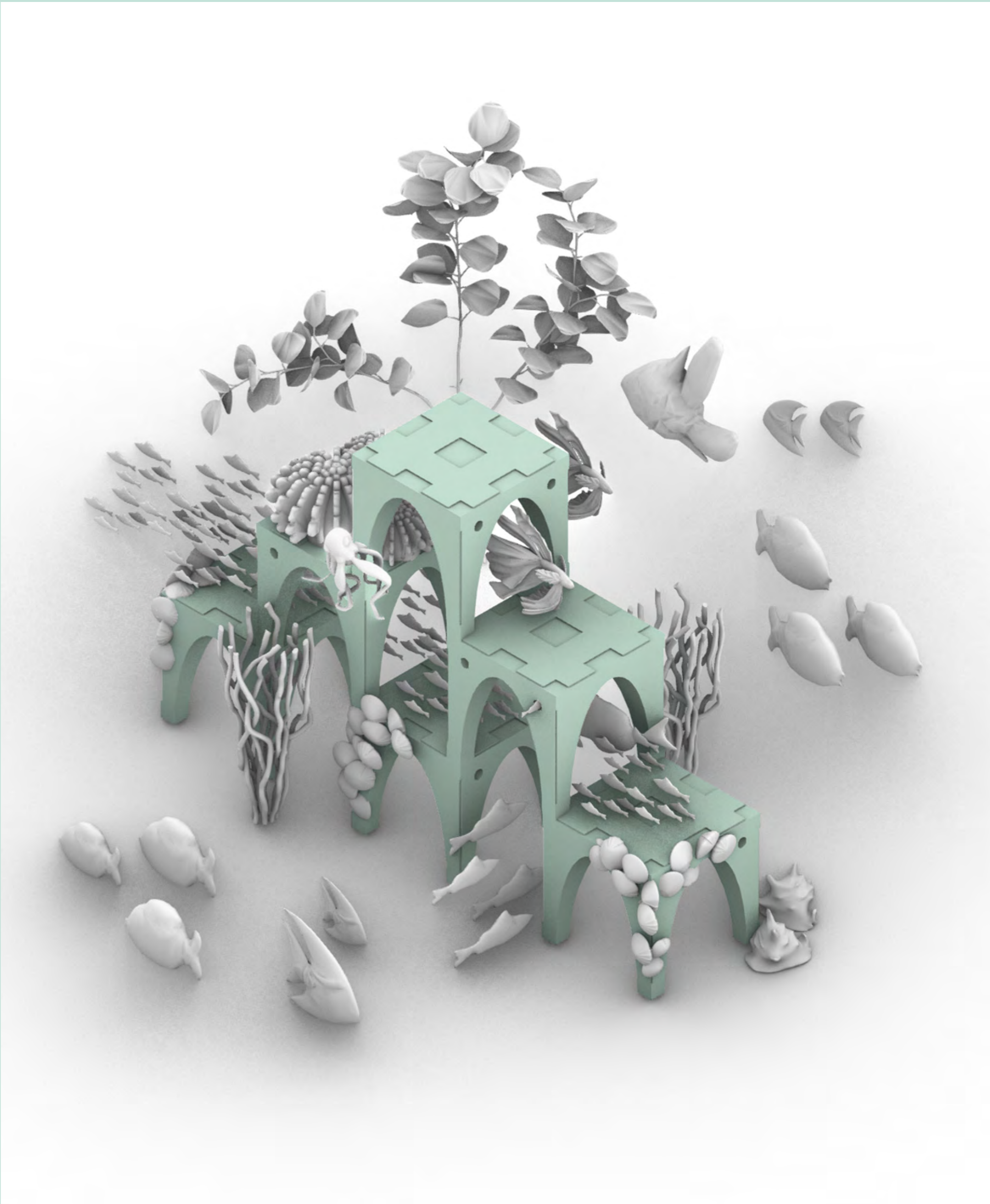


# M S 7 7 8 # T H E A R C H

FIRST LIFE: Before being donated to the ocean, #THEARCH adapts to **multiple functions and applications**; it can be used individually, stacked or assembled. It can shape breeze blocks, counters, pic-nic tables, benches, tables, stairs, shading, planters and countless other solutions.

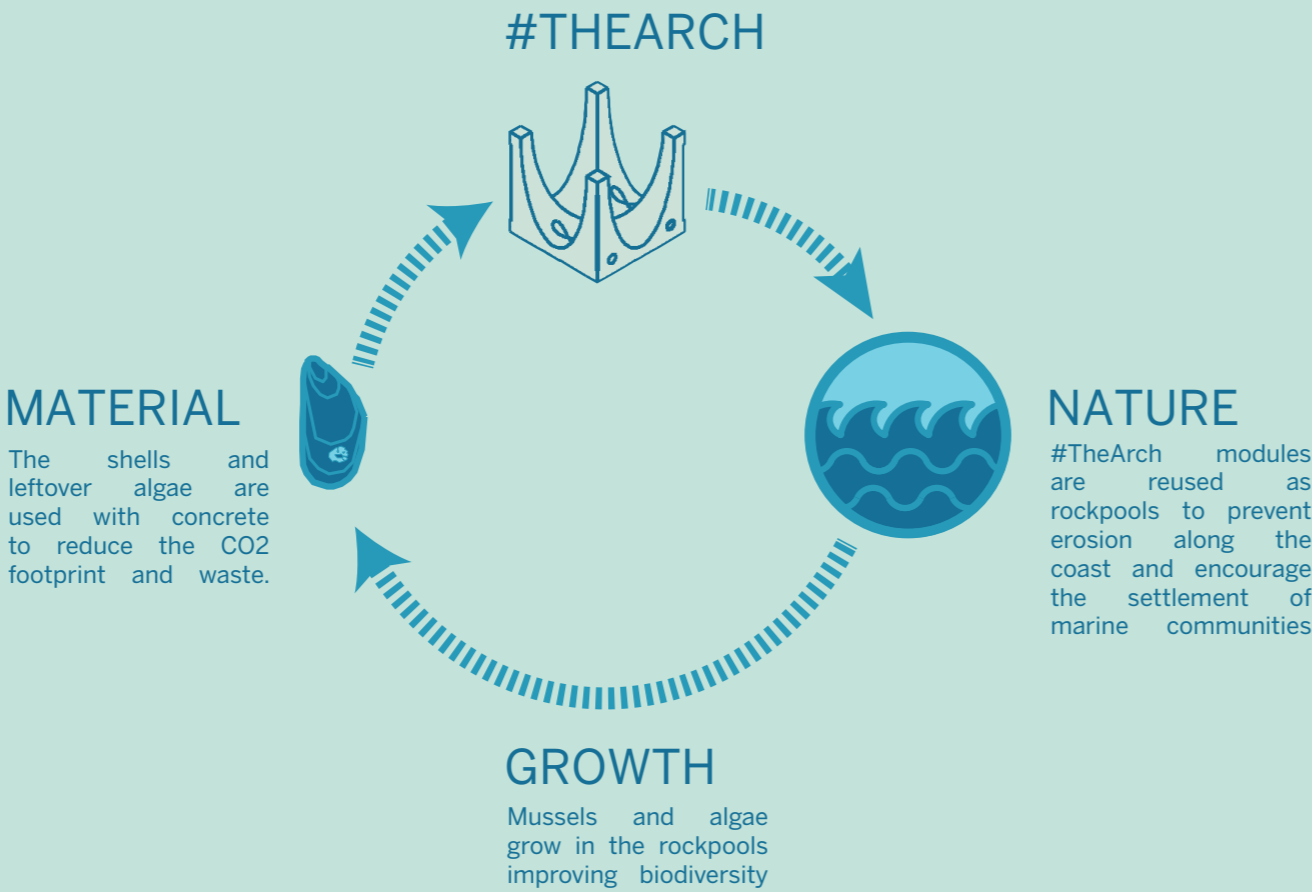


SECOND LIFE: #THEARCH combines marine waste aggregates in the place of sand, with algae-based colorants, to create a flexible, modular product. The product's end of life serves as a reef structure, to **support marine communities and encourage biodiversity**.

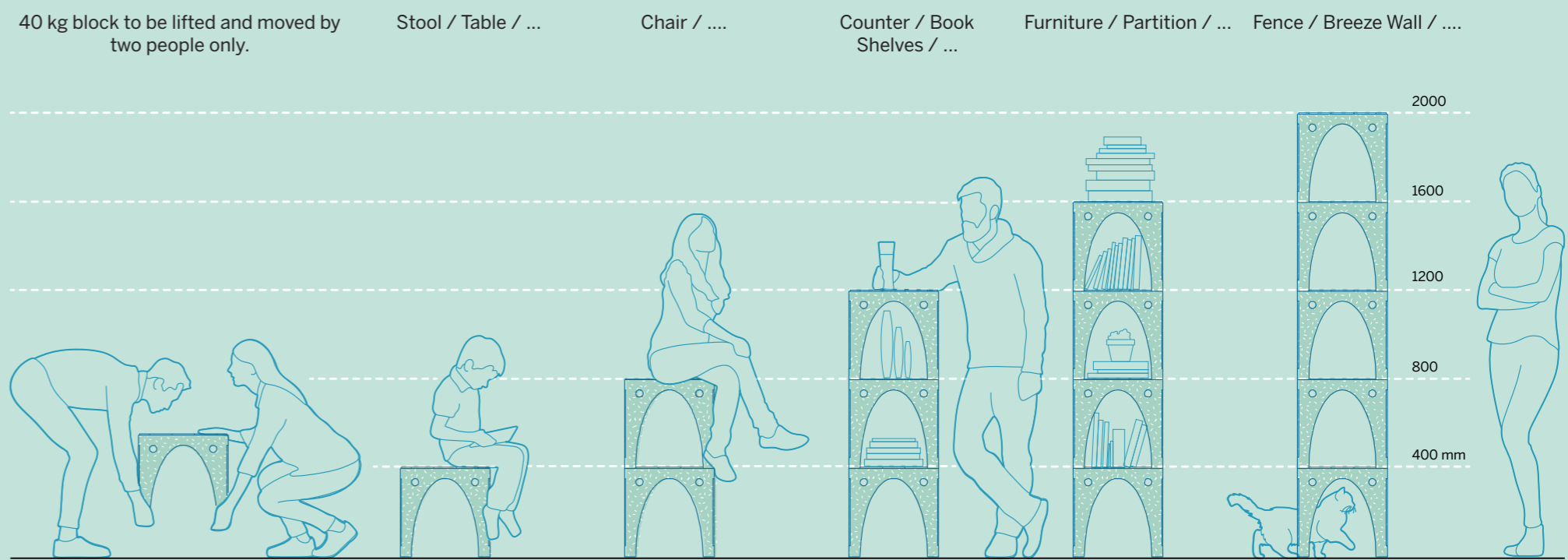


## BRING THE SEA TO YOUR HOME, AND YOUR HOME TO THE SEA.

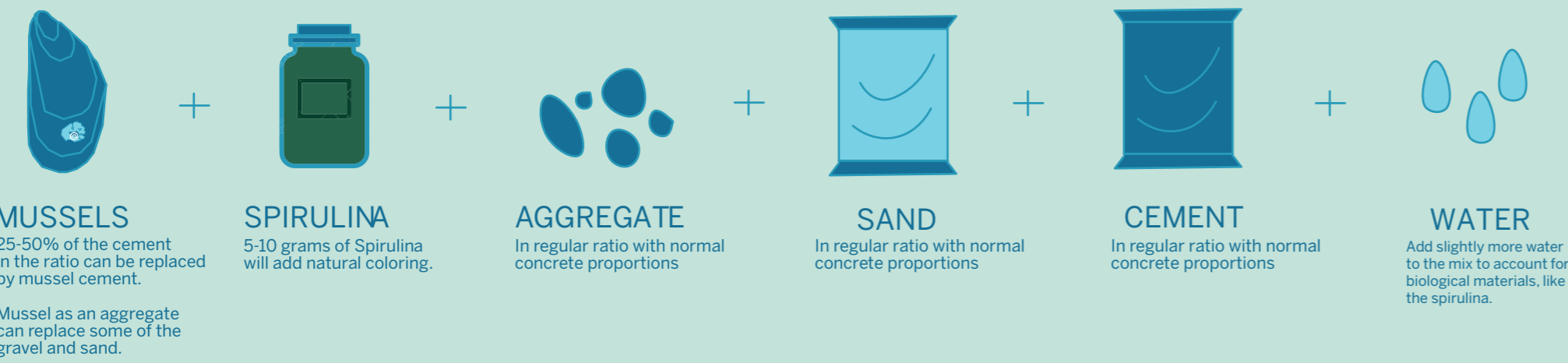
To redeem concrete as a construction material the project aims to address some of its biggest environmental threats. The Netherlands is faced with biodiversity loss, which is compounded by the pollution and carbon footprint of the building industry. Sand is often used as a necessary material in concrete-making, and is quickly becoming a precious commodity in construction. Beaches need to be restored by artificial filling after the storm season. This usually involves pumping sand from deeper sea-bottom areas through a pipeline onto the land, or transporting sand in with ships. This periodic filling with sand is an accepted, but laborious and expensive coastal protection measure (World Ocean Review).



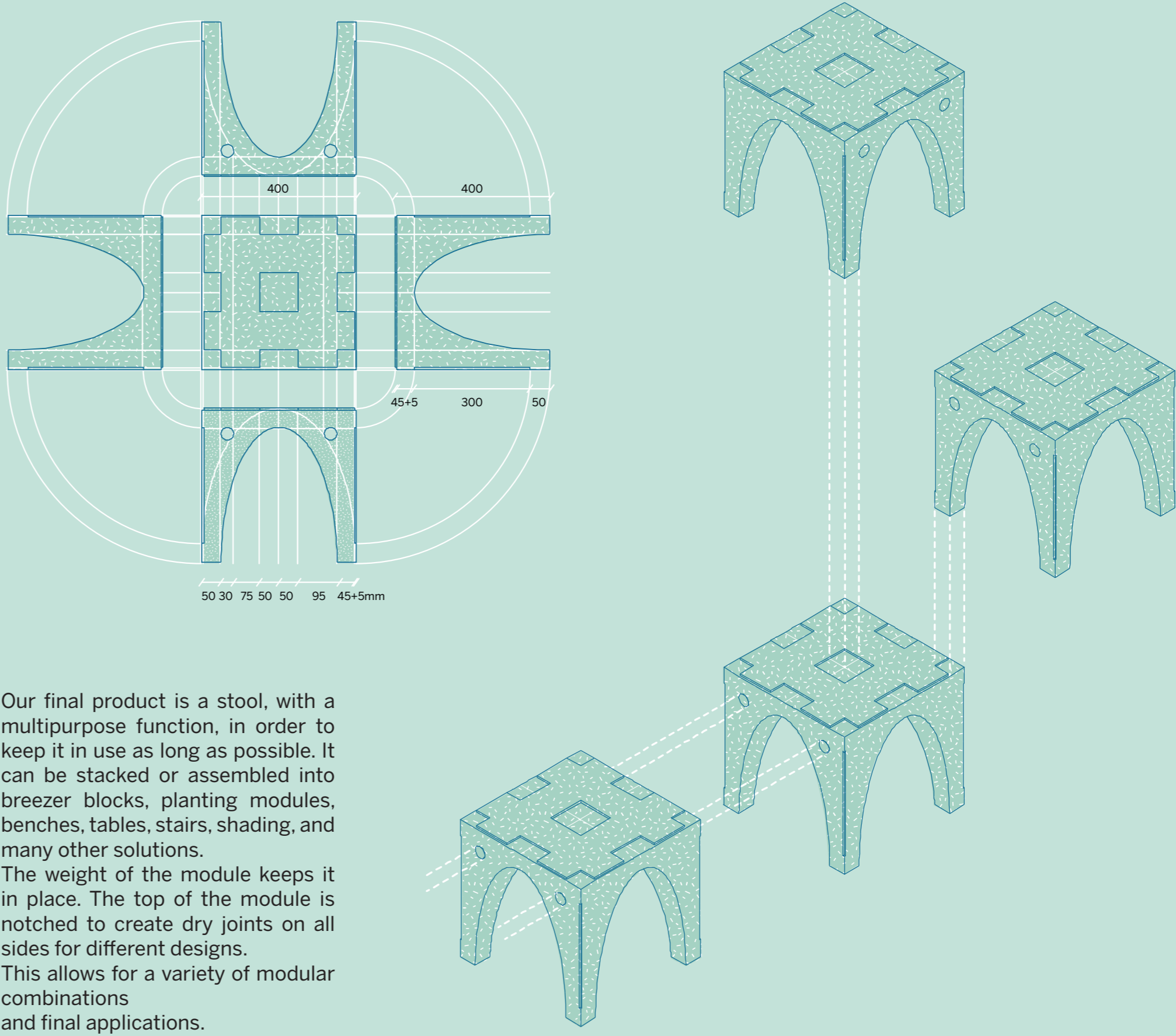
## DESIGN - CONNECTIONS - APPLICATIONS



## MUSSEL ALGAE CONCRETE



#The Arch: a sustainable, flexible furniture module, to help raise awareness of this new frontier of resources. Instead of relying solely on sand and conventional aggregates, we found a way to use wasted mussel shells as both aggregates and cement. In addition to this, we used spirulina, an easy-to-grow-algae, as a natural colorant. In order to process the mussel shells, we baked them at two specific times. In order to make the mussel cement, we baked them at 250 degrees for an hour, before crushing them into a fine, sieved powder. In order to make the aggregate, we baked them at 180 degrees for twenty minutes. Then, we created a testing process in order to figure out the best mixtures.



Our final product is a stool, with a multipurpose function, in order to keep it in use as long as possible. It can be stacked or assembled into breezer blocks, planting modules, benches, tables, stairs, shading, and many other solutions. The weight of the module keeps it in place. The top of the module is notched to create dry joints on all sides for different designs. This allows for a variety of modular combinations and final applications.

M S 7 7 8 # T H E A R C H

Our final modules are in scale 1:2. Because of this, we made our final furniture modules out of high performance concrete, however, we eventually hope to make a 1:1 scale version using our mussel/spirulina ratio after the conclusion of this course. Ultimately, we think the #TheArch can make people consider their relationship with the ocean, and the nature that makes their furniture possible.

