

**Module #6B**

**Green Design**

**How can waste turn into products?**

# Archy

## More Circular

- More Circular is a New Zealand born, Antwerp based upcycling and design company
- Develop processes that transform waste into new material and then produce circular interior products
- Started in a garage, driven by a desire to divert material from landfill and instead create products that people would love
- Now process plaster bound for landfill into a strong new plaster and make elegant interior products in Antwerp





**<https://vimeo.com/276196997>**

## Rare Earthenware

### Unknown Fields Division

- Formed from the toxic waste generated during the production of electronic devices like smartphones and laptops
- Rare earth materials used in the production of the electronic gadgets
- The team went to Baotou, where they found an “ocean of black mud” pumped out from a refinery that processes the metals, which are sourced from nearby mines
- Vases are made from mud samples taken back to London









<https://vimeo.com/124621603>

# SaltyCo Sustainable Fabrics

RCA

- Fabrics are made from a salt-tolerant plant that thrives in seawater
- Potential solution for the currently freshwater-intensive fashion and textile industries
- Cotton is notoriously water-hungry, requiring as much as 20,000 litres of freshwater to produce just a kilogram of the material



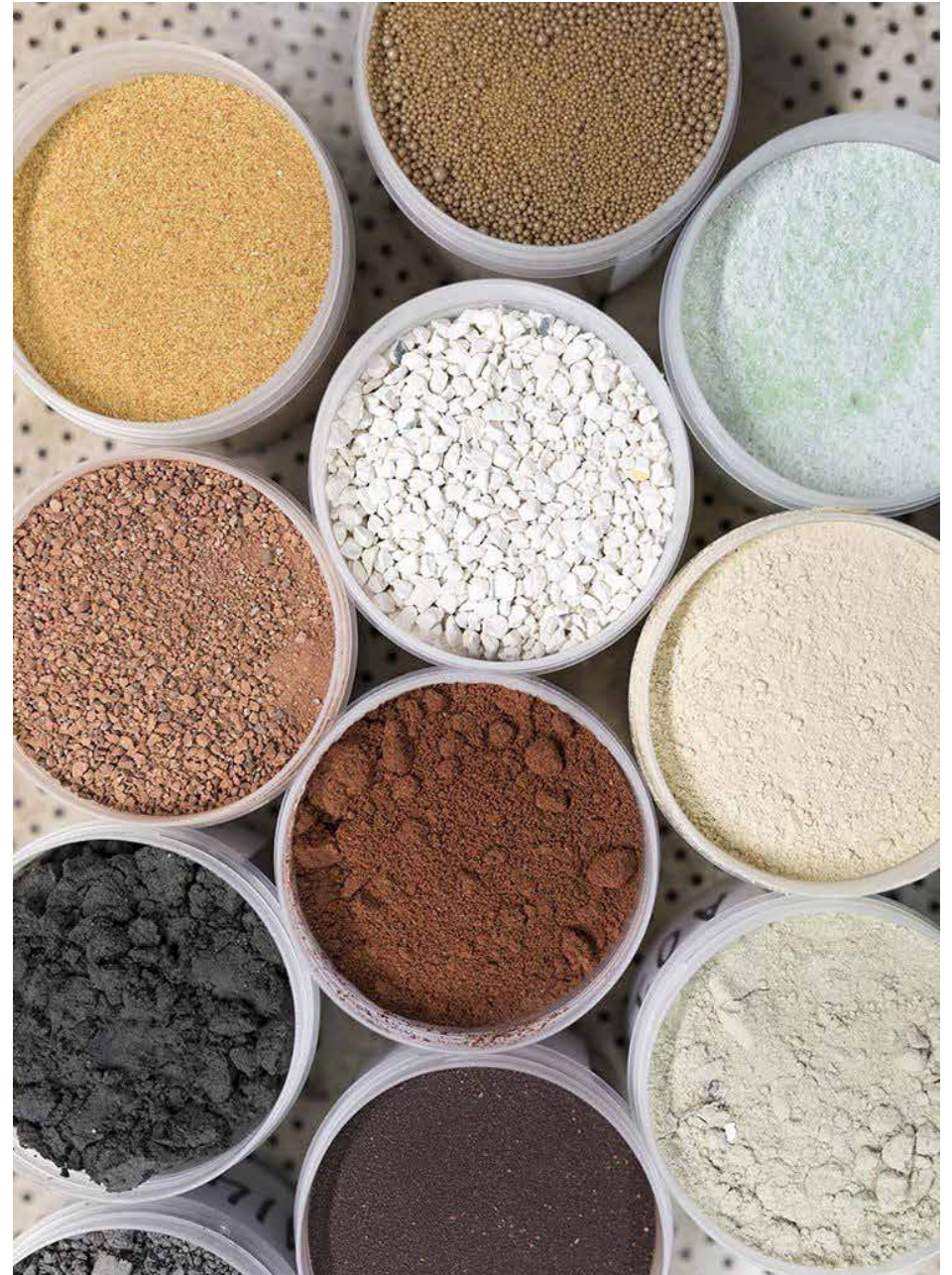


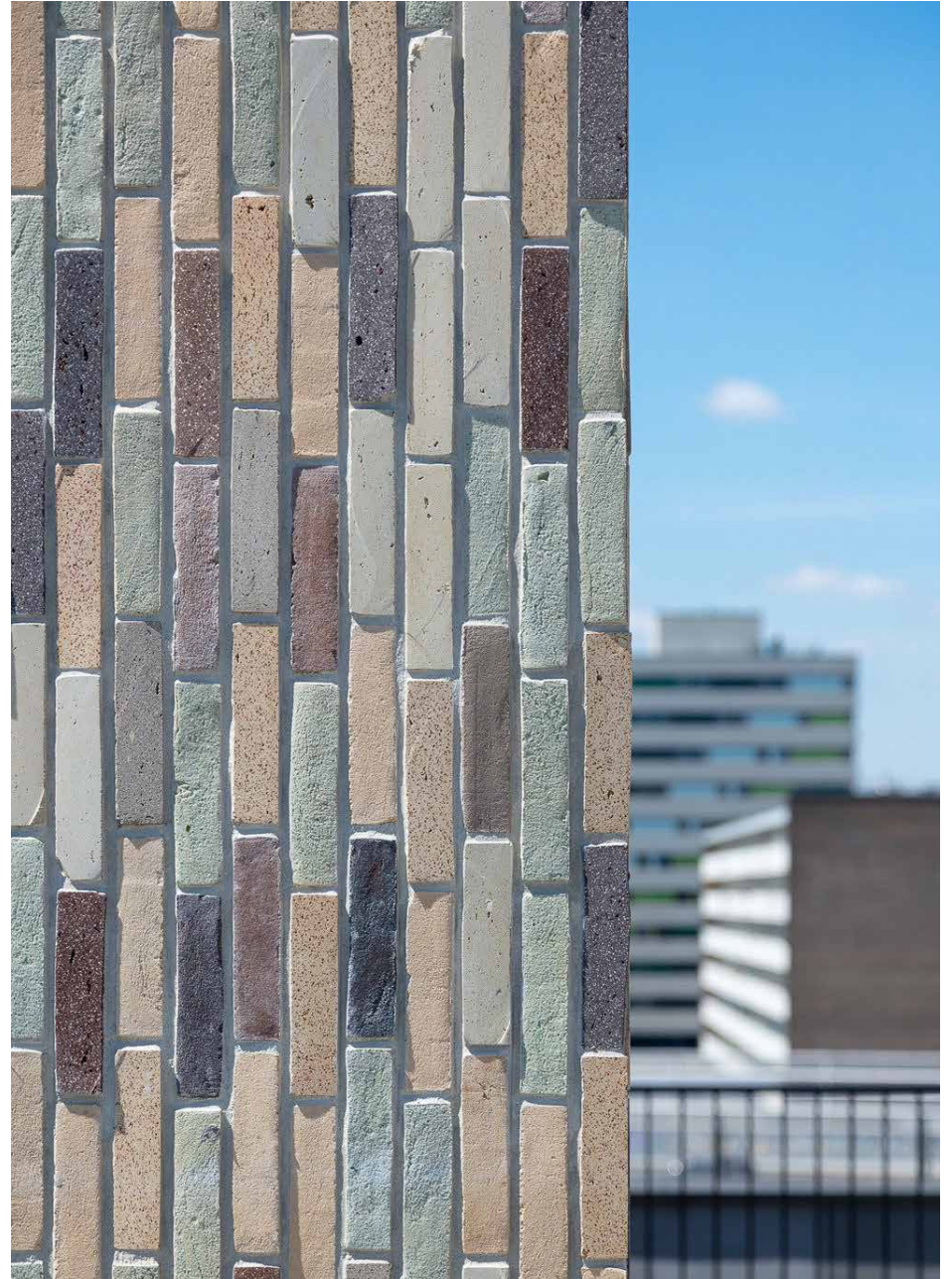
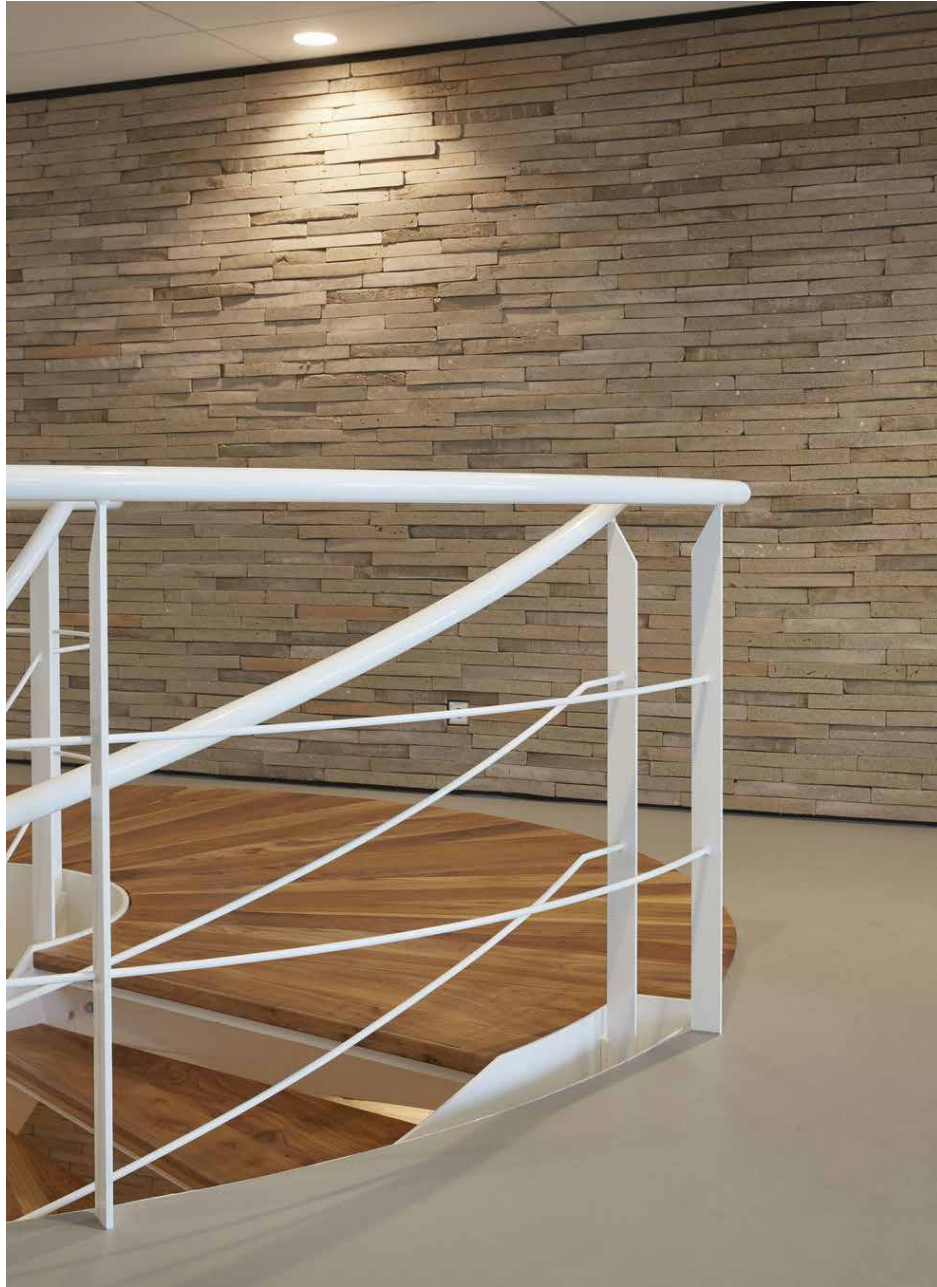
**What are some modern and sustainable building raw material?**

# CIRCULAR DESIGN: FROM WASTE TO BRICKS

StoneCycling

- Demolition debris is recycled into bricks
- Debris is turned into waste-based bricks that can be used in construction again
- Collection includes plenty of textures and colours that open to all sorts of creative pairings





## CONCRETE FOR BIODIVERSITY

ISDI-Indian School of Design and Innovation

- Concrete is distant from all what is natural and space consuming
- Made of a mix of soil, cement, charcoal and organic luffa fibres
- Very porous and the air they contain allows plants to develop into them
- They help with indoor air quality



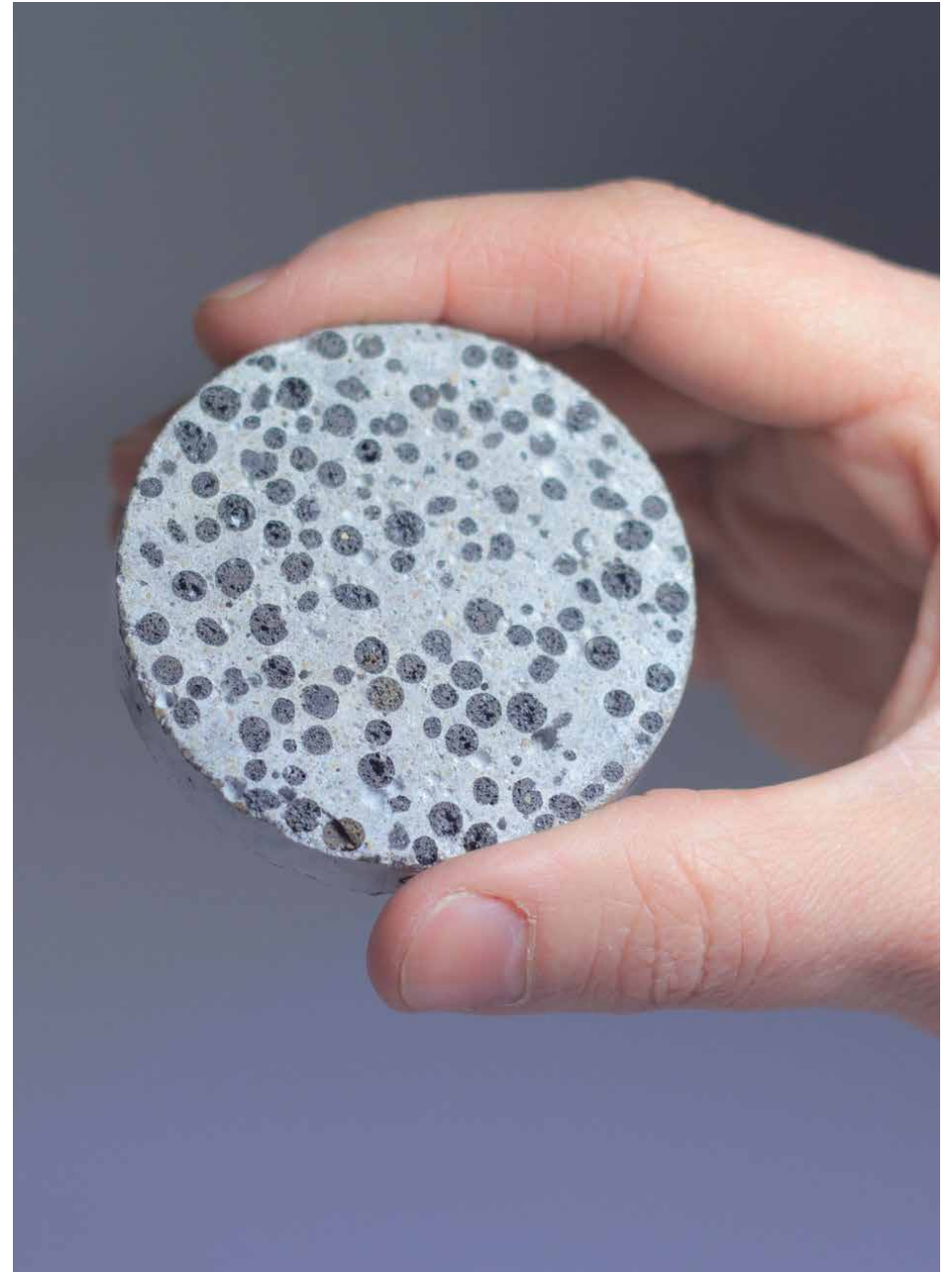




## SELF-HEALING CONCRETE

Technical University Delft and  
Basilisk Concrete

- One of the top disadvantages of concrete is that it cracks
- Bacteria is awake when they come in contact with water and oxygen (aka when a crack occurs)
- They then start producing limestone and essentially heal the crack, leaving only a slight scar on the surface



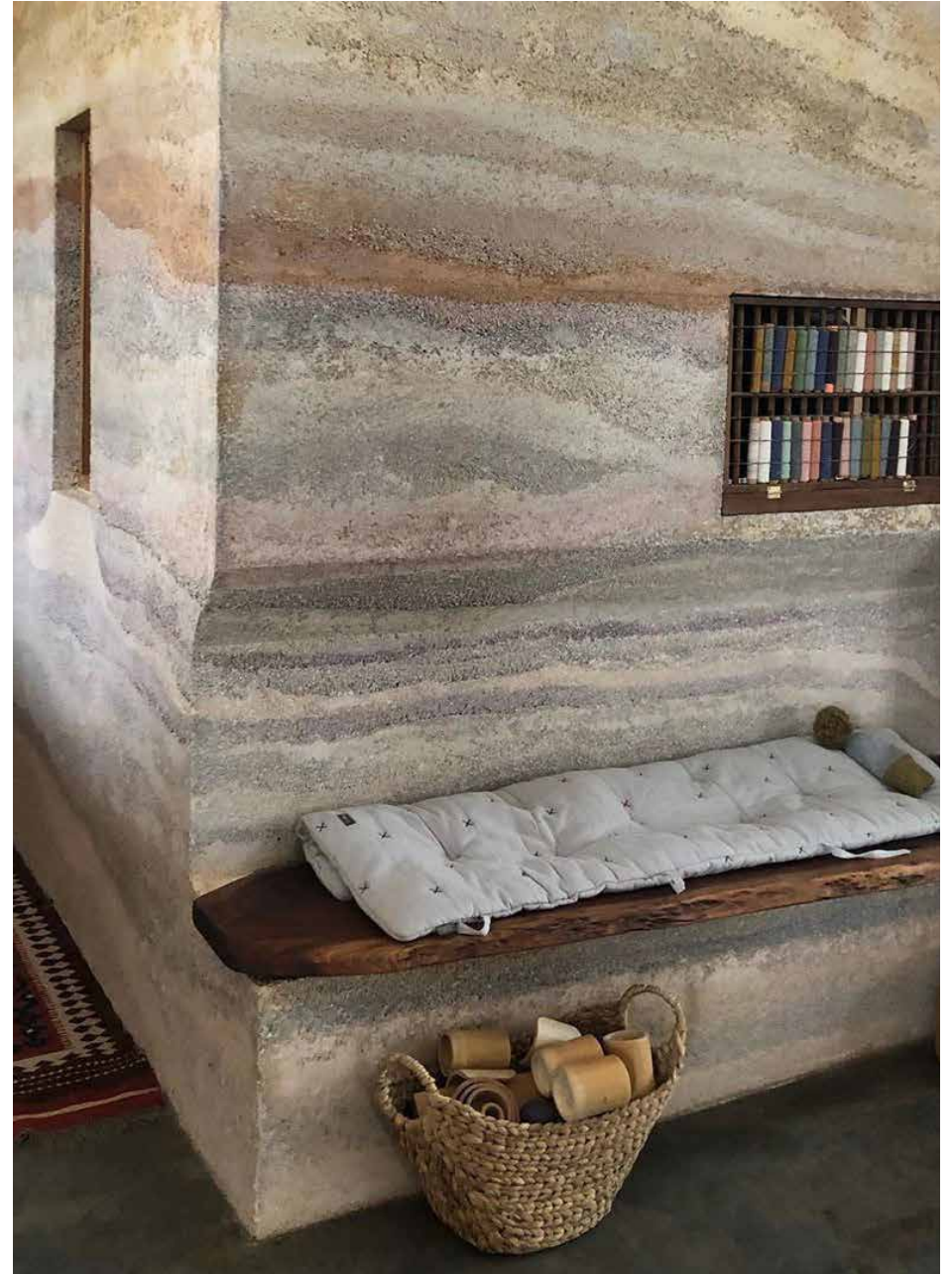


# HEMP CONCRETE

Dun Agro

- A mix of hemp fibres with natural glue and some water
- Sturdy, has good thermal and acoustic insulation qualities and is fire resistant
- CO<sup>2</sup> negative, namely absorbing more CO<sup>2</sup> than the one it emits





# ORGANIC CIRCULAR DESIGN BRICKS

## The Living

- Hy-fi bricks are a mix of circular design and biofabrication
- make use of agricultural waste (corn stalks) and mix it with mushroom mycelium into brick-shaped moulds
- Mushrooms will take a few days to grow and the result are organic bricks that can be composted at the end of their life

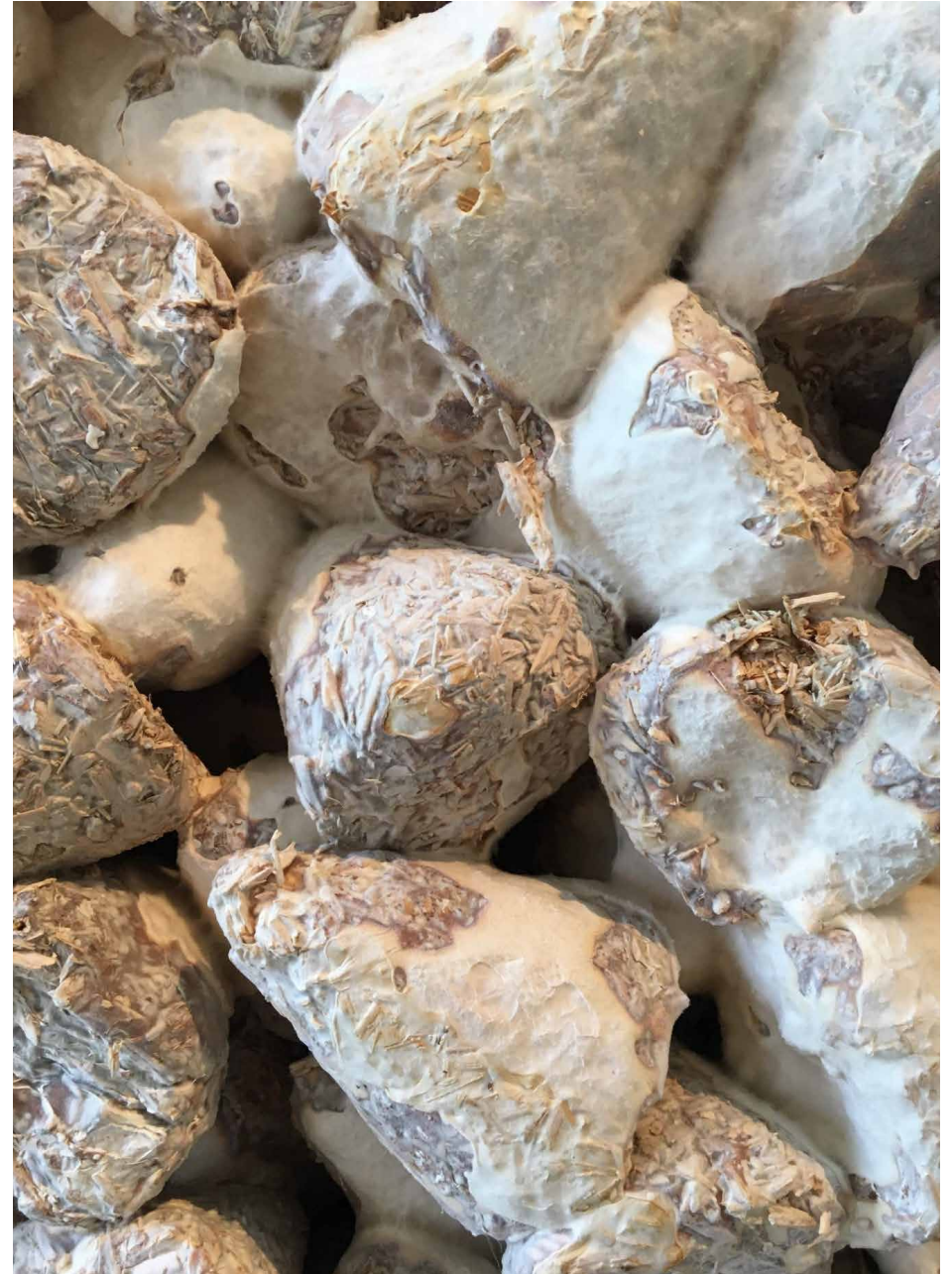


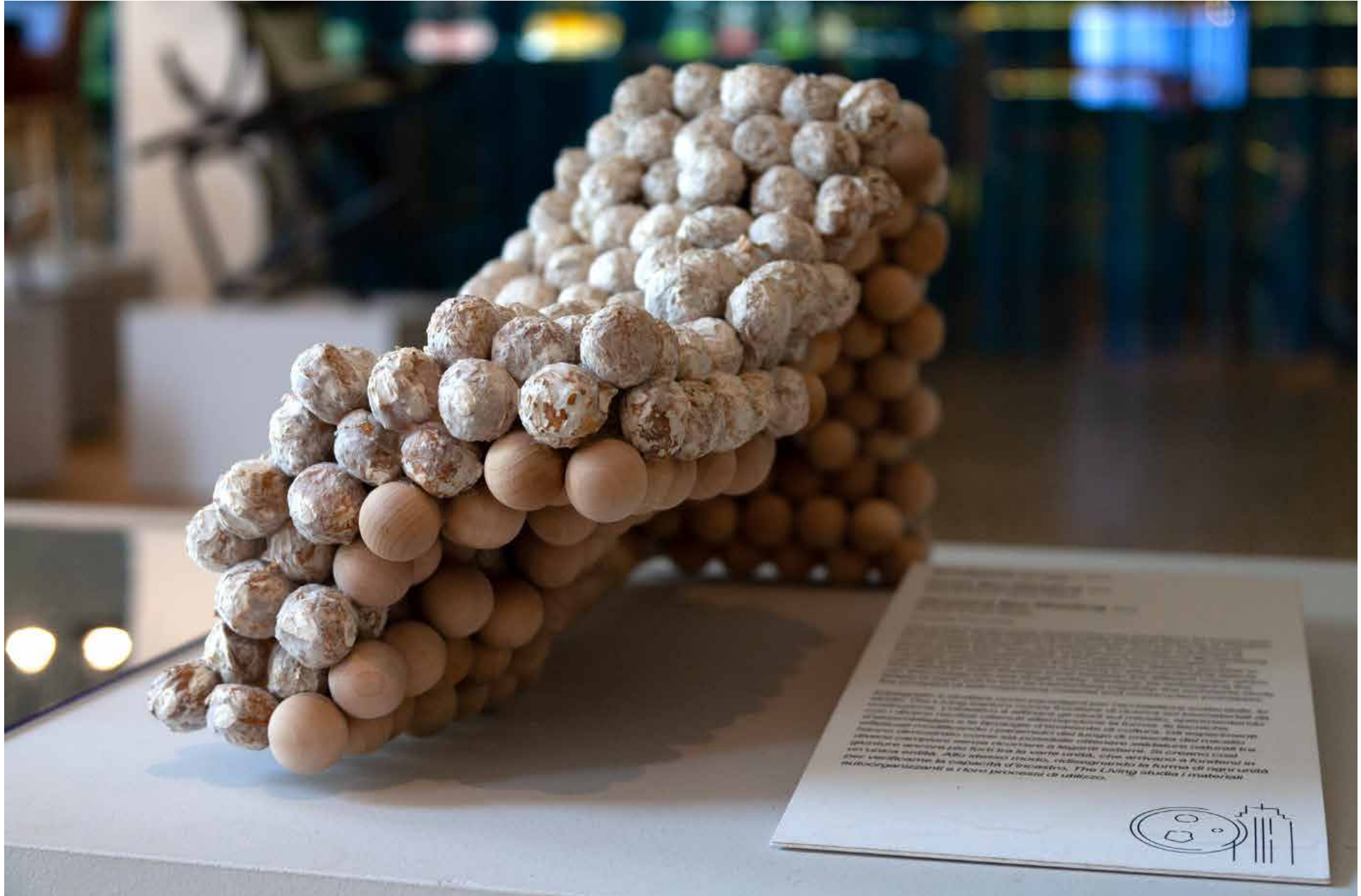


## BRICK WITHOUT MORTAR

### The Living

- mushroom mycelium has been used to grow bricks that naturally weld together without needing any mortar-like substance
- This Voxel bio-welding ensures an extremely strong joint





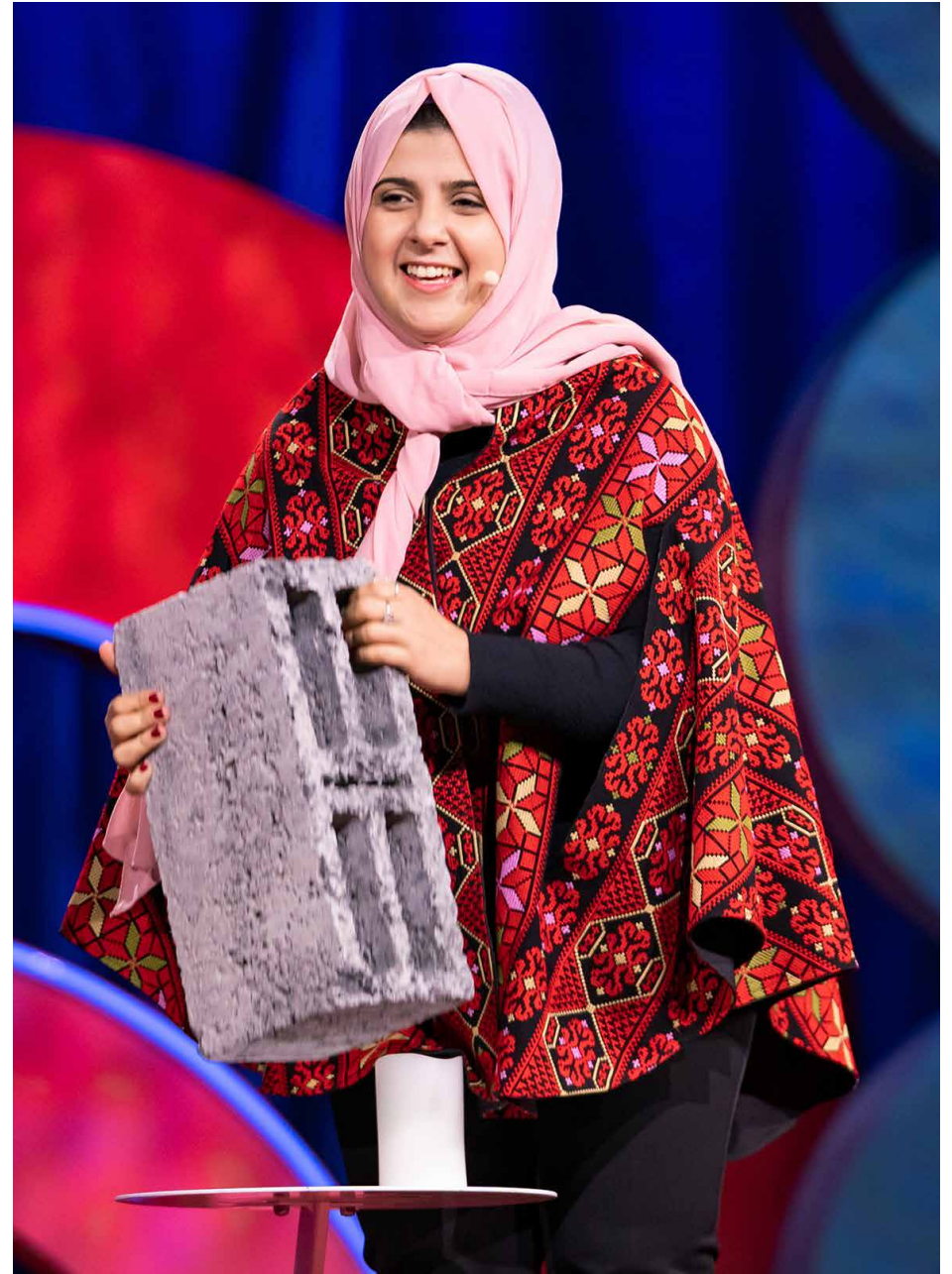


**Locally, what are some sustainable  
projects & solutions?**

## From Rubble to Concrete

Majd Mashharawi

- Turning ashes and rubbles from bombed houses into building material and concrete
- Ashes and rubbles are turned into building material instead being burried in the sand which is toxic





# Old News from Palestine

## Disarming Palestine

Ahmad Nassar

- Made from Al-Quds Newspaper
- 'Al Quds twenty years ago' - the news is still the same today as if 20 years ago
- The same topics are discussed: peace talks, prisoners, Jerusalem and refugees. Clearly there is a need for change





## Khaled Jarrar: The Battalion

Khaled Jarrar

- playful sculptures are made from recycled concrete, scraped off of the Apartheid Wall











# Hourglass

Majd Abdel Hamid

- The powder in hourglass consists of crushed cement bits chipped from the “Wall” in the West Bank mixed with sand grains
- Hourglass is handmade and produced in collaboration with a glass factory in Hizma





**CHRISTMAS BAUBLES FROM  
BETHLEHEM**  
**Disarming Palestine**  
Hebron Glass & Ceramics Factory



- Hand-blown glass baubles
- Made locally from recycled glass



## TEARS

### Disarming Palestine

Hebron Glass & Ceramics Factory



- Hand-blown glass baubles
- Made locally from recycled glass



# NABULSI SOAP

- A combination of virgin olive oil, water, locally supplied lime, and a basic sodium compound made by mixing the powdered ash of the barilla plant that grows along the banks of the River Jordan
- The finished product is ivory-coloured and has almost no scent







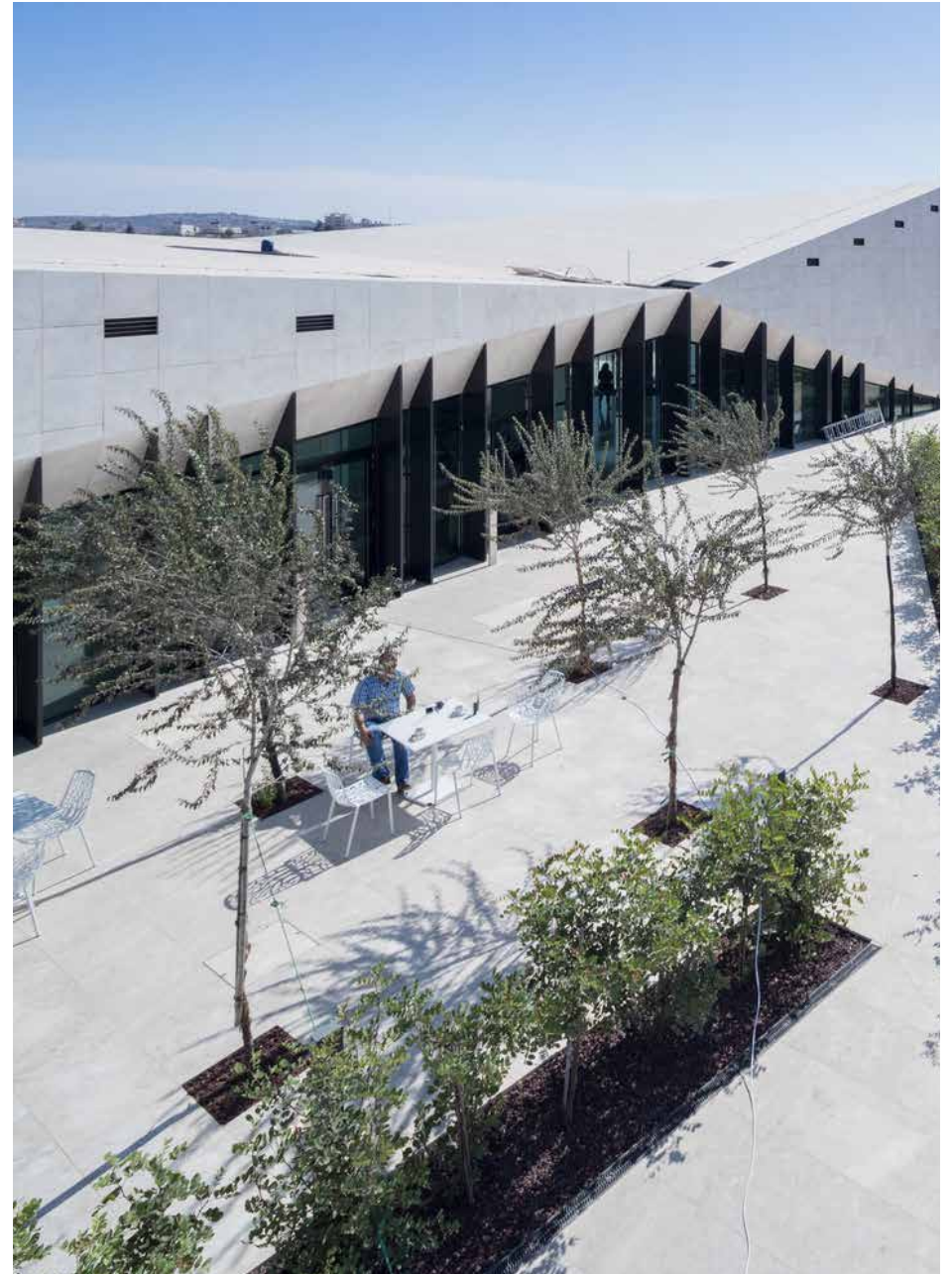


<https://youtu.be/aWmFMDr7y0U>

# The Palestinian Museum

Heneghan Peng Architects

- Palestine's first energy-efficient green building
- Green solutions include collecting rainwater from the rooftop of the building in large water containers for reuse
- Solar energy is used to heat water for public use, while wastewater is refined and reused for irrigating the gardens based on an automatically controlled water system
- The gardens are planted with indigenous plants, which tend not to require large amounts of water





**For next class:**

Module #7

**Design Now in Palestine**