

# CIRCULAR WITH CERAMICS

## WHAT IS CIRCULAR?

non-renewable resources are used again and again

## WHAT ARE THE GOALS?

- reducing environmental impacts
- prevent depletion of resources
- prevent damage to ecosystems
- prevent waste

## HOW IS THE APPROACH?

1. use sustainably extracted renewable resources or widely available resources
2. ensure long building and product lifetimes
3. make a following cycle of use possible
4. minimize the environmental impact of the building over the entire lifespan
5. use where possible existing building products and materials

## WHAT IS 'CERAMICS IN CONSTRUCTION'?

all building products made from fired clay

## WHAT IS A RENEWABLE RESOURCE?

resource that is naturally replenished on a human time scale (= 100 years)

## WHAT IS CRADLE TO CRADLE (C2C) CERTIFICATION?

products assessed on five basic C2C criteria: the purity of raw materials, recycling, energy and water use and social conditions

## HOW IS THE ENVIRONMENTAL PERFORMANCE INDICATED?

In the Netherlands with the Environmental Cost Indicator (MCI-value) - the different environmental impacts from the life cycle analysis (LCA) are weighed and translated into one figure - approved data is included in the Dutch environmental database (see Milieudatabase.nl)

## WHAT IS THE 'FUNDA HOUSE'?

the dream house of the Dutch based on Funda's big data (the largest housing site in the Netherlands) - "a terraced house with the spatial feel of a castle"

## CERAMIC ROOF TILE (with or without solar cell)

1. made from floodplain clay, a renewable raw material
2. very long service life (75+ years, glazed 100+ years)
3. reusable because removable and a long service life
4. low environmental impact

## CERAMIC FACADE SYSTEM WITH MECHANICAL ANCHORED TILES

1. made from clay, a widely available raw material
2. long service life (75+ years)
3. reusable because removable, a long service life and C2C certification
4. limited environmental impact

## BRICK SLIPS CONNECTED TO INSULATION, or ON PREFABRICATED PANELS, MECHANICALLY ANCHORED TO A REAR CONSTRUCTION

1. brick slips made from floodplain clay, a renewable raw material
2. long service life and the prefab panels are replaceable
3. prefab panels are reusable because they can be dismantled
4. brick slips has a low environmental impact, the impact of the rear construction should also be taken into consideration

## DRY STACK SYSTEM WITH BRICK

1. made from floodplain clay, a renewable raw material
2. very long service life (150+ years)
3. reusable because it can be dismantled and has a long service life
4. low environmental impact due to reuse and long lifespan

## CLAY PAVERS

1. made from floodplain clay, a renewable raw material
2. very long service life (25-250 years)
3. reusable because not connected to the substrate and it stays beautiful
4. low environmental impact due to reuse and long service life

## SANITARY WARE (toilet, sink, etc.)

1. made from clay, a widely available raw material
2. very long service life (75+ years)
3. reusable due to long service life
4. low environmental impact

## CERAMIC WALL AND FLOOR TILES

1. made from clay, a widely available raw material
2. long service life (50+ years)
3. high-quality recyclable, C2C certification
4. low environmental impact

## CLAY BLOCKS FOR WALLS

1. made from floodplain clay, a renewable raw material
2. very long service life (150+ years)
3. high quality recyclable when using small joints and clay plaster finish
4. limited environmental impact

## BRICK MASONRY (with lime mortar)

1. made from floodplain clay, a renewable raw material
2. very long service life (150+ years)
3. reusable when using lime mortar, otherwise recyclable
4. limited environmental impact, low impact when using lime mortar

## CERAMIC SEWAGE (clay pipes)

1. made from clay, a widely available raw material and 30% recycled material
2. very long service life (100+ years)
3. high-quality recyclable, C2C certification
4. limited environmental impact