



# 3RTO-C

## RESTORE, RECHARGE and RETAIN to CLEAN and CONNECT

### UNESCO WORLD HERITAGE AND SPONGE CITY: Quedlinburg, GERMANY

With emissions rising and global temperature increases, Quedlinburg is now experiencing the destructive effects of climate change. The city has already been experiencing major flooding due to climate conditions and only 25% of the project site having unsealed surfaces. Problems will continue if the city does not manage its storm water.

**RESTORE, RECHARGE and RETAIN to CLEAN and CONNECT (3R to C)** is a holistic solution and seeks for a more effective way to manage storm water and help with the climate crises through a full proof plan of implementing Sponge City solutions to create a more resilient city.

For years man has tried to control and dominate nature, Quedlinburg is no exception with canals that run through the city that have with man made walls. Designers took inspiration from nature fighting back.

As a medieval city with a lot of potential and many restrictions, Quedlinburg's identity should remain intact even after the design. The design's main objectives are **impactful in experience, but subtle in aesthetic**, as it was a main purpose not to compete with the existing infrastructure.

3RtoC's main principals are to:

## MASTER PLAN

The master plan shows how storm water management can be beautiful, and holistic. The solutions are thought to achieve a resilient version of Quedlinburg. The master plan expands the existing water channel system with the introduction of rain gardens on Wallstrasse and a artistic open swale through Schmale strasse located where the historic canal once was. Streets were also selected to introduce tree grates that retain and recharge the ground water. The criteria was in addition to the sidewalk and street an additional 2.5 minimum meters. The plan suggests that parking for visitors should be left to the outskirts of the historic center and parking is left only for residents leaving more room for green open space.

The main purpose for the design outcome was manufacturing and tailoring common sponge city techniques to the needs of a city as important as Quedlinburg with such a strong identity.

### 1. RETAIN & RECHARGE

A very geometrical shape as a square, inspired by the cobble stones that cover the whole city of Quedlinburg. That very simple shape was taken into consideration to include in the elements that retain and recharge (the water of) the city, as are the retaining and recharging ponds and fountains.

- Find areas and options to both retain and recharge the ground water.
- Flower boxes give citizens opportunity to store and be responsible with water.

### 2. RESTORE

As the rock begins it's journey through the water, nature as a power starts shaping the perfect square to its will. This metaphor is used as a main idea for the morphological and experiential concept for the sponge city of Quedlinburg. Nature is always going to fight back, and 3R to C is conceived on the idea of living with nature's virtues. Expand the water channel system.

- Give the water way system room to expand into open green spaces and slow the flow.
- Design takes inspiration from morphology of rivers, braided rivers, and river rock to influence the design in its site elements.

### 4. CLEAN

All storm water is cleaned through natural vegetation and filters before entering the water channel system. All green infrastructure systems are connected and interpretive signage explaining the natural systems connects visitors and residents in sharing the responsibility of managing their storm water responsibly.

### 5. CONNECT

After retaining, recharging and restoring the water, the citizens and visitors of Quedlinburg play the most important role in connecting with nature and the designed public spaces, but also with their history. As the stones in the river that once started as individual big stones, nature with its power shaped them until smooth and gathered them into the bottom of the canals. Interpretive signage explaining the natural systems connects visitors and residents in sharing the responsibility of managing their storm water responsibly.

### LEGEND

- Biodiversity Garden
- Rain Garden
- Permeable Paving
- Solar Panels
- Retention Pond
- Detention Basin
- Open Swale
- Underground trench grate
- Tree grate water Retention and Recharging

### INTENTION

- Retain / Recharge water
- Restore Water function
- Clean Water function
- Connect people with Water function

### LIMITS

- Visitors Motorized Vehicle Limit



ISOMETRIC SECTION WALL STRASSE

DETENTION BASIN AND OPEN SPORTS FIELD

POCKET PARK

VISITOR PARKING

MEDITATION GARDEN

DETENTION BASIN AND OPEN SPORTS FIELD

ARTISTIC RETENTION POND

WATER FEATURE PLAYGROUND

RE DESIGNED PARKING FOR VISITORS

WELCOMING PLAZA AND ARTISTIC RETENTION POND

BUS PICK UP / DROP OFF

### FLOODABLE PARK:

- + PLAYGROUND
- + OPEN PLAZA
- + SPORTS COURTS
- + OPEN GREEN LAWNS
- + NATURE GARDENS
- + WATER RETENTION BASINS
- + WATER RECHARGING BASINS

The floodpark contains the most promise for storm water solutions through retention, detention, rain gardens, and other sponge cities techniques. The park was designed with various uses in mind that are able to fulfill the needs of the inhabitants of Quedlinburg as well as visitors, these include:

- meditation gardens
- open sports lawn
- biodiversity gardens
- open lawn space
- amphitheater
- walkways
- bicycle lanes
- lounging areas
- picnic areas

The park contains different levels where people can enjoy it even when it is flooded as well as when the dry periods arrive to the city.