

# HOLISTIC APPROACH TO FOSTER CIRCULAR AND RESILIENT TRANSPORT INFRASTRUCTURES AND SUPPORT THE DEPLOYMENT OF GREEN AND INNOVATION PUBLIC PROCUREMENT AND INNOVATIVE ENGINEERING PRACTICES

## CIRCULAR ● SMART ● RESILIENT ● SUSTAINABLE

THE PROJECT AIMS TO DEVELOP A HOLISTIC APPROACH, SUPPORTED BY TECHNOLOGICAL AND NON-TECHNOLOGICAL INNOVATIONS, FOR THE UPGRADE AND CONSTRUCTION OF ROAD INFRASTRUCTURE, FOCUSING ON FOUR MAIN PILLARS:



### DIGITALIZATION

DEVELOPING AN OPEN-SOURCE PLATFORM WITH CIRCULARITY ANALYTICS, 3D PRINTING FOR BRIDGES AND SMART MOBILITY SOLUTIONS.



### RECYCLING

USING SECONDARY RAW MATERIALS FOR SUBGRADE STABILIZATION AND RECYCLE LOW-CARBON CEMENT FOR SLABS AND 3-D PRINTED ELEMENTS.



### REUSE

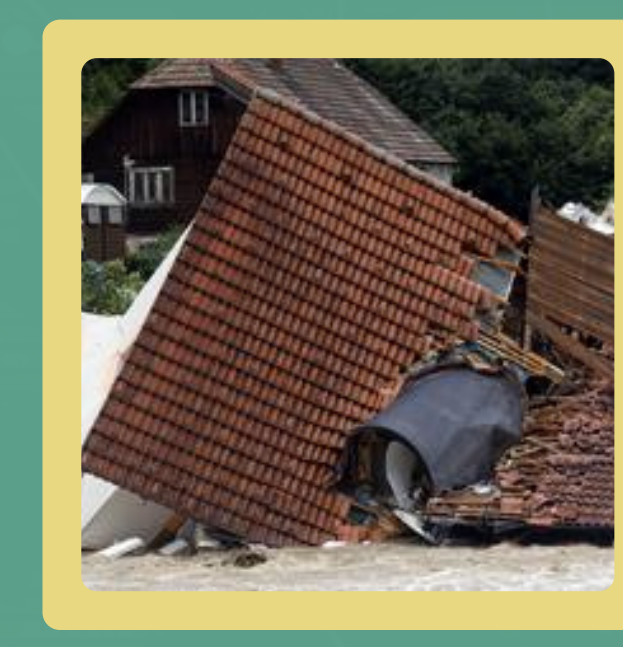
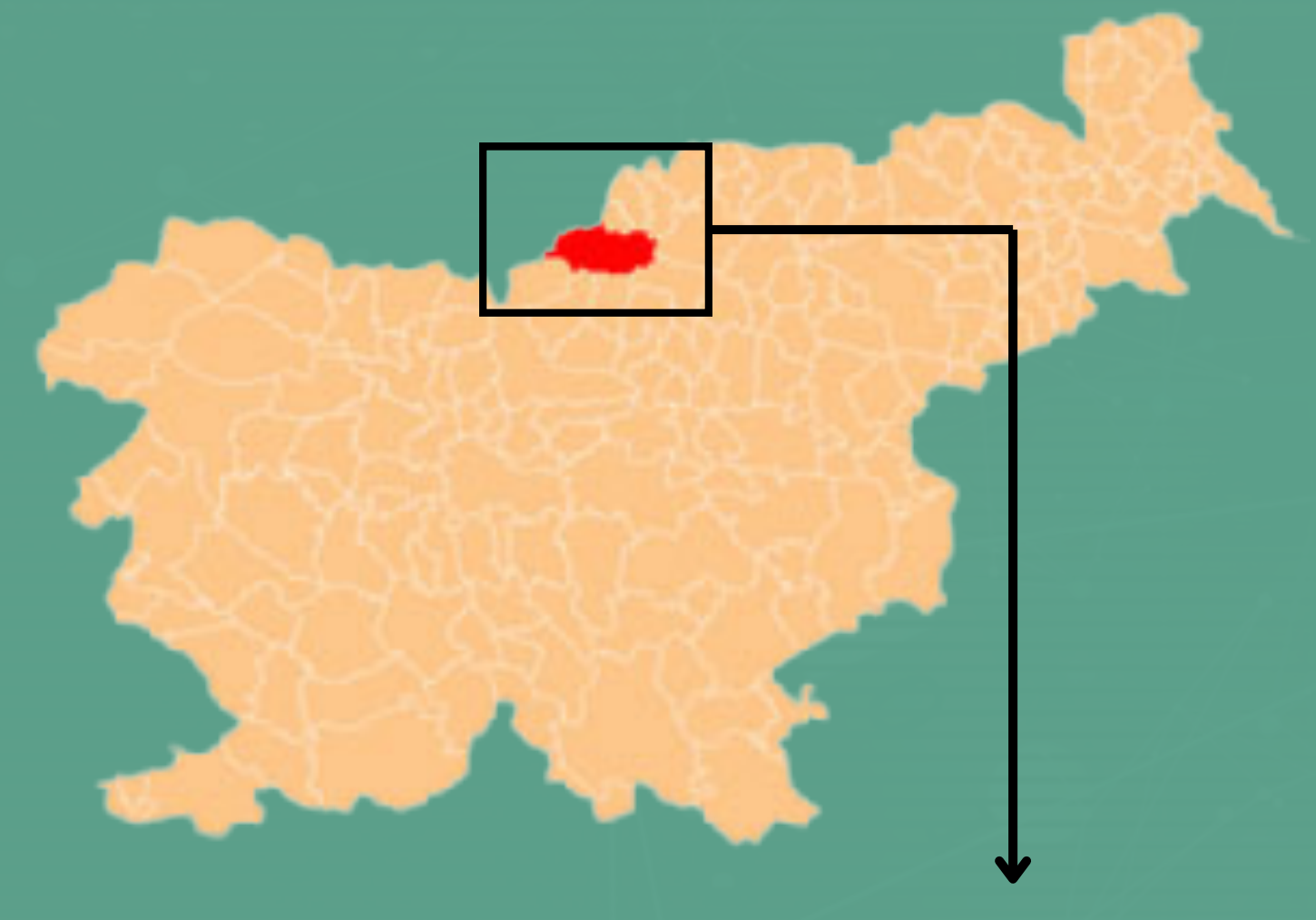
REUSING STRUCTURAL AND NON-STRUCTURAL ELEMENTS, PREFABRICATED CONCRETE ELEMENTS, GRS ABUTMENTS WITH SECONDARY RAW MATERIALS.



### ENERGY

INCLUDING INNOVATIVE ADAPTIVE LIGHTING SYSTEMS, FEASIBILITY ANALYSIS FOR GREEN ENERGY AND STORAGE AND ENHANCED TUNNEL VENTILATION MONITORING SYSTEMS

## PILOT SITE



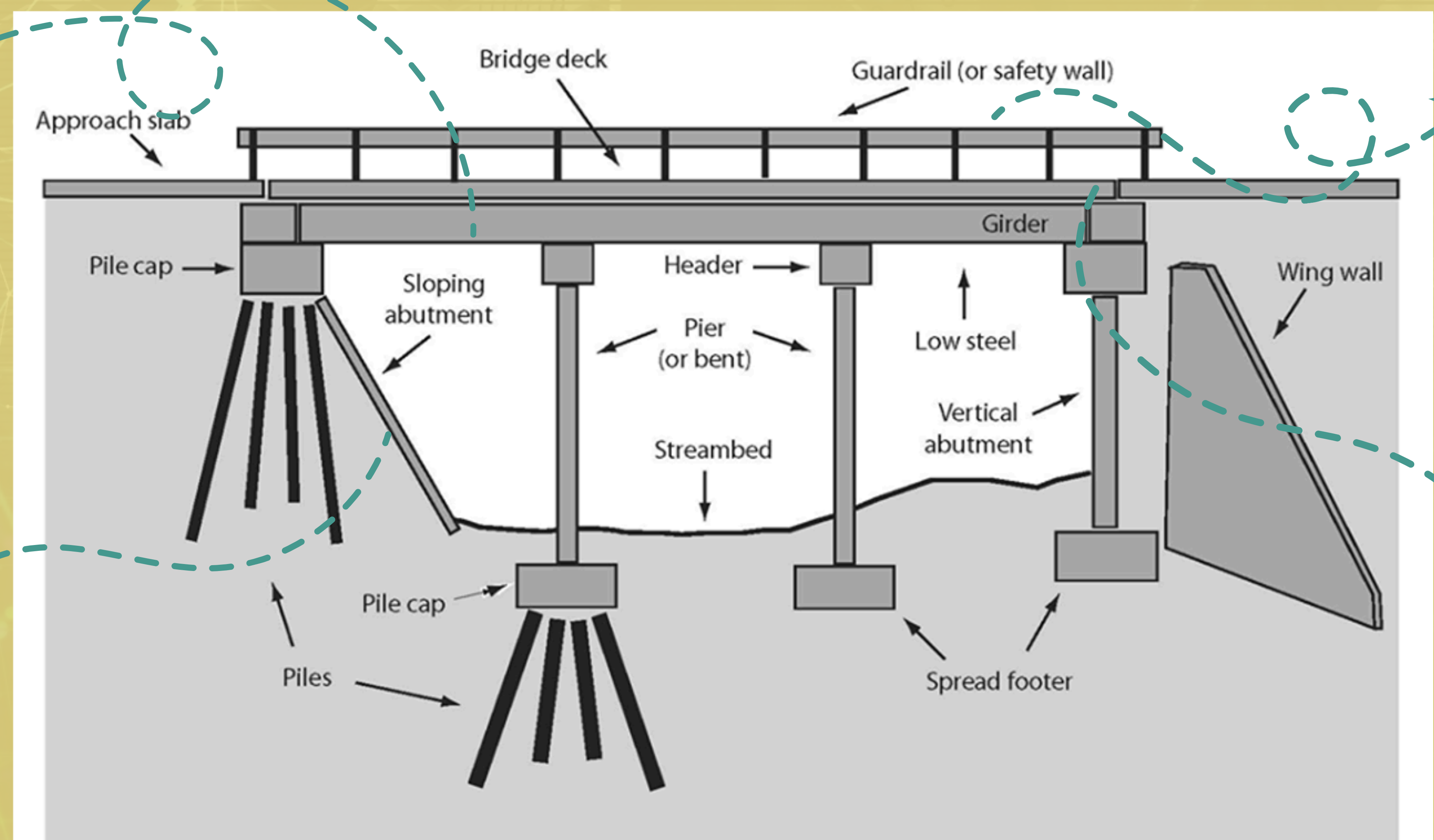
IN AUGUST 2023, DEVASTATING FLOODS HIT ČRNA NA KOROŠKEM, A VILLAGE IN SLOVENIA, CAUSING SEVERE DAMAGE TO INFRASTRUCTURE. PILOT SLOVENIA, AS PART OF THE CIRCUIT PROJECT, IS REBUILDING BRIDGES.

## 3D PRINTING DEMO

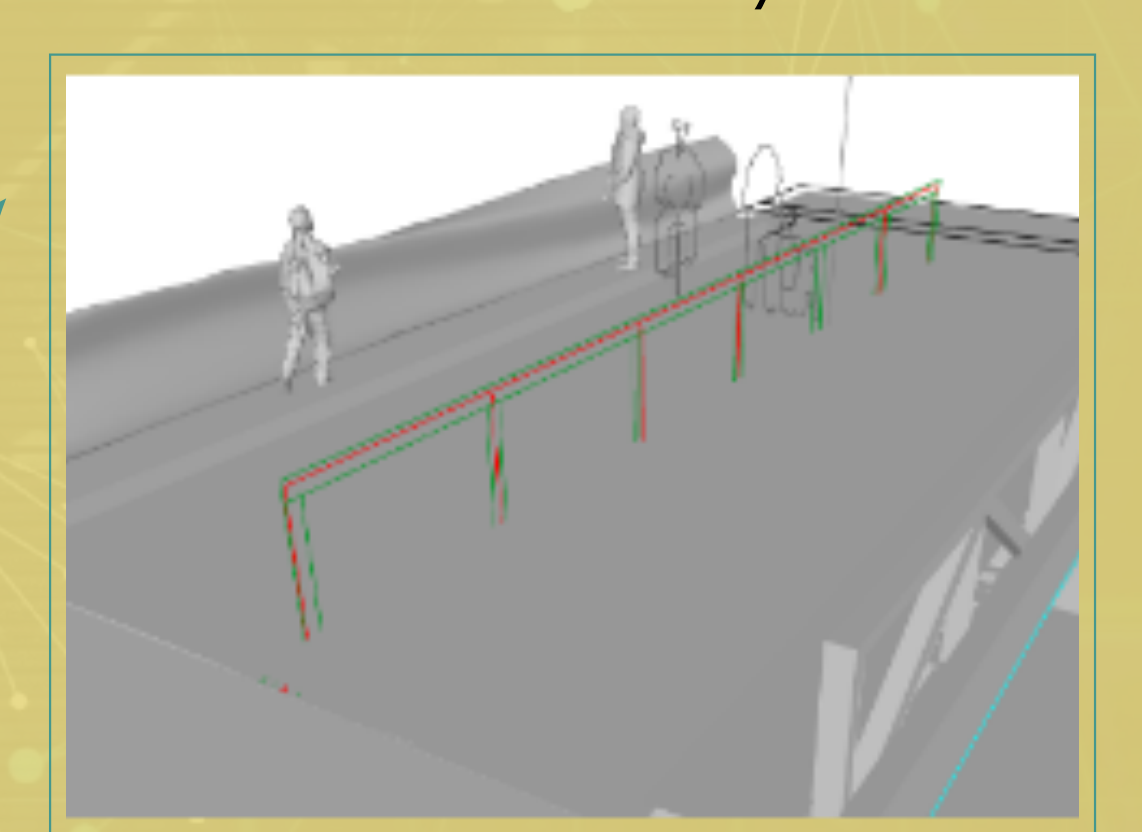
GIRDER (REUSED TRUSS OR BEAM)



ABUTMENT (GEOSYNTHETIC REINFORCED SOIL WITH REUSED INFILL)



SAFETY WALL (3D PRINTED CONCRETE)



DECK (PREFABRICATED MODULAR CONCRETE SLABS DESIGNED FOR REUSE)

