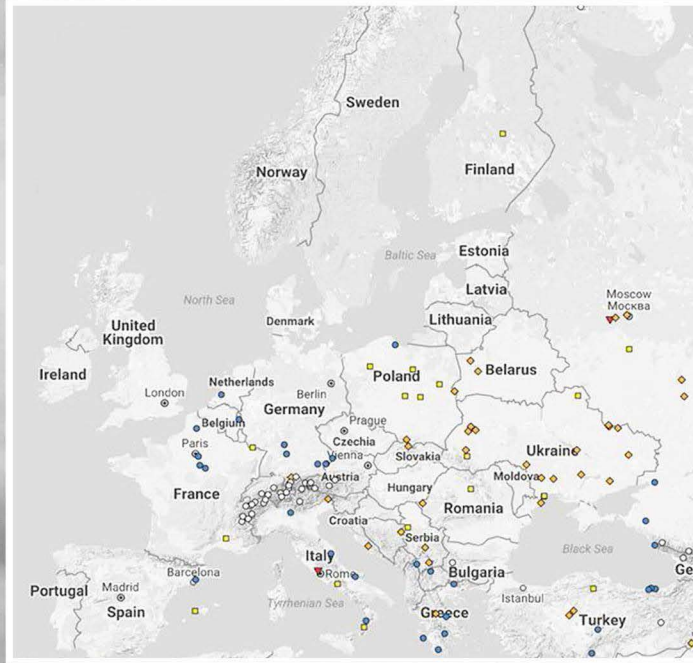


BORDERS OF POLAND



BORDERS OF THE SWIETOKRZYSKIE PROVINCE

- HEAVY RAIN (FLOOD) **32%**
- AVALANCHES **30%**
- LIGHTNING **25%**
- SEVERE WIND **11%**
- TORNADOES **2%**



BUILDINGS

POLDER

BUILDINGS

VISTULA RIVER

Country / City Poland  
 University / School Kielce University of Technology  
 Academic year 2017-2018  
 Title of the project Improving Flood Protection on Vistula River within Administrative Borders of Swietokrzyskie Province  
 Authors Karolina Met, Justyna Rurarz, Agnieszka Potrzebowska, Kinga Walczyk

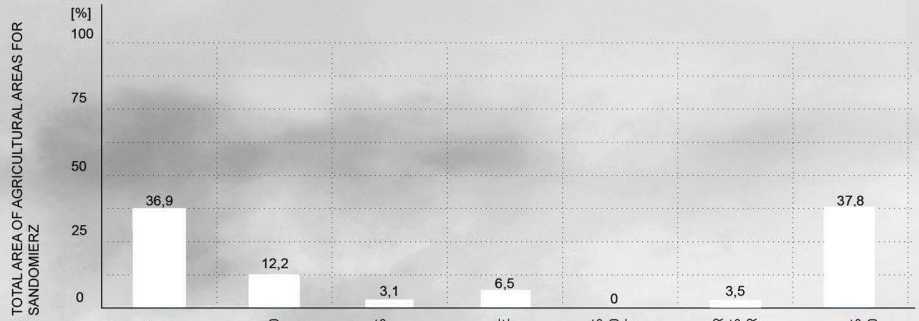
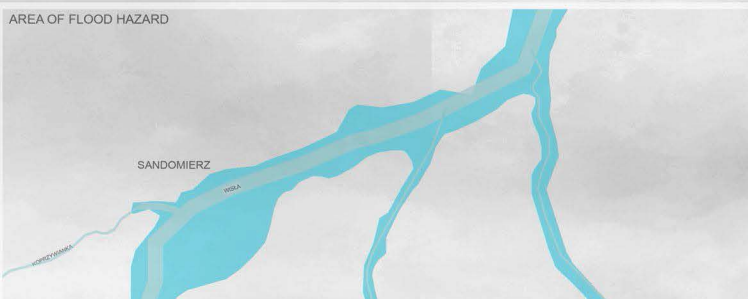
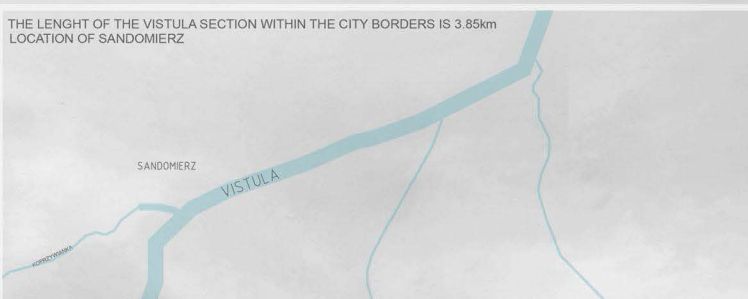
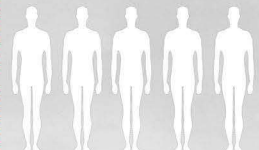


13

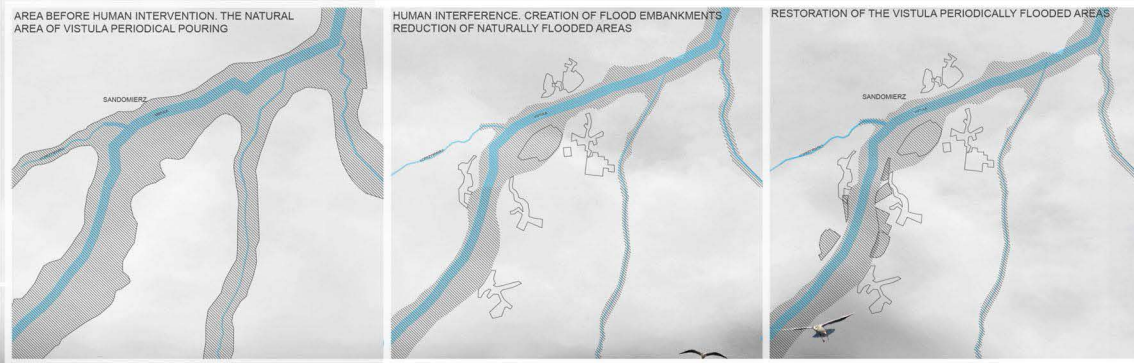
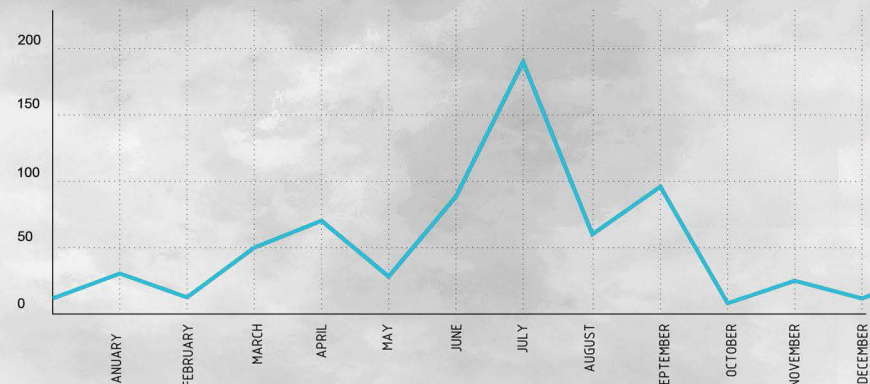
PEOPLE DIED AS A RESULT OF THE FLOOD IN 2016

173

PEOPLE WERE INJURED AS A RESULT OF THE FLOOD IN 2016



MONTHLY SUM OF ATMOSPHERIC WASTE (MM) FOR THE YEAR 2001  
 THE CHART SHOWS THAT THE MOST RAISED RAINFALL IS IN JULY. DECEMBER IS THE MOST DRY MONTH OF THE YEAR. AVERAGE ANNUAL WASTES ARE BETWEEN A 490 TO 700MM.







# PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 **Barcelona**

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC  
ETSAB- Escola Tècnica Superior  
d'Arquitectura de Barcelona  
Avenida Diagonal, 649 piso 5  
08028 Barcelona-Spain

## TECHNICAL DOSSIER

Title of the project	Improving Flood Protection on Vistula River within Administrative Borders of Swietokrzyskie Province
Authors	Karolina Met, Justyna Rurarz, Agnieszka Potrzebowska, Kinga Walczyk
Title of the course	Architecture
Academic year	2017-2018
Teaching Staff	Magdalena Wojnowska-Heciak
Department/Section/Program of belonging	
University/School	Kielce Univeristy of Technology

Written statement, short description of the project in English, no more than 250 words

In the last dozen or so years, Central Europe was the area that suffered particularly from flood. In Poland the flood risk occurs throughout the year. The result of the floods are enormous material losses, financial outlays, fatalities and wounded. The number of injured in 2017 reached 173 and killed 13. Low level of surface and ground water retention as well as lack of retention reservoirs, polders, dry reservoirs, reservoirs with flood reserve is an additional factor increasing the risk of flooding. The analyzes carried out showed the need to adapt the existing flood infrastructure to climate change. The development of settlement areas and changes in the use of land in areas adjacent to the river resulted in the liquidation of riverside polders. The project involves the reconstruction of natural absorbent surfaces. Agricultural areas have been used for this purpose. These areas will be used as agricultural areas and during the flood they will accumulate water. The result will be protection of built-up areas. The water that was supposed to flood the houses of people will be found in polders. For water regulation, culverts will be used which additionally will strengthen the embankment. During the hazard, the culvert will be opened. The flood embankment and culvert will also be a recreational area. As additional security for people, it is recommended to build houses in a special system.

For further information

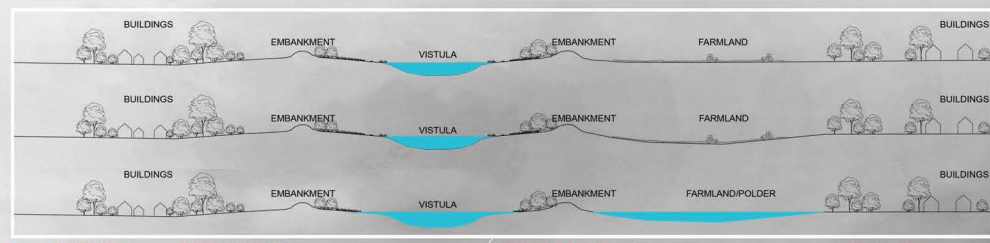
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T: + 34 93 401 64 11 / +34 93 552 0842

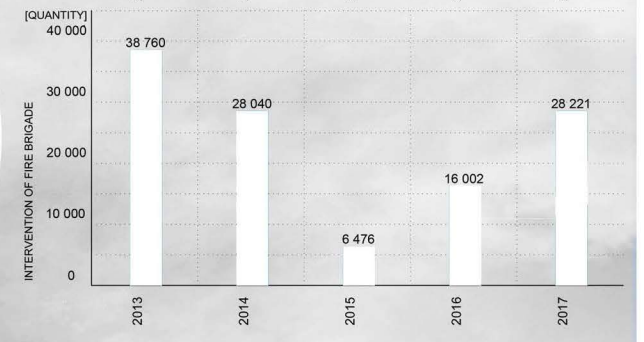
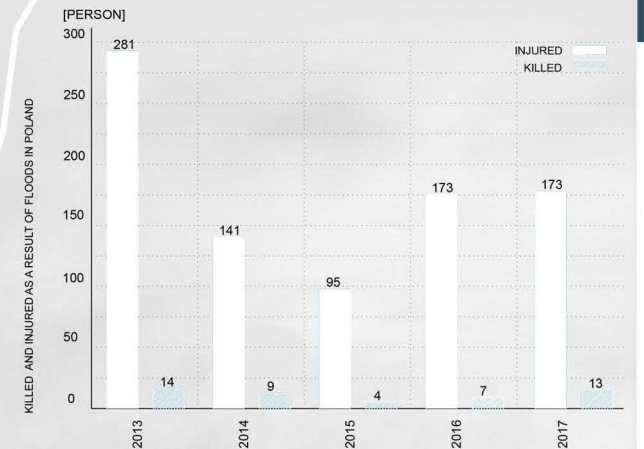
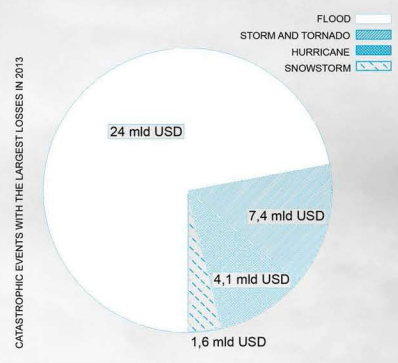
Contact via email at: [biennial.paisatge@upc.edu](mailto:biennial.paisatge@upc.edu)

Consult the web page <http://landscape.coac.net/>





- THE NATURAL FLORA OF THE VISTULA RIVER**
- BETULA PUBESCENS
  - ALNUS GLUTINOSA
  - ALISMA PLANTAGO-AQUATICA
  - CALTHA PALUSTRIS
  - SALIX CINEREA
  - SALIX PENTANDRA
  - FRANGULA ALNUS
  - SALIX AURITA



INCREASING FLOOD PROTECTION ON THE VISTULA SECTION within administrative borders of the Świętokrzyskie province





PROJECT OF CULVERT FOR DESIGNED POLDERS



