

<p>Gdańsk, Poland</p> <p>Gdańsk Climate-resilient reGeneration and renaturing area - (source: <i>ClimaGen Gdansk</i>)</p>	Term: 2 sem. (summer)	Flood-Resilient Urban Design and Nature-Based Solutions / Elective design II	ECTS: 5
	Type of studies: MSc in Arch.		Year: 2025/2026
Department of Urban Architecture and Waterscapes			
Seminars & assignments: 60 h Teacher: Dr. Sina Razzaghi Asl & additional teaching staff from Gdańsk Tech, Poland			
Brief description of the subject: This one-week intensive design workshop focuses on flood-risk reduction through Nature-based Solutions (NbS) in urban environments. The course aligns with the objectives of the ClimaGen, specifically the development of a flood-resilient green corridor along Heweliusza Street in Gdańsk.			
The course focuses on spatial diagnosis, permeability transformation, and section-based stormwater strategies. Students will apply architectural reasoning and visual analysis to evaluate how design interventions can reduce runoff and improve urban water retention. The course is linked to the CLIMAGEN Horizon project			
Objectives: <ul style="list-style-type: none"> To develop an understanding of urban flood risk as a spatial and design challenge in dense city environments. To equip students with tools for diagnosing flood vulnerability through site observation, permeability mapping, and sectional analysis. To introduce NbS as architectural and urban design strategies for stormwater management. To strengthen students' ability to transform impermeable urban streets into flood-resilient public spaces through spatial interventions. To foster the integration of water-sensitive design principles into architectural form, materiality, and landscape structure. To encourage critical thinking about climate adaptation in real urban contexts, aligned with the objectives of the ClimaGen project. 			
Block course from 20 June 2026 – till 27 June 2026 – 7 days			
Content of the course:			
<u>Seminars:</u>			
<i>Urban Flood Risk as a Spatial Problem</i> <ul style="list-style-type: none"> Climate change and extreme rainfall Flood vulnerability in dense European cities Street as hydrological surface 			
<i>Reading the City Through Water</i> <ul style="list-style-type: none"> Surface permeability and materiality Topography and flow direction Identifying accumulation zones and bottlenecks 			
<i>Nature-Based Solutions for Flood Mitigation</i> <ul style="list-style-type: none"> Bioswales and rain gardens Permeable pavements Tree trenches and infiltration strips Depressed green areas and retention spaces 			
<i>Water-Sensitive Urban Design (WSUD)</i> <ul style="list-style-type: none"> Integrating water management into public space Multi-functionality and spatial quality Design precedents from European cities 			
<u>Practice:</u> <ul style="list-style-type: none"> <i>Day 1, 20 June 2026– Site Diagnosis</i> Site visit and documentation Mapping hard vs. permeable surfaces Identification of flood-prone areas <i>Day 2, 21 June 2026– Analytical Drawings</i> 			



Street sections showing water flow logic
Mapping runoff paths
Identifying intervention zones

- *Day 3, 22 June 2026 – Concept Development*
Developing flood-resilient corridor strategies
Integrating NbS elements into spatial structure
- *Day 4, 23 June 2026 – Design Refinement*
Material strategy
Permeability transformation
Scenario testing (heavy rainfall event illustration)
- *Day 5, 24 June 2026 – Synthesis*
Master plan
Street sections
Flood-event scenario visualization
Public presentation and critique
- *Day 6-7, 25-26 June 2026 – Final Presentation*

Educational outcomes:

After completing the course, students will be able to:

- Identify and diagnose flood vulnerabilities in urban streets and public spaces.
- Analyze urban form, surface materials, and spatial configuration in relation to stormwater behavior.
- Apply Nature-based Solutions as spatial design strategies for flood mitigation.
- Integrate permeability, retention, and infiltration principles into architectural and urban proposals.
- Translate climate adaptation strategies into coherent design concepts supported by analytical diagrams and sections.
- Communicate flood-resilient design solutions clearly through professional architectural representation.

Prerequisites: Great willingness for multidisciplinary approaches, openness for research based, innovative sustainable design, advanced skills in using digital tools and ability of working in a digital environment

Assessment Methods and Criteria: Evaluation of the final study and task.

Study Materials: Reading List, excerpts of lectures, definitions etc. will be provided to students in digital format with respect to the topic of the seminars.