

Attachment to WP 1:

Evaluation of international examples of resilient reconstruction

<p>Disaster Refuge and Relief Urban Park System, Japan</p>	<p>Over the past 100 years, Japan has been exposed to several devastating earthquakes, which have triggered tsunamis and fires and claimed many lives. In response to these disasters, the principle of Disaster Prevention Parks was initiated in 1978 and has been continuously developed to this day - a systematic establishment of open space systems that function primarily as evacuation sites and routes, firebreaks and bases for recovery and reconstruction in the event of a disaster.</p> <p>The parks are equipped with disaster prevention facilities such as solar-powered lighting, seating that can be converted into ovens and water pumps. Helipads are located on sports fields and designated path networks in the parks are dimensioned so that emergency vehicles can drive on them and evacuation routes can be set up.</p> <p>In addition to disaster prevention, the Disaster Prevention Parks are intended to maintain a collective memory of the disruptive event and thus raise risk awareness in society through local evacuation drills or visits to disaster prevention facilities. The parks thus combine places for recreation and leisure activities with planning safety standards to establish multifunctionally effective places of refuge.</p>
<p>Helsinki Underground Masterplan</p>	<p>The development of the Underground Masterplan in Helsinki is characterized by the threat to Finland from the Soviet Union in the 20th century. Nuclear threats during the Cold War led to the creation of the first underground facilities and shelters, which have been continuously expanded in recent decades.</p> <p>Due to its geological properties, the city's underground is ideally suited for civil defence. The underground facilities are used for various purposes and can be quickly converted into shelters in the event of an emergency. These include a church, an indoor swimming pool, play and sports facilities and a museum. A further aspect is the traffic development by roads and subway railroad, which on the one hand lead to traffic calming above ground and on the other hand ensure underground networking of the infrastructure. The Underground Master Plan comprises the planning of the underground city, including the transportation systems and the associated 5,500 protective facilities. The master plan also includes measures to develop the geothermal energy supply. Geothermal energy and constant underground temperatures help to promote Helsinki's climate neutrality in the energy sector.</p>

	<p>With regard to security, there is a broad acceptance of the construction of bunker facilities in Helsinki as well as the participation of the population in national and regional civil defence courses, which illustrates the awareness of the increased threat situation since the Russian war of aggression against Ukraine.</p>
<p>Rotterdam Resilience Strategy</p>	<p>Climate change and its consequences for the city of Rotterdam are an important topic in urban development due to Rotterdam's location on the water and below sea level. Following various water management plans, the Rotterdam Climate Proof Programme was developed, which led to the Programme for Sustainability and Climate Change. In 2013, the 'Rotterdam Climate Change Adaptation Strategy' was developed with issues such as flood protection, accessibility and resilience.</p> <p>Rotterdam was one of the first participants in the Rockefeller Foundation's '100 Resilient Cities Programme', which was launched in 2013. The aim of this programme is to support cities around the world in becoming more resilient to the physical, social and economic challenges of the 21st century. It supports the participating cities with expertise and networks in the development and financing of a resilience strategy. By participating in the programme, the concept of resilience has been widely discussed in Rotterdam and topics such as cyber security and various social issues have been incorporated into the city's approach.</p>
<p>Stuttgart: Refugee Housing Strategy 2015</p>	<p>Decentralized accommodation of 8.000 refugees on 70 system buildings: systematized, open-system residential buildings with the same structure, max. 240 people/building and max. 3 buildings/location. Modular, convertible, deconstructible with a simple and temporary construction (within 11-13 weeks). The system buildings are complemented by parking spaces, bicycle parking, garbage boxes, stroller boxes, outdoor lighting, playground.</p> <p>It is an efficient system, because reusable. Diverse usages within the building provided. Flexible because of the modular system, the decentralized distribution and limited cluster of buildings to avoid "shelter-ghettos".</p>
<p>Munich: Refugee Housing Models in 2015</p>	<p>Decentralized accommodation of refugees, which is divided into four phases: (1) Central initial reception and registration; (2) Short-term reception for medical examination and distribution to other accommodation; (3) Immediate programme: Accommodation in lightweight halls, barracks / standard programme: Accommodation in fixed buildings / system buildings; (4) Accommodation in apartments in urban areas</p>

	<p>Example immediate program: 20 lightweight halls distributed throughout the city, in which different uses are integrated, limited to 2 years, internally divided by wooden modules (Max-Pröbstl-Straße).</p> <p>Example standard program: Modular buildings made of prefabricated wooden components that can be assembled quickly, are cost-effective and can be reused. A useful life of 7-10 years is intended.</p> <p>The modular design enables refugees to be accommodated quickly and flexibly. After short-term accommodation, the four-phase strategy enables the decentralized distribution of refugees and long-term integration into existing neighbourhoods (robustness).</p>
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