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Keynote Paper

Sustainable urbanization through underground development – towards an urban underground future

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ABSTRACT

Our globe is experiencing unprecedented growth in urban populations. The corresponding sprawl of existing urban areas and the explosion of new cities and urbanizing regions is occurring at rapid speed. Often infrastructure development cannot keep up while the resource land is being developed into urban sprawl. Efforts are going on in many cities and urbanizing regions to contain the sprawl and to densify in already built-up areas. At the same time, cities strive to create more open spaces and parks, especially in dense urban environments to improve or maintain or regain quality of life. The other side of the equation is the rise in natural hazards and the continuously increasing amount of people exposed to such. Making our cities more resilient is therefore a key necessity to avoid excessive damage through unpredictable natural disasters. The paper examines what the role of underground space is in that regard. Outlining the key elements for an effective and long-term use of the underground space, the authors present showcases, demonstrating to what extent underground facilities contribute to the sustainable development of urban areas

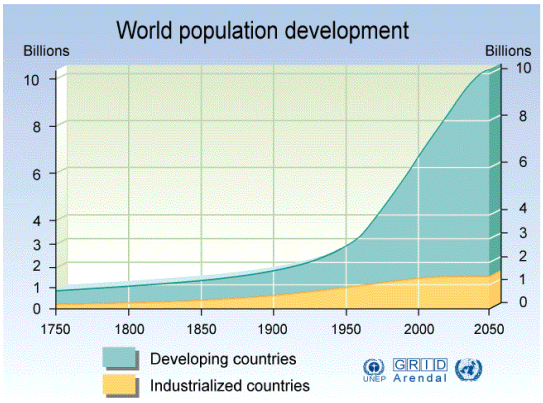

Fig. 1 World population development 1750-2050

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