Copenhagen, Monday, January 12, 2015

Søren Degn Eskesen: "Using the underground can assist in reducing the carbon foot print and create flood protection"

Questions to the President of the International Tunneling and underground space Association

The effects of climate change are nowadays widely visible throughout the world: river floods and marine submersions notably, are increasing tenfold. Regarding these phenomena, quite dangerous for populations and buildings, what solutions could underground infrastructures provide?

Søren Degn Eskesen: Cities around the world are challenged by rapid urbanisation, climate change and the need to become more resilient. ITA believes that underground space in urban areas can be used for meeting many challenges cities face. If done in a planned manner, the development of underground space can contribute to sustainable development of urban areas including helping them adapt to climate change effects.

The solution falls in two categories. Firstly using the underground can assist in reducing the carbon foot print that big cities today recreate. There are several options for this – by changing the transport into underground transport system using resilience energy such as metro system based on non-carbon energy and also by changing energy production into green energy such as hydro power of which the use of the underground is an integral part in providing tunnels for water transport and underground caverns for the power house.
Secondly solutions using the underground may be to create flood protection for the cities by providing tunnels for flood control either by diverting the flood water through tunnels instead of surface river which will be over flowing or by creating underground storage facilities for retention of the water during a flood. Such solutions have been used in several cities amongst other Buenos Aires in Argentina

Are Governments fully aware of the underground infrastructures' potential, in terms of populations and buildings' protection? Is there a growing awareness among the international community in that matter?

S.E: ITA has for some years been reaching out to decision makers and urban planners to promote the use of the underground space. During our annual World Tunnel Conferences held in the period 2011 to 2013 in Helsinki, Bangkok and Geneva we have organised open sessions where the subject has been the use of the underground in a changing world.

Cities everywhere are under pressure to support their growing populations, and meet their future energy and transportation needs, in far more sustainable ways. Decision makers and organisations are now talking about underground space and how to include the underground in the city planning to make the cities resilient. We as ITA support them and we are being acknowledged and being invited to activities driven by the UN global agendas. ITA was named as one of the partners in the Expert Group on Urban Drainage, set up by UN Habitat. An excellent example of this is the SMART project in Kuala Lumpur.

The UN Habitat has recently identified five basic principles on Urban Drainage and one of the five is that "Effective use of tunnelling and the underground space is appropriate where required". Tunnelling and Underground Space is now becoming part of the UN policy. So yes the international community are aware of the matter. This is only a first step, but it is significant and it does show our work in ITA is achieving what we are set out to do.

ITA AITES participated in the last September New York Climate Summit. Has ITA succeeded in rising awareness among governments' representatives about the solutions it proposes to mitigate the impacts of disturbed weather?

S.E: ITA was represented by the Chair of our Committee on Underground Space Han Admiral and myself at the UN Climate Summit in New York in September 2014. At the historic meeting many governments and organisations pledged their alliance combatting climate change. From this moment on, it became clear that investors were increasingly backing green projects geared towards a low carbon economy. This is caused by three reasons outlined by the speakers. Firstly it became clear that no longer is there any doubt as to the fact that climate change is changing our world and that it is being caused by human activity. Secondly that the costs of not doing anything are now outweighing the costs of doing something. The third is that governments alone are not going to change anything and involvement of the private sector is needed. That involvement is not about individual companies, but about companies willing to act together based on a common interest and on the simple fact that if they don't act now, there soon will be no world left.

In the closing session UN Secretary General Ban Ki-moom announced a Global Geothermal Alliance in the field of Energy, which made it clear that ITA's efforts to develop underground space in a planned manner needs to continue. Other fields that ITA shall remain focussed on are Transportation and Cities. The reduction of carbon emissions and transitioning to a low carbon economy are vital and can be delivered through these fields. Tunnelling and Underground Space can play an important role in delivering solutions in these areas.

The participants acknowledged that underground space can contribute to numerous urban challenges and they now acknowledge the ITA as a global leader on tunnelling and underground space.

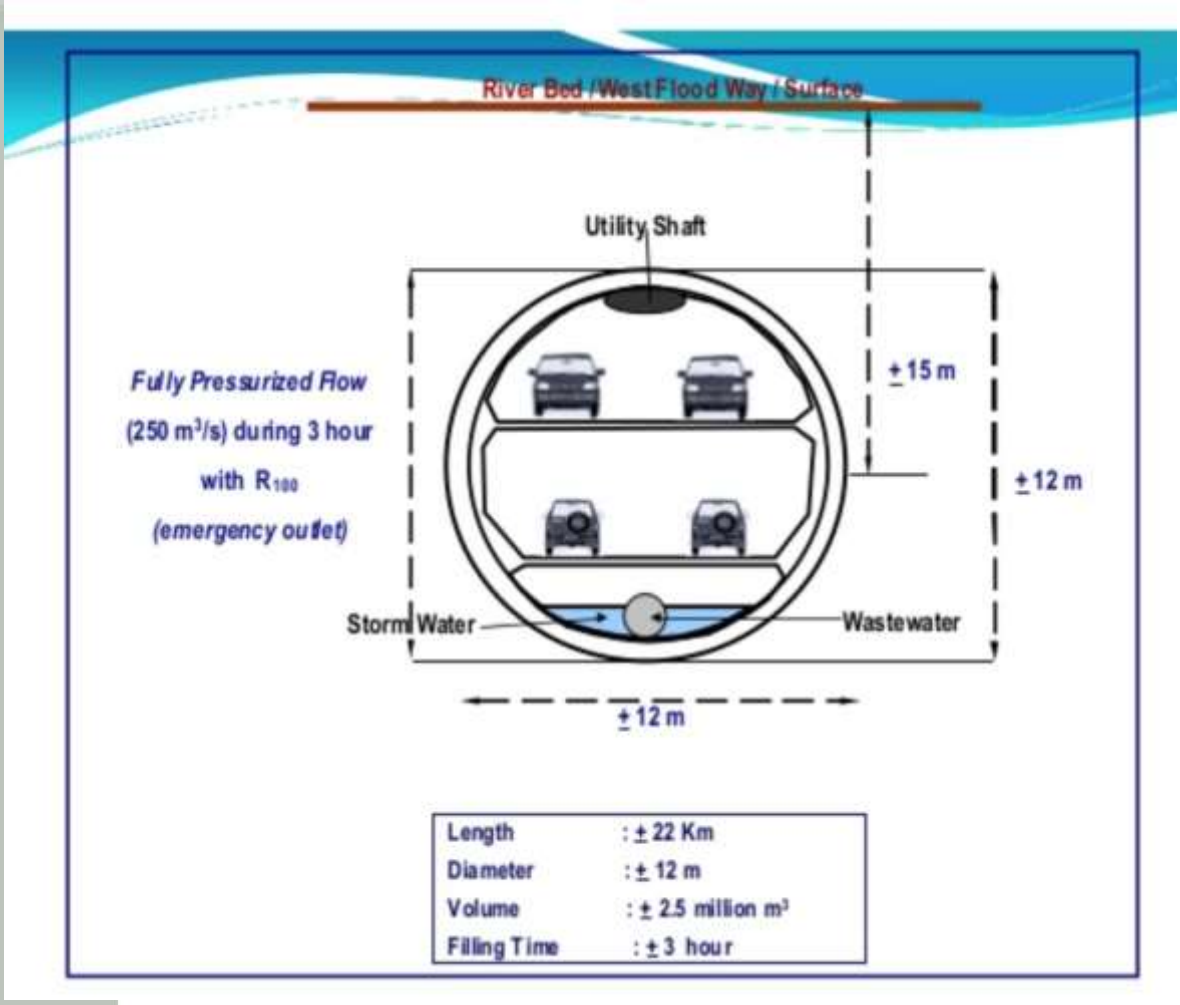
Floods and submersions are likely to increase both in number and strength within the next few years. How and with what kind of scientific and technical arguments can your industry foster greater States' investments in underground infrastructures to limit their devastating effects?

S.E: Our industry has solutions for flood control by diverting water into tunnels to avoid floods at the surface. We have proven the solutions exist already from a number of projects. We need to spread the message across and to inform that it is cheaper, safer and resilient to provide the solutions prior to the disaster occurring. We need to convince states and government to invest to avoid the disasters. The capital is better spent on investment for disaster risk reduction rather than spending a similar amount or more in rebuilding the cities after a disaster such as flooding.

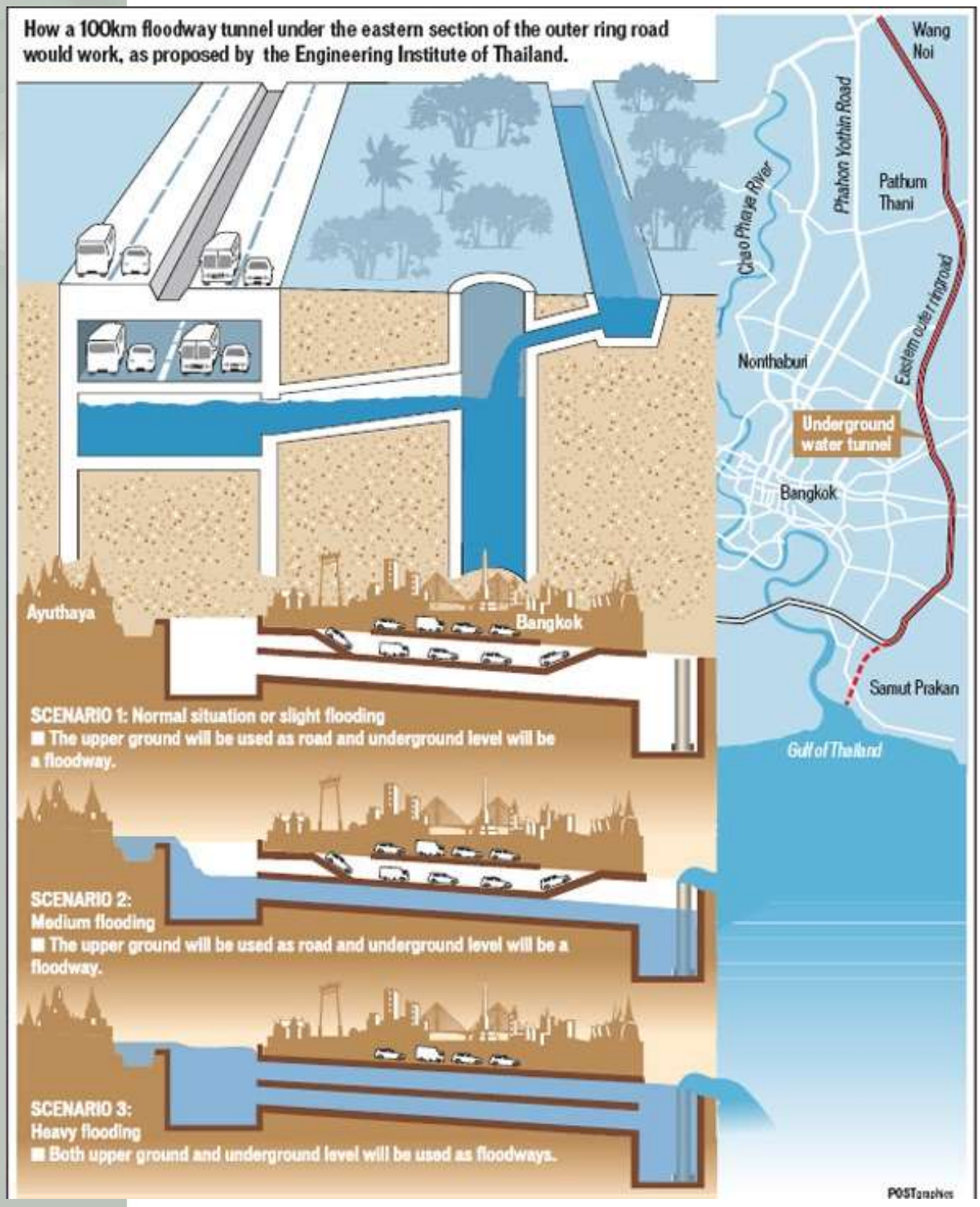
Cities everywhere are under pressure to support their growing populations, and meet their future energy and transportation needs, in far more sustainable ways in order to reduce the carbon footprint and the climate change effect. Moving people efficiently is critical to the liveability and economic success of cities. Success depends on how well cities utilize their underground, because what happens below greatly enhances what is possible above. By investing in the underground you create room at the surface to develop the city into an economic powerhouse.

Currently, are there any significant ongoing construction sites aiming at reinforcing the security of populations and goods located in flood-prone areas? If any, which ones?

S.E: South East Asia is probably the area of the world where the risk of flooding is the most important. In Jakarta, capital city of Indonesia, flooding is nowadays occurring too often. Several projects to cope with immediate remediation like the tunnel that will connect the Ciliwung River in Bidaracina, in East Jakarta, with Jakarta's East Flood Canal, East Jakarta. But for the long term an important project is the Jakarta multi purpose tunnel, based on the example of the Kula Lumpur SMART tunnel.



After the mega flood that occurs during the fall 2011 in Bangkok, the Bangkok Metropolitan Administration (BMA) as well as the ITA Member Nation in Thailand (TUTG) proposed various solutions including tunnels to prevent such flooding. TUTG proposed the construction of a long tunnel multi-purpose from North of the capital city to the sea and BMA is reinforcing its network of drainage tunnels. The construction of such a tunnel began few weeks ago. It will be a 6.4 km long tunnel and 5 m diameter.



Other projects exist in various countries and parts of the world. Even in my hometown Copenhagen, the capital of Denmark, we are considering to build a tunnel which will serve as a combination of a drainage tunnel and a six lane road. At the moment the heavy congested road is at the surface following the alignment of a previous river which now runs in drainage pipes. By moving the road underground and combine it with a drainage tunnel to control heavy rainfall we will free the surface area and make room for reinstating the river at surface area and create a recreation area to the benefit of the inhabitants of the city.

In 2015, Paris will welcome the World Climate Conference, an occasion to put climate disorders at the heart of discussions. What are the key messages ITA AITES plans to convey at the summit?

S.E: During our work with the UN Habitat we inform about the role underground space can play in urban drainage and disaster risk reduction. We are now part of a process that wants to bring together cities and private partners to really start projects that will do this. No more concepts, the real thing and especially in those fast growing cities that need it but have never considered it. We are challenged to come up with solutions to solve the challenges these cities have, in amongst other, drainage and flood control.

The benefits of the urban decision we make today will be valued by generations to come, exactly in the same way as we in our older cities see the benefit of the investment our grandfathers made such as building underground metro systems in cities like Paris, London, New York etc. Today's urban population are still benefitting in their daily life from the investments made more than 100 years ago.

ITA have never before been so close to getting the attention of the world and ensuring that tunnelling and underground space are seen as vital to meeting the biggest challenges this world has ever faced. We are committed and ITA will show leadership to carry the solutions through.

The International Tunnelling and Underground Space Association (ITA) is a non -profit and non-governmental international organization, which aims at promoting the use of underground space as a solution to sustainable development. Founded in 1974 and operating out of Lausanne, Switzerland, ITA currently associates 71 Member Nations, 200 affiliated members, 15 Prime Sponsors and 50 supporters.

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