

PRESENTATION TITLE

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Forum topics	<input type="checkbox"/> Energy in 21st Century	<input type="checkbox"/> Cultural Heritage in Digital World
	<input type="checkbox"/> Engineering Capacity Building	<input type="checkbox"/> Disaster Risk Management & Governance for Resilient Communities
	<input checked="" type="checkbox"/> Construction 4.0	<input type="checkbox"/> Facility & Asset Management, BIM Lifecycle

Abstract: (up to 250 words: for each heading use the bullet points or narrative - the submission including graphics should not exceed one page)

Problems - Issues / Challenges-Needs	<p>As the 3rd largest city in central Poland Łódź is supposed to be transformed a modern center for trade and economy, business services, culture and fashion. A main item to achieve this is the establishment of an efficient infrastructure with modern means of transport.</p> <p>The Design & Build – Project of Tunnel connecting three main stations Łódź Fabryczna, Łódź Kaliska and Łódź Żabieniec has been awarded to a Join Venture composed of Energopol Szczecin S.A. (leader) and PDBiM Sp. z o.o. in December 2017. It contains the “ready to use” construction of the underground tunnel with a total length of 1 x fi 12,7 x 2,6 km and 1 fi 8,5 x 3,6 km tunneling, 2 intermediate stations, switching areas as well as cross passengers and emergency exit shafts. Driven by the need to have a working public transportation system in place with future adjustment of the line for construction High Speed Railway in 2022, the time frame for the project was – and still is – very tight.</p>
Solutions - Methods / Results - Findings	<p>The 6,2 km of tunneling in center of City of Łódź will be realized with 2 EPB machines simultaneously and will be completed in only 18 months. In additions 10 cross passages/exits will be build as well as all the shafts and intermediate stations. In this contribution the overcoming of some of the many changes delivering a world class urban tunneling project is described emphasizing topics such as design issues (dense historic city buildings, low overburden, difficult ground & water conditions, connection with brand new railway Station Łódź Fabryczna) , TBM selection and performance (big 13,0 m diameter of the shield), logistic concepts (narrow streets, city center), interface management and health & safety.</p>
Novelty - Value / Relevance to ...	<p>The project is the biggest investment of Polish National Railways in history and at the same time the first tunneling project with usage of TBM EPB machine for conventional railway in Poland.</p> <p>Project is key project for fast railway connection of the most important cities in Poland – Łódź and Warsaw. Simultaneously the tunnel will play very important role in agglomeration and public transport.</p>
Forum statement	...

Keywords: (up to 5 keywords)

tunnel, railway, geotechnics, TBM,

Graphics: (please use the gray area below for *representative graphics* or *graphical summary*: select the gray area below and paste your graphics)

