Prof. Dr. Thomas Bock

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"BauRoboterBau", "SpaceRobotSpace"

He will talk on robotic construction and the robotic ambience. First the robot builds the space then the space becomes a robot or transformer or "robot habitation".

The first stationary robotics and automation systems for prefabrication of houses had been developed based on the doctor thesis for Kazuhiko Ohno under the guidance of Yositika Utida at the University of Tokyo in the 1960 ies. Companies like Sekisui, Misawa, Panahome and even Toyota started large scale modular prefabrication.

The first construction robots had been developped in Japan about 40 years ago. 31 years ago the first prototype of an automated and robotic building construction systeme had been tested in Etchu Jima in Tokyo and in 1992 the first integrated robotic construction site was working in Nagoya.

All in all about 500 single task robots and integrated robotic and automated construction sites had been developed, tested and applied. The most recent ones are the interior finishing robots by tmsuk for Sekisui house and the Shimizu Smart Site for a hotel in Osaka early this year.

Due to the demographic challenge various service robots had and are being developed for supporting independent live of elderly. Complementary to those single task service robots he develops and implements the notion of ambient integrated robotics (like the title of his upcoming 5th volume of the "construction robotics" book series for Cambridge University press).
This "robotic ambience or space/furniture" is inspired by ninja or karakuri yashiki, edo no gekicho, hojoki by kamo no chomei, gattai, gundam and space station, aircraft cockpit, business or first class seat design.

CV

Thomas Bock is a professor of building realization and robotics at Technische Universität München (TUM). He completed his education in architecture at Stuttgart University in Germany, in engineering at IIT in Chicago as a Fulbright Scholar and in construction automation and robotics at University of Tokyo in Japan. He spent 10 years abroad mostly in the EU, USA and Japan. He holds a US FAA commercial pilot license with IFR and MEL ratings. Professionally he worked in the prefabrication industry for precast concrete elements in Germany and Iran, designed and built in Germany, Spain and Costa Rica. Academically, for over 35 years, he focuses on automation and robotics in building construction, from planning, prefabrication, on site production and utilization to reorganization and building deconstruction phases. He started the national French commission "robotique en BTP" in 1989 as "poste rouge" employee at CNRS, was involved in the development of 50+ robotic systems for stationary production of modules made in concrete-masonry- timber- steel, on site robotic systems, automated construction and deconstruction sites and mechatronic building subsystems for daily life/work support. He is a member of several boards of directors of international associations and several

international academies in Europe, the Americas and Asia. He has consulted to several international ministries and evaluates research projects for various international funding institutions. He holds a honorary doctor, multi honorary professorships, is a distinguished fellow of the university of Tokyo and visiting /special apointed professorships. Professor Bock serves on several editorial boards, heads various working commissions and groups of international research organizations, authored and co-authored 500 articles and the world wide first five-volume Construction Robotics book series through Cambridge University Press.