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The Marcus Wallenberg Foundation proudly announces that the 2010 Marcus Wallenberg Prize is awarded to Professor Hans Joachim Blass, Karlsruhe Institute of Technology (KIT), Germany, for his path breaking work regarding innovative and reliable structural timber connections which have high load transfer capacity and can be efficiently applied at construction sites and within industrial processes.

Wood as a construction material offers several important environmental benefits. It is renewable, it stores carbon that has been sequestered from carbon dioxide in the atmosphere, it provides excellent opportunities for reuse and, when recycled, it serves as a carbon neutral source of energy.

The competitiveness of timber as a building material depends on the properties of the wood components themselves but to a large extent also on connections between components. In engineered wood structures, the capability of connections to transfer loads is commonly a limiting factor. The anisotropic nature of wood – with significantly weaker mechanical properties across the grain compared to along the grain direction – makes design and modelling of load bearing capacity of connections complicated. This has been a constraint to the use of wood in general and, in particular, for larger constructions like bridges, big stores, sports arenas, agricultural buildings, industrial buildings and spectacular official buildings.

Professor Blass has by extensive research provided fundamental engineering knowledge on timber connections and converted this knowledge to usable format for practising engineers based on principles of mechanics. He has also developed methods for designing connectors and connections and played an important role in the international standardization of these methods.

Professor Blass has pioneered the application of self-tapping screws in timber constructions, promoting the manufacturing of very large screw dimensions and developing and introducing these connections for high load applications. This work has led to much simplified methods for repairing damaged beams and reinforcing new ones.

The development and introduction of efficient connections which are easy to install make it possible to construct large timber structures and save timber material while offering attractive logistic solutions by use of prefabricated elements.

The developments made by Prof. Blass have been of importance for the increased use of larger wood based construction elements like glulam, which in Europe has increased in use by more than four times since the mid 1990s. They have also contributed to the significant increase in the timber frame market share of new housing, which e.g. in UK has more than doubled over the last decade.

Professor Hans Joachim Blass

Professor Blass was born in 1955. He took his PhD in 1987 at the faculty of Civil and Geodesic Engineering at Karlsruhe University. After employment at Karlsruhe University, Germany, Forintek Canada Corp., Canada, and TNO Building Research, Delft, The Netherlands, he was appointed Professor for Timber Structures at Delft University of Technology, Delft, The Netherlands. Since 1995 he has been Professor of Timber Engineering at Karlsruhe Institute of Technology, KIT (founded on 1 October 2009 through the merger between the Karlsruhe Research Centre and Karlsruhe University), and Director of its Material Testing Institute for Steel, Timber and Masonry (Versuchsanstalt für Stahl, Holz und Steine). Besides his academic career, Professor Blass is actively involved in the standardization work on timber structures and in knowledge transfer of challenging timber structures both within Europe and outside. Professor Blass is partner in Blass & Eberhart Consulting Engineers, Karlsruhe, Germany.

Prize Ceremony and Symposium
The Prize will be presented by His Majesty, The King of Sweden, at a ceremony in Stockholm on 27 September, 2010. On 28 September, a symposium around the subject of the Prize-winning research and its impact on the forest and forest products industries will be arranged.

For more information, please contact

Mr. Per G. Broman, The Marcus Wallenberg Foundation, Executive Secretary
Mobile +46-(0)70-5776993, Fax +46-(0)23-711581.