

York Timbers and UP sign agreement for sustainable wood-based bio-economy

By the University of Pretoria

Forestry company York Timbers, the largest solid wood processor in South Africa, has signed a funding agreement with the University of Pretoria (UP) to establish a Chair in data-driven wood structural engineering to promote a more sustainable built environment and the African bio-economy.

This initiative will be based at UP's new Engineering 4.0 facility, which is part of the new Innovation Africa@UP development (formerly known as the Hatfield Experimental Farm) in Hillcrest. "This is a strategic partnership to establish a trans-disciplinary research programme that is focused on the entire innovation chain, from genome-based breeding to the structural engineering of advanced engineered wood products within the context of a sustainable, timber-based built environment and the wood-based bio-economy in South Africa," says Professor Zander Myburg, Chair in Forest Genomics and Biotechnology at the Forestry and Agricultural Biotechnology Institute (FABI) at UP.

UP's Departments of Civil Engineering, Architecture, Computer Science, Chemical Engineering, Biochemistry, Genetics and Microbiology, as well as FABI, the Graduate School of Technology Management, and Innovation Africa@UP will be involved in this programme.

Prof Wynand Steyn, Head of UP's Department of Civil Engineering, explained that South Africa has to develop the appropriate engineering, safety and building codes for its own engineered wood products to stimulate a new construction industry based on this technology. "Most of South Africa's softwood timber is still used for low-value roof trussing, and, compared to wood from northern hemisphere timber-producing countries, is perceived to be of lower grade due to the faster growth of our pine plantations." However, with new engineered wood technology, high-value wood construction products can be produced from local pine plantations.

"South Africa must take an integrative approach to train wood structural and chemical engineers, architects, data scientists, geneticists, breeders and forest scientists who can take a holistic approach to the development of a new, sustainable wood-based bio-economy," says Prof Anton Ströh, Vice-Principal for Institutional Planning and Acting Vice-Principal for Research and Postgraduate Education at UP.

The Chair aims to address these challenges through funding for strategic academic appointments, and postdoctoral and postgraduate student projects from participating departments and institutes at UP.

"York's vision is to become the leading integrated timber processor in Southern Africa and to pioneer the application of engineered wood products as sustainable building materials in Africa," says CEO of York Timbers Piet van Zyl. "Timber has vast benefits, as it is a sustainable resource, is carbon-positive, sustains rural development, and is structurally and architecturally attractive." Wood properties are unique and almost impossible to replicate with any other building materials. With the development of engineered timber, wood is an eco-friendly alternative.

"We are committed to stimulating the development of a sustainable, mass timber construction industry in South Africa based on advanced engineered wood products from locally grown forest plantations." Van Zyl adds. "York's partnership with the University of Pretoria is to develop



Prof Tawana Kupe signs a Memorandum of Understanding with York Timber.

research excellence in timber improvement, engineering and design, and promote the use of engineered wood products as sustainable building materials in Africa."

The collaboration with UP is of critical importance to ensure that York's integrated vision for mass timber construction "from genetics to product" is realised.

UP Vice-Chancellor and Principal Professor Tawana Kupe welcomed the partnership. "The Chair will contribute to academic excellence in Innovation Africa@UP by helping to create a vibrant community of students, researchers, engineers, technopreneurs and local community members working together on innovations and bio-based products for the African bio-economy," he says. "This Chair will also benefit from the proximity to UP's new Future Africa development, which provides a dynamic living, learning and research environment where a community of scholars and other societal role players engage to advance excellence in scholarship, dialogue and impact."

The University of Pretoria (UP) is one of the largest contact and residential universities in South Africa, with its administration offices located on the Hatfield Campus, Pretoria. This 112-year-old institution is also the largest producer of research in South Africa. UP launched the Future Africa Campus in March 2019 as a hub for inter- and transdisciplinary research networks within UP and the global research community to maximise 4IR innovation and address the challenges and stresses our continent and world is facing. In addition, UP also launched the Javett Art Centre in September 2019 as a driver of transdisciplinary research development between the Humanities and other faculties. In 2020 UP will launch Engineering 4.0. as a hub not only for Smart Cities and Transport, but also to link the vast resources in technology and data sciences to other faculties via Future Africa. These initiatives are stimulating new thinking at the frontier of 'science for transformation'. 