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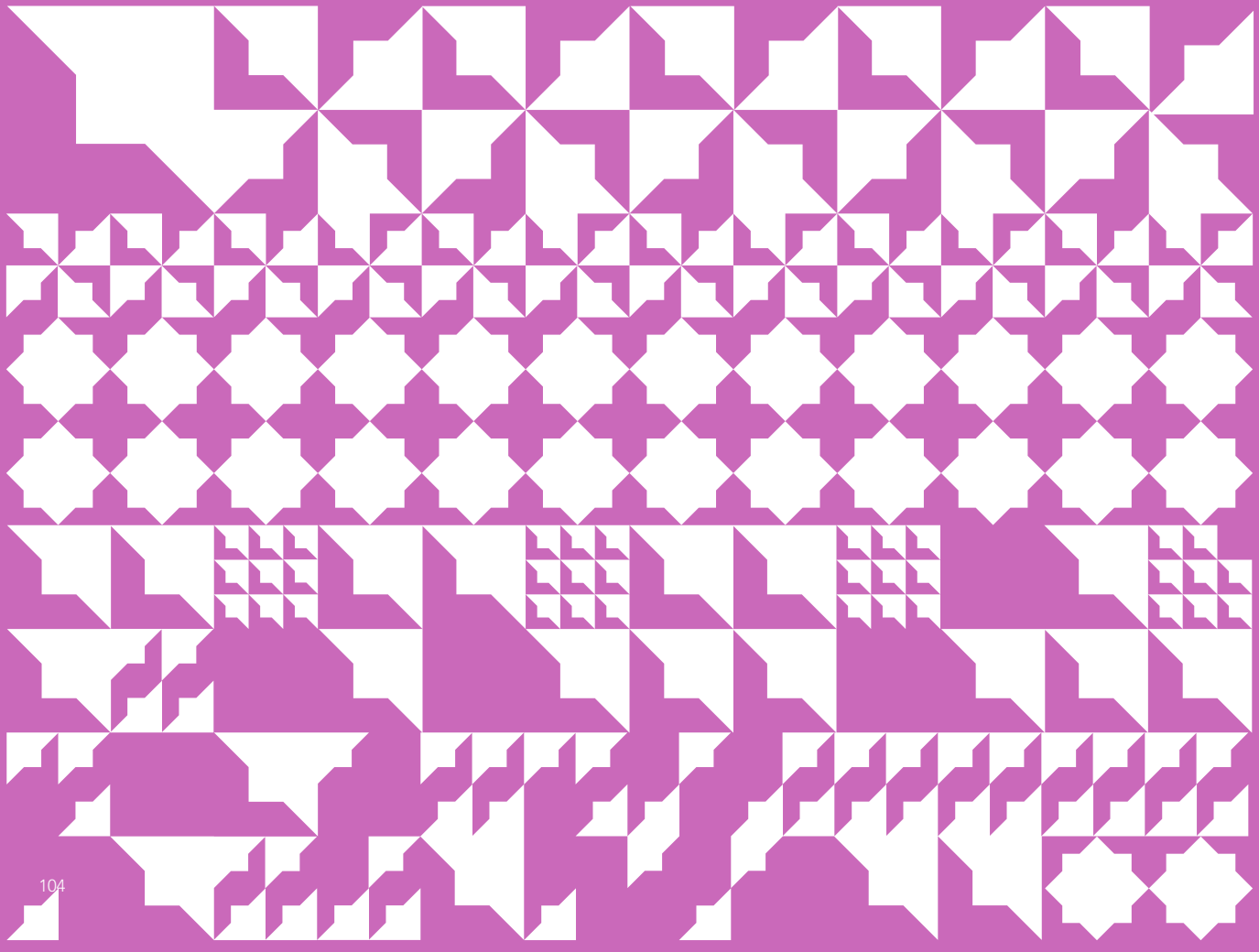
DOSSIER TRANSLATIONS

Wood, eternal youth

Guest editor: Mikel Landa



Introduction

Mikel Landa

From the simplest imaginable structure – a tree trunk placed between two rocks to save the span between them –, to the 100 m high two pagodas of Todai-Ji in Nara – that have remained standing for over four centuries since their construction in the year 740 DC –, wood has shown its structural qualities and the versatility it offers in order to create architecture. Its richness of techniques and capacity to adapt to the culture and climate environment have given place to varied architectures like the Norwegian Stavkirke, the churches of Chiloé, the quincha architecture in Perú, the churches of the Carpathian Mountains, the unique timber churches of the Basque country or the light geodesic structures of the Nomads in Ethyopia, Mongolia or Canada. These are just a few examples of an architectural richness that covers practically all the temporary and spatial axis in the global human constructive activity.

The ways of joining wood have defined the possibilities of architecture. Thus, the development of knots, nails and assemblies has implied an evolution of structural technologies. Philibert De l'Orme established, already in the 15th Century, the basis of a prefabricated system for the construction of timber vaults and domes. In 1906, Otto Hetzer created glued laminated timber just as we know it today, giving place to large structures and a new impetus to timber construction.

Nowadays, we witness a revolution of timber construction thanks to the development, in laboratories, of new technologically advanced materials derived from it, such as LVL, LSL or CLT. At the same time, we see another revolution, related to the arrival of digital systems, which affects the processes of design as well as fabrication, bringing them closer to each other until the intermediate steps between study and factory are eliminated. Wood, its derived products and the processes of fabrication have shown the ability to adapt especially to this digital revolution, placing such an ancestral material at the avant-garde once again.

Consequently, the editorial proposal consists of presenting in this number of Materia Arquitectura *a tour that relates the past with the present, tradition with avant-garde, popular with scientific knowledge, all of which is expressed in its title: wood, eternal youth.*

Showing an historical example of prefabrication, Enrique Nuere explains how Castillian carpenters created a way of building and prefabricating ceilings of complex geometry, like the interlaced carpentry, thanks to the unfolding of hip rafters and the use of carpentry squares (which are still used in the construction of light carpentry lace in North America). Ernst Zürcher, from his laboratory, shows the relationship between traditional knowledge of wood with scientific certainty at the basis of present technology.

While Blanca Juanes analizes an emblematic work of the 20th Century, Charles Moore´s Sea Ranch *and his new language through the use of wood, Horacio Torrent places Chilean architecture of the recent change of century at the same temporary axis, enhancing its propositive wealth, influenced by the possibilities provided by a material that has been and is a protagonist in Chile.*

Back in the laboratory, Pierre Blanchet revises some of the latest technologies and biomaterials derived from wood and the advantages for the future of architecture. Based on these materials and on their capacity to store carbon, Michael Green relates the future of housing in the world and the fulfillment of environmental objectives with the possibilities that wood offers for the construction of high-rise buildings.

Finally, the interview of this issue shows the innovative view of Shigeru Ban as well as his mastery of digital structures and technologies. The intensive use he makes of wood and his prominence in the introduction of paper as a structural material show his genius and the topicality and validity of wood.

We are about to match the achievements of Japanese carpenters of the eighth century. We will undoubtedly achieve that. The ceiling is higher.