

Contemporary Slovenian Timber constructions: an architectural design approach

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The presentation will cover a wide range of traditional and modern timber constructions in Alps region with emphasis on questions concerning the maintenance of the quality of life and the identity of cities. Recent developments, such as advanced modular housing units, bridge constructions and multy-storey buildings will also be introduced. Most notable examples of recent timber architecture involving various building types in Slovenia will be illustrated. The successful combination of a regional building style of sophisticated simplicity with sustainable construction methods has made the Slovenian architecture region famous.

The aspect of sustainability is one of the key elements of development today, and therefore, timber building offers particularly strong possibilities. In particular, the regulation of Green Public Procurement, which aims to reduce the negative environmental impact. In promoting greater use of wood we should not forget the modern principles such as forest management certification, labeling (FSC, PEFC), renewable wood, use wood in sustainable way, principle of «Cradle to grave» and «C2C-Cradle to cradle» and popular 3R principles «Reduce, Reuse, Recycle».

The dominating methods of timber construction in Slovenia include a timber-frame construction, balloon and massive construction (Fig. 1).



Figure 1: Panel construction, Wood frame construction, Solid wood construction

Currently, most Slovenian companies offer houses with timber-frame construction. Timber panel construction has had its own production in Slovenia for more than 35 years. Over the past thirty years, timber construction has undergone major changes. The most important are the following introduced changes: transition from on-site construction to prefabrication in a factory, transition from elementary measures to modular building and development from a single-panel to a macro-panel wall prefabricated panel system. All of these greatly improve the speed of building.

Built architectural structures from Slovenia, which represent many different types of buildings that all share a common constructional material – wood, will be introduced. It highlights the importance of architectural design in different building types: residential buildings, office buildings, commercial buildings, industrial buildings, buildings for education, religious buildings, urban/landscape design, touristic facilities, etc. Common parameters for all case studies are:

- Key figures: location, building year, architect,
- Construction: construction company, construction time, construction description,
- Energy performance: energy class, operational energy use and house technique.

The book introduces 57 residential and public structures that are examples of buildings with a high degree of prefabrication, sustainability awareness, are references to nature, and can adapt to different individual situations due to their flexibility. Several selected buildings will be presented in this presentation.

The Section of Slovenian Manufacturers of Prefabricated Houses, which currently includes manufacturers, namely Jelovica hiše d.o.o., Kager hiša d.o.o., Lumar IG d.o.o., Marleshiše Maribor d.o.o., Rihter d.o.o., and Riko hiše d.o.o., was established in 1999 and is part of the Association of Wood and Furniture Industries at the Slovenian Chamber of Commerce and Industry. Its main functions are:

- Organizing promotional activities to promote and advance prefabricated timber construction systems (publishing promotional materials, joint appearances at fairs, and website development);
- Collaborating with research institutions and business partners in all areas of development that seek to promote and develop timber construction; assuming an active role in adopting construction legislation; carrying out activities to promote incentives for the construction of energy-efficient structures;
- Active engagement in drafting legislation on timber construction;
- Protecting consumers against poor quality: only manufacturers that hold quality certificates accorded by renowned independent institutions may join the Section of Slovenian Manufacturers of Prefabricated Houses. www.splms.si/

Carpenters' Committee | The year 1984 saw the creation of the Wood Section at the Chamber of Craft and Small Business of Slovenia, which now has 2,450 members. Its Carpenters' Committee was established in 1996. Since the inception, the Committee has been steered by Jože Kregar, a construction engineer. The Committee members represent 490 Slovenian carpenters. They meet at monthly sessions to discuss pressing issues. Each year, the Committee organizes several training courses for its members. These feature Slovenian and foreign experts in construction, wood science, IT, and related legislation. The Committee is also involved in vocational education and helps organize and conduct master craftsman exams that are carried out under the auspices of the Chamber of Craft and Small Business of Slovenia.

Furthermore, the Committee proposes the prices of carpentry services. Certain members have even completed required training and obtained the status of court-appointed expert and appraiser for the carpentry industry.

More: Contemporary Slovenian Timber Architecture for Sustainability*

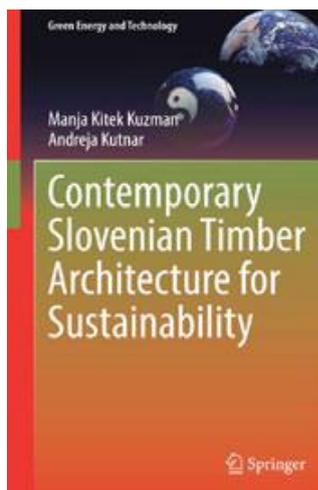
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*This work, Contemporary Slovenian Timber Architecture for Sustainability, was chosen as an example of good practice and an innovative approach to promoting forestry and wood-based industries through top-grade timber architectural designs, minimizing environmental impact and highlighting the role of the wood-based industries in attaining the EU objectives of sustainable development and low-carbon bio-economy. Published only recently, the volume has already won international acclaim. At the invitation of the InnoWood organization, the volume was presented at the Forest-Based Innovation and Research Needs for Reaping the Potential of Sustainable Habitats for Strengthening Europe's Low-Carbon Bio-Economy congress, which was held at the Forestry House in Brussels on 24 September 2014.

From the authors

We are excited to present Contemporary Slovenian Timber Architecture to you, as France played an important role in Slovenian history. ¹

In our roles, an architect and a wood scientist, we feel strongly that developments in wood products and timber construction will shape the future of sustainable development. Wood is an abundantly available renewable resource, in Slovenia and many areas of the world. In order to use this resource more effectively we have prepared a book "Contemporary Slovenian Timber Architecture for Sustainability" published by Springer International Publishing AG in a Series Green Energy and Technology to help promote interest and collaboration between other architects and scientists who seek to work in sustainable development. Many new environmentally sound technologies, processes and products are in development or will soon be entering the market. We present a selection of these developments, along with many aspects of sustainable building as well as current wood use in both residential and non-residential buildings.

While the case studies we present are Slovenian, they represent both European and global trends. The Slovenian climate is varied, and the building techniques used to adapt to the demands of those climates are many. The case studies selected present a distinctly Slovenian perspective, but are also examples of the best practices in sustainable building.

The topics presented range from green building developments to national and international legal frameworks that impact sustainable development and wood use, from Slovenian forests to developing architectural design paradigms.

It is our goal to promote a deeper understanding of sustainable development both in residential and non-residential buildings. Furthermore, we hope that goal is reached by promoting cooperation and collaboration between scientists, universities, architects and other designers, as well as construction professionals and the legislators developing the sustainability governance.

¹Between 1809 and 1813 Napoleon created six 'Illyrian Provinces' from Slovenian and Croatian regions and made Ljubljana the capital. Napoleon proved a popular conqueror as his relatively liberal regime de-Germanised the education system. Slovene was taught in schools for the first time, leading to a blossoming of national consciousness. In tribute, Ljubljana still has a French Revolution Sq (Trg Francoske Revolucije) with a column bearing a likeness of the French emperor.