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ECOTECH 29 • June 2012 New timber architecture in Vorarlberg
A supermarket converted to offices • Alternative Technology at 40



Tradition meets technology: timber architecture in Vorarlberg

Oliver Lowenstein visits Austria's Vorarlberg region, where architects are updating traditional timber construction methods to apply across a wide range of building types and sizes.

Architectural traffic between the UK and Austria's Vorarlberg is slowly increasing, prompted by the region's appealing marriage of low-tech timber architecture and severe Miesian-modern forms. A number of the UK's sustainability-oriented practices, as well as staff and students from a number of architecture schools, have made study visits, even if, according to one long-in-the-tooth local architectural promoter, 'they always visit the same, obvious buildings'.

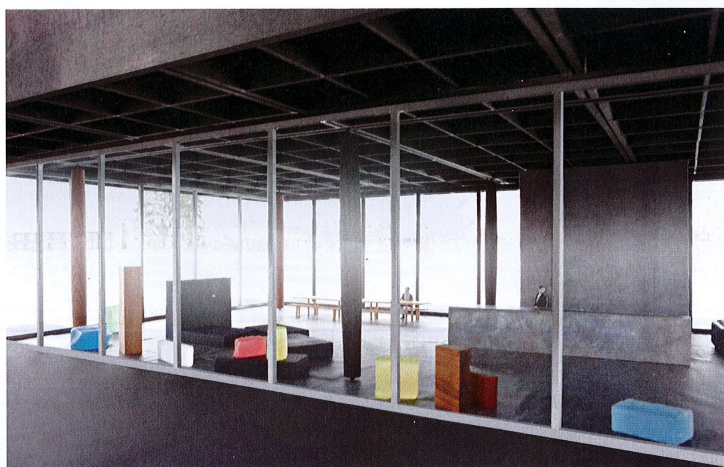
Vorarlberg has a holistic, closed-loop approach to building. Local municipalities tend to fund directly public projects such as community centres, fire stations, kindergartens and art and music centres, and these are often constructed with timber from forests owned by the very same communities that the buildings will serve. Since Passivhaus

standards became legally binding for all public buildings from January 2009, they are also constructed to rigorous eco-standards. Visitors may have taken in well-known projects such as Hermann Kaufmann's Ludesch Community Centre, Cukrowicz Nachbaur's Hittisau fire station and culture centre and Dietrich Untertrifaller's pioneering Passivhaus secondary school in Klaus. In so doing, they may have journeyed through Vorarlberg's scenic Bregenzerwald, passing timber yards stacked high with glulam and cross-laminated-timber (CLT), and the many small carpentry firms that are central to the region's building culture. On a recent visit, which took in the biennial Tri-Symposium on energy-efficient building in Bregenz, two new paths were apparent in Vorarlberg's architectural journey.



Above/left Life Cycle Tower One, Dornbirn, is designed by Hermann Kaufmann and engineered by Arup. The eight-storey building, constructed to Passivhaus standards, is the prototype for a high-rise timber construction system.

Right Werkraum Bregenzerwald, a showcase project designed by Peter Zumthor, is currently under construction. The model (right) is also shown on public display beneath the roof canopy of the part-complete building (far right).



The first is represented by two high-profile projects, each out of the ordinary, which look set to attract international attention. The most innovative, from the office of Hermann Kaufmann – one of Europe's leading timber architects – is Life Cycle Tower One (LCT-One), currently nearing completion on the outskirts of Dornbirn. The eight-storey hybrid timber-concrete office prototype is funded by a Vorarlberg developer and sets the scene for a new phase of timber high-rise. It employs a system technically designed for 30 storeys or more, and has the potential to halve construction times. Divided into a concrete core with a lift and stairwell, and timber open-plan office floors, it uses huge 8.1m x 2.7m prefabricated timber-concrete panels.

Built to Passivhaus standards, LCT-One is expected to achieve a 90 per cent energy reduction compared with a typical office building. While some may be hoping that Dornbirn will become a centre of timber high-rise, the commercial reasoning is that timber towers could become commonplace in those urban areas where legal requirements are promoting a shift towards zero-energy compact living.

The other project likely to command international attention is the Werkraum Bregenzerwald, designed by Peter Zumthor for the local carpentry organisation. Zumthor has had an association with Vorarlberg's rural craftsmen since collaborating on the seating for the Bregenz Kunsthau (1997). While the Werkraum Bregenzerwald isn't intended as a sustainable showcase, the focus on



carpentry relates to how Vorarlberg positions its sustainability identity. French sustainability specialist Dominique Gauzin-Muller, whose recent study 'L'architecture écologique du Vorarlberg' is the most comprehensive overview of the region's sustainable culture, suggests that the Kaufmann and Zumthor buildings mark the beginning

of a new experimental phase for Vorarlberg. Others, however, are more sceptical about whether they will precipitate change. The second development is that the younger generation of Vorarlberg architects is moving onto larger, more ambitious projects. Among the region's population of 360,000, there are 700

Above Cukrowicz Nachbaur's Roethis Music House (2010) houses a music room above meeting spaces, a store, cafe, and practice rooms (phs: Hanspeter Schiess). **Below** Cukrowicz Nachbaur's Lauterach biomass plant (ph: HS).

architects working in 200 offices; a high ratio for a semi-rural area. Three years ago I heard complaints from some young architects about not being able to get onto the competition ladder, but this issue now seems to have been rectified, with many of them now working on larger projects, including a number of public buildings.



Prominent among these is Cukrowicz Nachbaur Architekten, whose major rebuild of the Bregenz Vorarlberg Museum, completing next year, will move the practice up several rungs. Its careful, minimalist, timber aesthetic is exemplified by the Roethis Music House. With a Douglas-fir shingle and Siberian larch facade, the music centre was intended to be an all-timber structure. Problems with the acoustics and insulation turned it into a hybrid build, with glulam interior beams and detailing, secondary steel beams and concrete. The practice's Lauterach biomass plant, a dumb, rustic box, is clad with local unsawn waste wood, which masks an interior of glass and concrete that contains the biomass burners.

Christoph Kalb and Philipp Bertold, in practice as Architekturwerk, are working on the Volksschule Mariagrün in



Graz, the first school in Austria to adopt a Scandinavian pedagogical approach with adaptable, open spaces. Other architects to watch include Matthias Hein, Juri Troy, Bernardo Bader and Fink Thurner who are working on schools, public housing, fire stations and other public buildings.

But none of these younger practices is as evangelical about timber as Hermann



Kaufmann. 'For Hermann, wood is holy', says Gauzin-Muller. 'You can see this in his detailing... you wouldn't get either Cukrowicz Nachbaur or Matthias Hein trying to detail a concrete slab in timber.' Kaufmann says he aims to balance more commercial work with research, and cites the timber-concrete panelling system as an instance of his work to develop timber

prefabricated sections. The office's Sutterlüty supermarket in Weiler demonstrates how the construction of larger buildings in timber has become the norm. Kaufmann also initiated the recent 'Building with Timber: Paths into the Future' exhibition at in Munich, as part of his timber architecture professorship at the technical university. Throughout

Above Architekturwerk's Bertsch house, Frastanz (2011, ph: Robert Fessler); Rheindorf Kindergarten (left top, due 2012); Volksschule Mariagrün, Graz (left bottom, 2013). **Below** Hermann Kaufmann's Sutterlüty supermarket (ph: Bruno Klomfar).





Vorarlberg new timber buildings are completed with striking regularity, and these are recognised in the annual Vorarlberg Holzbau Kunst awards. Residential buildings continue apace, including one showcased during the Tri-Symposium. Energy researcher and architect Martin Brunn showed his new home, which exploits CLT panels and straw insulation, and whose performance is to be extensively monitored. Public commissions however appear to be slowing. 'All the public buildings have been



Above/below Martin Brunn's house construction/completion (ph: MB).



built', says Marina Hammerle, director of the Vorarlberg Architektur Institut. Matthias Hein notes how the majority of the state's planned 100 fire stations have been completed. This situation is reflected across much of the public sector, with the exception of a small number of kindergartens and primary school commissions. There's also a question regarding the current generation's eagerness to push the boundaries of both sustainability and timber. Helmut Krapmeier of the Energieinstitut Vorarlberg remarked that architects from throughout Europe had come to the Tri-Symposium but local attendees were thin on the ground. 'They believe the media version of Vorarlberg', he suggests, adding that local expertise and knowledge were becoming outdated. Kaufmann agrees with this, although he emphasises that the situation is complicated. Technical competence remains high, but there seems to be a lack of curiosity to drive experiment and research. Vorarlberg's architectural scene may be on the cusp of a new, experimental chapter, but an injection of energy – an architecture school, for instance – would help to propel this younger generation towards unknown terrain comparable to that on which the earlier Baukunstler generation built their reputations.

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