

## RY 5/2015, English Summary

Welcome to the Magazine RY Rakennettu Ympäristö, and our Theme Issue on Structural Safety.

Mr. **Kimmo Lylykangas**, Consulting Architect, writes on the best practices in Structural Energy Efficiency. In particular, he refers to the new Guidelines drawn jointly by the Ministry and The Confederation of Finnish Construction Industries RT, in September 2015. The Guidelines present ideas on using the shape coefficient of the building to estimate its future energy consumption. Exploiting solar energy passively can reduce the need for heating energy by 20–30 per cent. Also, the Guidelines suggest using the daylight factor to ensure that each room receives enough daylight.

The Finnish national regulations on structural safety are from 2013 and are now being reformed, once again. The simple choice, but not the only approved one, is to design a building according to Eurocodes. The Eurocodes provide rules for the basis of the design as well as structural design rules for the use of all major construction materials. Mr. **Jukka Bergman**, Senior Engineer with the Ministry of the Environment, explains the standards to us. He also gives us a glimpse of the new part of the National Building Code on Strength and Stability, which is being prepared by the Ministry.

Unless the structural designer decides to use Eurocodes in his work, he has to convince the Building Control of the validity of his design in some other way. Mr. **Reima Ojala**, Head of Turku City Building Control Department, sees an opportunity here to make use of the methods of the former Section B of the old Building Code. He also recommends that all parties take seriously the renewed June 2015 regulations on the competence of designers and site foremen. The classification of design assignments is somewhat different from that in previous versions of the Building Code. He regrets that there are no demands on the work experience of site foremen. The Ministry's new Guidelines will tell Building Control and others how to interpret the new regulations as they are intended.

When a building is converted to a new use, the first questions have to do with how well the building will serve its new function as to its location and basic layout. If the conversion looks feasible from this angle, designs will be made to adapt the structures of the building to the new use. Historically valuable buildings require a survey to clarify what kinds of alterations have already been done in the building. Mr. **Simo-Pekka Valtonen**, Managing Director of the structural design company Lauri Mehto Oy, gives us an example of such a conversion: his own office has been built in a space that was formerly a car showroom and a repair shop.

In the building boom of the 1970's, a vast number of apartment blocks were constructed in the suburbs of Finnish cities. Today, one apartment out of three is located in one of these housing blocks. The future of these housing areas is a major national issue. Many of these suburbs are in communities where the population is declining and the housing prices and rents are going down. Mr. **Harri Hagan**, Architect and Project Manager at Tampere Technical University, analyses the problems that come from the need of expensive renovations in buildings in less-than-desirable areas. In some countries, partial demolition has been an effective medicine. Re-designing these areas is another solution. In that case, it might be attractive to improve the energy efficiency and perhaps make the buildings help in producing energy.

The Finnish Land Use and Building Act was complemented in 2014 by regulations on special procedures to ensure the structural integrity of new buildings in the design and construction stage. The new regulations will also be applied if there are risks to the occupants' health or fire safety. Mr. **Jouko Lamminen**, Inspections Engineer with Vantaa City Building Control Department, further points out that high-risk buildings should be regularly checked throughout their life cycle. From April 1, such inspections, by competent inspectors, have been compulsory for wide-span buildings such as sports halls or large supermarkets.

Proactive quality control has made progress in construction, although Building Control resources have been cut in recent years. In North Karelia University of Applied Sciences, a survey was made to see how proactive quality control can improve the energy efficiency of a detached house. It was found in the survey that good design and workmanship are essential, as are the right technology and the right structural solutions.

An example of proactive Building Control comes from Kajaani City, where Building Control works in close contact with Town Planning. The City Guidelines will direct all plot owners to have a start-up meeting at Building Control before the design of the house is started. The new Lupapiste on-line service can simplify routines and may, for instance, make it unnecessary that a Site Manager should be approved in each local community separately, says Mr. **Risto Pesonen**, retired Manager of The Confederation of Finnish Construction Industries RT, and a Free Editor.

Helsinki City awarded a residential plot in the Jätkäsaari area to an association that wanted to put up a building for co-housing for seniors. Professor Emeritus **Matti Seppänen** was one of the group of friends behind the association, and later became its Chairman. He describes the building project, which was carried out before the present legislation for group building.

As rural population is going down and people migrate to new locations, cities and other communities wish to direct some of the people flow to their own areas. Some people may be attracted by the history of these communities, but others will appreciate green zones and recreation areas. Hyvinkää City was awarded the Good City Centre Prize by Elävät kaupunkikeskustat ry last February, with a reference to how the city had combined squares and green areas in the city centre. Ms. **Katri Isotalo**, Editor, also points out how beneficial green areas can be to the handling of urban runoff waters, to reducing urban noise, and she further emphasizes the importance of making green areas easily accessible.

Hyvinkää City is also the subject of another article, by Ms. **Anne Jarva**, Head of Hyvinkää's City Planning and Ms. **Aino Kuusimäki**, Assistant Town Planner. It centers on Hyvinkää's ten-day experiment last August, when the main street of the City was closed down for car traffic and reserved for public transport. The local traffic bus terminal was also relocated for this period, and containers were placed on the main street to demonstrate what the street could be like if car traffic was not allowed there. The experiment received a mixed response in the social media, but town planners were encouraged to develop further reforms for the City Centre.

The area of Battersea, one of the last industrial zones in central London, is changing rapidly. Its iconic landmark is the largest brick building in Europe, the Battersea Power Station, which is being converted into luxury flats, offices and cultural and commercial spaces. Ms. **Katriina Etholén**, M.A. and Freelance Editor, says that the gas holders in the power station area have no longer been used for storing gas since 2012, and are now also being demolished.

The Board of our Society visited Warsaw in Poland last September. Our Editor, Mr. **Lauri Jääskeläinen**, recounts the findings. The group visited modern building projects such as the Polin, the Museum of the History of Polish Jews, which opened in 2013. Besides, a Workshop was held to look at the future of the Society now that the Society's new Strategy has been determined in our Seminar in March, and now that the new Government has determined its new Policies. One of the main questions is how to demonstrate, beyond doubt, to the general public that Building Control brings added value to the community.

Our faithful correspondent, Mr. **Olli Lehtovuori**, a retired Architect, presents us a domestic building project. It is a wooden cottage in Savonranta local community, gently designed for round-the-year use, by a protected lake.

Juhani Nortomaa