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Vizualizacija / Visualization: InnoRenew CoE

ARHITEKTURA
KOT RAZISKOVALNI PROJEKT

V Izoli, natančneje v predelu Livad, je InnoRenew CoE začel graditi dve stavbi svojega novega raziskovalnega inštituta. Zasnova za stavbi je nastala kot interdisciplinarni projekt raziskovalcev, podprta pa je z inovativno tehnologijo ter v skladu z dognanji o vplivu grajenega okolja na zdravje ljudi. Projektanti in raziskovalci, zaposleni v InnoRenew CoE, smo pri tem združili znanja več strok, od arhitekture, gradbeništva, strojništva, psihologije, ergonomije in lesarstva do znanja multidisciplinarnih raziskovalcev zdravega bivanjskega okolja. Z načrtovanima stavbama želimo znanstvena odkritja prenesti v arhitekturo in jih preveriti, s tem pa postaviti tudi povsem nove cilje za prihodnost arhitekturnega načrtovanja.

Raziskovalni inštitut, ki je letos februarja praznoval drugo obletnico, je rezultat projekta, ki je bil v okviru Obzorja 2020, programa Evropske unije za raziskave in inovacije, odobren leta 2016. Pridobil je financiranje v skupni vrednosti 15 milijonov evrov evropskih in 30 milijonov evrov nacionalnih sredstev. Septembra 2018 je InnoRenew CoE pridobil tudi gradbeno dovoljenje.

V stavbah, ki bosta v veliki meri narejeni iz lesa, bodo kabineti, prostori za predstavitve in laboratoriji ter delavnice za znanstvenoraziskovalno delo. Skupna bruto površina stavb bo 8.200 m2 in vključuje deset raziskovalnih laboratorijev ter tehnične delavnice, kar bo omogočalo raziskave lesa tako v mikroskopskem kot tudi v makroskopskem merilu, kot je gradnja objektov. Glede na svojo velikost pa lahko trdimo, da bo to največja lesena stavba v Sloveniji doslej.

Na objektih inštituta bomo raziskovalci izvajali natančen monitoring vseh prostorov, konstrukcijskih sistemov in fasad. Merili bomo različne parametre, od temperature, vlage, akustike, prahu, emisij

Pogled na predvideni znanstvenoraziskovalni inštitut InnoRenew CoE v Izoli. Stavba bo največja lesena gradnja v Sloveniji do sedaj.
View of the planned InnoRenew CoE Scientific Research Institute in Izola. The building will be the largest wooden construction in Slovenia so far.

ZASNOVA ZA STAVBI JE NASTALA KOT INTERDISCIPLINARNI PROJEKT RAZISKOVALCEV, PODPRTA PA JE Z INOVATIVNO TEHNOLOGIJO TER V SKLADU Z DOGNANJI O VPLIVU GRAJENEGA OKOLJA NA ZDRAVJE LJUDI.

The design of the buildings was created as an interdisciplinary project of researchers, supported by innovative technology and consistent with the knowledge about the impact of the built environment on human health.

02 Na fasadi inštituta so predvideni tradicionalni materiali: istrski kamen in les v obliki latnika.
Traditional materials are foreseen on the facade of the Institute: Istrian stone and wood shaped as a trellis.

do statičnih obremenitev, staranja lesa na fasadah, meritve biotskih, kemičnih in fizikalnih količin. Vse podatke monitoringa bomo, razporejene glede na čas zajema, vpisovali v knjižnice BIM (angl. Building Information Modelling) in v sistem za pametno upravljanje (angl. Building Management System – BMS). To nam bo omogočilo vpogled v način staranja lesa v stavbah in lažje načrtovanje lesene gradnje v prihodnosti.

Na zunanjosti objektov bomo uporabili tradicionalne materiale. Les na fasadah bomo uporabili na tradicionalen način, kot senčilo (lesene lamele pred okni) in v obliki fasadne strukture, ki spominja na tradicionalen »latnik« slovenske Istre. Za obloge fasad v zgornjih nadstropjih, v arkadah in pri zunanjih tlakih bomo uporabili lokalni istrski kamen. Objekta sta oblikovana glede na načela restorativnega okoljskega in ergonomskega oblikovanja (angl. Restorative Environmental and Ergonomic design – REED), kar pomeni, da bomo s pomočjo zelenih streh, uporabe deževnice, sončne energije, nizkoenergijske gradnje, zasaditve zelenih vzpenjavk ter s pomočjo uporabe vidnega lesa v notranjosti ustvarili razmere za zdravo in okolju prijazno bivanjsko okolje.

Stavbi inštituta pa bosta imeli še eno zelo pomembno vlogo za nadaljnji razvoj znanosti. Omogočali bosta neposredno povezovanje znanstvenoraziskovalnega dela z gospodarstvom. InnoRenew CoE namreč že od vsega začetka sodeluje z različnimi slovenskimi in mednarodnimi podjetji. To sodelovanje pa bo veliko lažje v novih stavbah, kjer bo omogočen razvoj novih materialov, izdelkov in testiranj. Vse te aktivnosti pa se ne bodo dogajale zgolj v laboratorijih. V prostorih za predstavitve bodo omogočeni poslovni sestanki in mreženja, ki bodo s pomočjo številnih mednarodnih projektnih partnerjev inštituta InnoRenew CoE zainteresiranim domačim in tujim gospodarstvenikom omogočili nove poslovne priložnosti na področju razvoja materialov in izdelkov iz lesa ter drugih obnovljivih materialov.

Znanstvenoraziskovalni inštitut InnoRenew CoE
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Sodelavca: Bojan Cebin, Monika Rečnik
Krajinska arhitektura: Mitja Škrjanec
Statika: Iztok Šušteršič, Sašo Vozel
Strojne instalacije: Rudi Grahek, Robert Krese
REED oblikovanje: Mike Burnard
Tehnologija laboratorijev: Matthew Schwarzkopf, Jakub Sandak
Zasnova monitoringa: Michael Mrissa, Anna Sandak, Jakub Sandak, Mike Burnard, Andreja Kutnar, Iztok Šušteršič, David B. DeVallance, Miklos Kresz

InnoRenew CoE Scientific Research Institute
Architecture: Eva Prelovšek Niemelä, Aarne Niemelä
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Landscape architecture: Mitja Škrjanec
Statics: Iztok Šušteršič, Sašo Vozel
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ARCHITECTURE AS A RESEARCH PROJECT

In Izola, specifically in the Livada area, InnoRenew CoE has begun the construction of two buildings of its new research institute. The design of the buildings was created as an interdisciplinary project of researchers, supported by innovative technology and consistent with the knowledge about the impact of the built environment on human health. The designers and researchers employed by InnoRenew CoE have combined the knowledge of several disciplines, from architecture, construction, mechanical engineering, psychology, ergonomics and woodworking to the knowledge of multidisciplinary researchers in a healthy living environment field. With the planned buildings, we want to bring scientific discoveries into architecture and test them, and thus set entirely new goals for the future of architectural design.

The research institute, which celebrated its second anniversary this February, is the result of a project under Horizon 2020, a European Union research and innovation program approved in 2016. It has received a funding of €15 million from European and €30 million from national funds. In September 2018, InnoRenew CoE also obtained a building permit.

The buildings, which will be largely made of wood, will have cabinets, presentation rooms and laboratories, as well as workshops for scientific research. The total gross floor area of the buildings will be 8,200 m2 and includes ten research laboratories and technical workshops, which will enable wood research on a microscopic as well as a macroscopic scale, such as the construction of structures. Given its size, we can say that it will be the largest wooden building in Slovenia so far.

At the Institute's facilities, researchers will carry out precise monitoring of all spaces, structural systems and facades. We will measure various parameters, from temperature, humidity, acoustics, dust, emissions to static loads, ageing of facade wood, measurements of biotic, chemical and physical quantities. All monitored data will be entered into the Building Information Modeling (BIM) libraries and the Building Management System (BMS) and sorted by time of capture. This will give us an insight into the timber ageing of buildings and make it easier to plan for timber construction in the future.

We will use traditional materials on the exterior of the buildings. The wood on the facades will be used in the traditional way as a shade (wooden slats in front of the windows), and in such a facade form structure that is reminiscent of the traditional "trellis" of Slovenian Istria. For the facades on the upper floors, in the arcades and at external pressures, we will use local Istrian stone. The buildings are

V notranjosti je vertikalni atrij s stekleno streho, ki se razteza preko štirih etaž.
Inside, there is a vertical atrium with a glass roof that extends over four floors.

designed according to the principles of Restorative Environmental and Ergonomic Design (REED), which means that through green roofs, the use of rainwater, solar energy, low-energy construction, planting green climbers and using visible wood in the interior we will create the conditions for a healthy and environmentally friendly living environment.

Furthermore, the Institute's buildings will play another very important role in the further development of science. They will enable direct linking of scientific-research work with the economy. As from the very beginning, InnoRenew CoE has been cooperating with various Slovenian and international companies. This cooperation will be much easier in new buildings, which will allow the development of new materials, products and tests. However, not all of these activities will take place in laboratories alone. The presentation rooms will provide business meetings and networking opportunities, with the help of numerous international project partners of the InnoRenew CoE Institute, to provide interested local and foreign businessmen with new business opportunities in the development of materials and wood products as well as other renewable materials.

Med posameznimi laboratoriji so ozki atriji, ki poleti dajejo hladno senco, pozimi pa zatišje pred burjo.
There are narrow atriums between the individual laboratories, which provide cool shade in summer and calm before the storm in the winter.