EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

2021-IPR-A5001-FGIV-016848

FG IV SCIENTIST - EXPLORATORY RESEARCH PROJECT - Novel Modular and Reusable Panels for Safe & Carbon-Free Buildings (REUSE)

POSITION AS:
Member of the contract staff FGIV – art. 3b of the Conditions of Employment of Other Servants http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1962R0031:20110101:EN:PDF

WE ARE:
As the science and knowledge service of the Commission, the mission of DG Joint Research Centre (JRC) is to support EU policies with independent evidence throughout the whole policy cycle. The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain).
Further information is available at: https://ec.europa.eu/jrc/

The JRC offers a vacancy for a Contract Agent within the Exploratory Research Project "Novel Modular and Reusable Panels for Safe & Carbon-Free Buildings" (REUSE). The JRC Exploratory Research Programme (ER) is a strategic initiative characterised by ideas that might lead to novel results and qualitatively enrich current JRC scientific work.

The vacancy is within the Directorate for Space, Security and Migration. The directorate's mission is, among others, to focus on emergency preparedness, response, disaster risk management and resilience in cases of natural and manmade hazards.

The operational scientific research will take place in the Safety and Security of Buildings unit within a team of experimentalists and numerical modellers who provide reference results relevant to the European standardization in the building and construction sectors. Further information is available at: https://ec.europa.eu/jrc/en/research-facility/elsa

The Scientific Development unit is in charge of the overall JRC Exploratory Research Programme.

WE PROPOSE:
A position to carry out scientific and technical tasks in accordance with the Exploratory Research Project "Novel Modular and Reusable Panels for Safe & Carbon-Free Buildings" (REUSE) with:

- Special emphasis on exploring new modular panels for the seismic and energy upgrading of existing building and use of innovative connections that will enable the reuse of these panels;
- In support to policies, with special focus on the seismic and energy retrofitting of the existing EU buildings to support the 'renovation wave' of buildings initiative of the European Green Deal and the New European Bauhaus initiative.

In Europe, buildings account for 36% of the CO2 emissions and about 40% of the overall energy consumption, while at the end of their lifetime they generate enormous amounts of demolition waste. Meanwhile, collapses or damages of existing buildings during strong earthquakes have resulted in significant economic costs and loss of human lives. With demolition and reconstruction being neither an economically viable nor an environmentally friendly solution, the European Green Deal emphasises the need for EU Member States to engage in a renovation wave of their buildings. In addition, the New European Bauhaus initiative envisions safe, sustainable and beautiful renovated buildings for people to live together.

The exploratory research project REUSE aims at developing novel re-usable panels and innovative modular construction techniques that will contribute to the decarbonisation of the European building stock. Novel prefabricated panels (e.g., cross-laminated-timber or other lightweight high-performance materials) with high seismic and thermal resistance will be explored as a solution for upgrading the seismic and energy performance of old building envelopes. Moreover, the use of innovative connection systems will also be used to exploit modular construction for new buildings, which can be rapidly disassembled and re-used, exploring the concept of design-for-deconstruction and re-use. Therefore,

REUSE stands for both continue re-using the existing EU buildings by extending their lifetime but also by re-using the structural elements of new/retrofitted buildings at the end of their lifetime. The effectiveness of REUSE concepts applied to the building envelope will be validated experimentally in full-scale prototypes using the European Laboratory for Structural Assessment (ELSA) reaction wall facility.

The successful candidate will engage into all activities within the REUSE project, this including:

- Design innovative modular wall panelling systems with dry connections; the design should contemplate fast assembly/disassembly operations and effective reusability of structural components while delivering building envelopes of high aesthetics;
- Set-up of experimental models (i.e. design of external panels and their connections to the building envelope, design of the test set-up(s) for seismic testing;
- Perform seismic simulations for buildings in both their as-built and retrofitted states;
- Set-up a new methodology enabling the design-for-deconstruction and re-use concepts of modular building elements for reducing environmental impacts;
- Develop a new Design-for-Deconstruction (DfD) methodology to manage end-of-life building materials and design buildings that facilitate adaptation for reducing environmental impacts;
- Experimental results treatment;
- Project management;
- Provide regular and accurate reports on scientific activities every twelve months and a final report;
- Report to the Project Leader on progress, achievements and potential problems in a timely manner;
- Provide feedback and maintain interactive communication with colleagues;
- Explain the research activities and achievements to third parties, such as scientific communities and the general public;
- Write, publish and present scientific reports, articles and conference papers.

WE LOOK FOR:

A scientist with the following qualifications:

- A doctoral diploma in civil/structural engineering, earthquake engineering, architecture or field relevant to the position, alternatively completed university studies of at least three years attested by a diploma and at least five years professional experience in a field relevant to the position;
- Previous research or professional experience relevant to the topic of the call (i.e. seismic retrofitting of buildings; modular building construction; innovative dry connections; life-cycle assessment);
- Solid record of research activities including publications relevant for the post in international peer-reviewed journals is an advantage;
- Good oral and written communication skills in English (B2) are essential.

In addition, the following competences will be considered as an advantage:

- Ability to work in a team and in a multi-cultural environment;
- The candidate is expected to be creative and work independently.

EMPLOYMENT CONTRACT DURATION:

24 months employment contract for the Exploratory Research project “Novel Modular and Reusable Panels for Safe & Carbon-Free Buildings” (REUSE).

Employment contracts for Contract Agents can be renewed for maximum 6 years.

PLACE OF WORK:

Ispra, Italy

RULES AND ELIGIBILITY:

To be eligible for the position, the candidate must be on a valid EPSO reserve list for Function Group IV contract staff.

You can be added to an EPSO reserve list if you complete successfully an EPSO selection procedure.

Candidates who are on a valid EPSO reserve list or have applied to an EPSO selection procedure can apply to this specific position through http://recruitment.jrc.ec.europa.eu/?type=AX.

How to apply to an EPSO selection procedure?

Apply either to the permanent EPSO call (CAST Permanent) https://epso.europa.eu/documents/2240_en or a specialised call for researchers https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-IV-researchers

The CAST Permanent reserve list is used by a wide range of organisations (institutions, bodies, offices and agencies of the European Union), whereas the specialised reserve list for researchers (JRC Call COM/1/2015/GFIV – Research) is mainly used by the JRC.

RECRUITMENT POLICY:

The JRC

• Cultivates a workplace based on respect for other people and the environment.

• Embraces non-discriminatory practices and equality of opportunity. In case of equal merit, preference will be given to the gender in minority.