

**Czech Development agency**

**„Temporary Expert Assignment“**

**Support FOR establishing A professional civil engineering specialiSation at Burch international university of Sarajevo according to THE needs of THE building sector in Bosnia and Herzegovina**

Prepared by: XXXXXXXXXXXX; Brno University of Technology, Faculty of Civil Engineering, Brno

- 26th February 2018 -

**Temporary expert assignment (within the framework of the transfer of Czech transitional expertise)**

**Title in Czech Language:**

Podpora pro vytvoření odborné specializace stavební inženýrství na Burch international university v Sarajevu na základě potřeb ze stavební praxe v Bosně a Herzegovině

**Title in English Language:**

Support for establishing a professional civil engineering specialisation at Burch International University of Sarajevo according to the needs of the building sector in Bosnia and Herzegovina

**Applicant:**

Brno University of Technology, Faculty of Civil Engineering, Veveří 95, 602 00 Brno, Czech Republic

Contact person: XXXXXXXXXXXX, e-mail: XXXXXXXXXXXX; phone: XXXXXXXXXXXX

**Partner Institutions:**

Burch International University, Faculty of Engineering and Information Technologies, Francuske revolucije bb. Ilidža 71210, Sarajevo, Bosnia and Herzegovina

Contact person: XXXXXXXXXXXX, e-mail: XXXXXXXXXXXX; phone: XXXXXXXXXXXX

**Estimated Area of Expertise:**

The development of civil engineering according to EU requirements and environmental standards is a vital condition that must be fulfilled by Bosnia and Herzegovina before their accession to the EU. Although the construction industry, its potential, and other related problems are currently a widely discussed topic, there is still a significant shortage of qualified experts who can apply the latest trends with respect to the environment, quality of life, and sustainable development. If basic improvement in the standard of living is to be achieved in Bosnia and Herzegovina, it is necessary to respond to the challenges in the area of civil housing. Efforts should be made not only in the field of renovation, reconstruction, and remediation, but also in the construction of completely new energy-efficient buildings. For many years, energy efficiency has been neglected. Not enough attention has been paid to the use of insulating materials. The issue of reducing energy for heating, cooling, water heating, and lighting has not yet been addressed with respect to the local conditions and natural resources. As we can see in a number of preserved traditional buildings, Bosnia and Herzegovina offers plenty of opportunities to exploit local natural resources.

Situation analysis, preparation of a research plan, implementation of methodology, and data collection are the key tasks that will precede the introduction of a specialisation in civil engineering at Burch International University in Sarajevo. For this purpose, it will be necessary to assess the gathered data and set up an information campaign in print so that it contributes to greater awareness of the emerging specialisation in civil engineering. Experts with knowledge of European standards in the area of construction will help employees at Burch International University to gain important experience and obtain relevant information. All this may lead to setting up new research teams and may also boost research based on European requirements and legislation. The participation of experts in lectures will be necessary so that they can assess both lecturers' and students' needs. Expert reports based on the findings will be submitted to the partner university. These reports will include suggestions on how to proceed with the implementation of new study programmes according to European standards and requirements. The implementation of a civil engineering specialisation will be dealt with within the framework of compatibility with other universities in Europe. Thanks to their skills and knowledge, graduates will be able to develop the building potential in Bosnia and Herzegovina or find jobs anywhere in the European Union. The Experimental Students Pavillion, which is part of Burch International University, is a place where specialists can present the latest innovative technologies and processes or exploit the potential of traditional materials, craftsmanship, and natural resources available in Bosnia and Herzegovina.

Numerous job opportunities may be created in the area of energy efficiency, particularly in certification, metrology, the building materials industry, design, education, and the protection of the environment and sustainable resources.

**Expected Start and End Dates:**

1st April 2018 – 30th November 2018

**Total Number of Days in the Field:**

During the project, two trips are planned involving three experts, each of whom will spend four days in Bosnia and Herzegovina (during one trip). This means 22 days spent in Bosnia and Herzegovina for the whole team.

First trip of four days for the whole team in May 2018:

* XXXXXXXXXXXX: four days of expertise at IBU (Sarajevo – Bosnia and Herzegovina);
* XXXXXXXXXXXX: four days of expertise at IBU (Sarajevo – Bosnia and Herzegovina);
* XXXXXXXXXXXX: four days of expertise at IBU (Sarajevo – Bosnia and Herzegovina).

Second trip of five days for the whole team in October 2018:

* XXXXXXXXXXXX: five days of expertise at IBU (Sarajevo – Bosnia and Herzegovina);
* XXXXXXXXXXXX: five days of expertise at IBU (Sarajevo – Bosnia and Herzegovina).

**Expected Partner Institution Cooperation:**

The building sector includes many branches, areas, technologies, and opportunities for research and development. The processing of data collected by metrology experts, who are aware of EU building legislation and building practices in Bosnia and Herzegivina, will play a vital part in the development of the partner, Burch International University in Sarajevo. For this purpose, the following will be expected of the partner university:

* Expert report – requirements for the university to perform laboratory tests and experiments to the minimum extent needed for civil engineering in accordance with the building sector needs in Bosnia and Herzegovina and EU standards, at least 6 standard pages in English;
* Expert report – analysis and selection of necessary software for the civil engineering specialisation in accordance with the building sector needs in Bosnia and Herzegovina and EU standards, at least 2 standard pages in English;
* Design of key documents for the new civil engineering specialisation (leaflets, brochures, basic technical texts for utilisation in teaching), at least 14 standard pages in English;
* Expert report – analysis of the current situation in the field of teaching civil engineering subjects at IBU, participation in teaching of selected subjects, student needs analysis, summary of recommendations for IBU, summary of the current situation, summary of the minimum needs for introducing new specialisations, and recommendations for the IBU), at least 20 standard pages in English.

**Context:**

The aim of the expert work will be primarily to support the staff of International Burch University (IBU) by establishing a specialisation in civil engineering according to needs of the building sector in Bosnia and Herzegovina.

In particular, it will be an analysis of the IBU's minimum requirements from the point of view of equipment and SW needed for civil engineering education and for carrying out basic research work in these areas. The aim will also cover regional needs and civil engineering in Bosnia and Herzegovina with a focus on the areas of environmentally efficient construction, utilisation of local green building materials and technology, and rehabilitation and reconstruction (seen as a significant potential tour in Sarajevo).

Expected outcomes in this area will be:

* Summary of basic EN standards for the area of testing building material properties;
* Summary of basic EN standards for the area of testing building construction properties;
* Summary of basic EN standards for the area of product declaration in civil engineering (building materials and products);
* List of recommended labour tests (including descriptions of necessary labour equipment for each test) suitable for the new specialisation – selection will be done with respect to low initial cost of equipment and standards and the needs of the industry in Bosnia and Herzegovina.

The work will also cover the processing of key documents for the new field of civil engineering:

* Leaflets about the new specialisation – two leaflets will be issued both in English and the local language to promote the new specialisation and each leaflet will be at least one standard page;
* Brochures with a basic description of the new specialisation – at least six standard pages will be created and issued as 20 items, both in English and the local language, to provide information to prospective candidates for a new field of study,
* Basic technical texts for utilisation in teaching, including a description of collected practical tests and according to a deal with representatives of IBU, will be arranged at the first common meeting – six standard pages of an electronic document in MS word or pdf format will be created to help in the process of lecturers’ training.

Furthermore, an in-depth analysis of the state of education for civil engineering at IBU (currently being taught within architecture with an overlap with construction) will be an assessment of the current situation and the necessary needs for the future (including human resources necessary for a new specialisation).

During the stays at IBU, there will be discussion with the representatives of IBU about the new specialisation with respect to needs of the industrial sector in Bosnia and Herzegovina.

**Expected Outcomes and Results by the Applicant:**

* Creation of conditions for a new specialisation (Civil Engineering) at IBU;
* Increased level of knowledge of EU standardisation at IBU;
* Support for labour development at IBU according to EU standards;
* Creation of key documents and reports for IBU:
  + Report – “Recommendation for minimum labour equipment needs for civil engineering specialisation establishment”, minimum 6 pages in English including a summary of EN standards;
  + Report – “Recommendation for minimum SW needs for civil engineering specialisation establishment”, minimum 2 pages in English;
  + New key documents for the new civil engineering specialisation (leaflets, brochures, basic technical texts for utilisation in teaching), minimum 14 pages in English;
  + Report – “Analysis of the current situation in the field of teaching civil engineering subjects at IBU – participation in teaching, student needs analysis, and summary of recommendations for IBU”, minimum 20 pages in English.

**Expected Time Schedule:**

April 2018: preparation for visit to IBU (organisation of trip and programme at IBU) and preparation of key documents for evaluation of situation at IBU (questionnaire preparation, presentation preparation) – ten hours for each expert/30 hours total.

May 8 to May 12 2018: first trip to Bosnia and Herzegovina (IBU, Sarajevo), first part of developing expertise, reorganisation of IBU needs, analysis of the current situation in the field of teaching civil engineering subjects at IBU – four days of expertise for each expert/12 days total and trip.

June to September 2018: evaluation of results from the first visit to IBU, preparation of materials for a second visit to IBU and organisation of second trip to IBU. Preparation of outcomes (key documents and analyses) – ten hours of each expert/30 hours total.

October 2018: second trip to Bosnia and Herzegovina (IBU, Sarajevo), second part of developing expertise, reorganisation of IBU needs, analysis of the current situation in the field of teaching civil engineering subjects at IBU, evaluation of first results, discussion of first results and first recommendations with representatives of IBU – five days of expertise for expert/10 days total and trip.

October to November 2018: preparation of the final report and other documents cited in “Expected Outcomes and Results by the Applicant” above.

**Team Members:**

XXXXXXXXXXXX

XXXXXXXXXXXX

XXXXXXXXXXXX

**Expected Amount of Work in Total:**

For all experts:

* Two visits to Bosnia and Herzegovina (1st trip in May 2018, 2nd trip in October 2018) for a total of 22 days
* 224 hours of work in Czech Republic

**Amount of Work per Expert in Total:**

XXXXXXXXXXXX:

* Four days of expertise development at IBU (Sarajevo, Bosnia and Herzegovina) in May 2018
* Five days of expertise development at IBU (Sarajevo, Bosnia and Herzegovina) in October 2018
* 68 hours of work in Czech Republic.

XXXXXXXXXXXX:

* Four days of expertise development at IBU (Sarajevo, Bosnia and Herzegovina) in May 2018
* Five days of expertise development at IBU (Sarajevo, Bosnia and Herzegovina) in October 2018
* 68 hours of work in Czech Republic.

XXXXXXXXXXXX:

* Four days of expertise development at IBU (Sarajevo, Bosnia and Herzegovina) in May 2018
* 88 hours of work in Czech Republic.

**Funding:**

As stated in Annex III to the Contract.

Complementarity:

* Bosnia and Herzegovina's Metrology Institute capacity extension II
* Capacity support for the Bosnian Institute for Standardisation in the area of Eurocodes implementation
* Support to introduce new study fields and a system of practical education and international collaboration at a university in Banja Luka.