

**«Bridging the gap between
university and industry:
Master Curricular Supporting the
Development of Green Jobs and
Digital Skills in the Ukrainian
Building Sector»**

The BRIDGE

Sustainability Plan (version 1.0)

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Sustainability Plan

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LIST OF BENEFICIARIES

Number	Role	Short Name	Legal Name	Country
1	COO	PSACEA	Prydniprovska State Academy of Civil Engineering and Architecture	Ukraine
2	BEN	LPNU	Lviv Polytechnic National University	Ukraine
3	BEN	KNUCA	Kyiv National University of Construction and Architecture	Ukraine
4	BEN	ODABA	Odessa State Academy of Civil Engineering and Architecture	Ukraine
5	BEN	CPNU	Chernihiv Polytechnic National University	Ukraine
6	BEN	NGO ACU	Ngo "The Academy of Construction of Ukraine"	Ukraine
7	BEN	STUBA	Slovenska Technicka Univerzita v Bratislave	Slovakia
8	BEN	UNISANNIO	Universita degli Studi del Sannio	Italy
9	BEN	WUT	Politechnika Warszawska	Poland
10	BEN	RWTH AACHEN	Rheinisch-Westfaelische Technische Hochschule Aachen	Germany
11	BEN	SKSI	Slovenska Komora Stavebných Inzinierov	Slovakia
12	BEN	IPQ	Instytut Profesijnykh Kvalifikatsii	Ukraine
13	AP	MESU	Ministry of Education and Science of Ukraine	Ukraine

EXECUTIVE SUMMARY

The present document constitutes the Deliverable D6.1 “Sustainability Plan” in the framework of the Project named “Bridging the gap between university and industry: Master Curricular Supporting the Development of Green Jobs and Digital Skills in the Ukrainian Building Sector” (Project Acronym: The BRIDGE; Grant Agreement No.: 101127884).

This document provides the Sustainability Plan of The BRIDGE project. Sustainability is important aspect of successful implementation of the project. Actually, sustainability is the capacity of the project to continue and use its results beyond the end of the funding period. The Bridge project foresees a set of activities focused on the design and implementation of Master Programmes in AEC supporting the development of green jobs and digital skills in the Ukrainian building sector. The four main key exploitable/sustainable outcomes which will last after the project’s end and guarantee a substantial impact are four, namely establishment of a Stakeholders’ Platform, the BRIDGE Network, the Master Programmes, and the BRIDGE Educational Model. These four outcomes will guarantee the sustainability, long-term impact, and continuation of the project. An extension of the project could be also foreseen in terms of institutions involved, replicability opportunities, and continuous cooperation within the BRIDGE consortium.

This sustainability plan contains a preliminary description of the activities and strategies undertaken to sustain the BRIDGE project results after the end of the project lifetime.

This sustainable plan is preliminary and may be revised, if necessary, to improve the project's short-term and long-term outcomes.

INTRODUCTION

The purpose of Sustainability Plan is to define using of the achieved project results after the project end is also fulfil the future demands after the project end making effective and efficient use of the resources deployed during the project life time. The BRIDGE Project Sustainability Plan is linked to WP6 «Sustainability and exploitation actions» to ensure that the results of the project are sustainable beyond the BRIDGE project life time.

The sustainability goals are to ensure further exploitation of project results and resources after the project life time. The Bridge project outcomes such as Stakeholders' Platform, the BRIDGE Network, the Master Programmes, and the BRIDGE Educational Model maintained or developed after the end of the BRIDGE project:

- Stakeholders' Platform will be managed at national level, partners take care of the follow-up and universities meet regularly with other stakeholders;
- the BRIDGE Network oriented to the national/regional context and enforced the links with the labour market:
- the Master Programmes curriculum is still used and further developed and will be included in existing courses in universities which do not belong to the initial consortium:
- BRIDGE Educational Model can be disseminated to all the Ukrainian universities, learning structure created during the project period will be utilized further.

In this framework, the following components for ensuring an effective sustainability of BRIDGE will be described in this document.

PROJECT OVERVIEW

The overall objective of the BRIDGE is the establishment and development of multidisciplinary Master Programs in BIM Technology for Architecture, Engineering and Construction (AEC) in five outstanding UA Universities (UAUs) according to features and learning outcomes that will lead graduates to be involved in environmental and “green buildings” technological issues.

The project is designed to achieve the main two following outcomes:

1. Curricular reform: to implement an effective curricular reform oriented towards the labour market requirements and the needs of the links Higher Education - Socioeconomic environment; to support the employability expectations of the graduates by development of a constructive model for professional recognition of the new qualification in BIM Technology for AEC to be shared among all the involved parties (Civil Engineering, Architecture, Environmental Engineering, Construction Technologies). The curricular reform will be promoted, officially recognized, and implemented in five involved UA HEIs in different training directions, with official Master Courses implemented in each of the five UA HEIs, by developing a versatile training programme flexible and adaptive to labour market requirements; these Courses will be implemented over the project lifecycle; the first academic year will be completed in the framework of the third project year.

2. Links university-enterprises: i) to promote the affiliation to a networking system of the Partner Country' Universities and stakeholders, in order to remedy to the currently fragmented scientific national/regional background in the Energy Sustainability of Buildings and to the lack of distribution of knowledge, expertise, information and data; ii) to deliver appropriate education and documentation of universal character to be assessed by stakeholders' institutions having relevance in environmental and energy savings tasks. The project in general terms will also spread and promote the awareness in the Partner Countries related to the EU policies referred to sustainable building and renovation, as well as regional priority of decent work and economic growth, and will enhance the implementation of initiatives such as the Green Deal, 2030 objectives, Net Zero Energy Buildings, and others. The dissemination of the benefits of the curricular reform all over other Ukrainian HEIs will be performed as well. As for the curricular reform, the interdisciplinary cultural approach will be rooted in the European Green Deal, which sets the main direction for the future EU development, namely: i) a carbon-free society within 2050; ii) decoupling between economic growth and consumption of natural resources; iii) nobody is left behind. The learning outcomes will provide graduates with a high qualification in: energy efficiency, sustainable buildings, energy efficient renovation and retrofit, innovation management and environmental impact analysis. Furthermore, innovative topics such as BIM and BMS for the Management of the Building and Urban Climate and Sustainability will be introduced. Different curricula will be implemented in accordance with the different needs of the five leading universities. The project will deal with all the different steps of the implementation: requirements for the teachers' involvement, enrolment procedures, contribution from stakeholders / sponsors, possible short research projects and final thesis. The following professional outlines will be: innovation and development, production, advanced design, planning and scheduling, management of complex processes and systems, specifically in relation to BIM Technology for Architecture, Engineering and Construction.

STAKEHOLDERS' PLATFORM

Stakeholders' Platform: a permanent stakeholders' platform will be created and managed at national level by NGO 'The Academy of Construction of Ukraine'. It will represent a permanent forum to exchange ideas and circulate information about energy sustainability in buildings, affordable energy efficient housing solutions, energy efficient engineering systems, etc. HEIs, industries, public institutions, financial institutions, etc. will participate in the platform. The platform will be articulated in 5 local hubs, namely 1 for Kyiv Region, 1 for Odessa Region, 1 for Dnipro Region, 1 for Lviv Region, and 1 for Chernihiv region, which will be established during the project, whereas other hubs, i.e., in Kharkiv or Zaporizhzhia, can join after the project's completion. The local hubs will be managed by local HEIs and will also represent the advisory body for the cyclical updating of the master courses to make them aligned with the needs of the labour market. The discussion in the local hubs will be more focused on the regional level and regional challenges. The ideas can be put forward to the attention of the national governmental bodies through the platform or through the NGO. The Stakeholders' Platform will represent a powerful instrument not only for fuelling the discussion and cross-connections among HEIs and stakeholders, but also to support the economic development at the national and regional levels.

Maintaining the stakeholder platform and increasing the involvement of partners will be done by organising events to inform the development of project results at local and national levels. Regularly conducting and analysing the results of the surveys, as well as introducing ideas and raising awareness will allow to attract new partners and disseminate the project results to a wider audience, including universities, industrial enterprises, financial institutions, etc. not included in the original consortium. One of the objectives of the Stakeholder Platform should be to involve administrative and legislative bodies in the development of local hubs, including mutual consultation and exchange of experience. The flexibility of the stakeholder platform will allow to adjust its behaviour and direction of further activities depending on the needs of the labour market.

THE BRIDGE NETWORK

All the institutions participating in the BRIDGE will establish a partnership, namely the BRIDGE Network, where they express the willingness of cooperating in the field of sustainability, building and renovating in the construction sector. This is a relevant action since it will activate synergies in the framework of other EU programmes, such as the E+ ICM. The institutions participating in the network can apply for funding mobilities of students and academic staff to enforce their international dimension. The network will promote “smart approaches” to the building, engineering, architecture and environmental protection by organizing different kinds of events, such as webinars, round tables, publication of research and experiment outcomes, technical, and informative material, etc. This will be officialised by stipulation of specific consortium agreement signed by all the consortium members, and the discussion of an executive programme to be implemented after the project lifecycle, based on self-financing. A link to the project website will be inserted. Although the BRIDGE Network and the Stakeholders Platform will work in synergy, the network is expected to have a more international dimension (e.g., it is aimed to enforce the international dimension), whereas the Platform is more oriented to the national/regional context and has the objective of enforcing the links with the labour market.

The development of a unified network between BRIDGE partners enables a new level of cooperation. The partners continue the project even after its completion, against this background they also develop new projects and sign new agreements. A major expansion of the network into the international arena is envisaged. This requires each consortium partner in the BRIDGE network to disseminate it to its partners in other projects in order to attract more stakeholders and to ensure that the single network continues to be active and effective not only during the project period but also after its completion.

Increasing the involvement of the project partners from partner countries in the international and national arena as well as attracting new universities and organisations interested in cooperation will be done by organising promotional and awareness raising events, disseminating information materials through the project's communication tools. Consortium partners should also participate in international events, join various organisations or associations that can potentially support and develop the project results on a wider level.

THE E-BRIDGE MICRO-CREDENTIALS

The e-BRIDGE micro-credentials for lifelong learning and employability: open online courses (consisting of 10 elective modules) designed within the project will form the basis for further development of micro-credentials which could help widen learning opportunities and strengthen the role played in lifelong learning by both higher education institutions and secondary professional institutions. They will make possible the targeted, flexible acquisition of knowledge and competences, upskilling and reskilling of learners to meet new and emerging needs in society and the labour market and make it possible for individuals to fill the skill gaps they need to succeed in a fast-changing environment, while not replacing traditional qualifications. They can, where appropriate, complement existing qualifications, providing added value while not undermining the core principle of full degree programmes in initial education and training. Upon the project completion, we expect the synergy of the e-BRIDGE with other successful projects on developing digital environment, which could be used in different learning settings (formal, non-formal and informal learning settings). As an alternative, the e-Bridge online courses could be voluntarily granted to other virtual educational platforms being developed under Strand 3 national priority Strengthening the education digital environment for Ukraine, this way scaling up gross national outcome.

The training platform developed within the project, trained teaching staff and administrative support structure will enable the sustainable development of micro-credentials, and ensure their flexibility and adjustment to the constantly changing requirements of the labour market. The clear organisation of the structure of online courses and formed micro-credentials will facilitate the adaptation of the product created within the project for any educational platform. In the rapidly developing sphere of BIM technologies application, the possibility of exchanging educational materials with third parties is provided, as well as providing access to students from universities of partner countries, as well as from third-party organisations. Administrative staff trained within the project will provide organisational support and appropriate dissemination of information to their students and stakeholders.

MASTER PROGRAMMES

The new master programmes are a relevant part of the project, and they will also represent a pivotal element of the sustainability strategy since they will last after the project's end. The BRIDGE provides enough financial resources to setup and maintain the programmes in the middle term (e.g., well equipped BIM laboratory, up-to-date teaching material, etc.). Updating activities will be developed by local universities with the support of the BRIDGE and the Stakeholders' Platform. The courses within the programmes will be further supported by the analysis of possible double-degree agreements within the BRIDGE network, as well as the implementation of students and academic staff mobilities through other E+ actions will be considered a priority. Furthermore, thanks to the latest IT instruments, the EU professors can easily provide on-line seminars, lectures, etc. to enforce the international dimension of the Master Programmes. The Master Programmes will be complemented with the correspondent professional qualifications (micro-credentials) which will let the students easier adapt to the rapidly changing labour market requirements.

The new curriculum and Master's programme developed and accredited under the project will contribute to the sustainability of the project. The established learning environment, including developed teaching and learning materials, online courses and micro-credentials, will aim at dissemination, sustainability and commercialisation of project results after project completion.

THE BRIDGE EDUCATIONAL MODEL

The model will report all the steps necessary to design, implement, and run up-to-date master programmes in Architecture, Engineering and Construction based on BIM Technology, so that it can be used as a manual for replication of the project's results. It can be disseminated to all the Ukrainian universities who can use it as a reference. The model will be validated by the Academy of Construction of Ukraine and the Ministry of Education and Science of Ukraine before its dissemination.

Sustainability at the national level will be ensured by greater autonomy in the choice of the content of modern Master's programmes to bring education as close as possible to the requirements of employers.

The BRIDGE website will be active and continuously updated for at least another 3 years after the end of the project. It is expected that by the end of the project each Ukrainian partner university will have created a business model for further development, funding and follow-up after the end of the project. The results of the project will be deeply integrated into the daily educational and training activities of the partner universities within the established network. Representatives of the organisation's non-university partner will participate more frequently in information events and conferences and will fully support the project by promoting its vision both inside and outside their institution. The BRIDGE project is expected to have a significant impact on education policy at the national level, demonstrating how HEIs can play a more important role in shaping the national science system.

SHORT-TERM AND LONG-TERM SUSTAINABILITY INDICATORS

Short-term sustainability	Target groups/potential beneficiaries	Quantitative indicators	Qualitative indicators
Implementation of project-developed e-BRIDGE micro-credentials for continuous training and employment	Students, University academia, Alumni, Public Organisations, Employers	Increasing the number of students enrolled according to the e-BRIDGE micro-credits developed, number of student and academic staff mobilities	Growth of the number of advanced training and certificate holders
Expansion and development of the Stakeholders' Platform	Universities, Alumni, Public Organisations, Employers	Engaging new organisations and universities	Organising events for discussion and sharing of results

Long-term sustainability	Target groups/potential beneficiaries	Quantitative indicators	Qualitative indicators
Modernisation of development, introduction and implementation of modern master's programmes in the field of construction and civil engineering based on BIM-technologies, in Ukraine	Universities, Alumni, Public Organisations, VET/TVET institutions, Employers	Increasing the number of accredited programmes that correspond to the market demand	Benchmarking report (taken in 3 years) Stakeholders' feedback
Broadening and developing the BRIDGE network	Universities, Public Organisations, VET/TVET institutions, Employers	Engaging new organisations and universities through bilateral and multilateral agreements	Participation in new projects aimed at scaling up project results

CONCLUSIONS

Sustainability Plan contains description of the activities and strategies undertaken to sustain the BRIDGE project results after the end of the project lifetime. The Sustainability Action Plan summarises the measures for the sustainability of the project results at the Partner Country universities, in particular release of the BRIDGE Educational model and establishment of the BRIDGE Network.

Development of Key Exploitable Outcomes Strategy (Deliverable D6.2 “KEOs Strategy”) closely linked to the Sustainability Plan, defines specific actions for the continuation of the Master Programmes and the Stakeholders’ Platform.