

Assignment description

Building Based on Biobased; Co-creation process

Summary

In the BBoBB project, 16 partners from five countries in the North Sea region are working together to design, develop and strengthen value chains for the use of bio-based building materials. In a first phase of the project, we are mapping existing value chains and activities around bio-based building materials.

The task we describe in this call focuses on the second phase of the project which consists of 2 broad steps to move from crops to a final product.

1. In a first step, the properties of different crops will be examined in detail to combine them with the necessary biological binders to eventually produce a semi-finished product.
2. In the second step, we start from these semi-finished products to develop concrete interior or building applications.

As a result of this process, design methodologies are being developed and documented that can be disseminated open-source so that others can also get started with bio-based building materials in a constructive and clear way.

For this assignment, we are looking for participants with different fields of expertise; (product, material, bio, ...) designers, (interior) architects, bio engineers, ... who want to take part in a learning process and also want to take control of this process and the different steps in detail to get from crop to final product. For every region a group of 2-4 designers will be selected. For our region we look for 4 designers.

Detailed context

Building Based on BioBased (**BBoBB**) is an interregional cooperation project within the North Sea region on biobased (re)construction.

We believe that the transition to a circular economy is an important means to work on the climate challenge with the prospect of new business models. The transition from traditional to bio-based building materials offers a unique opportunity to contribute to this.

The pressure on the construction industry and its footprint is increasing. As much as 11% of global greenhouse gas emissions come from construction. And the production of building materials in particular has a large share in this. Fortunately, there are now many natural alternatives to traditional building materials. Think of crops such as flax, cattail, elephant grass, wool, straw and hemp.

Using these materials in construction offers benefits on several levels;

- New earning models for farmers
- A positive contribution to a healthier living environment
- A sustainable solution for the construction sector through CO2 storage

With the European project BBoBB, we are focusing with 16 partners from Belgium, Denmark, Germany, France and the Netherlands on developing and strengthening complete value chains for bio-based building. From farmers to processors to architects and builders.

We are working on an international approach to address obstacles in the chains. We do this through three work packages:

1. Strengthen government and policy to scale up biobased value chains;
2. Setting up pilots of biobased value chains in the North Sea region;
3. Design, raise awareness and involve industrial designers, architects and new clients.

Within these work packages, we are jointly committed to developing, strengthening and scaling up biobased value chains in the North Sea region. The structure of the activities and the composition of the partners ensure that all parties in the chain can be brought together. The international cooperation and exchange of knowledge offers a jump in scale to create both economic and ecological impact with the application of biobased materials.

With BBoBB, we show that it can be done!

Materials

Each region selects one or more crops that will be used during the design process. This depends on the availability of the crops within the region. For the regio of Flanders this will be hemp, miscanthus and flax.

Process

The process in which you will be actively involved and take on the necessary responsibility will be as follows;

1. Introduction session

Timing: nov/dec 2024

- Explanation of pilot, pilot specific crops and your role as designer in the system. Introduction questionnaire on your knowledge and experience in biobased design
- You will be asked to keep a journal of the process you will work on to use as input for the design methodologies. The journaling method and tools will be provided by the Belgian cluster.
- A first design session where an academic framework will be used to develop the design methodologies for the use of biobased materials.
- First rough prototyping of end products.

2. Binder session

Timing: jan/feb 2025

To understand the different compositions and properties of biological binders in combination with crops, an informative session is being organised by IMT Lille.

3. Compounding workshop

Timing: march/may 2025

With the requirements and characteristics of the end products in mind you will be participating in a compounding session where both crops and binders will be combined and connected into useful semi-finished products.

4. Evaluation session

Timing: may/June 2025

During this session your experiences will be shared with the group of designers and local partners by presenting the journal, prototypes and designs. From all these inputs, the design methodologies will be further developed and finalised. The questionnaire that has been conducted in the introduction session, will be conducted again with the participating designers to see how they evolved in becoming a biodesigner.

5. Design session with the value chain

Timing: Q3 2025

The different stakeholders in the value chain will be invited to use and test the design methodologies developed in the previous steps.

6. Building Creating / developing

Timing: Q1 2026

The prototypes, semi-products and prototypes are used to build a demonstrator. In every region a final product (demonstrator) will be produced. This can be a piece of furniture, a building element, a small-scale house, ... This will be decided during the previous steps of this design process.

7. Final presentation

Timing: Q2 2026

In a final step you will present the results and insights to the other regions to exchange learning and experiences.

Role and commitment as a designer/ architect

The designers/architects are key players in this process. We expect you to take ownership of the different activities, the process and the value chain. You will act as an orchestrator within the value chain. This means you will work with us to bring the value chain together, generate and develop ideas and set up biobased initiatives. Throughout the project, you will also receive the necessary guidance, support and training through workshop moments from UGent Campus Kortrijk, this is a unique learning opportunity. Your role within BBoBB;

- Your pro-active participation in the different workshops/ design sessions
 1. Introduction session
 2. Binder session
 3. Compounding workshop
 4. Evaluation session
 5. Design session with value chain
 6. Prototyping and building
 7. Final presentation of results

- ⇒ Some additional workshops, learning moments and evaluation sessions where necessary between the steps
- Preparation and processing of the workshops/ design sessions
- Active attitude to follow up the process and include the organisation.
- Periodic survey to monitor development within the project.
- Accurate journal keeping to document the process.
- This project is also a learning opportunity where you will receive new insights and experiences related to biobased crops and materials.

Budget

We foresee a budget of around EUR 5,000 per designer for this track.

Intellectual property

The aim of the project is to share all the knowledge, experience, learnings and results gained with the outside world to promote and facilitate the use of bio-based building materials by making them more accessible. As a result, no intellectual property will be able to be established on the outcomes of the process.

Application

Please send the following information to sebastien@designregio-kortrijk.be for your participation in this project before the 8th of November;

- Your field of expertise
- Your experience with biobased materials
- Your motivation to participate
- Your hourly rate taking into account the framing within this project

Selection

The selection will be confirmed by November 15th the latest based on your experience (25%), your motivation (40%) and your hourly rate (25%).