Development Plan
WPT5.2.1

CobBauge Development Plan

Synopsis

This development plan is an output that fulfils T5.2. The content of this development plan comes from discussions at CobBauge steering group meetings, throughout 2021 and 2022 and therefore, in separate parts it has been validated by the steering group members.

The Development plan assesses the market potential of future CobBauge related developments, suggests potential joint ventures and clarifies the Licensing strategy to ensure that staff can fulfil the outcomes of the building with CobBauge.

Future construction plans for CobBauge related developments

Throughout technical, partner and project meetings alongside steering group meetings, the future of building with CobBauge has been discussed. This was either explicitly or sometimes inferred by suggesting improvements that could be used with the current system. Those developments came under a number of main categories outlined below.

Technology/construction process.

Off-site construction/ Prefabrication was seen by many steering group members as a major way forwards related to the next stage of CobBauge. Thus, taking the CobBauge material that the CobBauge project had successfully optimised to fulfil the French and UK Building regulations and take on board comments that reflected how the construction industry had changed since the project started in 2017.

The question of drying remains a critical point for a massification of the cobbauge use. This process must be better controlled and optimized. Prefabrication is an answer, but further research will have to be conducted on the drying process, the relationship between heat and air circulation and the hypothesis of internal air circulation on the wall, points addressed in the very first experiments of scale 1 walls but not measured or developed subsequently.

Some questions that have driven the development plan have concerned how much impact has the clay plaster affected the drying process? This led to further areas of development such as identifying when was the optimum timing for the application of clay and lime plaster to ensure that the construction schedule gave time for the other related trades? The development plan therefore includes moisture measurements in the constructed buildings as a critical aspect of project has been related to the drying times associated with monolithic construction.

The steering group members felt that the development plan should include further developments from measured performance from the existing buildings, making the most of their strengths. The considerable evidence that our climate is changing is a driver for all future buildings to give some resilience to extremes of temperature, particularly the growing number of global wide summer heat waves. The CobBauge project then looked at Specific Heat Capacity and from this volumetric heat capacity. Building stays cool in summer and warm in winter.
The development plan included the production of guides for builders and designers. A specification guide has been produced for designers focusing on what an architect needs to know whereas Tom Morton from EBUKI's specification guide focuses on what the builder needs to know. All downloadable on the website.

In France, the insurability of the CobBauge process will require completion of studies on certain points not addressed in the research project. These are fire behaviour, and earthquake resistance. In the current state of the documents produced, the technical controllers assigned to public operations will request more precise and framed technical information, with limit values to be respected much more precisely. Redactional work will therefore remain to be done at least on the French side to facilitate the use of CobBauge.

The development plan is to improve the efficiency of CobBauge production and a structural engineer, and steering group member, Barry Honeysett visited both the French and UK sites as builders started a next lift and noted the process of getting cob from ground on to scaffolding, using a conveyor belt and 2 buckets, could be speeded up. A swing shovel was brought onto the site and this increased the rate in which the CobBauge material was being worked on. This emphasized that the plan needed to focus thought upon the use of labour and, where appropriate, to mechanise the process of getting the CobBauge material onto the walls.

Training

The development plan identifies that a vital challenge related to the future of CobBauge is to ensure that training is available and readily accessible by all those outside of the project that needed to gain information or to have skills explained. As part of meeting this challenge the plan moves the traditional face to face training events to a digital medium and for these to be hosted online. This part of the plan is well underway and EBUKI and PnrMCB have now produced 32 videos on YouTube. The plan is then to regularly advertise the fact that this deep and meaningful resource is available to anyone by advertising this on the social media of EBUKI and PnrMCB and reposting on other partner sites.

France and UK

The development plan includes further collaboration between both French and UK partners. The Development plan includes making the most of opportunities focused at the CobBauge buildings on both sides of the channel. An example of this, that partly stemmed from the steering group meetings is that representatives from some of the French partners attended 22/23 open days at Hudson's build in Norfolk.

The steering groups discussed the possibility of linking up with organisations such as British Heritage to use/discuss the CobBauge product. Invitations to these organisations went to attain a focused meeting about the future of CobBauge 'piggybacking' on the FutureBuild exhibition taking some of CobBauge mini samples of slip and hemp to show as examples.

International beyond France and UK

As part of the development plan there is the ambition to broaden the interest in CobBauge to overseas construction. As part of this the international conferences were also interlaced with visits to potential users of the CobBauge material. The conference and other presentations looked at the future of CobBauge, including links with Australia/USA. The PowerPoints of the presentations would be available on the CobBauge website broadening their scope further. Keen to get international presence.

CobBauge has been in direct contact with Peter Higson from the Australian Earth Building Association about the thermal side of earth. The development plan includes undertaking some

actions to allow the earth building industry to continue in Australia and for CobBauge to help overcoming the similar barriers to use that CobBauge encountered in its early day.

Publications

To ensure that the project has local/national/EU and international reach the CobBauge development plan aims to publish with a broad range of areas, that are aimed at broadening the use of the material, from designers, builders, and academics.

General publication

CobBauge will be submitting a publication to either online presence or limited paper distribution (to keep costs low) that will be a further tool in helping to link to those that are interested in building in an Ultra-Low Carbon method. The plan is to link to a technical expert in the field of low carbon building and to allow that person assist in the production of this text.

Academic papers

A number of academic papers will be drafted that are mainly centred on the data from the CobBauge buildings in France and the UK. These can help designers, engineers, and buildings to use the peer-reviewed element as an important method of persuading local authorities that the project has the evidence support any claims made. The topics will include moisture, shrinkage, thermal performance, energy performance and the production process.

Licensing system

The use of the ECVET system (documents available on the CobBauge website) will serve as a Licensing system and those people that have that qualification will ensure that staff employed to work on CobBauge buildings will have the knowledge to ensure the CobBauge project fulfils all its outcomes.