



PROJECT IMPLEMENTATION PLAN



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Changes Log

Version	Date	Modified elements



Introduction

Scope

The Project Implementation Plan (PIP) is a reference document for beneficiaries while executing the BAMB project. By acting as a master plan and summarizing all components needed to successfully implement the project in its entirety, the Implementation Plan operationalizes the Grant Agreement by translating it into a practical, hands-on guide for all project partners. It provides guidelines for administering, monitoring and reporting following the EC requirements stated in the Annotated Model Grant Agreement and other official programme documents.

Approach taken

The Implementation Plan is based on the BAMB Grant Agreement, the Consortium Agreement and the project Work Plan and will be made coherent with fellow project execution documents.

While these documents form the Project Implementation Plan's basis, the plan will be continuously updated throughout the project's lifetime, whenever project-internal additions and changes are made. Periodic revisions (6 monthly) will be made to the document based on the experiences during project execution.

These additions and changes are made by the Project Coordinator, and will be administered in the Changes Log. In the case of significant changes, partners and the EC Project Officer will first be informed and consulted.

Disclaimer

This document is partly based on the EC's official documents and profound knowledge of guidelines and ways of working in Horizon 2020. While guidelines on administration and reporting are as much as possible the same as the official documents, adjustments have been made with logical build-up and readability in mind. However, no legal responsibility can be taken for the contents in this document. If in doubt with an issue, please consult the official documents, or ask IBGE-BIM, who will ask for an official EC response if necessary.



1 Project Overview

Building as Material Banks: Integrating Materials Passports with Reversible Building Design to Optimise Circular Industrial Value Chains is a Horizon 2020 – Waste 1 project started on September 1, 2015. The project is led by Brussels Environment (IBGE-BIM) and brings together a consortium of 16 partners from 8 different countries.

The following paragraphs provide a quick introduction to the project goal, the lead beneficiaries per work packages, the project structure, a list of the deliverables and a summary of project effort in person-months. A more detailed overview of the project layout, with outputs and verification criteria, is provided in the Logical Framework Overview as attached in annex 2.

1.1 Project goal

The overall objective of the project is to explore and implement pathways towards a circular economy in the building sector by integrating the concepts of reversible building design and material passports. Material passports and reversible building design help preserve the buildings, components and materials' residual value, which makes it possible to capitalise on "waste" by high quality reuse and recycling strategies. Buildings can then function as banks of valuable materials that reduce construction and demolition waste and the use of virgin resource consumption.

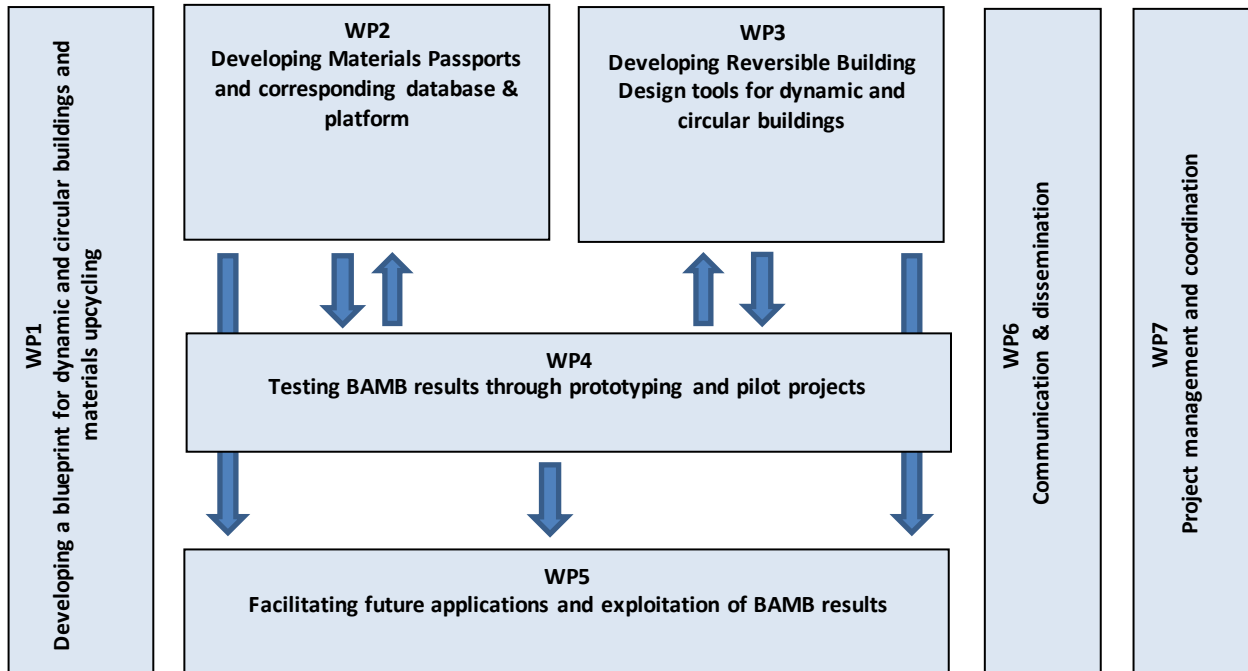
BAMB has the goal to achieve, within the pilots that will be developed during the project, to eliminate 30-50% of construction waste and reduce the use of virgin resources by 10-20% compared to a classic building construction and / or refurbishment.

1.2 List of work packages and lead beneficiaries

Figure 1: List of work packages and lead beneficiaries

WP Number	WP Title	Lead beneficiary	Person months	Start month	End month
1	Developing a blueprint for dynamic and circular buildings and materials upcycling	VITO	65,3	2	42
2	Developing Materials Passports and corresponding database & platform	EPEA	158,5	1	42
3	Developing Reversible Building Design tools for dynamic and circular buildings	UTwente	159,8	1	42
4	Testing BAMB results through prototyping and pilot projects	IBGE-BIM	154,2	1	42
5	Facilitating future applications and exploitation of BAMB results	BRE	284	1	42
6	Communication & dissemination	Ronneby	114,5	1	42
7	Project management and coordination	IBGE-BIM	70,8	1	42

Figure 2: Work package structure



1.3 List of deliverables

Figure 3: List of deliverables

Deliverable (no)	Deliverable name	WP no	Lead beneficiary	Type	Dissemination level	Due Date (in months)
D1	Synthesis of the state-of-the-art and key barriers and opportunities for Materials Passports and Reversible Building Design in the current system	1	VITO	R	PU	M15
D2	Visualisation of the blueprint of desired system configurations	1	VITO	DEC, Other	PU*	M21
D3	Online visualisation of Lessons Learned and Best Practices + Adjusted synthesis of the state-of-the-art and key barriers and opportunities + Adjusted Blueprint	1	VITO	DEC, Other	PU*	M42
D4	Materials Passports User Requirements Report	2	EPEA	R	CO	M7
D5	Framework for Materials Passports	2	EPEA	R	CO	M15
D6	Software Platform	2	IBM	DEC, Other	CO*	M14
D7	Operational Materials Passports	2	EPEA	DEM	CO*	M42
D8	Re-use potential tool	3	UTwente	R	CO*	M42
D9	Transformation capacity tool	3	UTwente	R	CO*	M42
D10	Design protocol for dynamic & circular building	3	UTwente	R, Other	CO*	M42
D11	Reversible Building Design User Requirements Report	3	UTwente	R	PU	M33
D12	Feasibility study + Feedback report	4	IBGE-BIM	R	PU*	M24
D13	Prototyping + Feedback report	4	IBGE-BIM	R	PU*	M32
D14	2 Pilots built + Feedback report	4	IBGE-BIM	Other, R	PU	M42
D15	Building Level Integrated Decision Making Model	5	BRE	R	CO	M32
D16	BIM Resource Productivity Prototype	5	Sundahus	Other	CO	M40
D17	Recommended business models	5	IBM	R	CO	M26
D18	Recommended target operating models	5	IBM	R	CO	M36
D19	Framework for regulations and standards	5	IBGE-BIM	R	PU*	M41
D20	Innovation and Exploitation Framework	5	BRE	R	CO	M40
D21	Communication plan	6	Ronneby	R	PU	M6
D22	Operational website	6	Ronneby	DEC	PU	M6
D23	Communication and dissemination catalogue	6	Ronneby	R	PU	M42
D24	Revised Final Work Plan	7	IBGE-BIM	R	PU	M4
D25	Project Implementation Plan	7	IBGE-BIM	R	PU	M6
D26	Updated Project Implementation Plan and Annexes	7	IBGE-BIM	R	PU	M38
D27	Data Management Plan	7	IBGE-BIM	R	PU	M6
D28	Updated Data Management Plan	7	IBGE-BIM	ORDP	PU	M38
D29	Consortium Meetings Minutes	7	IBGE-BIM	R	CO	M42

* these deliverables are to be in part CO and in part PU



1.4 Summary of project effort in person-months

Figure4: Summary of project effort in person-months

Partner	Total	WP1	WP2	WP3	WP4	WP5	WP6	WP7
1. IBGE-BIM	80,60	2,70	-	-	15,00	17,00	-	45,90
2. EPEA NL	63,46	2,10	41,83	-	12,00	4,50	0,75	2,28
EPEA Int.	63,34	1,40	47,17	-	8,00	4,50	0,75	1,52
3. VITO	47,10	11,40	-	-	-	34,70	-	1,00
4. BRE	96,80	4,20	-	5,00	-	83,00	-	4,60
5. ZUYD	52,70	0,70	-	8,00	33,00	7,00	3,00	1,00
6. IBM NL	73,50	3,00	22,50	-	-	48,00	-	-
IBM	1,00	1,00	-	-	-	-	-	-
IBM	0,90	-	-	-	-	-	-	0,90
IBM	-	-	-	-	-	-	-	-
7. VUB	72,00	7,80	-	28,00	32,20	-	3,00	1,00
8. Ronneby	58,70	0,70	-	-	-	10,00	47,00	1,00
9. Sundahus	75,70	0,70	38,00	-	-	36,00	-	1,00
10. TUM	13,70	0,70	-	-	-	-	12,00	1,00
11. UTwente	134,80	13,90	-	95,30	-	18,00	3,00	4,60
12. UMinho	57,50	7,70	-	-	-	6,80	42,00	1,00
13. SGDF	48,70	4,20	-	23,50	17,00	-	3,00	1,00
14. DS-ABT	44,70	1,70	2,00	-	33,00	7,00	-	1,00
15. BAMUK	12,20	0,70	1,00	-	4,00	5,50	-	1,00
16. Aurubis Bg	8,70	0,70	5,00	-	-	2,00	-	1,00
Aurubis AG	1,00	-	1,00	-	-	-	-	-
	1.007,1	65,30	158,50	159,80	154,20	284,00	114,50	70,80



2 Project teams and responsibilities (internal & external)

This section of the implementation plan describes the division of responsibilities across the Consortium, as well as the different management bodies & working groups, their responsibilities, composition, and way of functioning (type of meetings, frequency). A difference is made between internal project teams (composed of staff members of beneficiaries) and external project teams (composed of third-party stakeholders, for example industry, government or academic partners).

The responsibilities taken on by the coordinator and beneficiaries in the BAMB project is substantial and described in the project Grant Agreement and Consortium Agreement. In this paragraph specific elements of this division of responsibility are elaborated upon.

- **Lead partner principle** – As in any European cooperation project, the lead beneficiary or coordinator carries full responsibility vis-à-vis the programme authorities for the entire operation, including all partners, and is ultimately responsible for the proper reporting of progress to the EASME secretariat. The coordinator will act with the commitment made to EASME in mind and in line with the projects interests.
- **Beneficiary responsibility** – However, beneficiaries are responsible for their own delivery, administration and reporting within the project. It is up to the partner to inform themselves about the requirements and guidelines of the H2020 programme and the project requirements. Beneficiaries bear the responsibility for the delivery of all tasks and deliverables that are assigned to them. Any service the beneficiary delivers in this respect is to be regarded as non-legally binding. The grant and consortium agreements are the legal basis of the project. If a beneficiary does not deliver according to the agreements, the coordinator may (and should) take appropriate action.
- **Work Package and Action leaders responsibility** – As BAMB is a large and complex project, responsibility for tracking and monitoring progress in the work packages is delegated to the beneficiaries who lead the work package. Work package and Action leaders are to be informed by the Coordinating Partner of their specific responsibility and the best way of consolidating this role. As for all beneficiaries, Work Package and Action leaders bear the responsibility for any tasks and deliverables assigned to them, as well as the responsibility of coordinating and monitoring the work done by other beneficiaries within the Work package and/or Action that they lead. The Work Package or Action leader should inform the coordinator in a timely manner concerning any deviations or delays in the work package execution.

2.1 Project management

The coordinator IBGE-BIM will execute the day-to-day project management with a dedicated team of staff and supporting consultants. The following persons are part of the project's operational management:

- Caroline Henrotay – Technical and strategic manager
- Molly Steinlage – Operational manager
- Bart Janssen (Het Subsidiehuis) – Financial Manager
- Daan Lavies (Bureau BUITEN) – Technical and administrative support



The project management team will help plan and organize project meetings and events; answer technical, administrative or financial questions of partners; manage contact with the EC; develop management-related content for the BAMB media and platform; monitor the BAMB internal planning, project risks and mitigation; and develop and maintain external relations. The management team will also check if the project execution complies with the H2020 regulations on open data, innovation management etc. While executing the daily management, the below principles will be applied.

Principles of BAMB operational management

Focus on people

Developing good relations within the partnership is key for a successful project. Research management is a people business and should ideally not rely on formal tools or hierarchical management styles. Therefore, the project aims for an all-inclusive and consensus-based management style, with simple, straightforward management structures and clearly defined roles and responsibilities throughout the project.

Clear and pro-active communication

Clear and consistent communication will help smoothen cooperation. In addition to the planned (telco) meetings, the project management is available daily to assist the project partners. If problems arise, the management team will do its best to provide answers and solutions as soon as possible. Partners are encouraged to be pro-active and to share their thoughts. Waiting for the next planned meeting could mean valuable time gets lost.

Contact with the European Commission

The management team will ensure that a good working relationship with the European Commission will be developed and maintained, by pro-actively contacting the project officer about relevant aspects of our project. Informing the project officer well in advance instead of waiting for formal reporting periods will help smoothen cooperation. Following EU regulations, the Coordinating Partner will be the only party contacting the project officer.

Risk management and responsibilities

Throughout the project, all partners should keep a sharp eye out for potential risks. These risks will be discussed within the partnership, to find out how we can best mitigate the risk or respond to it. Based on the input of all partners, an inventory of potential risks and responses will be kept up-to-date by the project management. The thin line between partners' responsibility and the Lead Partner principle requires a pro-active way of working by the Coordinating Partner's management team, clear communications and agreement on the responsibilities and procedures which are to be clear for all partners.

2.2 Project Steering Group (PSG)

The Project Steering Group is responsible for the strategic management of the project, and has the highest level of decision power within the project. It is chaired by the Project Manager and will focus on strategic monitoring, evaluation and high level decision making. The steering group has the capacity to make strategic decisions on the direction of the project, work package execution, finances, dissemination strategy, protection of partner interests, disputes between partners etc. Every partner is represented in the Project Steering Group.

Objectives:

- Effective project monitoring (on overall project impact / objectives level);
- Forecasting, planning and organizing (high level);



- Monitoring of progress (high level), content, finances, and impact;
- Periodic evaluation of the project;
- Strategic decision making on the course of the project; and
- Aligning partner interests, and mediating when necessary.

Tasks:

- Validate certain deliverables which must be agreed on by all partners (E.g. Data Management Plan, Operational Project Website etc.)
- Incorporate advice from the Stakeholder Network;
- Decide upon any proposal made by the Project Coordination Team for the allocation of budget in accordance with the GA, and review and propose budget reallocations to the partners;
- Decide upon issues affecting the direction of the project and the commercial interests of the partners within the boundaries of the overall financial structure;
- Decide upon any proposal made by the Project Coordination Team regarding the adaptation to the Project Implementation Plan;
- Decide upon proposals made by the partners for the review and/or amendment of the terms of the GA;
- Decide upon material changes to the Work Plan;
- Decide upon proposals from the Project Coordination Team and the Communication Team to amend the Communication Plan;
- Decide upon proposals made by the partners for modifications or withdrawals to Attachment 1A/B (Background included/excluded);
- Decide upon additions to Attachment 3 (List of third parties for simplified transfer according to Section 8.3.2 of this CA);
- Decide upon proposals made by the partners for the accession of a new partner to the Consortium and approval of the settlement on the conditions of the accession of such a new partner;
- Decide upon proposals made by the partners for the withdrawal of a partner from the Consortium and the approval of the settlement on the conditions of the withdrawal;
- Identify any substantial breaches in obligations made by a partner(s) under this CA or the GA;
- Decide upon declarations, remedies and the termination of a Defaulting partner; and decide upon proposals to the Funding Authority for a change of the Project Coordinator if made a Defaulting partner.

Meetings

- Physical meetings every 6 months, aligned with PCT meetings
Purpose: Presentation of the progress of the different WPs + work sessions where partners can work together physically on any of the above objectives or tasks.
Timing: April 2016 / October 2016 / April 2017 / October 2017 / April 2018 / October 2018
(During the project we might deviate from this strict planning, also to be able to link physical meeting with events taking place with are relevant for BAMB)
- Telco meetings every 3 months between physical meetings:
Purpose: Brief presentation of progress and difficulties to Project Steering Group based on follow-up by the Project Coordination Team.
Timing: March 2016 / June 2016 / September 2016/ December 2016 etc.
Additional telco meetings when needed / required by the Coordinating Partner or the Project Coordination Team



Composition

Partner	Representative
1. IBGE-BIM	Caroline Henrotay
2. EPEA Nederland B.V.	Lars Luscuere
3. VITO	Karolien Peeters
4. BRE	Gillian Hobbs
5. ZUYD	Werner Eussen
6. IBM	Sofie Narinx
7. VUB	Anne Paduart
8. Ronneby Kommun	Johan Sandberg
9. Sundahus I Linköping AB	Jan Boström
10. TUM	Michiek Kulik
11. Universiteit Twente	Elma Durmisevic
12. UMINHO	Luis Braganca
13. Sarajevo Green Design Foundation	Adnan Pasic
14. DS-ABT	Valentin Brenner
15. BAM	Jesse Putzel
16. Aurubis Bulgaria AD	Vanya Stoyanova

2.3 Project Coordination Team (PCT)

The Project Coordination Team's main task is to coordinate the work done in the WPs, overseeing the timely delivery of outputs and deliverables, establishing and ensuring interconnections, and organizing interactions between partners whenever necessary. The Project Coordination Team brings together 8-11 staff members from different partners, with a different background / task in the project. It is composed of members from different partners who work on the project daily. The multidisciplinary nature of the project (Materials Passports, Reversible Building Design, ICT and value-chain approaches for example) will be reflected in the composition of the PCT. Next to staff members of the Coordinating Partner, experts on the main specialties are to be on the Project Coordination Team.

Tasks

- Technical follow-up and coordination of the work done in the work packages, establishing and ensuring interconnections between the different work packages, assuring that the objectives of the project are met with regard to the developed content (deliverables);
- Responsible for the proper execution and implementation of the decisions of the Project Steering Group;
- Review the intermediate internal reporting submitted by partners every 6 months on the progress of the activities within the different work packages, examine that information to assess its compliance with the Work Plan and, if necessary, propose modifications of the Work Plan to the Project Steering Group (based on intermediate report questionnaires sent to all WP leaders);



- Monitor the effective and efficient implementation of the Work Plan. Monitoring and validation of the quality of the deliverables assigned for validation by the PCT (a procedure will be set up to reduce the work load of revision);
- Contribution to the development of the Data Management Plan (which will be developed by the Coordinating Partner as part of work package 7) and the Communication Plan, which is to be written by the partners responsible within work package 6, with the support of the Communication Team;
- The Project Coordination Team is to report to the Project Steering Group on a regular basis and at minimum in preparation of every Project Steering Group meeting.

Additionally, the Project Coordination Team has the following responsibilities in case of a project change:

- Make proposals to the Financial Manager for allocation of the budget in accordance with the GA, review and propose budget reallocations to the Parties before this is transferred to the Project Steering Group;
- Decide upon measures within the framework of controls and audit procedures to ensure the effective monitoring of the progress of the technical work affecting the project as a whole; and
- Make proposals to the Project Steering Group that the Project Steering Group should serve notice to a Defaulting partner and that the Project Steering Group should assign the Defaulting partner's tasks to one or more specific legal entity(ies) (preferably chosen from the remaining Partners).

Meetings

- Physical meetings every 3 months, to align with Project Steering Group meetings every 6 months. Timing: January 2016/ April 2016 / June 2016/ October 2016 / January 2017/ April 2017 / June 2017/ October 2017 / January 2018/ April 2018 / June 2018/ October 2018 (During the project we might deviate from this strict planning, also to be able to link physical meeting with events taking place with are relevant for BAMB)
Each Work Package or Action Leader participating to the Project Coordination Team Meeting will prepare a short presentation on the work carried out in each Work Package / Action during the past 3 months. The presentation will be posted on WHTSON for access by all BAMB partners a minimum of 5 days before the Project Coordination Team meetings.
A PowerPoint Template will be send to Project Coordination Team Members 2 weeks before the meeting.
- Telco meetings every 4-6 weeks between physical meetings.

Composition

Partner name and number	Representative
1. IBGE-BIM	Caroline Henrotay / Molly Steinlage
2. EPEA Nederland B.V.	Lars Luscuere
3. VITO	Wim Debacker / Karolien Peeters
4. BRE	Gillian Hobbs
6. IBM	Frank De Visser
9. Sundahus I Linköping AB	Jan Boström
11. Universiteit Twente	Elma Durmisevic
12. UMINHO	Luis Braganca / Daniel Pinheiro



2.4 Communication Team

The Communication Team (COT) consists of 10-11 representatives from work packages 1 to 7, acting as a steering committee for communication work and having the final say on communication issues. The COT will involve the members of the Stakeholder Network in communication of project results. The leading partner of Work Package 6, Ronneby Kommun, will prepare the agenda for and lead monthly meetings regarding the status of communication efforts. The team also serves the purpose of disseminating public deliverables of the project amongst a wider audience and to control project communication with regards to project branding and confidentiality agreements.

Expectations of the persons participating as part of the Communication Team:

- It is important that they have the mandate to make decisions in order to not have to rely on lengthy internal processes;
- They must have insight into the partners'/work packages' work in the project in order to provide input to the COT on communication/dissemination requirements;
- All members must be ready to answer emails on any pressing issues, review plans and ideas ahead of COT-meetings and participate actively in monthly meetings.

Tasks:

- Provide input and validate the Communication Plan.;
- Provide input and validate the Project Branding and logo developed as part of work package 6;
- Selection of key public events where BAMB is to be presented;
- Review and approval of the content and timing of press releases (developed in WP6) and joint publications by the Consortium or proposed by the Funding Authority in respect of the procedures of Article 29 of the GA;
- Ensure the Communication Plan is effectively executed as part of WP6;
- Provide input on any obstacles or issues encountered in regards to this plan, and propose further suggestions on the promotion of project results.

Meetings

Monthly telco.

Composition

Partner name and number	Representative
1. IBGE-BIM	Molly Steinlage
2. EPEA Nederland B.V.	Hein van Tuijl
3. VITO	Nele D'Haese / Karolien Peeters
4. BRE	Flavie Lowres
6. IBM	Saskia Pybus
8. Ronneby Kommun	Lisa Aelman
9. Sundahus I Linköping AB	Lisa Elfström
11. Universiteit Twente	Elma Durmisevic
12. UMINHO	Luis Braganca / Daniel Pinheiro



2.5 Stakeholder Network

The Stakeholder Network is a group of external actors to be consulted during the project. The network is composed of third parties who are working within the domain of one or more of the aspects investigated and/or developed within the BAMB project. The Stakeholder Network should represent the different links of the value chain, the different actors within this link, as well as be geographically diverse and representative of the BAMB partners.

The aim of the Stakeholder Network is to disseminate project results, inform key stakeholders and allow them to give feedback on project outputs based on their field experience and expertise. The Stakeholder Network will be set-up and managed by the Coordinating Partner. However, all partners are required to give input with regard to the industrial and non-industrial actors that should be contacted, as well as federations representing certain sectors.

Functioning

Regarding the general functioning of the Stakeholder Network, the network will be organized on two levels according to 2 levels of membership. The philosophy is that different stakeholders are willing and interested in participating with different levels of commitment and active participation.

1) General Membership

The first level – general membership – would allow stakeholders to maintain being informed and would allow them to provide feedback through an Annual Stakeholder Network Meeting, which is to be scheduled to follow the PCT/PSG meetings in the fourth quarter of each year (exact dates to be confirmed).

2) Special Interest Groups

One step further, a second level of membership – Special Interest Groups- will allow participants to identify themselves with key interests or thematic areas (for example: Materials Passports, Reversible Building Design, Circular Economy, Business Models, BIM, etc.). The idea of these Special Interest Groups is that work package leaders could then call on these smaller groups for more direct interaction throughout the year and/or even call small workshops for direct feedback and exchange.

Six Special Interest Groups have been identified to focus on:

1. Materials Passports
2. Reversible Building Design
3. Building Information Modelling (BIM)
4. Business Models
5. Policies and Standards
6. Case Studies and Pilots

Potential tasks of the Special Interest Groups

- Participate in workshops and form different working groups based on the expertise and topic of the workshops. For example, workshops will be held to define the user requirements in different WPs, give input regarding the development of project outputs, etc.
- Have a pre-validation role for select deliverables. In particular, this role relates to certain industry-aimed deliverables that have had a user requirements assessment in the course of development and which require additional feedback before completion.
- Provide input on the Framework for Regulations and Standards.



- Assist in disseminating the project's results amongst selected target groups of stakeholders outside the Stakeholder Network.

Establishment

The establishment of the Stakeholder Network is foreseen for early 2016. The target participation numbers for the Stakeholder Network are:

- >50 small, medium and large companies and professionals; and
- >25 public bodies, universities and NGOs.

To ensure equality of opportunity and expand the reach of participation, a launching event will be held in May 2016 and will be advertised directly on the BAMB website, social media and other related websites. This launching event will be an opportunity to introduce potential stakeholders to the project and convince of the mutual benefit of joining the Stakeholder Network and participating in future Annual Stakeholder Network Meetings and/or Special Interest Groups. In addition to online advertisement, privileged partners of the members of the BAMB Consortium will be invited to attend the launching event and join the Stakeholder Network by means of a formal invitation email. A general email will be drafted for all BAMB partners to use to officially notify stakeholders of the launch of the Stakeholder Network and invite them to the event in May, and in attachment could be found the project flyer and the Terms of Reference describing the purpose and activities of the Stakeholder Network.



3 Events & Collaborative Working

Joint Project Steering Group and Project Coordination Team Meetings

In an effort to simultaneously facilitate maximum exchange between BAMB partners, promote efficiency and decrease travel costs, twice annually the Project Steering Group and Project Coordination Team meetings are planned to occur together in one location over the course of 2-3 days. Additional efforts will be taken to align one of these annual joint meetings with the occurrence of BAMB's participation in external, international events. These joint Project Steering Group and Project Coordination Team meetings are focal points in the project's progress and interactions between partners. They are efficiently planned multi-day events, aligning with the following:

- Meeting theme: a specific technical theme of the project, relevant to the timing of the meeting and venue;
- Administrative session on content and financial progress, attention and action points for project implementation;
- Data management and IP handling, identification and settlement of eventual issues that have arisen;
- Innovation & exploitation as a diagonal theme of project execution;
- Communication session;
- (Parallel) reunions of project internal workgroups. The length of workgroup meetings will vary based on items to be reviewed;
- A pilot visit or excursion to a site relevant to the project.

The Coordinating Partner, together with the hosting partner and the project teams (PSG, PCT) will prepare the agenda for the meetings. Logistics and technical arrangements are to be organized and facilitated by the hosting partner, and is covered by the budget of the hosting partner. Teleconferencing is to be arranged so that meetings can be attended from a distance for partners unable to physically attend.

Meeting minutes of decision making and follow up actions (D27) are to be taken systematically so that appropriate follow-up will occur and validation can take place.

External events

Several relevant external events are to be attended by a BAMB delegation. To the extent possible, these events are to be aligned with the joint Project Steering Group and Project Coordination Team meetings in order to facilitate the broad participation of BAMB partners:

- Green Design Festival in Sarajevo 2015 (<http://www.sarajevogreendesign.com>) – as project kick-off event
- Green Design Festival in Sarajevo 2017
- Further meetings to be specified and selected by the Communication Team. BAMB is to participate/ be presented at a minimum of one major international event per year over the course of the project.

WHTSON platform

During the course of the project the WHTSON platform is being used as the main online project exchange platform. Martina Lindgren (Ronneby), Caroline Henrotay (IBGE-BIM) and Molly Steinlage (IBGE-BIM) are all administrators of WHTSON.

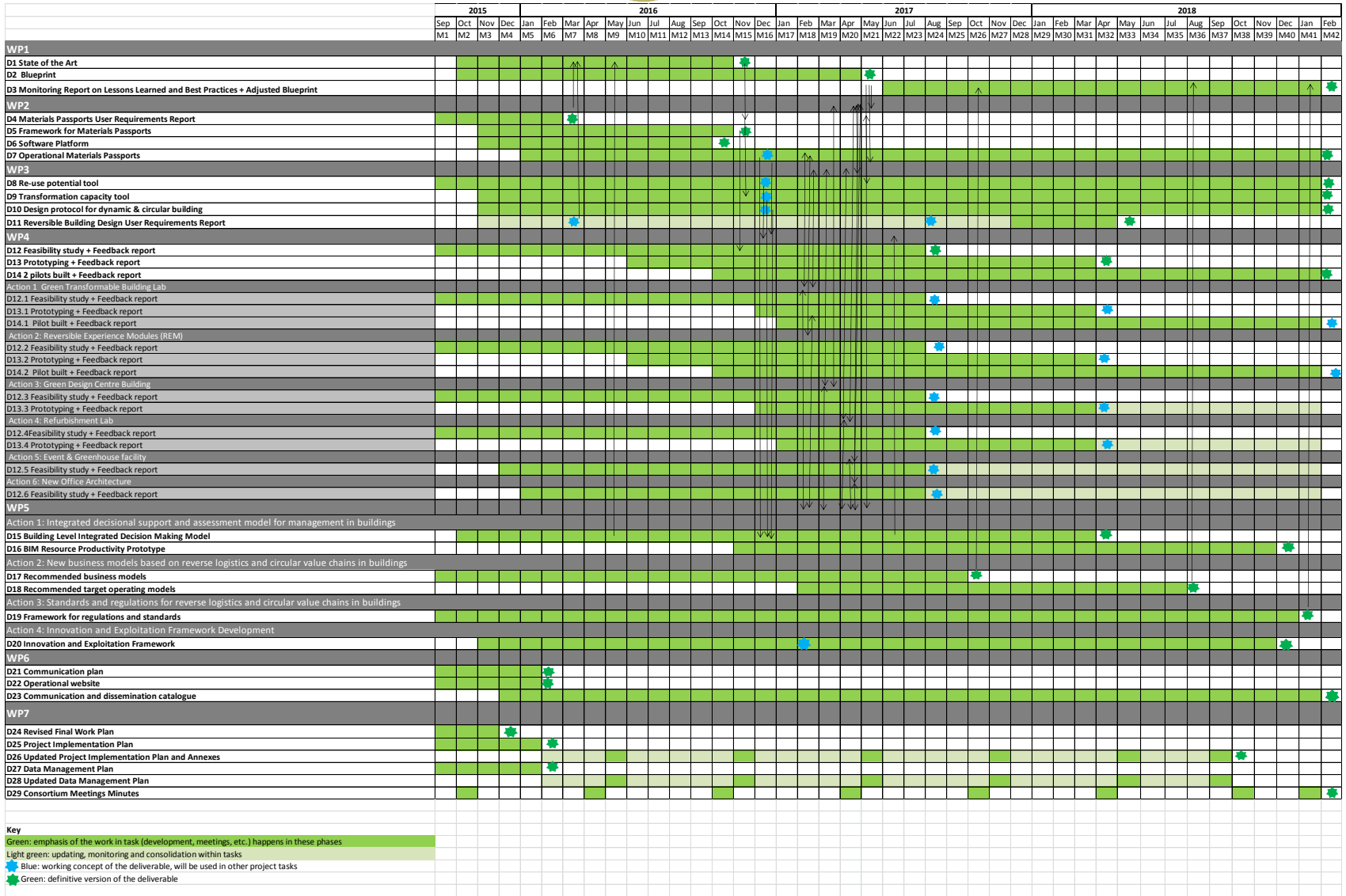
www.whtson.com

**Teleconferencing**

Teleconferencing will be the most common way of collaborative sessions for the PCT and the COT teams, along with the work package teams. While for bilateral and small sessions, Skype or GotoMeeting works well, for larger sessions with presentation / video conversations light and effective call-in purpose built call-in software is advised. The WHTSON platform is developing applications for these teleconferences.

4 Project planning and budget

4.1 Project planning



4.2 Project budget

Figure 4: Total budget per partner

Short name of partner	Budget
1. IBGE-BIM	€ 989.015,16
2. EPEA NL	€ 1.033.850,48
EPEA GMBH	€ 564.240,78
3. VITO	€ 668.242,50
4. BRE	€ 958.320,00
5. ZUYD	€ 825.837,50
6. IBM NL	€ 899.593,02
IBM Svenska	€ 13.024,22
IBM Belgium	€ 22.534,00
7. VUB	€ 724.625,00
8. Ronneby	€ 526.548,70
9. Sundahus	€ 607.593,75
10. TUM	€ 114.991,25
11. UTwente	€ 793.875,00
12. UMinho	€ 361.762,39
13. SGDF	€ 348.418,75
14. DS-ABT	€ 319.187,50
15. BAM UK	€ 93.875,00
16. Aurubis Bulgaria	€ 72.353,75
Aurubis AG	€ 12.500,00
Total	€ 9.950.388,75

Figure 5: Total budgets per work package

WP Number	Budget
1	€ 623.955,23
2	€ 1.459.237,06
3	€ 991.236,39
4	€ 2.219.183,25
5	€ 2.700.996,21
6	€ 937.638,56
7	€ 1.018.142,05
Total	€ 9.950.388,75



5 Administration and reporting guidelines

Introduction

Keeping records, monitoring and reporting progress, both financial and content-based, is an essential part of any EU-funded project. Horizon 2020 projects are no exception and, given the magnitude and complexity of these projects, require a specific approach. This chapter deals with both content and financial administration, monitoring and reporting; and will detail the **EC requirements** to be taken into account, as well as the procedures for **monitoring and reporting internally, within the project**. Special emphasis is given to **risk analysis** and **quality assurance**, as specific monitoring and evaluation requirements.

Related to administration and monitoring are the **Data Management Plan**, **Risk Management Plan** and the **Innovation and Exploitation Framework** that will be completed after the first version of the Project Implementation Plan. These documents, when finished, will lead to updates of the Implementation Plan and its Annexes.

5.1 Content administration and reporting

5.1.1 External reporting (EC requirements)

General obligation to inform

Reference: article 17 Annotated Model Grant Agreement – downloadable on WHTSON - general obligation to inform (P 148). The text shown below is a summary of the article.

Beneficiaries have a general obligation to inform the EC on project progress and changes in execution.

- Beneficiaries must provide — during implementation of the action or afterwards— any information requested in order to verify eligibility of the costs, proper implementation of the action and compliance with any other obligation under the Agreement.
- Each beneficiary must keep information stored in the ‘Beneficiary Register’ (via the electronic exchange system) up to date, in particular, its name, address, legal representatives, legal form and organisation type.
- Each beneficiary must immediately inform the Leading Partner (IBGE-BIM) — which must in turn immediately inform EASME and the other beneficiaries — of any of the following:
 - (a) events which are likely to significantly affect or delay the implementation of the action or the EU’s financial interests, in particular:
 - (i) changes in its legal, financial, technical, organisational or ownership situation [or those of its linked third parties and
 - (ii) changes in the name, address, legal form, organisation type of its linked third parties;]
 - (b) circumstances affecting:
 - (i) the decision to award the grant or
 - (ii) compliance with requirements under the Agreement.

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced.



Administration and record keeping

Reference: Annotated Model Grant Agreement – downloadable on WHTSON - - keeping records — supporting documentation (p 151 -).

The text shown below is a summary of the article.

All beneficiaries must, for a period of 5 years after the payment of the balance (the administrative finalization of the project) — keep records and other supporting documentation in order to prove the proper implementation of the action and the costs they declare as eligible.

They must make them available upon request or in the context of checks, reviews, audits or investigations. If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement, the beneficiaries must keep the records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. EASME may accept non-original documents if it considers that they offer a comparable level of assurance.

The beneficiaries must keep records and other supporting documentation on scientific and technical implementation of the action, in line with the accepted standards in the respective field.

The beneficiaries must keep the records and documentation supporting the costs declared. This is to be specified in paragraph 5.3.

If a beneficiary breaches any of its obligations under this article, costs insufficiently substantiated will be ineligible and will be rejected, and the grant may be reduced.

Reporting deliverables

Reference publications (EC):

Annotated Model Grant Agreement – downloadable on WHTSON (article 19, p 159-)

The Project Coordinator (IBGE-BIM) is required to submit the deliverables completed by beneficiaries to the EC (article 19 AMGA), according to the listing in Annex 1 of the AMGA.

At the time the periodic report (see below) is submitted, the Project Coordinator will check if all deliverables due are listed in the continuous reporting. An explanation (in the Comments column) should be added for:

- any departure from the scheduled deliverables (e.g. missing or late deliverables)
- any deliverable that has been cancelled or grouped with another.

Periodic report

Reference publications (EC):

Periodic reporting template – downloadable on WHTSON

Annotated Model Grant Agreement – downloadable on WHTSON (article 20, p 165-)

In order to receive payments, the beneficiaries (and their linked third parties) must report on the technical and financial implementation of action ('reporting'). This is done through the periodic and



final reports. For BAMB, three reports are foreseen – one periodic report at 18 months into the project, one at 30 months into the project, and one final report at the closure of the project.

These reports are the most important, but not the only, reporting mechanism to the EC. In addition to these reports, there are (for example) separate reporting / information requirements on deliverables (article 19 AMGA) and project changes (article 21 AMGA).

Processes for submitting a periodic report

Note: for the official guidelines on reporting, please consult the online H2020 manual. This section contains amended elements of the text published online.

There are two processes to take into account when reporting: 1) continuous reporting and 2) periodic reporting. In both cases, beneficiaries have a vital role to play. In the figure below, the difference in timing between continuous and periodic reporting is presented.

Continuous reporting

In parallel to periodic reporting, continuous reporting is required. The responsibility for continuous reporting sits with the beneficiaries, while the Project Coordinator (IBGE-BIM) will check on the progress and appropriateness of the continuous reporting.

Beneficiaries should use the continuous reporting functionality as soon as the project starts, in order to submit information that will later go into the periodic reports. The continuous reporting module is provided on the **H2020 participant portal**, in the beneficiaries' area.

The information to submit includes:

- deliverables;
- progress in achieving milestones;
- updates to the publishable summary;
- response to critical risks, ethics issues, publications, communications activities, IPRs; and
- your answers to the questionnaire about the economic and social impact of the project.

All of this information is then automatically compiled to create part A of every technical report, which is generated when the Project Coordinator and beneficiaries finish the preparation of the periodic report in the grant management system.

It is advisable to practice continuous reporting regularly, at least once a month, and when important progress is achieved.



Figure 6: Online reporting module in H2020 participant portal



Periodic reporting

The periodic report is made up of two sub-components: a technical (content) report (component 1) and a financial report (component 2). Once the beneficiaries deliver all necessary input and the two components are combined into a single PDF, the singular periodic report is then uploaded by the Project Coordinator.

The technical and the financial report should be coherent with one another – progress in research, piloting etc. should be visible in the expenditure declared and vice versa.

The first component, the technical report, itself includes two parts - part A (structured) and part B (free text)

The **technical report - part A** contains structured tables from the grant management system:

- cover page;
- publishable summary;
- web-based tables covering issues related to the project implementation (e.g. work packages, deliverables, milestones, etc.); and
- answers to the questionnaire about the economic and social impact, especially as measured against the Horizon 2020 key performance indicators and monitoring requirements.

Technical report - part A (structured) – relevant questionnaire elements

For BAMB, the following questionnaire elements are relevant / required to be filled out.

- Deliverables;
- Milestones;



- Ethical Issues (if applicable);
- Critical implementation risks and mitigation measures;
- Dissemination & exploitation of results;
- Impact on SMEs;
- Open Research Data; and
- Gender

All elements of part A will be generated by the IT system, based on the information entered by the participants through the periodic report and continuous reporting module¹ in the Participant Portal. Part A will mostly be pre-filled, and needs to be completed manually by stating which deliverables and milestones have been reached. The part A elements in the periodic report are included in the annexes, specifically stating which need to be completed for BAMB and which are not relevant.

- Each beneficiary should update the tables on an ongoing basis in the continuous reporting module. The information in the tables is then automatically compiled to create part A.

The **technical report - part B** is free text, focuses on content, and is a core part of the report that you must upload to the grant management tool as a single PDF document with:

- explanations of the work carried out by all beneficiaries and linked third parties during the reporting period; and
- an overview of the progress towards the project objectives, justifying the differences between work expected under Annex I and work actually performed, if any.

Part B of the technical report should be prepared by beneficiaries independently from the grant management tool, using a template provided by the Project Coordinator. When done, the Project Coordinator will compile all submitted components completed by beneficiaries, generate a singular PDF, and will upload this PDF to the grant management system (the technical report contribution section - the Report Core tab).

When both parts of the technical report (A & B) are ready to be submitted, the technical part will be finalised by the Project Coordinator's Contact Person, clicking Accept & Include.

Technical report - part B (free text)

The following elements need to be answered in Part B of the technical report. Details are visible in the template found in the Annexes.

1. Explanation of the work carried out by the beneficiaries and overview of the progress:
 - Towards project objectives;
 - Per WP; and
 - Impact.
2. Update of the Innovation and Exploitation Framework (if applicable)
3. Update of the Data Management Plan (if applicable)
4. Follow-up of recommendations and comments from previous review(s) (if applicable)
5. Deviations from Grant Agreement Annex 1 (if applicable)

Timing and periodic reporting periods

¹ for a specification of continuous reporting modules see further down this page



There will be three external reporting periods during BAMB'S lifetime: the first (periodic) report after 18 months, the second (periodic) report after 30 months and the third (final) report at the end of the project period, after 42 months. A graphic representation of these periods is shown below.

Figure: reporting period 1

2015				2016												2017	
Sept M1	Oct M2	Nov M3	Dec M4	Jan M5	Feb M6	Mar M7	Apr M8	May M9	Jun M10	Jul M11	Aug M12	Sep M13	Oct M14	Nov M15	Dec M16	Jan M17	Feb M18

Figure: reporting period 2

2017										2018	
Mar M19	Apr M20	May M21	Jun M22	Jul M23	Aug M24	Sep M25	Oct M26	Nov M27	Dec M28	Jan M29	Feb M30

Figure: reporting period 3

2018										2019	
Mar M31	Apr M32	May M33	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38	Nov M39	Dec M40	Jan M41	Feb M42

The EC reporting deadline for content and financial periodic reporting is 60 calendar days after the reporting period ends.

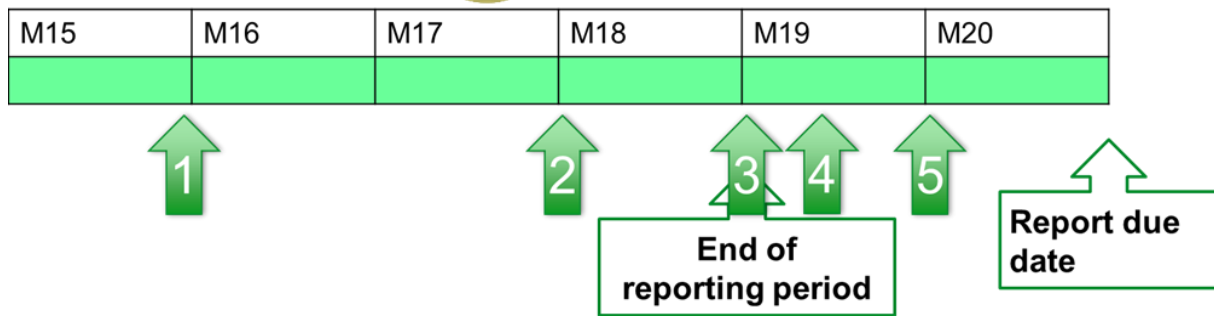
The workflow for the periodic and final report is organized as follows:

- Beneficiaries must submit their technical and financial progress to the Project Coordinator.
- Based on the contributions by all beneficiaries, the Project Coordinator (IBGE-BIM) will complete the periodic report and deliver it to the EC.

These processes will be further detailed when the first 'internal' reporting procedure starts (M6). See a description of internal project monitoring and reporting below.

For the first reporting period leading up to the delivery of the periodic report, an initial outline of steps to be taken has been made.

Draft planning for the first periodic report



Steps:

1. At the end of month 15: project coordinator IBGE-BIM sends informative emails to beneficiaries, and checks the continuous reporting module on the level and appropriateness of updates by the beneficiaries. An informative email will also be sent to beneficiaries for the financial administration and declaration of costs made;
2. At the beginning of month 18, the reporting procedure is set in motion in preparation of the Project Steering Group meeting, questionnaires will be sent to partners for both content and finance reporting², including the templates for the “Report on Explanations on the use of resources”. Meanwhile, the periodic report part B is pre-filled by the project coordinator IBGE-BIM, based on earlier partner reports and the information on the continuous reporting module;
3. In the first week of Month 19, the content reporting questionnaire and the financial statements are due to be sent to coordinator. The project coordinator will contact all beneficiaries by phone for missing elements and additional queries. For example, beneficiaries could be asked to complete part A elements on the participant portal;
4. In the second week of Month 19, the project coordinator IBGE-BIM compiles a complete technical report part B from partner contributions and drafts a full financial periodic report. The technical report is sent in to the project steering group for validation;
5. At the beginning of Month 20: Project Steering Group validates the technical report parts A and B and the report is sent in to the EC afterwards. The financial report is sent in by the project financial officer directly.

Considerations for periodic reporting

- Given the planning shown above, there will be considerable ‘peaks’ in reporting work for beneficiaries around M16-20, M28-32, and M40-44 regarding both content and financial aspects, which the Project Coordinator (IBGE-BIM) would like to even out throughout the project as much as possible.
- Continuous monitoring by beneficiaries for part A of the technical report is already an EC requirement, and part A partly overlaps with part B (part A is the ‘register’, part B is ‘the story behind it’).

5.1.2 Internal monitoring and reporting

By itself, the 18 month EC monitoring schedule is not an appropriate tool to effectively track project execution, get insight in project changes and deviations and mitigate risks. The long periods between reports can cause obstacles, delays and changes to go unchecked for long periods of time.

² For finance, the questionnaire should be similar to the individual financial statements



Therefore, a light internal monitoring system is needed. These reports should not be understood as an additional process for beneficiaries, but rather the incremental breakdown of the required process. This incremental process is called 'internal monitoring and reporting' and will be described in the next paragraph.

Internal monitoring and reporting is an incremental process that can be broken down as follows:

1. Telco updates / targeted checks for all partners as part of operational project management- every two to four weeks
2. Light internal reporting for task responsible partners - every 3 months
3. Light internal reporting for all partners - every 6 months

1. Telco updates targeted checks for all partners - every two to four weeks

The coordinator will arrange a telco meeting with all partners every two to four weeks, depending on the amount of tasks the partner is working on at that stage of the project. The detailed work plan, Activities Schedule, details filled in in part A of the continuous reporting module in the Participant Portal, and information gained via internal reporting provide the basis for these telco updates and provide the coordinator with an opportunity to track project progress, identify additional risks/obstacles, and find mitigation solutions. This method ensures that the coordinator has a good overview of the general progress made and partners are stimulated to discuss any issues that might arise. Also, potential changes and deviations are discussed (see box below).

Handling of project deviations and changes in the project

Each project has its own dynamics and will not be executed exactly according to plan. Then what exactly is considered a project change of deviation, and how should these be tackled within the project consortium?

The reference of project execution is the grant agreement and, specifically, the work plan. Changes or deviations from the content and financial planning in the work plan might occur, although they should be avoided if possible. All (minor and major) changes and deviations, including delays in the completion of deliverables and tasks, should be reported to the project management as soon as possible, ideally before they even occur. As many deviations occur because of re-considering priorities (for example a meeting location) project management should be given the opportunity to act beforehand. If more substantial changes are reported after they have happened and not duly reported to the EC, the connected costs declared might be considered ineligible.

In case of a reported project deviation or change, the project management will investigate the nature of the reported change/deviation and will involve the connected beneficiaries if required. In most cases, minor changes in content or finance can be addressed in the next steering group meeting. In some cases however, changes are significant and need to be reported to the EC programme officer. Project management will provide information on how to proceed to the beneficiary who reported the change.

2. Light internal reporting for task responsible partners - every 3 months

Every three months, the coordination team will send a prefilled short questionnaire based on Annex A to the Work Package and Action Leaders. The Work Package and Action Leaders are requested to send the templates to the partners who have been working on tasks in that period. The feedback that partners responsible for tasks provide will be used to prepare the Project Coordination Team meeting. Sending out the questionnaires will be done two weeks prior to the Project Coordination Team meeting. Completed questionnaires are to be submitted back to the Project Coordination



Team a minimum of 5 days before the Project Coordination Team meetings, and posted on WHTSON for access by all BAMB partners.

3. Light internal reporting for all partners - every 6 months

Every six months, all partners will be contacted by the coordination team to fill in a short questionnaire based on the temporary reporting template part B. Written input will be asked on task level (not on the subtasks). For example, a short explanation will be asked for the work carried out in each Work Package / Action, updates on dissemination and exploitation, data management etc.

Templates for the 3 and 6 month questionnaires are added in Annex 3.

5.1.3 Risks analysis and mitigation

Project execution risks need to be identified, described and risk-mitigation activities proposed before the project takes off. Appropriate risk management is an EC requirement and is operationalised in the Grant Agreement.

Project executions risks have been identified on two levels:

- project wide (also listed in annex 1 – to be reported upon to the EC);
- per Task / Deliverable (to be used for project / work package coordination).

This paragraph focuses on the project level. Risks identified for the Tasks level should primarily be monitored and handled by work package leaders. During the first semester of the project, an amendment to the PIP will be made when the additional annex on Risk Management will be made (including WP and task risks identified).

The identified risks on the project level, and the corresponding mitigation measures, are the following.

Figure : Risks

Risk no.	Description of risk	WP no.	Proposed risk-mitigation measures
R1	The construction sector is complex and heterogenic to perform system analysis	WP1	Actor and network analyses, and interactive workshops will provide a better understanding of relations between all actors in the supply chain. Boundaries of system analysis better defined in work plan adaptation (10/2015)
R2	Costs of entering the data in Materials Passports	WP2	IBM will advise on data extraction algorithms
R3	Buy-in from suppliers	WP2	Establishment of circular supplier communities for dissemination
R4	Complexity of BIM interface with materials aggregation data	WP2, WP5	BIM extracts data from Materials Passports and updated information is transferred back i.e. each element can function separately with minimal (and simple) points of interface required
R5	Determining residual value of materials	WP2	Collaboration with WP3 and WP5 on this subject
R6	Availability of data and input from other WPs to realise the integrated decisional support & assessment model for the management in buildings	WP5	Involvement of specialists and experts of leading companies participating in this WP will ensure availability of data and expertise. Adequate project coordination will ensure input from other WPs

R7	Consensus of data schema and decision making approaches developed in WP3 with external parties developing standards for BIM	WP5	BRE is leading the development of standards for BIM in the UK, UK is at cutting edge of BIM developments across EU, coupled with additional validation from Sundahus and other WP3 and WP5 partners heavily involved
R8	Availability of data to realise integrated architectural design & engineering protocols for reversible buildings	WP3	Involvement of specialists and experts of leading companies participating in this WP will ensure availability of data and expertise. Furthermore, the Stakeholder Network will be consulted if additional data are needed
R9	Potential adjustments of pilots may possibly conflict with (changing) project goals and vision. This could imply a requirement of additional or shifting funds at pilot partners	WP4	All external financing parties will be member of the Stakeholder Network which will be consulted. Within the Project Steering Group decisions will be made if major adjustments are required.
R10	Development of business models is dependent of sufficient input and data from building sector	WP5	Involvement of specialists and experts of leading companies participating in this WP will ensure availability of data and expertise. Additional data can be gathered via Stakeholder Network.
R11	Timely and complete sharing of data, information and insights from other WPs	WP1, 2, 3, 4, 5, 6, 7	Adequate project coordination and consortium agreement, ensuring all WPs are aligned and partners aware of mutual interdependencies and data and insights are shared in time
R12	Interdependency of WPs. Timely and adequate provision of tested results from previous WPs	WP1, 2, 3, 4, 5, 6, 7	Mutual interdependencies have been discussed in a separate session in Brussels - 10/15. Alignment and timing of delivery of interdependencies has been done as part of delivering the reviewed work plan (11/15)
R13	Reflexive monitoring demands openness on failure and unexpected results.	WP1, 2, 3, 4, 5, 6, 7	Interactive workshops will focus on this aspect to enthuse all parties involved.

5.1.4 Quality assurance and validation

Quality assurance, in the context of the BAMB project, is defined as a check by actors if the deliverable in question is according to expectations. Prior to the sending of deliverables to the EC, the management bodies (Project Steering Group, Project Coordination Team, or Communication Team) designated in the Work Plan will validate the quality of the deliverable. The quality assurance can be provided by project internal actors such as the Project Coordination Team or specific partners that are going to use the deliverable. Ideally, the Stakeholder Network should be involved as representatives of future market users.

Validation entails not just if the Deliverable is duly completed, but also:

- Is the result for the deliverable according to original expectations? Does it meet pre-determined validation criteria?
- Is it 'fit to use' by the appropriate actor / target group of users?
- Is it contributing to the other Tasks / Deliverables the way it's supposed to?

Validation has been added as a compulsory task for every Deliverable's completion. The process will take on average 3-4 weeks, with up to a maximum of 2 months, allowing time for feedback and revision as necessary.



Disputes regarding quality assurance and the mutual expectations of a Deliverable should be decided upon swiftly by the Project Steering Group, who will gather in a (on- or offline) extraordinary meeting. Eventual settlements will be prepared by the Project Coordination Team, if required assisted by legal support.

5.2 Financial administration, monitoring and reporting

This paragraph focuses on the rules for financial administration, monitoring and reporting, consisting of the formal EC requirements as well as the internal reporting to keep sound track of the project's costs.

5.2.1 EC requirements

Formal financial reporting towards the EC will take place after 18 months, 30 months and at the end of the project after 42 months. All EC rules and requirements on financial administration and reporting can be found in the annotated model grant agreement, in particular (but not limited to) the following articles:

- Article 4 — estimated budget and budget transfers – P20
- Article 5 — grant amount, form of grant, reimbursement rates and forms of costs – P23
- Article 6 — eligible and ineligible costs - P34
- Article 8 — resources to implement the action — third parties - P110
- Article 10 — purchase of goods, works or services - P 116
- Article 11 — use of in-kind contributions provided by third parties against payment - P119
- Article 12 — use of in-kind contributions provided by third parties free of charge - P122
- Article 13 — implementation of action tasks by subcontractors - P125
- Article 14 — implementation of action tasks by linked third parties -P131
- Article 20 — reporting — payment requests - P160
- Article 21 — payments and payment arrangements – P171
- Article 22 — checks, reviews, audits and investigations — extension of findings - P178

The **financial periodic and final reports**, consist of structured forms from the grant management system, including:

- individual financial statements (Annex 4 to the GA) for each beneficiary (and third parties)
- explanation of the use of resources and the information on subcontracting and in-kind contributions provided by third parties, from each beneficiary for the reporting period concerned
- periodic summary financial statement including the request for interim payment.

5.2.2 Internal reporting

The project's internal financial reporting is focussed on keeping track of the project's costs per partner, per cost category and per work package to ensure sound financial management throughout the course of the project. The project will run for a duration of 42 months, with scheduled formal financial reporting after month 18, month 30 and after month 42 as requested by the EC. In addition to these formal reports, a financial reporting structure is set up based on a "light" financial report by



each beneficiary every semester. This will enable sound financial management as the Coordinator (BE) receives overviews of incurred costs every semester, which can be used to address any financial issues that may arise on time. These “light” financial reports are to be submitted within two weeks after the closure of each semester (deadlines are 15th March and 15th September).

This “light” financial report is an Excel template in which beneficiaries each enter their costs incurred during a semester, for easy reporting to the project’s Coordinator. Additionally, the project Coordinator will provide a budget tool in which beneficiaries can enter their spending, which will project their spending against their available budget. At the same time this Excel template can be used by beneficiaries as a foundation for the formal reporting to the EC. This way, the reporting is directly connected to the creation of a sound audit trail by providing a template on beneficiary level to document all costs incurred on behalf of the project.

The information that is collected through these six monthly financial reports, will be combined at Coordinator level in a budget tool, that offsets the costs incurred against the budgets that are included in the project’s work plan. By using this budget tool the Coordinator can keep track of beneficiaries spending against their budget and forecast. This is a starting point for a comparison by the project manager of finances against the progress made on the content part of the project, highlighting any discrepancies.

5.2.3 Financial checks and attention points on financial administration

In the [online H2020 manual](#) under ‘grants management’ these elements, and many elements of the above annotated model grant agreement articles are explained.

5.3 External communication

5.3.1 Framework

BAMB’s external communication has to comply with H2020 communication regulations. These are to be found in the Annotated Model Grant Agreement. In the box below the essential elements of the article are visualized. Most importantly, the EU emblem and Horizon 2020 funding messages need to be visualized in every communication (article 38).

Essential elements on communication within the Annotated Model Grant Agreement

- The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner (article 38.1.1).
- All communication activities related to the action and any infrastructure, equipment and major results funded by the grant must:
 - display the EU emblem and
 - include the following text:

“This project has received funding from the [European Union’s Horizon 2020 research and innovation programme][Euratom research and training programme 2014-2018] under grant agreement No



[number].”

Or:

“This [infrastructure][equipment][insert type of result] is part of a project that has received funding from the [European Union’s Horizon 2020 research and innovation programme][Euratom research and training programme 2014-2018] under grant agreement No [number].”

When displayed together with another logo, the EU emblem must have appropriate prominence (article 38.1.2).

- Before engaging in a communication activity expected to have a major media impact, the beneficiaries must inform the Commission (see Article 52).
- Communication must take place following a comprehensive Communication Plan. Ad hoc efforts or mere dissemination of results are NOT sufficient. (Dissemination of results (see Article 29) cannot replace communication activities (or vice-versa); both provisions must be complied with.)

The Consortium will promote the action and its result, with a **comprehensive Communication Plan** that defines clear objectives (adapted to various relevant target audiences) and sets out a concrete plan for the communication activities (including a description and timing for each activity — throughout the duration of the action). ‘Promoting the action’ means providing targeted information to multiple audiences (including the media and the public), in a strategic and effective manner and possibly engaging in a two-way exchange.

In external communication, the BAMB project should demonstrate the ways in which it contributes to a European 'Innovation Union' and accounts for public spending by providing tangible proof that the collaborative research adds value by:

- showing how the collaborative project has achieved more than would have otherwise been possible, notably in achieving scientific excellence, contributing to competitiveness and solving societal challenges;
- showing how the outcomes are relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives more comfortable in other ways; and
- making better use of the results, by making sure they are taken up by decision-makers to influence policy-making and by industry and the scientific community to ensure follow-up.

5.3.2 Project Communication Plan

The BAMB Communication Plan, operationalizes the EC requirements and the work package 6 Tasks & Deliverables in detail. It is available for all project partners on the whtson online platform. The Communication Plan is part of the project architecture and will be the strategic framework for all communication activities in BAMB.

5.3.3 Innovation and exploitation



Horizon2020 is based on an impact orientated approach, focused on strategic technologies that can drive competitiveness and growth. Systematic planning of the innovation process and exploitation is at the core of this approach.

References for this paragraph:

- *Presentation 'Impact and innovation' by Dr. Eugene Sweeney, European IPR helpdesk expert. (available on WHTSON)*
- *H2020 online manual section 'dissemination and exploitation of results'*

5.3.4 Innovation management

What exactly does the EC expect of innovation management in an H2020 project? Innovation management is the overall management of all activities related to understanding needs, with the objective of successfully identifying new ideas, and managing them, in order to develop new products and services which satisfy these needs. Innovation management starts at the point of capturing the creative works and finishes when a product or service is deployed. It follows the 'technological readiness level' approach of the EC³.

In short, it entails that a project operationalizes the following in the application form:

- Demonstrate an understanding of the technology and market environment
- Justify the project objectives
- Present a credible and viable methodology and plan to achieve these project objectives
- Demonstrate capability to deliver what is planned, including governance, policies, systems, structures, operational processes and risk management
- Demonstrate and justify the potential impact of innovations and how it will be achieved

During the project, innovation management should be operationalized to:

- Understand the market needs and opportunities
- Take responsibility for the overall strategic approach of the research & development activities
- Ensure the project's foundations, management processes and structures (for innovation) are sound and working effectively
- Continually monitor the market, IP and technology landscapes
- Steer (adapt if necessary) the development plan to meet the project objectives and market needs – including market deployment

In innovation projects

Especially for Innovation projects such as BAMB, the following recommendations are given for operationalizing innovation management:

- Innovation is about satisfying needs & delivering benefits
 - What needs will be addressed?
 - What benefits delivered?
 - To whom and how much benefit (impact)?
- Focus on the business opportunity
- Include the concept for commercialisation
- Ensure a good level of innovation, i.e. develop something new

³ http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf



- Analyse competing solutions and explain why you will succeed and not your competitor

These elements are to be operationalized in the project innovation and exploitation framework (WP5A4).

5.3.5 Exploitation

Exploitation entails the marketing of individual and common project outputs to ensure market uptake and stakeholder visibility. The following elements of exploitation should be elaborated upon in the innovation and exploitation framework.

- Both commercial or research exploitation
- Preparation of exploitation and commercialisation strategies (and plans, if appropriate) - including the project results as a whole
- Coordination of individual partner's exploitation plans to avoid conflicts
- Preparation of more detailed strategies and plans during the project
- Adapting to changes and trends in market and technologies

Typical questions /actions when addressing exploitation

- How far down "TRL" road to go?
- Expected business models (licence, start-up, JV, etc)
- Do you need to licence in 3rd party components, etc?
- Prepare a draft business plan or investment proposition, if appropriate (with financials)
- Prepare a marketing (communication/dissemination) campaign to support exploitation
- Might more investment needed?
- What for (PoC, scale-up, company start, etc)
- How much, where from



ANNEXES

1 Legal Basis for BAMB

1.1 Grant Agreement

The Grant Agreement is the contract concluded between the European Commission (representing the European Union) and the beneficiaries under which the parties receive the rights and obligations. It consists of the basic text and annexes.

The Grant Agreement is available on the online platform of the project ([whtson](#)).

1.2 Consortium Agreement

The Consortium Agreement is the internal agreement between members of a consortium establishing their rights and obligations with respect to the implementation of the action in compliance with the grant agreement.

The Consortium Agreement is available on the online platform of the project ([whtson](#)).

2 Logical Framework

Objective	Output	Description of output	Task	Sub-task	Responsible partner	Completion date	Verification criteria	Means of verification	Risks & Assumptions
WP1 Developing a blueprint for dynamic and circular buildings and materials upcycling									
Develop a common and integrated understanding of the current system in which the BAMB Materials Passports and Reversible Building Design tools will be developed and implemented, and the problems and needs of which actors they will address. Develop a shared vision and blueprint for	D1 Synthesis of the state-of-the-art and key barriers and opportunities for Materials Passports and Reversible Building Design in the current system	<ul style="list-style-type: none"> * State-of-the art of Materials Passports * State-of-the-art of reversible design * Clear description of the value chain and network mapping at the building product level, building level * availability of information between actors along the value chain, with a specific point of concern related to the applicability of BIM within the current building practice in EU * estimation of the availability, composition, amount and quality of C&D Waste in the EU * identification of overall construction types and methods used to remove 			VITO	30/11/2016	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a private part of a web page.	
			WP1 T 1 : Managing the Systemic Learning and Interactive Monitoring Platform	1.1.1 Daily management of the SLIM platform	UMINHO	28/02/2019			Delay on the completion of the SLIM platform as a part of the project website. Different BAMB partners not having the reflex to exchange useful information through the SLIM Platform, requiring a longer period of (intense) facilitation.
			WP1 T2 : Developing a	1.2.1 Pre-selection of key	VUB, EPEA	30/11/2015			Not enough input

<p>a future system configuration within the EU.</p> <p>Monitor the context of the project in order to give input to the development of the different tools and refine the shared vision and blueprint.</p>		<p>and maintain buildings</p> <ul style="list-style-type: none"> * elaboration on the cause of demolition of buildings and major maintenance needs of buildings * estimation of re-use potential of buildings, components and materials within the existing buildings stock * identification of existing solutions/ applications/ strategies, key actors and barriers to accelerate the reuse of: - residues as material resources (not necessarily for building products) - (generic) components applicable for different buildings - trans-functional buildings * identification of existing initiatives and regulations impeding or supporting reuse of materials, components and buildings 	common understanding of key terminology	terminology					from all partners
				1.2.2 Co-creation and structuring of wiki pages	VUB, VITO	31/05/2016			Not enough input from all partners. The IT development of the SLIM Platform with wiki features is not delivered on-time. Wiki pages could be too "successful" requesting too much facilitation activities by the Wiki administrator.
				1.2.3 Reviewing the wiki pages for transfer to public part of the project website	VUB	30/06/2016			
			WP1T3 : Overview of the state-of-the-art and barriers and opportunities related to the current system	1.3.1 Developing guidelines enabling a systemic view	VITO	28/02/2016			
				1.3.2 Characterising the vested building system, including inventory of (inter-disciplinary) elements and relationships between them	VITO, EPEA, VUB, IBM, BRE, UTwente, SGDF, IBGE-BIM	31/10/2018			Because the state-of-the-art reports are drafted by different authors a potential risk is that not all system elements will be dealt with in the same way or at the same level of detail although guidelines and a template will have been developed to avoid this
				1.3.3 Placing the identified opportunities and barriers in a systemic context	VITO	30/11/2016			Describing the structure and the functioning of the

									vested system by making links between different systemic elements can only be done when all state-of-the-art reports are provided in time.
				1.3.4 Refining opportunities and barriers based on input of reflexive monitoring activities	VITO, EPEA, UTwente	28/2/2019			Not enough input from all partners Lack of feedback & cooperation from different WP's
			WP1T4: Validate	1.4.1 Submit to BAMB Project Steering Group for systematic validation	VITO	31/10/2016			Revisions required by steering group
				1.4.2 Finalized deliverable	VITO	30/11/2016			
	D2 Visualisation of the blueprint of desired system configurations	*Based on the identified current vested system (D1) and the desired future configuration, barriers and opportunities, a guide is developed listing short-term actions and long-term activities that would enable transition through disruptive interventions as well as through the supporting of slow evolutions. *Suggestions to initiate listed actions that are linked to opportunities and barriers *Identification of			VITO	31/5/2017	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of part of a web page.	
			WP1T5: Developing a shared vision and blueprint for a future system configuration	1.5.1 Determining common values and key principles for a circular and dynamic (built) environment	VITO, EPEA, UTwente	31/05/2016			Too little interaction between participants to develop a common transition framework.
				1.5.2 Linking the common values and key principles with required systemic changes		31/10/2016			
				1.5.3 Defining and characterising activities/interventions related to the required systemic changes based on the concepts		30/4/2017			The number of interactive/co-creation sessions planned will not be enough to have

		actors to be involved		of Materials Passports, Reversible design and the actions required for future implementation					sufficient output
				1.5.4 Structuring/grouping of activities/interventions on a time scale focusing short-term actions on the implementation of reversible design and Materials Passports		28/2/2019			
				1.5.5 Refining of blueprint based on input of reflexive monitoring activities	VITO	28/2/2019			
		WP1T6: Reflexive monitoring in order to update identified opportunities and barriers for systemic change and the identification of best practices		1.6.1 Identification and selection of system driven pilot cases	VITO	31/03/2016			<p>None of the pilot cases is system driven with regards to the different aspects investigated in BAMB.</p> <p>The system driven pilot cases, developed by private actors, are already too far in the decision making process and cannot integrate the support to overcome barriers and grasp opportunities in their decision making process</p>
				1.6.2 Setting up and managing a dynamic learning agenda (DLA) for each selected pilot case (incl. discussion meetings) – this DLA will enable to 1) better support the		30/09/2018			Informal reflexive monitoring is not taken up.

				development of pilot project finding solutions to overcome current barriers and ease the implementation of Reversible design & Materials Passports 2) give feedback to the development of the different tools and results within the BAMB project					
				1.6.3 Reflection workshops between actors of all system driven pilot cases		31/10/2018			
			WP1T7: Validate	1.7.1 Submit to BAMB Project Steering Group for systematic validation	VITO	30/4/2017			Revisions required by steering group
				1.4.2 Finalized deliverable		31/5/2017			
	D3 Online visualisation of Lessons Learned and Best Practices + Adjusted synthesis of the state-of-the-art and key barriers and opportunities + Adjusted Blueprint	*Updated version of the vested system (D1) and blueprint (D2) based on reflexive monitoring and lessons learned.			VITO	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of part of a web page.	
			WP1T8 : Drafting and developing final deliverables.		VITO	28/02/2019			
			WP1T9: Validate	1.9.1 Submit to BAMB Project Steering Group for systematic validation	VITO	31/01/2019			Revisions required by steering group
				1.4.2 Finalized deliverable		28/02/2019			
WP2 Developing Materials Passports and corresponding database & platform									
Develop an operational Materials Passports database containing	D4 Materials Passports User Requirements Report	User requirements analysis / scoping: the goal is to have a clear overview of the requirements a user has for the			EPEA	31/03/2016	All output topics and requirements as described in the detailed work	Validation of final deliverable in the form of a pdf.	User requirements analysis is very broad, demanding very diverse interactions and adaptations of the

300 materials, components , etc.		passports to be developed. This includes: - definition anticipated users & user categories - Per user category the main user requirements are defined on what will be included in the proof of technology software platform (minimum x?) - requirements regarding BIM & interaction with other BAMB tools are defined - clear definition of scope of the Materials Passports based on functional & non-functional requirements including geographical scope. - anticipated materials for which materials passports can be developed					plan are dealt with and met. Further criteria are to be defined with users of the deliverable.		passports. Adaptations to scope definition, scope timing, scope creep.
			WP2T1 : User requirements analysis / scoping	2.1.1 User analysis	EPEA	28/02/2016			Lack of sufficient information regarding users, user requirements and the scope of the passports. BIM connection feasibility.
				2.1.2 User requirement analysis					Not being able to meet with the potential users in a workshop format. Difficulties to have the right input from stakeholders
				2.1.3 Defining scope					The input & needs from different stakeholders and users/user categories is insufficient or contradictory
				2.1.4 Draft Materials Passports User Requirements Report					
			WP2T2: Validate	2.2.1 Submit to BAMB Project Steering Group for systematic validation	EPEA	28/02/2016			Deliverable content needs further development to adjust to D4's needs
				2.2.2 Finalized deliverable		31/03/2016			
	D5 Framework for	This deliverable is a report that will create an overview			EPEA	30/11/2016	All output topics and requirements	Validation of final deliverable in the form of a pdf.	Adaptations to input forms may be necessary as

	Materials Passports	of the context of Materials Passports and their use: this includes the passport content, its structure and scenarios including identified users, data sources, ways of extracting information, defined data input forms and output information, a conceptual and/or content description of different versions of passports as these are developed as outcomes of the user requirement analysis					as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.		the ICT infrastructure is further developed
			WP2T3 : Define content and structure of Materials Passports data input forms and output information and draft conceptual framework	2.3.1 Define data input forms and output information and draft conceptual framework	EPEA	30/06/2016			
				2.3.2 Verify that the interim results will be able to be implemented electronically					Defined structure or content cannot be implemented on a software platform due to functional, technical and/or cost hurdle
			WP2T4: Develop prototype Materials Passports data input forms and output information and test & validate	2.4.1 Develop prototypes	EPEA	31/8/2016			Dependency on tasks and deliverable concluded after T4
				2.4.2 Test prototypes		30/09/2016			
			WP2T5 : Finalize Passport input forms and output information and conceptual framework		EPEA	30/09/2016			Framework needs to be adapted significantly
			WP2T6: Validate	2.6.1Submit to BAMB Project Steering Group for systematic validation	EPEA	31/10/2016			Content needs further adaptation due D5s needs
				2.6.2 Finalized deliverable		30/11/2016			
D6 Software platform	The Software Platform will be a functional proof of technology based on the Materials			IBM	31/10/2016	All output topics and requirements as described in the	Validation of final deliverable in the form of a pdf accompanied by a video	Pilot platform needs further development and testing.	

		Passports User Requirements gathered in the early stages of the project. Ultimately, the software platform will be able to support the generation of - and access to Materials Passports. The platform will support information exchange with existing information systems which contain materials information - the manner in which this is done depends on the requirements for the interaction with the system.					detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	demonstration of the software platform.	
			WP2T7: Inventory existing databases and assess data structures for front-end and back-end use	2.7.1 Inventory existing databases and software platforms	SundaHus	31/05/2016			Insufficient levels of access to databases and software platforms to carry out tasks
				2.7.2 Assess data structures		31/05/2016			
			WP2T8: Upgrading existing ICT infrastructure of EPEA and SundaHus to accommodate Materials Passports usage	2.8.1 Identify, evaluate and upgrade components	SundaHus	30/09/2017			Upgrades not feasible within budgets
			WP2T9: Development of data-protocols, -structure and interfacing details to accommodate Passport data input and information output		IBM	31/08/2016			Problems in alignment based on results for D5
			WP2T10: Develop and test overall software platform	2.10.1 Use cases	IBM	30/09/2016			Risk that the scope of the PoT is not agreed as sufficient by all parties involved, as the requirements and needs are not clear up front. No time for full agile development. Waterfall approach requires the requirements to be clear and known up front.
			WP2T11: Validate	2.11.1 Submit to BAMB Project Steering Group for systematic validation	EPEA	30/09/2016			Deliverable content needs further adaptation to adapt to D7's

									needs.
				2.11.2 Finalized deliverable	IBM	31/10/2016			
	D7 Operational Materials Passports	Sets of data describing defined characteristics of materials in products that give them value for recovery and reuse. The Materials Passports Software Platform is the accompanying software platform on which they will be able to operate as described in D5 & D6. The software platform will contain 300 operational Materials Passports.			EPEA	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf accompanied by a video demonstration of the operational material passports.	Platform not ready for generation of passports. Insufficient data.
			WP2T12: The generation of 300 Passports and their implementation using the software platform	2.12.1 Collect data	EPEA	28/02/2019			Not sufficient data available.
				2.12.2 Implement data platform					
				2.12.3 Inventory of existing BAMB and Materials Passport best practices					
			WP2T13: Validate	2.13.1 Submit to BAMB Project Steering Group for systematic validation	EPEA	31/01/2019			Implementation of passports requires adjustments of content and platform structure
				2.13.2 Finalized deliverable		28/02/2019			
			WP2T14: Continuous modification and updating of framework, software and Materials Passports based on pilot projects and lessons learned		EPEA	31/01/2019			The predicted number of modifications and adaptations is bigger than planned
			WP2T15: Circular supplier community workshops	2.15.1 Metals value chain description	EPEA	31/8/2016			
				2.15.2 The community workshops	EPEA	31/07/2017			
WP3 Develop integrated architectural design and engineering tools for reversible buildings									

In order to enable different stakeholders on different levels of the construction value chain to implement reversible design strategies and approaches in their construction and refurbishment activities three tools are going to be developed within this Work Package: 1) Reuse potential tool; 2) Transformation capacity tool; 3) Design protocol for dynamic & circular Buildings	D8 Re-use potential tool	Re-use potential tool will enable the assessment of the reuse potential of building structures - at the system and component level - in order to preserve the buildings and its components' and materials' residual value and foster high quality reuse. The tool will be presented in an excel format, containing input, calculation and evaluation sheets and will address the following: Information about disassembly characteristics of building structures (systems and components) resulting in the indication of the reuse potential of systems, components and elements forming components. Information on both typology of system/component configuration and typology of connections. Ranking of component and			UTwente	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	- Validation of final deliverable in the form of an excel..	Unavailability of all data needed regarding the methods of construction and deconstruction as well as building connections to assess reuse potential. Delays in collecting necessary information from the users group. Delays in interaction with case pilot regarding testing of criteria. Information from student workshops with WP3 is not on time or insufficient. Data coming out of the reuse potential analyses is difficult to integrate in BIM
			WP3T1: Identify indicators for re-use and disassembly potential	3.1.1 : Identify the major construction types and methods commonly used to remove and maintain buildings for the major construction types – work done together with State-of-the-art _ WP1	UTwente	31/08/2016			Data availability in different countries
				3.1.2 Overview of the total amounts of construction and demolition waste per material.		31/03/2016			
				3.1.3 Elaborate on the cause of demolition and list of parts exposed to maintenance		30/04/2016			
				3.1.4 Overview of Products produced from construction		31/08/2016			

		system configurations and connection typologies from reusable to not reusable providing a score for element/component/system reuse potential from high level reuse (100 % reuse) to low level reuse options (10% reuse). Environmental and economic benefits related to different reuse potential options.		and demolition waste or other applications of reused materials from building construction and product market for products produced from C&D waste– work done together with State-of-the-art _ WP1					
				3.1.5 Identification of re-use potential of materials from the existing building stock – work done together with State-of-the-art _ WP1		30/07/2016			
				3.1.6 Report on the barriers for deconstruction to make better use of the C&D waste and report on the strategies to overcome the barriers - – work done together with State-of-the-art _ WP1.		31/08/2016			
				3.1.7 roadmap for the development of reversible design tools based on the report		31/08/2016			
		WP3T2: Develop and rank interfaces between different physical/functional layers and within different layers for dynamic circular buildings		3.2.1 Overview of the commonly used interfaces between and within different physical layers in existing buildings	UTwente	31/12/2018			Unavailability of all data needed regarding the methods of construction and deconstruction as well as building connections to asses reuse potential
				3.2.2 Overview of the existing demountable interfaces – work done together with State-of-the-art _ WP1		31/07/2016			
				3.2.3 Identify building component physical functional layers and sublayers – work done together with State-of-the-art _ WP1		31/12/2016			
				3.2.4 Analyses of component configurations and their product manufacturing strategies for reuse.		29/02/2017			
				3.2.5 Ranking Interfaces		31/05/2017			

				according to criteria for disassembly potential and reuse potential of components.					
				3.2.6 Setting up the key criteria for assessing high reuse potential of building elements		31/07/2017			
				3.2.7 Proposal for standardization of interfaces between different physical levels of building configuration		30/11/2017			
				3.2.8 Concept Design solutions for improving existing or develop new interfaces that will increase reuse potential of building elements, components and systems developed in collaboration with GTB Lab partners and /industry (feedback loop with WP4 Action 1 GTB Lab and Action 3)		30/04/2018			Delays in interaction with case pilot regarding testing of criteria
				3.2.9 Report on strategy that manufacturing should take in order to develop reversible products with high reuse potential of their elements		30/09/2018			
				3.2.10 Report on design strategy to improve development of buildings products and interfaces that will safeguard high reuse potential of building materials		31/10/2018			
			WP3T3: Design and engineering studios	3.3.1 International design studios	UTwente	30/11/2018			Information from workshops with WP3 is not on time or sufficient Delays in interaction with case pilot regarding testing of criteria Insufficient information from student workshops

			WP3T4: Perform user requirements analysis	3.4.1 Defining the users requirements questioner with respect to the reuse potential tool and Interactive sessions with I&D Board around GTB Lab	UTwente	30/04/2018			
				3.4.2 State of the art regarding BIM integration in design, engineering and construction process (in relation with subtask 3.11.2)		31/05/2016			
				3.4.3 Draft re-use potential tool user requirements report		30/06/2016			Delays in collecting necessary information from the users group
			WP3T5: Framework for assessment/re-use potential tool	3.5.1 Identify the method that is best suitable for use as reuse potential measurement tool based on the nature of data developed during research	UTwente	31/01/2017			It is not possible to identify a practicable methodology that could be realistically applied to measure reuse potential
				3.5.2 Feedback loops testing design approach and complementary assessment tool through design, construction, deconstruction, reconfiguration of components within GTB Lab		31/01/2017			
				3.5.3 Report explaining the conceptual framework of the Reuse potential tool		31/01/2017			
			WP3T6: Development and continuous improvement of assessment/re-use potential tool		UTwente	31/12/2018			
				3.6.1 Development of the suitable data presentation regarding reuse potential that can be integrated in BIM		31/10/2018			
				3.6.2 Interactive workshop with WP5 to set up a strategy		31/10/2018			

				for integration of reuse potential module in BIM.					
			WP3T7: Validate	3.7.1 Submit to BAMB Project Coordination Team for systematic validation	Utwente	31/01/2019			Compatibility of the reuse potential Data with assessment methods and software.
				3.7.2 Finalized deliverable		28/02/2019			
	D9 Transformation capacity tool	Transformation Capacity Tool as a base for Design protocol will address the following: Technical characteristics of buildings for different building typologies and functions. Mapping of different typologies and functions into compatible typological models. Impact of spatial and technical requirements on the transformation capacity. Use scenarios for the calculation of transformation capacity based on the building regulation and standards as well as on future trends analyses. Classification of buildings Environmental and economic benefits			Utwente	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of an excel..	Unavailability of all data needed, regarding different typologies of buildings Unavailability of all data regarding technical characteristics needed to assess transformation potential of buildings and building systems. Delay in obtaining sufficient information regarding users requirements Delays in interaction with case pilot regarding testing of criteria Information from student workshops with WP3 is not on time or un-sufficient Data coming out the transformation capacity analyses is difficult to integrate in BIM

		related to different transformation capacity options.	WP3T8: Identify criteria for measuring building and system transformation capacity per function/typology	3.8.1 Overview of existing measurement tools – work done together with State-of-the-art _ WP1	UTwente	30/11/2016			
				3.8.2 Overview of building typologies per different functions and building spatial configurations in different countries in Europe – work done together with State-of-the-art _ WP1		31/09/2016			Unavailability of all data needed regarding the methods of construction and deconstruction as well as building connections to assess reuse potential and strategies for system/building transformation
				3.8.3 Identify building and system physical/functional layers and their use and technical life cycles		30/05/2017			
				3.8.4 Analyses of building and system configurations and their product manufacturing strategies for their transformations		30/11/2017			
				3.8.5 Identify main criteria for measuring transformation capacity on system and component level for new construction using case studies and feedback loops from the design studios around GTB Lab		31/12/2017			Delays in interaction with case pilot regarding testing of criteria
				3.8.6 Identify main criteria for measuring transformation capacity on system and component level for refurbishment using case studies in combination with subtask 8.5		31/12/2017			
				3.8.7 Report on suitable tool for measuring Transformation capacity on system component level		30/01/2018			
			WP3T9: Develop strategies and solutions for the design of transformable buildings, systems and components	3.9.1 Overview of the existing building typologies solutions that have transformation potential resulting from the	UTwente	29/02/2018			Not sufficient data available

				typology analyses				
				3.9.2 Overview of solutions that improve transformation capacity of buildings considering typology solutions and building physical composition resulting from analyses of building and systems configurations, design studios and pilots		31/01/2018		
				3.9.3 Overview of system/component solutions that improve transformation capacity on system/component level		29/02/2018		
			WP3T10: Design and engineering studios	3.10.1 International design studios for testing the concepts, solutions and ranking, through design assignments and feedback loop with Green Transformable Building Lab & VUB pilot	UTwente	31/12/2018		Information from workshops with WP3 is not on time or sufficient. Delays in interaction with case pilot regarding testing of criteria. Insufficient information from student workshops.
			WP3T11: Perform user requirements analysis	3.11.1 Interactive workshops with I&D Board and GTB Lab industry members as well as VUB pilot stakeholders	UTwente	31/08/2018		
				3.11.2 State of the art and user requirements regarding BIM integration in design, engineering and construction process		31/05/2016		
				3.11.3 Draft transformation capacity tool user requirements report		31/06/2016		Delays in collecting necessary information from the users group.
			WP3T12: Framework for a measurement tool for	3.12.1 developing the model framework and defining	UTwente	31/01/2017		Unavailability of all data needed

			transformation capacity	relations and levels of dependences (weighting factors) between the main transformation criteria within the model					regarding the methods of construction and deconstruction as well as building connections to asses reuse potential Delays in interaction with case pilot regarding testing of reuse potential tools and feedback report
				3.12.2 testing of the transformation model framework on the cases		31/01/2017			
			WP3T13: Development and continuous improvement of the measurement tool for transformation capacity	3.13.1 drafting the detailed model configuration including all sub criteria and their relations including the level of their dependences and influence on the main criteria 3.13.2 Defining weighting factors for each relation between sub-criteria	UTwente	31/12/2018			Defined structure or content cannot be implemented on to workable/easy usable model due to functional, technical and/or cost hurdle
				3.13.2 Interactive workshop with WP5 to set up a strategy for integration of transformation potential tool in BIM		31/10/2018			
				3.13.3 Development of suitable data presentation regarding transformation potential potential that can be integrated in BIM		31/10/2018			
				3.13.4 Defining the relation between transformation potential results and economic and environmental impacts		30/11/2018			
				3.13.5 drafting the report on Transformation potential tool		31/12/2018			

			WP3T14: Validate	3.14.1 Submit to BAMB Project Coordination Team for systematic validation	UTwente	31/01/2019			Compatibility of the Transformation capacity Data with assessment methods and software.
				3.14.2 Finalized deliverable		28/02/2019			
	D10 Design Protocol for dynamic & circular building	Reuse potential tool and Transformation capacity tool developed in this WP are the base for the Design Protocol for dynamic & circular building. The Design Protocol will integrate the framework of the Transformation Capacity and Re-use tools, mapping the main transformation and reuse criteria and their interactions, interdependences and importance into a design strategy for reversible buildings. The virtual simulator will enable the assessment of the transformation and re-use potential of a design providing a digital estimation of the design impacts. It is a 3D			UTwente	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf accompanied by a virtual simulator (ICT tool).	Unavailability of all data needed, regarding different typologies of buildings. Unavailability of all data regarding technical characteristics needed to assess transformation potential of buildings and building systems. Delay in obtaining sufficient information regarding users requirements. Delays in interaction with case pilot regarding testing of design criteria. Information from student workshops with WP3 is not on time or un-sufficient. Data framework model needed for design Protocol is difficult to integrate in BIM framework.

		design tool using 3D parametric modelling enabling ease of exchange for 3D files.							Data with respect to LCC and LCA is difficult to integrate within a workable design model.
		WP3T15: Develop concepts for building physical layers and their configurations for dynamic and circular buildings	3.15.1 Define independent physical layers for the reversibility of new construction in different countries in Europe based on transformation models developed as result of typology and building configuration analyses	UTwente	31/07/2018				Data availability in different countries
			3.15.2 Experimenting, testing and monitoring feedback loop from the GTB Lab		30/06/2018				Delay in receiving the tasting results and feedback loops from pilots
			3.15.3 Define independent physical layers for the reversibility of the existing buildings		30/06/2018				
			3.15.4 Experimenting, testing and monitoring feedback loop from the VUB pilot		30/05/2018				
		WP3T16: Perform user requirements analysis	3.16.1 Defining the users requirements questioner with respect to the design protocol & virtual simulator and Interactive sessions with I&D Board around GTB Lab	UTwente	31/01/2018				Lack of sufficient information regarding users, user requirements and the scope of the reversible building tools
			3.16.2 State of the art regarding BIM integration in design, engineering and construction process		31/12/2016				
			3.16.3 Interactive workshop with WP5 to set up a strategy for integration of virtual simulator in BIM.		31/12/2017				
			3.16.4 Draft protocol and virtual simulator user requirements report		31/01/2018				

			WP3T17: Design guidelines and strategies	3.17.1 Set of building reversible building solutions for new construction in upcoming years	UTwente	30/08/2018			Not sufficient data available
				3.17.2 Set of building reversible solutions for refurbishment in Belgium, NL and B&H		30/08/2018			
				3.17.3 Design guidelines and strategies for reversible building design		30/08/2018			
			WP3T18: Develop and improve a virtual simulator of design protocol	3.18.1 Define a framework for the integration of data from design protocol on transformation, re-use potential, into a virtual simulator	UTwente	31/12/2018			It is not possible to identify a practicable parametric software methodology that could be realistically applied to simulate design protocols
				3.18.2 Define a framework for the integration in Building Level Decision Making Model		31/07/2018			
				3.18.3 Final report final report aligned with validation		31/12/2018			
			WP3T19: Validate	3.19.1 Submit to BAMB Project Coordination Team for systematic validation	UTwente	31/01/2019			Compatibility of the Transformation capacity and reuse potential Data with BIM framework and software
				3.19.2 Finalized deliverable		28/02/2019			
	D11 Reversible Building Design User Requirements Report	Report summarizing User Requirements with respect to Reversible Building Design. Key components include: General requirements for			UTwente	31/05/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further	Validation of final deliverable in the form of a pdf.	Delays in obtaining sufficient information regarding users requirements. Delays in forming stakeholders group.

		reversible buildings, User Requirements for the Transformation Capacity tool, User Requirements for the Reuse Potential tool, User Requirements for the Design protocol and virtual simulator, and Further recommendations					criteria are to be defined with users of the deliverable.		
			WP3T20: Consolidate the reversible building design user requirement reports	3.20.1 integrate feedback from design studio's pilots and monitoring in user requirement report	UTwente	30/02/2018			Lack of sufficient feedback from users and user requirements
				3.20.2 consolidate and improve user requirement analyses performed in order to develop and get users feedback on the conceptual re-use capacity tool, transformation capacity tool and design protocol for reversible design		30/02/2018			
				3.20.2 draft revisable building design user requirements report		30/03/2018			
			WP3T21: Validate	3.21.1 Submit to BAMB Project Coordination Team for systematic validation	UTwente	30/04/2018			Deliverable content needs further development to adjust to D11's needs
				3.21.2 Finalized deliverable		31/05/2018			
WP4 Testing BAMB results through prototyping and pilot projects									
Testing Materials Passports and Reversible Building Design results. Testing waste reduction potential of	D12 - Feasibility study + Feedback report	Processing and conclusions on the existing conditions: *The location * The needs * The local building industry * The stakeholders (design team, owner, industry partners) and their role in the action. Research and			IBGE-BIM	31/08/2017	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the	Validation of final deliverable in the form of a pdf.	The report is not finished in time. The needed information of the feasibility report for prototyping and/or building is not available on time. The needed information for the interactions with the other

<p>Materials Passports and Reversible Building Design.</p> <p>Testing certain aspects with regard to business models: suppliers' ownership and service delivery, reversible logistics etc.</p> <p>Raise awareness and demonstrate innovative approaches investigated and implemented in the BAMB project through practical application and physical construction.</p>		<p>monitoring of different transformation and/or relocation scenarios, of which a minimum of 2 scenarios will be fully developed, implemented and assessed.</p> <p>Requirements concerning the technical, functional, and comfort aspects of the developed scenarios.</p> <p>Conclusion about the needs in practical use, technical engineering, architectural design...</p> <p>Design plans:</p> <ul style="list-style-type: none"> * Preliminary design plans * Implementation plan * Technical detailing and/or technical specifications of (part of) the construction. <p>Feedback report on the tools/concepts/frames</p>					deliverable.		WP's is not delivered (on time). Delays in the agreement with public authorities Delays in the design
			WP4A1T1: Mapping of existing	4A1.1.1 Pilot description	ZUYD	30/01/2016			
				4A1.1.2: Location conditions		31/05/2016			Delays in the agreement with public authorities resulting in a need for other location
				4A1.1.3: mapping innovation		30/04/2016			
				4A1.1.4: legal needs & regulation		31/07/2016			
			WP4A1T2: Objective of the experiment of the pilot	4A1.2.1: Goal of the experiment	ZUYD	31/03/2016			
				4A1.2.2: Objectives tested with key stakeholders & expert group & WP4		31/03/2016			
			WP4A1T3: Actor & network analysis for active involvement of companies and decision makers: Operational & content wise	4A1.3.1: Owner/builder/ contractor/producer	ZUYD	31/07/2016			Difficulties finding the right stakeholders
				4A1.3.2: Design team		30/04/2016			
				4A1.3.3: Authorities		31/07/2016			

		meworks developed in WP1, WP2, WP3 and/or WP5 tested or investigated within the pilot. This feedback will contain the ease of use, the strengths and weaknesses of the assessed tools/concepts/frameworks. Recommendations of improvements will be given.	WP4A1T4: Design scenario's and programmatic analyses	4A1.4.1: Programing, use and technical scenario's analyses thorough design studios	ZUYD	30/10/2016			Lack of involvement stakeholders leading to delayed design and technical detailing
				4A1.4.2: Detailed plan for the first construction phase of the GTB LAB including monitoring plan		30/01/2017			
				4A1.4.3: Identifying scenario for the second construction phase of GTBL		31/01/2017			
				4A1.4.4: Planning of interaction with WP2&3&5					
			WP4A1T5: Building system design & building design	4A1.5.1: Interaction implementation of WP2-3-5	ZUYD	30/05/2017			Lack of input from other work packages Material Passports is not delivered on time Re-use Potential tool is not delivered on time
			WP4A1T6: End report + Feedback report on feasibility A1	4A1.6.1: Overview and conclusions of all tasks of feasibility study A1 - Feedback report	ZUYD	31/05/2017			Results Delayed
			WP4A1T7: Validate	4A1.7.1: Submit to BAMB Project Coordination Team for systematic validation	ZUYD	15/06/2017			
				4A1.7.2 Finalized deliverable sub-deliverable	ZUYD	30/06/2017			
			WP4A2T1: Mapping of existing	4A2.1.1: Vision definition	EPEA	30/11/2015			Lack of available information
				4A2.1.2: Market analysis		31/12/2015			
				4A2.1.3: User's needs analysis		28/02/2016			
				4A2.1.4: Similar existing products analysis		31/12/2015			
				4A2.1.5: Function-in-context analysis		31/12/2015			

			4A2.1.6: Trends analysis		31/12/2015			
			4A2.1.7: Consolidation in pilot definition		29/02/2016			
			4A2.1.8: Consolidation in design requirements		29/02/2016			
		WP4A2T2: Objective of the experiment of the pilot	4A2.2.1: Gap analysis between desired objective and existing	EPEA	31/03/2016			
			4A2.2.2: Prioritize steps needed		30/04/2016			
			4A2.2.3: Detail KPI's for pilot		30/04/2016			
			4A2.2.4: Define detailed approach for pilots		30/04/2016			
		WP4A2T3: Actor & network analysis for active involvement of companies and decision makers: Operational & content wise	4A2.3.1: Develop stakeholder matrix	EPEA	31/05/2016			Lack of involvement for selected stakeholders
			4A2.3.2: Define roles and tasks for stakeholders		31/07/2016			
			4A2.3.3: Invite and Engage selected stakeholders		31/10/2016			
		WP4A2T4: Design scenario's and programmatic analyses	4A2.4.1: Develop scenario's	EPEA	31/05/2016			Insufficient communication between partner and lead
			4A2.4.2: Analysis of interprogrammatic relations		30/06/2016			
			4A2.4.3: Develop detailed plan including monitoring		31/08/2016			
		WP4A2T5: Building system design & building design	4A2.5.1: Consolidate requirements into guidelines	EPEA	30/11/2016			Unsuccessful ideation process leading to suboptimal designs
			4A2.5.2: Ideation, selection, re-ideation towards concept-designs		31/01/2017			
		WP4A2T6: End report + Feedback report	4A2.6.1: Collect results, summarize in report		30/11/2016			Results get lost
			4A2.6.2: Fill in Feedback Report		31/01/2017			

			WP4A2T7: Validate	4A2.7.1: Submit to BAMB Project Coordination Team for systematic validation	EPEA	28/02/2017			
				4A2.7.2 Finalized sub-deliverable	EPEA	31/03/2017			
			WP4A3T1: Mapping of existing	4A3.1.1: Pilot description	SGDF	31/01/2016			
				4A3.1.2: Location conditions		31/05/2016			Delays in the agreement with public authorities resulting in a need for other location
				4A3.1.3: Mapping innovation		31/04/2016			
				4A3.1.4: Legal needs and regulation		31/07/2016			
			WP4A3T2: Objective of the experiment of the pilot	4A3.2.1: Goal of the experiment	SGDF	31/03/2016			
				4A3.2.2: Objectives tested with key stakeholders and expert group and with WP4		31/03/2016			
			WP4A3T3: Actor & network analysis for active involvement of companies and decision makers: Operational & content wise	4A3.3.1: Owner/builder	SGDF	31/07/2016			Difficulties finding the right stakeholders and engaging them
				4A3.3.2: Design team (architect, engineer...)		31/01/2016			
				4A3.3.3: Authorities		31/07/2016			
			WP4A3T4: Design scenario's and programmatic analyses	4A3.4.1: Programing, use and technical scenario's analyses thorough design studios	SGDF	31/09/2016			
				4A3.4.2: Detailed plan of the GDC including monitoring plan		31/03/2017			Lack of involvement stakeholders leading to delayed design and technical detailing
				4A3.4.3: Planning of interaction with WP2&3&5					
			WP4A3T5: Building system design & building design	4A3.5.1: Interaction implementation of WP2&3&5	SGDF	30/04/2017			Lack of input from other work

									packages Material Passports is not delivered on time Re-use Potential tool is not delivered on time
			WP4A3T6: End report + Feedback report	4A3.6.1: Overview and conclusions of all tasks on feasibility study A3 - Feedback report	SGDF	31/05/2017			Results Delayed
			WP4A3T7: Validate	4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation	SGDF	15/06/2017			
				4A3.7.2 Finalized sub- deliverable	SGDF	30/06/2017			
			WP4A4T1: Mapping of existing	4A4.1.1: Define and illustrate each of the 3 proposed module variants (conceptual design) 4A4.1.2: Define which reversible eco-innovative solutions need to be developed per variant 4A4.1.3: Determine preliminary budget estimates (for external funding purposes)	VUB	30/04/2016			Delay in the task
						30/04/2016			
						31/05/2016			
			WP4A4T2: Objective of the experiment of the pilot	4A4.2.1: Pilot project aims discussion: The description of the pilot project and its aims will be explicitly discussed with the other involved partners at one of the partner meetings.	VUB	30/04/2016			
			WP4A4T3: Actor & network analysis for active involvement of companies and decision makers:	4A4.3.1: Consulting industrial actors for development of reversible eco-innovative solutions	VUB	30/06/2016			Difficulties finding the right stakeholders and engaging them

			Operational & content wise					
				4A4.3.2: Liaise and discuss with relevant university department officials		28/02/2019		
				4A4.3.3: Search for external funding for pilots or prototypes		31/01/2017		
				4A4.3.4: Create overview of actors & network		28/02/2017		
			WP4A4T4: Design scenario's and programmatic analyses	4A4.4.1: Refurbishment variant A (refurbishment lab)	VUB	31/01/2017		Lack of involvement stakeholders leading to delayed design and technical detailing
				4A4.4.2: Refurbishment variant B (experimental setup)		31/01/2017		
				T12.4.3: Refurbishment variant C (transformation lab)		31/01/2017		
			WP4A4T5: Building system design & building design	4A4.5.1: Testing Material Passports during design	VUB	31/12/2016		Lack of input from other work packages Material Passports is not delivered on time Re-use Potential tool is not delivered on time
				4A4.5.2: Testing Re-use Potential Tool during design		31/01/2017		
			WP4A4T6: End report + Feedback report	4A4.6.1: End report + Feedback report	VUB	31/05/2017		Internal: Preceding tasks not finished in time External: Insufficient information about pilot context by university representatives
			WP4A4T7: Validate	4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation	SGDF	15/06/2017		

			4A3.7.2 Finalized sub-deliverable	SGDF	30/06/2017			
		WP4A5T1: Mapping of existing	4A5.1.1: Pilot description	IBGE	31/12/2015			
			4A5.1.2: Location conditions		31/12/2015			
			4A5.1.3: Mapping of the project specific context for reversible design scenarios and material passports		31/03/2016			
			4A5.1.4: Analysis of local material flows, construction and demolition waste streams		31/03/2016			
			4A5.1.5: Mapping of existing materials and how they could be used within circular building design		31/13/2016			
			4A5.1.6: Legal needs and regulations		31/01/2016			Issues regarding the acceptance of the building permit
			4A5.1.7: Budget and timing		30/06/2016			
		WP4A5T2: Objective of the experiment of the pilot	4A5.2.1: Goal of the experiment to be defined in collaboration with different partners from WP2; WP3; WP5.	IBGE	30/04/2016			
			4A5.2.2: Aspects tested within BAMB + interaction with other WP's		30/04/2016			
		WP4A5T3: Actor & network analysis for active involvement of companies and decision makers: Operational & content wise	4A5.3.1: Analysis of and definition of specifications for materials, elements, systems and construction techniques to be implemented for reversible design. Analysis of and suggestion for material passports on suggested materials.	IBGE	31/05/2016			Difficulties finding the right stakeholders and engaging them
			4A5.3.2: Consultation of industrial actors and suppliers.		30/09/2016			
			4A5.3.2: Overview of contractors and suppliers		30/09/2016			
		WP4A5T4: Design scenario's	4A5.4.1: Architectural programmes and plans	IBGE	30/09/2016			Lack of

			and programmatic analyses	for defined scenario's including	monitoring plan				involvement stakeholders leading to delayed design and technical detailing Legal aspects with regard to building permit leading to delay in the design
				4A5.4.2: Further analysis of Materials Passports within design		31/12/2016			
				4A5.4.2: Further analysis of Reversible Design Criteria and detailing principles within design		31/12/2016			
				4A5.4.3: First detailed design of greenhouse/event hall (technical drawings, in situ placement, planning)		01/02/2017			Lack of input from other work packages Material Passports is not delivered on time Re-use Potential tool is not delivered on time
			WP4A5T5: Building system design & building design	4A5.5.1: Testing design & design scenario's based on tools available in WP2-3-5	IBGE	30/04/2017			
				4A5.5.2: Analysis and revision of design based on testing		15/05/2017			
			WP4A5T6: End report + Feedback report	4A5.6.1: Overview and conclusions of feasibility A5	IBGE	31/05/2017			Internal: Preceding tasks not finished in time External: Legal issues regarding the building permit will not have enabled the start of the design and

									technical feasibility study
			WP4A5T7: Validate	4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation		15/06/2017			
				4A3.7.2 Finalized sub-deliverable		30/06/2017			
				4A5.6.2: Feedback report		28/02/2017			
			WP4A6T1: Mapping of existing	4A6.1.1: Analysis of local material flows, construction and demolition waste streams and project specific context for reversible design scenarios and material passports	Drees & Sommer	30/06/2016			Lack of information
				4A6.1.2: Screening of the existing planning of the building (which is in early concept stage when we enter the project).					
				4A6.1.3: Analysis and adjustment of tendering and contract awarding structure to implement circular design requirements in tendering process					Issues regarding the acceptance of the building permit
			WP4A6T2: Objective of the experiment of the pilot	4A6.2.1: Description of objectives of the project	Drees & Sommer	31/03/2016			
			WP4A6T3: Actor & network analysis for active involvement of companies and decision makers: Operational & content wise	4A6.3.1: Material inquiry (based on preliminary design) and availability check with local suppliers, setup of alternative supply chain		31/05/2017			Difficulties finding the right stakeholders and engaging them
				4A6.3.2: Preparation of project					

				specific "construction materials' positive list"					
				4A6.3.3: Analysis of existing supply chain and search for cooperative suppliers and contractors. Define fields of activity with design team and owner					
		WP4A6T4: Design scenario's and programmatic analyses		4A6.4.1: Development of "transformation scenarios" and the buildings "layers of change"	Drees & Sommer	31/05/2017			Lack of involvement stakeholders leading to delayed design and technical detailing
				4A6.4.2: Preparation of standard details' catalogue					
				4A6.4.3: Circular Engineering sectoral planning for cost group 300 (Arch + Eng)					
				4A6.4.4: Circular Engineering sectoral planning for cost group 400 (HWAC)					
		WP4A6T5: Building system design & building design		4A6.5.1: Elaboration of pilot buildings and systems design rules and concepts	Drees & Sommer	31/05/2017			Lack of input from other work packages Material Passports is not delivered on time Re-use Potential tool is not delivered on time
		WP4A6T6: End report + Feedback report		4A6.6.1: End report + Feedback report	Drees & Sommer	31/05/2017			Internal: Preceding tasks not finished in time
		WP4A6T7: Validate		4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation	Drees & Sommer	15/06/2017			
				4A3.7.2 Finalized sub-deliverable	Drees & Sommer	30/06/2017			

			WP4 T1: compiling the end reports + feedback from the different Pilots	4T1.1: Overview and conclusions of all sub-deliverables D12 - Feedback report	IBGE-BIM	31/07/2017			
			WP4T2: Validate	4T2.1 Submit to BAMB Project Coordination Team for systematic validation	IBGE-BIM	15/08/2017			
				4T2.2 Finalized deliverable		31/08/2017			
	D13 - Prototyping + Feedback report	Further development of design plans for prototyping. Conclusions on technical preparations and used materials. Detailed plan for manufacturing of the prototypes. Manufacturing of the prototypes. Assessment of the manufacturing and the redesign of the prototypes. Manufacturing of the redesigned adjustments of the prototypes. Feedback report on the prototyping concerning the lessons learned, analysis of the process, feedback to WP2-WP3-WP5.			IBGE-BIM	30/04/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	
			WP4A1T7: Preparation of prototyping manufacturing	4A1.7.1: Preparation of prototyping manufacturing	ZUYD	30/09/2017			
			WP4A1T8: Developing and manufacturing of innovative components and systems design	4A1.8.1: Developing Material specifications and manufacturing processes defined	ZUYD	30/09/2017			
				4A1.8.2: Manufacturing of prototype		30/11/2017			
			WP4A1T9: Testing of developed components	4A1.9.1: Feedback loop: redesign & retesting defined	ZUYD	31/12/2017			
			WP4A1T10: End report + Feedback report	4A1.10.1: Overview and conclusions - Feedback report	ZUYD	31/01/2018			
			WP4A1T11: Validate	4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation		28/02/2018			
				4A3.7.2 Finalized sub-deliverable		31/03/2018			

			WP4A2T7: Preparation of prot manufacturing	4A2.7.1: Translate concept into design	EPEA	31/01/2017			Prototype too complex
				4A2.7.2: Develop plan for prototyping		31/03/2017			
			WP4A2T8: Developing and manufacturing of innovative components and systems design	4A2.8.1: Build prototypes	EPEA	31/03/2017			Prototype too complex
				4A2.8.2: Check prototype quality		31/03/2017			
			WP4A2T9: Testing of developed components	4A2.9.1: Develop test protocol	EPEA	31/01/2017			Ambiguous test results
				4A2.9.2: Test prototype		31/03/2017			
				4A2.9.3: Results, conclusions, report		31/03/2017			
			WP4A2T10: End report + Feedback report	4A1.10.1: Overview and conclusions - Feedback report	EPEA	30/06/2017			Results get lost
			WP4A2T11: Validate	4A3.7.1: Submit to BAMB Project Coordination Team for systematic validation		31/07/2017			
				4A3.7.2 Finalized sub- deliverable		31/08/2017			
			WP4A3T7: Preparation of prot manufacturing	4A3.7.1: Preparation of prototyping manufacturing	SGDF	30/09/2017			
			WP4A3T8: Developing and manufacturing of innovative components and systems design	4A3.8.1: Developing Material specifications and manufacturing processes defined	SGDF	30/09/2017			
				4A3.8.2: Manufacturing of prototype		30/11/2017			
			WP4A3T9: Testing of developed components	4A3.9.1: Feedback loop: redesign & retesting	SGDF	31/12/2017			
			WP4A3T10: End report + Feedback report	4A3.10.1: Overview and conclusions of all tasks of D12 - Feedback report		31/01/2018			Results Delayed
			WP4A3T11: Validate	4A3.11.1: Submit to BAMB Project Coordination Team for systematic validation		28/02/2018			
				4A3.11.2 Finalized sub-		31/03/2018			

			deliverable					
			WP4A4T7: Preparation of prototyping manufacturing	4A4.7.1: Selection of prototypes and prototype designs to be developed and manufactured, based on feasibility report	VUB	31/03/2017		
				4A4.7.2: Plan and start the pilot location preparation together with the university's infrastructure department		30/09/2017		
				4A4.7.3: Detailed plan of the manufacturing and testing process		30/09/2017		
			WP4A4T8: Developing and manufacturing of innovative components and systems design	4A4.8.1: Preparing and adapting details for manufacturing	VUB	31/03/2017		
				4A4.8.2: Sourcing of building materials and manufacturing of the prototypes		31/08/2017		
				4A4.8.3: Assembly and disassembly in lab		30/09/2017		
			WP4A4T9: Testing of developed components	4A4.9.1: Prepare module interior (e.g. cleaning, stripping, adding dimensional adaptors, connection points, electricity)	VUB	30/06/2017		
				4A4.9.2: Assembly test: Assemble the three interior prototypes (consecutively)		31/12/2017		
				4A4.9.3: Disassembly test: Disassemble and reconfigure the three interior prototypes (consecutively)		31/12/2017		
				4A4.9.4: Optional additional types of testing		31/12/2017		
				4A4.9.5: Feedback loop: redesign and retesting		31/12/2017		
			WP4A4T10: End report + Feedback report	4A4.10.1: End report + Feedback report	VUB	31/01/2018		

			WP4A4T11: Validate	4A4.11.1: Submit to BAMB Project Coordination Team for systematic validation		28/02/2018			
				4A4.11.2 Finalized sub-deliverable		31/03/2018			
			WP4 T3: compiling the end reports + feedback from the different Pilots	4T1.1: Overview and conclusions of all sub-deliverables D13 - Feedback report	IBGE-BIM	15/04/2018			
			WP4T4: Validate	4T2.1 Submit to BAMB Project Coordination Team for systematic validation	IBGE-BIM	30/04/2018			
				4T2.2 Finalized deliverable		31/08/2017			
	D14 - 2 pilots built + Feedback report	Construction drawings: as built plans (of each transformation/relocation). Specifications of materials: how and why to use in the construction. Technical specifications and details that provide information about the components which determine the reversibility and implementation of Materials Passports. Pictures of the building activities, taken during the important phases of the project (photos that capture both the elements which determine the			IBGE-BIM	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf accompanied by the completed construction of 2 pilots.	
			WP4A1T11: Preparation + start	4A1.1.1: Preparation + start full construction	ZUYD	30/10/2017			
			WP4A1T12: Transformation scenario development	4A1.2.1: Monitoring, evaluation & design studios	ZUYD	31/03/2018			
			WP4A1T13: Transformations/relocations	4A1.3.1: Second construction phase- transformation	ZUYD	30/09/2018			
			WP4A1T14: End report + Feedback report	4A1.4.1: Overview and conclusions of all tasks of D12 - Feedback report	ZUYD	30/11/2018			
			WP4A1T15: Validate	4A1.15.1: Submit to BAMB Project Coordination Team for systematic validation		30/11/2018			

		reversibility, waste reduction, and implementation of materials passports) Assessment of the applied financial/economic al aspects of the pilot built. Assessment of the transformations/relocations: conclusions on the consequences on technical, architectural, economical, comfort... level. Conclusions on the ease of use, needed time and logistical implications. Feedback report on the pilots built concerning the lessons learned, analysis of the process, feedback to WP2-WP3-WP5		4A1.15.2 Finalized sub-deliverable		31/12/2018			
			WP4A2T11: Preparation + start full construction	4A2.1.1: Detailed design drawings	EPEA	31/03/2017			Too expensive building costs
				4A2.1.2: Build REM's		30/06/2018			
			WP4A2T13: Transformations/relocations	4A2.3.1: Select, contact locations	EPEA	31/10/2017			Too few locations for relocations
				4A2.3.2: Relocate REM's		30/09/2018			
				4A2.4.1: Collect results, summarize in report	EPEA	30/09/2018			Results get lost
			WP4A2T14: End report + Feed	4A2.4.2: Fill in Feedback Report		30/09/2018			
			WP4A2T15: Validate	4A4.11.1: Submit to BAMB Project Coordination Team for systematic validation		30/11/2018			
				4A4.11.2 Finalized sub-deliverable		31/12/2018			
			WP4 T5: compiling the end reports + feedback from the different Pilots	4T1.1: Overview and conclusions of all sub-deliverables D13 - Feedback report		31/01/2019			
			WP4T6: Validate	4T2.1 Submit to BAMB Project Coordination Team for systematic validation		15/02/2019			
				4T2.2 Finalized deliverable		28/02/2019			
WP5 Facilitating future applications and exploitation of BAMB results									
Elaborating key aspects for the future application and exploitation of dynamic and circular building design: Financial	D15 Building Level Integrated Decision Making Model	Agreed methodology to undertake a Building level integrated assessment of resource productivity in new buildings and existing buildings Agreed data required to feed			BRE	30/4/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of	Validation of final deliverable in the form of a pdf.	All the required data inputs are available in the format required to undertake the analysis and create the decision-making support.

and commercial aspects; Environmental aspects; Management & decision making aspects; User aspects & Policy aspects. Fostering the exploitation of BAMB results. Ensure the application of Materials Passports and Reversible Building Design Develop recommendations for regulations and standards.		into the model and their recommended source (including BAMB output, external data source and user data input) Examples of reports that are achievable in a) purely quantitative form (without the virtual simulator); b) visual form (with the virtual simulator) – developed during the piloting. A minimum of 4 examples will be developed. Assumptions made and robustness evaluation of those assumptions Indications of variation in confidence and applicability across construction types and geographical areas Recommendations for widespread application and description of possible use scenarios					the deliverable.		
			WP5A1T1: Developing a data schema for measuring resource productivity, including data inputs, specified format and acceptable sources	5A1.1.1 Material and product information and resource productivity scenarios data	BRE	31/12/2016			Timing of information relating to Material Passports and Reversible Design metrics is key risk
				5A1.1.2 Reversible design information – metrics for reuse potential and transformation capacity		31/12/2016			Timing of information relating to Material Passports and Reversible Design metrics is key risk
				5A1.1.3 Life cycle costing (LCC) and whole life value data		31/12/2016			
				5A1.1.4 In-use maintenance and operating data		31/12/2016			
			WP5A1T2: Perform user requirements analysis	5A1.2.1 Investigation of BIM Standardisation and Compliance Issues	BRE	31/10/2016			External risk in terms of aligning BAMB objectives with wider activities in construction sector developing decision making tools, some of which are BIM related.
				5A1.2.2 Developing scenarios for possible user interface, analysis and reporting options – both BIM and non-BIM related		30/09/2016			
				5A1.2.3 User and stakeholder feedback, including EU workshop for invited stakeholders		31/07/2016			Input needed from other BAMB partners conducting user requirements analysis outside of WP5A1, and

									cooperation and feedback needed from stakeholders.
			WP5A1T3: Developing the methodology for the Building Level Integrated Decision Making Model, trials on pilots and the development of a virtual building model	5A1.3.1 Initial methodology developed to enable proof of concept to be tested	BRE	31/03/2017			It is not possible to develop a practicable methodology that could be realistically applied to buildings across their life cycles
				5A1.3.2 Methodology/proof of concept trialled on 2 building scenarios		31/07/2017			
				5A1.3.3 Develop integrated environmental and financial assessment model		31/08/2017			
				5A1.3.4 Methodology applied to Virtual Building Model		31/10/2017			
			WP5A1T4: Adapting the approach to enable existing buildings to be evaluated and trials of adapted approach on 10 buildings	5A1.4.1 Development of a flexible set of data input requirements, alongside a series of assumptions, to be used in the absence of relevant data for use in existing buildings only	BRE	31/01/2017			Risk of not being able to create sufficiently robust assumptions to underpin adapted method for existing buildings.
				5A1.4.2 Adapted method to enable Building level integrated decision making for existing buildings		30/06/2017			
				5A1.4.3 Trial of dataset and adapted approach methodology on 10 existing buildings of varying ages, locations, typology and use		30/11/2017			
				5A1.4.4 Adapted integrated assessment model for existing buildings		31/01/2018			
			WP5A1T5: Validate	5A1.5.1 Engagement with the Stakeholder Network at twice yearly intervals	BRE	31/12/2017			Risk of conflicting stakeholder views resulting in indecision in which way to develop

									outputs, especially the agreed methodology for building level integrated decision making.
				5A1.5.2 Submit to BAMB Project Coordination Team for systematic validation		31/03/2018			
				5A1.5.3 Finalized deliverable		31/04/2018			
	D16 BIM Resource Productivity Prototype	BIM compliant resource productivity prototype that supports a selected subset of the features of the Building Level Integrated Decision Making Model in D15. The creation of a useful prototype as a proof of concept of how the assessment and decision making model could aid real world BIM users in making better choices and designs to enhance reuse potential and transformation capacity. Beta version software product that can access data from a BIM/ CAD model and			SundaHus	31/12/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a Beta version software product that is BIM compliant.	Heavy reliance on the result obtained through D15, as well input from WP2, WP3 and WP4
			WP5A1T6: Development of a BIM Compliant Resource Productivity Prototype (add-on) in accordance with existing BIM software	5A1.6.1 Initial definition of prototype's specifications, i.e. scope, input and output requirements, target platform and so on. This step will rely heavily on the output of task 3.	SundaHus	30/04/2017			Risk that required input data for all desired aspects of the decision making model won't be available in an efficient manner.
				5A1.6.2 Development of prototype with regular interim releases to enable feedback from reference group.		31/03/2018			
			WP5A1T7: Trial of a prototype on buildings scenarios	5A1.7.1 Set up a scope the trials, i.e. define what should be tested and in which scenarios. Compile a list of	SundaHus	31/12/2017			Risk that there won't be data available for all the described

		combine with BAMB generated datasets and other external/user supplied data to provide assessment of reuse potential based upon design decisions and material selection criteria. product and design information needed to create the BIM can also be used to assess reuse potential, and an additional data layer relating to resource productivity can then be viewed		actual building scenarios available for trial with regard to data availability and quality					scenarios.
				5A1.7.2 Perform trials. Lessons learned from the trials will be feedback that, if viable, results in adaptations to the prototype that then can be tested again.		31/08/2018			
				5A1.7.3 Summary of result of trials and lessons learned.		30/09/2018			
			WP5A1T8: Validate	5A1.8.1 Workshop with partners and other stakeholders	SundaHus	31/10/2018			Risk of conflicting views of what is required for functional approach. This could be especially true since the stakeholders are expected to have different backgrounds and perspective on the building process.
				5A1.8.2 Submit to BAMB Project Coordination Team for systematic validation		30/11/2018			
				5A1.8.3 Finalized deliverable		31/12/2018			
	D17 Recommended Business Models	Written report on the recommended business models that are applicable to the outputs being generated in the BAMB project concerning Materials Passports and Reversible Building Design. 2 main sections: 1) Determination of business model innovation needs, 2) Business model			IBM	31/10/2017	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	Timely sharing of inputs from partners (specifically regarding pilots) Not enough definition or detail of the proposed solutions from the WP2, WP3 Not having an unified view on the integration between the different work products (material

		development and recommendations. Key components of the first include: Industry Competitive Options, Stakeholders roles in value chain, Target customer segments and relationships, Distribution channels, Value propositions, Revenue model, Cost structure, Required core capabilities, Partner network, Critical enabling platforms, Key business processes, and Industry/ecosystem supply chain. In the second, key components include: Business Model Assessment and selection criteria defined, Evaluation of the suitability of selected business models, Development of parameters for testing in 2 pilots, Test business models in 2 pilots, Document lessons							passports and reversible building design)
			WP5A2T1: Modus operandi	5A2.1.1 Clarification of terminology relevant for the development of business models	IBM	28/02/2016			Many different concepts may arise and the alignment of definitions may prove difficult
				5A2.1.2 Alignment of methodologies to be used by partners for development of models		28/02/2016			Conflicting approaches and methods may delay alignment
			WP5A2T2: Elaborate opportunities for Materials Passports for all links in the value chain and stakeholders	5A2.2.1 Elaborate the organisation of the value chain for different links	IBM	31/08/2017			Delay on the outcome of WP2 on Material Passport and related timelines would cause significant delays.
				5A2.2.2 Elaborate the missing links and related business opportunities					
				5A2.2.3 Elaborate the transition needs for existing links					
				5A2.2.4 Selection of the most viable business opportunities					
				5A2.2.5 Conduct an innovation discovery workshop					
			WP5A2T3: Elaborate the business needs and opportunities for Reversible Building Design for all links in the value chain and stakeholders	5A2.3.1 Desk research on the existing value chain, including interaction with LCC work	IBM	31/08/2017			Dependencies on the outcome of WP3
				5A2.3.2 Analysis of frontrunners (3 cases)		31/12/2016			Dependencies on the timing of the pilots that will be assessed
				5A2.3.3 Case 1 & 2 including reporting		31/08/2017			

		learned from 2 pilots, Finalize business model options based on learning from 2 pilots.		5A2.3.4 Elaborate the transition needs for existing links		31/08/2017			
				5A2.3.5 Selection of the most viable business opportunities		31/08/2017			
			WP5A2T4: Perform user requirements analysis	5A2.4.1 Interactive workshop with the I&D Board	IBM	31/08/2017			Dependent on participation of Stakeholder Network members
				5A2.4.2 User and stakeholder feedback					Dependent on cooperation and input from stakeholders
			WP5A2T5: Identify and develop potential business concepts, at least 2 based on pilots	5A2.5.1 Select 5 business models for further evaluation, including - value propositions, revenue model and insights on the enterprise model and industry networks	IBM	31/08/2017			Dependent on input from all partners and the Stakeholder Network regarding the proposed concepts. Dependent on the outputs of the pilot assessment.
			WP5A2T6: Draft final business models for recommendation	5A2.6.1 Develop an overarching report and recommendation on the most attractive/sustainable business model concepts	IBM	31/08/2017			
			WP5A2T7: Validate	5A2.7.1 Interactions with Stakeholder Network for feedback	IBM	30/09/2017			Dependent on the cooperation of Stakeholder Network members
				5A2.7.2 Submit to BAMB Project Coordination Team for systematic validation					
				5A2.7.3 Finalized deliverable		31/10/2017			Not having sufficient time to process feedback from coordination team and fully reflect proposed changes

	D18 Recommen ded Target Operating Model	Written report on the recommended operating model that is applicable to the selected business models. Key components include: Hypotheses for overarching target operational capabilities, Critical components in the Component Business Model (CBM) , Identification of elements that can in practice be tested during the two pilots, Analysis of Critical Components, Preliminary 'heat map' of components , Detailed definition of the target capabilities, Refined CBM, additional analyses and a finalized heat map, Target architecture to further detail the CBM by illustrating the connections or gaps between the identified business components, as well as initiatives to bridge gaps when needed,			IBM	31/08/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	Timely sharing of inputs from partners (specifically regarding pilots) Not enough definition or detail of the proposed solutions from the WP2, WP3 Not having an unified view on the integration between the different work products (material passports and reversible building design)
			WP5A2T8: Define target architecture	5A2.8.1 Define the business components that are part of the future operating model	IBM	31/10/2017			
				5A2.8.2 Using the CBM methodology, develop a target business architecture that can enable the Material Passports and the Reversible Building Design principles.					Business model selected not detailed enough to be able to design enterprise model capabilities
			WP5A2T9: Develop an implementation Roadmap	5A2.9.1 Define what are the priority initiatives that need to be described to be able to plan for the execution of the proposed target operating model.	IBM	30/06/2018			
				5A2.9.2 Top down business case - high level view of future benefits and costs associated with the main BAMB proposals					Not obtaining sufficient information regarding costs from the other work packages WP2, 3 and 4.
				5A2.9.3 Define the logical sequences of the activities					

		Implementation Roadmap to summarize the lessons learned and recommendations from all of the above areas.	WP5A2T10 : Draft Final Target Operating Model		IBM	30/06/2018			Delays in previous task on different work packages can result in gaps on the operating model design
			WP5A2T11: Validate	5A2.7.1 Interactions with the Stakeholder Network for feedback	IBM	31/07/2018			Dependent on the cooperation of Stakeholder Network members
				5A2.7.2 Submit to BAMB Project Coordination Team for systematic validation					
				5A2.7.3 Finalized deliverable		31/08/2018			Not having sufficient time to process feedback from coordination team and fully reflect proposed changes
	D19 Framework for Regulations and Standards	Written report on suggestions for future policies and standards, with regard to how they can facilitate the transition towards circular and dynamic buildings, their impact on waste reduction and reduction of use of virgin resources as well as their impact on different stakeholders. Suggestions are to respond to existing barriers identified, as well as to reinforce existing regulations and			IBGE	31/01/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	
			WP5A3T1: Identification of scope	5A3.1.1 Geographic scope narrowing 3 locations will be defined based on pilot locations and geographical activity of the involved partners.	IBGE	31/05/2016			
				5A3.1.2 Identification of policy levels to investigate based on:					

		cover areas that are not regulated yet.		1) policy matrix and narrowed geographic scope (subtask 1) ; 2) the impact of the policies / standards on BAMB. For each defined geographical area, the policies impacting BAMB on the different links of the value chain are going to be investigated and mapped.					
		WP5A3T2: Setting-up and management of a governance platform		5A3.2.1 Identify actors of the platform based on members of the Stakeholder Network while maximizing the comprehensive coverage of the links with different policy levels (for public actors) and the different links of the value chain + set up platform	IBGE	31/07/2016			Dependent on motivating Stakeholder Network and relevant actors to participate in the platform
				5A3.2.2 Managing/coordinating the platform and organizing interactions		31/01/2019			Dependent on motivating stakeholders to share information with regard to the barriers & opportunity of current policy and standard Dependent on motivating stakeholders to monitor and assess the results of the framework established
		WP5A3T3: Link the governance platform with other EU and international platforms		5A3.3.1 Identification of 5 to 7 relevant platforms	IBGE	31/07/2016			
				5A3.3.2 Joining and actively participating to the platforms		31/01/2019			Dependent on establishing contact/interactions with existing

								platforms
				5A3.3.3 Coordination/inclusion of platform participants in the Stakeholder Network		31/01/2019		
			WP5A3T4: Impact assessment of current policy actions	5A3.4.1 Impact assessment of current policy actions, specifically related to BAMB ambitions - impact related to resource productivity indicators and other key performance indicators, as defined in the EU Resource Efficiency Roadmap, the avoided environmental burden and the financial cost related to current policy actions will be estimated.	BRE	30/06/2017		Potential difficulty to find the right information in regard to the current policies and standards for certain links of the value chain
				5A3.4.2 Investigation of best practices (no geographical limitations) at different policy levels.		31/12/2017		
			WP5A3T5: Draft a framework for regulations and standards; policy recommendations	5A3.5.1 Suggestions for future policies, instruments and standards	BRE	28/02/2018		Potential suggested policies, instrument and standards may not be acceptable for a large part of the stakeholders
				5A3.5.2 Assessment of suggested future policies, instruments and standards. The benefits, costs, etc. related to the suggested future policies, instruments and standards will be investigated as well as the way stakeholders relate to them.		31/10/2018		Potential that the suggested policies, instruments and standards are contradicting existing legislations in other areas
			WP5A3T6: Validate	5A3.6.1 Submit to BAMB Project Coordination Team for systematic validation	IBGE	31/12/2018		
				5A3.6.2 Finalized deliverable		31/01/2019		
D20 Innovation	Framework on the innovation				BRE	31/12/2018	All output topics and	Validation of final deliverable in the

	and Exploitation Framework	potential of the outputs being generated during the BAMB project, including a framework for exploitation and marketing of the products developed. Indication on what valuable outputs will be generated and provide insights in future applications.					requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	form of a pdf.	
			WP5A4T1: Give input and validate data management plan components regarding the future use and exploitation of data	5A4.1.1 Identify with all partners within the Data Management Plan the datasets that will be developed or needed to develop outputs outside the control of the project	BRE	31/12/2016			Risk that the identification of certain project output will not be on time
				5A4.1.2 For datasets outside of the control/ownership of the project, that are necessary to develop project outputs, develop long term management plan and agreements with the dataset owners to ensure continued access to adequate data beyond the term of this project.		31/12/2016			Risk of disagreement between partners on how a common project output should be managed on the longer term
				5A4.1.3 Based on Sub-task 2 give input and complement the data management plan which sets out ownership, access and maintenance agreements and future exploitation rights of all relevant data needed to develop outputs, or developed as an output in their own right.		30/04/2017			
			WP5A4T2: Identify an innovation strategy and management framework	5A4.2.1 Develop and deliver training material for all relevant WPs and Actions	IBM	31/12/2016			Dependent on the timely input of all WP leaders

				leaders to enable them to understand what is meant by innovation and the process that will be used to develop an innovation strategy for BAMB					
				5A4.2.2 All partners to give input regarding the identified innovation potential in the respective work package		31/03/2017			Input of all partners
				5A4.2.3 Guidance to work package leaders in the development of the innovation outputs		31/08/2017			
				5A4.2.4 Clearly identify what is unique about BAMB, in terms of the project objectives and the innovation gaps that need to be addressed in order to reach these objectives (workshop of WP/Action leaders); based on all the individual outputs and work packages an overarching innovation insight is developed		31/08/2017			
				5A4.2.5 Reconcile the innovation gaps to the existing work plan and develop draft Innovation Strategy and Management Plan		30/04/2018			
				5A4.2.6 Ensure the relevant WPs and Actions leaders fully understand the Innovation goals and are able to report progress on a quarterly basis		30/04/2018			
			WP5A4T3: Identify a framework for exploitation and marketing of the products developed	5A4.3.1 Develop and deliver training material for all relevant WPs and Actions leaders to enable them to understand what is meant by exploitation and the process that will be used to develop an Exploitation plan for BAMB	BRE	31/12/2016			
				5A4.3.2 Clearly identify what is		31/12/2016			

				unique about BAMB, in terms of the project deliverables and other outputs, and provide initial assessment of the likely market/target audience for these outputs, as well as potentially competing products/services (workshop of WP/Action leaders) ; based on all individual outputs and work packages an overarching exploitation insight is developed					
				5A4.3.3 Ensure all identified markets/target groups are represented on Stakeholder Network and/or relevant 'User requirement Analysis		30/04/2017			Potential external risk in lack of understanding/awareness of target markets and potentially competing products/services
				5A4.3.4 Through sub-task 3, develop good understanding of market potential for all relevant project deliverables and outputs. Develop draft exploitation plan		31/08/2018			
				5A4.3.5 Ensure the relevant WPs and Actions leaders fully understand the Exploitation goals and are able to report progress on a quarterly basis		31/08/2018			
			WP5A4T4: Consolidate Innovation and Exploitation Framework	5A4.4.1 Develop options for governance beyond project (a co-operative structure will be investigated as one of the options)	BRE	30/06/2017			
				5A4.4.2 Consult with all project partners on options to develop preferred route		31/11/2017			Possibility that it is not possible to agree on post-project governance structure

				5A4.4.3 Undertake legalisation activities required to enact preferred governance route		30/09/2018			
				5A4.4.4 Finalise Innovation Strategy & Exploitation Plan for transferral into post project governance structure to inform implementation goals and metrics for success		30/11/2018			
			WP5A4T5: Validate	5A4.5.1 Submit to BAMB Project Coordination Team for systematic validation	BRE	30/11/2018			
				5A4.5.2 Finalized deliverable		31/12/2018			
WP6 Communication & dissemination									
Raise awareness. Disseminate results. Facilitate internal communication amongst partners. Guarantee stakeholder and donor visibility.	D21 Communication Plan	*A written plan that will include stakeholder and channel analysis, and processes for dissemination. *Identification of who is responsible for what information. * Project branding *Media relations plan.			Ronneby	29/02/2016	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	
			WP6T1: Development and execution of a communication plan	6.1.1 Develop a communication strategy		29/02/2016			There is a risk that the budget is insufficient to develop a comprehensive enough communication strategy, which manages to encompass all WP results, internal communication and external communication about the project.)

				6.1.2 Set up a Communication Team		30/11/2015			
				1.3 Follow-up, maintain and execute the Communication Plan		28/02/2019			
			WP6T2: Establish project branding	6.2.1 Establish graphic profile for the project	UMINHO	31/03/2016			If the Project branding is not successful or not attractive to the project partners there is a risk of delay in the conclusion of this task. There's also a risk of insufficient budget if it is not possible to obtain an acceptable consensus in the graphic profile due to personal perceptions / likings.
				6.2.2 Approval by the Communication Team	UMINHO	08/04/2016			
			WP6T3: Media relations	6.3.1 Develop structure for documentation and maintenance of media relations	Ronneby	29/04/2016			The cultural and geographical diversity of the media in the countries throughout the European Union as target for the project results poses a risk or challenge to good media coverage in all parts of EU. Unclear boundaries for what all partners are responsible for and what WP6 is

									responsible for poses a risk of tasks falling in between and for conflicts
				6.3.2 Develop media relations		28/02/2019			
				6.3.3 Document all media relations		28/02/2019			
				6.3.4 Maintain media relations		28/02/2019			
				6.3.5 Catalog all national and international press clippings		28/02/2019			All partners are to notify Ronneby of press and media publications
			WP6T4: Validate	6.4.1 Systematic validation to BAMB Communication Team (3 weeks before delivery date)	Ronneby	29/01/2016			
				6.4.2 Finalized deliverable		29/02/2016			
	D22 Operational Website	A project website with RSS and Twitter-feed, as well as corresponding Facebook page.			Ronneby	29/02/2016	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a website.	
			WP6T5: Develop and maintain website	6.5.1 Develop website		29/02/2016			Risk that different partners in the project have different expectations and view on how the web should work, look and what it should entail. Risk that the diversity of partners and the

									broad scope of the project could make the web scattered and confusing, difficult to organize Risk that the budget is insufficient to create a solution that fills all WPs and partners needs and requirements/expectations.
				6.5.2 Develop Twitter and Facebook for the project		30/11/2015			
				6.5.3 Develop platform for internal communication and data management		28/02/2016			
				6.5.4 Maintain web and social media		28/02/2019+			Risk associated with that only one project partner will be able to maintain the web, if something happens within that organization there is a problem.
			WP6T6: Validate	6.6.1 Submit to BAMB Project Steering Group for systematic validation	Ronneby	29/02/2016			
				6.6.2 Finalized deliverable		29/02/2016			
	D23 Communication and Dissemination Catalogue	The collected communication and dissemination materials and events in the project. 3 BAMB leaflets, 6-8 electronic			Ronneby	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met.	Validation of final deliverable in the form of a pdf.	

		newsletters, Minimum of 5 high-level publication (books and articles), Communication materials for 3 events and final BAMB event, Communication materials for design competition, Communication materials for pilots and WPs, Press clippings					Further criteria are to be defined with users of the deliverable.		
			WP6T7: Communication and Dissemination Catalogue	6.7.1 Draft BAMB leaflet	UMINHO	28/02/2019			
				6.7.2 Draft and distribute 6-8 newsletters	UMINHO	28/02/2019			All partners to contribute newsletter content
				6.7.3 Publish high-level materials (instructional publication regarding Materials Passports, a book on design strategies for reversible buildings, a book on design strategies for refurbishment, a book and reading materials for students presenting technical solutions for dynamic circular buildings and their applications, a publication on Materials Passports best practices)	Ronneby, EPEA, TUM, UTwente, SGDF, VUB	28/02/2019			
				6.7.4 Catalogue all communication and dissemination materials	Ronneby	28/02/2019			
			WP6T8: Present BAMB project	6.8.1 Participate in 3 High profile events	UMINHO	28/02/2019			Risk that project partners will feel overstepped if not able to participate at events resulting in conflicts. Risk concerning the planning and execution of the events as a face outward of the project Risk that events do not have the expected impacts

									for reasons that are beyond BAMB's control and do not illustrate UMINHO and the consortium efforts. Scanty risk that no high profile event matching BAMB purpose will occur in 2018.
				6.8.2 Final BAMB event		28/02/2019			
		WP6T9: Communication material for reversible design competition	6.9.1 Organize and disseminate a call for a reversible design competition for EU university students at end of WP2 and WP3 based on models, tools and design protocols developed.	UMINHO	31/12/2018				Risk that the reversible design competition generates low interest in EU students. Risk of low quality of reversible design projects submitted. Risk that WP3 outputs are not fully functional for the design competition. Dissemination level of project outputs (confidential / partially confidential) may also compromise the main objectives / quality of the competition.
		WP6T10: Communication and Dissemination materials for WP results	6.10.1 Partners draft content for WP results	WP leaders and partners	28/02/2019				Low quality input from the WPs will result in poor quality communication

				6.10.2 Draft communication materials	Ronneby				
				6.10.3 Publish communication materials					
			WP6T11: Communication materials for each pilot	6.11.1 Draft content for local materials for Pilot	Pilot partners	28/02/2019			Low quality input from the pilot partners will result in poor quality communication
				6.11.2 Draft local communication materials	Ronneby and pilot partners (sign off)				
				6.11.3 Publish local communication materials	Pilot partners				
			WP6T12: Validate	6.12.1 Submit to BAMB Project Steering Group for systematic validation	Ronneby	31/01/2019			
				6.12.2 Finalized deliverable		28/02/2019			
WP7 Project Management and Coordination									
Ensure Project administration and logistics Ensure project meets overall objectives and impact Ensure a smooth execution of all project WP's and components . Ensure the balance in	D24 Revised Final Work Plan	A revised and thoroughly updated Annex 1 Grant Agreement meeting the requirements of the EU: Rationalization of the work plan; Analytic restructuring of the work packages; Identification of tasks, their scope, the responsibility of partners, their timing and interactions; Reduction of the number of tasks,			IBGE	31/12/2015	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	All partners must provide input
			WP7T1: Finalize revisions to work plan and work packages	7.1.1 Collection of input from all partners	IBGE	10/10/2015			All partners must provide input
				7.1.2 Compile revised Work Plan		25/10/2015			
			WP7T2: Validate	7.2.1 Submit to BAMB Project Steering Group for systematic	IBGE	30/10/2015			

the partnership and between partners Meeting the programme’s as well as the partnerships administrative and financial requirements Ensure partners’ intellectual property is adequately protected and preserved Making links and exchanges with other research and development projects within the field. Ensure the monitoring and reporting.		deliverables and milestones		validation					
				7.2.2 Finalized deliverable		31/10/2015			
	D25 Project Implementation Plan	A master plan that summarizes all components needed to successfully implement the project in its entirety: Project Work Plan, Log Frame, descriptions of activities, responsible parties, management bodies and procedures, budget, monitoring and reporting guidelines, financial reporting guidelines and EC rules, communication guidelines, legal basis for the project and Consortium, reference documents, contact details.			IBGE	28/02/2016	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	Dependent on the timely revision and acceptance of the revised Work Plan All partners must provide input
			WP7T3 : Draft the Project Implementation Plan	7.3.1 Collection of input from all partners	IBGE	10/10/2015			All partners must provide input for the development of the Project Implementation Plan
				7.3.2 Compile the Project Implementation Plan					
			WP7T4: Draft Annexes to the Project Implementation Plan	7.4.1 Draft Activities Schedule	IBGE	31/01/2016			All partners must provide input for the development of the Annexes
				7.4.2 Draft Reporting and Monitoring Template					
			WP7T5: Validate	7.5.1 Submit to BAMB Project Steering Group for systematic validation	IBGE	08/02/2016			
				7.5.2 Finalized deliverable					
	D26 Updated Project Implementation Plan and Annexes	An additional Annex to be included is the Risk Management Plan. A final document will track all changes to the Annexes to the			IBGE	31/10/2018	All output topics and requirements as described in the detailed work plan are dealt with and met. Further	Validation of final deliverable in the form of a pdf.	Dependent on partners and the Project Coordination Team alerting of necessary revisions

		Project Implementation Plan (Activities Schedule, Risk Management Plan, etc.), which are to be updated on a rolling basis throughout the project, following internal monitoring and reporting periods.					criteria are to be defined with users of the deliverable.		
		WP7T6: Monitor all activities and deliverables; assure strategic, technical and operational management.	7.6.1 Strategic management (PSG meetings every 6 months)	Project Steering Group	28/02/2019				
			7.6.2 Technical coordination (PCT meetings every 3 months)	Project Coordination Team					
			7.6.3 Operational Coordination	IBGE					
			7.6.4 Legal assistance						
			7.6.5 Financial administration						
			7.6.6 Internal project monitoring and reporting (Continuous, on a 6 month basis)						
			7.6.7 Set-up and management of the Stakeholder Network						
		WP7T7: Assure complementarity with other research projects	7.7.1 Identifying projects	IBGE	28/02/2019				Dependent on input from all partners and the Project Coordination Team
			7.7.2 Initiate interactions, exchange of information and co-operation						External projects are not willing to share information
			7.7.3 implement interactions, exchange of information and co-operation						and set-up co-operation IP issues impede sharing of information
		WP7T8: Draft Risk Management Plan	7.8.1 Collection of input from all partners	IBGE	31/03/2016				Dependent on adequate and detailed input from all partners.
			7.8.2 Compile the Risk Management Plan		31/03/2016				
		WPT79: Update Project Implementation Plan and Annexes every 6 months	7.9.1 Identify necessary revisions/updates to the Project Implementation Plan	IBGE/Project Coordination Team	31/08/2018				

				and Annexes and signaling them to the leading partner and Project Steering Group					
				7.9.2 Drafting revisions/updates to the Project Implementation Plan and Annexes	IBGE				
				7.9.3 Alerting the EC of any updates/revisions and submitting any necessary GA amendments					
			WP710: Validate	7.10.1 Submit to BAMB Project Steering Group for systematic validation	IBGE	30/09/2018			
				7.10.2 Finalized deliverable		31/10/2018			
	D27 Data Management Plan	A document that formally outlines how data and issues regarding intellectual property are to be handled, both during the project and after its completion. To be addressed in the plan:			IBGE	29/02/2016	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	Dependent on partners and the Project Coordination Team alerting of necessary revisions
			WP7T11: Draft Data Management Plan	7.10.1 Collection of input from all partners	IBGE	28/02/2016			
				7.10.2 Compile the Data Management Plan		28/02/2016			
			WP712: Validate	7.12.1 Submit to BAMB Project Steering Group for systematic validation	IBGE	29/02/2016			
				7.12.2 Finalized deliverable		29/02/2016			
	D28 Updated Data Management Plan	A final document will track all changes to the Data Management Plan, which are to			IBGE	31/08/2018	All output topics and requirements as described in the	Validation of final deliverable in the form of a pdf.	

		be updated on a rolling basis throughout the project, following internal monitoring and reporting periods.					detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.		
			WPT713: Update Data Management Plan every 6 months	7.13.1 Identify necessary revisions/updates to the Data Management Plan and signaling them to the leading partner and Project Steering Group	IBGE/Project Coordination Team	31/08/2018			
				7.13.2 Drafting revisions/updates to the Data Management Plan	IBGE	31/08/2018			
			WP714: Validate	7.14.1 Submit to BAMB Project Steering Group for systematic validation	IBGE	30/09/2018			
				7.14.2 Finalized deliverable		31/10/2018			
	D29 Consortium Meetings Minutes	Written recordings of project meeting discussions, decision points and actions to be taken			IBGE	28/02/2019	All output topics and requirements as described in the detailed work plan are dealt with and met. Further criteria are to be defined with users of the deliverable.	Validation of final deliverable in the form of a pdf.	
			WP7T15: Draft Minutes of the Consortium Meetings	7.15.1 Draft minutes of all Consortium (Project Steering Group) meetings	IBGE	31/01/2019			
				7.15.2 Compile a final report complete with all minutes					
			WP716: Validate	7.16.1 Submit to BAMB Project Steering Group for systematic	IBGE	31/01/2019			



				validation					
				7.16.2 Finalized deliverable		28/02/2019			

3 Reporting templates

3.1 External Reporting

3.1.1 Periodic Reporting

Periodic Technical Report: Part A (structured)

Note: please see H2020 template on periodic reporting for the original templates and latest updates.

1. Summary for publication

1.1 Summary of the context and overall objectives of the project

This section must be completed on-line with suitable quality to enable direct publication by the Commission/Agency. It should be easy to read i.e. written in a language easily understandable by a broader public, thereby promoting the dissemination and supporting the exploitation of EU funded results. It should preferably not exceed 7480 characters (equivalent to two pages of a text document). This part must not contain any confidential data.

The summary for publication must be drafted as a "stand-alone" text. No references should be made to other parts of the report. References can be made only to publicly available information. Beside the summary filled within the tool, diagrams or photographs illustrating and promoting the work of the project can be provided (only as images)3.

1.2 Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

This section must be completed on-line

1.3 Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

This section must be completed on-line

2. Deliverables

Del. no.	Deliverable name	WP no.	Lead beneficiary	Type	Dissemin. level	Delivery date from Annex 1	Actual delivery date	If deliverable not submitted on time: Forecast delivery date if appropriate	Status	Comments
[insert deliverable number]	[insert deliverable name]	[insert WP number]	[insert beneficiary short name]	[R/ /DEM/ /DEC/ /OTHER/]	[PU/ /CO/ /CI/]	[insert month number]	[insert dd/mm/y yyy]	[insert dd/mm/yyyy]	[Not submitted/ /Request for revision/ /Not assessed yet/ /Not valid/ /Accepted/]	[insert comments]

(*) Data in coloured fields will be prefilled by the IT tool.

3. Milestones

Milest. no.	Milestone title	Related WP(s) no.	Lead beneficiary	Delivery date from Annex 1	Means of verification	Achieved	If not achieved Forecast achievement date	Comments
[insert MS number]	[insert milestone name]	[insert WP number]	[insert beneficiary short name]	[insert dd/mm/yyyy]	[insert means of verification as in Annex 1]	[YES/ /NO/]	[insert dd/mm/yyyy]	[insert comment if needed]

(*) Data in coloured fields will be prefilled by the IT tool.



4. Ethical issues

Ethic requirements	Due date of the compliance of the ethic requirement	Report of the independent ethics advisor/ advisory board if applicable	Comments
[insert requirement as in Annex 1]	[insert dd/mm/yyyy]	[Not submitted/ Submitted/]	[insert comment]

(*) Data in coloured fields will be prefilled by the IT tool.

5. Critical implementation risks and mitigation actions

At the end of each period beneficiaries should give the state of play of every risk identified in Annex 1 and if necessary give new mitigation measures, as well as update or add to the list of identified risks.

Foreseen Risks

The following table lists the Risks identified in Annex 1. The table is read-only and it is provided as a reference for the State of Play table below.

Risk Number	Description of Risk	Work Packages Concerned	Proposed risk-mitigation measures
[insert risk number as in Annex 1]	[insert risk description as in Annex 1]	[insert WP number]	[insert mitigation measure as in Annex 1]

(*) Data in coloured fields will be prefilled by the IT tool.

Unforeseen Risks

Risk Number	Description of Risk	Work Packages Concerned	Proposed risk-mitigation measures
[insert unforeseen risk number]	[insert risk description]	[insert WP number]	[insert mitigation measure]

States of the Play for Risk Mitigation

Risk Number	Period	Did you apply risk mitigation measures?	Did your risk materialise?	Comments
[risk number]	[period number]	[YES/ NO]	[YES/ NO]	[insert comment if needed; mandatory if the risk mitigation measures have not been applied]

6. Dissemination and exploitation of results

6.1 Scientific publications⁴

Publications accessible via OpenAIRE will be displayed automatically. Beneficiaries will only need to check if the publications are linked to the project.

In case of publications not registered via OpenAIRE, the beneficiary encodes the Digital Object Identifier (DOI) and all the rest of the information is completed automatically.

⁴ Both the joint publications coming from public and private project participants as well as from private/public project participants with public/private organisations outside the Consortium (as long as they are related to the funded project) should be reported.

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eISSN	Authors	Title of the journal or equivalent	Number, date	Publisher	Place of publication	Year of publication	Relevant pages	Public & private participation	Peer-review	Is/Will open access provided to this publication
[Article in journal] [Publication in conference proceeding/workshop] [Books/Monographs] [Chapters in books] [Thesis/dissertation]	[insert title of the publication]	[insert DOI reference]	[insert ISSN or eISSN number]	[insert authors' name(s)]	[insert title of the journal]	[insert number of the journal] [insert month of the publication] [insert year of the publication]	[insert name of the publisher]	[insert place of publication]	[insert year of the publication] [insert first page of the publication] [insert last page of the publication]		[YES/NO]	[YES/NO]	[Yes - Green OA [insert the length of embargo if any]] [Yes - Gold OA [insert the amount of processing charges in EUR if any]] [NO]

(*) Data to be completed only if DOI not available.

6.2 Dissemination and communication activities

List only activities directly linked to the project.

Type of dissemination and communication activities	Number
[Organisation of a Conference] [Organisation of a workshop] [Press release] [Non-scientific and non-peer reviewed publications (popularised publications)] [Exhibition] [Flyers training] [Social media] [Web-site] [Communication campaign (e.g radio, TV)] [Participation to a conference] [Participation to a workshop] [Participation to an event other than a conference or workshop] [Video/film] [Brokerage event] [Pitch event] [Trade fair] [Participation in activities organised jointly with other H2020 project(s)] [Other]	[insert number of activities]
Total funding amount	[insert amount in EUR]

(*) One row per type of activity selected from the drop-down menu in the IT tool.

Type of audience reached In the context of all dissemination & communication activities (multiple choices' is possible)	Estimated Number of persons reached
<i>[Scientific Community (higher education, Research)]</i> <i>[Industry]</i> <i>[Civil Society]</i> <i>[General Public]</i> <i>[Policy makers]</i> <i>[Medias]</i> <i>[Investors]</i> <i>[Customers]</i> <i>[Other]</i>	<i>[insert number]</i>

(*) One row per type of activity selected from the drop-down menu in the IT tool.

6.3 Intellectual property rights resulting from the project

Type of IP Rights	Application reference	Date of the application	Official title of the application	Applicant(s)	Has the IPR protection been awarded?	If available, official publication number of award of protection
<i>[Patent]</i> <i>[Trademark]</i> <i>[Registered design]</i> <i>[Utility model]</i> <i>[Other]</i>	<i>[Option for international applications of patents [insert IP international organisation code] [insert serial number]]</i> <i>[Option for national applications of patents [insert country code (two letters)] [insert serial number]]</i> <i>[Option for other registered IPR [insert application reference country code (two letters) or organisation code]] [insert alphanumeric identifier]]</i>	<i>[insert dd/mm/yyyy]</i>	<i>[insert title of the application]</i>	<i>[insert beneficiary(ies) name]</i>	<i>[YES]</i> <i>[NO]</i> <i>[No applicable]</i>	<i>[Option for patents [insert code (two letters referring to a country or organisation)] [insert serial number]]</i> <i>Option for rest [insert official publication number]]</i>

(*) By encoding the application reference part of the data will be automatically completed.

7. Impact on SMEs

SME Name	Turnover of the company at the beginning of the project/most recent accountability period from the beginning of the project	Number of employees at the beginning of the project/ most recent accountability period from the beginning of the project	Turnover of the company at the most recent accountability period	Number of employees at the most recent accountability period
[insert name of SME]	[insert amount from database (pre-filled if information is available, otherwise the user will need to enter the information manually)]	[insert amount from database (pre-filled if information is available, otherwise the user will need to enter the information manually)]	[insert amount]	[insert number]

8. Open Research Data

More information on Data Management Plans (DMPs) in the Online Manual.

Digital Object Identifier, DOI (if available)	Title/Identifier (if no DOI available)	Is this dataset Openly accessible ⁵ ?	Is this dataset re-usable ⁶	If the dataset is linked to a publication, specify the DOI of the publication
[insert DOI reference]	[insert title or identifier]	[YES] [NO]	[YES] [NO]	[insert DOI reference of the publication]

9. Gender

Gender of R&D participants⁷ involved in the project

Beneficiaries	Number F including third parties (if appropriate)	Number M including third parties (if appropriate)	Total Including third parties (if appropriate)
[insert name of beneficiary]	[insert number]	[insert number]	[insert number]

(*) Data in coloured fields will be prefilled by the IT tool.

Gender dimension in the project

Does the project include a gender dimension in research⁸? [YES]/[NO]



Periodic Technical Report: Part B (narrative)

1. Explanation of the work carried out by the beneficiaries and overview of the progress

Explain the work carried out during the reporting period in line with the Annex 1 to the Grant Agreement. Include an overview of the project results towards the objective of the action in line with the structure of the Annex 1 to the Grant Agreement including summary of Deliverables and Milestones, and a summary of exploitable results and an explanation about how they can/will be exploited¹⁰.

(No page limit per work package but report shall be concise and readable. Any duplication should be avoided).

1.1 Objectives

List the specific objectives for the project as described in section 1.1 of the DoA and describe the work carried out during the reporting period towards the achievement of each listed objective. Provide clear and measurable details.

1.2 Explanation of the work carried per WP

• 1.2.1 Work Package X

Explain the work carried out in WPX during the reporting period giving details of the work carried out by each beneficiary involved.

1.3 Impact

Include in this section whether the information in section 2.1 of the DoA (how your project will contribute to the expected impacts) is still relevant or needs to be updated. Include further details in the latter case.

2. Update of the plan for exploitation and dissemination of results (if applicable)

Include in this section whether the plan for exploitation and dissemination of results as described in the DoA needs to be updated and give details.

3. Update of the Data Management plan (if applicable)

Include in this section whether the Data Management Plan as described in the DoA needs to be updated and give details.

4. Follow-up of recommendations and comments from previous review(s) (if applicable)

Include in this section the list of recommendations and comments from previous reviews and give information on how they have been followed up.

5. Deviations from Annex 1 (if applicable)

Explain the reasons for deviations from the DoA, the consequences and the proposed corrective actions.

5.1 Tasks

Include explanations for tasks not fully implemented, critical objectives not fully achieved and/or not being on schedule. Explain also the impact on other tasks on the available resources and the planning.



5.2 Use of resources

Include explanations on deviations of the use of resources between actual and planned use of resources in Annex 1, especially related to person-months per work package.

5.2.1 Unforeseen subcontracting (if applicable)

Specify in this section:

- the work (the tasks) performed by a subcontractor which may cover only a limited part of the project;
- explanation of the circumstances which caused the need for a subcontract, taking into account the specific characteristics of the project;
- the confirmation that the subcontractor has been selected ensuring the best value for money or, if appropriate, the lowest price and avoiding any conflict of interests.

5.2.2 Unforeseen use of in-kind contribution from third party against payment or free of charges (if applicable)

Specify in this section:

- the identity of the third party;
- the resources made available by the third party respectively against payment or free of charges
- explanation of the circumstances which caused the need for using these resources for carrying out the work.

Periodic Financial Report

Individual financial statements (Annex 4 to the GA). More information in the Online Manual.

FINANCIAL STATEMENT FOR [BENEFICIARY {name}/ LINKED THIRD PARTY {name}] FOR REPORTING PERIOD {reporting period}																	Additional information Information for indirect costs Costs of in-kind contributions not used on premises				
Eligible ¹ costs (per budget category)												Receipts		EU contribution							
A. Direct personnel costs				B. Direct costs of subcontracting		C. Direct costs of JH support		D. Other direct costs		E. Indirect costs ²		F. Costs of – J		Total costs		Receipts		Reimbursement rate %	Maximum EU contribution ³	Requested EU contribution	
A.1 Employees (or equivalent)		A.4 SME owners without salary				D.1 Travel		D.4 Costs of large research infrastructure		F.1 Costs of – J						Receipts of the action, to be reported in the last reporting period, according to Article 5.3.3					
A.2 Natural persons under direct contract		A.5 Beneficiaries that are natural persons without salary				D.2 Equipment															
A.3 Salaried persons {A.6 Personnel for providing access to research infrastructure}						D.3 Other goods and services															
Form of costs ⁴	Actual		Unit		Actual		Actual		Actual		Flat-rate ⁵		Unit								
			XX EUR/hour								25%		XX EUR/unit								
	a	Total b	No hours	Total c	d	{e}	f	{g}	b=0.25 x (a+b+c+d+g) x {1} x {2} ⁶ x {3}		No units	Total {1}	Total {2}	j = a+b+c+d+g of e/g) x {1} x {2}		k	l	m	n	o	
{short name beneficiary/linked third party}																					

The beneficiary/linked third party hereby confirms that:
The information provided is complete, reliable and true.
The costs declared are eligible (see Article 6).
The costs can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations (see Articles 17, 18 and 22).
For the last reporting period: that all the receipts have been declared (see Article 5.3.3).



3.2 Internal Reporting



3-monthly internal progress reporting on tasks scheduled during the reporting period

Work Package / Action : *prefill*

Lead beneficiary : *prefill*

Deliverables and tasks		Responsible partner	Start date	Deadline	Progress	If late, forecast delivery / completion date	Risks encountered / foreseen	If risks encountered, describe impacts and mitigation approach	Description of unforeseen risks and additional mitigation measures	Comments
No.	Name/Description									
D19	Framework for regulations and standards	IBGE	01/09/2015	31/01/2019	Select one.		Select one.			
WP5A3T1	Identification of scope	IBGE	01/09/2015	31/05/2016	Select one.		Select one.			
WP5A3T2	Setting-up and management of a governance platform	IBGE	01/03/2016	01/09/2019	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			
Prefill	Prefill	Prefill	Prefill	Prefill	Select one.		Select one.			



6 Monthly internal reporting (narrative)

[Partner] M6-M12

Work Packages / Actions involved in: WPx, WPx, WPx

Work Package / Action <i>[prefilled, one table to be completed per WP / Action]</i>		
	Question	Response
1. Explanation of the work carried out in this Work Package / Action during this reporting period		
1.1	Describe how the work carried out during this reporting period has contributed towards achieving the objectives listed for this Work Package / Action. Provide clear and measurable details.	
1.2	Provide details of your organizations' involvement in the work carried out on this Work Package / Action in this reporting period.	

2. Deviations from the Work Plan (as described in Annex 1 of the Grant agreement)

2.1	Have deviations from the Work Plan taken place?	Select one.
	<p>If yes, specify in this section:</p> <p>a) List which tasks have not been fully implemented, critical objectives not fully achieved and/or are behind schedule, and/or deliverables not submitted and/or are behind schedule;</p> <p>b) Explain per item the impact this (potentially) has on other tasks, on the available resources and the planning;</p> <p>c) Describe the consequences and the proposed corrective actions</p>	
2.2	Have deviations in resources taken place? (Especially related to person-months per Work Package / Action)	Select one.
	<p>If yes, specify in this section:</p> <p>a) The reasons for deviations from the Work Plan, the consequences (on other tasks, on the available resources and the planning);</p> <p>b) The proposed corrective actions with regards to tasks and use of resources</p>	
2.3	Has unforeseen subcontracting taken place?	Select one.
	<p>If yes, specify in this section:</p> <p>a) The work (the tasks) performed by a subcontractor which may cover only a limited part of the project;</p> <p>b) Explanation of the circumstances which caused the need for a subcontract, taking into account the specific characteristics of the project;</p> <p>c) The confirmation that the subcontractor has been selected ensuring the best value for money or, if appropriate, the lowest price and avoiding any conflict of interests.</p>	
2.4	Has unforeseen use of in-kind-contributions from a third party against payment or free of charges taken place?	Select one.
	<p>If yes, specify in this section:</p> <p>a) The reasons for this deviation, the consequences (on other tasks on the available resources and the planning) and the proposed corrective actions with regards to tasks and use of resources;</p> <p>b) The identity of the third party;</p> <p>c) The resources made available by the third party, respectively against</p>	

	payment or free of charges d) Explanation of the circumstances which caused the need for using these resources for carrying out the work.	
3. Updates		
3.1	Does the way in which the project has set out to contribute to the expected impact as described in the Work Plan need to be updated?	Select one.
3.2	Does the plan for exploitation and dissemination of results need to be updated?	Select one.
3.3	Does the Data Management Plan need to be updated?	Select one.
3.4	Does the Risk Management Plan need to be updated?	Select one.
4. Follow-up of recommendations and comments from previous review(s) (if applicable)		
4.1	If applicable, please list the recommendations and comments from previous reviews and give information on how they have been followed up.	<i>This will not be applicable until we have received feedback on the first reporting period</i>

For more information on the EC requirements on keeping records, please read Article 18 of the AMGA.

5 Partner contact information

PARTICIPANT CONTACT INFORMATION						
	BAMB Partner	Participant	Role	Country	Email	Phone
1	IBGE-BIM	Caroline Henrotay	Project Manager; Lead	BE	chenrotay@leefmilieu.irisnet.be	00 32 2 775 79 44
		Joeri Gyssens	Financial		jgyssens@leefmilieu.brussels	00 32 2 775 78 52
2	EPEA Nederland B.V.	Lars Luscuere	Lead	NL	luscuere@epea.com	00 31 85 104 42 31 00 31 65 121 95 92
		Hein van Tuijl	Financial		vantuijl@epea.com	00 31 85 104 42 30
3	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.	Wim Debacker Karolien Peeters	Lead	BE	wim.debacker@vito.be karolien.peeters@vito.be	00 32 14 33 58 94
		Erik Jansen	Financial		erik.jansen@vito.be	
4	BUILDING RESEARCH ESTABLISHMENT LTD	Gilli Hobbs	Lead	UK	Gilli.Hobbs@bre.co.uk	00 44 7800622899
		Matthew Gilligan	Financial		Mathew.Gilligan@bre.co.uk	00 44 1923 665280
5	STICHTING HOGESCHOOL ZUYD	Werner Eussen	Lead	NL	werner.eussen@zuyd.nl	
		Ron Reuleaux			ron.reuleaux@zuyd.nl	
6	IBM NEDERLAND BV	Sofie Narinx	Lead	BE	sofie.narinx@be.ibm.com	00 32 497 05 38 48
		Frank De Visser	Financial	NL	frank.de.visser@nl.ibm.com	00 31 6 51388539

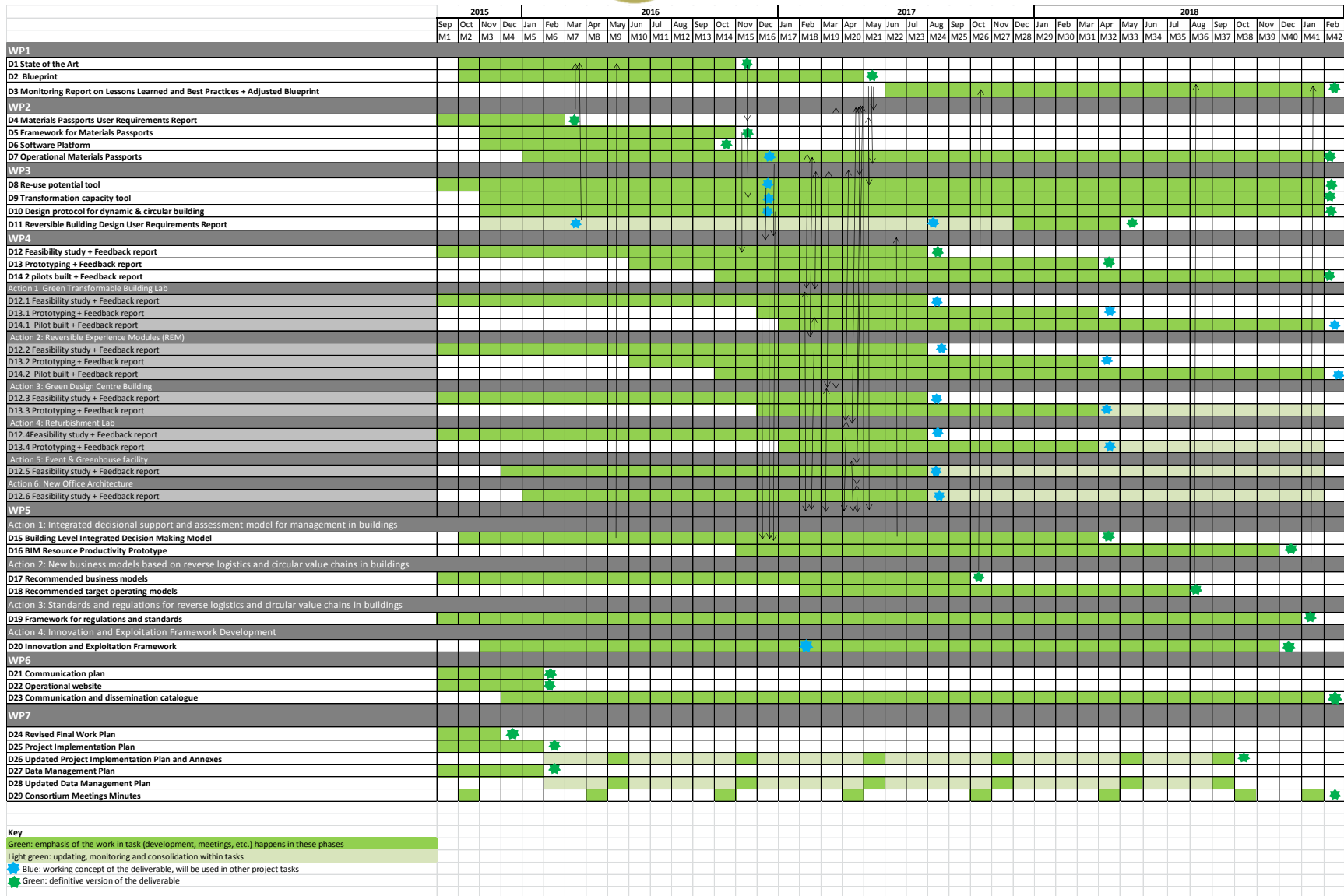
7	VRIJE UNIVERSITEIT BRUSSEL	Anne Paduart Niels De Temmerman	Lead	BE	anne.paduart@vub.ac.be niels.de.temmerman@vub.ac.be	00 3226292829 00 32 26293675
		Kim Coppens	Financial		kcoppens@vub.ac.be	
8	Ronneby kommun	Johan Sandberg	Lead; Financial	SE	johan.sandberg@ronneby.se	00 46 457618810
9	SundaHus i Linköping AB (publ)	Jan Boström	Lead	SE	jan@sundahus.se	00 46 13 363073
		Arvid Jannert	Financial		arvid@sundahus.se	00 46 13 36 30 79
10	TECHNISCHE UNIVERSITAET MUENCHEN	Professor Werner Lang	Lead	DE	w.lang@tum.de	00 49 89 289 23990
		Jutta Bergmann	Financial		jutta.bergmann@tum.de	
11	UNIVERSITEIT TWENTE	Dr. Elma Durmisevic	Lead	NL	E.Durmisevic@utwente.nl	00 31 6 29008667
		Erik van Unen	Financial		h.vanunen@utwente.nl	
12	UNIVERSIDADE DO MINHO	Prof. Luís Bragança	Lead	PT	braganca@civil.uminho.pt	00 351 253 510 241
		Daniel Pinheiro	Financial		dsp@civil.uminho.pt	00 351 253510242
13	FONDACIJA ZA RAZVOJ ODRŽIVOGDIZAJNA SARAJEVO	Prof. Dr. Adnan Pasic	Lead	BA	adnanp@af.unsa.ba	
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6 Activities Schedule





7 H2020 terminology

This is a non-exhaustive glossary of frequently-used terms in the H2020 context. The glossary will be updated over the course of the project.

Access rights

Rights to use results or background under the terms and conditions laid down in accordance with the Horizon 2020 Rules for Participation (Regulation(EU) No 1290/2013).

Access to risk finance

Access to risk finance shall aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the equity instrument of the Programme for the Competitiveness of Enterprises and SMEs, it shall support the development of European Union-level venture capital.

Account Administrator

A role in the Participant Portal giving particular access rights for managing organisation-related data. Account Administrators are assigned by LEARs who delegate some of their tasks to them. Account Administrators have full read/write access to the organisation data and can assign Legal Signatories (LSIGNs) and Financial Signatories (FSIGNs). For more details on the management of roles and access rights in the Participant Portal see: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/user-account-and-roles/my-area_en.htm

Affiliated entity

Any legal entity that is under the direct or indirect control of a participant, or under the same direct or indirect control as the participant, or is directly or indirectly controlling a participant. Control may take any of the forms set out in Article 7 of Horizon 2020 Rules for Participation (Regulation (EU) 1290/2013).

Basic act

A legal act adopted by the European Union institutions in the form of a regulation, a directive or a decision within the meaning of Article 288 of the Treaty on the Functioning of the European Union which provides a legal basis for the action.

Beneficiary

Means the legal person, other than the European Commission, who is a Party in the Grant Agreement.

Beneficiary Register

A central database of organisations (legal entities) participating in EU funding programmes. Each organisation has a Participant Identification Code (PIC) that is used as the unique identifier in all interactions in any proposals or grants in which the organisation is involved. A search for registered



beneficiaries and their PICs and the service for self-registering new organisations are available at: <http://ec.europa.eu/research/participants/portal/desktop/en/organisations/register.html>

Close-to-market action

An action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

Contractor

Contractor means a natural or legal person with whom a procurement contract has been concluded.

Coordinator

The Coordinator of a Consortium who submits the project in the name of the Consortium. In case of successful application it participates in the grant preparation in the name of the Consortium and during the project period keeps contact with the European Commission in the name of the Consortium.

Coordinator Contact

A role in the Participant Portal giving particular access rights for the paperless management of Horizon 2020 grants. Coordinator Contacts have full, read/write access to their own and the Consortium's common e-forms, and can submit to the Commission/Agency. They can nominate/revoke other Coordinator Contacts, Task Managers and Team Members of the coordinating entity. For more details on the management of roles and access rights in the Participant Portal, see http://ec.europa.eu/research/participants/docs/h2020-funding-guide/user-account-and-roles/roles-and-access-rights_en.htm.

Digital Agenda

The first of seven flagship initiatives of the Europe 2020 strategy which contains the strategy of the European Union towards a digital economy through utilisation of digital technologies by 2020. See following link for further information- <http://ec.europa.eu/digital-agenda/digital-agenda-europe>

Dissemination

The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.

ERC Executive Agency

The administrative organ of the European Research Council (ERC), which is responsible for all aspects of administrative implementation and execution of ERC programmes. This executive agency manages the awards of ERC grants.

Entry into force

Refers to the date upon which the Grant Agreement or amendment to the Grant Agreement has legal force and effect.

**Equity investment**

Equity investment means the provision of capital to a firm, invested directly or indirectly in return for total or partial ownership of that firm and where the equity investor may assume some management control of the firm and may share the firm's profits.

Financial Regulation

Contains the principles and procedures governing the establishment and implementation of the budget of the European Union and the control of the European Communities' finances. For more details, see http://ec.europa.eu/budget/biblio/documents/regulations/regulations_en.cfm

Independent Observers

With a view to ensuring a high degree of transparency, the Commission may appoint independent experts to act as observers of the evaluation process from the point of view of its working and execution. Their role is to give independent advice to the Commission on the conduct and fairness of all phases of the evaluation sessions.

Innovation

The process, including its outcome, by which new ideas respond to societal or economic needs and demand and generate new products, services or business and organisational models that are successfully introduced into an existing market or that are able to create new markets and that contribute value to society.

Innovation Union

A flagship initiative of the Europe 2020 strategy. This initiative aims to improve conditions and access to finance for research and innovation in Europe to ensure that innovative ideas can be turned into products and services that create growth and jobs. Horizon 2020 is a key tool to implement the Innovation Union.

Joint undertaking

It is a collaboration of two or more companies to undertake a common project or to pursue a specific objective. To this end, co-venturers bring together their common resources and capabilities, such as project funding, capital equipment, know-how and intellectual property. The joint venture has the scope to create a legally independent company to develop a competitive advantage by commercialising a new product or service.

Legal Entity Appointed Representative

A person appointed by the legal representative of a legal entity participating in EU funding programmes. The LEAR is usually an administrative staff member of the central administrative department of the organisation. The LEAR provides the Commission with up-to-date legal and financial data, including the persons in the organisation authorised to sign grant agreements (LSIGNS) and financial statements (FSIGNS) and commits to maintain the information up-to-date, enabling future use for grants and other transactions between the entity and the Commission research (and other) programmes. The LEAR can delegate some of his/her tasks to Account Administrators. More details on the role and tasks of LEARs can be found at:



http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/register-an-organisation/learn-appointment_en.htm

Work Plan

The document similar to the European Commission work programme adopted by funding bodies entrusted with part of the implementation of Horizon 2020 in accordance with Article 9(2) of Regulation (EU) No 1290/2013 [Horizon 2020].

Work Programme

The document adopted by the European Commission for the implementation of the specific programme in accordance with Article 5 of Council Decision (2013/743/EU) [H2020 Specific programme].

For a complete overview of H2020 terminology see:

http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.htm