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## DELIVERABLE D10.2 BIMERR DISSEMINATION AND COMMUNICATION PLAN AND ASSOCIATED MATERIAL 1

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## EXECUTIVE SUMMARY

The main aim of this deliverable is to define, propose and establish a specific action plan through a holistic communication and dissemination approach based on the project's objectives, special characteristics (maturity of tangible and intangible project's results e.g. TRL, new business models etc.), strengths and weaknesses, threats and opportunities.

In parallel with the implementation phases of the project, based on this plan, certain and discrete actions must be further deployed and executed in order for the consortium to "engage stakeholders" and, through this, to multiply the overall impact of the project. Main constraints may be the possible unwillingness of stakeholders to be involved within the implementation phases of each project, their perception about the estimated results, their lack of information about its real and estimated results, their potential benefits, any prerequisites and timeline.

In this sense, this deliverable is structured through a systematic methodological approach, within and in accordance to the scope, objectives, content and expected results of BIMERR project, so as to analyze the best possible options and means of communication and dissemination at each phase and in direct relation to the specific needs of the project's target groups. One other important aspect that was taken into serious consideration is BIMERR's timeline and milestones in relation to its progress and to the consequent informative content that needs to be continuously produced, updated and targeted at each group of stakeholders. In addition to the above-mentioned concept, specific monitoring and risk assessment methodologies with quantified key performance indicators and metrics are already set and will be applied during the whole period of BIMERR so as to improve the expected dissemination and communication impact and justify any discrepancies that may occur.

Last but not least, special concern was given to the early address of all target groups in accordance to the content of information and the relative message that needs to be communicated at each project's phase, results and objectives. The appropriate means of raising awareness among the pre-defined target groups are also defined.

All the actions described in this plan are fully aligned with the goals and the objectives of Milestones 7 for “Public Awareness, Dissemination and Engagement Planning”, 8 for the “Standardization Punch-list” and 11 for the “Project website launch”.

The Dissemination and Communication Plan (D10.2) of the BIMERR project will be updated in a periodic basis and enriched versions will be submitted in M18, M30 and M42.

## 1. INTRODUCTION

### 1.1 PURPOSE, CONTEXT AND SCOPE OF THIS DELIVERABLE

The main purpose of this deliverable is:

- to steer dissemination and communication (D&C) activities during the project's lifetime
- to specify the method for defining the appropriate information and messages for achieving stakeholders' engagement through the entire lifecycle of BIMERR
- to establish the Living Lab Methodology and to elaborate on the Living Lab activities planning
- to assure the influence of BIMERR tangible and intangible results after the end of BIMERR project, according to planned additional activities by the partners

Good and comprehensive understanding of the project's objectives, timeline and phases, of the scope and use of selected communication and dissemination channels or material, of the detailed target group segment and lastly of the content needed for each communication and dissemination activity towards the different target groups, is of key importance.

In this context, the main scope of this deliverable is to clearly define:

- the communication and dissemination objectives in relation to project's objectives
- the Living Lab Methodology and the related tools and activities.
- the interdependencies between project WPs & outcomes & dissemination & communication activities
- the estimated time plan for every communication and dissemination action
- the discrete segment of communication and dissemination target groups and partners involved (enablers) in each activity
- the content and message that need to be produced, finalized and communicated at each step and activity, according to the project's deployment phase
- the selected dissemination and communication means (online and offline) and the "roadmap" for multiplying the expected effect to the predefined audiences during and after the end of BIMERR

- the responsible partner (or internal teams) for implementing each communication and dissemination activity

More generally, the scope of this deliverable is mainly to answer, at this early stage of BIMERR project, the following questions in order to have a common methodological approach and specific targets and content in parallel to the deployment of BIMERR project:

- What information has to be disseminated and communicated?
- What is the best approach and method to engage the BIMERR stakeholders into the different implementation phases of the project?
- Why should we disseminate and communicate at each phase?
- When should we disseminate and communicate?
- Who is, at each phase and action, responsible to disseminate and communicate?
- Where and how should we disseminate and communicate at each project's phase?

Last but not least, this deliverable is also aiming at defining a specific monitoring methodology for all communication and dissemination activities, by using metrics and KPIs, which are described in this deliverable.

## **1.2 STRUCTURE AND CONTENT OF THIS DELIVERABLE**

This deliverable outlines the Communication and Dissemination Plan for the BIMERR project. Firstly, the definitions of the concepts are given, followed by a short presentation of BIMERR concept, methodology approach, vision, goals & objectives. More specifically, it begins with the BIMERR abstract and conceptual approach, then the BIMERR implementation methodology and discrete project's phases are stated, followed by the project's milestones, expected tangible and intangible results and overall quantified impact. Moreover, the communication and dissemination objectives and expected impact are discussed. In more detail, firstly, the communication plan and objectives are presented. Secondly, the dissemination plan and objectives are discussed.

Thirdly, the target groups identification and classification are mentioned. In the next section, the dissemination and communication methodology is analyzed. More in detail, the SMART communication methodology is thoroughly discussed, followed by the BIMERR selected dissemination and communication methodological approach. In the next section, the deployment approach and specifications of the communication and dissemination tangible and intangible tools and materials are defined.

The BIMERR internal management and communication tool is discussed, followed by a presentation of the BIMERR website, the social media platforms and the living lab activities. In addition, the scientific publications and presentations, and the participation in fora and thematic events are presented. Then, the cooperation with other projects in the domain of energy efficiency buildings and BIM is outlined along with the liaison with professional communities and networks and the promotional and dissemination material. After presenting D&C tools and mechanisms, the detailed dissemination and communication action plan is discussed. This chapter includes the detailed communication plan, the detailed dissemination plan and the interdependencies between project WPs, outcomes, dissemination and communication activities.

Furthermore, the monitoring of dissemination and communication activities is presented. Initially, the monitoring process and the key performance indicators (KPIs) are defined along with the KPIs measurement tools and means. Finally, the risk assessment describes and analyzes the risk register and the risk mitigation procedure.

Moreover, the up to date progress of the communication and dissemination plan is presented. Firstly, there is a description of implemented actions until M06, followed by the dissemination and communication material and a plan for collaboration with other actions and initiatives. Finally, a detailed external communication and dissemination plan is discussed. Chapter five refers to a list of completed dissemination and communication actions followed by a chapter on partners' roles and completed actions. Finally, the conclusions are examined in detail. Finally, the BIMERR templates, as designed during the first months of the project can be found in the annex.

## 2. DISSEMINATION AND COMMUNICATION PLAN

### 2.1 DEFINITIONS

**Communication** refers to the act of informing audience beyond the project community about the action and its results. It is a process that starts at the outset of the action and continues throughout its entire lifetime. Strategic and targeted measures are vital in order to communicate the action and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange, according to the EC Research & Innovation Participant Portal Glossary/Reference Terms. The purpose of Communication of the project is to show the impact and benefits of EU-funded R&I activities. Communication should focus on promoting the project and its results.

**Dissemination** focuses on the communication of the results produced during the project. It refers to the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including scientific publications in any medium, according to the EC Research & Innovation Participant Portal Glossary/Reference Terms. The objective of dissemination is to 'transfer knowledge and results' in order to enable others to use the results, leading to a maximization of the impact of the EU funded research. Dissemination is focused on the results which shall become available to other stakeholders for use through this process. The target audiences of dissemination are groups that take an interest in the potential use of the results of the projects, such as the scientific community, industrial partners and policy makers.

This deliverable is based on the above-mentioned definitions and its structure follows this clear distinction between communication and dissemination.

In order to maximize the impact and the effectiveness of the dissemination activities, specified messages will be produced with different approach for each target group. The dissemination messages will be accurate, in a scientific and formal language.

Communication, on the other hand, aims at promoting the project to the general public. The target of communication is to increase the public visibility of the project; therefore, the language that is used in order to achieve the target, is rather more accessible.

## 2.2 SHORT PRESENTATION OF BIMERR CONCEPT, METHODOLOGY APPROACH, VISION, GOALS & OBJECTIVES

### 2.2.1 BIMERR ABSTRACT AND CONCEPTUAL APPROACH

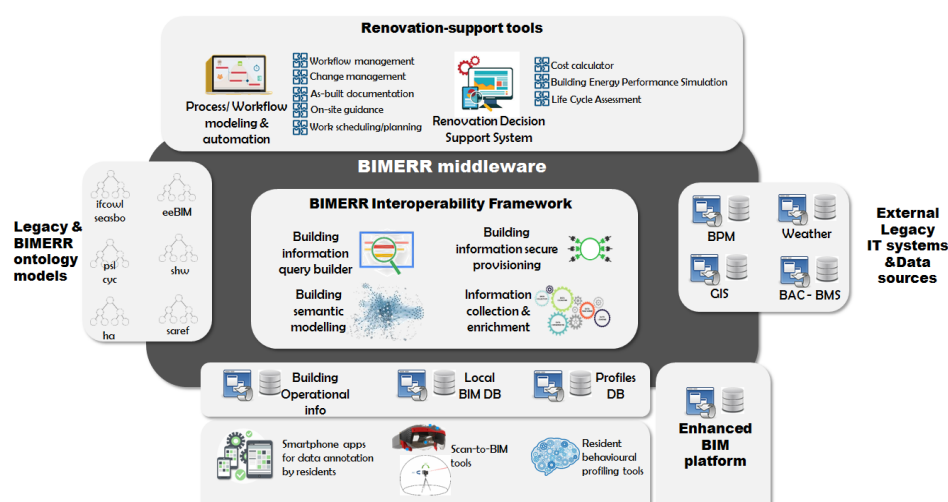
Building Information Modelling is a critical element in the digitalization of the construction industry, which is necessary in order to unleash huge efficiency and productivity improvements.

BIMERR will design and develop a Renovation 4.0 toolkit which will comprise tools to support renovation stakeholders throughout the renovation process of existing buildings, from project conception to delivery.

It comprises tools for the automated creation of enhanced building information models, a renovation decision support system to aid the designer in exploring available renovation options and provide an accurate estimation of renovation impact on building performance, as well as a process management tool that will optimize the design and on-site construction process toward optimal coordination and minimization of renovation time and cost.

At the heart of the BIMERR toolkit lies an interoperability framework, which will enforce semantic interoperability among BIMERR tools as well as with third-party legacy ICT tools to enable seamless BIM creation and information exchange among AEC stakeholders in an effort to enhance the rapid adoption of BIM in renovation of the existing EU building stock.

The BIMERR toolkit will be validated and demonstrated in 4 buildings in 3 European Member States. Two buildings will be used for pre-validation and implementation refinement and the



**Figure 1: BIMERR Interoperability Framework**



refined BIMERR toolkit will support the actual renovation design and works in one residential building in Poland and a second one in Spain.

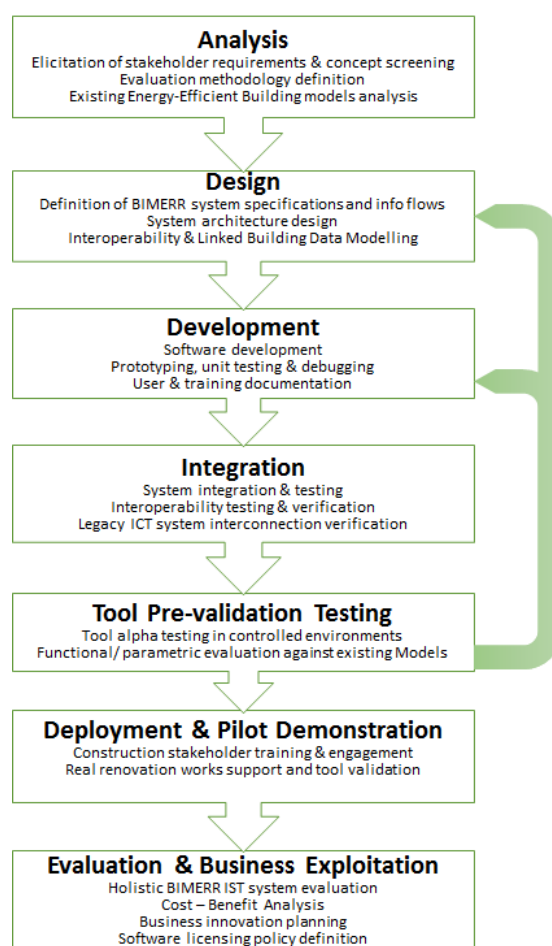
The assessment and evaluation of the BIMERR toolkit after these real-life activities, will feed material into two supporting horizontal project activities: i) dissemination and exploitation of project outcomes through the creation of best practice examples of BIMERR use, that will guide further replication effort, and ii) promotion of BIMERR outcomes to the most relevant standardization bodies.

### 2.2.2 BIMERR IMPLEMENTATION METHODOLOGY AND DISCRETE PROJECT'S PHASES

In order to reach the above-mentioned objectives, the BIMERR consortium has planned to follow an implementation methodology that comprises several steps as shown in Figure 2.

First, an analysis will be conducted including a study in the requirements of the end users in order to be used as core feedback for the tool's development.

Moreover, an evaluation methodology will be developed to showcase the impact of these tools along with an analysis in the existing energy efficiency of the building. Software development begins after this analysis. It consists of three phases: the design phase, the development phase and the integration phase. Software development will follow agile methodologies and continuous integration principles, always anchored to the



**Figure 2: BIMERR Implementation Methodology**

BIMERR data models designed up-front. The aim of this is to catch potential incompatibilities or bugs early in the development process.

Moreover, this development and integration approach will also enable a key feedback loop from the pre-validation phase, foreseen in the project methodology, that aims to eliminate user acceptance issues during the pilot demonstrations. This testing and pre-validation phase is foreseen to take place in real buildings which will not undergo any renovation interventions and will serve as a dry run for the actual demonstration activities. After the pre-validation, the final technical phase is the validation on real renovation sites, where the entire BIMERR tools value chain will be demonstrated in two real-life renovation projects in order to quantify and validate their impact throughout the renovation process: from design and planning to the actual construction works. Finally, in parallel with the technical activities of the project, an evaluation and business exploitation plan will be developed to evaluate the project results and prepare for the commercialization phase following the project.

### **2.2.3 PROJECT MILESTONES**

In the following table a list of the BIMERR project milestones is presented. From those milestones relevant to the activities of dissemination and communication are:

- Milestone 7 “Public Awareness, Dissemination and Engagement Planning” which is estimated for M06 and verifies the detailed report on the dissemination and communication plan and the smooth operation of the living labs
- Milestone 8 “Standardization Punch-list” which is predicted for M30 and verifies the timely preparation of the standardization punch-list and plan for promotion to relevant bodies and finally
- Milestone 11 “Project Website Launch” which is estimated for M03 and verifies the launch of project website and its availability to public access.

Milestone number	Milestone name	Related WPs	Estimated date	Means of verification
MS1	End-user requirements elicitation & documentation	WP2	M6	Timely delivery of D1.1.
MS2	BIMERR system architecture definition	WP2	M12	All the deliverables related to architecture design and specifications are delivered prior development task starts
MS3	Delivery of first version of BIMERR system for pre-validation	WP7	M24	Availability of the integrated BIMERR framework for deployment and testing at the pre-validation pilot sites.
MS4	Selection of real renovation projects for demonstration activities	WP8	M24	Detailed information about the target buildings, written commitment from the owner/manager to participate in validation activities
MS5	Delivery of refined BIMERR system after pre-validation	WP7	M30	Availability of the second version of the integrated BIMERR framework for deployment and use at the real renovation pilot sites.
MS6	BIMERR validation and evaluation	WP8	M42	BIMERR validation completed and relevant recommendations extracted and delivered to WP9 for best practice documentation.
MS7	Public Awareness, Dissemination and Engagement Planning	WP9	M6	Detailed report on the dissemination and communication plan. Smooth operation of the living labs.
MS8	Standardization Punch-list	WP9	M30	Timely preparation of the standardization punch-list and plan for promotion to relevant bodies
MS9	Business Innovation plan	WP8	M42	BIMERR business innovation plan release
MS10	Quality Assurance Plan	WP1	M3	Quality assurance circulation and agreement among partners
MS11	Project website launch	WP9	M3	Public access to project website available

**Table 1: The BIMERR Milestones**

## 2.2.4 PROJECT EXPECTED TANGIBLE AND INTANGIBLE RESULTS AND OVERALL QUANTIFIED IMPACT

### 2.2.4.1. BIMERR Expected Tangible and Intangible Results

According to the Grant Agreement and the Description of Action (DoA) of the BIMERR project, the following table summarizes the main exploitable results expected to be generated by the BIMERR project, as well as the main exploitation routes and options that the consortium is foreseeing for each of them.

Exploitable results	Target exploitation route	Responsible partner	Offering type	Monetization model	Target users/clients
BIMERR Solution	Commercial	BIMERR Joint Venture	Software Product	Royalties	AEC Industry
BIMERR Semantic Interoperability Framework	Commercial	Suite5, UBITECH	Software Service	License Fees, Implementation Fees	AEC Industry, Urban Planners, Utilities, Software Providers
Scan-to BIM tool	Commercial R&D	HWU	Software Product	Consulting Fees	AEC Industry, Software Providers
Augmented Reality Apps for BIM Enrichment	Commercial	CERTH, GU	Product	Direct Sales	AEC Industry, Building Occupants, Facility Managers
Renovation Workflow Management and Automation Module	Commercial	BOC, NT	Software Product	License Fees, Consulting Fees	AEC Industry, Software Providers
Augmented Reality App for On-site work support	Commercial	NT	Software Product	Direct Sales	AEC Industry, Software Providers
Renovation Components (modelling constructs) Repository	Commercial	EXE	Add-on to existing product	Direct Sales	AEC Industry, Software Providers
Renovation Performance Simulation Modules and DSS	Commercial	Xylem	Add-on to existing product	Direct Sales	AEC Industry, Urban Planners
Resident Behaviour Profiling module	Commercial R&D	Hypertech	Add-on to existing product	License fees	AEC Industry, Energy Utilities, Smart Home Equipment Providers

**Table 2: BIMERR exploitable results**

### 2.2.4.2 Expected BIMERR Overall Impact

The expected overall impact of BIMERR is:

- A reduction of the renovation working time of at least 15-20% compared to current practices with the baseline defined in the proposal

- Acceleration of the market uptake across Europe, by speeding-up industrial exploitation, in particular amongst constructing/ renovations companies with a target of 50% of their renovation business based on BIM;
- Creation of best practice examples for the construction retrofitting sector with benefits for the operators and associated stakeholders (architects, designers, planners, etc.).

The estimated quantified impacts of BIMERR are described in the following table:

<b>BIMERR Impact Achieved During the Project</b>	
Impact Category	Target
Renovation Cost Savings	80%
Renovation Time Reduction	30-35%
User acceptance rate during BIMERR pilot activities	>95%
<b>Contribution to Additional Impacts following the wide deployment of BIMERR solutions and technologies</b>	
Energy Savings in Buildings	35%
Annual Energy Savings in GWh	17,800
Annual Energy Cost Savings for the renovated building stock	€ 2 billion
Annual Energy Cost Savings per household	€ 315
GHG Emissions Reduction	122 million tons CO2
Increase of Rental Rates of the EU Building Stock	2-17%
Increase of Resale Rates for Renovated Buildings	6-35%
Annual EU Building Stock Market Value Increase	€ 126 million
New Jobs Created on an Annual Basis	3,000-10,000

**Table 3: BIMERR Impact Achieved During the Project**

The communication and dissemination content that will be produced during the lifecycle of BIMERR will also be based on the above-mentioned project's impact in accordance to the needs of each target group and according to each project's phase.

## **2.3 COMMUNICATION AND DISSEMINATION OBJECTIVES AND EXPECTED IMPACT**

### **2.3.1 INTRODUCTION**

Based on the concept, goals, objectives of BIMERR and in order to achieve the best possible results for the project, specific communication and dissemination objectives are defined since the start of the project. The below mentioned objectives are in accordance to the overall impact of BIMERR and act as enablers in order to maximize this impact, both during and after the end of BIMERR. The 4 phases of the communication and dissemination plan are in parallel with the 4 phases of the expected BIMERR software implementation progress in order to facilitate the timely communication of the project outcomes. These objectives are described in the following paragraphs.

### **2.3.2 COMMUNICATION PLAN & OBJECTIVES**

In order to achieve an effective communication strategy, it is crucial to define clear communication objectives. In BIMERR project, the communication plan is driven by the following communication objectives:

- **Communication Objective 1:** Increase the **visibility of BIMERR** by providing universally comprehensible information to the public about the project goals and results.
- **Communication Objective 2:** Create a **user community that will provide insights and detailed feedback** during the development of the project.
- **Communication Objective 3:** Communicate **tangible results and success stories** coming from the project's validation activities.
- **Communication Objective 4:** Increase **awareness and enhance societal perception** on how Research and Innovation can tackle emerging challenges and positively impact the society, while increasing visibility and information flow on the vital role of HORIZON 2020 and EU funded research.
- **Communication Objective 5:** Promoting and demonstrating the **societal and economic benefits** generated by the BIMERR project to a wide range of audiences outside the core project target groups.
- **Communication Objective 6:** **Complement the dissemination activities** of the BIMERR project.

An integrated Dissemination and Communication Methodology is designed and launched by the BIMERR Consortium utilizing a vast variety of instruments and relations to communicate the project's success stories along with the overall project's framework.

The BIMERR communication instruments will include at minimum the following:

- Project's website
- Social media (Twitter, Facebook, LinkedIn)
- Press releases, newsletters, videos in popular media channels with diverse inclusive audiences
- Participation and presentation of the project in other networks and groups
- In-house presentations to existing clients / collaborators and brainstorming for further extending the BIMERR solutions to other applications and markets
- Appropriate material (e.g. brochure, roll-up, poster, factsheet, leaflet, press release, newsletter) accompanied by promotional video presenting results and achievements of BIMERR

All these communication means and instruments will support the BIMERR consortium to achieve all the above-mentioned communication objectives. By using the appropriate material, the non-specialist general public will be targeted. In addition, media relations will be established through social media in order to attract journalists and bloggers to the BIMERR's social media posts and updates.

Through the following table, an initial crosstabulation between communication objectives, project period and selected means and actions are described:

Periodicity Tools for Communication	Period I: M01 – M06	Period II: M06-M12	Period III: M12-M18	Period IV: M18-M43	Post Project Communication
<b>BIMERR Website</b>	Design and development of the BIMERR website	Regular update of the website content	Continuous update of website with targeted content	Regular update of website content with presentation of results and demo	
<b>Social Media</b>	Establishment of social media presence	Regular actions on social media	Promote results and events; Interact with social media users	Post updates about project results; Interact with users; Spread relevant material.	

<b>Communication Material</b>	Design logo and project's graphic identity, brochure, roll-up	Poster, factsheet, press releases newsletters	Promotional video, leaflet with results, press releases, newsletters	Promotional video, leaflet with achievements, press releases, newsletters	
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**Table 4: BIMERR Communication Plan**

### **2.3.3 DISSEMINATION PLAN & OBJECTIVES**

The major focus of the Dissemination strategy of BIMERR is to ensure that project's outcomes (concepts, scientific results, tools, methodologies etc.) are widely disseminated to the appropriate target communities at appropriate times via appropriate methods. To that end, in order to have a successful dissemination strategy, the BIMERR consortium has set the following dissemination objectives:

- **Dissemination Objective 1:** Raise **awareness and social engagement** for the BIMERR project goals and activities in target communities via appropriate methods.
- **Dissemination Objective 2:** Encourage the **involvement of end-users and stakeholders**, through the utilization of Living Lab, in all phases of the project implementation by using a "User-Centric Design Approach" of dissemination. In this objective is very important to establish and maintain an adequate communication channel with all types of participants involved.
- **Dissemination Objective 3:** Ensure **the diffusion of all the scientific and technological results** generated in the BIMERR project within and beyond the project's consortium.
- **Dissemination Objective 4:** Effective BIMERR dissemination activities implicitly and explicitly contribute to the timely support of the **exploitation strategy** of the BIMERR project.
- **Dissemination Objective 5: Cooperation with other projects** in the domain of Energy Efficiency Buildings and Building Information Modelling.

In order to ensure the achievement of the dissemination objectives, the BIMERR Consortium has designed specific dissemination activities and means. Dissemination activities are characterized by active and a priori awareness and acceptance of the targeted audience.

The BIMERR dissemination instruments will include the following activities and means:



- Living Lab to raise awareness and achieve wide engagement of demo stakeholders
- Project website and social media presence
- Scientific publications and presentations
- Participation in fora & thematic events
- Contributions to standards
- Active cooperation with other projects in relevant fields
- Liaison with professional communities and networks
- Promotional content and dissemination material

All the above-mentioned instruments and means will contribute to the successful dissemination of the BIMERR project. BIMERR will also produce and disseminate promotional videos, newsletters, press releases, brochures, posters, slides and leaflets presenting the project concept and achievements.

Through the following table, an initial crosstabulation between dissemination objectives, project period and selected means and actions are described:

periodicity Tools for Dissemination	Period I: M01 – M06	Period II: M06-M12	Period III: M12-M18	Period IV: M18-M43	Post Project Communication
<b>Implementation of Living Labs Methodology throughout the project</b>	Specification of Living Lab Activities; Identify key target groups;	Implementation of Dissemination activities through Living Lab Methodology; Follow up activities	Implementation of Dissemination activities through Living Lab Methodology; Follow up activities,	Implementation of Dissemination activities Living Lab; Continuous feedback; Pilot activities feedback and results	
<b>Participation in Conferences</b>	Participation in relevant events and presentation of BIMERR	Presentation of project's results to events	Presentation of project's results and BIMERR solution to events	Presentation of BIIMERR results, achievements and solutions to events	
<b>Scientific Publication &amp; Presentations</b>	Preparation for publication of position papers	Publication of position papers and methodology	Publication of position papers and methodology; Presentation of project results	Publication of position papers and methodology; Publications on project results and findings	
<b>Standardization Activities</b>	-	Identification and Information on	Identification and Information on	Consultation, Engagement and Involvement of	

		Standardization bodies	Standardization bodies	Standardization Bodies through the Promotion of BIMERR Results	
<b>Cooperation with other projects</b>	Mapping of possible synergies	Participation in events in order to establish synergies	Synergies & links for smooth knowledge transfer; common dissemination actions	Common dissemination actions with other projects	

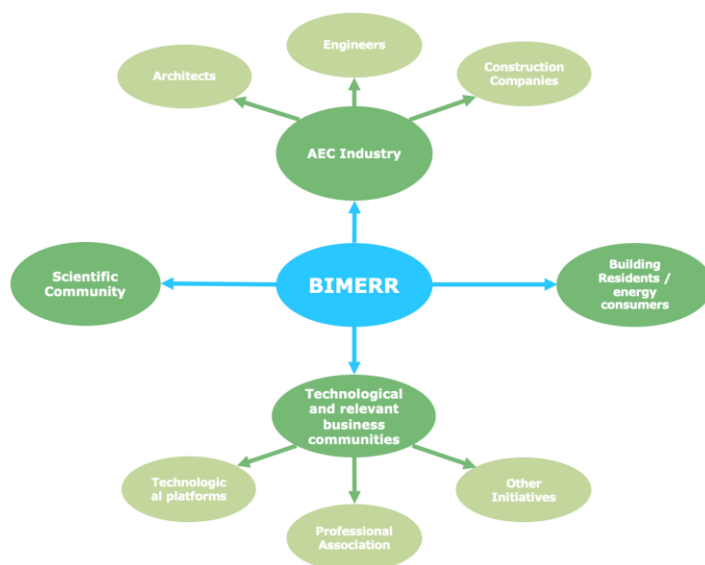
**Table 5: BIMERR Dissemination Plan**

### 2.3.4 TARGET GROUPS IDENTIFICATION & CLASSIFICATION

The goal of this paragraph is to provide a clear definition of the dissemination and communication target groups. The accurate identification of the target groups is essential for the success of the BIMERR project. The definition of the groups is based on the Dissemination and Communication Objectives as described in previous sections.

The dissemination and exploitation strategy of BIMERR, as defined in the Grant Agreement and the DoA, focuses on the following target groups:

- **Architects, Engineers and Construction Industry (AEC Industry)**
- **Building Residents / Energy Consumers**
- **Technological Platforms and Professional Association and Initiatives**
- **Scientific Community**



**Figure 3: Communication and Dissemination Target Groups**

The first target group, namely the **AEC industry**, entails key stakeholders involved in the design, planning and implementation of building renovation projects and subsequently the primary end-users of the BIMERR result. In the target group of AEC industry the BIMERR

partners entail architects, engineers, construction companies, project managers and workers. Moreover, AEC companies are the essential participants and receivers of the Living Lab awareness, engagement, training and other dissemination activities. The active involvement of this target group is crucial for the success of the project, since they will be invited to co-design, co-create and demonstrate/ validate the BIMERR BIM-based innovations. Particular attention is given to the segment of **BIM software providers**, which comprises the main exploitation target group for the integrated solution delivered by BIMERR.

In the Deliverable 3.1 presented in M06, the BIMERR Consortium defined 17 user groups in the use cases and are grouped to 7 main user groups according to their role in the use cases and the BIMERR component (tool) they will use. The following table provides a brief general description of the 17 user groups/roles identified in the use cases and are involved in the renovation process.

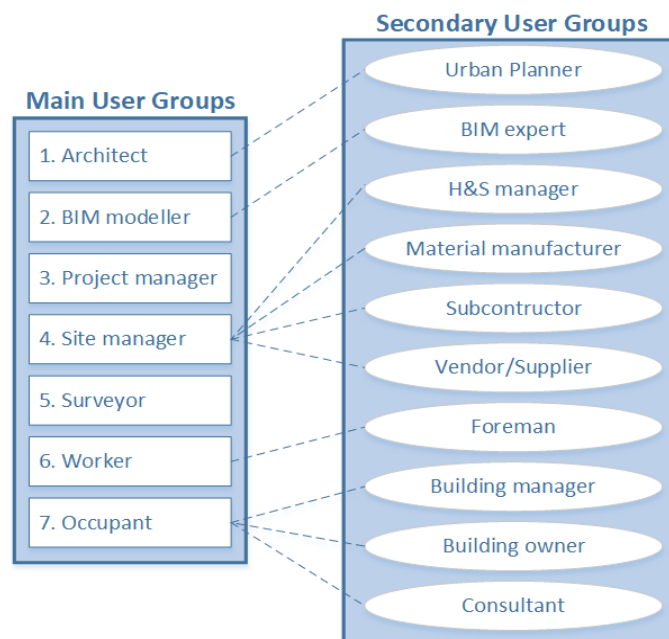
No	BIMERR user	Description
1	BIM modeler	A BIM Modeler is engaged in the process of generating digital models of the construction/renovation place. He develops the construction drawings and imports data to a BIM platform.
2	Building surveyor	The Building surveyor is responsible for making sure that buildings are safe, energy efficient and livable. He interacts with other professionals such as engineers, architects and builders to ensure that buildings are designed and constructed to comply with building regulations.
3	Architect-Designer/Engineer	An architect/engineer prepares construction drawings and specifications. He could lodge the planning application and building warrants. He leads the design team to meet the client's design requirements and hence, defines the client requirements, arranges site investigations, establishes the preferred solution, develops the design, prepares room data sheets, offers advice on material selection, etc. An architect/engineer also monitors the construction of the project to ensure it is done according to the plans and specifications.
4	BIM expert	He is engaged with the process of generating and managing digital building information models. He is a member of the BIM team; however, different terminology is used in the AEC Industry to define the roles in a BIM team. A BIM Manager is usually someone who manages the team. A BIM Modeler

		builds the BIM virtually and ensures that the model aligns with the goals set by the BIM Manager. A BIM Technician is someone who develops the construction drawings and extracts data on a BIM platform.
5	Urban Planner	Urban planning deals with the development and design of land use and the built environment, including air, water, and infrastructure such as transportation, communications, and distribution networks. It deals with the physical layout of human settlements. The primary concern is public safety, including efficiency, sanitation, protection and use of the environment issues. It is interdisciplinary and includes social, engineering and design sciences.
6	Building manager	He is mainly involved in the development of master plans for properties as well as budget estimation for proposed projects. He could serve as lease manager for the owner's rental properties and be the contact with the tenants. He may be responsible for space planning, and space inventory and allocations. Also, he might be in charge of minor projects such as contracted work and services.
7	Building occupant	The occupant is the final customer. Since one of the objectives of the BIMERR project is to establish an energy efficient environment fully preserving end users' needs and preferences, tools and applications will be available to address the high-level need for establishing a sustainable environment.
8	Building owner	The person who owns the building and has full authority to control the renovation project. Generally, he is mainly involved in the financial issues of the construction project and makes sure that the necessary financial resources are available timely. He has to work together with the architect and other consultants to achieve the goals set for the construction project.
9	Consultant	Construction consultants help clients prepare for their projects and ensure that contractors complete the project on cost. They provide cost estimates and budgets, select contractors, administer construction contracts, and resolve differences between contractors and project owners.
10	Health & Safety Manager	His roles and responsibilities include monitoring health and safety risks at the workplace and advising employees how to avoid them. He ensures compliance with all health and safety legislation. He works with and trains employees to improve the health and safety standards in the workplace. He

		assists with the creation and management of health and safety monitoring systems and policies in the workplace, as well as manages emergency procedures (such as fire alarm drills).
11	Material manufacturer	Building materials manufacturers produce a variety of materials used for construction. This is an established industry and the use of the materials is typically segmented into specific specialty trades, such as carpentry, insulation, plumbing, roofing work, etc.
12	Project manager	He monitors and controls all the aspects of a project and makes sure that the people involved achieve the objectives on time and to cost, performance and quality. He also directs the Design Team and ensures that appropriate information and understanding exists to effectively execute the project.
13	Subcontractor	He is hired by a general contractor to perform a specific job within a construction project. As such, plumbers, painters, electricians and other specialists may be considered construction subcontractors.
14	Vendor/Supplier	Nowadays a supplier is not only an organization contracted to provide physical supplies such as goods, materials, plant, etc. but also any provider of services and goods, either directly to the employer or to another supplier in a supply chain.
15	Foreman	He is usually a senior worker in charge of a construction crew.
16	Site Manager	A site manager or sometimes construction manager, oversees site operations on a day-to-day basis, and ensures that work is done safely, on time, within budget and to the right quality standards.
17	Worker	A <i>construction worker</i> is a tradesperson, laborer, or professional employed in the physical <i>construction</i> of the built environment and its infrastructure.

**Table 6: Target Groups from AEC community**

In Figure 5, a main and secondary classification of targeted user groups is provided:



**Figure 5: Targeted user groups and categorization to main and secondary groups**

The second main target group entails the **building residents (energy consumers)**. Building residents are directly involved in project activities because they are the actual energy consumers in buildings. Their participation in the Living Lab Activities is crucial, as they will be invited to learn more about the BIMERR solution and any possible concerns about their privacy violations and personal data collection will be mitigated. Together with the AEC Industry, they are placed as key target group for the effective dissemination and communication of the BIMERR project.

The third target group is the **technological and relevant business communities**. This target group entails technological platforms, professional associations and various related initiatives. BIMERR will establish clear alignment and coordination with relevant technology platforms and industrial associations, in order to establish standardized BIM-based practices and solutions.

Synergies with many technological and business communities will be explored during the development of the BIMERR project. Therefore, possible synergies will be continuously updated in the forthcoming versions of this document. Possible synergies will be established with the following communities, among others:

- eeSemantics Wiki
- Open Reference Models Initiative

- European Construction Technology Platform/ ECTP
- buildingSmart Alliance and its Linked Data Working Group
- ETSI Working Group for Standardization of the SAREF for Building Ontology
- W3C and its linked Building Data Community Group
- Euro VR Association
- European Platforms Initiative on IoT
- International Association for Automation and Robotics in Construction/IAARC
- International Committee of Architectural Photogrammetry/CIPA

The fourth target group is the **scientific community**, that corresponds to research and academic organizations, scientific journals, committees, internal fora and other working groups in research fields related to the field of the BIMERR project.

In some cases, there is a need for the BIMERR project to be presented to a wide range of audiences outside the core project target groups. For the communication objectives of the project that reflect the demonstration of societal and economic benefits of the project in the society and the increase of the awareness on Horizon 2020 projects and EU funded Research, the target group is defined as “general public”.

## 2.4 DISSEMINATION AND COMMUNICATION METHODOLOGY

### 2.4.1 SMART COMMUNICATION METHODOLOGY

SMART methodology is a conceptual approach in order to design a consistent and robust communication plan before starting to communicate and disseminate project results. In this approach the main key is consistency. More into detail, SMART methodology considers the following aspects:

- **Specific:** Identify all the specific communication goals by answering key targeted questions (Who? What? Where? How? When? Why?). Set up specific communication targets in order to establish tactics and vehicles, goals and messages, benefits / stakeholders and the time frame of the project.



**Figure 6: SMART Methodology**

- **Measurable:** Establish criteria to measure the communication progress of the project. Metrics are very important for the development of plan (e.g. online analytics, surveys and polls, feedback analysis).
- **Achievable/Attainable:** Establish communication goals that are realistic and measure the balance between quality and quantity.
- **Realistic & Results Oriented:** Establish criteria to measure that the project's objectives and tactics are meeting the projected goals. Analyze the quality of the communication based on response. Identify possible measures for improvement in case the results are not as expected at the beginning of the project.
- **Time Conscious:** The absolute respect to the timeline and the deadlines, is a prerequisite for a successful communication plan.

For the BIMERR project, the **SMART approach** is chosen as **common framework** for performing the BIMERR Dissemination and Communication plan. Based on the above-mentioned methodological principles, the dissemination and communication activities and the relevant informative content / material will be **specific and direct, reliable, measurable, attainable, results oriented and time conscious**. In the following paragraph, on the basis of these mentioned principles, a specific methodology has been chosen in order to conclude to **a detailed roadmap** for communicating the key messages and results of BIMERR to the relevant target groups.

#### **2.4.2 BIMERR SELECTED DISSEMINATION & COMMUNICATION METHODOLOGICAL APPROACH**

The BIMERR selected dissemination and communication methodological approach describes all the actions that will be performed during the dissemination process of the BIMERR project. In addition, the methodology defines the planning, the execution and the reporting/improving of the dissemination activities, as well as the responsibilities allocation among the BIMERR consortium partners. It is crucial to communicate and disseminate properly all the results of the BIMERR project, in order to achieve the maximum impact and successful communication towards the specific target groups.

During the implementation of this methodological approach, special attention has been given to stakeholders' engagement. According to the EU handbook (Durham E., 2014) "stakeholders' engagement" is crucial for the success of the communication and dissemination objectives and the absence of a clear understanding of their needs at each phase may lead to lost



opportunities for each part in terms of information, involvement and final engagement (if applicable). Early engagement is likely to make the engagement process more credible and relevant; finding the right mix of participants and ensuring no groups have been excluded will enhance legitimacy and credibility.

As a consequence, since the first months of the project, a pre-defined horizontal methodology will be applied and will be based on the following principles:

- Who are BIMERR stakeholders?
- What to communicate?  
Assessment, analysis and prioritization of BIMERR stakeholders and their needs
- Why communicate?  
Understanding of BIMERR stakeholders in terms of their expected input or interaction (information, consultation, involvement, engagement)
- When and where to communicate?
- How to communicate?

The whole engagement process will be undertaken while taking into consideration the following key success factors (CASH D. C., 2002), (CASH D. C., 2003), (YOUNG, 2013b):

- **Credibility** (the perceived quality and validity of the stakeholder engagement process and the people involved with the engagement)
- **Relevance** (the usefulness of the engagement process and its outcomes – how closely it relates to stakeholders and their needs, and how responsive the process is to changing needs)
- **Legitimacy** (the perceived fairness and balance of the stakeholder engagement process, and is particularly important in cases where conflict may occur)

Consequently, the BIMERR dissemination and communication methodology comprises of 3 distinct phases:

### 1. Planning phase

The design will be based on the abovementioned principles.

#### Scope

- The scope of the BIMERR project is clearly defined and the activities presented in this plan will be evaluated in due time.

### 2. Execution phase

Every partner will use the material and the agreed communication and dissemination methods.

#### Objectives

- Clear, achievable and measurable communication objectives are set for the BIMERR project.

### 3. Reporting / Improving phase

This phase will be guided by the active participation and contributions of each partner in order to plan on time corrective measures, if the goals are not achieved.

#### Planning

- Definition and understanding of the BIMERR objectives, the target audience and the planning is done before the implementation of the communication activity.

#### Metrics

- During the communication activity it is crucial to collect analytical metrics. A metrics system (indicators) is set in place in order to achieve better monitoring and improvement of the communication objectives.

**Figure 7: The BIMERR Communication Methodology**

The continuous and unceasing continuation of these 3 phases is crucial, in order to ensure coherent information flow of all BIMERR tangible and intangible results in all aspects of communication and dissemination activities.

In every phase of the project, all the project partners will actively provide material for internal and external communication and dissemination activities in order to reach the BIMERR communication goals and objectives. All the project results will be conceptualized and categorized in a timeframe, in order to communicate them with the appropriate target groups or stakeholders with a consistent message.

On the one side, the communication and dissemination of the BIMERR project will be focused on the results and the target groups that will be communicated during the development of the project. On the other side, a coherent and effective message with overall impact will be established in order to reach out society as a whole.

In the following chapters, a detailed and specific list with tangible and intangible results as well as the appropriate target groups and stakeholders for each result will be thoroughly analyzed.

## 2.5 LIVING LABS METHODOLOGY

The Living Labs Methodology is one of the main frameworks which support horizontally the Communication and Dissemination Methodology of the BIMERR project. The Living Lab approach adopted by BIMERR, engages end-users from the early stages of any new idea cultivating motivation to share and discuss experiences as well as requirements. In this context, one of the main novelties of BIMERR, is the involvement of end-users and stakeholders in the co-creation of the BIMERR framework (user-driven approach). For this reason, the aim of the Living Lab Methodology is to establish an open innovation 2.0 and value co-creation framework, involving different end-users and stakeholders either directly participating in or offered by the project and ranging from the project consortium partners to relevant end-users and stakeholders (AEC professionals), along with scientific, technological and relevant business communities.

The main activities under the living lab methodology are planned to be executed in three phases.

Thus, during the first phase, namely the **design phase**, the main scope of the activities will be to gather the stakeholder specifications and requirements which will be used during the design of BIMERR tools. In order to reach this target several workshops are going to be organized during this phase, in cooperation with Task 3.1, while different questionnaires for different stakeholder groups are going to be developed for the elicitation of the end user requirements. Those requirements will be then used as a core for the open-innovation design methodology of BIMERR tools and the main target will be to meet those requirements by the end of the project giving the opportunity to accelerate collaborative knowledge generation and technology integration against real market and user needs.

Following that, during the second phase, namely the **Implementation phase**, the Living Labs will be the live feedback loop between the stakeholders and the technology providers. More in detail, the stakeholders in that phase will provide feedback for the features of BIMERR tools during their development in order to establish the co-creation framework and maximize their effect on the characteristics of BIMERR tools. To achieve that, various interaction and collaboration mechanisms will be used during that phase, including workshops that might contain demonstration of beta versions of tools, or direct demonstration of features by the technology providers to specified user groups, or online demonstration of BIMERR tools to

specific user groups with the scope to receive their feedback and implement their needs in the BIMERR tools.

Finally, during the third phase, namely the **Validation phase**, the evaluation of BIMERR tools will be performed in accordance with the successful meeting of the end user requirements. Moreover, the stakeholders will be actively participating in the end-product definition and go-to-market strategy creation, during that phase by involving them through the final workshops in the pilot sites, but also by involving the participants in the training activities and other dissemination activities of the project. These activities aim to establish an iteration and open collaboration process that will accelerate collaborative knowledge generation and integration, technology customization and validation against real market and user needs, as well as end-product definition and go-to-market strategy creation.

The attraction of end-users and of the stakeholders will be from the networks of the BIMERR Consortium partners. All partners are responsible to provide contact details and signed consent forms from end-users and stakeholders that are participating in the project. More into detail, a Living Lab Database is under design in Confluence and the aim is to include several end-users and stakeholders Contact details and their function. The participants are categorized in target groups according to their function (e.g. Architects, Engineers, BIM-modelers etc.). The Living Lab Database will be used as the pool for future dissemination activities and will be continuously updated through the development of the project.

The Living Lab Methodology for co-creation follows an approach in order to involve different perspectives and collaboratively design tools, materials, processes, tools and activities. Another essential part of the Living Lab methodology is engagement of the users. One important factor of the engagement is that all possible types of user's engagement require continuous information of the users about the project and various information tools and activities. Thus, all types of engagement require some tools and activities.

The following table is a useful mechanism to structure the types of engagement in Living Lab activities with the goals for the users, key messages and relevant dissemination and communication tools. More in detail:

Type of engagement	Living Lab goal for participation	Dissemination and Communication Tools
CONTINUOUS INFORMATION	<ul style="list-style-type: none"> <li>Inform the end-users and the stockholders about the goals and objectives of the BIMERR project.</li> <li>How their participation will contribute to the success of the project.</li> <li>Their input and feedback are needed</li> </ul> <p>Key message: Inform the Participants in every stage.</p>	<ul style="list-style-type: none"> <li>Website</li> <li>Social Media</li> <li>Brochure</li> <li>Fact Sheet</li> <li>Workshop</li> <li>Questionnaires</li> <li>Newsletter</li> <li>Press Releases</li> <li>Articles</li> </ul>
CONSULTATION	<ul style="list-style-type: none"> <li>Gather information and feedback from end users through the project</li> </ul> <p>Key message: Their feedback is valuable for the project and they will be informed about how their input influenced BIMERR.</p>	<ul style="list-style-type: none"> <li>Living Lab Workshops</li> <li>Questionnaires</li> <li>Templates</li> <li>Interactive Techniques</li> <li>Internet</li> </ul>
COLLABORATION	<ul style="list-style-type: none"> <li>The creation of a collaborative relation with the users is very important. The identification of problems and the recommendations of possible solutions will be included in BIMERR</li> </ul> <p>Key Message: The collaboration with the users and stakeholders will ensure that their concerns will be solved in the final outcome with solutions and recommendations that they proposed.</p>	<ul style="list-style-type: none"> <li>Living Lab Workshops</li> <li>Interaction with participants</li> <li>Open questions in Questionnaires</li> <li>Internet</li> </ul>

**Table 7: Type of engagement in Living Labs**

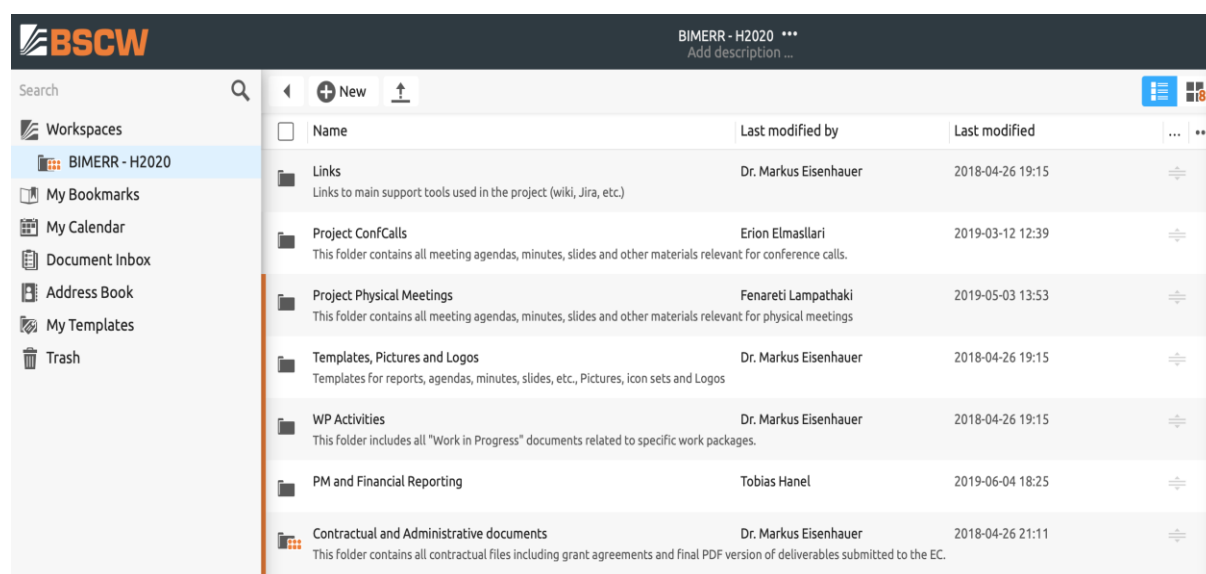
## 2.6 DEPLOYMENT APPROACH AND SPECIFICATIONS OF THE COMMUNICATION AND DISSEMINATION TANGIBLE & INTANGIBLE TOOLS & MATERIALS

### 2.6.1 BIMERR INTERNAL MANAGEMENT AND COMMUNICATION TOOL

The communications and the data generated in BIMERR project, are stored in a protected internal repository called BSCW. The platform is managed by the project coordinator and is protected with username and password. This platform is used by project partners to store and share working documents and deliverables.



In addition to this tool, the consortium partners use the platform Confluence, offered by the Project Coordinator Fraunhofer, in order to facilitate the communication and the review procedure in the consortium of BIMERR project.



### 2.6.2 BIMERR WEBSITE

#### 2.6.2.1. Set up of the website

The BIMERR website – [www.bimerr.eu](http://www.bimerr.eu) (Delivered in M03) is the starting point for anyone that is seeking to learn more about the project. The website will stimulate a crucial resource on the presentation and promotion of the BIMERR objectives, tools and consortium partners. Throughout the project, a variety of stakeholders will be invited to stay informed about the

development of BIMERR and to contribute to important aspects of the project. It has been designed as a vibrant online tool, visually attractive and informative about the project.

The website is the primary tool that will be used to successfully implement the Dissemination and Communication strategy of BIMERR project.

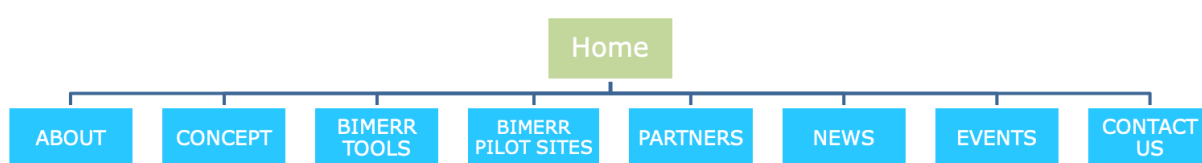
### 2.6.2.2 Website Update

In order to sustain a holistic online presence for BIMERR, the project's website is regularly updated, including project's results and specific news / events related to the BIMERR project.

Due to the evolving nature of the BIMERR project, the structure of the website is clear, and the information is constantly updated following the developments of the project.

The BIMERR webpage is designed, and the content is written and adapted, used a series of different tools. The update of the content is performed, using a What You See Is What You Get (WYSIWYG) application. For this reason, the creation and development of a webpage is faster because only a limited knowledge of HTML is needed, as it's automatically generated. However, the code can still be edited manually.

In the following figure, a detailed analysis of all the structure of the website is presented:

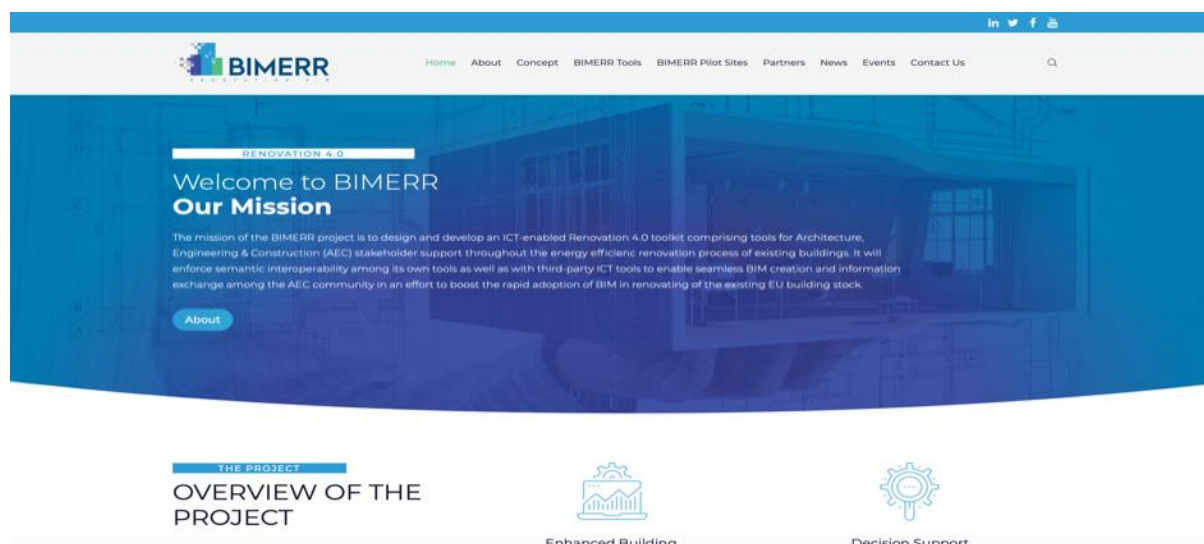


**Figure 8: BIMERR Website - Site Map**

Based on the structure of the above diagram, the developed site map is informative and concise, in order to facilitate the navigation of any type of website visitor. The webpage integrates all the different aspects of the BIMERR project.

The structure of the BIMERR website is based on this sitemap in order to provide a clear and detailed image of the project to the visitor.

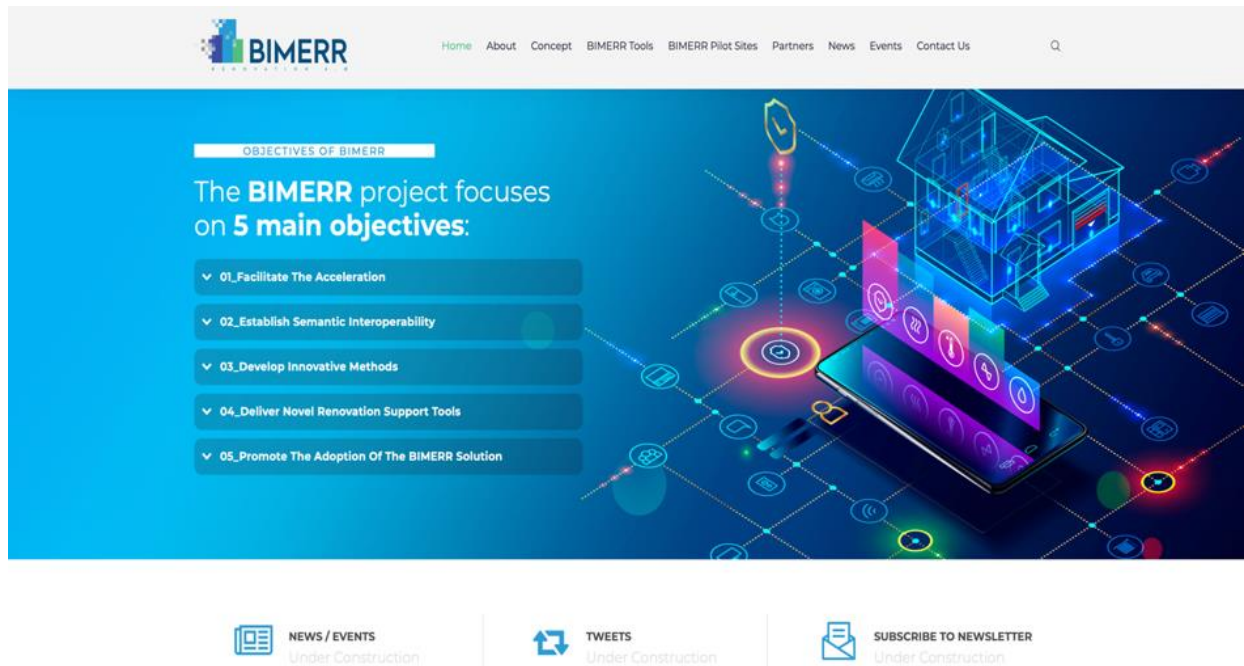
A visual application based on the above-mentioned site map of the BIMERR website is presented in the following figure:



**Figure 9: BIMERR website “Home” page screen capture (part 1)**

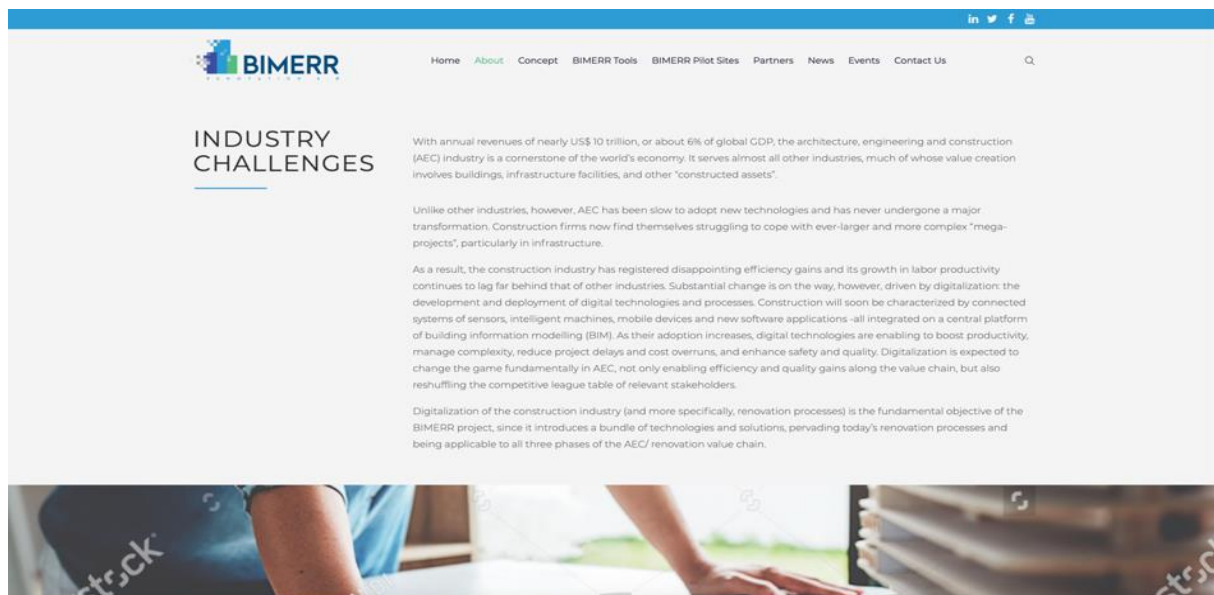
More into detail, in the sub-section of the “Home” page, the mission of the project together with news and events section is presented. The message that will be displayed is a summary of the mission of the BIMERR project. The main mission displayed is the design and development of an ICT-enabled Renovation 4.0 toolkit comprising tools for Architecture, Engineering & Construction (AEC) stakeholder support throughout the energy efficiency renovation process of existing buildings.



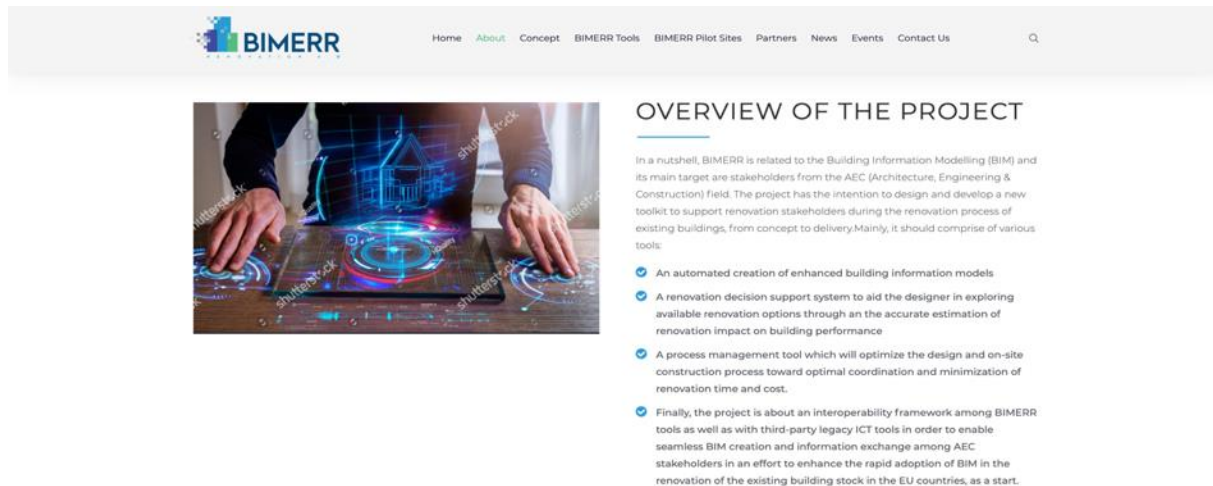


**Figure 10: BIMERR website "Home" page screen capture (part 2)**

Moreover, in the "About" page of the website, the challenges of the AEC industry will be presented in the relevant section.



**Figure 11: BIMERR website "About" page, "Industry Challenges" section screen capture**



**Figure 12: "Overview of the Project" figure**

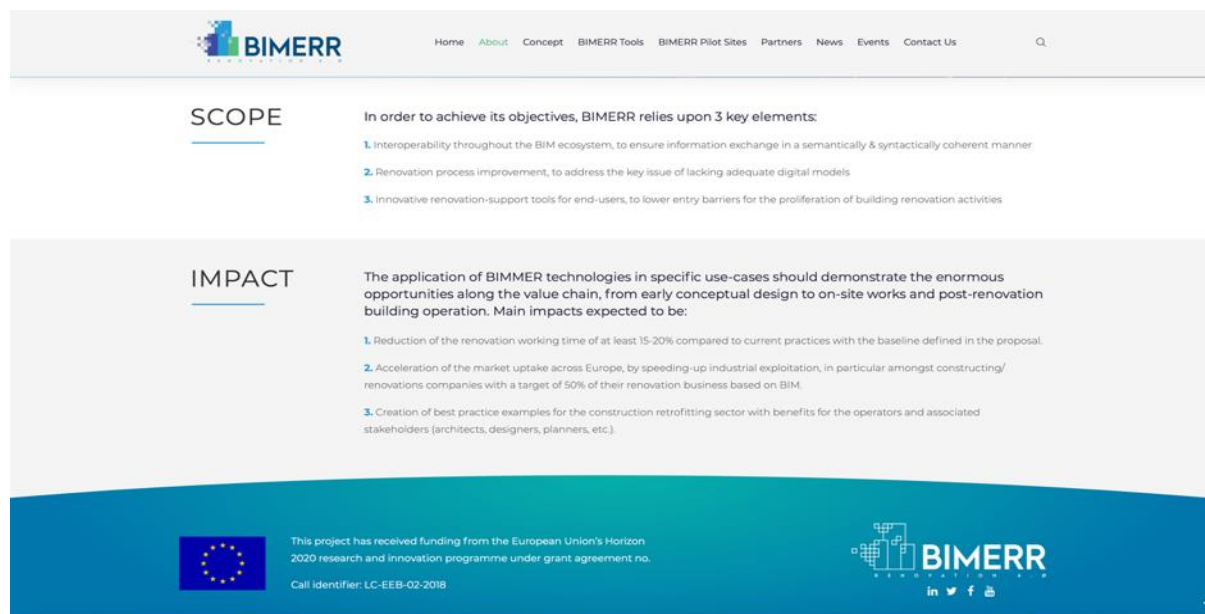
In the next section the project will be presented in a nutshell. A general overview of the mission and the toolkit of the BIMERR project will be available to the visitor.

Following the section with the general overview of the project, a detailed presentation of BIMERR's 5 main objectives will be displayed, along with the scope and expected impact of the project

In order to achieve its objectives, BIMERR relies upon 3 key elements that constitute the project's scope will be analyzed in this specific part of the website.



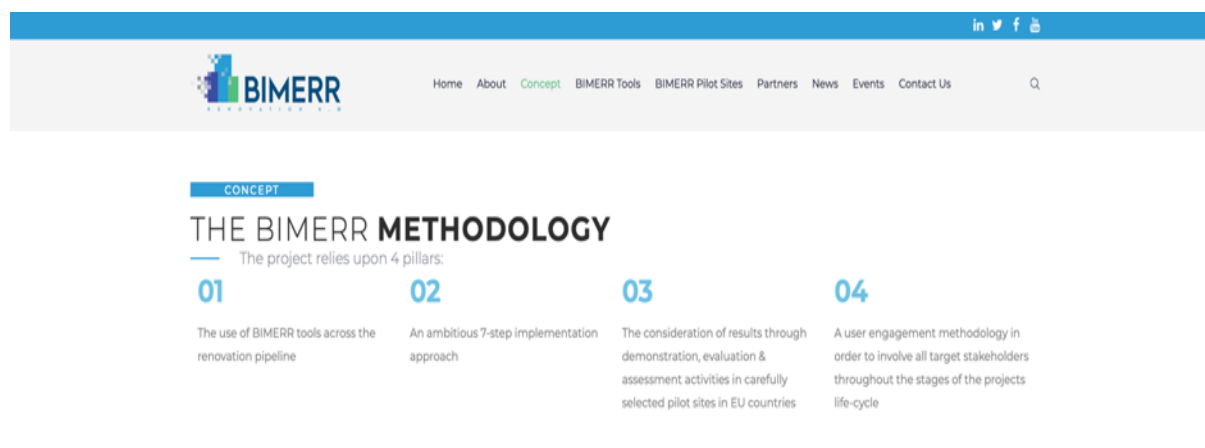
**Figure 13: BIMERR "Objectives" section screen capture**



**Figure 14: BIMERR "Scope & Impact" section screen capture**

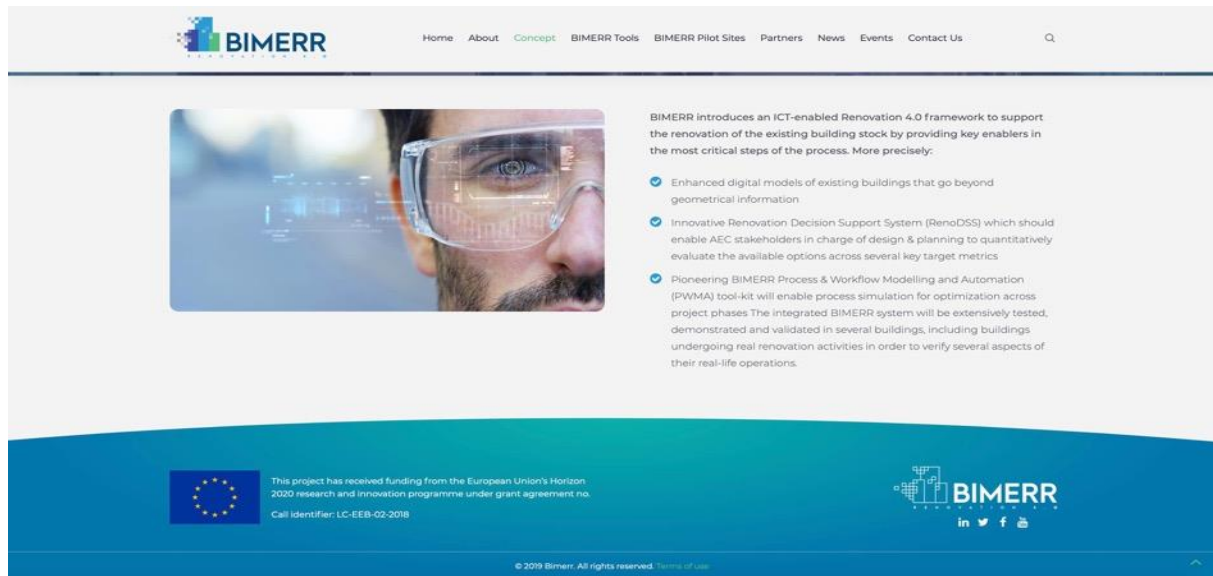
The expected impact of the project will be featured in the website. The application of BIMERR technologies in specific use-cases should demonstrate the enormous opportunities along the value chain, from early conceptual design to on-site works and post-renovation building operation.

The "Concept" page of the website contains a section dedicated to the Methodology of the BIMERR project, followed by the actual presentation of the concept. In detail, a summary of BIMERR's Methodology is exposed:



**Figure 15: BIMERR "Methodology" section screen capture**

In addition, the BIMERR Concept is presented in the following figure.



**Figure 16: BIMERR website "Concept" page screen capture**

In the "BIMERR Tools" page a detailed presentation of the developed tools and the BIMERR tool validation & demonstration activities that will take place overall in 4 buildings, will be presented. This page is currently under construction and will be gradually filled with content as the project evolves.

In the "Partners" page, a short profile of each partner of the BIMERR consortium will be available as in the following figure:



**Figure 17: BIMERR website "Partners" page screen capture**



In the other sections of the website, News and Events related to the BIMERR project will be presented in the corresponding pages. In the last section of the website, a contact form, available to all visitors, is provided.

### 2.6.3 SOCIAL MEDIA PLATFORMS

#### 2.6.3.1. Twitter

As the nature of Twitter is to enable the sharing of short posts, the primary content will consist of short textual updates and links to BIMERR-related events or topics.

The Twitter account of @EUBIMERR will be used as preeminent communication media, given its efficiency in terms of visibility and engagement of users. It enables instantaneously reaching out to a large audience by creating primary posts or retweeting relevant content. One of the greatest advantages of Twitter is its ability to interconnect other users through tags and mentions (e.g #BIM). This approach will guarantee the ample reachability of the project.

The account will be mainly dedicated to non-visual content, to swiftly spread the message and the news of the BIMERR project. The Twitter account is used as a channel for constant update on every project development and result but also as a reminder for all the project-related activities and events.

The purpose of the Twitter account is to make the BIMERR project hashtag go viral and be “mentioned” and “re-tweeted” by a substantial number of targeted followers.

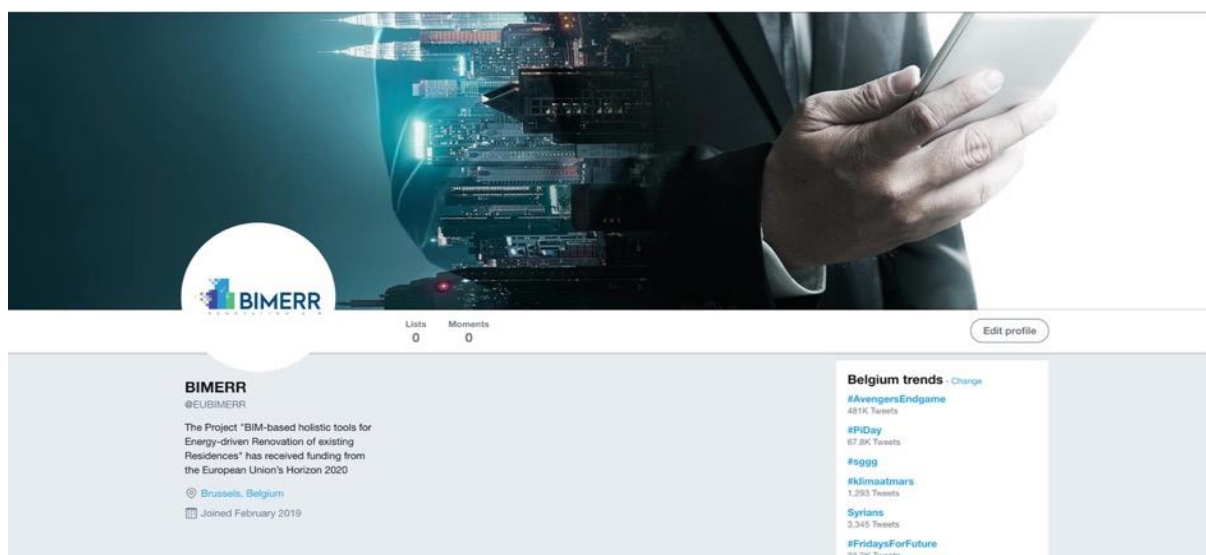


Figure 18: BIMERR Twitter page

### 2.6.3.2 LinkedIn

The second social media channel that is chosen for BIMERR project is LinkedIn with name @EUBIMERR. It might be less popular than other social media platforms, however, it is considered the best platform for professional use and networking.

As a networking site for professionals, it can be used for reaching other groups or professionals that might be interested in posting information about the project's vision, culture, objectives and achievements.

For the purpose of BIMERR, our goal is to establish networks on specific topics, share content that will engage professionals and companies and connect with already established groups. LinkedIn can be a very effective tool for the project's exploitation strategy, that can promote BIMERR as a disruptive idea on the market, triggering potentially interested companies and end-users.

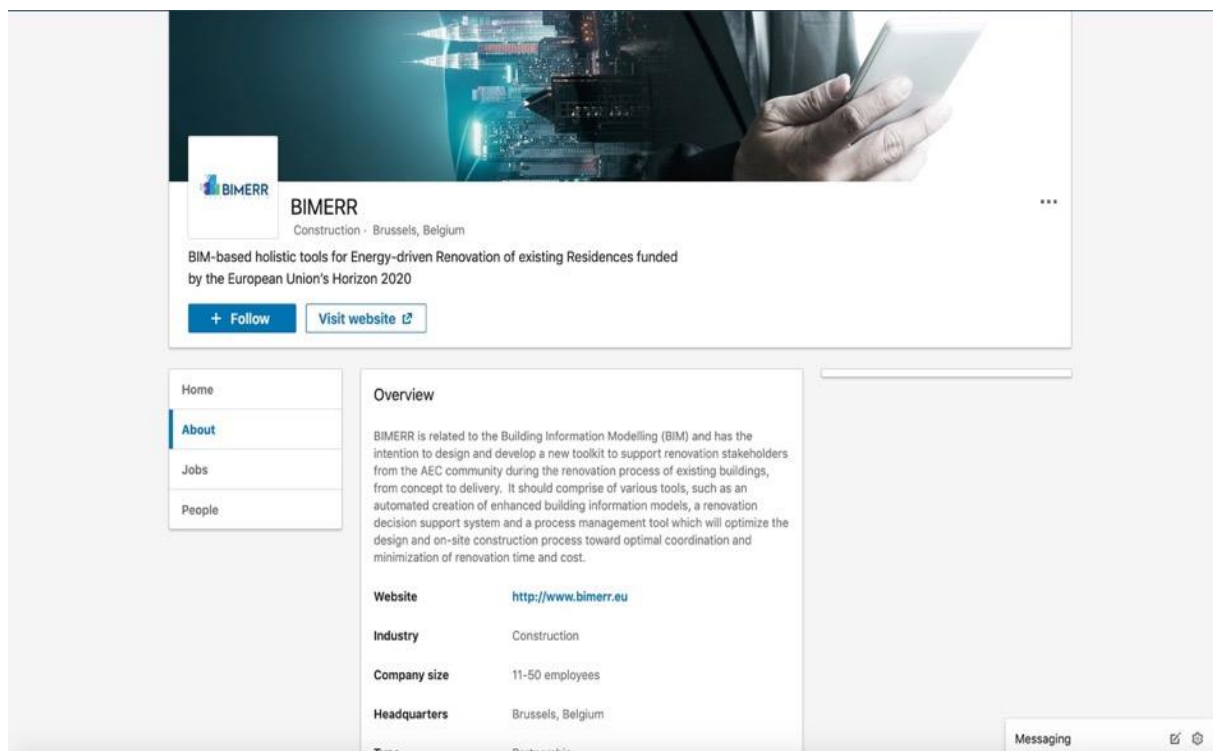
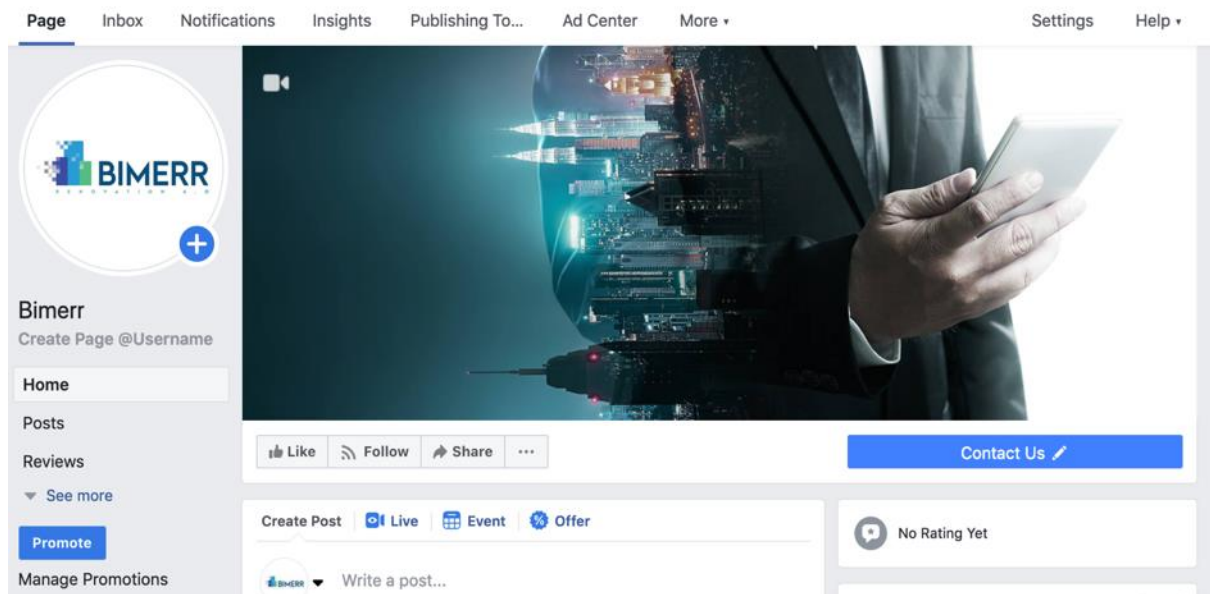


Figure 19: BIMERR LinkedIn page

### 2.6.3.3 Facebook



**Figure 20: BIMERR Facebook page**

The third social media channel that is chosen for BIMERR is Facebook named EUBIMERR. Facebook is the most common and popular social network. As a consequence, it can reach a wide audience of different types, maximizing the dissemination of BIMERR project-related news, events and results. Thus, a Facebook page for BIMERR is already created, to increase the project's outreach. The Facebook Analytics tool, namely Facebook Insights, will produce valuable statistics, e.g. the number of reached people, providing a useful instrument to measure "dissemination performance".

## 2.6.4 SCIENTIFIC PUBLICATIONS AND PRESENTATIONS

The main aim of scientific publications is to disseminate the latest project outcomes and scientific project advances.

Publications in specialized magazines and papers sent to related events will attract the attention of professionals from the AEC community and other relevant stakeholders, as well as providing the opportunity of collaboration within the purposes of the BIMERR project. In order to support this activity, whenever possible, project publications will be archived in the dedicated platform or linked to the BIMERR website.

It is foreseen that BIMERR consortium partners will individually, as well as in collaboration, publish and present project-related advances in technical papers, journals (peer reviewed or not) and magazines.

The following journals and magazines are especially relevant to the communication strategy of the BIMERR project:

Title	Category	Publisher	Periodicity	Location
<b>Applied Energy</b>	Energy Efficiency	Elsevier B.V.	Twice a month (every 15 days)	Amsterdam
<b>Energy Efficiency</b>	Energy Efficiency	Springer	Monthly	Netherlands
<b>Energy and Building</b>	Energy efficiency in buildings	Elsevier B.V.	Monthly	Amsterdam
<b>Construction Innovation Information</b>	Information, Process, Management	Emerald Publishing Limited	Quarterly	United Kingdom
<b>Journal of Building Construction and Planning Research</b>	Building, Construction and planning	SCIRP – Scientific Research Publishing	Quarterly	
<b>Journal of Building Engineering</b>	Construction, operation, performance, maintenance and deterioration / life cycle of the built environment	Elsevier B.V.	Every two months	Amsterdam
<b>Journal of Building Information Modelling</b>	Business, standards and technical issues related to BIM	Matrix Group Publishing	Twice a year (fall and spring)	United States
<b>Journal of Building Performance Simulation</b>	Modelling and simulating the performance of buildings	Taylor & Francis Group	6 issues per year	United Kingdom
<b>Journal of Civil Engineering and Architecture</b>	Theory and practice of civil engineering science and technology, innovation, engineering and management	David Publishing Company	monthly	United States
<b>Journal of Construction Engineering and Management</b>	Construction Management	ASCE Library	monthly	United States



Title	Category	Publisher	Periodicity	Location
<b>Virtual and Physical Prototyping</b>	Activities related to the multi-disciplinary area of virtual and rapid prototyping	Taylor & Francis Group	Quarterly	United Kingdom
<b>Automation in Construction</b>	Information technologies in buildings construction life-cycle	Elsevier B.V.	Monthly	Amsterdam
<b>Buildings — Open Access Journal</b>	Building science, building engineering and architecture	Multidisciplinary Digital Publishing Institute	Monthly	Basel, Switzerland

**Table 8: Journals and Magazines relevant to the BIMERR project**

### **2.6.5 PARTICIPATION IN FORA AND THEMATIC EVENTS**

The BIMERR project aims at increasing the productivity of the building construction activities, such as renovation, refurbishment and completely new development, through the digitalization revolution of the last decade. The BIMERR tool is a concept that can find many applications in the AEC sector and hence its commercialization is promising. Towards this, it is important to participate in events, meetings, consortiums etc. where the BIMERR can be demonstrated and the results/outcomes can be presented with the view of being ultimately adopted in the market. Thus, a full-scale dissemination has to follow, to exhibit the advantages of this concept to as many relevant market players and to effectively attract end-users. The dates and the places of the events are provisional as in M06. Workshops, meetings and other large events (exhibitions, trade fairs, showcases, etc.) that represent relevant opportunities for dissemination are the following:

- **1) 36<sup>th</sup> CIB W78 2019 Conference – University of Northumbria, Newcastle**

*Planned to be held in Newcastle on the 18-20<sup>th</sup> September 2019*, the event envisions the integration and communication of data, information and knowledge in the entire spectrum of workplace aspects. The Information Communication Technologies (ICT) are considered as a key booster towards an increased productivity and a sophisticated design and construction. The International Council for Research and Innovation in Building and Construction is a top-class event in the AEC community, numbering more than 500 member organizations and over 5,000 experts with great experience in the research, industry and governmental affairs background.

For more info, please follow this link: <http://cibw78.northumbria-eee.co.uk/>

- **2) LDAC2019 – Linked Data in Architecture and Construction Week, Lisbon**

Planned to be held in Lisbon on the 19-21<sup>st</sup> June 2019, the LDAC2019 workshop aims at gathering researchers, engineers, industry stakeholders and standardization organizations to discuss and evaluate different concepts of capturing building data and information. Extensive attention will be given in the 3D geometry, geospatial tech, building automation and semantic sensors. The importance of this event is high as industries will present their cases and experiences related to the practical application of linked data and semantic web technologies at any stage of the design, construction, operations etc.

For more info, please follow this link: <http://linkedbuildingdata.net/ldac2019/#venue>

The same University organizes prior to the workshop, the first LDAC Summer School dedicated to the application of semantic web, linked data and web of data technologies in the AEC sector. The vision of the summer school is to bridge experts on this topic with participants who want to explore deeper in the field and get hands-on experience on the semantic web technology or even individuals who are seeking for a first-time approach with this technology to use it in their future research and own career pathway.

- **3) TermoEXPO – Thermomodernisation and Energy – Efficient Construction Zone, Warsaw**

Planned to be held on the 10-11<sup>th</sup> September in Warsaw, the event aims at demonstrating new ideas and solutions around the energy-saving and energy-efficiency problems. The exposition encourages participants to bring along eco-friendly systems, solutions and trends to further increase awareness around the thermo-modernization, thermo-insulation, energy recuperation and data collection systems. The event's vision is to encompass the modern trends in building energy sustainability with the design and construction of pre-fabricated construction entities (flats, residential building, industrial constructions).

For more info, please follow this link: <http://termoexpo.pl/o-targach-termoexpo/?lang=en>

- **4) Re+build 2019, Milan**

Planned to be held on the 25-27<sup>th</sup> in Milan, the event constitutes a great opportunity for networking among partners from the construction industry. This event takes place every year since 2012 focusing on different hot topics concerning the building community. The 2019's vision is to encourage discussions and high focused sessions around the productivity of construction and adherence to the environmental trends and the new generation technologies.

For more info, please follow this link: <http://www.rebuilditalia.it/en/rebuildStory/>

- **5) Rebuild, Madrid**

Planned to be held on the 17-19<sup>th</sup> September in Madrid, Rebuild Showroom and Congress's scope is to bridge the building sector by bringing together the industry leaders with existing brands of the market, all together with the National Congress of Advanced Architecture and Construction. It encourages and facilitates discussions around new materials, off-site construction, new technologies and design concepts. Rebuild connects many buyers and decision makers such as builders, architects, engineers and designers with the latest trends in material tech, solutions and designing tools and methods.

For more info, please follow this link: <https://www.rebuildexpo.com/exponer/rebuild/>

## **6) Digital Construction Week, London**

Planned to be held on the 16-17<sup>th</sup> October in London, the event is an excellent opportunity to come across cutting-edge technology in the built environment. It consists of an exhibition of the latest trends in innovation, digitalization tools and technology. Special care is taken on promoting new tools ready to be deployed in the construction business. Cases studies, research projects and workshops are part of the agenda with the goal to interconnect the business market with the new novelties in digitalization and the current ways-of-working in the construction field.

For more info, please follow this link: <https://www.digitalconstructionweek.com/speak-at-DCW2019>

- **7) Sustainable places, Cagliari**

*Planned to be held in summer 2020 in Cagliari*, the event's topic includes all aspects of sustainability. It envisages to capture the sustainable element in the future building design and constructions through showcases exhibitions, workshops and trainings. Technical discussions around urban planning, renovation strategies, understanding the data collection and innovative construction are some of the topics that are part of the conference's agenda.

For more info, please follow this link: <https://www.sustainableplaces.eu/>

- **8) Sustainability in Energy and Buildings (SEB), Budapest**

*Planned to be held on the 4-5<sup>th</sup> July in Budapest*, the International Conference on Sustainability in Energy and Buildings focuses on creating tight bonds between researchers, governmental bodies and industry professionals to discuss around the future of sustainability in Energy and Buildings. Topics such as optimization and modelling techniques, data technology, sustainable design of buildings in neighborhoods and cities are already included in the agenda. It is agreed that the meeting's proceedings are going to be published by Springer in the KES SMART innovation Systems and Technologies series.

For more info, please follow this link: <http://seb-19.kesinternational.org/>

- **9) 5th International Conference on Sustainable Construction Materials and Technologies (SCMT5), Surrey**

*Planned to be held on the 15-17<sup>th</sup> July in Surrey*, the conference aims at opening discussions and debates around sustainable construction. Regulatory framework and government initiatives, efficient and sustainable use of construction materials are some of the main topics of the agenda. A significant pillar of the conference is the design of structures and buildings for sustainability. The conference organized in Surrey, is the 5<sup>th</sup> of the SCMT conference series and has already received abstracts and registrations from 35 countries, raising the bar for top-notch discussions and international connection among different stakeholders of the AEC community.

For more info, please follow this link: <https://www.kingston.ac.uk/events/item/2839/14-jul-2019-fifth-international-conference-on-sustainable-construction-materials-and-technologies-scmt5/>

- **10) European Energy Efficiency Conference, Wels**

Planned to be held on the 4-6<sup>th</sup> March in Wels, the conference aims at connecting people from business, the public sector and research to empower them to discuss about energy innovation, policies and building concepts. Open discussions regarding best practice solutions, improving performance, consumer satisfaction, quality management, equipment and installation, and innovation in services and technologies will be the epicenter of the agenda. During the 2-day event, participants will participate in several workshops, technical visits to innovative energy efficiency projects and in a major tradeshow on building efficiency and renewable energy with an expected turnout of 100,000 visitors and 1,600 exhibiting companies.

For more info, please follow this link: <https://www.wsed.at/en/programme/european-energy-efficiency-conference.html>

- **11) BIMWORLD, Munich**

Planned to be held on the 26-27<sup>th</sup> November in Munich, The Building Information Modeling (BIM) Conference aims at connecting all engaged sectors and partners in the BIM ecosystem. The main scope is to hold elaborate discussions on key topics such as BIM capturing, BIM collaboration, BIM visualization and BIM best practice. Also, overall information around BIM and new technologies for the construction of urban planning and industrial estate will be shared. BIMWORLD is a leading event for BIM users with multi-disciplinary participants. Architectural firms, design and engineering companies, software and digital service entities, project builders and contractors account for almost the 70% of the total expected turnout, which will not be limited to the German market, but also international partners are invited to get involved in the proceedings.

For more info, please follow this link: <https://www.bim-world.de/>

- **12) FUTUREBUILD, London**

Planned to be held on the 03-05<sup>th</sup> March 2020 in London, the event will be the 2<sup>nd</sup> Futurebuild conference. The agenda has not yet been published, as the call for the registration got recently announced. However, the agenda of the very first Futurebuild 2019 creates high expectations

for the next year event. More than 27,000 senior built environment professionals joined the event, whose main pillar was the topic of innovation and ways to seek innovative solutions in the industry. The structure of the event was such to combine seminars on designing cognitive wellness, infrastructure technologies and circularity with workshops on building sustainability and building productivity. The Futurebuild conference brought together professionals from different innovation backgrounds (design, engineers, architects, digital firms etc.) but from high seniority, as 90% of the participants were sitting on managerial level or above, giving some added value on the discussions and the proceedings of the event. Therefore, the Futurebuild in 2020 could be a great opportunity for the BIMERR concept to be presented and the results to be shared across key players of the market.

For more info, please follow this link: <https://www.futurebuild.co.uk/welcome#/>

- **13) Building Materials on Construction Technologies, Stockholm**

Planned to be held in the summer 2020 in Stockholm, this international conference serves as an enabler for communication between experts in building materials and construction technologies. The structure of the conference is such that allows dissemination of outcomes, sharing experiences and exchange ideas on important topics relevant to the construction industry. New materials with novel durability, maintenance, new designs for buildings, novel building techniques and energy associated solutions are expected to be discussed through oral presentations, workshops, panels and networking sessions throughout the 2 -day event.

For more info, please follow this link: <https://buildingmaterials-technologies.enggconferences.com/>

- **14) BEYOND, Gothenburg**

Planned to be held on the 9-11<sup>th</sup> June 2020 in Gothenburg, this conference aims at bridging the gap between the United Nations Sustainable Development Goals and the built environment. The entire conference is an organized decision to seek solutions and robust implementation plans, hence invitations are sent across to the wholesome academia community as well as private and public sectors. The discussion scheme is planned to consist of conversation panels,

idea pitching, study tours, round tables and show cases. Through these activities, light will be shed on the current problematic situations and the high quality sustainable oriented solutions towards the agreed UN ambition. Regarding the participation turnout, there is little information since the BEYOND conference is not expected until early June next year. However, so far three companies, leaders in their fields, have registered in the conference; AKADEMISKA HUS, SKANSKA and ROCKWOOL.

For more info, please follow this link: <https://beyond2020.se/conference/confirmed-sponsors-exhibitors/>

Furthermore, during this reporting period, M6, the dissemination plan is not yet finalized. The updated version should follow all along the project's progress and new events will be incorporated in the existing list of conferences and workshops. The view for the future is to attempt to promote BIMERR on a global scale, if possible, by participating in world-class and global-level events to even further disseminate its results. A global view could be both promising and beneficial in order to expand the market segment and explore new markets (outside the barriers of EU) which can be attracted to the BIM technology and would like to adopt it and thus boost its commercialization. Such events, with worldwide resonance that BIMERR could potentially take part are the "*ACM BuildSys Conference*" in New York, USA, on the 13-14<sup>th</sup> November 2019 and the "*Conference on Information Technology in Construction*" in Bangkok, Thailand, on the 3<sup>rd</sup>-4<sup>th</sup> of February in 2020.

#### **2.6.6 COOPERATION WITH OTHER PROJECTS IN THE DOMAIN OF ENERGY EFFICIENCY BUILDINGS AND BUILDING INFORMATION MODELING**

The H2020 initiative encompasses a plethora of European funded projects around key domains and highlights the importance of exchanging ideas, building close collaborations and being inclusive. Therefore, creating bonds and communication roads with other projects in the same field of interest boosts dissemination of results and energizes consortia to cooperate and achieve their shared goal.

Since BIMERR is not a stand-alone project within the field of Building Innovation Modelling, opening communication channels with other projects could be beneficial for spreading its innovative concept across the partners of other consortia, consisting of members from many different countries. In addition, dispersion of scientific findings between projects could encourage problem-solving procedures and risk mitigation through sharing experiences and corrective actions in similar situations. The most important element of established project-wise channels is the stacking of novel technologies and knowledge that will definitely prompt EU to achieve the H2020 goals and ultimately to make a crucial step towards energy efficiency and sustainability.

The BIMERR consortium strongly promotes its open-minded profile and looks forward to collaborating with other projects within the field of energy efficiency and Building Information Modelling. The similar projects are classified in completed (or almost finalized) and ongoing projects. The ongoing and completed projects that BIMERR will exchange knowledge in various fields and will cooperate are:

#### **MOEEBIUS – November 2015**

The project focuses on reducing the gap between the predicted and actual energy performances at the level of buildings and blocks of buildings. In other words, MOEEBIUS is an attempt to mitigate the risk of building's energy underperformance. The solution to be developed will enable to predict the realistic energy use of buildings, increasing the confidence of customers in the EPC effectiveness and the associated savings the new energy technologies bring forward

Read more in this link: <https://www.moeebius.eu/about-the-project>

#### **HEAT4COOL – October 2016**

The project focuses on developing, integrating and demonstrating easy to install and highly energy efficient solutions for building retrofitting. Ultimate objective is to successfully implement a drop in the energy consumption by 20% in such a way to allow returns on investments in less than 10 years. Simultaneous achievements are expected to be the development of an integrated heating and cooling solution as well as a waste water heat recovery system. Read more in this link: <https://www.moeebius.eu/about-the-project>



### **OptEEmal – September 2015 (Completed)**

The project aims to develop a holistic and robust design platform for renovation at district level. Through an integrated IPD building approach, it is expected to reduce time required for the district retrofitting projects and improve solutions as compared to existing but not fully-business practices. Read more in this link: <https://www.opteemal-project.eu/>

Secondly, some ongoing projects that BIMERR will cooperate are:

### **BIM4EEB – January 2019**

The project envisions to develop a BIM management system with a toolkit that will boost the semantic interoperability between software and stakeholders involved in the renovation field. This new tool is expected to be a robust and attractive tool to both the designers in the early stages of designing phase and the construction companies when carrying out the work and services during retrofitting. Strong engagement with end-users is foreseen to ensure matching the expectations of the market and maximizing the value of the developed BIM tool.

Read more in this link: <https://cordis.europa.eu/project/rcn/220004/factsheet/en>

### **BIM4REN – November 2018**

The project focuses on empowering BIM tools integration into the construction sector. To achieve this, subject matter experts have been invited to join the consortium and provide innovate but adequate processes, methodologies and hardware tools. Read more in this link: <https://cordis.europa.eu/project/rcn/218345/factsheet/en>

### **SPHERE – November 2018**

The project aims at developing a digital system that will bridge together the designing side with the manufacturing and construction side within a project. In addition to this, a web-platform is foreseen to be created to allow large data collection and, through its synchronization feature, to facilitate handling and processing of that heavy loaded information.

Ultimately, an improvement and optimization on the building's energy design, construction and energy performance coupled with reduced construction costs, is expected.<sup>1</sup>

Table 9 presents further similar projects that BIMERR will seek cooperation with:

Project acronym	Project Title	Commencement date
<b>ENCORE<sup>2</sup></b>	Energy aware BIM cloud platform in cost-effective building renovation context	January 2019
<b>BIM-SPEED<sup>3</sup></b>	Harmonized building information speedway for energy-efficient renovation	November 2018
<b>BIMplement<sup>4</sup></b>	Setting up a large scale and flexible qualification methodology integrating technical, cross-craft and BIM related skills and competences	September 2017
<b>BIM4REN<sup>5</sup></b>	Building Information modelling-based tools & technologies for fast and efficient renovation of residential buildings	October 2018
<b>BIM4EEB<sup>6</sup></b>	BIM based fast toolkit for efficient renovation in buildings	January 2019
<b>SCORES<sup>7</sup></b>	Self-consumption of renewable energy by hybrid storage systems	November 2017
<b>NewTREND<sup>8</sup></b>	New integrated methodology and tools for retrofit design towards a next generation of energy efficient and sustainable buildings and districts	September 2015
<b>STUNNING<sup>9</sup></b>	Sustainable business models for the deep renovation of buildings	October 2017
<b>ReCO2ST<sup>10</sup></b>	Residential retrofit assessment platform and demonstrations for near zero energy and CO2 emissions with optimum cost, health, comfort and environmental quality	January 2018
<b>HEART<sup>11</sup></b>	Holistic energy and architectural retrofit toolkit	October 2017
<b>RenoZEB<sup>12</sup></b>	Accelerating energy renovation solution for zero energy buildings & neighborhoods	October 2017
<b>REZBUILD<sup>13</sup></b>	Refurbishment decision-making platform through advanced technologies for near zero-energy building renovation	October 2017

**Table 9: Relevant projects H2020-EEB-2017 and H2020-NMBP-EEB-2018**

<sup>1</sup> SPHERE: <https://cordis.europa.eu/project/rcn/218344/factsheet/en>

<sup>2</sup> ENCORE: <https://cordis.europa.eu/project/rcn/102094/factsheet/en>

<sup>3</sup> BIM-SPEED: <https://cordis.europa.eu/project/rcn/218590/factsheet/en>

<sup>4</sup> BIMplement: <https://cordis.europa.eu/project/rcn/210066/factsheet/en>

<sup>5</sup> BIM4REN : <https://cordis.europa.eu/project/rcn/218345/factsheet/en>

<sup>6</sup> BIM4EEB: <https://cordis.europa.eu/project/rcn/220004/factsheet/en>

<sup>7</sup> SCORES: <https://cordis.europa.eu/project/rcn/211751/factsheet/en>

<sup>8</sup> NewTREND: <https://cordis.europa.eu/project/rcn/198365/factsheet/en>

<sup>9</sup> STUNNING: <https://cordis.europa.eu/project/rcn/211144/factsheet/en>

<sup>10</sup> ReCO2ST: <https://cordis.europa.eu/project/rcn/213424/factsheet/en>

<sup>11</sup> HEART: <https://cordis.europa.eu/project/rcn/211645/factsheet/en>

<sup>12</sup> RenoZEB: <https://cordis.europa.eu/project/rcn/211310/factsheet/en>

<sup>13</sup> REZBUILD: <https://cordis.europa.eu/project/rcn/211313/factsheet/en>

### **2.6.7 LIAISON WITH PROFESSIONAL COMMUNITIES AND NETWORKS**

The BIMERR's ambition is to develop a BIM toolkit, ready to be incorporated into the renovation and construction building market. It is therefore of utmost importance to create channels with the right partners who have the ability and the knowledge to take up the new technology and apply it in their business fields. Towards this ambition, it would be encouraged that BIMERR could create liaisons with organizations and associations such as:

#### **At a European level:**

- AEEBC : The association of European Experts in Building and Construction
- FIEC : European Construction Industry Federation
- EuroACE: The European Alliance of Companies for Energy Efficiency in Buildings
- ACE : Architects' Council of Europe
- EAAE : The European association for Architectural Education
- CICA : Confederation of International Contractors' Association
- EBC : European Builders Confederation
- EIC : European International Contractors

#### **And at domestic level:**

- CEOE : Confederation of Employers and Industries of Spain
- BDA : Association of German Architects
- ASBC : Austrian Sustainable Building Council
- ALA : Association of Professional Architects
- CIC : Construction Industry Council
- SADAS-PEA : Greek Association of Architects
- Polish Association of Building Managers

### **2.6.8 PROMOTIONAL AND DISSEMINATION MATERIAL**

In line with the obligations regarding dissemination of results and achievements, appropriate dissemination material will be distributed in the various events in which the partners participate or via social media. Following the project's progress and the relevant results, the kind of dissemination material that will be shared between the target audiences, will be identified accordingly. The production of promotional and dissemination material will be in accordance

with the scope of specific targeted messages for each target group. For each target group, dedicated promotional material in different languages will be designed in M06-M12.

It is of high importance to use this material coherently in order to achieve a better understanding and accessibility by the stakeholders.

More specifically, the following dissemination material will be developed:

- **Project's logo**  
A unique project logo has been developed for the BIMMER project in accordance with the project's objectives and characteristics. The logo is a visual presentation of buildings with small pixels.
- **Project's graphic identity**  
The main principle followed throughout the project is consistency with the branding design. The colors used for the templates, presentations and other materials are the ones used in the BIMERR logo.
- **Brochure**  
It will present the project's objectives and information about the project's implementation.
- **Roll-up banners**  
They will promote the project's progress and results during events and conferences.
- **Poster**  
It will facilitate the project's visibility in events and conferences.
- **Leaflet**  
Leaflets will be developed throughout the project's duration showcasing the project's important achievements
- **Press release**  
Press release will focus on the most significant project's outcomes.
- **Newsletter**  
Information about the project's progress, news and events will be shared among the interested stakeholders with the use of newsletters.

## 2.7 DETAILED DISSEMINATION AND COMMUNICATION ACTION PLAN

### 2.7.1 DETAILED COMMUNICATION PLAN

For a communication plan to be effective, communication needs to be goal-driven. It is an absolute necessity for the success of the project, to further analyze the communication objectives described in chapter 2.3.2, and present them in relation to targeted actions and timeline. The following table presents the BIMERR communication objectives and their correspondence with the relevant target groups:

<div>Communication Objectives</div> <div>BIMERR Target Groups</div>	COMM. OBJECTIVE 1	COMM. OBJECTIVE 2	COMM. OBJECTIVE 3	COMM. OBJECTIVE 4	COMM. OBJECTIVE 5	COMM. OBJECTIVE 6
Architects	■	■	■		■	■
Engineers	■	■	■		■	■
Construction Companies	■	■	■		■	■
Building Residents / Energy Consumers	■	■	■	■	■	■
Technological Platforms	■	■	■		■	■
Professional Association & Initiatives	■		■		■	■
Scientific Community	■					■

Table 10: BIMERR Communication Objectives –Target Groups Correspondence

In the following tables, the communication objectives are presented along with an analysis and a detailed description of actions:

Communication Objective 1	Increase the <b>visibility of BIMERR</b> by providing universally comprehensible information to the public about the project goals and results.		
Sub-Objective 1.1	Increase the visibility of BIMERR by providing universally comprehensible information to the public about the project goals.		
Sub-Objective 1.2	Increase the visibility of BIMERR by providing universally comprehensible information to the public about the project results.		
Responsible Partner	MERIT		
Engaged Partners	All partners		
Start Month	M01	End Month	42
Action	Increase constantly the visibility of BIMERR by using all the relevant communication means		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> In order to effectively and widely communicate the goals and results of the BIMERR project, several communication means are set in place. As described in the relevant section, the communication means to increase the visibility of the BIMERR goals and results will be:			
<ul style="list-style-type: none"><li>• Project' s dedicated website</li><li>• Social media</li><li>• BIMERR partners' social media</li><li>• Press releases, newsletters, videos.</li><li>• Participation and presentation of the project in other networks and groups</li><li>• In-house presentations to existing clients / collaborators and brainstorming for further extending the BIMERR solutions to other applications and markets</li><li>• Appropriate material (e.g. brochure, case studies, stories, documents)</li></ul>			
More specifically, different networking events will be set in place to increase the visibility of BIMERR. Prior to these events, an event will be created on the social media to attract the targeted groups. In these events, especially on Facebook, every possible user that will "attend" or "is interested on the event" will be contacted directly with a private message, offering him			

Communication Objective 1	Increase the <b>visibility of BIMERR</b> by providing universally comprehensible information to the public about the project goals and results.
<p>more details about the event from the BIMERR webpage. In addition to that, through the Twitter and LinkedIn channel, it will be attempted to create groups of people that are interested in BIM. This can happen through various hashtags such as #BIM or #AEC. It is very important to communicate in every group a different message that can engage their interest on BIMERR. As example, the engagement of energy consumers will be achieved through messages about the reduced cost of the BIM solution etc. In the review of this document, detailed messages and actions like the above will be incorporated in this detailed action plan.</p>	
<p><b>Expected Outcome:</b> As described, the communication of the BIMERR project will be carried out through various tools in order to constantly increase the visibility of BIMERR. The expected outcome of this process will be the continuous promotion of BIMERR goals and results with the eventual engagement of all target groups.</p>	
<p><b>Constrains &amp; important milestones:</b> Communication Objective 1 is directly linked with the Milestone 7 "Public Awareness, Dissemination and Engagement Planning" in M06 and Milestone 11" Project Website Launch" in M06. The direct link with these core project Milestones shows the importance of this communication objective for the entire success of the BIMERR project.</p>	

Communication Objective 2	Create a <b>user’s community that will provide insights and detailed feedback</b> during the development of the project.		
Responsible Partner	MERIT		
Engaged Partners	MERIT, CERTH, UPM, Hypertech, Xylem, CONCAT, BX, FER.		
Start Month	M01	End Month	M42
Action	Living Lab Activities		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> One of the main innovations of BIMERR is the use of Living Lab workshops. With these actions BIMERR aims to establish an open innovation 2.0 and value co-creation framework by involving the end-users and stakeholders during the development of the BIMERR project. In order to guarantee the success of the events and to attract more attendees, there is a need for active and targeted communication with users that are possibly			

Communication Objective 2	Create a <b>user's community that will provide insights and detailed feedback</b> during the development of the project.
<p>interested to participate. As first step, a database of different target groups will be created, providing contacts for different end-users and stakeholders of BIMERR. The creation of such a database is essential for the successful attraction of these users to attend the BIMERR communication and dissemination activities.</p>	
<p><b>Expected Outcome:</b> From the participation of end-users and stakeholders in the development of the project, it is expected to involve them in the requirement definition activities, as well as in the evaluation of BIMERR results. The goal of this process is to create a user community that will constantly provide expertise and feedback during the development of the project.</p>	
<p><b>Constrains &amp; important milestones:</b> The Communication Objective 2 is directly linked with the Milestone 7 "Public Awareness, Dissemination and Engagement Planning" in M07. This objective is directly linked with the Living Lab Activities.</p>	

Communication Objective 3	Communicate <b>tangible results and success stories</b> coming from the projects validation activities.		
Responsible Partner	MERIT		
Engaged Partners	All partners		
Start Month	M20	End Month	M42
Action	Effective communication of the produced tangible results and success stories of BIMERR.		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> The effective and coherent communication of tangible results and success stories of BIMERR is essential. With this action, BIMERR partners will create a strong and simple message/success story to reproduce about the success of BIMERR project. Thus, this action will take place after the delivery of first version of the BIMERR platform for pre-validation. Once tangible results of BIMERR are produced, the BIMERR consortium will produce different videos from the demo sites presenting the final product and explaining to the possible users why the BIMERR solution fits their needs. The promotion of success stories through these videos is crucial in order to circulate the messages with greater impact. The			



Communication Objective 3	Communicate <b>tangible results and success stories</b> coming from the projects validation activities.
diffusion of messages presenting success stories and tangible results will take place through the project's social media channels, website and various events. A possible action will be the communication with relevant journalists or media in related field, in order to circulate and promote the BIMERR success stories.	
<b>Expected Outcome:</b> The expected outcome of this action is to create of a simple message for the success of BIMERR project. By having a tangible result and success stories about the impact of BIMERR, the success of the communication strategy will be increased.	
<b>Constrains &amp; important milestones:</b> The Communication Objective 3 is directly linked with the Milestone 7 "Public Awareness, Dissemination and Engagement Planning" M06 and Milestone 11" Project Website Launch" in M03.	

Communication Objective 4	Increase <b>awareness and enhance societal perception</b> on how Research and Innovation can tackle emerging challenges and positively impact the society, while increasing visibility and information flow on the vital role of Horizon 2020 and EU funded research.		
Responsible Partner	MERIT		
Engaged Partners	All partners		
Start Month	M01	End Month	M42
Action	Communicate the importance and the impact of the Horizon 2020 project.		
Targeted Group	General public		
<b>Description of action:</b> Through several communication channels, as well as through domain-related events, the importance of Horizon 2020 projects will be highlighted. During the participation in various events, synergies with other projects will be established in order to maximize the communication impact on society while increasing the visibility and the information flow. Tweets and posts on Facebook will constantly underline the importance of Horizon 2020 EU funding in the implementation of the project as well as in cooperation and synergies with other relevant projects.			
<b>Expected Outcome:</b> From the presentation of BIMERR in various events, it will be attempted to highlight the importance of EU funded research and also of Horizon 2020 projects. The			

importance and positive impact of Horizon 2020 EU funded research on the society, will be promoted through the BIMERR website and the social media channels. Finally, in every action of BIMERR a disclaimer about the Horizon 2020 EU research funding and the EU support in this particular project will be incorporated, in order to achieve this communication objective.

**Constrains & important milestones:** The Communication Objective 4 is directly linked with the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06 and Milestone 11” Project Website Launch” M03. This objective will complement the actions for public awareness about the EU funding of the BIMERR project.

Communication Objective 5	Promoting and demonstrating the <b>societal and economic benefits</b> generated by the BIMERR project to a wide range of audiences outside the core project target groups.		
Responsible Partner	MERIT		
Engaged Partners	All partners		
Start Month	M20	End Month	M42
Action	Creation of a simple and comprehensive message for the societal and economic benefits of BIMERR solution.		
Targeted Group	General public		
<b>Description of action:</b> As mentioned in the Communication Objective 3, a comprehensive and simple message will be prepared. The aim is to construct a message that is capable to demonstrate the societal and economic benefits of BIMERR in a wide range of audiences. In order to succeed, various social media channels will be used with a combination of a video presenting the tangible results of the BIMERR solution. For the successful communication of this objective similar Actions with the other objectives will take place. Promotion of the economic benefits for the users is an essential part of the BIMERR’s successful communication. Videos shall be created through automated tools, promoting the benefits of BIMERR with a simple and comprehensive way. These videos can be circulated through social media channels of BIMERR and other media such us online blogs and journals.			
<b>Expected Outcome:</b> After the creation and presentation of the relevant video in social media, which will highlight the societal and economic benefits of BIMERR, the reach in audiences outside the core project target groups will be achieved. Once a concrete and			

effective message is created, it will be communicated also with other means such as press-releases, leaflets, posters etc.

**Constrains & important milestones:** The Communication Objective 5 is directly linked with the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06 and Milestone 11” Project Website Launch” in M03. This objective will complement the actions for general public awareness of the BIMERR project.

Communication Objective 6	<b>Complement the dissemination activities</b> of the BIMERR project.		
Responsible Partner	MERIT		
Engaged Partners	All partners		
Start Month	M01	End Month	M42
Action	Any communication action will complement and reinforce the dissemination activities of the BIMERR project.		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> As described above, communication actions will complement and assist all the dissemination activities of the project. Through the communication channels of BIMERR, every dissemination action will be promoted. The promotion of scientific publications can be done with a Facebook post and a comprehensive tweet. Every dissemination result can have greater impact to users outside of the target groups, if the message is well explained, simplified and promoted through the broader communication channels.			
<b>Expected Outcome:</b> With the support of the communication actions, the outreach and impact of dissemination activities will be higher and will eventually increase the overall promotion of the BIMERR results.			
<b>Constrains &amp; important milestones:</b> The Communication Objective 6, is directly linked with the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06 and Milestone 11” Project Website Launch” in M03. The main goal of this objective is to support and complement all the dissemination actions in order to increase the dissemination and engagement planning.			

# COMMUNICATION SCOREBOARD

Communication Key Performance Indicators							
Communication Mechanism	Description	Target Value for Phase I (M1 - M12)	Target Value for Phase II (M13 - M18)	Target Value for Phase III (M18 - M30)	Target Value for Phase IV (M30 - M42)	Total target value	Means of Verification
Project Website	Nr of unique visitors	400	+400	>600	>700	2100	Google analytics
	Average duration of visits	2 min	3 min	3 min	>3 min	2.5 min	
	Nr of page views	2500	+1500	>2000	>3000	9000	
Social Media (Twitter, Facebook, LinkedIn)	Nr of followers	200	+150	>400	>600	750	Social Networks' built-in analytics
	Nr of posts	20	+30	>40	>50	140	
	Nr of retweets/reposts/comments	20	+30	>60	>60	170	
Traditional material (Press releases, newsletters, videos)	Nr of press - releases	3	>3	>6	>8	20	Material available on the website
Presentations in other networks and groups	Nr of presentations	2	+2	>4	>7	15	Archives of presentations participation

In house presentations to existing clients and brainstorming for extending BIMERR solutions to other applications and markets	Nr of organized events	2	+2	+3	+4	11	Archives of in-house events
Brochure, roll-up, poster, fact sheets, leaflets etc	Nr of factsheets/banners/brochures	3	+2	+2	+1	8	Videos uploaded on BIMERR's YouTube channel
	Nr of Newsletters	2	+1	+2	3	8	

## 2.7.2 DETAILED DISSEMINATION PLAN

An integral part of the effective communication of the project results, is the dissemination within appropriate channels. The effective dissemination of the project's outcomes (e.g. concept, scientific results, tools, methodologies) is crucial for the general success of the project. In section 2.3.3 of the Dissemination and Communication Plan, the Dissemination objectives were articulated and analyzed. Moreover, after the definition of the objectives the correspondence with the selected target groups is the following:

Dissemination Objectives BIMERR Target Groups	DISS. OBJECTIVE 1	DISS. OBJECTIVE 2	DISS. OBJECTIVE 3	DISS. OBJECTIVE 4	DISS. OBJECTIVE 5
Architects	■	■	■	■	■
Engineers	■	■	■	■	■
Construction Companies	■	■	■	■	■
Building Residents / Energy Consumers	■	■		■	
Technological Platforms	■	■	■	■	■
Professional Association & Initiatives	■	■	■	■	■
Scientific Community	■	■	■		■

Table 11: BIMERR Dissemination Objectives –Target Groups Correspondence

Dissemination Objective 1	Raise <b>awareness and social engagement</b> for the BIMERR project goals and activities in target communities via appropriate methods.			
Responsible Partner	MERIT			
Engaged Partners	All partners			
Start Month	M01	End Month	M42	

Action	Attract relevant target communities towards the BIMERR project by raising awareness with relevant tools and appropriate dissemination actions.
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities
<b>Description of action:</b> The main goal of this action is to engage the appropriate target groups by using the proper dissemination tools and methods. Such tools, as described in previous sections, can be the participation in relevant events & conferences, publications and other dissemination activities. In order to attract visitors in these activities, a database with the contact details of targeted users will be created in order to support the co-creation methodology of Living Lab.	
<b>Expected Outcome:</b> The expected outcome of these actions is the active dissemination of the BIMERR results and outcomes through various activities. With targeted actions the dissemination objective of raising awareness and increasing the social engagement will be achieved.	
<b>Constrains &amp; important milestones:</b> The Dissemination Objective 1 is directly linked with the Milestone 7 "Public Awareness, Dissemination and Engagement Planning" in M06 and Milestone 11" Project Website Launch" in M03.	

Dissemination Objective 2	Encourage the <b>involvement of end-users and stakeholders</b> , through the utilization of Living Lab Workshop, in all phases of the project implementation by using a "User-Centric Design Approach" of dissemination. In this objective is very important to establish and maintain adequate channel with all type of users involved in the living lab workshops or with the completion of questionnaires.		
Responsible Partner	MERIT		
Engaged Partners	MERIT, CERTH, UPM, Hypertech, Xylem, CONCAT, BX, FER.		
Start Month	M01	End Month	M42
Action	Involvement of end-users and stakeholders through the use of Living Lab Methodology.		

Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities
<b>Description of action:</b> This dissemination action is directly linked with the second communication objective about the involvement of participants in the establishment of open innovation 2.0 and the value co-creation framework by involving the end-users and stakeholders during the development of the BIMERR project.	
<b>Expected Outcome:</b> The participation of end-users and stakeholders in the development of the project, will involve them in the requirement definition activities of the project, as well as in the evaluation of BIMERR results. The goal of this process is to establish and maintain an adequate communication channel with all the Living Lab participants in order to better disseminate the BIMERR results and outcomes.	
<b>Constrains &amp; important milestones:</b> Encourage the <b>involvement of end-users and stakeholders</b> , through the utilization of Living Lab, in all phases of the project implementation by using a "User-Centric Design Approach" of dissemination. In this objective is very important to establish and maintain adequate communication channel with all type of participants involved.	

Dissemination Objective 3	Ensure <b>the diffusion of all the scientific and technological results</b> generated in BIMERR project within and beyond the project's consortium.		
Responsible Partner	FIT/HYPERTECH		
Engaged Partners	All technical partners		
Start Month	M01	End Month	M42
Action	Diffusion of scientific and technological results		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> Publications in scientific journals and conferences relevant to the research and innovation activities will attract the scientific communities directly or indirectly in the scope of BIMERR. Until M12, at least 4 scientific papers will be published to better diffuse the scientific and technological outcomes of BIMERR.			



**Expected Outcome:** The dissemination actions will reinforce the diffusion of the scientific and technological results in the scientific community, foster cross-project cooperation and provide a fundamental verification of soundness of project results.

**Constrains & important milestones:** The Dissemination Objective 3 is directly linked with the Milestone 7 "Public Awareness, Dissemination and Engagement Planning" in M06 and Milestone 11 "Project Website Launch" in M03.

Dissemination Objective 4	Effective BIMERR Dissemination activities implicitly and explicitly contribute to the timely support of the <b>exploitation strategy</b> of the BIMERR project.		
Responsible Partner	MERIT		
Engaged Partners	MERIT, Ubitech, Suite5, Hypertech, Xylem, GU, ConKAT, BOC, BX, EXE, NT, FER		
Start Month	M06	End Month	M42
Action	Dissemination Planning as a parallel support strategy to Exploitation Plan.		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> All the dissemination actions will be closely related to the objectives and scope of the Exploitation Strategy of the project. All the dissemination actions will aim to increase the visibility of the BIMERR solution in the market and to support the Exploitation plan of the BIMERR project.			
<b>Expected Outcome:</b> The dissemination activities through the development of the project, as well as the post-project dissemination activities will assist the effective and successful Exploitation Strategy of the BIMERR project.			
<b>Constrains &amp; important milestones:</b> The Dissemination Objective 4 is directly linked with the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06.			

Dissemination Objective 5	<b>Cooperation with other projects</b> in the domain of Energy Efficiency Buildings and Building Information Modelling.		
Responsible Partner	FIT/MERIT		
Engaged Partners	All partners		

Start Month	M01	End Month	M42
Action	Synergies and cooperation with other projects in the relevant fields.		
Targeted Group	AEC Industry, Building Residents/Energy Consumers, Scientific, Technological and Business Communities		
<b>Description of action:</b> For BIMERR partners, previous industrial and scientific experiences are essential for the development of the project. Moreover, partners participating in relevant projects will be engaged to establish synergies and links with other projects. Common dissemination actions will be co-organized to increase the outreach of the project’s results.			
<b>Expected Outcome:</b> The aim of synergies and cooperation with other projects in the domain of Energy Efficiency building and Building Information Modelling is to encourage the smooth knowledge transfer and experience sharing between BIMERR and other projects.			
<b>Constrains &amp; important milestones:</b> The Dissemination Objective 5 is directly linked with the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06. Its ultimate goal is to increase the synergies and the cooperation with other projects in relevant field to multiply the dissemination impact.			

## DISSEMINATION SCOREBOARD

### Dissemination Key Performance Indicators

Dissemination Mechanism	Description	Target Value for Phase I (M1 - M12)	Target Value for Phase II (M12 - M18)	Target Value for Phase III (M18 - M30)	Target Value for Phase IV (M30 - M42)	Total target value	Means of Verification
Living labs	Nr of events	3	+3	3	3	12	Archives on organized events
Project website and social media presence	Nr of unique visitors	300	+500	+800	> +1500	2000	Google analytics
	Average duration of visits	2 min	3 min	3 min	>3 min	2.5 min	
	Nr of page views	600	+400	> +800	> +1000	2800	
Scientific publications	Nr of unique publications	4	+2	+4	+4	14	Enumeration of all published articles
Participation in fora and thematic events	number of events	4	>6	>8	10	28	Nr of attendances in events
Contributions to standards		0	0	2	>3	5	attendance to events

	nr of events/workshops/presen- ces						
Liaison with Professional communities and networks	Nr of events/workshops/telcos /presentations	0	1	3	3	7	attendance to events
Promotional Content and Dissemination Material (leaflets, brochure, roll-up, poster, press-release and newsletter)	brochure	1	0	1	0	2	Enumeration of published material
	newsletter	2	+1	+3	+3	10	
	Press release	2	+2	+3	+3	10	
	poster	0	1	1	1	3	
	roll-up	1	0	1	0	2	
	leaflet	0	0	1	1	2	

In the following tables an analysis of the specific communication and dissemination tools with the related target groups is provided:

<div>Communication Instruments</div> <div>Target Group</div>	Website	Twitter	LinkedIn	Facebook	YouTube	Press Release	Newsletter	Brochure/ Leaflet/ Printed Material
Architects	✓	✓	✓	✓	✓	✓	✓	✓
Engineers	✓	✓	✓	✓	✓	✓	✓	✓
Construction Companies	✓	✓	✓	✓	✓	✓	✓	✓
Building Residents / Energy Consumers	✓	✓	✓	✓	✓		✓	✓
Technological Platforms	✓	✓	✓	✓	✓	✓	✓	✓
Professional Association & Initiatives	✓	✓	✓	✓	✓	✓	✓	✓
Scientific Community	✓	✓	✓	✓	✓		✓	✓

Table 12: Communication tools for each target group

Dissemination Instruments Target Group	Website	Social Media	Living Lab	Scientific Publications	Fora & Thematic Events	Conferences	Cooperation with Other Projects	Professional Communities and Networks	Dissemination Material
Architects	✓	✓	✓		✓	✓	✓	✓	✓
Engineers	✓	✓	✓		✓	✓	✓	✓	✓
Construction Companies	✓	✓	✓		✓	✓	✓	✓	✓
Building Residents / Energy Consumers	✓	✓	✓				✓		✓
Technological Platforms	✓	✓		✓	✓	✓	✓	✓	✓
Professional Association & Initiatives	✓	✓		✓	✓	✓	✓	✓	✓
Scientific Community	✓	✓		✓		✓	✓		✓

**Table 13: Dissemination tools for each target group**

### 2.7.3 INTERDEPENDENCIES BETWEEN PROJECT WPS & OUTCOMES & DISSEMINATION AND COMMUNICATION ACTIVITIES

As referred in the risk assessment plan of this report, there is a risk of delayed development of project technologies, which may lead to deviations from the dissemination plan, since there is dependency between some actions, work packages and milestones of the project and the dissemination activities. The reason is that after the first half of the project, dissemination activities need to present some solid results of the project and hence the technologies need to be fully developed. In order to mitigate that risk, all interdependencies are identified in this phase of the project, so that they can be constantly monitored and supplementary actions can be taken timely. Those interdependencies are presented in the following Table 14:

WP	Project Outcome	Time	Depended dissemination Activity
WP3	Milestone 2: BIMERR system architecture definition	M12	The system architecture must be defined on time in order to take into account its results for the 2 <sup>nd</sup> version of BIMERR dissemination and communication plan in month 18
WP4	Finalization of the BIMERR semantic interoperability framework	M18	The BIMERR semantic interoperability framework must be defined on time as its results are necessary for the 2 <sup>nd</sup> version of BIMERR dissemination and communication plan in month 18
WP5 WP6 WP7	Finalization of BIMERR tools (Scan to BIM, renovation workflow management and automation module, augmented reality app for BIM enrichment and for on-site support, process management tools, end-user app and renovation decision support system)	M23	The finalization of BIMERR tools needs to be done on time, as they will be disseminated as project outcomes and thus, need to be functional and reliable by then.

WP8	Pre-validation activities	M30	Pre-validation activities need to be completed by month 30, as predicted, in order to share the results in dissemination activities, but also use the results to organize the final workshops with the end-users and the training activities.
WP9	Validation activities	M40	Validation activities must have extracted solid results by month 40, with the scope to disseminate, in the last phase of the project, the final results and the assessment of the project technologies. Moreover, those results will be needed for the stakeholder requirement assessment and the training activities.
WP9	MS6: BIMERR validation and evaluation	M42	The BIMERR validation must be completed and relevant recommendations must be extracted and delivered on time, in order to be used for the best practice documentation.

**Table 14: BIMERR Interdependencies**



### 3. MONITORING OF DISSEMINATION AND COMMUNICATION ACTIVITIES

#### 3.1 THE MONITORING PROCESS

One of the most important factors for the success of the communication and dissemination strategy & action plan of BIMERR is the establishment of clear and evidence-based monitoring, evaluation and follow-up framework. It is crucial for all BIMERR partners to know how to evaluate the communication and dissemination plan in the context of certain key performance indicators (KPIs).



These KPIs have to be monitored and assessed during the whole life cycle of the project and the Dissemination and Communication Manager (Merit Consulting House sprl.) is responsible for setting the rules, the guidelines and the methods for achieving the desired and pre-defined KPIs in accordance to, both the special needs of target groups and each phase (period) of BIMERR.

The whole process is continuously fed by the BIMERR target groups, whose role is essential for receiving feedback on qualitative and quantitative aspects of the informative content and the communicated message during each phase of the project. Through this procedure, any necessary improvement action will be communicated on time to all partners by the Dissemination and Communication Manager in order to discuss, design, update and include them to upcoming BIMERR dissemination and communication activities.

In the first revision of the Communication and Dissemination Plan in M18, the Monitoring process of communication and dissemination activities will be re-evaluated. This process is closely linked to the Milestone 7 “Public Awareness, Dissemination and Engagement Planning” in M06 and Milestone 11 “Project Website Launch” in M03.

Important part of the dissemination roadmap is to monitor the effectiveness and to quantify the agreed to implemented actions. Therefore, the set of Key Performance Indicators (KPIs) will

serve as the monitoring tool during reviewing of the performance of BIMERR's dissemination plan. In specific intervals, these metrics will be reviewed and where required will be updated to outline the success grade of dissemination methodology. Each individual activity will be linked to a dedicated KPI to ensure the progress of the activity and evaluate whether further action is required to guarantee success. In that way, the overall robustness is assessed, and all errors can be spotted, analyzed and mitigated to ensure the ultimate goal of the roadmap plan. The here presented KPIs and monitoring procedure constitute an initial draft. Their updated versions will be part of the Deliverable 10.3 on M18. The above methodology will give the opportunity to all stakeholders and the Project Coordinator to have a clear view on the progress of the dissemination plan and take action when necessary.

All the above actions are quantified on the Scoreboards, which are included in Annex I. These Scorecards are based on estimations that can be reviewed on a later stage after the further development of the BIMERR project.

### 3.2 KEY PERFORMANCE INDICATORS (KPIs) DEFINITION

The key performance indicators in BIMERR are based on European Commission's requirements. They concern the following actions:

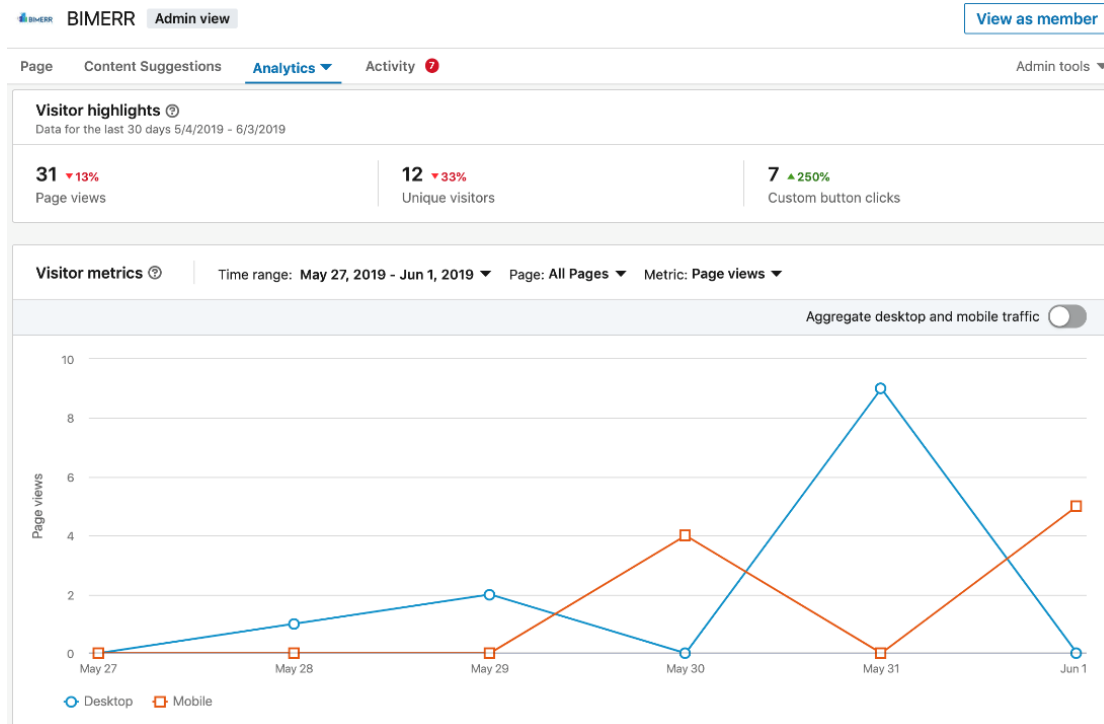
- |   |   |
|---|---|
| - Organization of conference                    | - Participation to a conference   |
| - Organization of a workshop                    | - Participation to a workshop   |
| - Press release                                 | - Participation to an event other than a conference or a workshop         |
| - Non-scientific, non-peer reviewed publication | - video/film  |
| - Exhibition                                    | - Brokerage event   |
| - Flyer   | - Pitch event   |
| - Training                                      | - Trade fair  |
| - Social media                                  | - Participation in activities organized jointly with other H2020 projects |
| - Website                                       | - Other   |
| - Communication campaign (radio, TV)            |   |

### 3.3 KPIs MEASUREMENT TOOLS AND MEANS

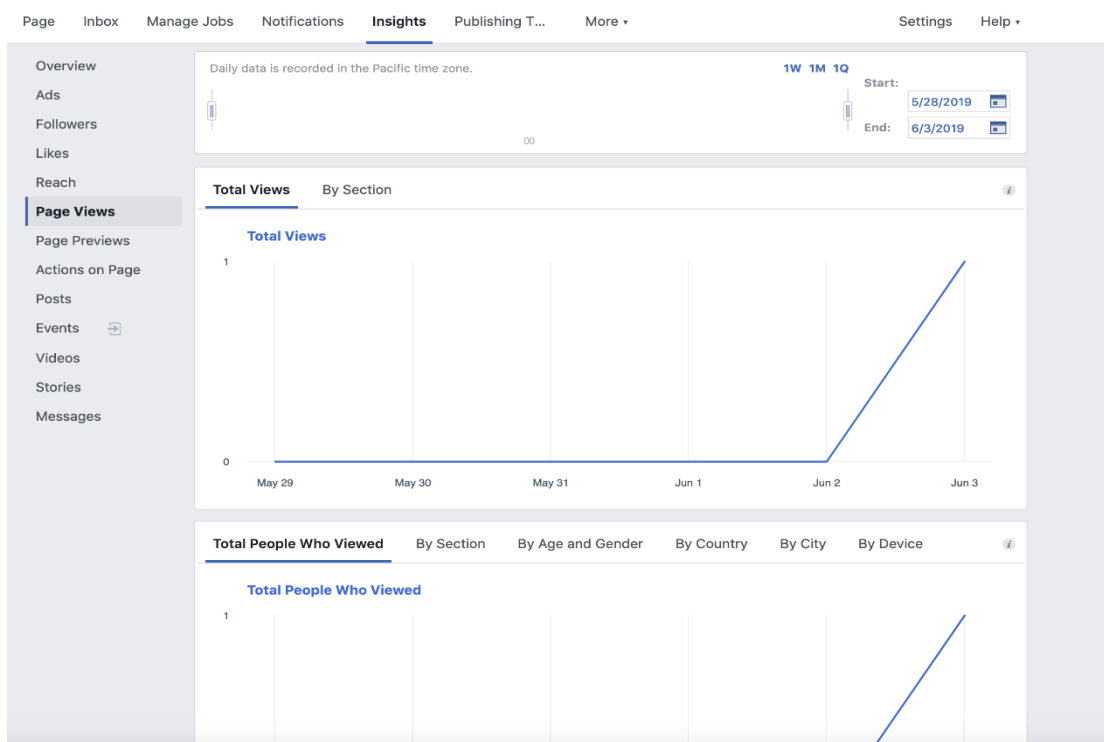
To assess and review the defined KPIs, the following measurement tools have been identified:

- Website's overall analytics tool: gather data on the number of users, origin, visit duration and preferred domains over up to three months ahead.
- Twitter statistics to review the popularity of BIMERR's tweets and to measure the number of followers, the overall number of posts, the number of impressions of each post on a 28-day period and to calculate the average impressions of all posts in a four-week period.
- LinkedIn statistics to monitor the views and check the number of followers and the number of impressions of each post.
- Facebook statistics to assess the engagement with the public and get data on the number of likes, shares and followers of BIMERR's profile on a 28-day period and get an understanding on the impact of the posts in a four-week period.
- Living Lab assessment: a Living Lab assessment form will be distributed to participants in all BIMERR Living Lab activities.
- Google analytics: the Google Analytics tool is essential in monitoring and reviewing the performance of the social media platforms for both communication and dissemination purposes.

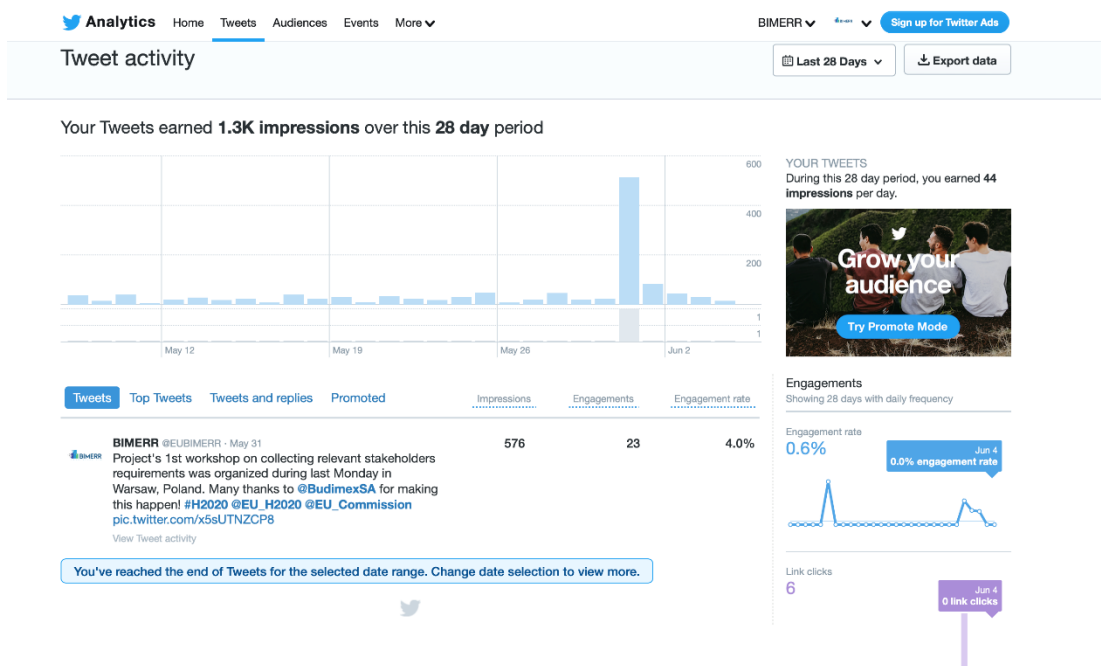
Together with its website, BIMERR has established LinkedIn, Facebook and Twitter accounts to connect with the market and the general public, raise awareness for the project progress and share findings and results when ready to be published. The measurement and monitoring of these tools will be conducted through Google Analytics.



**Figure 21: Template of users views performance for the BIMERR's LinkedIn profile**



**Figure 22: Template of Page views performance for the BIMERR's Facebook profile**



**Figure 23: Tweet activity and engagement rate of BIMERR's Twitter profile**

### 3.4 RISK ASSESSMENT

#### 3.4.1 RISK ASSESSMENT METHODOLOGY

The risk assessment analysis presented here has been performed according to the Risk Matrix reported in Table 15. More in detail various combinations of likelihood and severity are collected and by those the associated "judgement" of risk tolerability is extracted. The risks identified are ranked according to the expected frequency of event occurrence (likelihood) from A (practically not credible) to F (frequent) and also according to the potential associated consequences (Severity) from 1 (minimum effect) to 5 (major effect), based on the following Risk Assessment Matrix (see Table 15).



Frequency \ Consequence	A Practically not credible	B Rare	C Unlikely	D Credible	E Probable	F Likely/Frequent
1 - Minimum						
2 - Slight		Tolerable				
3 - Medium			ALARP			
4 - Severe				Intolerable		
5 - Major						

**Table 15: RISK Methodology - MATRIX**

As a result, the purpose of the risk assessment is to classify hazards as being low, medium or high, in order to identify the need for further mitigation measures and to classify effectiveness of the proposed solutions.

Following that and based on the risk ranking, the different classifications of the risks are:

- Low Risk (Green area): The level of risk is generally acceptable, and it only requires standard monitoring to prevent any future deterioration.
- Medium Risk (Yellow Region): The level of risk is generally acceptable provided that implementation of additional measures is disproportionate to the benefit gained (As Low As Reasonably Practicable principle - ALARP).
- High risk (Red Region): The level of risk in this region is not acceptable "as is" and risk control-mitigation measures are necessary to reduce risk.

### 3.4.2 RISK REGISTER AND CLASSIFICATION

According to the methodology presented above, the risks for the dissemination and communication of the project are presented and classified in the following Table 16:

Risk Identification	Actor / WHO	Frequency	Consequence	Classification
Limited acceptance of project results by the end-users	Consortium – End users	D -Credible	3- Medium	ALARP
Delayed development of project technologies which will cause deviations in dissemination plan	Consortium	C - Unlikely	3- Medium	ALARP
Limited participation of end-users and stakeholders in the User-Centric Design approach (living labs, workshops, etc.)	Consortium – End users	E - Probable	4 - Severe	Intolerable
Low participation of audience in dissemination events	Consortium - Audience	C - Unlikely	3- Medium	ALARP
Consortium partners not participating in the dissemination activities	Consortium	C - Unlikely	2- Slight	Tolerable
Technology partners not familiar with dissemination / unable to follow dissemination due to lack of expertise	Consortium	D -Credible	2- Slight	ALARP

Risk Identification	Actor / WHO	Frequency	Consequence	Classification
Low quality of dissemination material	Dissemination leader	B - Rare	3- Medium	Tolerable
Lower than expected website and social media traffic	Consortium	E - Probable	2- Slight	ALARP
Project dissemination KPI's not reached	Consortium	D -Credible	3- Medium	ALARP
Wrong identification of target audiences	Dissemination leader	C - Unlikely	3- Medium	ALARP
Incorrect usage of dissemination channels / wrong identification of dissemination channel per target audience	Dissemination leader	C - Unlikely	3- Medium	ALARP
Incorrect main message identification per target audience and/or per dissemination channel	Dissemination leader	D -Credible	3- Medium	ALARP

**Table 16: Risk Register and Classification**

### 3.4.3 RISK MITIGATION

For the risks classified as ALARP and intolerable, mitigation actions need be taken in order to control the risks. Those actions per risk are presented in the following Table 17:

Risk	Risk Mitigation / HOW	Responsible for risk mitigation / WHO	Timeline / WHEN
Limited acceptance of project results by the end-users	Well defined user requirements definition and baseline, along with cost-benefit validation of the solution. The Technical Manager and Dissemination and Exploitation Manager will follow up and monitor the user requirements accomplishment to ensure methodological vigilance.	Technical Manager, Dissemination and Exploitation Manager, consortium	During project duration



Risk	Risk Mitigation / HOW	Responsible for risk mitigation / WHO	Timeline / WHEN
Delayed development of project technologies which will cause deviations in dissemination plan	The Interdependencies Between Project WPs & Outcomes & Dissemination & Communication Activities will be identified within this report and it will be monitored constantly for the “on-time” implementation by the DEM	Technical Manager, Dissemination and Exploitation Manager, coordinator	During project duration
Limited participation of end-users and stakeholders in the User-Centric Design approach (living labs, workshops, etc.)	In order to mitigate that risk, the living lab activities of the project will begin early enough in the project, to create enough space for end-user’s engagement. Moreover, the workshops will be organized by the pilot partners in order to maximize attendance using their already existing channels and the key construction stakeholders they already have as contacts. Finally, all project events will be hosted at an appropriate location and time in order to maximize attendance – especially by attendees external to the consortium.	Dissemination and Exploitation Manager, coordinator	During living lab activities
Low participation of audience in dissemination events	All project events are predicted to be hosted at an appropriate location and time in order to maximize attendance.	Dissemination and Exploitation Manager, coordinator	During project duration
Technology partners not familiar with dissemination / unable to follow dissemination due to lack of expertise	The dissemination plan described in this report will support all partners with lack of experience in dissemination and will act as a handbook for the tasks they need to carry out. Moreover, the DEM will be available to support any partner needed.	Dissemination and Exploitation Manager, coordinator	During project duration
Lower than expected website and social media traffic	The traffic of the website and social media will be constantly monitored (through Google analytics and other tools) and	Dissemination and Exploitation Manager	During project duration

Risk	Risk Mitigation / HOW	Responsible for risk mitigation / WHO	Timeline / WHEN
	actions will be taken if the traffic is below target.		
Project dissemination KPI's not reached	The performance towards the KPI's will be constantly monitored and measures will be taken in the 2 <sup>nd</sup> and 3 <sup>rd</sup> versions of BIMERR dissemination and communication plan in months 18 and 30, if deviations are observed.	Dissemination and Exploitation Manager	Month 18 Month 30
Wrong identification of target audiences	The target audiences will be identified early in the project and will be updated in the 2 <sup>nd</sup> and 3 <sup>rd</sup> versions of BIMERR dissemination and communication plan in months 18 and 30, to become more accurate.	Dissemination and Exploitation Manager	Month 18 Month 30
Incorrect usage of dissemination channels / wrong identification of dissemination channel per target audience	The best practices will be used towards the identification of the best dissemination channel per target audience and the performance will be constantly monitored. If changes needed, they will be implemented in the 2 <sup>nd</sup> and 3 <sup>rd</sup> version BIMERR dissemination and communication plan in months 18 and 30.	Dissemination and Exploitation Manager	Month 18 Month 30
Incorrect main message identification per target audience and/or per dissemination channel	The performance of the main dissemination message per audience and per channel will be constantly monitored and will be adjusted accordingly to maximize its efficiency.	Dissemination and Exploitation Manager	During project duration

**Table 17: Risk Mitigation**

## **4. UP TO DATE PROGRESS OF COMMUNICATION AND DISSEMINATION PLAN**

### **4.1 DESCRIPTION OF IMPLEMENTED ACTIONS AND ASSOCIATED MATERIALS UNTIL M06**

Within the period M01-M06, initial dissemination and communication actions have already been implemented. The design and development of the BIMERR website have been finalized and the project's accounts in social media (Facebook, Twitter and LinkedIn) have been created. The branding design has been finalized. A unique logo (Annex II) has been designed, where the use of green and blue color implies the eco-friendly and forward-thinking character of the project, combined with the harmony and simplicity of the BIMERR philosophy. Moreover, the use of violet implies the innovative character of the project.

In addition, until M06, one BIMERR Living Lab Workshop is already organized. The first Living Lab was organized in Poland (BX) and the second one in Spain (FER). From the activities press releases are produced (see Annex I) in 3 different languages (English, Polish and Spanish) in order to increase the communication flow. Thus, relevant social media and website posts will be circulated to foster the dissemination and communication impact.

Moreover, the graphic identity of the project has been developed. All project templates and PowerPoint presentations should be consistent with the branding design and the colors used for these templates and presentation of other materials are the ones used in the BIMERR logo.

The project brochure has been also finalized providing a detailed and non-technical overview of the project, aiming at a wider target audience. There is a page with a brief summary of the project and a page on the objectives, the BIMERR methodology, the scope and the expected impact. Focus was given on the use of pictures to make it attractive to the audience.



Figure 24: BIMERR Brochure (1/2)



Figure 25: BIMERR Brochure (2/2)



**Figure 26: BIMERR Roll-up**

In addition, 3 roll-up banners have been designed but they are not yet finalized. Discussions between partners are being carried out in order to decide on the most suitable banner for the needs of the project.

## 4.2 DISSEMINATION AND COMMUNICATION IMPLEMENTED ACTIONS M06-M18

For the following period, M06-M12, the content of the BIMERR website will be regularly updated and project information will be uploaded on the social media. Moreover, in accordance with the project's progress, it is foreseen to develop a poster, a project factsheet, press releases and the first newsletter. The poster will include a summary of the project and will be used as a project presentation in conferences and meetings. The project factsheet will



highlight some of the developed results as well as the next steps of the project. Press releases will be published providing the key project achievements and organization of specific events.

The newsletters will summarize relevant information on the project's development and will promote relevant content on a periodic basis focusing on key achievements of the project and upcoming events.

After M12, and as the project evolves, refined and updated versions of the abovementioned dissemination material will be produced. In more detail, a promotional video of the BIMERR methodology will be developed. The BIMERR website and social media will be continuously updated regarding the relevant content and results as well as events. Moreover, a leaflet with the first results will be prepared for distribution at relevant events, a press release containing the implementation of key activities during this project period as well as participation in events, and a newsletter with a summary of the actions that will be taken within this period are going to be developed.

#### **4.3 PLAN FOR COLLABORATION WITH OTHER ACTIONS AND INITIATIVES**

The BIMERR project aspires to develop a new toolkit for renovation of buildings that could be adopted by the AEC community. However, under the H2020 umbrella, there are numerous other relevant projects that share a similar vision in conjunction with their own specific identity and targeted goals. It goes without saying that the aim of BIMERR project is to commercialize the forthcoming toolkit and achieve a transition from cradle all the way to the market.

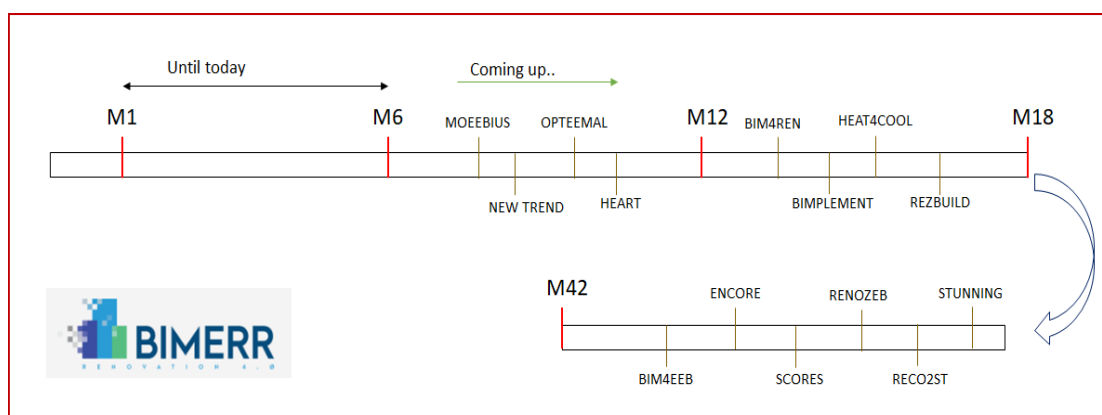
Therefore, it is of utmost importance for BIMERR not to be a stand-alone, isolated project, and entirely focused on its own targets. For this reason, it will be attempted to create communication channels with other relevant projects, encourage exchanging ideas and boost problem-solving procedures through sharing past experiences and to share experience and knowledge to fulfil common goals and objectives,

During this reporting period, M01 - M06, the BIMERR consortium has already contacted various projects. In the forthcoming months, between M06 and M12, the stakeholders will explore the possibility to form bonds with ongoing and some completed projects, MOEEBIUS, OPTEEMAL, NEW TREND and HEART projects. All projects except the MOEEBIUS and OPTEEMA which are already finalized, the other projects are ongoing and started earlier than BIMERR. They fall within the category of energy sustainability, modelling toolkits to boost cost reduction in

renovation phase and creation of holistic design models for building retrofitting. The fact that they started in 2015, except the HEART that started in October 2017, means that they already have 3 years of progress and hence possible communication may be beneficial to set the right pathway before the BIMERR project gets deeper into its implementation phase.

It is also essential for BIMERR to bridge with projects of the same field, and such vicinity shall be promoted. Thus, within M12 and M18, the idea of liaising with the BIM4REN, BIMPLEMENT, HEAT4COOL and REZBUILD will be put on the table. These projects started in 2017 (except for HEAT4COOL in 2016) and envision to develop solutions towards a significant reduction of the building energy consumption, while empowering integration of BIMs in the market. Forming bonds with other consortia and creating partnerships with other projects shall be a continuous effort all along the project progress. From M18 until the completion of the project, efforts will be made to connect with the STUNNING, RECO2ST, SCORES, RENOZEB, ENCORE, BIM4EEB projects.

With the completed projects, BIMERR is attempting to exchange valuable knowledge and experience. Our approach with the ongoing projects is to communicate and disseminate effectively BIMERR. This will be achieved by creating synergies and collaboration with other ongoing projects.



**Figure 27: Forthcoming initiatives to collaborate with other projects with energy sustainability and BIM**

## 5. LIST OF COMPLETED DISSEMINATION AND COMMUNICATION ACTIONS

Following the dissemination methodology agreed at the beginning of the project, the BIMERR was engaged twice with the public to raise awareness about both the scope and vision. It was presented on a lecture session at the Harvard Graduate School of Design on the 3<sup>rd</sup> April 2019, where the Project Coordinator from FIT discussed the approach of the BIMERR project, the use of smart glasses and multitude of other tools to enrich the BIM models in order to stimulate and optimize the renovation process and achieve reduction of construction/renovation costs.

The second opportunity to disseminate the project during the first 6 months since the kick-off meeting, was a press-release by Budimex. Both an internal press-release and external publications based on the press-release were published. Shared content was prepared in Polish and kept the key messages clear and brief, in order to engage the public with the main goals of the project, the BIMERR tools, the pilot sites and the overall list of partners. No scientific publications have been published in this period, as the project was still in an initial phase and no actual results have been produced so far. In the near future, scientific findings generated all along the project will be communicated and disseminated to the right audience.

Under the Living Lab Methodology, various dissemination actions have been taken place until M06. As part of the Living Labs Methodology, several tools such as templates and questionnaires have been produced by the partners, and subsequently used by the pilot participants in the context of the Living Labs Methodology for interviewing the targeted user groups during especially organized workshops.

BIMERR Living Lab activities are developed from a very early stage of the project implementation (user requirements phase) up to the pilot evaluation phase in order to engage the target groups in the project. These activities aim to establish an iteration and open collaboration process that will accelerate collaborative knowledge generation and integration, technology customization and validation against real market and user needs, as well as end-product definition and go-to-market strategy creation.

As part of Living Labs Methodology, targeted Living Lab workshops are organized together with the involvement of the definition of various interaction and collaboration mechanisms in order to take advantage of the participation of key construction stakeholders. As described in



the Grant Agreement and the DoA, Living Lab workshops will be performed (further to other planned engagement and training activities). The aims of the Living Lab workshops are:

- to raise awareness, engagement and acceptance of renovation stakeholders, including also the preparation and distribution of appropriate material
- to involve end-users in the requirement definition activities of the project
- to involve stakeholders in the evaluation of BIMERR results

The initial planning is to organize several workshops in various countries. The first Living Lab workshop concerned the collection of requirements from stakeholders and was hosted in M05 in Poland (BX), under the support of MERIT as Dissemination and Exploitation Manager.

At this stage, more activities in the context of Living Lab Methodology have been produced, namely templates and questionnaires for interviewing the target user groups as well as the initial design and planning for the future training activities.

As mentioned in the chapter of Living Lab Methodology, a detailed Living Lab Database is under construction in M06. This Database will include the contact details, the function and the location of several end-users and stakeholders that are participating in the project. Responsible for providing details of the end-users and stakeholders are all partners. This database will be completed in the upcoming months.

## **6. PARTNERS ROLES AND COMPLETED ACTIONS**

On a later stage of the development of the project, this section will entail a more detailed action plan with implemented dissemination and communication actions and the responsible partner. The idea is to balance the workflow and request inputs on time from all partners, in order to guarantee the continuous and coherent communication and dissemination of the BIMERR project.

In addition to this detailed action plan, a social media activity plan will also be included, presenting specific dates and actions by every partner. In the BIMERR Social Media Activity Plan, a detailed timeline with social media posts and reactions will be analyzed and explained.

In the later stages of the project, partners will be allocated for every specific communication and dissemination activity as well as for every social media contribution or action (Tweet, Facebook post or LinkedIn update). To that end, in the review of the BIMERR Communication and Dissemination Plan in M18 this section will be fully up to date.

## 7. CONCLUSIONS

The main aim of this deliverable is to define, propose and establish a specific action plan through a holistic communication and dissemination approach based on the project's objectives, special characteristics (maturity of tangible and intangible project's results e.g. TRL, new business models etc.), strengths and weaknesses, threats and opportunities. During this deliverable, special concern was given to addressing all target groups in accordance to the content of information and the relative message that needs to be communicated at each project's phase, result and objective. The final scope of this deliverable is to define the Living Lab Methodology and the ways and means of raising awareness among the defined target groups about the BIMERR project. In addition, through the dissemination and communication activities of BIMERR, as outlined in this deliverable, the final users of BIMERR technologies will become familiar with their potential benefits.

All the actions described in this plan are fully aligned with the goals and the objectives of Milestones 7 for "Public Awareness, Dissemination and Engagement Planning", 8 for the "Standardization Punch-list" and 11 for the "Project Website Launch". According to the timetable of the project, the first tangible results are expected after M20 of the project. Therefore, the essential dissemination action will start at that time period. However, various communication instruments are already set in place, such as the website, social media, brochure, roll-ups, posters as presented in this deliverable. At a later stage of the project, when tangible results will be presented, a specific and tailormade message will be constructed, in order to engage more the specific target groups.

In order to enhance the effectiveness of the communication and dissemination of BIMERR project, detailed dissemination and communication plans have been already presented in this deliverable and will be enriched and refined in due time. In the next updated version of this plan in M18, the detailed communication and dissemination plans will be further analyzed in order to guarantee the effectiveness of the implemented communication and dissemination actions of the BIMERR project.

## ANNEX I

### PRESS RELEASE FROM FERROVIAL AND BUDIMEX

Ferrovial Agroman R&D Department is participating in this project with Budimex Innovation Department, increasing the collaboration that has been already established in previous R&D projects such as SAFEWAY.



With annual revenues of nearly US\$ 10 trillion, or about 6% of global GDP, the architecture, engineering and construction (AEC) industry is a cornerstone of the world's economy. Unlike other industries, however, AEC has been slow to adopt new technologies and has never undergone a major digital transformation.

Nevertheless, substantial change is on the way. Construction will soon be characterized by connected systems of sensors, intelligent machines, mobile devices and new software applications. As their adoption increases, new technologies boost productivity, manage complexity, reduce project delays and cost overruns, and enhance safety and quality.

In the framework of BIMERR Project, the improvement of renovation processes is targeted. The application of this project's technologies in specific use-cases should demonstrate the enormous opportunities along

BIMERR project officially begun with the Kick Off Meeting that took place in Bonn (Germany) on the 21<sup>st</sup> and 22<sup>nd</sup> of January 2019. It is a European funded project within Horizon 2020 Programme by the European Commission, with the participation of the Urban Rehabilitation Area and the R&D Department of Ferrovial Agroman. The project will have a duration of 45 months.

The consortium developing the works is formed by 17 partners including technology and software companies, contractors, research centers, universities, designers, and infrastructure maintainers and operators:

- Ferrovial Agroman
- Budimex
- UPM (Polytechnic University of Madrid)
- Fraunhofer
- Information Technologies Institute (ITI) – Centre of Research and Technology Hellas (CERTH)
- Ubitech
- Suite5
- Hypertech
- Merit Consulting House
- Xylem Technologies
- Glass Up
- CONKAT S.A.
- BOC Asset Management GMBH
- University of Peloponnese UOP
- Exergy
- Heriot-Watt University
- Novitech A.S.

The final version of BIMERR website is now available. If you seek more information about the project, please go to the project's website at [www.bimerr.eu](http://www.bimerr.eu) (<http://www.bimerr.eu>)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 820621

Call identifier: LC-EEB-02-2018

## **ANNEX II – PROJECT GRAPHIC IDENTITY**

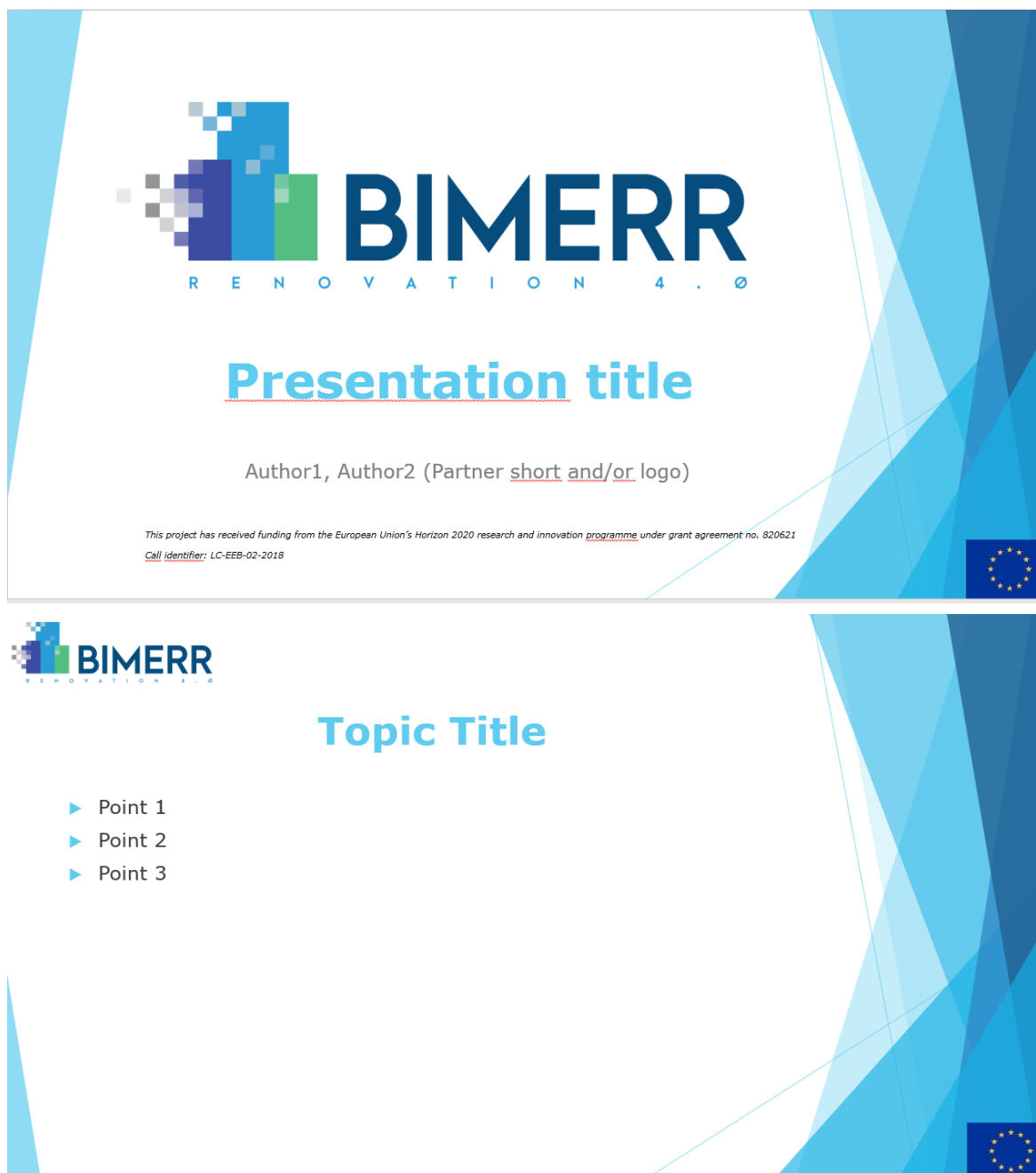
In this Annex the Project's graphic identity is presented. It consists of the project's logo and project templates for presentations, deliverables, newsletters and press releases.

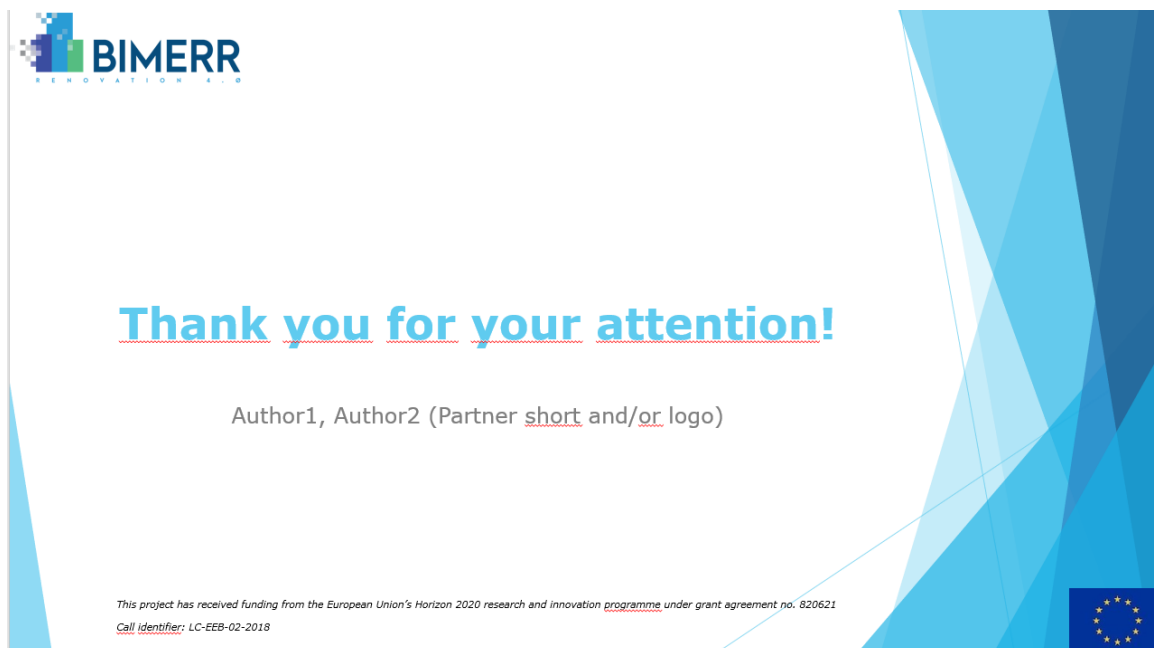
Below the project's logo is presented:



**Figure 28: BIMERR Logo**

Below the Presentation template of BIMERR is presented:





**Figure 29: BIMERR Presentation**



Below the template of the Deliverables can be found:



Project Acronym: **BIMERR**  
 Project Full Title: **BIM-based holistic tools for Energy-driven Renovation of existing Residences**  
 Grant Agreement: **820621**  
 Project Duration: **42 months**

## DELIVERABLE DXX.X

### Title

Deliverable Status: **Draft**  
 File Name: **Document5**  
 Due Date: **DD/MM/YYYY (MXX)**  
 Submission Date: **DD/MM/YYYY (MXX)**  
 Task Leader: **Partner Name (TXX.X)**

Dissemination level	
Public	
Confidential, only for members of the Consortium (including the Commission Services)	

### The BIMERR project consortium is composed of:

FIT	Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.	Germany
CERTH	Ethniko Kentro Erevnas Kai Technologikis Anaptyxis	Greece
UPM	Universidad Politecnica De Madrid	Spain
UBITECH	Ubitech Limited	Cyprus
SUITE5	Suite5 Data Intelligence Solutions Limited	Cyprus
HYPERTECH	Hypertech (Chaipertek) Anonymos Viomichaniki Emporiki Etaireia Pliroforikis Kai Neon Technologion	Greece
MERIT	Merit Consulting House Sprl	Belgium
XYLEM	Xylem Science And Technology Management Gmbh	Austria
GU	Glassup Srl	Italy
CONKAT	Anonymos Etaireia Kataskevon Technikon Ergon, Emporikon Viomichanikonkai Nautiliakon Epicheiriseon Kon'kat	Greece
BOC	Boc Asset Management Gmbh	Austria
BX	Budimex Sa	Poland
UOP	University Of Peloponnese	Greece
EXE	Exergy Ltd	United Kingdom
HWU	Heriot-Watt University	United Kingdom
NT	Novitech As	Slovakia
FER	Ferrovial Agroman S.A	Spain

### Disclaimer

*BIMERR project has received funding from the European Union's Horizon 2020 Research and innovation programme under Grant Agreement n°820621. The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Commission (EC). EC is not liable for any use that may be made of the information contained therein.*

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## REVISION CONTROL

Version	Author	Date	Status
			Quality Check
X.X			Final Draft reviewed
1.0			Submission to the EC

Below the Newsletter template can be found:



**Figure 30: BIMERR Newsletter Template**

Finally, the template of the Press Release is shown below:

|

Contact:

Name:

Address:

Phone number:

Website:



---

Date:

**PRESS RELEASE**

**"Title"**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820621

**Figure 31: BIMERR Press Release Template**

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