

Updated Dissemination and Exploitation Plan D6.6



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Deliverable 6.6

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Executive summary

This report updates the DREEAM dissemination and exploitation strategy developed at the beginning of the project. In particular, this version has the primary aim to evaluate the effectiveness and impacts of the DREEAM project dissemination and exploitation activities as well as to identify and describe the main project results and their future exploitation beyond project duration.

In the DREEAM project, partners have developed a number of products and services supporting building owners in their decision-making journey throughout the different phases of the renovation programmes. The "toolkit" facilitates investment planning, renovation design, quality assurance, energy consumption monitoring, tenant engagement, training etc., addressing the main challenges hindering the upscaling of EE renovations. The following inforgraphic outlines the products and services which have been identified as key exploitable results of the project and their position/role in the BO's decision-making journey.





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1 Introduction

1.1 Background

The objective of the DREEAM project is to deliver a replicable and integrated renovation approach for energy efficiency at a multi-building scale with 75% energy demand reduction potential. The project focuses on the deep renovation of social and public housing managed by single owners of large portfolios of residential buildings enabling EU-wide replication and adoption of the project results.

The DREEAM project aims to trigger multi-building renovations approaching NZEB standards by improving the building owners' return on investments (ROI). Its comprehensive approach makes use of advanced analytical tools supporting housing companies and cities in their decision-making processes by identifying the most cost-effective combination of technologies while applying appropriate financing models and tenants' preferences.

DREEAM Objective 3: engage with 60% of all EU social and public housing companies within the duration of the project and inform 190 SME contractors and its skilled workers about benefits of the DREEAM approach.

Means achieving the objectives and monitoring: the dissemination and exploitation activities will ensure that the project outcomes reach majority of EU social and public housing companies. The training programme developed and applied by the project partners will ensure that SME contractors are informed about the integrated DREEAM approach.

1.2 Task 6.1

In task 6.1, the dissemination and exploitation strategy is developed with the objective of organising the activities that are to be performed to achieve the desired project impacts. The strategy will identify the target audience of stakeholders as well as the related channels and messages to be used.

The document has been updated during the project lifetime according to the project process and feedback from the first outreach to the target groups. This last updated version aims to focus on the evaluation of the effectiveness / impact of the dissemination and exploitation activities during the project as well as on the exploitation strategy of the project results beyond its duration. All partners have directly contributed to the development of this Deliverable 6.6 reflecting their strong interest in future exploitation of project results among the target groups and/or internally.

1.3 Aim and phasing

Communication, Dissemination and Exploitation activities reflect project progress and implementation schedule. Therefore, according to the project development phase, some activities are more relevant than others to be carried out, ensuring outreach to the target groups and adoption of the project outcomes.

According to DREEAM project development and in line with the European Commission definitions, Communication, Dissemination and Exploitation activities were initially planned as outlined in figure 1.



Figure 1. Outreach planning



Dissemination: dissemination activities started after the first year of the project (from month 12 until project end) when concrete results were available to be disclosed. Key stakeholder groups were outreached through different channels and tools developed in the Communication programme.

Exploitation: exploitation activities were carried out in the second phase of the project (month 24-48) to ensure the future use of the project results by project partners and key stakeholder groups beyond the project end. Project activities enabled to deliver project results to the target audiences and demonstrate its potential market value.

Outreach to the target groups and, in particular, engagement of building owners was performed project start.

2 Dissemination

Dissemination - EC definition

The public disclosure of the results by any appropriate means, including by scientific publications in any medium.

The main objective of disseminating is to inform building owners (BOs) of 60% of Europe's social and public affordable housing projects on DREEAM results and activities, resulting in improved energy efficiency. Other audiences include possible users of the multi-building design methodology and public-sector investment decision-makers and policymakers, for whom the multi-building approach could deliver better results.

As all the project partners had something to gain from the outcomes of sharing the project results, it was decided that dissemination would be a shared responsibility.

2.1 Target audience

Stakeholder	Relevance	Objective
Researchers	Build upon DREEAM outcomes and insights	Ensure wider use of knowledge and decision-making tools
Building owners (BOs), local authorities	Decision-makers on investments and sustainability managers can achieve better housing quality or lower costs and best Value for Money	Make information available on cases, tools and guidance on how to use the multi-building approach, and technology database
Skilled workers involved in the renovation project	Engineers & SME contractors who can exploit the tools for enhanced service offering to building owners	Make information available on cases, tools and guidance on the use of the multi-building approach, and technology database
Innovators and start-ups in the Climate-KIC network	Novel technologies are key in enabling cost-effective investment decisions; information on such technologies should be disseminated	Provide insight in market needs and value offering of novel technologies (in particular energy management systems)
Policymakers	Responsible for the final decision on large scale investment projects and for the establishment of favourable policies for energy efficiency renovation	Show the potential benefits of broad uptake of building renovation approaches

Table 1. DREEAM target audiences



2.2 Objectives

Using multiple complementary communication tools, key performance indicators were identified for the project partners.

Tool	Target	Results at project end	
Website	>1 000 website views a year	Achieved: Between March 10 2019 and April 10 2019 alone, the website received 2566 visits from 964 unique visitors, exceeding all expectations.	
	24 posts a year	Achieved: 100 posts by the project end considering Linkedin and Twitter	
Social media	>1 250 followers	Not achieved: the main focus of the communication activities were set on the website and events. There was an initial underestimation of the posts needed to be published to achieve this very ambitious number of followers.	
	24 a year	Partners have actively presented the project at 50 events and workshops. In addition, partners have engaged with the target groups in individual meetings (e.g. for the replication programme).	
Workshops	10 project presentations	Achieved: the project was presented at 50 international events	
	500 researchers reached	Achieved: 10 of the events were DREEAM was presented had a specific target audience of researchers altogether counting more than 500 attendees.	
Publications	10 publications on external sites	Achieved: the DREEAM project was featured in 24 external publications, including 8 academic papers and articles on relevant news sites such as BUILD UP, Construible, EU Research.	

Table 2. Communication and dissemination targets and results

2.2.1 Website

The website had a relatively modest goal of reaching over a thousand visits a year. Despite some issues with tracking the website's analytics, the target was reached in less than two weeks. Between March 19 2019 and April 10 alone 2019, the website received 2 566 visits from 964 unique visitors:



Figure 2. Website visitors' analytics

In total, 46 posts have so far been published on the website, including news items and videos as well as project updates.



2.2.2 Social media

Twitter and LinkedIn accounts have a combined audience of over 260 followers and 54k reached impressions during the project time. Both accounts are managed by the Chalmers team and post regularly – sharing all news items from the website as well as project partners' relevant news. Twitter is also used to follow events live when the DREEAM project is being presented.

Between May 2016 (the date of the first tweet) and March 2019, the DREEAM Twitter account has tweeted 65 times and those tweets have had over 47k+ impressions.

Opened in June 2018, the Linkedin account was populated with 44 posts, reaching roughly 7k+ organic impressions.

2.2.3 External events: conferences & workshops

Since the start of the project, DREEAM partners have presented the methodology and results at 50 international events including conferences and workshops. The events covered all the target audiences outlined in the communication and dissemination plan. Notable examples include:

United Nations – Global Festival of action for sustainable Development – 2^{nd} and 3^{rd} March 2017 /Bonn/Germany

During this event with more than 800 participants, 80 countries represented and there was an important social media coverage (2M people reached with 2,8M mentions on social media), Kathleen Zoonnekindt (SAVILLS) participated as speaker during a fish bowl session to present some key results of DREEAM project, the key factors influencing the adoption of saving behaviors for energy and water as observed in the first series of interviews in DREEAM project.

World Sustainable Built Environment (WSBE) conference – 5/7th June 2017, Hong Kong

WSBE 2017 had over 1 800 participants – policymakers, academics and industry practitioners. Claudio Nägeli (Chalmers) presented DREEAM and specifically Chalmers work in the project at a side session focusing on "Deep Renovations – Processes & Methodologies".

Social Housing Festival – 14th June 2017, Amsterdam/The Netherlands

With 1 300 participants attending 45 events over 9 days, the ISHF 2017's theme was "Affordable Housing now, better communities tomorrow". DREEAM was presented on the 14th of June as part of a session on "Energy efficiency in social housing". After a short project introduction by Izabela Kurkowska (Chalmers), Kathleen Zoonnekindt (Savills) presented the DREEAM approach to tenant engagement as well as energy consumption monitoring before and after renovation.

EURHONET conference "Housing the future – Stronger together!" – 25th October 2017, Turin/Italy

Rolf Bastiaanssen of Bax & Company, Sabina Manente of ATER and Izabela Kurkowska of Chalmers represented DREEAM at the annual EURHONET conference 'Housing the future – Stronger together!'. Four projects, including DREEAM, had the opportunity to present themselves to the audience in four interactive sessions focusing on the opportunities and challenges related to European collaborations. For DREEAM, this was also an occasion to introduce the DREEAM replication voucher programme to Eurhonet members.

EFL Seminar on Energy Efficient Retrofitting of Buildings - April 26th 2018, Essen/Germany

Rolf Bastiaanssen and Giulia Rinaldi of Bax & Company presented DREEAM multi-building renovation approach as well as the DREEAM replication voucher programme to support housing companies around Europe in scaling up their renovation ambitions. Alexander Stöckl of 1892 presented a case study in Berlin, followed by an interactive Q&A session.



Congress of Energy Engineering – 27, 28th June 2018, Madrid

DREEAM was presented at the very first edition of the Congress of Energy Engineering in Madrid by <u>Maria</u> <u>Cubillo from SinCeO2.</u> The 1st Congress on Energy Engineering (iENER '18, <u>https://www.congresoiener.com/</u>) aims to become a national reference event where knowledge and experiences are exchanged among practitioners from the broad area of Energy Engineering. Presenting DREEAM at the congress was a very good opportunity to showcase the project to a wide target of professionals, including the public administration, other energy service and consulting companies in the field.

ISEC Conference – 4/5th of October 2018, Graz/Austria

370 experts from science, industry and energy policy from 51 countries took part in ISEC 2018. The conference focused on the heating sector and resource efficiency in a networked sustainable energy system. Results offer enormous opportunities for innovative research institutions and companies. Under the conference topic Innovation for the Decarbonisation of Buildings and Quarters, Bax & Company's Giulia Rinaldi outlined DREEAM's multi-building approach and specifically focused on the value of scaled investment planning for achieving building owners' long-term sustainability vision.

Strumenti, tecnologie e modelli finanziari innovativi per una riqualificazione «Near Zero Energy Building» a costo zero nell'edilizia residenziale – 16th May 2019, Treviso

DREEAM project partner ATER Treviso hosted an international conference on the results of the DREEAM project at the Treviso pilot site and the future prospects for development in Italy and Europe. In addition to presenting the project results, the conference prompted a discussion with sector experts from Italy and abroad to reflect on the implications of DREEAM's innovative methodology. The conference was attended by public bodies, social housing agencies, experts in the field and designers as well as from the DREEAM working group (Chalmers, Savills, Places for People, SinceO2, DEXMA) and members of EURHONET.

Full list of events where the DREEAM project was presented is included in Annex 2.

While it is difficult to measure the impact of presenting a project at an event, there have been several positive outcomes. At the larger conferences, relevant stakeholders received the DREEAM presentations with interest, while the smaller workshops focused on interacting with the target audiences were always very successful. From meeting new partner projects (such as OPTEEMAL, who went on to feature the DREEAM project on their website) to driving up traffic to our own website and establishing contact with participants who are keen to get involved in the programme, these events have helped to boost the project's visibility.

2.2.4 Publications

The DREEAM project was featured in 24 external publications, exceeding the target initially established by the DREEAM partners. External publications have ranged from articles, news items in newsletters, interviews, scientific papers and press releases. Examples to date include:

Title	Publication	Date	Туре
DREEAM Project: metodologías estandarizadas para la rehabilitación con criterios EECN de edificios residenciales	Construible	Nov 2016	Article
Demonstrating an integrated Renovation approach for Energy Efficiency At the Multi-building scale	EeB PPP Project review 2017	May 2017	Other

Table 3. Same of publications of the DREEAM project



75% energy demand reduction by applying the DREEAM toolkit.	Housing Futures	May 2017	Article
Energy efficiency through smart renovation	Impact	Jun 2017	Brochure
DREEAM - Horizon 2020 project for cost-effective large-scale energy efficient renovations of residential buildings	ResearchGate	Aug 2017	Academic paper
The effect of different working parameters on the optimal size of a battery for grid-connected PV systems	Science Direct	Sep 2017	Academic paper
SBS to Deliver DREEAM Energy Efficiency Pilot	Sustainable Building UK	Jan 2018	Press release
Making British energy grids smarter	BUILD UP	Sep 2018	Article
Tenant engagement with the H2020 DREEAM project	BUILD UP	Oct 2018	Video
DREEAM: Support your decision- making on portfolio investment planning	Housing Europe	Mar 2019	Other
A green outlook on property renovations	EU Research	Mar 2019	Article

Full list of publications can be found in Annex 3.

2.2.5 Synergies with Projects & Networks

The project has been linked to several ongoing EU projects to ensure that the work reaches as many relevant stakeholders as possible after the project's end. These partner projects include:

Table 4. Projects	collaborating	with DREEAM.
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Title	Link
STUNNING Renovation Hub	https://renovation-hub.eu/refurbishment-solutions/dreeam-demonstrating-an- integrated-renovation-approach-for-energy-efficiency-at-the-multi-building-scale/
OptEEmAL	https://www.opteemal-project.eu/press-corner/links-to-similar-projects- initiatives.html
Houseful	http://www.housingeurope.eu/section-118/houseful
EXCEED	http://www.exceedproject.eu/wp-content/uploads/2019/03/ExcEED-4th- enews_March-2019.pdf

3 Exploitation

Exploitation - EC definition

The utilization of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating or providing a service, or in standardization activities.



Because of the importance of an effective exploitation plan and strategy for the DREEAM Project results, a three step process involving all partners has been followed:

- 1. **Exploitation plan workshop (GA September 2018):** during the General Assembly of the DREEAM project held in Ghent on the 28th of September of 2018, the project coordinator Holger Wallbaum (Chalmers) has led a workshop with the objective to discuss with the entire consortium the overall exploitation strategy of the project as well as to define the key exploitable project results. Partners were asked to present their key outcomes and were supported in an open discussion to better understand their potential use after project end.
- 2. Individual calls and collection of partners' inputs: following the exploitation workshop which gave partners an overall indication and direction to follow in their internal discussion, partners were asked to internally define their main results, their interest in exploitation, which market/user to target, their envisioned action plan and route to market. Individual calls were organised by Bax&Company with the DREEAM partners to collect the necessary inputs.
- **3.** Consortium review: the final step of the process required all partners to review the first full version of the updated dissemination and exploitation plan, consolidating and reviewing their own results and exploitation strategies outlined based on the inputs collected in the previous steps. In the GA held in Gothenburg on the 4th of June 2019, a specific workshop led by Bax&Company and the project coordinator was conducted for completing the review process and collecting the latest updates from the project partners to be integrated into the final version of this deliverable.



Figure 3. Three phases approach for the development of the updated exploitation plan

This document reflects all the inputs collected over the process from the DREEAM partners, which have contributed to the definition of the key project results and their exploitation routes with the aim to maximise project impacts and future utilisation beyond the project lifetime.

3.1 Objectives

The overall objective of the exploitation activities is to: demonstrate the replicability of the project results and their application in real life cases; demonstrate their value for the target groups and end-users; bring them closer to market for future utilisation.

Based on the development of the project activities and on the results achieved, the initial objectives established in D6.1 for each of the DREEAM partners have been reviewed and updated (see Table 5). Individual conversations have been conducted to discuss the results achieved and the ambitions related to their further utilisation and commercialisation.



Partner Objective Link the district and city level renovation analysis tool with existing tools Chalmers for building stock analysis and assessment of renovation options Enhance their approach and solutions library for offerings to residential Exeleria building owners in preparation for renovation projects Enhance their approach and solutions library for offerings to building owners, social housing companies, cities, in particular for energy Savills management, renovation strategies, social evaluation and social engagement post-renovations Advance the self-inspection techniques for quality management during the RISE building renovation process Improve service offering on strategic investment planning and create interaction with potential clients in Europe. Exploit the results of cost-benefit **Bax & Company** analysis to improve its approach for defining, and financing renovation projects Use the results and monitoring data of the project for the planning of **Places for People** renovation of similar buildings and sites in their stock Use the result of the project for the planning of renovation of similar buildings and sites in their stock. Compare the DREEAM method with other methods **ATER Treviso** to establish the most efficient. Continue being a front-runner among other housing associations in Italy is the main objective Use the results and monitoring data of the project for the planning of 1892 renovation of similar building and sites in their stock Improve knowledge base for their members and expand their networks to Eurhonet housing providers Use the methodology and resulting evidence produced in business cases to NAPE improve its knowledge/expertise base on renovation strategies and to stimulate uptake in cities across Poland Improve their current value proposition of energy management products and Dexma services, demonstrate their value for BOs Develop new software and applications in the field of energy refurbishment; Strusoft interact with the BO's market in different countries to improve their products and services Offer advisory services to similar projects in the future. Enhance its SinCeo2 methodologies through learning from recent academic insights Improve service offerings and expand the network in Europe EnergyPro Clear demonstration of the cost-benefit and potential for their recommended **3C-Precon** technologies Exploit the results by enhancing its expertise base, and actively informing **Wuppertal Institute** and training its members

Table 5. DREEAM partners' exploitation objectives

3.2 Target groups and messages

The DREEAM project focuses on the deep renovation of the social and public housing sector whose single ownership structure enables large-scale replication and high energy-saving potential.

The stakeholder ecosystem related to renovation projects of institutional building owners is complex, involving both public and private entities as well as the wider public. However, exploitation activities should focus on the potential users of the project results and be tailored to the specific needs of each target group.



The following target groups have been identified as key potential users/adopters of the project results because of their power and influence on the decision-making process regarding energy efficiency renovation at a multi-building scale.

Building owners (BOs) (cities, housing associations) - Relevance: High

Building owners are considered the main beneficiaries of the project results as main responsible for the development and implementation of renovation projects at a multi-building scale. The results of DREEAM could be used for shaping future renovation programmes by supporting investment decisions in energy efficiency, selecting the optimal design and providing enhanced quality assurance and tenant engagement.

Engineering firms and contractors - Relevance: High

Engineering firms and contractors represent a highly relevant target group as they are responsible for the design and implementation of the renovation projects. This group has a financial incentive to adopt state-of-the-art and advanced DREEAM tools/approaches for the improvement of their service offering to the building owners. By using DREEAM results, engineering firms and contractors can develop optimal multi-building renovations, opening up new technological possibilities and generating additional social and economic benefits for the end users and, therefore, enhancing their own market opportunities.

Innovators - start-ups - Relevance: Medium

Mayor investments in energy efficiency will unlock opportunities for business development of a wide range of technologies and innovations targeting the optimisation of consumption and RES generation at multibuilding and district level. DREEAM tools and approach have included in their analysis of these innovative technologies, creating additional market opportunities for SMEs and start-ups. This target group will use the results of the DREEAM project in their product / service development process for delivering additional value to the end-users when integrating their technology in multi-building renovation projects.

Policy makers (social housing, energy efficiency and urban development area) – Relevance: Medium

Policymakers represent an important group to target as potential project initiators as they are often final decision makers of large-scale renovation programmes. In addition, policy makers have a strong influence on large-scale renovation projects through the establishment of favourable policies. By showing the value of large-scale energy efficiency programmes which deliver enhanced social and environmental benefits compared to the current renovation strategies, current ambitions would be upscaled and DREEAM results used during oth the planning and policy development processes.

Financial institutions – Relevance: Medium

The DREEAM approach demonstrates the relevance of investment and renovation planning at the portfolio level for achieving improved ROI as well as long-term sustainability ambitions. Results show that building owners looking at long-term financing can access better financing terms as well as different funding opportunities thanks to the scale considered. The green financing market is growing, and financial institutions are increasingly involved in sustainable projects, providing new financing instruments for investors. The DREEAM results can be used by 1) financing institutions for shaping their green financing programmes with deeper insights into the potential benefits of an integrated approach at scale 2) by their clients for developing energy efficiency renovation projects.

Research institutes, Universities – Relevance: Low

Research institutes and universities are potential users of DREEAM results in further research activities. No commercial interest is envisioned but only utilisation of the DREEAM approach and data for the development of innovation and research work related to integrated deep renovation at multi-building/district scale.

For each of the highly relevant target groups identified already in early stage development of the project, specific project activities were designed for implementing a tailored strategy to bring results to market (see section 5).

3.3 Approach to Intellectual Property Rights

The IPR management is strictly established by the Consortium Agreement which includes all details regarding ownership and transferability of results, access rights and confidentiality of information.



As described in section 8 of the Grant Agreement, results of the DREEAM project are owned by the Party that generates them. Results jointly generated by the collaboration of different partners will be owned and exploited as proposed in the table below as outlined in the Consortium Agreement.

DREEAM joint results (from CA)	IPR ownership	Proposed exploitation
Library of SOTA renovation options	Chalmers, Exeleria, 3C-Pre, RISE	Royalty-free access to all
DREEAM approach	Chalmers, Exeleria, Savills, RISE, BaxCo	Access on fair and reasonable conditions for partners
Pilot site design alternatives and feasibility analysis results	Consortium ownership	Royalty-free access to all
Energy performance data	Building owners	Royalty-free to use within consortium
DREEAM monitoring platform	OpenD, Sin2	Access on fair and reasonable conditions for partners
Benchmark and financial analysis	Building owners, Sinceo2, Savills, RISE	Royalty-free to use within consortium
Innovative technologies exploitation	BaxCo, Chalmers	Royalty-free to use within consortium

Table 6. IPR ownership and proposed exploitation from Consortium Agreement.

4 DREEAM exploitable results

Results - EC definition

Any tangible or intangible output of the action, such as data, knowledge and information whatever their form or nature, whether or not they can be protected.¹

4.1 The building owners decision-making journey for EE renovation

The DREEAM project supports building owners (e.g. municipalities, housing associations) in their decisions before, during and after renovation through an integrated approach addressing all the key aspects of large-scale energy efficiency projects: investment planning, renovation design, quality assurance, energy consumption monitoring, tenant engagement.

The DREEAM partners have closely collaborated in developing a comprehensive "toolkit" that helps building owners planning, designing, implementing and delivering multi-building renovation projects, upscaling their current ambitions up to NZEB standards.

Working alongside DREEAM Building Owners ATER Treviso, 1892 and Places for People, and collecting insights from the wider social housing sector through EURHONET and the replication programme allowed to develop tools that respond to actual BOs' needs and that can be applied across Europe. In-project testing have indeed facilitated the achievement of results (products and services) that are close or ready to market. Direct validation with the main user segment have ensured high commercialisation potential and future impact.

The following infographic outlines the products and services which have been identified as key exploitable results of the project and their position/role in the BO's decision-making journey.

¹ "Dissemination and exploitation in H2020". H2020 Coordinators' Day. European Commission





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4.1.1 Before renovation

DREEAM tools

Chalmers University, Exeleria, Strusoft (tool consortium)

The **DREEAM optimisation tool** is an energy calculation model combined with economic and environmental assessments which represents the core of the DREEAM approach. The tool calculates optimised refurbishment options towards multiple objectives (technical, economic, environmental) which support building owners in their decision-making process. Its application resulted to be highly relevant for early stage design and strategic planning. The software is based on building energy model according to EU standards.

The tool has been developed within the first 36 months of the project (WP1); a first functional prototype of the tool was proved with DREEAM building owners and a number of external housing associations and municipalities within the replication programme. Feedback from the building owners and from this in-project validation process revealed that the optimisation tool faced two main challenges for an effective implementation and valuable application: 1) **data availability** -a reliable database and documentation on the "pre-renovation status" of the buildings were still missing, 2) **data quality** -an approach to fill remaining data with reasonable effort still needed to be developed. To overcome these barriers, new software modules were designed to improve BO's data availability by generating the missing values identified in the interviews. The **DREEAM building inventory tool** was developed in the last year of the DREEAM project with the support and expertise of Strusoft and additional effort of Exeleria. The tool is built around a building inventory data base in which the available building information is stored and displayed (see Figure 4).



Figure 4. DREEAM building inventory tool arichitecture: modules, interactions and priorities

Together the two tools will help addressing real market demands and overcome data shortages. They will lead to accelerated, deeper and more cost-effective renovations in the EU and enhance the chance of producing an exploitable product for the EU building market.

The DREEAM consortium (Chalmers, Exeleria and Strusoft) have worked to further develop the "building inventory tool" with the aim of achieving a viable product by the end of the project with a reliable interaction with the "optimisation tool". The three partners have invested significant effort in the development of the business model canvas and exploring different commercialisation pathways for the tools. Internal meetings were carried out to assess partners' interests and to define potential future contribution in commercialisation. Workshops and interviews with BOs allowed to analyse potential income streams and consider different commercial specifications. For partners' individual exploitation plans see Section 6.



Portfolio investment planning service BaxCo

The investment scenario model was developed by Bax & Company in the framework of the DREEAM project to demonstrate the value of scaled investment planning for achieving building owners' long-term sustainability vision. Applying a "backcasting" approach, energy efficiency targets are considered the starting point for the development of investment strategies which realistically link the building owners' financial capacity with the renovation measures to be implemented. The current status of the building portfolio is assessed based on the crosscutting dataset built from operational, technical and financial data points at dwelling level. Building typologies (archetypes) and age are key tools for categorising the stock as well as a basis for the design of tailored renovation packages. The integration and visualisation of datasets in an interactive manner allows decision-makers to quickly design and assess alternative investment strategies. Having applied the service with >10 housing providers across Europe, it has helped to bring decision-making energy efficiency investment to board level. The service offers tailored (often upwards) renovation investments, due to better insight in (financial) feasibility. Results demonstrate the importance of data collection and management to BOs and inform on better financing conditions ('green' interest discounts) and national and EU grants unlocked by the strategies proposed. Link with these programmes is offered as last step of the process.



Figure 5. Data visualisation analysis of portfolio data

Social impact evaluation service and Social Engagement Program Savills

Savills sociologist Kathleen Zoonnekindt in collaboration with Corné Koppelaar developed a service combining the following two approaches elaborated within the DREEAM project in one unique exploitable Social Service for housing associations. The service promotes social impact evaluation and empowerment of housing companies' staff and tenants in deep-renovation projects.

- Social Evaluation Service: an innovative methodology of social evaluation before/after renovations to measure and assess the impact of the DREEAM approach on life quality and energy use of tenants. The methodology has been finalised including the last part of the analysis done with post-renovation interviews in May and June 2019.
- Social Engagement service called Green Neighbours (Co-design and Training): this methodology has the aim to elaborate solutions with tenants and local managers of housing companies. This approach is currently in its last stage of development with the analysis of positive results obtained from proactive consultations of tenants and staff.



4.1.2 During renovation

Quality assurance tool / process RISE

Within DREEAM, project partner RISE has developed a quality assurance system based on the experience gained within the SQUARE project and on the own systems for moisture-proof, airtight and energy efficient building (ByggaL, ByggaF, ByggaE). RISE aims to continue the development of the system and, in particular, to digitalise the tool into a software or app in collaboration with Strusoft. This would allow the automation of the quality review process during construction and renovation.

Training

Nape

Based on the experience and knowledge developed within the DREEAM project, NAPE will provide training for public and non-public residential buildings owners as well as for building managers on the scope of deep renovation of residential buildings and financing opportunities. The training scope will be franchised to the Energy Conservation Foundation (mother entity of NAPE), which is focusing on training in different areas related to sustainable energy use. NAPE will help attracting participants for this training from their network of building managers and related associations. Such training is not provided so far in Poland.

4.1.3 After renovation

Engagement tools for tenants

Savills

In WP4, Savills' sociologist Kathleen Zoonnekindt developed a set of engaging tools for housing companies staff and tenants on best use of energy after renovations, energy budget management and climate awareness, and developed the mixed service tailored for housing companies in collaboration with Corné Koppelaar (Savills). The engaging tools were co-designed with employees and tenants, and the last prototypes tested in May and June 2019 with tenants and employees of the pilot sites during the post-renovation interviews. Feedbacks were collected in order to further improve the tools and achieve a first complete prototype of the engagement service called Green Neighbours by the end of the project, in September 2019. Savills' sociologist has expressed her intention to further develop this set of tools in the market in collaboration with Corné Koppelaar, possibly creating a spin-off and in future EU-funded research and innovation activities (see Section 6 for additional information).

Both methodologies have been tested in the 3 pilot sites and already presented to several partners within the project and through the client base of Savills. The services have already been tested in a business environment and a new version of the business presentation including communication material is in preparation based on first feedback. Over the past 6 months of the project, Savills have focused on finalizing the social evaluation protocol, and the prototypes of tools to engage tenants and employees. Also, the assessment of a fair value for these services and their potential exploitation routes have been explored. First contacts with potential future users have been established for both 1) collecting feedback on the marketing approach and value of the services 2) creating good leads for first future application at a commercial level (see Section 6 for further information).

Innovative methodology to estimate the energy efficiency before / after renovations SinceO2, DEXMA

Over the course of the DREEAM project, SinceO2 has developed an innovative methodology to estimate the energy efficiency before and after renovations, by combining qualitative and quantitative data, in combination with additional inputs from the social and qualitative perspective provided by Savills. During the project, SinceO2 has improved the calculation of the baseline for the estimation of the energy savings which has been integrated in the DEXMA energy management platform. Therefore, energy consumption data are collected, energy savings estimated and visualised in the platform. Additional information regarding its expected future utilisation is reported in SinceO2's individual exploitation plan in section 6.



4.2 DREEAM building owners



DREEAM building owners Places for People, ATER Treviso and 1892 as well as most of EURHONET members represent the main user group for the future utilisation of the products and services developed within the project: building owners (e.g. housing associations, municipalities) with large portfolio of buildings and the ambition and need to deeply renovate.

DREEAM partners engaged with the BOs to understand the common challenges hindering the upscaling of deep renovation programmes, e.g. tenant awareness and acceptace, financing, technical optimisation. Building upon BO's requirements and inputs, partners have developed solutions addressing these common challenges and supporting the advancement of current practices towards large scale NZEB renovation projects. In project collaboration between SMEs, engineering firms, experts and "users" allowed to validate the tools and approaches with different decision-makers, further adapt and verify their value proposition, bringing them closer to market-entry.

At last, testing with a large number of BOs across Europe in the replication programme allowed to demonstrate the replicability of the approach and to tailor the value propositions to different countries.

Altogeter the toolkit enables building owners across Europe to achive the 75% energy demand reduction in socially and financially sustainable ways.

By implementing and testing these tools and services, the DREEAM BOs's decison-making process has been already influenced. They have indeed confirmed that will internally adopt and make use of some projects results in planning and implementing future deep renovations at multi-building level. E.g. 1892 is continuing their tenant engagement process, training "Energy Ambassadors"; Places for People have already replicated some elements of the DREEAM approach in other renovation projects and considered new multi-building innovative technologies; ATER Treviso is looking at investment planning and improved social engagement.

1892, Places for People and ATER Treviso will further contribute to the dissemination of the DREEAM results and impacts in several ways, e.g. 1892 has applied for the ERHIN Award and took 1st place with the Berlin pilot site Nettelbeckplatz; ATER Treviso is currently exploring the opportunity to be involved in a number of other European projects in EE renovation, building upon their experience and lessons learned in the DREEAM proje



5 Use of DREEAM results during project lifetime

The purpose of this document is to focus on the exploitation strategy of DREEAM project results beyond the project end and to assess the KPIs during the project duration.

5.1 Tools and Exploitation activities

In order to deliver DREEAM project results and innovations to market, the DREEAM project has developed a number of work streams focused on in-project validation of project results by the target groups as well as on the demonstration of their replicability and potential large-scale uptake by the end-users (building owners, contractors, innovators). For each key target group, a specific exploitation activity and strategy was devised with the objective to bring results closer to market for future utilisation and commercialisation after project end. A short description of these exploitation activities carried out during the project lifetime is outlined.

Training programme

Target group: Engineering firms and contractors

Local contractors and engineering firms represent the supply side of the energy efficiency renovation sector. The training programme has been designed to raise awareness among this target group about the benefits of the DREEAM integrated approach as well as on the practical implications for supporting their potential market uptake. Within this activity, NAPE organised 4 training sessions for the Municipality of Warsaw, property managers, the energy efficiency business sector and energy auditors in Poland.

EU multi-city replication programme

Target group: building owners (cities and housing associations – project promoters in the public and social housing sectors)

DREEAM's overall objective is to trigger large-scale renovations at NZEB standards in the social and public housing sector. To facilitate the market uptake of the DREEAM approach and tools, the project offers 15 building owners (BOs) support in the development of an integrated renovation programme including:

- Investment planning: The BO's ambitions are used as the starting point for the development of feasible and sustainable investment strategies at the beginning of the renovation decision-making process;
- Exploration of renovation solutions: analysis of different technology combinations to identify the optimal solution with higher economic, social and environmental benefits at the multi-building level.

Piloting the DREEAM results with 15 different decision-makers demonstrates replicability and creates opportunities for internal adoption of the approach proposed and application to their entire building stock. This fosters the use of innovative technologies, which creates the conditions needed for a bigger and better market offering. Finally, through this programme partners have the possibility to engage with a large number of building owners and create those "good leads" that are relevant for future exploitation of the project results.

Innovative technologies exploitation

Target group: innovators (SMEs and start-ups)

ICT energy management systems and other innovative technologies for heat or electricity storage, smart grids and smart homes allow for better exploitation of the decentralised generation with enhanced energy savings at the multi-building level. Numerous innovators have been engaged and analysed by Chalmers and Bax & Company aiming at identifying those technologies and services with the highest potential for enabling NZEB renovations at multi-building scale. A number of these technologies have been included in the portfolio of the DREEAM tool, creating new opportunities for business development. For 10 innovative SMEs, an exploitation plan for entering international markets has been developed.

In this context, two companies were asked to develop a feasibility study and business case on the implementation of a smart energy management platform at the Padiham site to enhance PfP's return on investment.

Workshops with decision-makers

Target group: policy makers (municipalities and local authorities)

Partners have organised a number of workshops with target groups for raising awareness of the DREEAM results and approach and their related benefits (see Table 7 for some examples). More than 20 policymakers were already directly involved in these tailored events with the objective to demonstrate the value of the project results and facilitate their potential adoption in municipalities' practices.

Workshop	Country	DREEAM responsible partners	Target group	Number of policymakers involved
2016	Poland	NAPE, Exeleria, BaxCo Municipalities		6
			Municipalities,	
2016	Italy	EURHONET, Chalmers,	housing	>5
			associations	
2017	Spain	BaxCo, Exeleria	Municipalities	3
2019	Germany	BaxCo, 1892	BOs, government	2
2010			agency	5
			Municipalities,	
2018	Latvia	BaxCo, Exeleria	housing	3
			associations	
			Municipalities,	
2019	Italy	ATER Treviso, et al.	regional	15
			governments, BOs	

Table 7. DREEAM workshops with decision-makers: examples

5.2 Exploitation KPIs and impact

Supported by / engaging with network organisations such as Eurhonet (39), EFL (30), Housing Europe (the largest networks at European level, whose combined membership cover more than 60% of social housing organisations in Europe), NAPE and IWO.

Exploitation activity	KPI definition	Target	Impact Achieved
Replication programme	Replication programme BOs	15	15
Training programme	Local workers at pilot site	10	10
Innovators and start uns	Innovators analysed	10 per year	>50
innovators and start-ups	SMEs exploitation plan	10	10
Workshops	Number of policymakers engaged	15	>100

Table 8. DREEAM exploitation targets and results.

6 Exploitation strategy beyond project lifetime

This section has the aim to outline and describe the individual exploitation strategies of those partners that have developed a product or service within the DREEAM project and who have high interst in its/their exploitation beyond project lifetime.

As can be noticed, some of the results will be commercialised while others adopted internally to improve current value propositions or used for future research activities. Additionally, by project end, some of these tools and services will be ready to market while others will need futher development and improvements before reaching the required maturity.

Additional information can be found in the individual strategies reported below.

Chalmers University

Exploitable project result

- DREEAM optimisation tool
- DREEAM building inventory tool

Target market

Real estate companies with a large building stock, primarily residential typologies.

The building inventory tool is developed to be used by administrative personal with a task to overview the building stock, facility management and others who knows about and collect data of the buildings.

To start with, the countries of key commercial interests will be those where good connections with housing companies already exist (e.g. UK and Germany). Other markets will be explored when the product has been developed further based on the collaboration with first customers.

Route to exploitation

The Building Inventory Tool whose development was led by Chalmers (WP Lead 1, York Ostermeyer) has currently achieved a TRL 7. The tool will started to be used by a strategic and targeted selection of customers/clients/users. After confirmation and verification by those initial targeted clients accelerated "productification" will be performed. This includes marketing, landing pages, documentation, manuals, show cases, reference clients.

Due to the lack of time and the change of stakeholders in StruSoft, the DREEAM tool consortium could not complete the development of the business model and establish the commercial agreements. Therefore, partners have committed to work on the matter for the next 6 months by signing a MOU (Memorandum of Understanding).

At the moment Chalmers is working on getting the tool tested and further developed in collaboration with the first alpha client. While discussions with 1892 and other housing companies are scheduled, Holger Wallbaum will present the tools at Savills headquarters on the 30th September in London. Furthermore a discussion has been started with the municipality "Drom Ha Sharon" in Israel that showed interest to take advantage of the DREEAM approach and tools. Exelerias/Everis mother company NTT Facilities Inc. is looking into the business development opportunities based on a development project in Australia. York Ostermeyer will present the DREEAM tools to NTT in Munich on September 27th.

Chalmers optimisation tool will be connected as a module to the Building Inventory tool once the latter has been tested and developed with an alpha client.

IPR and ownership of the result

Commercial contracts will be established in the next 6 months. Partners have committed to work on the commercial agreements and newco structure by signing a MOU (by the end of the project).

Outreach to the target groups

Presentation to Savills scheduled; access to other potential customers (currently in Germany) being worked on.





Strusoft

StruSoft

Exploitable project result

- DREEAM building inventory tool
- DREEAM optimisation tool
- Quality Assurance Tool (See RISE exploitation plan)

Target market and users

Real estate companies with a large building stock, primarily residential typologies.

The building inventory tool is developed to be used by administrative personel with a task to overview the building stock, facility management and others who knows about and collect data of the buildings.

Route to exploitation

The Building Inventory Tool has currently achieved a TRL 7. The tool will started to be used by a strategic and targeted selection of customers/clients/users. After confirmation and verification by those initial targeted clients accelerated "productification" will be performed. This includes marketing, landing pages, documentation, manuals, show cases, reference clients.

During the Project, Strusoft has involved their own sales team to look into the commercialisation, business model and action plan. Due to a recent change in the company structure there are some restrictions on concrete decisions. However, there is MoU that should be agreed and signed for the Tool consortium, which gives some yet to be verified details on the obligations of the partners.

By signing the MOU, each partner have indeed committed to: 1) test the tool within pilot customers to get real market feedback and be able to establish the business models hypothesis 2) present the tool to potential customers and get feeedbacks 3) Continue the tool development accordingly.

IPR measures created

The building inventory tool uses the StruSoft's energy simulation module. This module is protected by StruSoft IP and the usage can be licensed. However, in a Tool consortium it will be used without initial costs. Data processing and advanced visualisation from StruSofts work in the project now belongs to a DREEAM Tool consortium.

Commercial contracts between Exeleria, Strusoft and Chalmers will be developed and established in the next 6 months. Partners have committed to work on the commercial agreements and newco structure by signing a MOU (by the end of the project).

Outreach to the target groups

At StruSoft a sales team are working on customer acquisition both through existing customer network and new channels.

Exeleria

 Θ exeleria

Exploitable project result

- 1. DREEAM optimisation tool
- 2. DREEAM building inventory tool

Target market and users

Key potential users / customers in the professional and non-professional renovation market are:

- Housing associations
- Building stock managers
- Private owners
- Renovation solutions manufacturers (HVAC, insulation, windows, control and domotics, etc)
- Policy makers
- Other companies interested in ads for the tool users

The key commercial areas for Exeleria are those markets where they have already a strong presence and network such as Spain, Italy, Portugal. In the future, Exeleria also looks at the expansion in South America.

Route to exploitation

Exeleria, Strusoft and Chalmers are currently working to develop their business plans related to the commercialisation of the DREEAM tools (DREEAM optimisation tool and DREEAM building inventory tool) and analyse the size of the market that is actually reachable with the tools. Due to the lack of time and the change of stakeholders in StruSoft, the DREEAM tool consortium could not complete the development of the business model and establish the commercial agreements. Therefore, partners have committed to work on the matter for the next 6 months by signing a MOU.

Outreach to target groups

Over the course of the project, Exeleria had the opportunity to get in contact with a number of building owners during the replication programme and through the network of DREEAM partners, expanding their pool of potential customers to other European countries. The non-professional market will be engaged in marketing campaigns.

IPR measures created

Commercial contracts will be established in the next 6 monhts. Partners have committed to work on the commercial agreements and newco structure by signing a MOU (by the end of the project).

Business model and value proposition

The following options are being considered and analysed for the DREEAM optimisation tool:

- 1. New product integrated into existing services: Exeleria intends to commercialise the DREEAM tool as part of their consultancy and engineering services for design and planning of energy efficiency renovations. A tailored value proposition and pricing is being developed for each of the target countries according to the competitors and users' requirements.
- 2. New product being commercialised through a licensing model.
- 3. New product and new service for the optimal design of renovation options.

By signing the MOU, each partner have committed to: 1) test the tools within pilot customers to get real market feedback and be able to establish the business models hypothesis 2) present the tool to potential customers and get feeedbacks.

Periodic meetings have been scheduled and organised to shared update on the work progress and regularly plan the next steps.



SWOT	HELPFUL	HARMFUL			
INTERNAL	Strengths Few similar products and DT has unique features like multicriteria optimization EC funding We will use SOTA technoligies and machine learning algorithms Renovation market is a high volume market SW tool so easy to scale up Everis & NTT are well known brands We hava aliances with BREEAM, GBC and WELL Everis has several marketing channels that need to be adapted Regional spread and no conflits regarding comercial areas	Weakenesses Few potential costumers contacted and tested Residental sector is new for everis. No significant network We have to deal with legal issues and ways to cooperate between partners			
EXTERNAL	Opportunities We foresee new services for our costumers coming from DREEAM TOOL Tool easily adaptable for comertial buildings Once enough custumers e-comerce platform for suppliers	Threats Few but some competitors Resindential sector reluctant to changes and low profesional profiles Lack of data in the residential sector			
Figure 6. SWOT analysis performed by Exeleria on DREEAM optimisation tool					



The following option is being considered and analysed: consultancy services including Social evaluation service and Social engagement service. A tailored proposition including a pricing model is being developed and ready for internal decision making by September 2019.

IPR and ownership of the result

Savills, their sociologist Kathleen Zoonnekindt and business advisor Corné Koppelaar only.



RISE

Exploitable project result

• Quality Assurance Tool

Target market

- Building owners
- Engineering firms
- Contractors

Route to exploitation (in exploratory phase)

RISE aims to establish a collaboration with Strusoft to develop a digital and automated version of their Quality Assurance system. For doing so, Strusoft and RISE are currently exploring different funding opportunities and R&D programmes that would finance the future development of the software. This version could be developed as an app to be used by workers and building owners to control and check the quality of the interventions. The further step would be the integration of this quality assurance module into a BIM system. A call within the Swedish Program on Smart Built Environment about digitalisation of the building sector has been identified: it will open in November 2019 and RISE and StruSoft will team up to write an application to get funding for the development of the quality assessment tool.

IPR and ownership of the result

The product would be commercialised by Strusoft and the IP would be of RISE. Commercial agreements and specifications will be explored in the future.

SinceO2

Exploitable project result

• Innovative methodology to estimate the energy efficiency before / after renovations

Target market

- Businesses
- Building owners

Route to exploitation

SinCeo2 will adopt the methodology developed for the energy efficiency evaluation before / after renovations in their current services targeting the verification of EE projects of BOs and businesses, and allowing for real time tracking of the energy savings. The energy management services are provided in combination with a platform that monitors the energy consumption and provides users access to user-friendly statistics and data facilitating the improvement of their behaviour and understanding of the EE value.

SinceO2 aims to continue the collaboration with DEXMA as platform provider beyond the DREEAM project, using the DEXMA energy management platform for the provision of their consulting services. The SinceO2 baseline calculation has been indeed already integrated in the platform.

Outreach to target groups

To reach potential users, SinCeo2 is performing presentations of the methodology to housing companies, existing clients and building owners in order to grow their network and test the value/interest of potential clients in the service.









Bax & Company

Exploitable project result

• <u>Portfolio investment planning service</u>: Data-driven service that facilitates long-term sustainable real estate investment planning. This service combines data analysis and renovation insights in order to facilitate



decision-making between key decision makers in the BO's executive board. The idea is to demonstrate long-term investment planning outcomes. The delivery of the service requires a combination of meetings onsite with housing associations' experts / decision-makers and inhouse process of the data.

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Route to exploitation & action plan

Target market and users: building owners (housing associations, municipalities, etc.) and sustainability policymakers to assess the viability of policy impact scenarios.

Market positioning: Taking into account the European Commission 2030 goals of energy efficiency and national policy targets, sustainability will start to play a strategic part of BO's long-term business planning. The service developed and offered by BaxCo will support building owners in their decision-making process by providing:

- First rough quantification of the costs and benefits of sustainability

- Assessment of data availability and quality
- Investment Scenario development & validation Data visualisation

These key elements have been developed to respond to BO's current challenges and demands.

Based on the market analysis carried out during the DREEAM project, BaxCo will initially focus on the specific market of BOs in the North-West Europe area. The analysis could be used to support the definition of the built environment section of Urban Sustainability Action Plans.

<u>Business model</u>: consultancy services to housing providers, cities and policymakers Over the course of the project, the portfolio investment planning service has been further improved and adjusted to each BO's requirements thanks to its validation during the replication programme (WP5); a detailed process description was outlined as well as communication material to attract BOs' interest. Feedback from the candidates was used to advance the first version and achieve a ready-to-market service to be commercialised. BaxCo will integrate the investment planning tool in its current portfolio of commercial services.

NAPE

Exploitable project result

• Training



Technical, Energy performance, Financing review of residential building

it is currently subject of offering to the districts of the City of Warsaw, which are managing the municipal residential building stock and to non-public building managers interested in the new financing offer for deep renovation of residential buildings. Such methodology is not applied so far in Poland.



Target market

Public and non-public residential buildings

Business plan

Business model: consultancy and engineering services to building owners

NAPE aims to sell the commercial products and services built upon DREEAM knowledge and approach in Eastern Europe, in particular in Poland and Ukraine.

NAPE is interested in continuing to offer the services provided in the replication programme by setting up a commercial agreement with BaxCo and Exeleria. Thanks to the collaboration in the replication programme, NAPE, Exeleria and BaxCo could indeed jointly provide and elaborate long-term renovation strategies of municipal housing stock in Eastern Europe. The renovation strategies developed within DREEAM by BaxCo and NAPE for Warsaw and Lublin are considered as pilots.

NAPE concluded co-operation agreement with the Polish PROMAR Ltd. for bilateral promotion of products owned by NAPE (TEFR) and PROMAR (IMPERIUS) as they are complementary and are commonly bringing added value for municipal clients. Such offer is the first one on the market.

DEXMA

Exploitation interest: new business applications in the field of residential buildings of DEXMA Energy

Exploitation project result

Management tool: these business applications will use existing DEXMA energy management platform, and will be jointly exploited with DEXMA partners (like SinceO2). Results from DREEAM pilots, as well as the business contacts created during the project (during dissemination events as well as with DREEAM BOs), will be used as a starting point for the potential commercial exploitation of these new business applications.





7 Annex I: General rules & requirements

Contractual Obligations

Project communication rules are established in article 38 of the Grant Agreement (Promoting the Action, Visibility of EU Funding), with further requirements set out in article 27 (Protection of Results – Visibility of Funding) and Article 28 (Exploitation of Results) and article 29 (Obligation to disseminate results).

In all external communication, dissemination and exploitation, information should be included on the EU funding received. This consists of a text and use of the EU emblem. The text to be used at all communication, dissemination and exploitation is:

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement no 680511. This document does not represent the opinion of the European Union, and the European Union is not responsible for any use that might be made of its content." The EU Emblem. High-resolution emblems can be found here:

http://europa.eu/about-eu/basic-information/symbols/flag/



For more information about the rules of the European Commission, including specific examples, can be found at the following link:

https://ec.europa.eu/easme/sites/easme-site/files/documents/6. Communication-Alexandra Ruete.pdf

Visual identity

European projects are obliged to meet certain requirements when communicating, disseminating and exploiting anything related to the project. It is important that all outcomes are consistent and in line with the agreed visual identity.

To conform and coordinate all images of the project, it is important to provide the target audiences with a univocal and easily recognizable image of the project. In addition, it allows communicating any initiative, activity and message in a uniform way.

The project logo represents the project identity and it must appear in all documents together with institutional logos. The logo is distinctively used on the project website, leaflet and will also be used accordingly on all other dissemination material which will be produced in the context of the project.

The logo is available in the shared Dropbox folder in .jpg format (different quality versions available):

• Dropbox/DREEAM Project Partners/3 Templates

Similarly, templates for reports and deliverables (.docx) and presentations (.pptx) need to use a common template. Those are saved in the shared Dropbox folder:

• Dropbox/DREEAM Project Partners/3_Templates



8 Annex II: List of external events and conferences

Event	Date	Target audience	Partner	Event type
NAPE workshop	Apr-16	building owners	NAPE	Workshop
FeB PP Impact Workshop	Apr-16	nolicymakers research	Chalmers	Workshop
3rd Congress of Nearly Zero	110	building owners.	Chaimers	Workshop
Energy Buildings	Jun-16	policymakers	Exeleria	Conference
16th International Multidisciplinary				
Scientific GeoConference	Jun-16	research	Chalmers	Conference
BLIII D LIPON Londors' Summit	Sop 16	general public,	Chalmers,	Summit
	Sep-10		GL	Summe
Ecobalance Vinneya conference: Spelplan	Oct-16	general public	Chalmers	Conference
Europa	Oct-16	policymakers	Chalmers	Conference
Training Workshop - Sustainable	000 10	ponegmakers	Chaimers	Comerence
Construction Topic Group meeting	Oct-16	building owners	EURHONET	Workshop
Electronic and web-based tools for				
energy efficiency	Oct-16	engineering firms, research	Chalmers	Conference
Climate improvments – Good	Dec 16	Municipal housing	DICE	Workshop
Energy Efficiency Finance Market	Dec-10	companies	NISE	workshop
Place conference	Jan-17	financial institutions	Energy Pro	Conference
Sustainable construction				
(EURHONET topic group meeting)	Feb-17	building owners	EURHONET	Workshop
UN Global Festival Of Ideas for			a	
Sustainable development	Mar-17	policymakers	Savills	Conference
WSBE 2017	Jun-17	policymakers	Chalmers	Conference
Sustainable building (EURHONET	T 17	1. 11.11	FUDUONET	XX7 al al an
group meeting)	Jun-1/	building owners	EUKHONEI	worksnop
Social Housing Festival	Jun-17	building owners	Chalmers, Savills	Conference
Eurhonet General Assembly 2017	Jul-17	building owners	EURHONET	Conference
ECEEE	Jun-17	research	Savills	Conference
		Municipal housing		
Renovate for reduced energy use	Aug-17	companies	RISE	Workshop
CISBAT 2017	Sep-17	research	Chalmers	Conference
EURHONET conference: Housing			Bax & Company,	
the future - stronger together!	Oct-17	building owners	Chalmers, ATER	Conference
RISE conference: A better	Oct-17	innovators	Chalmers	Conference
Sustainable Construction Topic	001-17	hinovators	Chaimers	Conference
Group meeting	Feb-18	building owners	EURHONET	Working group
Forum Thermo-modernisation 2018				
"Thermo-modernisation in the fight				~ .
against smog"	Apr-18	Policy- makers	NAPE	Conference
EFL Seminar on Energy Efficient Retrofitting of Buildings	$\Delta pr_{-}18$	nolicymakers	Bax & Company,	Workshop
TRUED 10	Api-10		1092	Workshop
1ENER18	Jun-18	Engineering firms	SinceO2	Conference
C4E Forum - Central and Fastern		building owners		
Europe Energy Efficiency Forum	Jun-18	innovators, general public	NAPE	Conference
Sustainable development,				-
architecture, construction,		Building owners,		
engineering and environmental	T 10	engineering firms, general	MADE	
protection, innovative energy	Jun-18	public	NAPE	Conterence



efficiency technologies, use of renewable energy sources 2018				
Conferenced				
Sustainable Construction Topic Group meeting	Jun-18	building owners	EURHONET	Working group
Sustainable Construction Topic	vuii 10		Denaron Di	the online group
Group meeting	Sep-18	building owners	EURHONET	Working group
ISEC Conference	Oct-18	engineering firms, research	Bax & Company	Conference
Eurhonet General Assembly 2018	Oct-18	building owners	EURHONET	Working group
VIII Forum For Real Estate Management	Oct-18	engineering firms	NAPE	Conference
International meeting with regards Building Market stock in Europe	Oct-18	Engineering firms, building owners, real estate managers	NAPE	Workshop
CONAMA 2018	Nov-18	policymakers research	SinCeO2	Conference
Housing for All - Affordable	100-10	poncymakers, research	SinceO2	Conference
Housing in Growing Cities		policymakers, building		
Conference	Dec-18	owners	EURHONET	Conference
TIMEPAC2019	Jan-19	research	Bax & Company	Conference
Sustainable Construction Topic Group meeting + DREEAM				
Workshop and Study Visit	Feb-19	building owners	EURHONET	Working group
International LIGHT Fair	Mar-19	Researchers, energineering firms and contractors, innovators, general public	NAPE	Other
SBE19	May-19	engineering firms, research	Chalmers	Conference
Workshop in Treviso	May-19	engineering firms	ATE. Exeleria	Workshop
Sustainable Construction Topic		6 6 6	,	
Group meeting + DREEAM				
Workshop and Study Visit	May-19	building owners	EURHONET	Working group
EXPERT LAB 4.0	Jun-19	general public, engineering firms	Exeleria	Conference
Responsible Housing Awards Ceremony	Jun-19	building owners, policymakers, general public	1892	Other (award cermony)
ISHF2019	Jun-19	building owners, research, innovators	Bax & Company	Workshop
Components for reduced climat	A 10	C	DICE	XX71 . 1
impact	Aug-19	Component manufacturer	KISE	workshop
EESAP10	Sep-19		SinceO2	Conference
STUNNING project final event	Sep-19	policymakers	Bax & Company	Workshop
Future Technologies Conference	Oct-19	research	Chalmers	Conference



9 Annex III: List of publications

Title	Dublication	Tring	Dete
DREFAM Project: metodologías	Fublication	Туре	Date
estandarizadas para la rehabilitación con			
criterios EECN de edificios residenciales	Construible	article	Nov-16
	16th International Multidisciplinary		
Feasibility of Solar Energy in South Sweden:	Scientific GeoConference SGEM		
Artificial Neural Network Modeling.	2016, Vienna	academic paper	Nov-16
Demonstrating an integrated Renovation			
approach for Energy Efficiency At the Multi-			
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