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D6.10 Report on training activities

WP6

Lead Partner: FENIX TNT

Dissemination Level: Public

Deliverable due date: M56 Actual submission date: M57

Deliverable Version: V1

Project Acronym	EENSULATE
Project Title	Development of innovative lightweight and highly insulating energy efficient components and associated enabling materials for cost-effective retrofitting and new construction of curtain wall facades
Grant Agreement n°	723868
Funding Scheme	Innovation Action
Call	H2020- EEB-2016
Topic	EEB-01-2016 Highly efficient insulation materials with improved properties
Starting Date	1st August 2016
Duration	58 Months

Executive Summary

The present document deliverable D6.10 “Report on training activities” describes a set of training activities performed within the framework of the EENSULATE project and its results. The report D6.10 is delivered in the context of the task T6.4 “Training activities” within the WP6 “Exploitation, Dissemination and Communication”. The objective of EENSULATE project is to develop innovative lightweight and highly insulating energy efficient components and associated enabling materials for cost-effective retrofitting and new construction of curtain wall facades.

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Abbreviations and Acronyms

D	Deliverable
M	Month
ESCO	Energy Service Company
WP	Work Package
VIG	Vacuum Insulated Glass

1 Introduction

The idea behind the EENSULATE project to bring existing curtain wall buildings to nearly zero energy standards is a result of challenge Europe is currently facing. Thousands of buildings in Europe were constructed in the recent decades using curtain walls. However, the curtain wall technology of this time is regarded as substandard today and contribute to energy inefficiency of said buildings. Consequently, in order to improve energy consumption in the existing curtain wall building stock, retrofitting solutions must be developed and implemented. The need for energy efficient curtain wall solutions is furthermore more enhanced by the fact that curtain wall technology has recently moved from office buildings to glazed residential towers.

As the EENSULATE project has developed several new technologies, tools and practices, training activities were important part of the WP6 towards the end of the EENSULATE project. These activities exploited processes and tools developed in the EENSULATE Project and further elaborated them to be available to a wider community of professionals, relevant for the production, design, application, installation and disassembly.

2 Target audience and themes of interest

The main goal of the training activities for the EENSULATE project was to train professionals and stakeholders involved in the insulation materials, energy efficiency and the construction sector in general as well as to disseminate the EENSULATE Best Practice.

In order to define the content of training materials and guidelines, different stakeholders have been identified together with their themes of interest. The target audience was identified as follows:

- Educators (academic staff, researchers, higher education, public administration in charge of energy and building, etc.).
- Technical Experts (architects, engineers, designers, construction industry, installers, etc.).
- Decision Makers (Investors and developers, local and regional authorities, etc.).
- Service providers (thermo-technical companies, construction companies, ESCOs).
- Standardization/certification bodies (technical chambers, National standard organizations).
- End users.

The themes of interest were identified as follows:

- EENSULATE technology development and its benefits.
- EENSULATE real-scale demonstration.
- Retrofit process application at the individual demonstration site interventions
- Final state of the demonstration interventions
- EENSULATE Best practice and recommendations.

3 Training activities performed

According to the themes of interests of each target audience group, different training materials have been prepared:

- Training manual – "EENSULATE Best Practice" booklet
- Training videos – Demonstration site installation process and finalisation
- Public webinar organization and the webinar recording
- EENSULATE installation guidelines
- Project website implementation

3.1 Training manual – EENSULATE Best Practices booklet

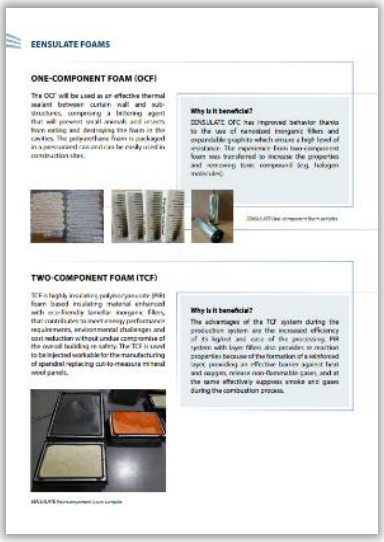
A 16 pages long booklet "BEST PRACTICE BOKLET" was created by FENIX in cooperation with technical partners. The Booklet is available on the EENSULATE project website and was intended for printing and distribution on physical events. The latter is not possible at the moment due to the coronavirus restrictions and the fact that physical events are being cancelled. Therefore, the EENSULATE project is putting more emphasis on the online dissemination of the material, social media profiles, press releases, newsletter, etc. The booklet is available on the project website, in the section "Training" (http://www.eensulate.eu/documents/training).

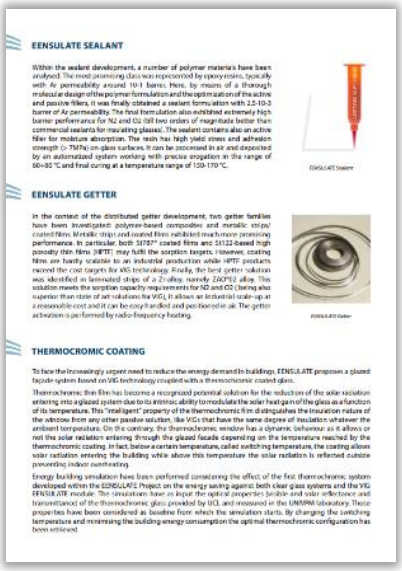
The main topics covered in the booklet:

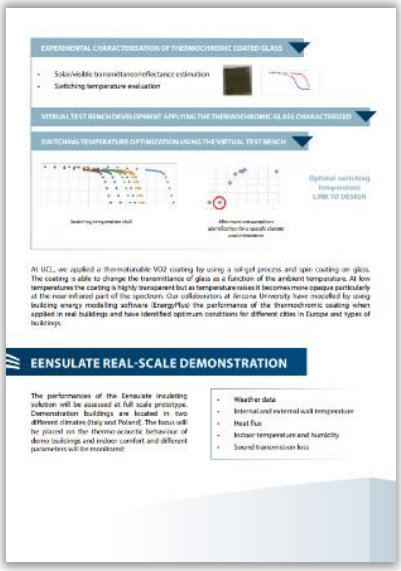
- EENSULATE main technologies (Vacuum Insulated Glass – VIG), Foam, Sealant, Getter, Thermochromic coating.
- EENSULATE real-scale demonstration.
- Retrofit process application at the individual demonstration sites.


EENSULATE
HIGH END MATERIAL FOR MODERN BUILDINGS
BEST PRACTICES BOOKLET
PROJECT PARTNERS

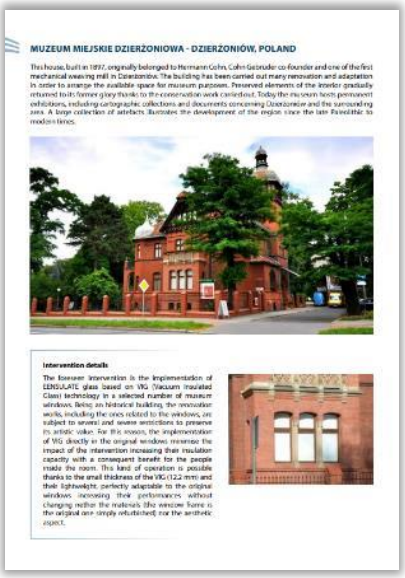

MAIN TECHNOLOGIES
VACUUM INSULATED GLASS (VIG)


EENSULATE FOAMS
ONE-COMPONENT FOAM (OCF)
TWO-COMPONENT FOAM (TCF)


EENSULATE SEALANT
EENSULATE GETTER
THERMOCROMIC COATING


EXPERIMENTAL CHARACTERISATION OF THERMOCHROMIC COATED GLASS
EENSULATE REAL-SCALE DEMONSTRATION


POLISH SCHOOL - DZIERŻONIÓW, POLAND


MUZEUM MIEJSKIE DZIERŻONIOWA - DZIERŻONIÓW, POLAND


PUBLIC LIBRARY SAN GIOVANNI - PESARO, ITALY


RETROFIT PROCESS APPLICATION AT THE INDIVIDUAL DEMONSTRATION SITES
POLISH SCHOOL - DZIERŻONIÓW, POLAND

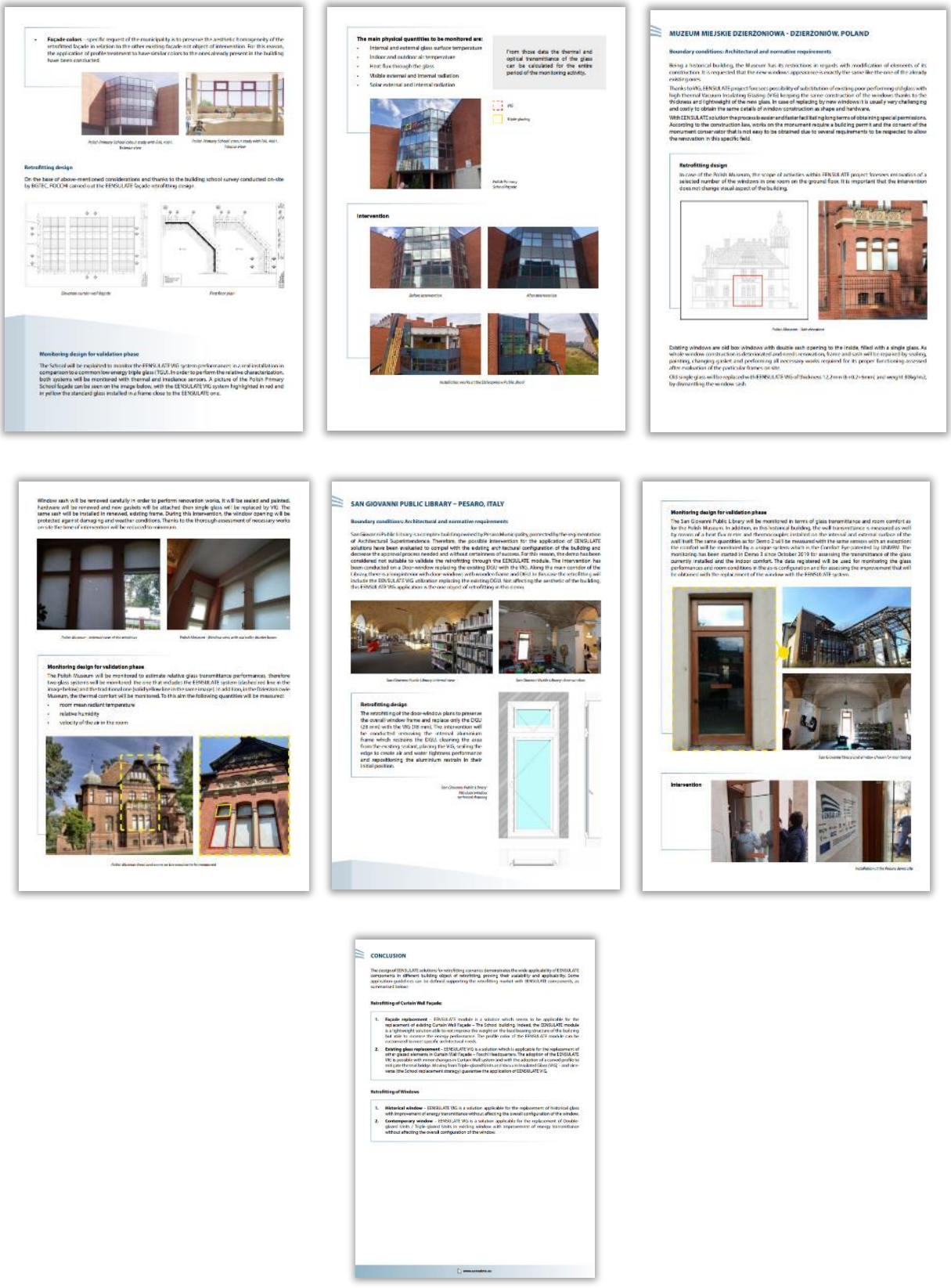


Figure 1 Best Practice Booklet

3.2 Training videos

Three training videos were developed for the EENSULATE project. They are related to installation of the EENSULATE facade modules / windows at the demonstration sites. All EENSULATE project videos are stored in the project website (http://www.eensulate.eu/videos) as well as on the YouTube channel (https://www.youtube.com/channel/UCIC6QSaaOrtw3EGRT0cxQ-g)

Installation of the EENSULATE façade module – Public school, Dzierzoniow

The video focuses on the installation process of the EENSULATE façade module on the demonstration site in Dzierzoniow – the Public school.

Figure 2 Training video 1: Installation of the EENUSLATE facade module

Final state of the EENSULATE façade module – Public school, Dzierzoniow

The video showcases the final state of the EENSULATE façade module at the demonstration site in Dzierzoniow – the Public school.

Figure 3 Training video 2: Public School Dzierzoniow

Final state of the EENSULATE VIG demo – Museum, Dzierzoniow

The video showcases the final state of the EENSULATE VIG at the demonstration site in Dzierzoniow – the Muzeum.

Figure 4 Training video 3: Muzeum Dzierzoniow

3.3 Public webinar organization and recording

Webinar session format and recording

In M55, the EENSULATE project organized a public webinar focused on the project results and progress along with the themes and interests of the target groups identified (see chapter 2 of this Deliverable), such as: EENSULATE main technologies introduction, the development process, design, and its benefits; EENSULATE real-scale demonstration, etc… The format of the webinar was a moderated panel discussion with three speakers and a moderator. The event was organized in cooperation with the Build Up portal in order to attract bigger audience, to have a strong media partner and to add credibility to the event. 50 attendees were present at the event. The session was highly interactive, there were 2 polls for the audience to participate in and the video from the installation of the EENSULATE façade module was played in real time. There was also a Q & A session, where the audience raised various questions and the EENSULATE experts answered them in detail.

The whole webinar was recorded and shared on the project website (http://www.eensulate.eu/webinar) and YouTube channel (https://www.youtube.com/watch?v=cg8TRDwd6mE&t=1500s) for further training and educational purposes.

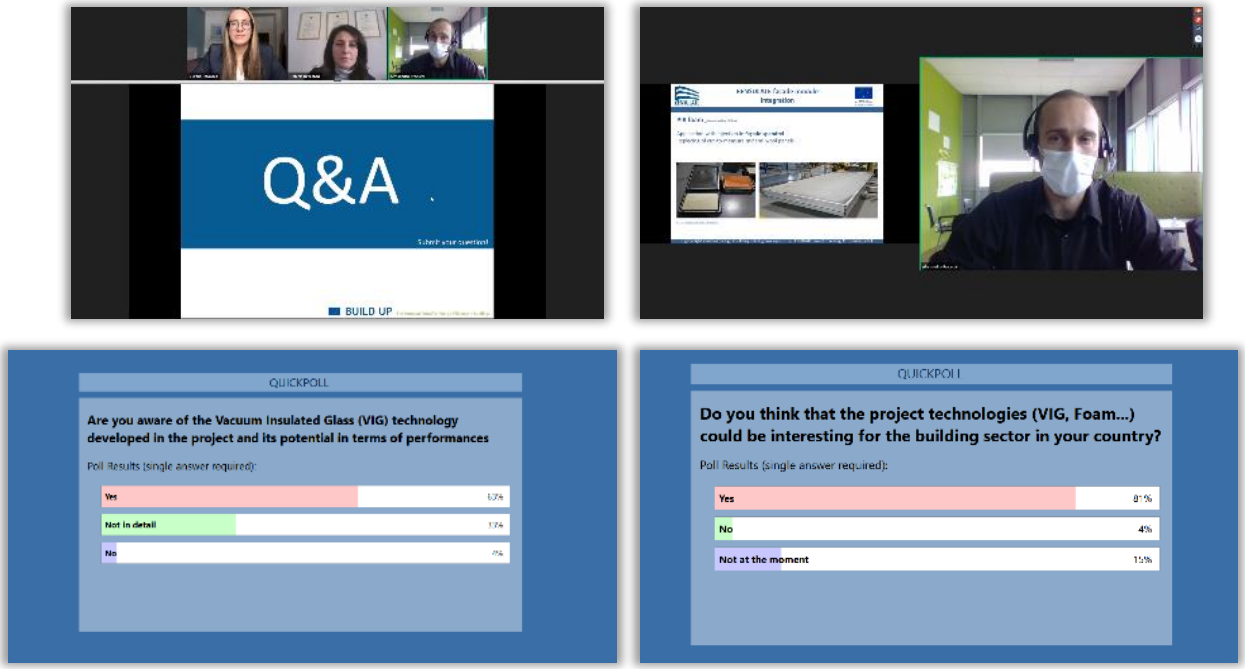


Figure 5 EENSULATE Webinar

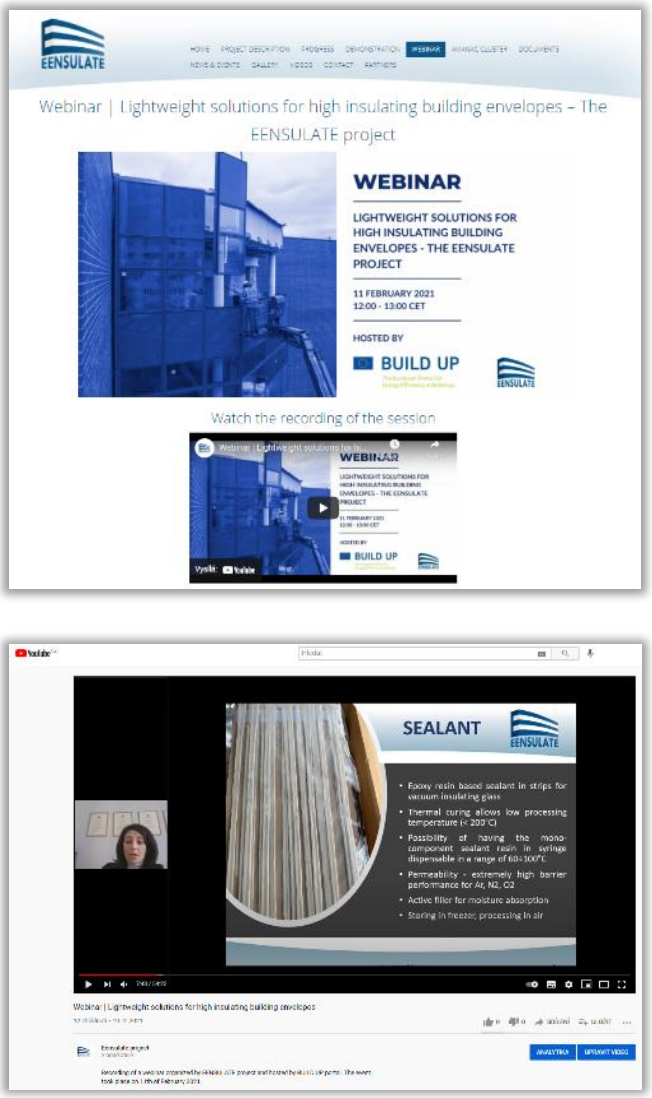


Figure 6 Webinar recording on EENSULATE website and YouTube channel

Further details regarding the dissemination campaign and the content of the Webinar can be found in D6.8 “Policy workshops and awareness campaign”.

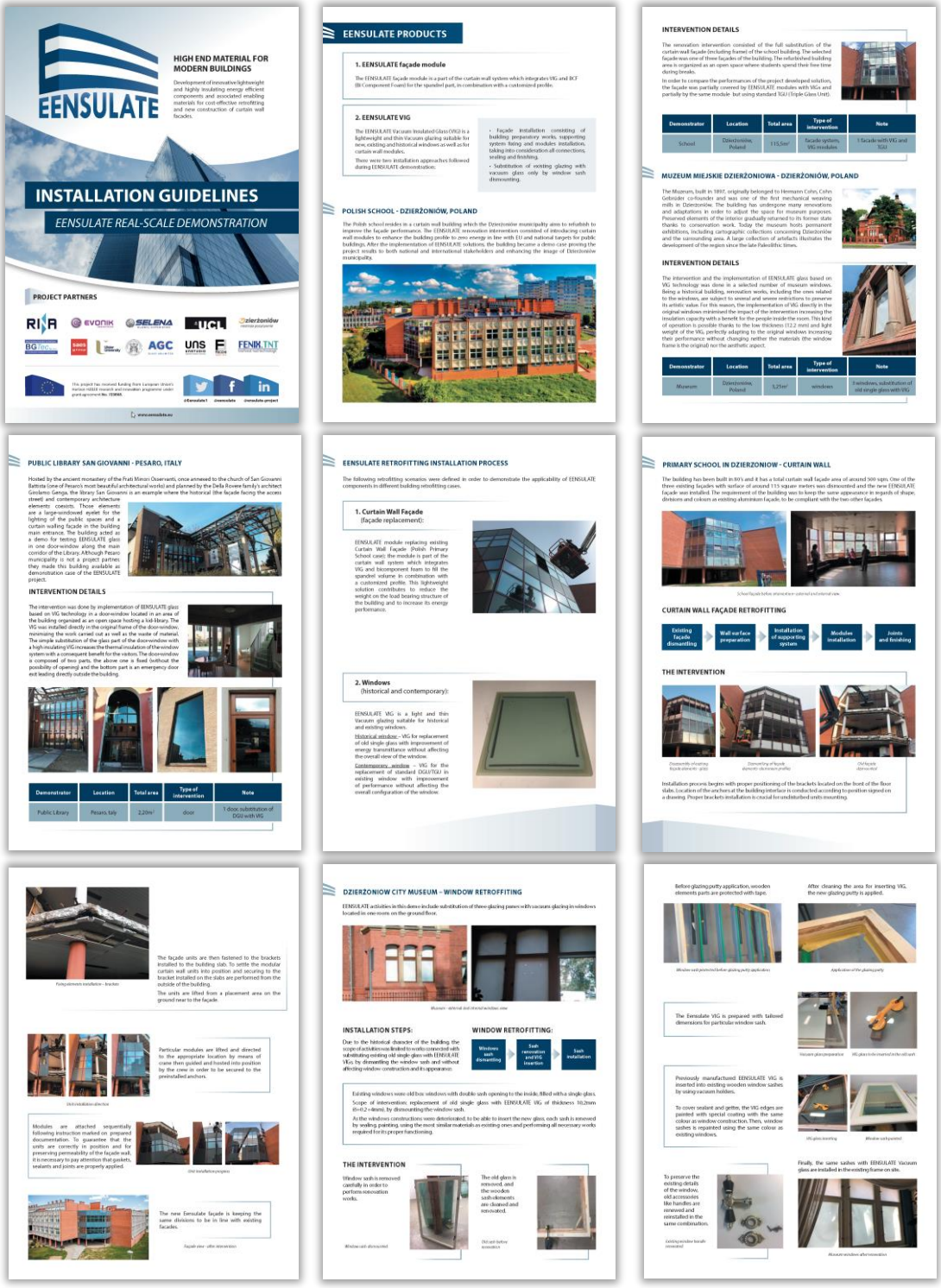
3.4 EENSULATE Installation Guidelines

A booklet on "EENSULATE installation guidelines" was created by FENIX in cooperation with technical partners – especially BGTEC. The Guidelines are aimed at Technical Experts (architects, engineers, designers, construction industry, installers, etc.) and service providers (thermo-technical companies, construction companies, ESCOs) and therefor includes a more technical information. To be available as a standalone publication, the EENSULATE demo sites and the interventions are described similarly as in the "Best practice booklet".

The guidelines are available on the EENSULATE project website and similarly as the "Best practice booklet" were intended for printing and distribution on physical events. EENSULATE project will, due to ongoing travel restrictions, put emphasis on the online dissemination of the material, social media profiles, press releases, newsletter, etc. The booklet will be available on the project website, in the section "Training" (http://www.eensulate.eu/documents/training).

The main topics covered in the guidelines are the following:

- EENSULATE products introduction – installation guidelines for - façade module, VIG
- EENSULATE real-scale demonstration – description of demo building and the conducted interventions
- EENSULATE retrofitting installation process in different scenarios – Curtain wall façade (facade replacement), windows (historical and contemporary)
- Individual steps of the interventions with images and descriptions
- Conclusions


EENSULATE
HIGH END MATERIAL FOR MODERN BUILDINGS
INSTALLATION GUIDELINES
EENSULATE REAL-SCALE DEMONSTRATION
PROJECT PARTNERS
EENSULATE PRODUCTS
1. EENSULATE façade module
2. EENSULATE VIG
POLISH SCHOOL - DZIERŻONIÓW, POLAND
INTERVENTION DETAILS
MUZEUM MIEJSKIE DZIERŻONIOWA - DZIERŻONIÓW, POLAND
PUBLIC LIBRARY SAN GIOVANNI - PESARO, ITALY
EENSULATE RETROFITTING INSTALLATION PROCESS
1. Curtain Wall Façade (façade replacement):
2. Windows (historical and contemporary):
PRIMARY SCHOOL IN DZIERZONIOW - CURTAIN WALL
CURTAIN WALL FAÇADE RETROFITTING
THE INTERVENTION
DZIERZONIOW CITY MUSEUM – WINDOW RETROFFITING
INSTALLATION STEPS:
WINDOW RETROFITTING:
THE INTERVENTION

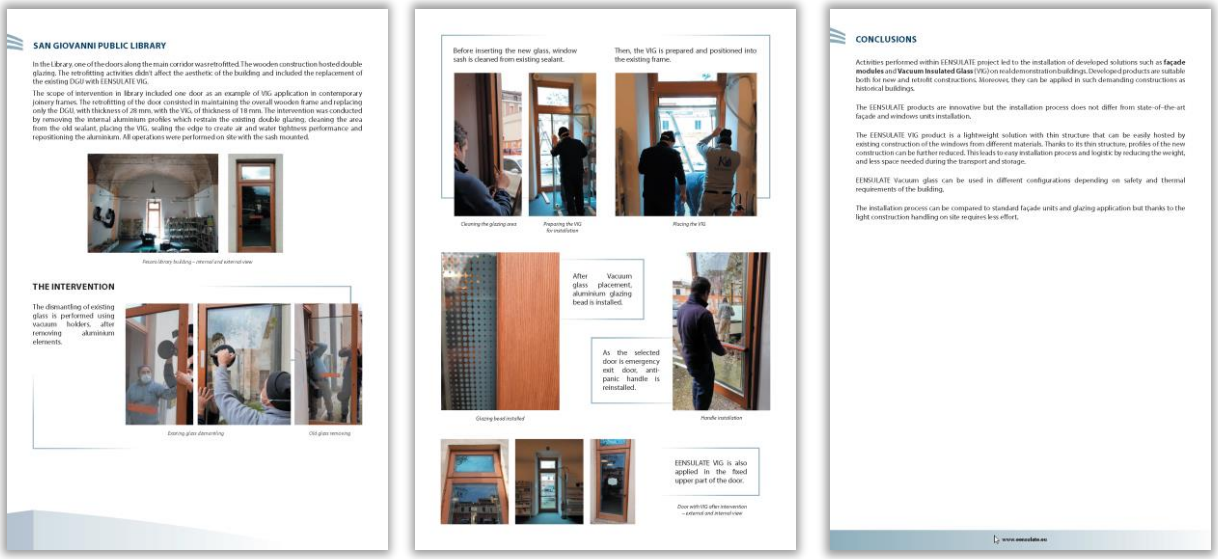


Figure 7 EENSULATE Installation Guidelines Booklet

3.5 Project website implementation

The EENSULATE project website acts as a main hub for all project information. The website will be kept online after the end of the project and therefore all information needs to be available – including a dedicated section in training activities. The website will be updated in the final month of the project to reflect the whole duration of the project.

The website will include:

- Project description, technologies description, project progress
- Training section (Training manual – "EENSULATE Best Practice" booklet, Training videos – Demonstration site installation process, Public webinar recording and the EENSULATE installation guidelines)
- Demonstration sites description, intervention details etc.
- Documents – all promo materials, presentations, publications, newsletters
- Videos – all videos produced – including Final EENSULATE video
- Contact & Partners information – for follow up work, exploitation, and projects.
- Final statement of the project coordinator

4 Conclusion

This report contains a summary of all training activities performed for the EENSULATE project. The training activities were carefully selected considering the selected target groups and their main themes of interest. The booklet “EENSULATE Best Practices” contains detailed technical information about the development of the EENSULATE main technologies, its benefits, design, EENSULATE real-scale demonstration and more, as described in the 3.1 chapter of this deliverable. Three training videos were created, there was a public webinar organized in cooperation with the Build Up portal which attracted solid number of the project stakeholders which was partly due to the strong partner that was chosen and partly due to the extensive promotion campaign. A recording from the event is available on all the project communication channels and the Build Up portal as well. A set of EENSULATE Installation guidelines was also created with the intention to share the intervention details with a more technical focused audience.

Most of the training activities were carried out during the last six months of the project. Every output of the training activities is accessible online through the project website, which will be kept online for minimum 2 years after the project ends. This means that the training material will be available even after the project reaches its end.