

**Development of an Innovative Insulation Fire Resistant Façade
from the Construction and Demolition Waste**

DEFEAT

INTEGRATED/0918/0052

DELIVERABLE D2.4

PROJECT WEBSITE

DELIVERABLE INFORMATION

Deliverable No	D2.4	
Deliverable Title	Project Website	
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Dissemination Level ¹		
PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	

¹ Enter a cross (X) in the appropriate cell.

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1. Project Summary

The management of Construction and Demolition Waste (CDW) in Cyprus faces several challenges and appears to be underperforming, as well as there is a lack of recycling technologies to be applied in this type of waste in order to increase the salvage value of the building. In addition, over the last decade, the construction activities in Europe were accelerated as well as the rehabilitation activities for energy saving, as a general need to facilitate the accommodation. Even though the construction works are ongoing, only in the recent years the safety of such infrastructures has gained increasing attention, particularly the issue of fire. Towards this end, the scope of the DEFEAT project is the innovative separation and transformation of CDW into an innovative insulation fire resistant facade.

The DEFEAT project will develop in pilot scale, and through detailed experimental study, an innovative separation method of CDW, as well as a composite material generated also from the CDW, which will gain low thermal conductivity, satisfactory mechanical properties, and at the same time will be fire resistant. Initially, a novel method will be utilized for the optimization of the separation of the CDW in order to receive “Clean” materials after the CDW collection. On this purpose the technology of image processing will be applied to optimize the separation process. As a result, both recycled concrete aggregates and also the raw material that will be used for the development of the insulation and fire resistant composite for building applications, will be obtained. For the latter, the technology of geopolymerisation will be applied. The optimization of the material density will be achieved by chemical and mechanical methods while the production will be held by a conventional method and 3D-printing. In addition, the final products will be evaluated in terms of thermal, mechanical, fire resistance properties, as well as financial cost, to allow for their full market potential and uptake within 3 years after the end of the project. At the end of the project, an attempt will be carried out in order to establish a framework for utilizing CDW as a raw material in the building industry.

The social, economic, environmental, and scientific impacts of the project and the whole consortium of DEFEAT are summarized below:

Social impacts

- Utilization of waste and return to the production cycle as a high value-added material in the context of the circular economy.
- Developing products that have an impact on the building sector and benefits most of society.
- Decrease of a waste with a simultaneous positive impact on the environmental footprint created by the deposition so far.

Economic impacts

- Stimulate the economy by introducing new materials in the building material sector that increase competition and lead to lower prices.
- Developing innovative materials by leveraging a number of companies wishing to mass-produce and sell them, creating growth conditions for the economy.
- Creating Net Added Value by investing and launching a high value-added product line and creation of a suitable environment for the further development of innovative building materials (geopolymers) by companies in Cyprus.

Environmental impacts

- Low energy consumption for the development of geopolymers, since the curing temperature is ambient.
- Low energy consumption for the waste separation
- Reduced CO₂ emissions compared to the cement and concrete industry.
- The utilization of a waste for the production of an innovative product and the elimination of the relevant environmental impacts is related with the environmental and societal progress in Europe.

Scientific impacts

- Developing of know-how and transferring it to the industrial level in the recovery of construction waste materials through the production of recycled aggregates and development of composite fire-resistant insulation material as well as on the waste separation.

- Training of scientists and staff in an interdisciplinary environment related to materials engineering.

2. Glossary of Terms

Acronym	Meaning
CDW	Construction and Demolition Waste
RIF	Research and Innovation Foundation
EU	European Union
HO	Host Organization

2.1 Definitions

Words beginning with a capital letter shall have the meaning defined either herein or in the Rules or in the Grant Agreement related to the Project.

2.2 Additional Definitions

Project refers to the DEFEAT project funded from the Research Promotion Foundation Programmes for Research, Technological Development and Innovation – RESTART 2016 – 2020.

3. Description of Work

3.1 Purpose of the Webpage

The purpose of this document is to present the DEFEAT website page <http://defeat.frederick.ac.cy/> and detail its structure.

The aim of the DEFEAT website page is to increase the visibility of the project mainly to a range of stakeholders (and also to the wider public) and provide them with a reference point for receiving updates during the project activity period and beyond. The website page is also developed to decrease the amount of paper used during the dissemination process. It provides information on the reasons for undertaking the project, its objectives, background on the technology the project intends to utilize and expected outcomes.

The website page provides general information on the project objectives and the work to be performed. There will be a continuous update of the project website during and after the runtime of the project. The web address will be advertised and it is intended to be of interest to potential end-users.

3.2 Target Audience

The DEFEAT webpage will assist in establishing contact with a range of stakeholders in order to engage them at an initial project stage and ensure a closely technical development and future exploitation. The most relevant communities have been identified, and the dissemination strategy has been designed to evolve during the duration of the project aiming to reach:

- Policy Makers, Industries and SMEs
- Potential end-users, Inventors and Consultation Groups
- Sectoral working groups and associations
- Academics
- Wider Public
- Cyprus Research and Innovation Foundation

4. Website Page Structure

The aim of the DEFEAT project website is to increase the visibility of the project to the public and provide them with a reference for receiving updates during the project activity period and after the end of the project. The website page is also developed to decrease the amount of paper used during the dissemination process. By following the project's website link and thanks to the wide use of internet, the public will easily understand and learn additional information related to the project which may not be described solely in a leaflet or a brochure. It provides information on the reasons for undertaking the project, its objectives, background on the technology the project intends to utilize and expected outcomes.

Since the HO's website page (Frederick Research Center website page: <http://www.frederick.ac.cy/>) has already an established number of interacting audience (users and followers), it was decided instead of developing an exclusive website for DEFEAT project and attract a completely new audience, to include the DEFEAT website page inside the HO's website, dedicating its own website page and assisting DEFEAT project to attract first audience easier. In the future and as the project will attract more followers, the project will evolve and the technology will be more mature, there will be an updated assessment, in order to judge if the DEFEAT innovative technology and research can have its own full website.

The design of the website page is developed upon the following criteria and considers suggestions given in the EU Project Websites – Best Practice Guidelines (http://www.eurosfaire.prd.fr/7pc/documents/1271333123_project_website_guidelines_en.pdf) which offer better quality and user-friendliness to the project website, triggering higher popularity and provide better visibility for the project and the European Commission. Best practices include:

- a. Visual communication: use of photos and colours, web pages are easy to browse, information is kept short and links are included to websites and publications
- b. Verbal communication: the website uses simple phrasing, no jargon is used in order to attract the widest possible audience, e-devices are user friendly
- c. Visibility: maximum use of free or affordable methods to increase page ranking on search engines, Webmaster Tools provided by search engines to check indexing status, good cross linking between the different pages of the site and other sites, keywords to the web page metadata; use frequently used keyword search phrases both in the metadata and in the “Contents” pages

- d. Regular update of contents: the update of the current version of the webpage will be regularly performed by the HO. Moreover, there are connection with the social networks that the DEFEAT project will have presence (LinkedIn, Facebook, Twitter) with the addition of the relevant add-on button on the website page.

The DEFEAT website provides general information on the project objectives and the work to be performed. There will be a continuous update of the project's website during the runtime of the project and after its end. The web address will be widely advertised and it is intended to be of interest to potential end-users.

The DEFEAT website is accessible at: <http://defeat.frederick.ac.cy/>

In the beginning of the page, the logo of DEFEAT project is depicted (Figure 1):



Figure 1. DEFEAT project Logo

The page presents all the aspects of the project DEFEAT briefly including the Aim of the project, the Objectives, and the Scope of the project. The website is in English where the most up-to date details about the project activity are included.

The header on all sections of the website includes the logo along with the navigation tabs to all the other website sections named:

- **Home**
- **Project (The Problems, The Challenges, Project Stages, Project Impact)**
- **Partners**
- **Media (In the Press, Publications, Public Deliverables & Downloads, Gallery)**
- **News & Events**
- **Contact Us**

Additionally, the header includes a search button and the social media icons, which the website visitor can press and be redirected to DEFEAT's LinkedIn, Facebook, Twitter and YouTube accounts. Our social media accounts are also shared in the project's leaflet and newsletters through the following links.

- Facebook: <https://www.facebook.com/DEFEAT-105407267904655>
- Twitter: <https://twitter.com/DEFEAT85269725>
- LinkedIn: <https://www.linkedin.com/company/defeat-project>
- YouTube:
https://www.youtube.com/channel/UCwmVxkiHDbq4ZBWx1Uevh0g?guided_help_flow=5

All the aforementioned information included in the website's Header is depicted on the Figure 2:



Figure 2. Header of all sections

By pressing the “Contact Us” button placed under the video, the email application pops up and the visitor can email us directly.

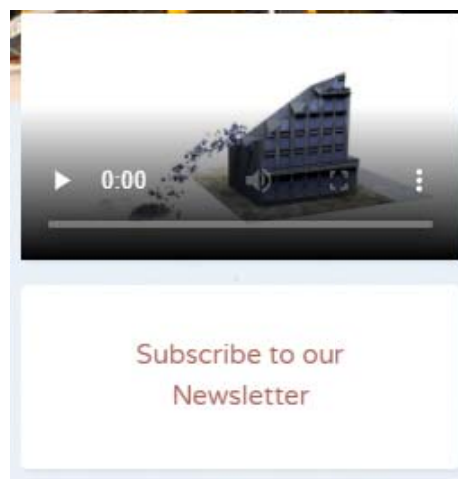


Figure 3. Subscription button

The footer² of all sections has the reference to the funding by the European Regional Development Fund and the Republic of Cyprus through the Research & Innovation Foundation. Additionally, the footer includes the links to the social media platforms.

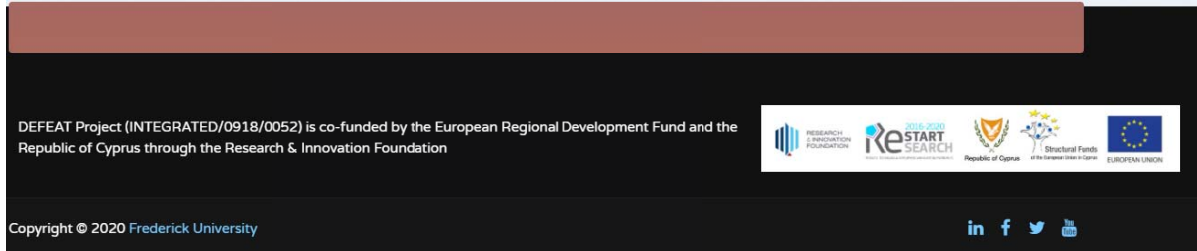


Figure 4. Project's disclaimer located in the footer of all sections

4.1 Home Page

The Home Page depicts briefly all the aspects of the DEFEAT Project including the Mission, the Objectives, the Impact as well as the Newsletter subscription button. A characteristic picture showing one of the project's partners premises and the first video produced for the needs of the project are being included on the Home Page which visualizes DEFEAT's technology.

² The footer is located at the bottom of the web page.

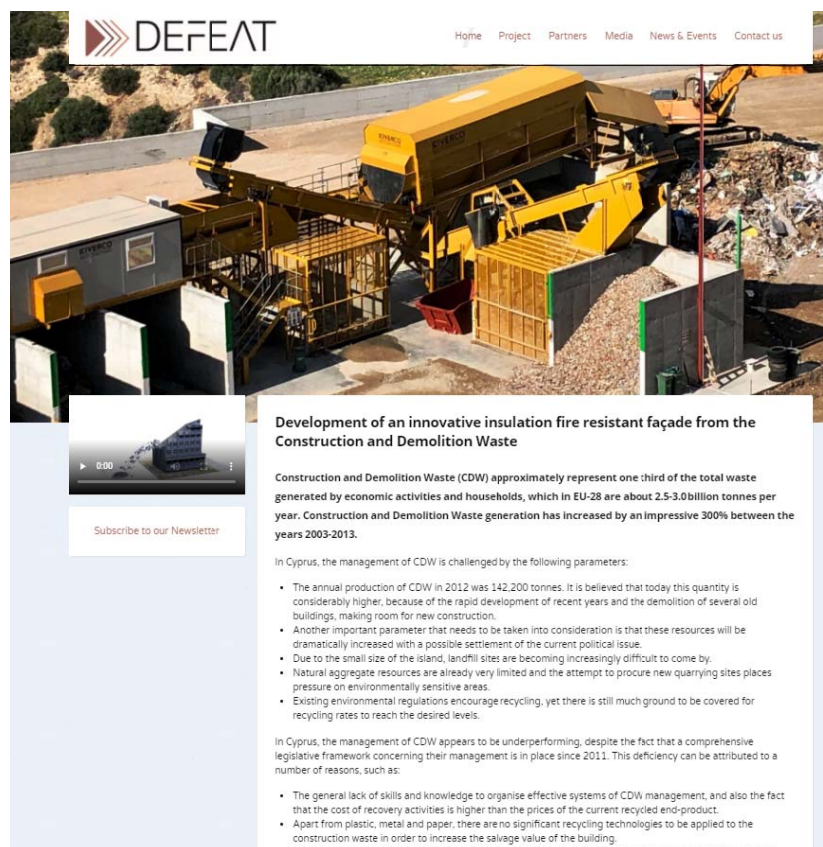


Figure 5. Home Page

4.2 Project

The second tab of the DEFEAT website includes an overview of the Project. Through a drop-down list in the Project tab, the visitor has the option to navigate through the Problems, The Challenges, Project Stages and Project Impact of DEFEAT project.



Figure 6. Drop-down list of Project section

4.2.1 The Problems

The large amount of CDW produced as well as the poor management of this valuable waste led to the DEFEAT idea. The problems are stated clearly under this section.



Figure 7. The Problems Section

4.2.2 The Challenges

The most crucial challenges of the CDW management are described under this section. Additionally, those challenges will be addressed within DEFEAT project.

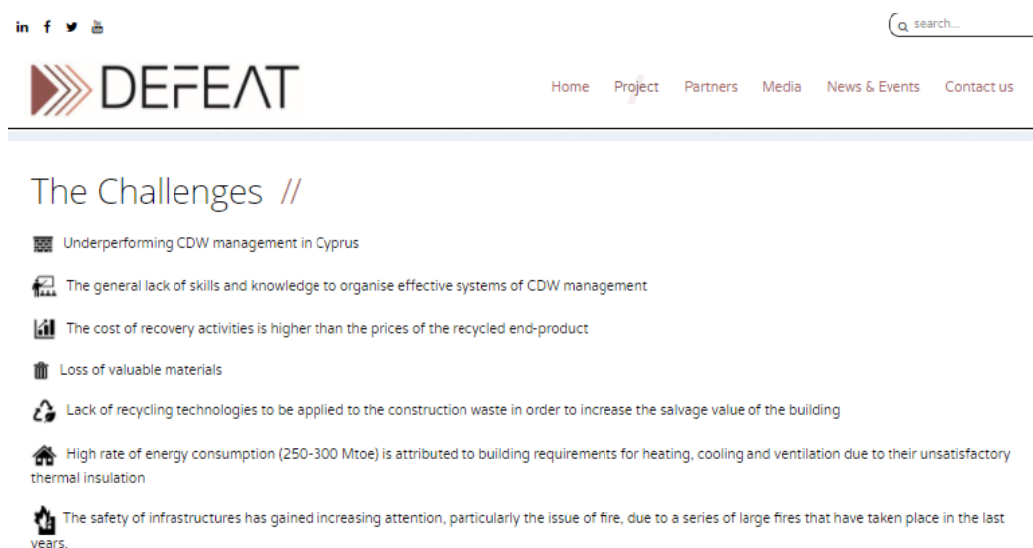


Figure 8. The Challenges Section

4.2.3 Project Stages

The most important stages of the DEFEAT innovative technology are briefly explained under this section. The DEFEAT video launched on YouTube visualizes the Project Stages as well.

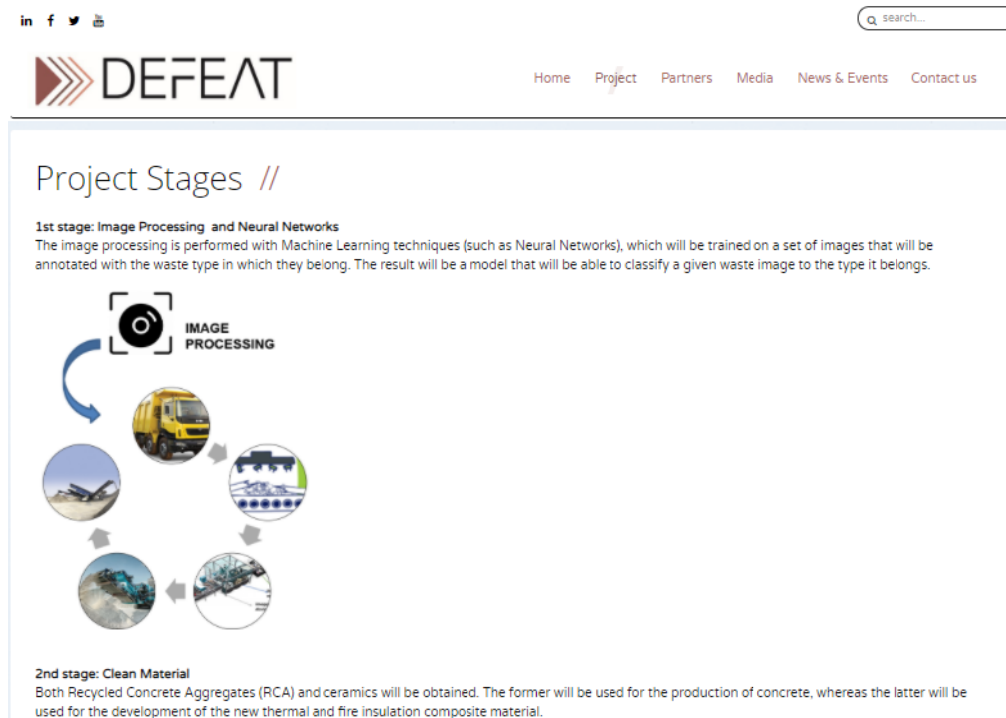


Figure 9. The Project Stages section

4.2.4 Project Impact

The Project impact section details the Social, Economic, Scientific and Environmental impact that the DEFEAT project aims to bring to the society.

Project Impact //

SOCIAL IMPACT

- Enhance the **state-of-the-art knowledge** concerning the **reuse of CDW** in construction industry through the **production of innovative materials**.
- **Boost the recycling process in Cyprus** with all possible benefits and impacts.
- Utilization of CDW and return to the production cycle as a high value added material in the context of the **Circular Economy**.
- Developing **products that have an impact on the building sector**.

ECONOMIC IMPACT

- **Stimulate the economy** by introducing new materials that **increase competition**.
- Developing innovative materials by **leveraging a number of companies**, creating growth conditions for the economy.
- Creating **Net Added Value** by investing and launching a high value-added product line and creation of a **suitable environment** for the further **development** of innovative geopolymer materials in Cyprus.

SCIENTIFIC IMPACT

- Developing and transferring of **know-how** to the industrial level in the recovery of CDW through the **development of a special type of composite material**.
- **Training of scientists and staff** in an interdisciplinary environment related to materials engineering.
- **First time in Cyprus and in Europe**, where inorganic polymers for **insulation** and **fire resistance from CDW** will be developed.

ENVIRONMENTAL IMPACT

- **Low energy consumption** for the development of geopolymers.
- **Low energy consumption** for the waste separation.
- **Reduced CO₂ emissions** compared to cement and concrete industry.
- **Decrease of a waste** with a simultaneous **positive impact on the environmental footprint** created by the deposition so far.

Figure 10. The Project Impact section

4.3 Partners

The Partners tab of the DEFEAT website lists the Consortium Partners. The Partners Organization logos are hyperlinked to direct the website visitor to each partners Organization website. A Quadruple-Helix presented on the website groups the Partners Organization based on type and commitment to the project.



Figure 11. DEFEAT's Partners

4.4 Media

Through a drop-down list in the Media tab, the visitor has the option to navigate through the Press, Publications, Public Deliverables & Downloads and Gallery sections.

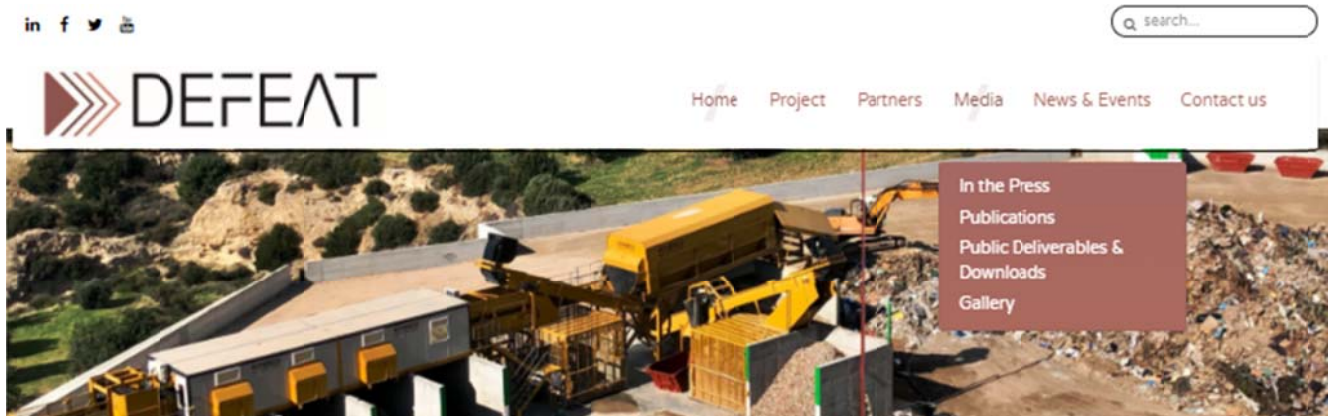


Figure 12. Drop-down list of Media section

4.4.1 In the Press

The Press sections includes a list with Press releases which have been send to journals, newspapers, and blogs to inform the public about the DEFEAT idea and innovative technology.

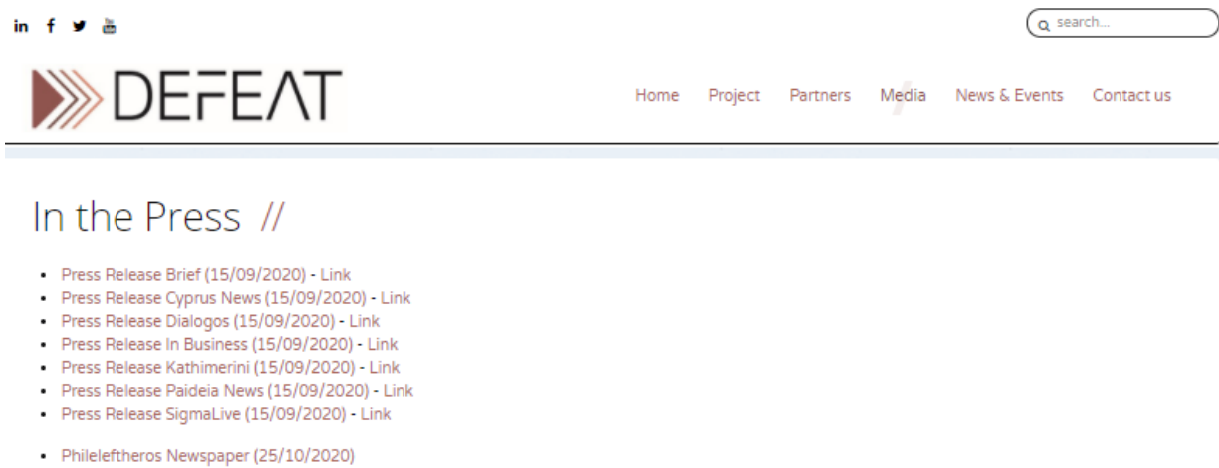


Figure 13. In the Press section

4.4.2 Publications

This section currently includes the leaflet and the newsletter that have been developed to reach the various target groups in an effective and efficient way in various occasions. During the project's

lifetime, the publications that will be developed regarding the project results will be published under this section.



Figure 14. Publications section

4.4.3 Public Deliverables & Downloads

The Public Deliverables and materials such as the letterhead and logo will be uploaded in this section and will be accessible through this tab. This section will include in the future all the documents which are open for the public.



Figure 15. Public Deliverables & Downloads section

4.4.4 Gallery

This section gathers all the pictures that have been developed or pictures captured and visualizes the project's results, technology, processing methods, equipment etc. to be used in various occasions.

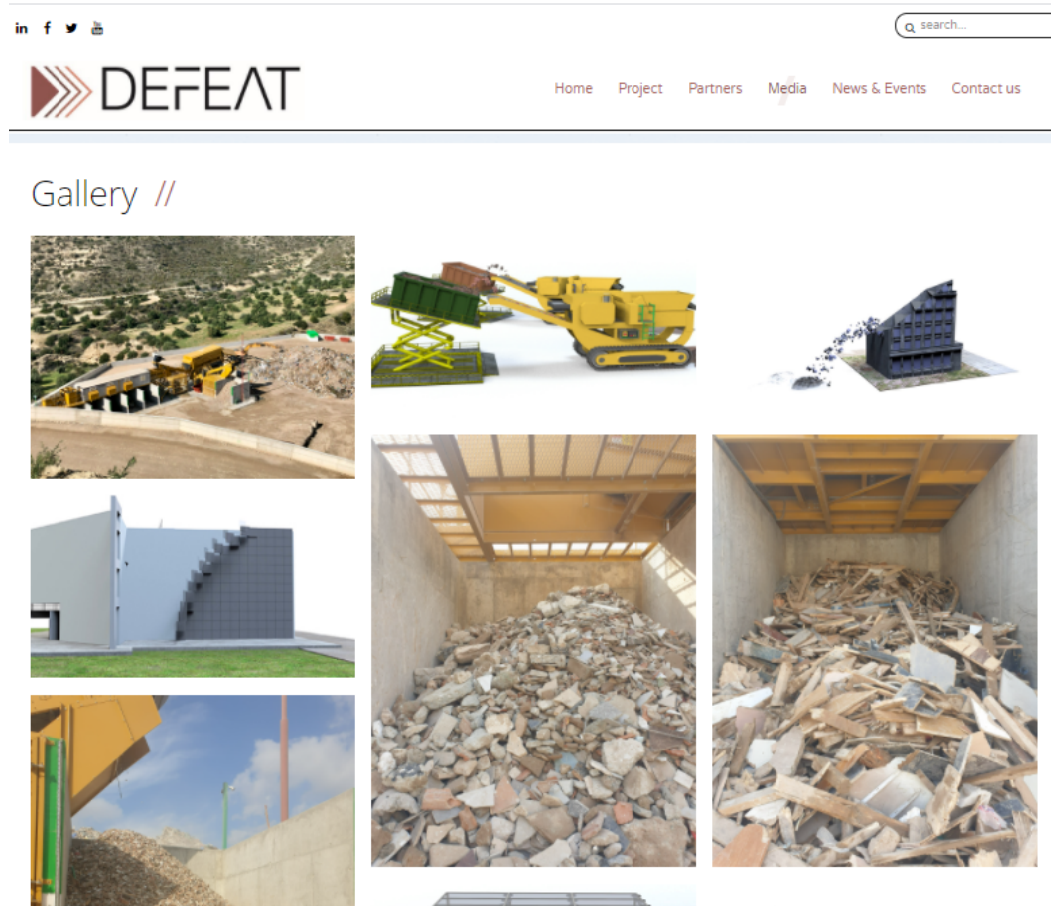


Figure 16. Gallery section

4.5 News & Events

The News and Events section includes all the events, news, seminars, conferences, and other interesting publications that are relevant to the DEFEAT objectives and sectors. This section works like a blog. The posts are shown in chronological order from the most recent to the oldest.

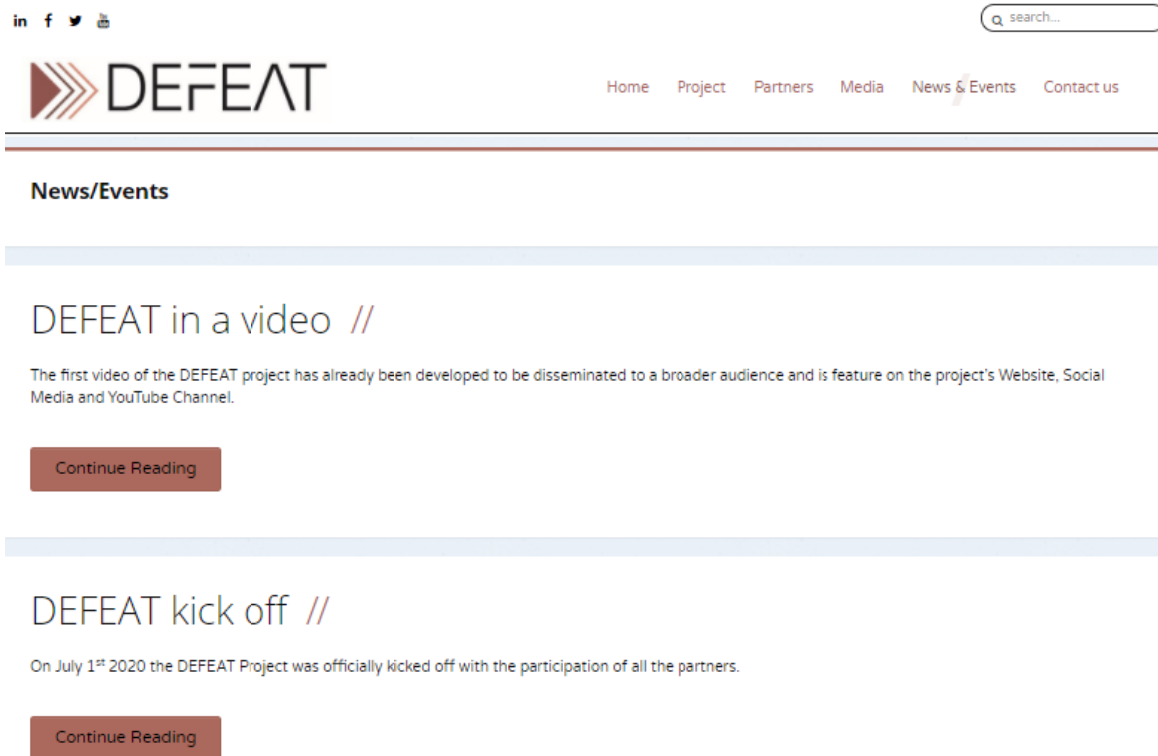


Figure 17. DEFEAT News & Event section

4.6 Contact Us

In the Contact Us section, each visitor is given the opportunity to contact the Coordinator of DEFEAT Project, Dr Demetris Nicolaides (Figure 18), by completing a contact form (Figure 19). The contact form contains information about the visitor's name and email, the subject of the visitor's message and a box that the visitor can write the reasons for contacting the DEFEAT's consortium.



Figure 18. Contact us section

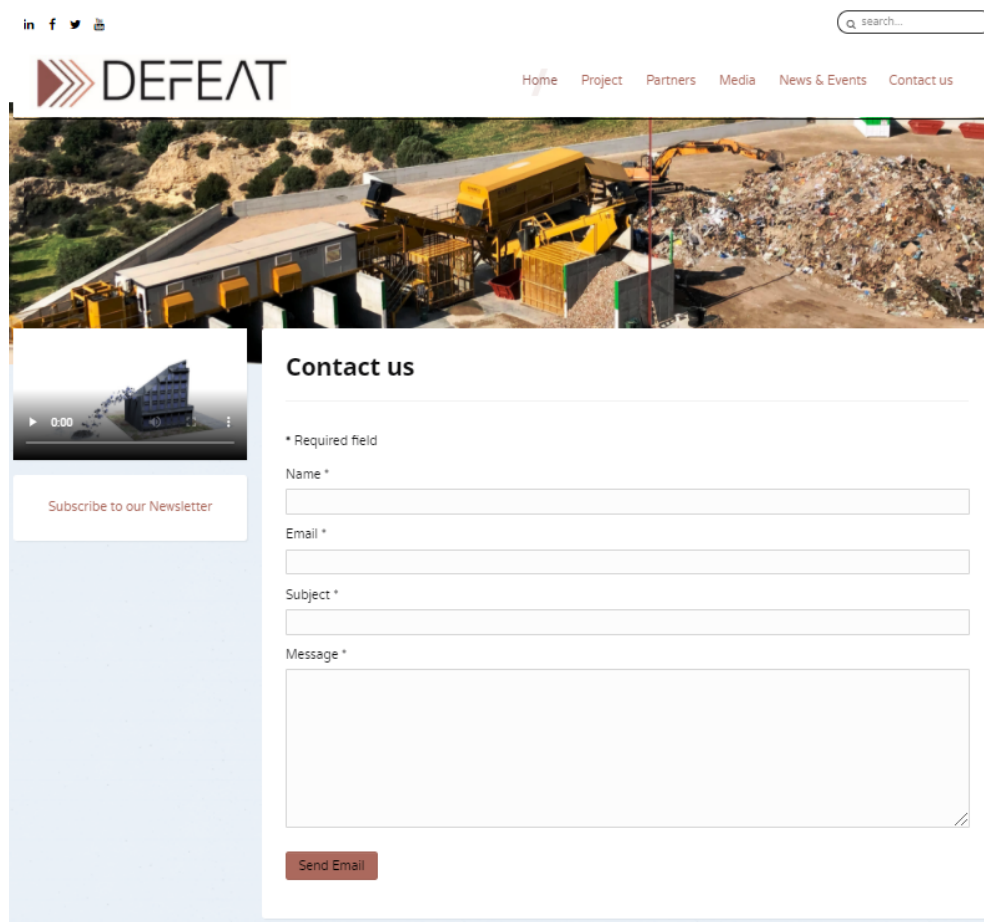


Figure 19. DEFEAT contact form

5. Means to achieve good referencing of the website

Links to the official website of each partner have been added to the DEFEAT project website. Vice versa, all partners will be asked to link back to the DEFEAT website. Partners will be requested to create short descriptions of the project on their home organizations website and to link from there to the official DEFEAT website.

News, updates and other material related to the project will be posted in the News section, i.e. at the moment, mainly by adding public deliverables, articles about DEFEAT, information about events where DEFEAT was presented, relevant events, conferences and seminars etc. There will be regular communication between the partners in order to develop material that would be uploaded to the project's website.

6. Conclusions

The document presented the website for the DEFEAT project. The website and the social media will be updated constantly with news and documents, adding to the dissemination of the DEFEAT project and the better exploitation of its outcomes.

Acknowledgements

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