



**Africa-Europe BioClimatic buildings for
XXI century**

MEDIA DIFFUSION



ABC 21 project

This document has been developed as part of the project titled “**ABC 21 – Africa-Europe BioClimatic buildings for XXI century**”.

The sole responsibility for the content of this presentation lies with the authors. This report reflects only the author's view. The Executive Agency for Small and Medium sized Enterprises is not responsible for any use that may be made of the information it contains.



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 894712.

Document information

Name:	Media diffusion
Date:	19.05.2023
Work Package:	WP4 - Exchange for policy support and market uptake
Task:	Task 4.5 Technical Dissemination, Scientific Communication

Authors

Name	Email	Institution
Camilla Rampinelli	Camilla.rampinelli@e-sieben.at	e7
Susanne Kuchar	Susanne.kuchar@e-sieben.at	e7

Revision

Version	Date	Author	Description of changes
v1	31.05.2023	Camilla Rampinelli	First publishable version
v2	31.05.2023	Camilla Rampinelli	Revised version

Executive summary

This report provides a comprehensive overview of the dissemination activities and communication efforts undertaken as part of the ABC 21 project, funded under the Horizon 2020 program. The ABC 21 project aims to address the challenges of the 21st century by developing innovative and sustainable bioclimatic buildings in Africa and Europe. The report highlights the dissemination work conducted, showcasing the project's objectives, progress, and outcomes.

The dissemination strategy employed for the ABC 21 project was multifaceted, utilizing various channels and platforms to reach a diverse and relevant audience. Personalized and targeted information was shared through direct invitations, newsletters, and formal emails sent to the project's contact network. Prominent websites and platforms such as BuildUp, Construction 21, UN-Habitat, and Global ABC were leveraged to extend the project's reach and enhance visibility. The inclusion of the ABC 21 conference in these platforms' event calendars ensured wider exposure to individuals interested in sustainable construction practices and bioclimatic materials.

Social media played a crucial role in the dissemination strategy, with the project utilizing LinkedIn and Twitter accounts to engage with a broader audience. Regular updates, speaker announcements, and program highlights were shared through these channels, fostering discussions and facilitating the spread of conference information among professionals and enthusiasts in the field.

The report also highlights the development of a visual identity for the project, including the creation of a project logo and various templates to ensure consistent branding across communication materials. The ABC 21 website served as a central hub for information, offering a well-structured platform to showcase project details and provide easy access to resources.

Various communication materials such as flyers, digital content, and newsletters were prepared to effectively convey project updates and engage the target audience. Webinars, events, and conferences were organized to provide platforms for knowledge exchange and collaboration. Noteworthy events included the eceee Summer Study 2022, Urban Resilience and One Health Conference, EU COP26 Side Event, and COP26 – French pavilion session, among others.

The report further explores the ICBMB (International Conference of Bioclimatic Materials and Buildings), which served as a key milestone for the project. The conference program featured renowned speakers who presented on topics related to bioclimatic materials, sustainable design practices, and case studies. The presentations and posters were made available to the public through the conference website, enhancing knowledge dissemination.

Despite the challenges posed by the COVID-19 pandemic, the project successfully adapted to the circumstances and migrated to the online sphere, enabling broader audience engagement and participation. This shift to virtual spaces allowed for continued dissemination and the opportunity to reach individuals who may not have been able to attend in-person events.

The report concludes with an evaluation of the dissemination efforts, including quantitative and qualitative assessments of the project's impact. Key performance indicators were used to measure the effectiveness of the dissemination activities, and an assessment of the dissemination strategies was conducted.

Abbreviations

Term	Name
ADEME	French Environment and Energy Management Agency
AFD	Agence Française de Développement
Africities	Pan African Local Government Summit
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AUI	Al Akhawayn University
COP26	26th UN Climate Change Conference of the Parties
DEEC	Department of Electrical Engineering and Computer Science
EU	European Union
EUROACE	European Alliance of Companies for Energy Efficiency in Buildings
FC.ID	University of Lisbon Faculty of Sciences and Technology
GABC	Global Alliance for Buildings and Construction
H2020	Horizon 2020 (EU research and innovation program)
ICBMB	International Conference of Bioclimatic Materials and Buildings
ICBMB	International Conference on Bioclimatic Materials and Buildings
IRSEC	International Renewable and Sustainable Energy Conference
NE 136	Networking session at the World Urban Forum
PCM	Phase Change Material
PEEB	Polish Platform for Energy Efficient Buildings
POLIMI	Politecnico di Milano, a university
UN	United Nations
UN Habitat	United Nations Human Settlements Programme
VELUX	A company specializing in roof windows and skylights
WUF 11	11th World Urban Forum

Contents

1.	Introduction.....	7
1.1	Scope and objectives	7
1.2	Document Structure.....	7
2.	Diffusion plan.....	9
2.1	Target audiences.....	9
	Policy Makers (EU & Africa).....	9
	Market Actors (EU & Africa).....	9
	Education Sector (EU & Africa).....	10
	Public Sector (Mainly Africa).....	10
	Development Agencies and International Financing Institutions.....	10
2.2	Planned actions.....	10
3.	Visual Identity	11
3.1	Project logo & features	11
3.2	Templates	12
4.	Communication channels.....	14
4.1	ABC 21 Website.....	14
	Website structure	14
4.2	LinkedIn	15
4.2	Twitter	16
4.3	YouTube.....	17
4.4	Other websites	18
	1) BuildUp	18
	2) Construction 21.....	18
5.	Communication materials.....	20
5.1	Flyers	20
5.2	Digital Content.....	21
5.3	Newsletter.....	21
6.	Conferences & presentations.....	23
6.1	Webinars	23
6.2	Events & conferences.....	24
	ceeee Summer Study 2022	24
	Urban Resilience and One Health Conference:	24
	EU COP26 Side Event.....	25
	COP26 – French pavilion session	25
	IRSEC 2021 - International Renewable and Sustainable Energy Conference in November 2021	26
	9 th Africities	27
	World Urban Forum	27
7.	Papers and Articles	29
8.	ICBMB – International Conference of Bioclimatic Materials and Buildings	30
8.1	Overview	30
8.2	Conference Website.....	31

8.3 Program & Speakers	33
8.3 Dissemination.....	36
9. Evaluation & Impact	39
8.1 Quantitative Evaluation (KPIs).....	39
8.2 Qualitative Evaluation (based on KPIs)	40
8.3 Assessment of dissemination activities	40
10. List of dissemination activities	42

1. Introduction

The core objective of Task 4.5 Technical Dissemination, Scientific Communication is to ensure effective communication activities to target groups and stakeholders, thus disseminating the project results, findings and activities to the widest audience. The purpose of this report is to provide a comprehensive overview of the dissemination efforts and activities undertaken for the ABC21 project. This chapter sets the foundation for the report by outlining the scope, objectives, and structure of the document. It serves as a guide to navigate through the various chapters and sections, offering valuable insights into the project's communication strategies.

The COVID-19 pandemic presented significant challenges for the ABC21 project, particularly in terms of dissemination efforts. The restrictions on in-person gatherings and travel limitations disrupted the traditional conference and event formats that were initially planned. However, the project quickly adapted to the changing circumstances and embraced the online sphere as an alternative platform for engagement. By migrating to virtual spaces, the project was able to overcome physical barriers and reach a broader audience group. This shift to online platforms not only ensured the continuity of dissemination activities but also enabled participation from individuals who may not have been able to attend in-person events. Despite the challenges posed by the pandemic, the project successfully navigated the digital landscape and leveraged technology to maximize its impact and promote sustainable practices in bioclimatic designs and materials.

1.1 Scope and objectives

The report focuses on the dissemination plan and activities carried out for the ABC21 project. It provides an in-depth analysis of the strategies employed to reach target audiences and maximize the project's visibility. The report also evaluates the impact of these activities and assesses their effectiveness in achieving the project's goals.

1.2 Document Structure

The report is structured into ten chapters, each addressing a specific aspect of the dissemination efforts. It begins with an introduction, followed by a detailed examination of the diffusion plan, visual identity, communication channels, and communication materials. Furthermore, the report covers conferences and presentations, papers and articles, the International Conference of Bioclimatic Materials and Buildings (ICBMB), evaluation and impact, and concludes with a comprehensive list of dissemination activities.

- **Diffusion Plan:** Chapter 2 delves into the diffusion plan for the ABC21 project, highlighting the target audiences and planned actions. The identified target audiences include policy makers, market actors, the education sector, the public sector, and development agencies and international financing institutions. The chapter outlines the strategic actions planned to engage these audiences effectively.
- **Visual Identity:** Chapter 3 focuses on the visual identity of the project, showcasing the project logo and its distinctive features. It also explores the templates utilized to maintain consistency across communication materials.
- **Communication Channels:** Chapter 4 presents an overview of the various communication channels employed to disseminate information about the project. It delves into the structure and features of the ABC21 website, the project's presence on LinkedIn, Twitter, and

YouTube, as well as the utilization of other external websites such as BuildUp and Construction 21.

- **Communication Materials:** Chapter 5 provides an insight into the creation and distribution of communication materials. It explores the development of flyers, digital content, and newsletters, serving as essential tools to convey project information to the target audiences.
- **Conferences & Presentations:** Chapter 6 focuses on the participation of the ABC21 project in conferences and presentations. It highlights the webinars, events, and conferences attended by the project, including notable engagements such as the eceee Summer Study 2022, Urban Resilience and One Health Conference, EU COP26 Side Event, COP26 – French pavilion session, IRSEC 2021, 9th Africities, and World Urban Forum.
- **Papers and Articles:** Chapter 7 explores the dissemination of knowledge through papers and articles. It discusses the project's contributions to academic and industry publications, highlighting the impact of these publications in expanding the reach of the ABC21 project.
- **ICBMB – International Conference of Bioclimatic Materials and Buildings:** Chapter 8 provides a detailed overview of the International Conference of Bioclimatic Materials and Buildings (ICBMB). It covers the conference's objectives, the dedicated conference website, the program, speakers, and the dissemination strategies implemented.
- **Evaluation & Impact:** Chapter 9 assesses the effectiveness and impact of the dissemination activities carried out for the ABC21 project. It evaluates the quantitative and qualitative aspects of the project's communication efforts and provides an analysis of the dissemination activities' outcomes.
- **List of Dissemination Activities:** The report concludes with Chapter 10, presenting a comprehensive list of all the dissemination activities undertaken for the ABC21 project. It serves as a reference for future analysis and provides an overview of the project

2. Diffusion plan

The diffusion plan was created in the first 3 months of the project, as form to guide the dissemination activities. This initial version we analysed which stakeholders we wanted to reach, the channels for communication and

2.1 Target audiences

First step of the diffusion plan was to establish the targeted audiences of the project, the media channels which were more effective for communication and the overall goal that we would like to achieve:

		Target Audiences					
Communication Activities		Policy Makers (EU & Africa)	Market Actors (Mainly Africa)	Education Sector (EU & Africa)	Public Sector (Mainly Africa)	Development Agencies (EU & Africa)	International Financing Institutions (EU & Africa)
Articles in Journals (Academic & General)		X	X	X			
Policy Briefs (Publication & Presentation)		X			X	X	
Events & Conferences (Participation & Presentations)		X	X	X	X		
Workshops & Webinars (Presentation & Courses)		X	X	X	X		
ABC 21 direct channels	Twitter posts (Infographics & News)	X	X	X	X	X	X
	LinkedIn Posts (Infographics & News)	X	X	X	X	X	X
	Website Posts (Results & News)	X	X	X	X	X	X
	Press Releases	X	X		X	X	X

Policy Makers (EU & Africa)

Objective: Inspire policy changes for sustainable building practices, bioclimatic design, local materials, and sustainable techniques in the EU and African building sectors. Facilitate the exchange of successful practices between European and African countries.

Market Actors (EU & Africa)

Objective: Engage market actors (manufacturers, suppliers, contractors, developers) to promote and adopt bioclimatic approaches, local materials, and passive cooling techniques. Establish a network for disseminating knowledge, sharing techniques, and supporting the development of sustainable building concepts.

Education Sector (EU & Africa)

Objective: Disseminate bioclimatic approaches and alternative materials within the academic community of Africa and Europe. Encourage research groups to explore sustainable building topics and create a collaborative research network.

Public Sector (Mainly Africa)

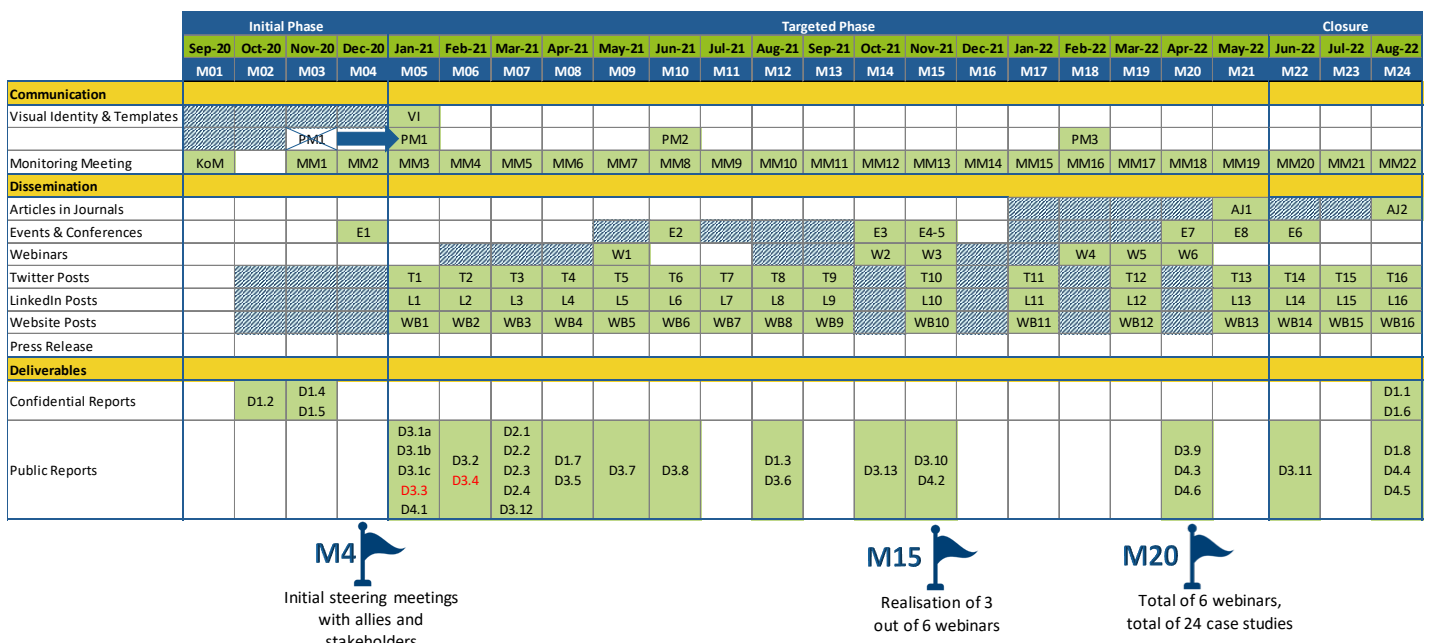
Objective: Promote policy changes for sustainable building practices, bioclimatic materials, and techniques. Support the development of certified local building material manufacturing and effective sustainable supply chains. Empower and support local initiatives.

Development Agencies and International Financing Institutions

Objective: Advocate the cost-effectiveness and sustainability of bioclimatic approaches. Inspire action to facilitate

2.2 Planned actions

In the initial stages of the project, a comprehensive diffusion plan was established to guide the dissemination activities of the ABC 21 project. The plan outlined various strategies and actions to effectively communicate project objectives and outcomes to the target audience. It is important to note that the plan underwent adaptations to accommodate changes in deadlines, leverage new opportunities, and align with any project amendments that occurred throughout its duration. Outlined below is an overview of the initial version of the diffusion plan. For a detailed list of all activities, please refer to Chapter 10 of this report.



3. Visual Identity

The visual identity of the ABC 21 project was developed to reflect the cooperation between Europe and Africa while conveying the project's focus on sustainable bioclimatic buildings. The visual elements, including logos, features, colours, and templates, were designed in accordance with EU guidelines and recommendations.

3.1 Project logo & features

To symbolize the collaboration between Europe and Africa, the project's logos and features incorporated the map of both continents. This visual representation highlighted the cross-continental partnership and the shared goal of advancing sustainable building practices. The logos and features were designed to be visually appealing and easily recognizable, effectively representing the essence of the project.

In addition, the project incorporated the Saharan ant as a symbolic element in its visual identity. The Saharan ant is known for its ability to stay cool under the scorching sun due to its special reflective coating. By incorporating this image, the project aimed to communicate the concept of bioclimatic design and its effectiveness in maintaining a comfortable and sustainable built environment, even in extreme heat.

Logo Font: **Impact**



Africa-Europe BioClimatic buildings for XXI century



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 894712.

Logo Features

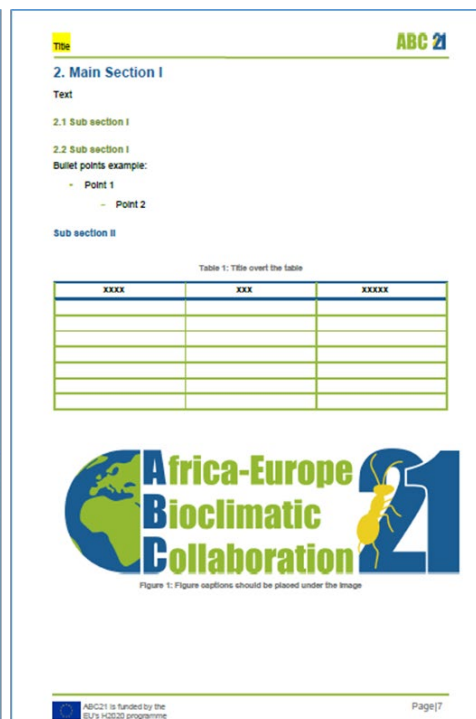
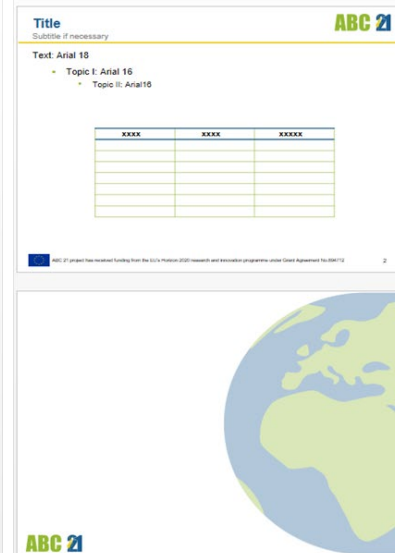


A carefully selected colour palette was established for the project materials, aligning with EU guidelines and recommendations. The colours were chosen to reflect the project's themes of sustainability, nature, and cooperation. Earth tones, greens, blues, and warm shades were incorporated to evoke a sense of harmony with the natural environment while maintaining a professional and visually appealing aesthetic.

RGB: 25 91 146 CMYK: 0 10 84 10 Web: #195B92	RGB: 198 198 198 CMYK: 0 0 0 22 Web: #C6C6C6	RGB: 150 186 64 CMYK: 19 0 66 27 Web: #96BA40	RGB: 238 207 37 CMYK: 0 10 84 10 Web: #EECF25	RGB: 232 243 243 CMYK: 5 0 0 5 Web: #E8F3F3	RGB: 145 43 26 CMYK: 0 70 82 43 Web: #912B1A
RGB: 4 56 92 CMYK: 96 39 0 64 Web: #04385C	RGB: 122 122 122 CMYK: 0 0 0 52 Web: #7a7a7a	RGB: 41 86 2 CMYK: 52 0 98 66 Web: #295602	RGB: 219 177 0 CMYK: 0 19 100 14 Web: #ddb100		

3.2 Templates

To ensure consistency and professionalism in project communications, templates for presentations and reports were created. These templates featured the project's logos, colours, and other visual elements, providing a unified and cohesive visual identity across all project-related documents. The templates were designed to be user-friendly and easily adaptable, allowing project partners to create visually appealing and standardized materials in line with the project's visual identity guidelines.



The visual identity of the ABC 21 project played a crucial role in conveying its objectives, themes, and collaborative nature. Through the incorporation of logos and features highlighting the partnership between Europe and Africa, the use of the Saharan ant as a symbol of resilience and sustainability, and the establishment of a harmonious colour palette, the visual identity effectively represented the project's values and messages. Additionally, the templates for presentations and reports provided a consistent and professional visual framework for project communications, ensuring a unified brand presence. By adhering to EU guidelines and recommendations, the project's visual identity maintained credibility and resonance within the audience.

4. Communication channels

Effective communication channels play a crucial role in reaching a wider audience and ensuring the successful dissemination of project information. In the case of the ABC 21 project, various channels were utilized to engage stakeholders and amplify the project's reach. By utilizing a diverse range of communication channels, including the project website, LinkedIn, Twitter, YouTube, and other dedicated websites, the ABC 21 project maximized its outreach, engagement, and impact. These channels facilitated the dissemination of project information, fostered collaborations, and ensured that the project's messages reached the intended target audiences. A complete list of the actions and posts made during the project duration is available in chapter 10 *List of dissemination activities*.

4.1 ABC 21 Website

A central platform for disseminating project-related information was created through the ABC 21 project website. This website served as a comprehensive resource, providing details about the project, research findings, news updates, publications, and upcoming events. Regular updates and maintenance ensured that the website contained up-to-date and relevant content for the target audience. The ABC 21 website served as a hub for stakeholders to access project materials, stay informed, and engage with the project's progress.

<https://www.abc21.eu/>

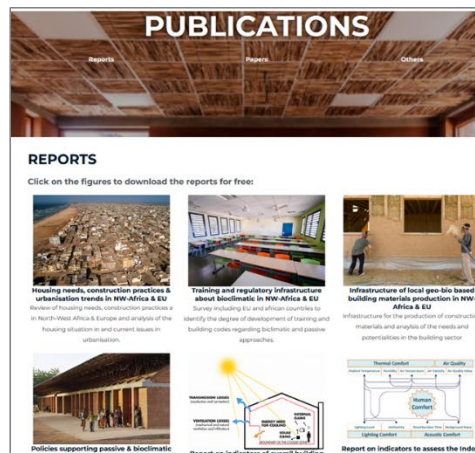
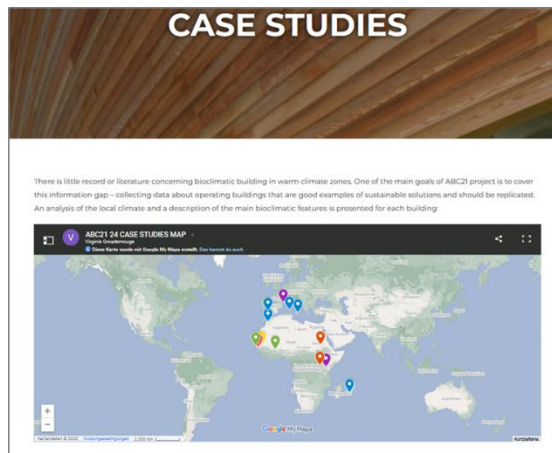
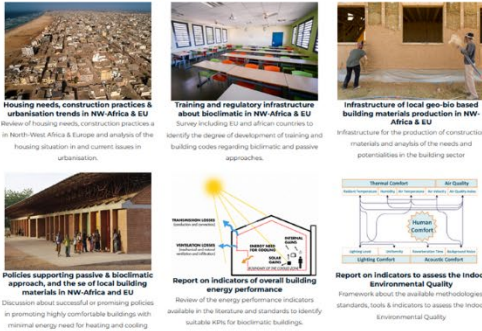
Website structure





REPORTS

Click on the figures to download the reports for free:

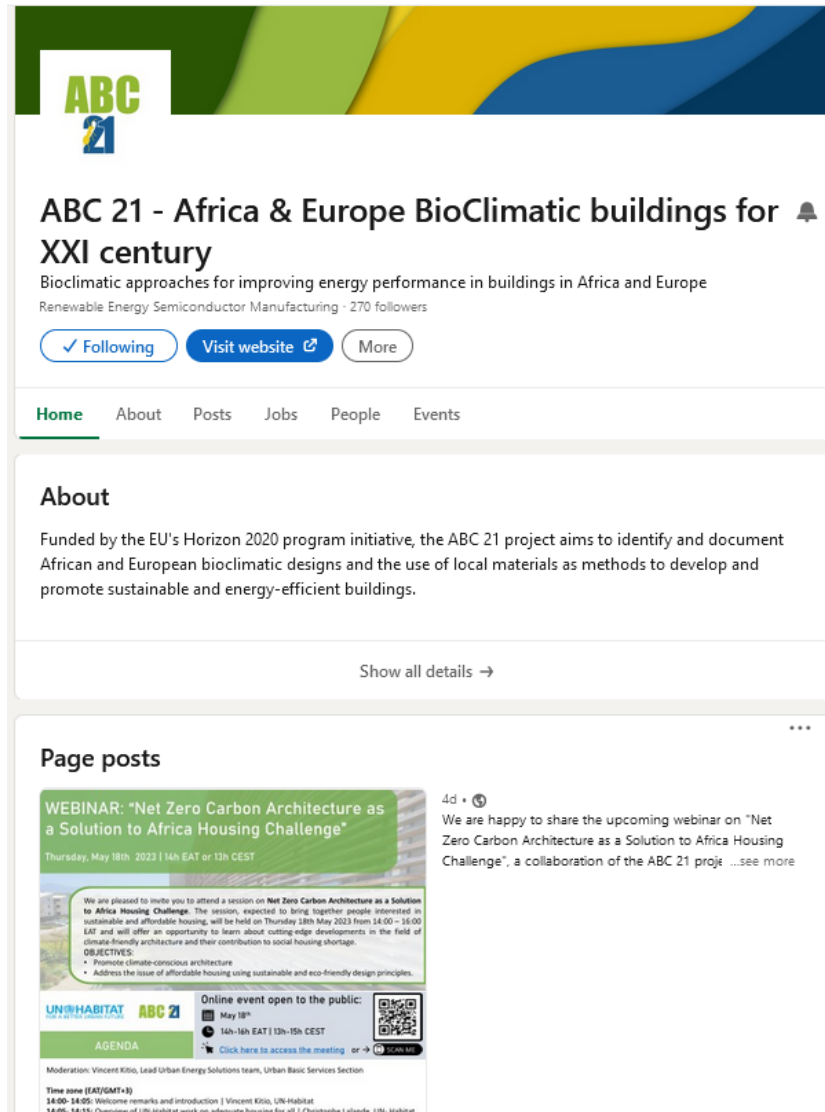


4.2 LinkedIn

The project leveraged LinkedIn as a valuable communication channel, recognizing its efficiency in engaging stakeholders and reaching diverse audiences. The project team

established a LinkedIn account and actively used it to share updates, news, and project achievements. This platform facilitated connections with professionals, policymakers, researchers, and industry experts, enabling meaningful discussions and the exchange of knowledge. The LinkedIn account gained significant traction, particularly when reports were published, generating interest and interaction from a wide range of stakeholders.

<https://www.linkedin.com/company/abc21-africa-europe-bioclimate-collaboration/>



4.2 Twitter

Twitter was predominantly utilized to communicate with a general audience and collaborate with other institutions and projects. The project maintained an active presence on Twitter, sharing project updates, research insights, and relevant industry news. Twitter proved to be an effective channel for engaging with stakeholders, particularly through interactions with partners such as Global ABC and UN Habitat. Collaboration and knowledge sharing were fostered, amplifying the project's visibility and impact within the sustainable building community.

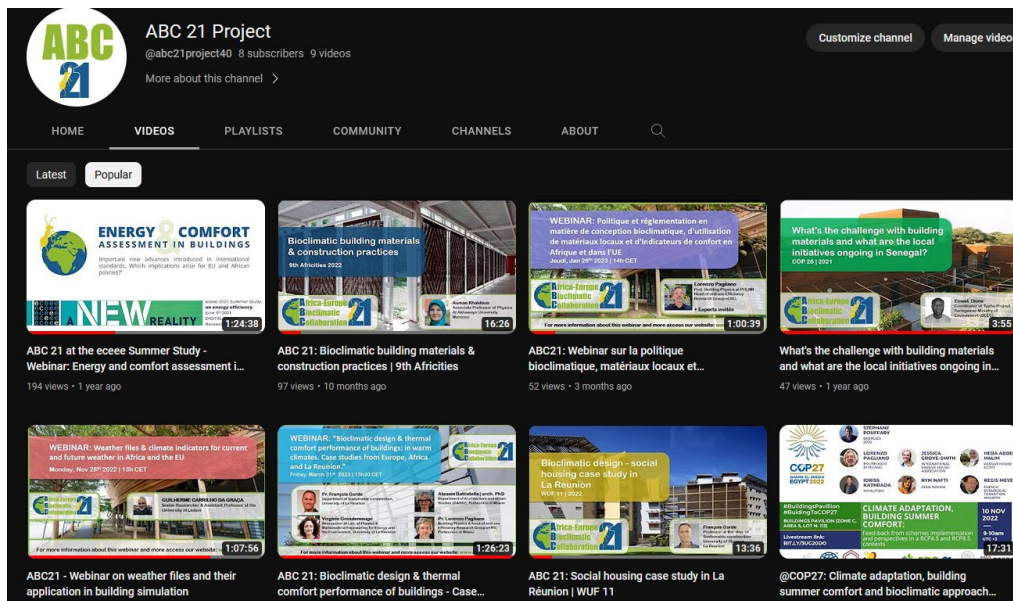
https://twitter.com/ABC21_h2020



4.3 YouTube

YouTube served as a valuable repository for webinars and recordings of online events organized by the ABC 21 project. This platform allowed the project to reach a broader audience by providing access to informative sessions and discussions. By leveraging YouTube, the project ensured that its webinars and online events remained accessible even after their live broadcasts. In total, 10 videos were posted there.

<https://www.youtube.com/@abc21project40>

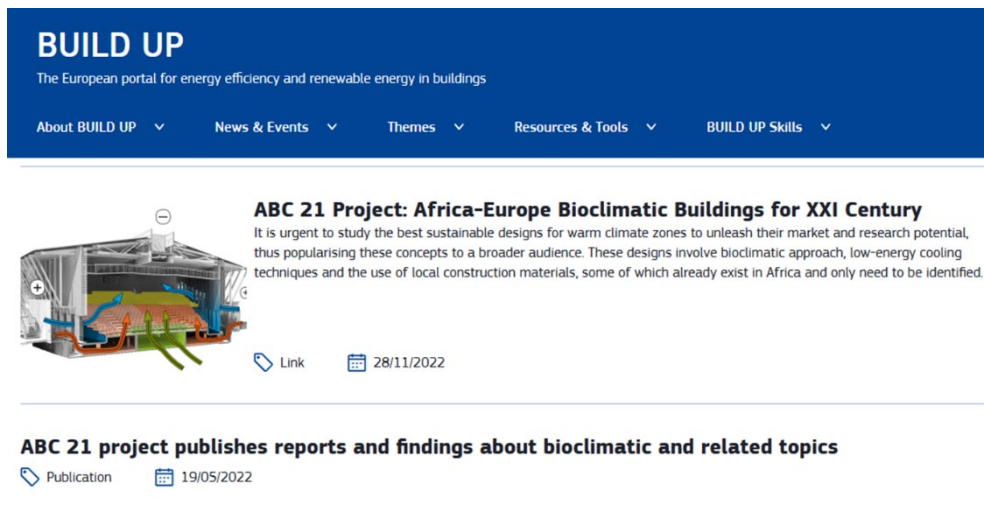


4.4 Other websites

We prepared dedicate posts and content for two specific platforms:

1) BuildUp

It is known for its engagement with European audiences and individuals involved in the building sector, served as a valuable platform for the project. The project team leveraged this website to share detailed information about the project, its objectives, and notable achievements. BuildUp facilitated interactions with European stakeholders, providing a platform for discussions, collaboration, and knowledge exchange.




2) Construction 21

With its focus on green buildings and a strong presence among African audiences, provided an ideal platform to communicate with stakeholders in Africa. The project utilized Construction 21 to share tailored content, disseminate project updates, and engage with individuals passionate about sustainable construction practices. This platform enabled the project to

connect with a wide network of professionals, policymakers, and industry experts across the African building sector.

ALL
POSTED
SHARED



ABC 21 Africa-Europe Bioclimatic Buildings for XXI Century

Mission: bioclimatic design, energy efficiency, sustainable buildings

member since 04/2021



Community leader

43


0

1353

Funded by the EU's Horizon 2020 program initiative, the ABC 21 project aims to identify and document African and European bioclimatic designs and the use of local materials as methods to develop and promote sustainable and energy-efficient buildings.





Housing needs, construction practices and urbanisation trends in North West Africa and Europe



Review of housing needs, construction practices in North-West Africa & Europe and analysis of the housing situation in current issues in urbanisation. The situation of housing demand and supply is facing (...)

ICBMB - International Conference on Bioclimatic Materials and Buildings



International Conference on Bioclimatic Materials & Buildings
Energy efficiency and global industry value chain
May 3rd to 5th 2023 | Ifrane - Morocco | Organized by **ABC 21**

ABC 21 project has received funding from the Horizon 2020 under Grant Agreement No. 884712

Energy efficiency and global industry value chain will gather scientists, politicians, industrials, architects, and other experts in the field to dive into innovative solutions, strategies and policies (...)

ABC21 is funded by the EU's H2020 programme

Page|19

5. Communication materials

Effective communication materials are essential for conveying project information, engaging stakeholders, and promoting participation in project activities. The ABC 21 project utilized a range of materials to effectively communicate its objectives, progress, and upcoming events.

5.1 Flyers


To provide concise and visually appealing information about the project, two flyers were produced. These flyers served as handy promotional tools, summarizing the key aspects of the project, its goals, and the benefits of adopting bioclimatic design and sustainable building practices. The flyers were designed to attract attention and generate interest among stakeholders, encouraging them to learn more about the project and its activities.


The challenge

Forecasts indicate that more than half of the global population growth until 2050 will occur in Africa, and it will be followed by the expansion of housing and building needs. New buildings should be designed following concepts that will make them robust against expected climatic changes and energy efficient. These designs involve:


- a bioclimatic approach,
- low-energy cooling techniques,
- the use of local construction materials,

some of which already exist in Africa and only need to be identified and adapted.





Africa-Europe bioclimatic buildings for XXI Century



Learn more about us:
www.abc21.eu

[/ABC21_h2020](#)
[/abc21-africa-europe-bioclimatic-collaboration](#)

The project has received funding from the EU Horizon 2020 research & innovation programme under the Grant Agreement No. 894712.


Consortium:

- Politecnico di Milano
- Agence Marocaine de l'Efficacité Énergétique
- e7 energy innovation & engineering
- Associação para a Investigação e Desenvolvimento de Ciências
- Direction de l'Environnement et des Etablissements Classés
- Ministry of National Territory Planning, Urban Planning, Housing and City Policy
- Université de La Réunion
- Ecole Africaine des Métiers de l'Architecture et de l'Urbanisme
- Al Akhawayn University in Ifrane

Collaborators:

- UN-Habitat
- Ciências – U Lisboa


ABC 21 promotes information on adequate, locally adapted techniques and building materials related to bioclimatic design and case studies available in Africa & Europe.



Bioclimatism is a concept that integrates the micro-climate and architecture with human thermal comfort. It refers to an architectural design approach which adopts passive strategies to achieve comfort in buildings and neighbouring areas, while reducing energy consumption


ABC 21 objectives are:

- To revive the knowledge of bioclimatic vernacular architecture
- Learn from each other, especially from the experience of African architects, using
- A common technical language (performance indicators, translation table in various national languages)
- Updated design tools,
- Adapted traditional materials
- Comprehensively documenting case studies



Case Studies:

There is little record about bioclimatic buildings in warm climate zones. One of the main goals of ABC 21 is to cover this gap by collecting data about operating buildings that are good examples of sustainable solutions.



© Studio Neri | Office de l'Architecture / Bureau Neri

Buildings categories:

 Office, residential, educational & healthcare

Europe	Africa	Réunion Island
4 buildings France (2) Italy (1) Portugal (1)	16 buildings Kenya (2) Morocco (6) Senegal (6) Sudan (1) Burkina Faso (2) Uganda (1)	6 buildings



www.abc21.eu

ABC21_h2020

abc21-africa-europe

bioclimatic-collaboration

Africa-Europe bioclimatic buildings for XXI Century

THE CHALLENGE

Forecasts indicate that by 2050 more than half of the global population growth will occur in Africa, and it will be followed by the expansion of housing and building needs. New buildings should be designed following concepts that will make them energy efficient and robust against expected climatic changes.

These designs involve

- a bioclimatic approach,
- low-energy cooling techniques,
- the use of local construction materials,

some of which already exist in Africa and only need to be identified and adapted.

CONSORTIUM

- Politecnico di Milano - IT
- Agence Marocaine de l'Efficacité Énergétique - MO
- e7 energy innovation & engineering - AT
- Associação para a Investigação e Desenvolvimento de Ciências - PT
- Direction de l'Environnement et des Etablissements Classés - SE
- Ministry of National Territory Planning, Urban Planning, Housing and City Policy - MO
- Université de La Réunion - FR
- Ecole Africaine des Métiers de l'Architecture et de l'Urbanisme - TO
- Al Akhawayn University in Ifrane - MO

COLLABORATORS

- UN-Habitat - KE
- Ciências - U Lisboa - PT

OUR MISSION

ABC 21 promotes information on adequate, locally adapted techniques and building materials related to bioclimatic design and case studies available in Africa & Europe.

Bioclimatism is a concept that integrates the micro-climate and architecture with human thermal comfort. It refers to an architectural design approach which adopts passive strategies to achieve comfort in buildings and neighbouring areas, while reducing energy consumption.



OUR OBJECTIVES

- Revive the knowledge of bioclimatic vernacular architecture
- Learn from each other, especially from the experience of African architects, using
- A common technical language (performance indicators, translation table in various national languages)
- Updated design tools
- Adapted traditional materials
- Comprehensively documenting case studies



There is little record or literature about bioclimatic buildings in warm climate zones. One of the main goals of is to cover this information gap by collecting data about operating buildings that are good examples of sustainable solutions that should be replicated

Buildings categories evaluated:
Office | Residential | Educational | Healthcare facilities

Locations:

EUROPE (4)	AFRICA (16)	RÉUNION ISLAND (6)
France (2) Italy (1) Portugal (1)	Kenya (2) Morocco (4) Senegal (6) Sudan (1) Burkina Faso (2) Uganda (1)	

The project has received funding from the EU Horizon 2020 research & innovation programme under the Grant Agreement No. 894712.

5.2 Digital Content

The project team created a variety of digital content, including images, infographics, and short videos, to be used in social media and project website. Many figures, charts, and artworks were created to enhance the visual appeal and consistency with the project's identity. The digital content aimed to inform and engage stakeholders, encouraging them to follow the project news and work.



5.3 Newsletter

A key component for the direct communication with selected stakeholders were the two newsletters. It included invitations to webinars on case studies and the International Conference on Bioclimatic Materials and Buildings (ICBMB), providing opportunities for learning and collaboration. The newsletter also shared updates on project work and published results, ensuring stakeholders remained informed about the project's progress and had access to valuable resources. Through these communication materials, the ABC 21 project successfully fostered stakeholder engagement and participation, promoting sustainable building practices and innovation in the construction industry.



The challenge


Forecasts indicate that more than half of the global population growth until 2050 will occur in Africa, and it will be followed by the expansion of housing and building needs. New buildings should be designed following concepts that will make them robust against expected climatic changes and energy efficient. These designs involve:

- a bioclimatic approach,
- low-energy cooling techniques,
- the use of local construction materials,

some of which already exist in Africa and only need to be identified and adapted.

ABC 21 promotes information on adequate, locally adapted techniques and building materials related to bioclimatic design and case studies available in Africa & Europe.

Bioclimatism is a concept that integrates the micro-climate and architecture with human thermal comfort. It refers to an architectural design approach which adopts passive strategies to achieve comfort in buildings and neighbouring areas, while reducing energy consumption.



ABC 21 objectives are:

- ✓ To revive the knowledge of bioclimatic vernacular architecture
- ✓ Learn from each other, especially from the experience of African architects, using
- ✓ A common technical language (performance indicators, translation table in various national languages)
- ✓ Updated design tools,
- ✓ Adapted traditional materials

✓ Comprehensively documenting case studies

Reports & other publications

We have published reports presenting our work regarding energy & comfort indicators, local geo/bio-based building materials, training and regulation infrastructure, policies overview and more. The deliverables are open to the public for download on our website or in the links below:

- [Report on housing needs, construction practices and urbanisation trends in North-West Africa](#)
- [Report on training and regulatory infrastructure in North-West Africa and EU](#)
- [Report on infrastructure for production of construction materials in North-West Africa and EU](#)
- [Report on policies supporting passive and bioclimatic approach, and development of local materials and production chains in North-West Africa and EU](#)
- [Report on indicators of overall building energy performance](#)
- [Report on comfort indicators and scenarios](#)
- [Report on energy flexibility indicators with focus on warm climate conditions](#)
- [Report on availability of weather files and indicators for today and future weather in Africa and EU](#)
- [Report on available methods and tools for the generation of future weather files](#)
- [Report on materials and construction practices](#)




➤ [Report on 12 Case studies of European and African bioclimatic buildings](#)

[Click here to access all Reports](#)

Case Studies

There is little record about bioclimatic buildings in warm climate zones. One of the main goals of ABC 21 is to cover this gap by collecting data about operating buildings that are good examples of sustainable solutions.

Buildings categories: Office, residential, educational & healthcare

<p>Europe</p>  <p>4 buildings France (2) Italy (1) Portugal (1)</p>	<p>Africa</p>  <p>16 buildings Kenya (2) Morocco (4) Senegal (6) Sudan (1) Burkina Faso (2) Uganda (1)</p>	<p>Réunion Island</p>  <p>6 buildings</p>
--	---	---

[Click here to download information about the Case Studies](#)

Weather files for future climate – free to use!

Building energy simulation (BES) has become an essential tool in building energy systems' design and optimization. ABC 21 developed future weather files for 9 different locations in Europe and Africa, freely available to the worldwide building design community to be used in the design of resilient climate projects. Typical Meteorological Year files, containing hourly data, were generated using the Morphing methodology for two future weather periods concerning the years 2050 & 2090.


[Click here to download the Weather files](#)

Webinar & Presentations

We have organised so far two webinars about the project results. Four more will happen until the end of the project:

- **WEBINAR 1: ENERGY & COMFORT INDICATORS: Energy and comfort assessment in buildings - important new advances introduced in international standards. Which implications arise for EU and African policies?**
- **WEBINAR 2: LOCAL BUILDING MATERIALS - HOW TO REDUCE BUILDINGS' EMBODIED CARBON?** In collaboration with PEEB, ACT and GlobalABC we presented some of the work on local construction materials and their potential to decarbonise the building sector.

[Click here to watch the Webinars and presentations](#)



Africa:

- RABAT
- MIDELT
- DAKAR
- NAIROBI
- LOMÉ
- SAINT DENIS

EU:

- VIENNA
- MILAN
- LISBON

ICBMD 23 – Conference

6. Conferences & presentations

The ABC 21 project made significant efforts to introduce the project and its work on numerous occasions. Recognizing the language barrier, especially with countries in Northwest Africa, presentations were delivered in both English and French to ensure effective communication and engagement. Due to COVID-19 restrictions, most presentations and events were online, allowing for broader accessibility and participation. A complete list of the actions and posts made during the project duration is available in chapter 10 *List of dissemination activities and the recordings are available on ABC 21 Website: <https://www.abc21.eu/webinars/>*

6.1 Webinars

The project organized a series of webinars covering various topics related to bioclimatic design and sustainable building practices. While the number of attendees during the live sessions may not have been substantial, the recorded webinars are available on YouTube and continue to be utilized by other projects and individuals. The webinars generated engaging discussions, with attendees asking insightful questions and contributing valuable insights.

To reach a wider African audience, one webinar specifically focused on policies was conducted in French. This strategic decision aimed to bridge the language gap and foster increased participation from stakeholders in Africa. The discussions during the webinars provided valuable inputs that were utilized in the project's ongoing work, ensuring that the project benefited from diverse perspectives and experiences.

The following webinars were conducted as part of the ABC 21 project:

- **Webinar 1: Energy & comfort indicators by POLIMI:**
 - <https://youtu.be/DDuiDITT77Y>
- **Webinar 2: Local materials & techniques towards the future by AUI:**
 - <https://youtu.be/VqHtBdjYo5I>
- **Webinar 2: Future Weather Indicators by FC.ID:**
 - <https://youtu.be/HNVSBGkdV9c>
- **Webinar 4: Successful & promising policies approaches by POLIMI:**
 - <https://youtu.be/6-RzzQbBS2k>
- **Webinar 5: Bioclimatic case studies by UR:**
 - <https://youtu.be/rXlZvSs9GdI>
- **Webinar 6: Bioclimatic concepts in changing climate cities by POLIMI:**
 - <https://youtu.be/Erm7fzyWUDY>

These webinars served as platforms for knowledge exchange, facilitating discussions on key aspects of bioclimatic design and sharing practical insights and experiences. All relevant data and recording were added to ABC 21 website: <https://www.abc21.eu/webinars/>. The recordings of these webinars continue to contribute to the dissemination of knowledge beyond the project itself, leaving a lasting impact on the broader community interested in sustainable

building practices. More details about the webinars are available in the dedicated report *D4.3 – Webinars*.

6.2 Events & conferences

The ABC 21 project actively participated in a series of events and conferences, providing opportunities for knowledge exchange, dissemination of project findings, and collaboration with stakeholders. There were many interaction and participations, and the complete list is available in chapter 10. The following key events and conferences are worth highlighting:

eceee Summer Study 2022

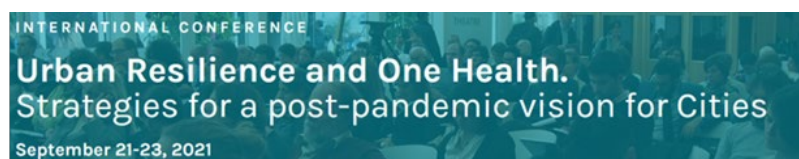
In June 2021, the project organized a session titled "Energy and comfort assessment: important new advances introduced in international standards. Which implications arise for EU and African policies?" The session aimed to analyse the current situation, discuss lessons learned, and explore how these new developments can support legislation and regulation in Africa and Europe. Besides that the project partners participated in other sessions of the conference, highlighting the work in ABC 21 and also exchanging experiences with other researchers and market actors.



Urban Resilience and One Health Conference:

In September 2021, the project's coordinator, Prof. Lorenzo Pagliano (POLIMI), delivered a keynote speech at the Urban Resilience and One Health Conference. The conference focused on strategies for envisioning post-pandemic visions for cities, and Prof. Pagliano's speech contributed valuable insights to the discussion. Also, Prof. Asmae Khaldoun from AU presented two articles related to ABC 21 work in the conference:

- *"Toward sustainable and resilient buildings using optical properties" by Asmae Khaldoun et al.*
- *"Traditional and modern building materials and practices adapted to natural resources: a way to meet the resilience approach" by Asmae Khaldoun, Lorenzo Pagliano, Silvia Erba et al.*



EU COP26 Side Event

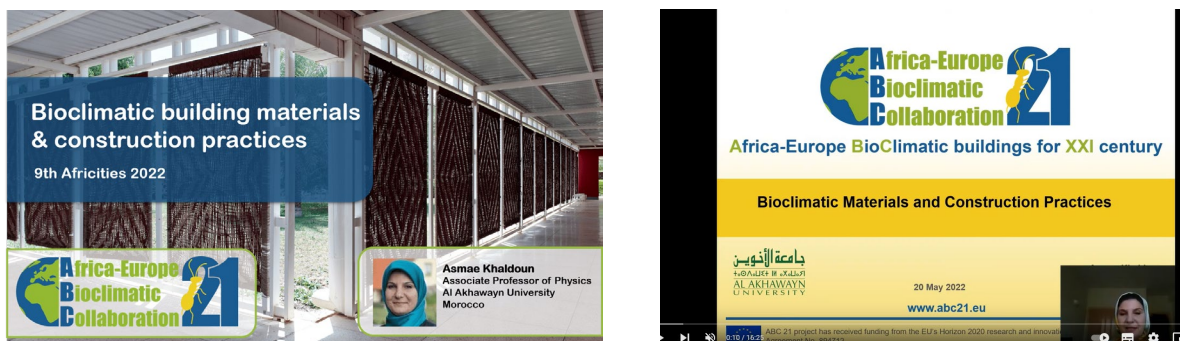
In November 2021, Prof. Asmae Khaldoun (AUI) and Prof. Lorenzo Pagliano (POLIMI) participated in a joint online session as part of the EU side events of COP26. The session, titled "Decarbonizing Buildings: the importance of energy efficiency and low-carbon construction materials," was a collaboration with VELUX and EUROACE. The goal was to explore and discuss feasible solutions to decarbonise the building sector. Prof. Asmae presented the work developed about the use and techniques of Bio-Geo based construction materials and their potential to decarbonise the building sector. Prof. Lorenzo participated as a discussant on the topic of policies and how they need to be adapted to boost this sector.



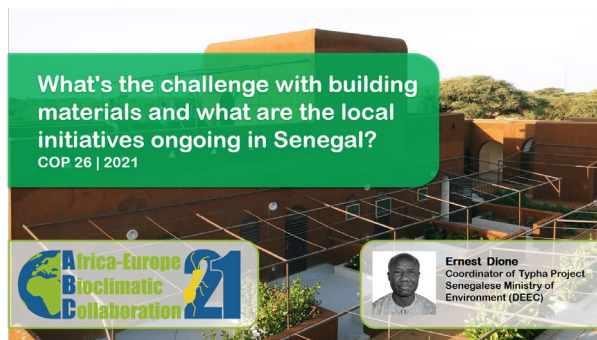
COP26 – French pavilion session

During the COP26 conference held in Glasgow between October 31 and November 12, 2021, the ABC 21 project hosted a hybrid-workshop at the French pavilion. The workshop was organized in collaboration with the French Ministère de la Transition Ecologique et Solidaire, the Global Alliance for Buildings and Construction (GABC), and co-organizers ADEME, PEEB, and AFD. Its primary focus was to showcase the project's work and highlight its contributions to decarbonizing the building sector.

The workshop featured two recorded interventions from the ABC 21 project. Prof. Asmae Khaldoun from AUI presented the research and findings related to local materials for buildings. Her presentation emphasized the various properties and types of local materials available, showcasing their potential for sustainable construction practices.



In addition, Ernest Dione from DEEC presented his work on typha, a plant widely available in Senegal. He highlighted its potential as a sustainable building material that can be utilized in different parts of the building process. This intervention shed light on the innovative use of locally available resources to promote sustainable and environmentally friendly construction practices.



The ABC 21 workshop at the COP26 conference aimed to raise awareness about the project's objectives and achievements in the field of decarbonizing the building sector. By collaborating with reputable organizations and presenting valuable research and practical solutions, the workshop contributed to the broader dialogue on climate change and sustainable urban development.

IRSEC 2021 - International Renewable and Sustainable Energy Conference in November 2021

Students from Al Akhawayn University (AUI), led by Prof. Asmae Khaldoun, presented three papers developed within the framework of the ABC 21 project at the International Renewable and Sustainable Energy Conference (IRSEC) in November 2021.



The presentations at IRSEC 2021 included the following papers:

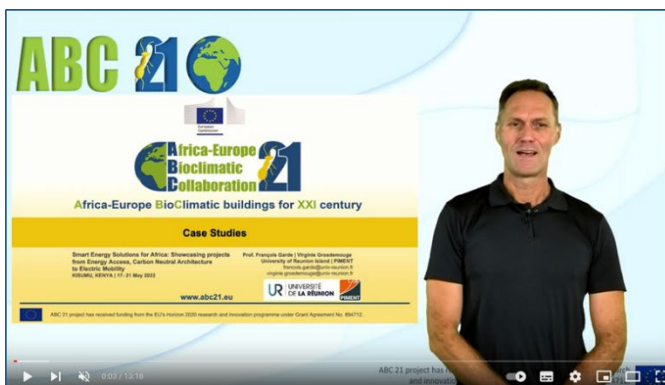
- Presentation: "PV Sizing of a Stand Alone Solar Carport System Linked to Charging Stations and its Economic Analysis (A Case Study)". Presented by Fatima-Ezzahra Riakhi and Prof. Asmae Khaldoun from Al Akhawayn University (AUI).
- Presentation: "PV Sizing of a Grid Connected Solar Carport System Linked to Charging Stations and its Economic Analysis (A Case Study)". Presented by Fatima-Ezzahra Riakhi and Prof. Asmae Khaldoun from Al Akhawayn University (AUI).
- Presentation: "Improving the Rheological Properties of Bensmim Clay for its Use in Clay Brick Production". Presented by Ghita El Boukili, Fatima Zahra El Ouardi, Mahdi Lechheb, Fatima Kifani-Sahban, and Prof. Asmae Khaldoun from Al Akhawayn University (AUI).

These presentations showcased the research and findings related to the ABC 21 project, demonstrating the advancements made in solar carport systems and clay brick production. The contributions of the AUI team added valuable insights to the field of renewable energy and sustainable building materials.

9th Africities

At the 9th Africities conference in May 2022, the ABC 21 project organized a physical session focused on "Smart Energy Solutions for Africa: Energy Access, Carbon Neutral Architecture, and Electric Mobility." The session aimed to address the challenges and opportunities in these areas within the African context.

The session was organized and hosted by Vincent Kitio from UN-Habitat, ensuring a well-structured and informative event. It provided a platform for project partners Prof. Francois Garde and Prof. Asmae Khaldoun to present their research and findings related to the project's case studies and the use of local materials for buildings. Their presentations offered valuable insights into sustainable and energy-efficient practices suitable for African cities.



The session at Africities 2022 attracted an African audience comprising policymakers and representatives from local authorities. This engagement with policymakers ensured that the project's innovative solutions and recommendations could directly influence future policies and decision-making processes. By targeting African policymakers and local authorities, the ABC 21 project aimed to foster meaningful dialogue and encourage the adoption of sustainable energy practices, carbon-neutral architecture, and electric mobility throughout the African continent.

World Urban Forum

WUF 11, the World Urban Forum, was held in Katowice, Poland. The networking session NE 136 hosted at WUF 11 focused on "Towards Net Zero carbon architecture in Africa." This session, organized by UN-Habitat and the ABC 21 project, aimed to address bioclimatic architectural designs for tropical buildings with a specific emphasis on sustainable and affordable housing. The event took place on June 29, 2022, from 2:30 to 4:00 pm, and featured distinguished speakers, including government officials and experts in the field.

The session highlighted the urgent need to tackle the challenges of rapid urbanization, climate change impacts, and the housing shortage in Sub-Saharan Africa. With over half of the global population residing in cities, which are responsible for three-quarters of global greenhouse gas emissions, it is crucial to adopt carbon neutrality principles in building designs. The event emphasized the role of architectural design in achieving carbon neutrality, focusing on energy efficiency, sustainable urban planning, and green neighbourhood design.



Distinguished speakers, including government officials and experts in the field, shared insights on the importance of implementing enabling policies and regulations to drive the transition towards carbon-neutral and bioclimatic architecture. In this session, Prof. Asmae Khaldoun and Prof. François Garde from UR presented the ABC 21 Project work on the case studies and possible solutions to be used widely in the African building sector to help not only to lower energy needs but also to decarbonise buildings:

These events and conferences provided crucial platforms for sharing project findings, engaging with stakeholders, and fostering collaborations with researchers, policymakers, and industry professionals. The participation of ABC 21 project members in these events showcased the project's commitment to promoting sustainable building practices and fostering sustainable development in the built environment. We interacted and participated in many more conferences, the complete list is available in Chapter 10.

7. Papers and Articles

The research partners, primarily universities, played a significant role in producing papers and articles relevant to the theme of the ABC 21 project. The links to the articles are also integrated to ABC 21 website: <https://www.abc21.eu/publications/>

The following list presents the final papers published as a result of their research efforts:

- [1] ASHRAE Likelihood of Dissatisfaction: A new right-here and right-now thermal comfort index for assessing the Likelihood of dissatisfaction according to the ASHRAE adaptive comfort model. [DOI: <https://doi.org/10.1016/j.enbuild.2021.111286>]
- [2] Thermophysical and Mechanical Assessment of Unfired Clay Bricks with Dry Grass Fibrous Filler. [DOI: <https://doi.org/10.1007/s10765-022-03043-8>]
- [3] Assessment of graphene oxide clay wall performance as an efficient active heating system. [DOI: <https://doi.org/10.1016/j.matpr.2022.08.393>]
- [4] Simulation of an energy-efficient cool roof with cellulose-based daytime radiative cooling material. [DOI: <https://doi.org/10.1016/j.matpr.2022.08.411>]
- [5] A study of a passive heating design employing a Trombe wall with PCM: A numerical investigation of the semi-oceanic climate in Morocco. [DOI: <https://doi.org/10.1016/j.matpr.2022.08.410>]
- [6] Machine learning forecasting of thermal, mechanical, and physicochemical properties of unfired clay bricks with plastic waste additives. [DOI: <https://doi.org/10.1016/j.matpr.2022.08.218>]
- [7] Improving rheological and mechanical properties of non-plastic clay soil from Bensmim region (Morocco) using bentonite additions: Suitability for building application. [DOI: <https://doi.org/10.1016/j.jobe.2022.105525>]
- [8] Viscoelastic Measurements of Clay Suspensions and their Relationship to Strength of Unfired Clay Bricks with Almond Husk Additive. [DOI: <https://doi.org/10.4028/p-1p1oy2>]

These papers and articles encompassed various aspects of bioclimatic design, sustainable building materials, and innovative heating and cooling systems. The research findings contributed to the knowledge and understanding of these topics, furthering the field of sustainable construction and promoting the adoption of environmentally friendly building practices. The publications served as valuable resources for the academic and professional communities, enhancing the dissemination and application of the project's research outcomes.

8. ICBMB – International Conference of Bioclimatic

Materials and Buildings

As a part of the project tasks, we organised a dedicated conference to cover the main topics worked during ABC 21 project. Deliverable D4.4 is a detailed report presenting more information about the event and preparation. In this report we will present an overview of the conference and focus on the dissemination and communication aspects.

8.1 Overview

The International Conference on Bioclimatic Materials and Buildings (ICBMB) brought together an impressive gathering of scientists, politicians, architects, industrials, and other experts. The event aimed to delve into innovative solutions, strategies, and policies centered around local bioclimatic approaches. These approaches aimed to create more comfortable living situations while reducing the carbon footprint of buildings and optimizing energy demands for cooling and heating. Held from May 3rd to 5th, 2023, the conference took place in the city of Ifrane, Morocco, hosted by project partner Al Akhawayn University

ICBMB served as a platform for evaluating, disseminating, and adapting existing solutions and policies that promote sustainable building practices. Throughout the conference, experts led insightful discussions on key topics relevant to the development and assessment of policies for highly energy-efficient buildings using a bioclimatic approach.

The event encompassed a range of themes, delving into the analysis of bioclimatic materials, construction practices, and designs. In addition, participants explored the use of indicators and weather files as vital inputs for designing buildings and districts. Notably, the conference featured case studies that showcased successful bioclimatic buildings and districts, illustrating their real-world implementation and impact.

ICBMB fostered collaboration and knowledge exchange among researchers, students, market actors, and non-profit organizations. By uniting diverse stakeholders, the conference accelerated the adoption of sustainable building practices and contributed to the creation of more comfortable, energy-efficient built environments.

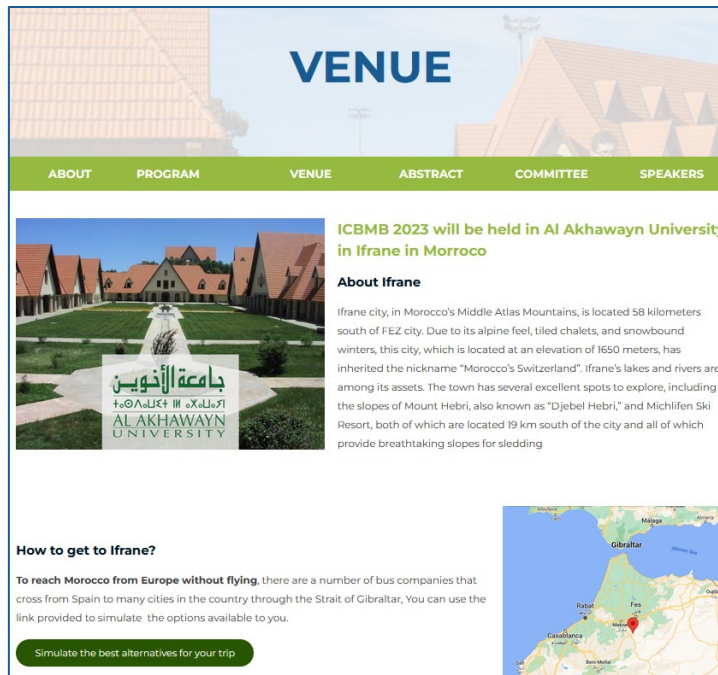




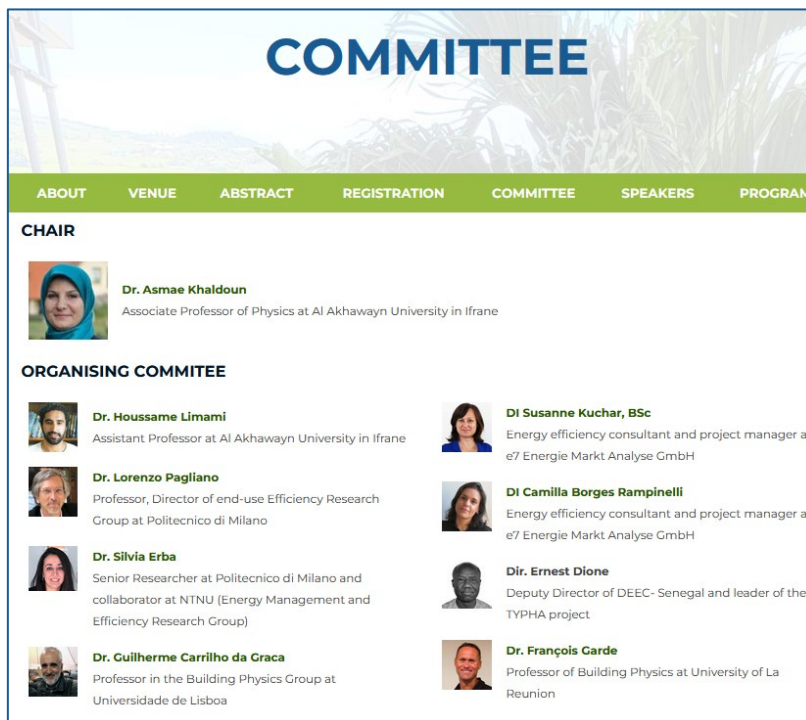
8.2 Conference Website

The conference organising committee created a dedicated website to serve as a central hub of information and updates for participants and the general public. This website played a crucial role in disseminating relevant details about the event and ensuring that attendees had easy access to essential information. One of the key features of the conference website was its constant updates, ensuring that participants had the most up-to-date information regarding the venue, university, and accommodation options. This helped attendees plan their travel and accommodations effectively, enhancing their overall conference experience.

<https://www.abc21.eu/icbmb-2023-ifrane/>



The website also provided comprehensive information about the organizing and scientific committees, allowing participants to familiarize themselves with the individuals responsible for the ICBMB. This transparency helped build trust and credibility among attendees.



To streamline the registration process, the conference implemented a website form where participants could easily register for the event. This simplified and efficient registration process saved time for both organizers and attendees. Also it was made a dedicated section for the abstract, providing a template and guidelines on the submission process.

ABSTRACT

ABOUT PROGRAM VENUE ABSTRACT COMMITTEE SPEAKERS

ABSTRACT TEMPLATE

You are invited to submit an abstract to be presented at the conference and later published.
Please send your abstract directly to our email: icbmb2023@au.ma
 The template to be used for the abstract is available for download:

[Click here to download the Template](#)

DEADLINES

Event	Date	Description
Registration begins	February 1 st 2023	Registration opens to all interested attendees
End of abstract submission	April 1 st 2023 Extended: April 14th 2023	Final date for the abstract submission
Notification of acceptance	April 21 st 2023	Committee notifies abstracts for publishing/ presenting
Paper submission	May 10 th 2023	Submission of the final version of selected papers

Additionally, the website hosted the program, which was available online and adapted as needed to accommodate any last-minute changes. Participants could refer to the website to stay informed about the schedule, session details, and speakers, ensuring they didn't miss out on any valuable sessions or presentations.

Furthermore, the conference website served as a repository for all presentations and posters, making them accessible to the public. This feature allowed participants to revisit the materials presented during the event and provided a valuable resource for individuals who were unable to attend the conference.

8.3 Program & Speakers

The ICBMB 2023 conference program featured a diverse range of topics and prominent speakers, providing valuable insights into bioclimatic materials and buildings. The conference kicked off with opening speeches that emphasized the importance of highly energy-efficient buildings adopting the bioclimatic approach. The program delved into the analysis of bioclimatic materials, construction practices, and designs

The presentations by Prof. Lorenzo Pagliano and Prof. Silvia Erba focused on policies for bioclimatic buildings, highlighting the need for sustainable and comfortable living spaces. Renowned experts such as Prof. Riccardo Paolini, Prof. Asmae Khaldoun, and Prof. Mohammed el Ganaoui presented their research on topics like supercool materials for urban heat mitigation, the challenges of building bioclimatic materials, and the principles of bioclimatic architecture. These sessions provided valuable insights into innovative approaches and materials that contribute to energy-efficient and sustainable buildings.

Another key aspect of the conference program was the discussion on indicators and weather files as inputs for designing buildings and districts. Prof. Lorenzo Pagliano, Prof. Moussa Dembele, and João Carlos Simões were among the speakers who shared their expertise on weather files, climate indicators, and methodologies for assessing thermal comfort. These

discussions highlighted the importance of accurate data and performance indicators in designing environmentally responsive and comfortable buildings.

The program also featured presentations on bioclimatic buildings and districts, showcasing case studies from various regions. Speakers like Arch. Vincent Kitio and Ernest Dione shared their insights into energy and resource-efficient office buildings, as well as neighbourhood-level bioclimatic solutions. These real-world examples demonstrated the successful implementation of bioclimatic principles in different contexts.

Throughout the conference, attendees had access to a collection of presentations and posters, which were made available for download on the conference website. This ensured that the knowledge and findings shared during the event could be accessed and utilized even after the conference had ended.

Below is the official program, also available on [ICBMB Website](#):

ICBMB 2023 conference program

Wednesday, May 3rd 2023

9:00 am – Participant registration and welcoming

Policies for highly energy efficient buildings adopting the bioclimatic approach

Opening Speeches

2:00 pm – Chair of the Conference

2:10 pm – Prof. Lorenzo Pagliano, Prof. Silvia Erba (ABC21 Coordinators) | [download here the presentation "Policies for Bioclimatic Buildings"](#)

2:40 pm – President of AUI University

2:55 pm – Mme. Soraya Khalil (Ministry of Habitat Morocco)

3:00 pm – Julien Tami (EU representative, DG Energy)

3:15 pm – Mme. Nada Belkhir (AMEE) | [download here the presentation "L'INFRASTRUCTURE RÉGLEMENTAIRE ET DE FORMATION EN AFRIQUE DU NORD-OUEST ET EN EUROPE"](#)

3:30 pm – Régis Meyer (GABC Global Alliance for Building and Construction (UN))

3:45 pm – Vincent Kitio (UN-Habitat) | [download here the presentation "Policies and legislations on Energy and Resource Efficiency in the building and construction sector in Sub-Saharan Africa"](#)

4:00 pm - Coffee break

4:00 pm – Round table on "Policies for highly Energy Efficient Buildings adopting the Bioclimatic approach"

6:00 pm – End of Day 1

Thursday, May 4th 2023

Analysis of bioclimatic materials and construction practices and design
Presentations

9:00 am – Prof. Riccardo Paolini (University of New South Wales) | [download here the presentation "Supercool materials for urban heat mitigation and cooling energy savings"](#)

9:30 am – Prof. Asmae Khaldoun (Al Akhawayn University) | [download here the presentation "Bioclimatic Materials"](#)

9:45 am – Prof. Rachid Bennacer (Paris-Saclay University / ENS Paris-Saclay) | [download here the presentation "Building Bioclimatic Materials Challenges"](#)

10:00 am – Prof. Mohammed el Ganaoui (University of Lorraine) | [download here the presentation "Bioclimatic Architecture"](#)

10:15 am – Prof. Vincent Sambou (Cheikh Anta Diop University) | [download here the presentation "Thermal behaviour and energy evaluation of an ecological building located in Dakar, Senegal"](#)

Coffee break

11:00 am – Discussion

12:00 pm - Lunch break

Indicators and weather files, as Input for the design of buildings and districts
Presentations

2:00 pm – João Carlos Simões (University of Lisbon) | [download here the presentation "Weather files and climate indicators for current and future weather in Africa & EU"](#)

2:20 pm – Silvia Erba (Politecnico di Milano) | [download here the presentation "Key performance indicators and methodology for thermal comfort assessments"](#)

2:40 pm – Prof. Lorenzo Pagliano (Politecnico di Milano) | [download here the presentation "Comfort Indicators for Bioclimatic Buildings"](#)

3:00 pm – Prof. Moussa Dembele (EAMAU Togo) | [download here the presentation "Implication de la formation dans la promotion de l'architecture Bioclimatique en Afrique"](#)

3:15pm – Prof. Dorra Ismail (Ecole Nationale d'Architecture et d'Urbanisme, Tunisia) | [download here the presentation "Comment penser notre praxis, enseignement, recherche de l'architecture?"](#)

3:30 pm – Prof. Akouete Atsou Fiefonou (EAMAU Togo) | [download here the presentation "Impacts négatifs du changement climatique sur la ville de Lomé au Togo de 2000 à 2022"](#)

3:45 pm – Eng. Zakaria Sadik (ALTO EKO) | [download here the presentation "Energy efficiency and green building in Morocco"](#)

4:00 pm – Prof. Mohamed Essaaidi (ENSIAS College of Engineering) | [download here the presentation "Sustainable Smart Cities for SDGs Acceleration"](#)

Coffee break

4:00 pm – Posters: [click here to download all the posters presented!](#)

Friday, May 5th 2023

Bioclimatic buildings and districts: Case studies
Presentations

9:00 am – Silvia Erba (Politecnico di Milano) | [download here the presentation "Case Studies & Thermal comfort Assessment"](#)

9:15 am – Arch. Vincent Kitio (UN-Habitat Kenya) | [download here the presentation "The United Nations Offices Nairobi: Energy and Resource Efficient Office Building Headquarters of UN-Habitat and UN -Environment"](#)

9:30 am – Ernest Dione (Typha project Senegal) | [download here the presentation "Bioclimatic buildings and neighbourhoods – cases studies"](#)

9:45 am – Prof. Abderrahim Brakez (University of Cadi Ayyad)

10:00 am – Arch. Mamoun Kadiri Hassani (Morocco) | [download here the presentation "Pour des architectures soutenables au Maroc"](#)

Coffee break

11:00 am – Discussion

12:00 pm – CLOSING CEREMONY

12:30 pm – End of conference

8.3 Dissemination

The dissemination strategy employed for the ICBMB 2023 conference aimed to maximize awareness and participation. The first step was to elaborate the visual identity to be used on the materials and dissemination actions:



03 – 05 May 2023

Al Akhawayn University
Campus, Ifrane, Morocco

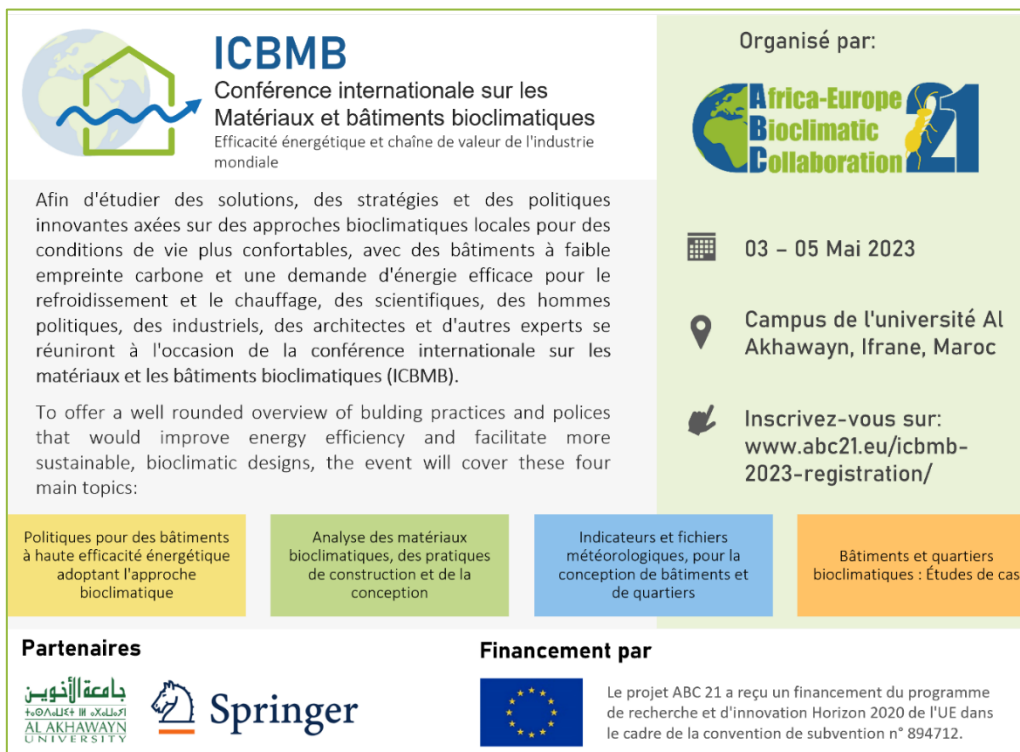
The following elements were integral to this strategy:

Direct Invitations: The organizing committee proactively reached out to individuals and organizations within their network. Personalized newsletters and formal invitation emails were sent to ensure that the target audience received tailored information about the conference, increasing the likelihood of their attendance.

Website and Platform Dissemination: To reach a wider audience, the conference details were prominently featured on various reputable websites and platforms. The BuildUp website, Construction 21 website, UN-Habitat, and Global ABC were selected as key platforms for sharing conference information. Leveraging the established credibility and audience of these platforms allowed individuals interested in sustainable construction practices and bioclimatic

materials to easily access information about the conference. Additionally, the conference was included in the event calendars of these platforms, further enhancing its visibility and attracting potential participants.

Bilingual Materials: To foster greater engagement from African stakeholders, particularly from North and Western Africa, the conference organizers prepared materials in both English and French. Recognizing the importance of linguistic diversity in the region, this approach aimed to facilitate accessibility and ensure that participants from various linguistic backgrounds could fully engage with the conference content. By providing information and resources in both English and French, the organizers actively encouraged the participation of stakeholders from North and Western Africa, enabling them to fully comprehend and contribute to the discussions on bioclimatic materials and buildings.



ICBMB
Conférence internationale sur les Matériaux et bâtiments bioclimatiques
Efficacité énergétique et chaîne de valeur de l'industrie mondiale

Afin d'étudier des solutions, des stratégies et des politiques innovantes axées sur des approches bioclimatiques locales pour des conditions de vie plus confortables, avec des bâtiments à faible empreinte carbone et une demande d'énergie efficace pour le refroidissement et le chauffage, des scientifiques, des hommes politiques, des industriels, des architectes et d'autres experts se réuniront à l'occasion de la conférence internationale sur les matériaux et les bâtiments bioclimatiques (ICBMB).

To offer a well rounded overview of bulding practices and polices that would improve energy efficiency and facilitate more sustainable, bioclimatic designs, the event will cover these four main topics:

- Politiques pour des bâtiments à haute efficacité énergétique adoptant l'approche bioclimatique
- Analyse des matériaux bioclimatiques, des pratiques de construction et de la conception
- Indicateurs et fichiers météorologiques, pour la conception de bâtiments et de quartiers
- Bâtiments et quartiers bioclimatiques : Études de cas

Organisé par: Africa-Europe Bioclimatic Collaboration

03 – 05 Mai 2023


Campus de l'université Al Akhawayn, Ifrane, Maroc

Inscrivez-vous sur: www.abc21.eu/icbmb-2023-registration/

Partenaires
جامعة الأخوين
ALAKHAWAYN UNIVERSITY
Springer

Financement par
Le projet ABC 21 a reçu un financement du programme de recherche et d'innovation Horizon 2020 de l'UE dans le cadre de la convention de subvention n° 894712.

Social Media Engagement: The organizing committee utilized the existing ABC21 LinkedIn and Twitter accounts to extend the reach and engage with a broader audience. Regular updates about the conference, including speaker announcements and program highlights, were shared through these social media channels. Additionally, the committee prepared profiles of the esteemed speakers, which were posted on social media to generate excitement and attract more attendees. By showcasing the expertise and insights of the speakers, the committee aimed to create anticipation and encourage active participation from the audience. These strategic social media efforts not only disseminated conference information but also served as a powerful tool for promoting the event, building credibility, and fostering a sense of community among professionals and enthusiasts interested in bioclimatic materials and buildings.




ICBMB
International Conference on
Bioclimatic Materials & Buildings
Energy efficiency and global industry value chain

03 - 05 May 2023

Al Akhawayn University
Campus, Ifrane, Morocco

Scan for further details
about ICBMB and ABC 21




Vincent Kitio got his PhD from the University of Rome la "Sapienza", Italy. He leads the Urban Energy Solutions of UN-HABITAT, a section that works on three focus areas: universal energy access for the urban poor; energy efficiency in the built environment (including adequate and affordable housing) and renewable energy systems (both generation and consumption) in urban areas. He develops and implements regional energy programs in Africa. Past and ongoing projects include: "Promoting Energy Efficiency in Buildings in East Africa" that aims at mainstreaming energy efficient measures in housing policies, building codes, building practices and building finance; and the "Mainstreaming Energy and Resource Efficiency measures, and Renewable Energy technologies into Building Codes in West Africa (Senegal, Nigeria and Cameroon).


Lead Urban Energy Solutions, UN-HABITAT.


He is architect graduated from the Institute of Architecture of Venice.

He holds a PhD in Appropriate Energy Technologies for Developing Countries.




**VINCENT
KITIO**






Partners



Funding by



ABC 21 Project has received funding from the EU's Horizon 2020 research and innovation programme under Grant Agreement No. 894712.

9. Evaluation & Impact

The dissemination activities undertaken within the ABC 21 project were rigorously evaluated to assess their effectiveness in achieving the project's objectives. Key performance indicators (KPIs) were defined to measure the reach, engagement, and impact of the various channels and activities. The evaluation process involved both quantitative and qualitative methods to gather data and feedback from stakeholders.


8.1 Quantitative Evaluation (KPIs)

Quantitative evaluation focused on measuring the reach and engagement of the dissemination channels. Key metrics included: Website Analytics, Social Media Metrics, and Event Participation. The table below summarises some of the KPIs from the dissemination work.

Website		#
Page views		13,426
Sessions (user engaged with website)		6,297
Users		3,611
Social Media	# of followers	# of posts
LinkedIn	270	75
Twitter	281	85
Events (Grant Agreement)	# of attendees	# of presentations
ceeee Summer Study	40	1
UN Climate Change Conference: COP 26	35	2*
Africities 2021	25	1
International Renewable and Sustainable Energy Conference (IRSEC)	40	1
World Urban Forum	20	2
ICBMB	60	6
Webinars	# of attendees	Recording visualisation
Webinar 1: Energy & Comfort Indicators	40	194
Webinar 2: Local Materials & Techniques towards the Future	92	168
Webinar 3: Future Weather Indicators	35	30
Webinar 4: Successful & promising Policies Approaches	33	52
Webinar 5: Case studies	43	28
Webinar 6: Bioclimatic concepts in changing climate cities	xxx	-
Papers	# of papers	
Publications on journals	8	

In terms of audience, we can relate to the Webinars, Social Media and Website demographics:

Website

Country	% Users
1.  Morocco	19.39%
2.  United States	13.87%
3.  Italy	13.30%
4.  France	7.27%
5.  Netherlands	3.14%
6.  India	2.84%
7.  Austria	2.76%
8.  Finland	2.54%
9.  Germany	2.46%
10.  Portugal	2.30%

LinkedIn

Location	% Users
Casablanca Prefecture, Morocco	31 (8.8%)
Milan Area, Italy	23 (6.6%)
Ifrane Province, Morocco	17 (4.8%)
Lisbon Area, Portugal	15 (4.3%)
Austria area	10 (2.8%)
Reunion area	10 (2.8%)
Rabat Prefecture, Morocco	7 (2%)
Metz Area, France	6 (1.7%)

8.2 Qualitative Evaluation (based on KPIs)

The qualitative evaluation of the ABC 21 project's dissemination activities demonstrates a successful engagement with the target audience and a strong impact on knowledge sharing. The project's website received 13,426 page views, with 6,297 sessions from 3,611 unique users, indicating a significant interest and interaction with the project's online content.

The project's social media presence also proved effective, with 270 followers on LinkedIn and 281 followers on Twitter. This shows a successful engagement with stakeholders and audiences through these platforms.

Participation in various events further contributed to the project's qualitative evaluation. The project had a presence at notable conferences such as eceee Summer Study, UN Climate Change Conference COP26, Africities 2021, International Renewable and Sustainable Energy Conference (IRSEC), World Urban Forum, and the International Conference on Bioclimatic Materials and Buildings (ICBMB). These events attracted a total of 215 attendees, and the project had the opportunity to present and discuss its findings and outcomes, thereby creating valuable interactions and knowledge exchange.

The demographics show that our strategy was successful to engage northern Africa and south European countries. To expand even further the reach to West-Africa, it would be necessary to create content and work in French, since the language seems to be a barrier for that:

8.3 Assessment of dissemination activities

The dissemination activities of the ABC 21 project have had a significant impact in raising awareness, fostering engagement, and promoting sustainable building practices. The project's webinars covering various topics such as energy and comfort indicators, future weather indicators, local materials and techniques, case studies, and successful policy approaches attracted a total of 261 attendees. This indicates a strong interest in the project's subject matter and a willingness to learn and participate in the discussions.

The publication of eight research papers in reputable journals has further contributed to the project's impact. These papers provide valuable insights into bioclimatic design, sustainable building materials, and innovative heating and cooling systems. By disseminating knowledge

and sharing research findings, the project has played a crucial role in advancing the field and inspiring further research and innovation.

The project's online presence and engagement have also reflected in the demographics of website and LinkedIn access. The top countries accessing the website include Morocco, the United States, Italy, France, and the Netherlands, indicating a global reach. Similarly, the LinkedIn access is prominent in locations such as Casablanca Prefecture in Morocco, the Milan Area in Italy, and Ifrane Province in Morocco, demonstrating the project's impact on an international scale.

In conclusion, the ABC 21 project has effectively disseminated its research and findings through various channels, resulting in a significant impact on engagement, knowledge sharing, and the promotion of sustainable building practices. The project's webinars, publications, events, and online presence have collectively contributed to its success in reaching and engaging a diverse audience and driving positive change in the field of bioclimatic design and sustainable construction.

10. List of dissemination activities

	Title	Link	Audience	Details	Partner	Date	Location
# Articles/Papers in Journals							
1	ASHRAE Likelihood of Dissatisfaction: A new right-here and right-now thermal comfort index for assessing the Likelihood of dissatisfaction according to the ASHRAE adaptive comfort model	https://doi.org/10.1016/j.enbui.2021.111286	Scientific Community	This paper proposes a novel right-here and right-now index for use with the ASHRAE Standard 55 adaptive thermal comfort model. It is based on the same underlying logic and assumptions embedded in de Dear and Bragers' adaptive model in order to maximise coherence with the reference thermal comfort approach.	POLIMI	Jul 19, 2021	-
2	Thermophysical and Mechanical Assessment of Unfired Clay Bricks with Dry Grass Fibrous Filler	https://doi.org/10.1007/s10765-022-03043-8	Scientific Community	The paper investigates ecological environmental-friendly building materials with improved physicochemical and insulating properties as well as good functioning materials with appropriate mechanical resistances, suitable to be good construction materials in specific building applications.	AUI	Jun 2, 2022	-
3	Assessment of graphene oxide clay wall performance as an efficient active heating system	https://doi.org/10.1016/j.matpr.2022.08.393	Scientific Community	Graphene Oxide Bricks (GOB) as a heating system show promising results, quickly raising indoor temperature and providing longer heat retention compared to traditional systems. Optimizing the wall length and incorporating clay brick covering enhance its performance.	AUI	Feb 2023	-
4	Simulation of an energy-efficient cool roof with cellulose-based daytime radiative cooling material	https://doi.org/10.1016/j.matpr.2022.08.411	Scientific Community	This paper proposes a cool roof using a recyclable cellulose acetate-based material for daytime radiative cooling, achieving significant energy savings of up to 60.38% and improved thermal comfort in buildings	AUI	Feb 2023	-
5	A study of a passive heating design employing a Trombe wall with PCM: A numerical investigation of the semi-oceanic climate in Morocco	https://doi.org/10.1016/j.matpr.2022.08.410	Scientific Community	Passive systems, like the Trombe wall, combined with Phase Change Materials (PCM), effectively balance heating and cooling in buildings. By implementing specific measures, significant energy savings of 42.97% were achieved in a semi-oceanic climate.	AUI	Feb 2023	-
6	Machine learning forecasting of thermal, mechanical and physicochemical properties of unfired clay bricks with plastic waste additives	https://doi.org/10.1016/j.matpr.2022.08.218	Scientific Community	This paper focuses on designing a forecasting model to predict the properties of clay bricks with different percentages of plastic waste additives (HDPE & PET). The model, validated through three comparative techniques, demonstrates accurate predictions with a low percentage error of around 1%.	AUI	Jan 2023	-
7	Improving rheological and mechanical properties of non-plastic clay soil from Bensmim region (Morocco) using bentonite additions: Suitability for building application	https://doi.org/10.1016/j.jobbe.2022.105525	Scientific Community	This study focuses on developing a scientific methodology to adjust the physicochemical composition of clay soil for construction purposes. By adding bentonite to unsuitable clay, the plasticity and properties of clay bricks were significantly improved. The findings demonstrate that rheology can be effectively used to optimize construction material formulations.	AUI POLIMI	Jan 2023	-



	Title	Link	Audience	Details	Partner	Date	Location
8	Viscoelastic Measurements of Clay Suspensions and their Relationship to Strength of Unfired Clay Bricks with Almond Husk Additive	https://doi.org/10.4028/p-1p1oy2	Scientific Community	This study investigates the rheological behaviour of organ-silica suspensions made from almond husk waste and illite clay, in relation to the compressive strength of unfired clay bricks incorporating the same waste	AUI	Jul 2022	-
# ABC 21 Website posts – “News” Section							
1	Connect with us on Twitter and LinkedIn	Link	All stakeholders	Presentation of the project and social media channels	e7	Jun 1, 2021	Online
2	ABC 21 hosts a dedicated session at eceee Summer Study on Wednesday – June 9th 21	Link	All stakeholders	Promotion of webinar as a part of eceee summer study, one of our allies	e7	Jun 1, 2021	Online
3	Participation at Urban Resilience and One Health 2021	Link	All stakeholders	Disseminate UROH event and ABC 21 contributions	e7	Sep 16, 2021	Online
4	ABC 21 @ COP26 EU side event – online session about Decarbonising Buildings	Link	All stakeholders	Promotion of joint webinar as part of EU side events of COP26	e7	Nov 2, 2021	Online
5	COP26 session on Decarbonisation of the Building Sector – French Pavilion & Online	Link	All stakeholders	Promotion of ABC 21 contribution to French Pavilion session on buildings and energy efficiency	e7	Nov 9, 2021	Online
6	New report on housing needs & building practices in Africa & Europe	Link	All stakeholders	Dissemination of recently published report D2.1	e7	Dec 7, 2021	Online
7	Training & regulatory infrastructure concerning bioclimatic in the EU and Africa	Link	All stakeholders	Dissemination of recently published report D2.2	e7	Dec 10, 2021	Online
8	Local construction bioclimatic materials – an overview of the technical characteristics, types & manufacturers in NW-Africa & EU	Link	All stakeholders	Dissemination of recently published reports D2.3 and D3.7	e7	Dec 14, 2021	Online
9	Policy Overview: Supporting Passive & Bioclimatic Approaches in NW-Africa & EU	Link	All stakeholders	Dissemination of recently published report D2.4	e7	Dec 16, 2021	Online
10	Comfort indicators and energy flexibility in buildings: reports describe concepts and how to connect them to bioclimatic approaches	Link	All stakeholders	Dissemination of recently published reports D3.1, D3.2 & D3.3	e7	Dec 22, 2021	Online
11	Participation at IRSEC 2021	Link	All stakeholders	Dissemination of video recordings regarding three presentations done at IRSEC 2021, an online event organised in Morocco	e7	Feb 22, 2022	Online
12	Case Studies – report on successful examples of bioclimatic approach in the EU and Africa	Link	All stakeholders	Dissemination of recently published report D3.8	e7	Feb 22, 2022	Online
13	Webinar: Building materials – A hidden heavyweight for the climate	Link	All stakeholders	Dissemination of the Webinar about bioclimatic building materials in collaboration with PEEB	e7 AUI	Mar 21, 2022	Online
14	ABC21 participates in roundtable “Towards Adaptation of the Building Sector in the Mediterranean Region”	Link	All stakeholders	Cooperation with RCREEE and meetMED II, and GlobalABC and ADEME organised a roundtable discussion to address the topic of resilient building construction in the Mediterranean context from the perspective of COP 27 that will be hosted in Egypt. The event took place on March 7th 2022 at Nice/FR.	e7 POLIMI FC.ID	Apr 13, 2022	Online



	Title	Link	Audience	Details	Partner	Date	Location
15	Join us at WUF 11 in Katowice, for the network event about bioclimatic architecture in the African context	Link	All stakeholders	Our partner Vincent Kitio from UN-HABITAT along with ABC 21 project hosted a networking session (NE 136) at WUF11 entitled “Towards Net Zero carbon architecture in Africa: Presentation of case studies of carbon-neutral buildings in Africa”	e7 UN-HAB	Jun 23, 2022	Online
16	ABC 21 participates at COP 27 building session about Climate adaptation & summer comfort	Link	All stakeholders	Participation on COP 27 session, to provide different point a view on these challenges, with a panel of speakers involved in the strategy design and the projects implementation, in different locations in the world.	e7 POLIMI	Nov 7, 2022	Online
17	Webinar on weather files and their application in building simulation	Link	All stakeholders	Dissemination of the Webinar about weather files: prof. Guilherme Carrilho da Graça from the University of Lisbon will presented his work regarding the generation and application of weather files for future and current weather in building thermal simulation, specifically in warm climate areas in Europe and Africa.	e7 FC.ID	Nov 21, 2022	Online
18	UN-Habitat, POLIMI and UR working together on Case Study: UN Building in Nairobi	Link	All stakeholders	Hybrid meeting between UN-HABITAT, POLIMI and UR. The meeting was focused on analysing the passive features of the UN-Habitat office building in Nairobi, Kenya and design the monitoring experiment to test the passive features of the building	e7 POLIMI UR UN-HAB	Feb 16, 2023	Milan, IT
19	Webinar about Case Studies in Africa, Europe and La Reunion	Link	All stakeholders	Dissemination of the Webinar about Case Studies: Presentation of bioclimatic buildings in terms of passive solutions and thermal comfort performance for different climates in mainland Africa, the Indian Ocean and South Europe. Lessons learned and ways of improving thermal comfort.	e7 POLIMI UR	Mar 23, 2023	Online
20	ABC 21 Project and EEA Collaborate to Provide Sustainable Cooling Solutions for Buildings in Europe	Link	All stakeholders	Collaboration has resulted in the incorporation of innovative inputs in the EEA's latest report on sustainable cooling policies for buildings in Europe.	e7 POLIMI	Apr 26, 2023	Online
21	Webinar about bioclimatic architecture – Net Zero Carbon Architecture as a Solution to Africa Housing Challenge by UN-Habitat	Link	All stakeholders	Dissemination of the Webinar about bioclimatic concepts: collaboration with UN-Habitat - Promote climate-conscious architecture & Address the issue of affordable housing using sustainable and eco-friendly design principles.	e7 POLIMI UN-HAB		Online
# Other websites							
1	e7 WEBISTE - Africa-Europe BioClimatic Buildings for XXI Century is now online!	Post link	Policy Makers Market Actors Public Sector Development Agencies	Presentation of the project, partners and objectives	e7	Mar 15, 2021	Online

	Title	Link	Audience	Details	Partner	Date	Location
2	GlobalABC May 21 newsletter article	Newsletter link	Policy Makers Market Actors Education Sector Public Sector Development Agencies	Project presentation and link to website	e7 POLIMI	May 21	Online
3	e7 WEBISTE - Join the ABC 21 webinar on the topic of "Energy and comfort assessment in buildings" on June 9th at the eceee Summer Study 2021!	Post link	Policy Makers Market Actors Public Sector Development Agencies	Dissemination of WEBINAR on Energy & Comfort indicators	e7	May 30, 2021	Online
4	BUILDUP WEBSITE - Promoting Webinar 1 (Post in "LEARN" and Article in "NEWS AND EVENTS")	News & Events	All stakeholders	Promotion of Webinar	e7	June 2021	Online
5	CONSTRUCTION 21 WEBSITE - Introduction to ABC 21	Post link	All stakeholders	Presentation of the project, partners and objectives	e7	Jun 2, 2021	Online
6	CONSTRUCTION 21 WEBSITE - Webinar "Energy and comfort assessment in Buildings"	Post link	All stakeholders	Dissemination of WEBINAR on Energy & Comfort indicators	e7	Jun 03, 2021	Online
7	BUILDUP WEBSITE - Introduction to the project	Explore	All stakeholders	Presentation of the project, partners and objectives	e7	Jun 7, 2021	Online
8	BUILDUP WEBISTE - Reports	Link	All stakeholders	Presentation of reports (available for download):	e7	May 19, 2022	Online
9	CONSTRUCTION 21 - Reports	Link	All stakeholders	Presentation of reports (available for download):	e7	May 25, 2022	Online
10	Build Up - Webinar Building materials – A hidden heavyweight for the climate	Link	All stakeholders	Dissemination of webinar	e7	Mar 2022	Online
11	CONSTRUCTION 21 - Webinar: Building materials – A hidden heavyweight for the climate	Link	All stakeholders	Dissemination of webinar	e7	Mar 2022	Online
12	Build Up - Webinar on Weather files and climate indicators for current and future weather in Africa and the EU	Link	All stakeholders	Dissemination of webinar	e7	Nov 2022	Online
13	CONSTRUCTION 21 - [Webinar] Weather files and climate indicators for current and future weather in Africa and the EU	Link	All stakeholders	Dissemination of webinar	e7	Nov 2022	Online
14	Build Up - Webinar - Policy and regulation landscape regarding bioclimatic design, the use of local materials and comfort indicators in Africa and the EU	Link	All stakeholders	Dissemination of webinar	e7	Jan 2023	Online



	Title	Link	Audience	Details	Partner	Date	Location
15	CONSTRUCTION 21 - ICBMB - International Conference on Bioclimatic Materials and Buildings	Link	All stakeholders	Dissemination ICBMB	e7	Feb 2023	Online
16	Build Up - ICBMB - International Conference on Bioclimatic Materials and Buildings	Link	All stakeholders	Dissemination ICBMB	e7	Feb 2023	Online
17	Ukesa -ICBMB	Link	All stakeholders	Dissemination ICBMB	e7	Feb 2023	Online
18	UN-Habitat - ICBMB	Link	All stakeholders	Dissemination ICBMB	e7	Mar 2023	Online
19	FEDARENE – ICBMB	Link	All stakeholders	Dissemination ICBMB	e7	Mar 2023	Online
20	GlobalABC - ICBMB	Link	All stakeholders	Dissemination ICBMB	e7	Mar 2023	Online
21	ManagEnergy - ICBMB	Link	All stakeholders	Dissemination ICBMB	e7	Mar 2023	Online
# Events & Conferences							
1	MEETmeTONIGHT:Notte dei Ricercatori /European Night of Researchers	Video	Academia and local government (Italy)	Project presentation	POLIMI	Nov 28, 2020	Online
2	EASME meeting with DG ENER +DEVCO	-	Development Agency	Presentation of the project as whole. Focus on WP3 and WP4	e7 POLIMI	Dec 18, 2020	Online
3	eceee Summer Study 2021	Programme	Policy Makers Market Actors Education Sector	Organised a session about “Energy and comfort assessment: important new advances introduced in international standards. Which implications arise for EU and African policies?”The goals are to analyse the current situation, lessons learned, and how these new developments might support legislation and regulation in Africa and Europe.	e7	Jun 7-11, 2021	Online
4	International conference: Urban Resilience and One Health - Strategies for a post-pandemic vision for Cities	UROH website	Scientific Community Market Actors Education Sector	Keynotes speech by Prof. Lorenzo Pagliano (POLIMI) Articles presented by Prof. Asmae Khaldoun (AUI) Articles presented: 1) "Toward sustainable and resilient buildings using optical properties" by Asmae Khaldoun et al. 2) "Traditional and modern building materials and practices adapted to natural resources: a way to meet the resilience approach" by Asmae Khaldoun, Lorenzo Pagliano, Silvia Erba et al.	POLIMI AUI	Sep 21-23, 2021	Milan Online

	Title	Link	Audience	Details	Partner	Date	Location
5	EU COP26 Side Event	Session recording	All stakeholders	Prof. Asmae Khaldoun (AUI) and Prof. Lorenzo Pagliano (POLIMI) participated in a joint online session as a part of the EU side events of COP 26. The title is “Decarbonising Buildings: the importance of energy efficiency and low-carbon construction materials” and is a joint cooperation with VELUX and EUROACE.	e7 POLIMI AUI	Nov 5, 2021	Online Brussels
6	COP26 - session on Decarbonisation of the Building Sector – French Pavilion & Online	DEEC speech	All stakeholders	Prof. Asmae Khaldoun (AUI) presented a brief of her work regarding local building materials and techniques and how they support the building sector decarbonisation. Ernest Dione from Direction de l’Environnement et des Etablissements Classés (DEEC) will also contribute sharing the initiatives in SN Senegal regarding local materials and techniques.	e7 AUI DEEC	Nov 11, 2021	Online Glasgow
		AUI Speech					
7	IRSEC 2021 - International Renewable and Sustainable Energy Conference	Link to papers presentations	Scientific Community Market Actors Education Sector	Students of Al Akhawayn University (AUI) led by Professor Asmae Khaldoun participated in November 2021 in IRSEC 2021. Three papers developed in the framework of ABC 21 project were presented. 1) PV Sizing of a Stand Alone Solar Carport System Linked to Charging Stations and its Economic Analysis (A Case Study) 2) PV Sizing of a Grid Connected Solar Carport System Linked to Charging Stations and its Economic Analysis (A Case Study) 3) Improving of the Rheological Properties of Bensmim Clay for its Use in Clay Brick Production	AUI	Nov 23- 27, 2021	Online Morocco
8	RENEWABLE ENERGY, BIOCLIMATIC CONSTRUCTIONS & SUSTAINABILITY CONFERENCE	-	Scientific Community Market Actors Education Sector	Professor Asmae Khaldoun along with her team organised this local conference to address energy, bioclimatic and sustainability topics to students. The aim was to Bridge the gap and connect AUI students with research/Industry to help them explore different career paths after their graduation. Four posters produced by students in the framework of ABC 21 project were presented. Four posters presented: 1) 3D Houses 2) Fired-clay bricks 3) Increasing solar cells efficiency using Nano coating 4) Self-Heating Graphene Nanocomposite Bricks	AUI	Dec 14, 2021	Iframe, Morocco

Title		Link	Audience	Details	Partner	Date	Location
9	9th Africities	-	All stakeholders	Organisation of session SOU-69 Smart Energy Solutions for Africa: Energy Access, Carbon Neutral Architecture and Electric Mobility. Prof. Francois Garde and Prof. Asmae Khaldoun presented their works related to the 12 first case studies analysed by the project and local materials for buildings. The Kenya Permanent Secretary was not able to attend but send one of the director. We also had the Ambassador of Sweden to Kenya who was there and the Mayor of ChefChaoun in Morocco	UN-Habitat	May 20, 2022	Kisumu, Kenya
10	5 th International Conference on Materials and Environmental Science (ICMES2022)	Link	Scientific Community Market Actors Education Sector	Presentation of work developed in the framework of ABC21 project. Presentations can be traced in the published program according to the codes: ID-238 Conductive Graphene Clay Bricks for Energy Efficient Buildings. ID-370 Old buildings of Morocco: a source of inspiration for energy-efficient modern buildings ID-240 Design and simulation of an energy-efficient air conditioner with cellulose-based daytime radiative cooling material ID22 A rheological approach to evaluate strength of unfired clay bricks incorporating almond husk ID237 A study of a passive cooling and heating design employing a Trombe wall with PCM: A numerical investigation of the semi-oceanic climate in Morocco:	AUI	June 9-12, 2022	Saidia, Morocco
11	eeeee Summer Study 2022	-	Policy Makers Market Actors Education Sector	Poster presentation: Introduction about project actions and objectives: thermal comfort standard, the role on ventilation, case studies and guidelines.	POLIMI	June 8th, 2022	Hyères, France
# Others							
1	Salute del pianeta e salute umana attraverso sufficenza ed efficienza energetica e fonti rinnovabili	Recording	Scientific Community Market Actors Education Sector	Presentation at this webinar made by Prof. Lorenzo Pagliano at 1:32'.	POLIMI	Oct 1, 2021	Online, Italy
2	European workshops on nZEB for the revision of the directive	-	Policy Makers Public Authorities Scientific Community Market Actors	Prof. Lorenzo Pagliano participated on behalf of ABC 21 in 3 European workshops to discuss changes and improvements on nZEB / EBPD. Letter of participation were provided	POLIMI		Online

	Title	Link	Audience	Details	Partner	Date	Location
3	European workshop on PEDs	-	Policy Makers Public Authorities Scientific Community Market Actors	Prof. Lorenzo Pagliano participated on behalf of ABC 21 in an European workshop to discuss Positive Energy Districts (PED)	POLIMI	Sep 17, 2021	Online
4	Piano Transizione Ecologica\PNRR: audizione di ISDE e M4OH Camera dei Deputati	Recording	Policy Makers Public Authorities	Presentation at the Italian Parliament on the Climate Plan made by Prof. Lorenzo Pagliano. Mention of ABC 21 and bio-materials from 11' 30".	POLIMI	Nov 3, 2021	Online, Italy
5	Dissemination of Webinar 1 about energy and comfort indicators at Master Ridef presentation	-	Scientific Community Education Sector	Prof. Lorenzo Pagliano mentioned our project and webinar to candidates to the new edition of Master RIDEF	POLIMI	Jan 14, 2022	Online, Italy

