



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

WEBINARS



ABC 21 project

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

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Revision

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Executive summary

The report provides an overview of six webinars conducted as part of the ABC 21 project. These webinars covered various topics related to energy and comfort indicators, local building materials, weather files, and policies for bioclimatic design. The executive summary highlights the main findings and outcomes of each webinar, providing a concise overview of the key points discussed.

Webinar #1 on Energy and Comfort Indicators

It highlighted the importance of establishing a common set of physical concepts, definitions, and nomenclature to improve communication and design guidelines in the building sector. The webinar discussed important new advances introduced in international standards on the topics of indoor thermal comfort and energy and the implications for European and African policies. The webinar received significant participation and achieved valuable outcomes in fostering synergies, encouraging policy discussions, and providing inputs to EU organizations.

Webinar #2 on Local Building Materials

It explored the potential of using local construction materials to decarbonize the building sector. The webinar emphasized resource efficiency, circular economy approaches, and the adoption of sustainable practices. The event witnessed active participation and contributed to raising awareness and promoting sustainable practices in the construction sector.

Webinar #3 on Weather Files and Climate Indicators

It addressed the generation and application of weather files for building energy simulation, focusing on warm climate areas in Europe and Africa. The webinar highlighted the need for more weather files in African cities and provided insights into future weather files and their importance in building design. The event raised awareness and provided valuable information to building designers.

Webinar #4 on Policies for Bioclimatic Design, Local Materials, and Comfort Indicators

It discussed initiatives and policies in the EU and Africa to incorporate bioclimatic design and comfort indicators into building codes. The webinar emphasized the need for a common technical language, envelope-first policies, and incentives for energy efficiency. It served as a platform for discussions on policy-related topics and the certification of bio-based and geo-sourced materials.

Webinar #5: Case Studies for Bioclimatic Design in Europe, Africa, and La Réunion

This webinar focused on presenting selected case studies located in different climates, showcasing bioclimatic design and thermal comfort performance during warm periods. The aim was to share key lessons learned and explore ways of improving thermal comfort in these diverse climates. The webinar addressed the information gap concerning bioclimatic buildings and experimental feedback in warm climate zones, with the objective of collecting data about operating buildings that serve as examples to be replicated at a wider scale.

Webinar #6: Net Zero Carbon Architecture as a Solution to Africa Housing Challenge

This webinar, organized by the Urban Basic Services Community of Practice, focused on exploring Net Zero Carbon Architecture as a solution to the housing challenge in Africa. It

provided insights into cutting-edge developments in climate-friendly architecture and their contribution to addressing the shortage of sustainable and affordable housing. The session brought together UN-Habitat staff working or interested in sustainable housing and featured presentations from distinguished organizations such as Swiss Resource Centre & Consultancies for Development (Skat Consulting Ltd), Africa Europe Bioclimatic Collaboration 21 (ABC 21), and Patriarche Architectures.

The report provides a comprehensive overview of each webinar's objectives, participation, outcomes, and dissemination efforts. The findings from these webinars contribute to the overall goals of the ABC 21 project, promoting sustainable practices, reducing emissions, and improving design and construction guidelines in the building sector.

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1. Introduction

The ABC 21 Webinars Report presents an in-depth analysis of the six webinars conducted during the project. These webinars covered a wide range of topics related to energy and comfort indicators, local building materials, weather files and climate indicators, policies for bioclimatic design, and case studies for bioclimatic design in different regions. This introduction provides an overview of the report, outlining its structure and the interconnections between different sections.

1.2 Document Structure

The report is organized into several sections that explore each webinar in detail. These sections are designed to provide a comprehensive understanding of the webinars and their outcomes. It is important to note that the information flow across sections is interconnected, enabling a holistic view of the ABC 21 project's findings and recommendations.

The report begins with an introduction to set the context for the work carried out in the webinars. This section explains the purpose of the report and highlights the significance of the webinars in advancing knowledge and promoting sustainable practices in the building sector.

Following the introduction, the report delves into each webinar individually. Sections 2 to 7 focus on Webinars 1 to 6, respectively, and provide an overview of each webinar's objectives, agendas, recordings, attendance, and outcomes. These sections offer a detailed analysis of the discussions, insights, and recommendations put forth during each webinar, shedding light on the key findings and their implications.

Additionally, the report includes a summary section that encapsulates the main takeaways from all the webinars, providing a comprehensive synthesis of the project's outcomes. Finally, the report concludes with a reference section that lists the sources cited throughout the document. By following the structured organization of this report, readers will gain a thorough understanding of the webinars' content and their contributions to energy efficiency, sustainability, and bioclimatic design in the building sector.

2. Internal guidelines

2.1 Preparation phase

For the preparation phase, the following points need to be defined between e7, PoliMi and other project partners involved in the Webinar:

Webinar tool	Choose webinar tool, change tool if features of the tool do not meet expectations
Title:	Define the title of the Webinar <i>e.g. "Performance indicators and guidelines for bioclimatic buildings"</i>
Date:	Set up the date and time <i>e.g. April 22nd 2021 – 14:00 CET</i>
Partners involved:	Describe partner involved and their role briefly <i>e.g.</i> <ul style="list-style-type: none"> ▪ <i>e7 will organize the schedule and preparations.</i> ▪ <i>PoliMi will coordinate the contents and present.</i> ▪ <i>UN-Habitat will organise and event to stream the webinar.</i> ▪ <i>PoliMi, AUI, EAMAU, FC.ID, UR will synchronise with lectures to their students.</i>
Content (short version):	Describe briefly the content of the webinar <i>e.g. Present an analysis on the literature and international standards and consolidate the main concepts/ variables for effective design work.</i>
Content (longer version)	Describe the content of the webinar in about 3 -4 paragraphs (for the invitation of the attendees)
Key message:	List the key messages or objectives of the webinar <i>e.g.</i> <ol style="list-style-type: none"> 1. <i>Disseminate pour review on indicators applied to bioclimatic buildings.</i> 2. <i>Present our list of indicators.</i>
Target audience:	Who is the target audience of this Webinar? <i>e.g. Market Actors and Education Sector</i>
Presenters:	List presenters <i>e.g. PoliMi: Lorenzo and Silvia</i>
Moderator:	Who will be the moderator? Any other assistant needed? <i>e.g. e7: Susanne as moderator and Cora as support.</i>
Duration:	Suggested: 60 min (incl. 15 min Q&A)
Q&A:	Define Q&A procedure, questions will be collected in the chat and discussed in the end

Some recommendations to be taken into account:

- **Target audience** and the expectations of the participants – We should adjust webinar content in relation to the targeted audience.
- **Recommended duration:** Ideally not more than 60 minutes. If longer than an hour, consider breaking the webinar up into two parts.

- **Day of the week:** Tuesday, Wednesday and Thursday are statistically the most popular days for webinars (not Monday or Friday)
- **Time of day:** Mornings are the most popular time for hosting webinars, especially 10am and 11am (this will be time zone dependent of course)
- **Recording:** The moderator is responsible for recording the webinar session. This is very important, since we have committed to make the recordings available to the public.

2.1.1 Setting up the agenda

The organisers should define a specific agenda to be followed in the webinar. This helps monitor time and organise the session. See the example below:

<p>1. Introduction</p> <p>Susanne [e7] – 5 min</p> <ul style="list-style-type: none"> ▪ Welcome attendees ▪ Short explanation of the project ▪ Webinar rules: deactivate mics and webcams, Q&A in the end, recording will be made available later...
<p>2. Physical variables involved in bioclimatic architecture</p> <p>Lorenzo [PoliMi] – 15 min</p> <ul style="list-style-type: none"> ▪ Topics that will be handled in the presentation ...
<p>3. Thermal comfort parameter</p> <p>Silvia [PoliMi] – 15 min</p> <ul style="list-style-type: none"> ▪ Topics that will be handled in the presentation ...
<p>4. Indicators for Bioclimatic construction and design</p> <p>Lorenzo [PoliMi] – 15 min</p> <ul style="list-style-type: none"> ▪ Topics that will be handled in the presentation ...
<p>5. Q&A and closure</p> <p>Susanne [e7] – 15 min</p> <ul style="list-style-type: none"> ▪ Select question from attendees ▪ Closure of the webinar

2.1.2 Invitation and registration

Depending on the target audience, different invitation strategies can be used. Most important is to have the engagement of all project partners in sharing the webinar with their peers.

On the project website the following information should be made available in the webinar invitation and registration page:

- **Clearly show date/ time/ place (Online) and that it is open and free of charge.**
- **Present topics + short explanation of the contents that will be presented**
- **Short description of speakers, their occupations and if available a headshot**

For the registration, we will ask attendees to provide their email addresses, their country of residence and select from predefined list their field of occupation: *student / researcher / market*

actor/ policy / public authority / FI / development agency. Due to data privacy, no other information will be collected.

2.2 Guidelines

2.2.1 Recommendations for presentations

Set clear objectives for the presentation: Adjust the technical content and presentation to the target audience and key messages defined for the webinar. Draw a logical line of where you want to go with your presentation and the final message to the audience.

Rehearsal: It is important to comply with the time limitation, thus rehearsal is a gut strategy to cope with that.

Presentation template: You should always use the **ABC 21 power point template**.

Slides: One day prior to the webinar, you should send the final version of the slides (in ppt and pdf) to the moderator as a technical backup and for dissemination.

Tips for the slides: For a better presentation and attendees' experience, the following tips should be taken into account:

- **One discussion topic on one slide:** Don't add too much information in one slide only, keep the presentation dynamic: one slide = one discussion topic.
- **Minimal text:** Use key words and avoid long sentences or too much text in the same slide.
- **Keep it simple:** Avoid slide transitions, gifs or visual effects.
- **Images:** Use good quality pictures. Attendees must be able to see them and read embedded content without much effort.
- **Add small graphics/infographics:** Some written information or data can be adapted into graphics, thus becoming more attractive to the audience.

2.2.2 Recommendations for the moderation

Script: Write down a script with the main phrases to be used when welcoming attendees, switching between presentations, opening up Q&A and closing the webinar.

Be aware of open mics/cams: The moderator will be also the meeting organiser, which means he/she has to assure that all other mics and webcams (except for the presenter) must be switched off.

Keep track of the chat: The moderator will also conduct the QA session at the end. He or she must be aware of the attendees posting in the chat and keep track of the questions.

2.2.3 Prep session

On the day **prior to the webinar presenters and moderator should have a prep session in the chosen webinar tool** to review the agenda, slides and dynamics of the presentation. The moderator is responsible for organising this prep session and setting it up. In this prep session some of the objectives are:

- Moderator knows how to start the webinar, pass presenter controls, moderate questions, start recording and mute participants.
- Presenters are comfortable muting and unmuting, controlling slides and interacting with tools.
- Slides are clear and appealing
- Everyone knows what they should do and when.

2.2.4 Webinar's day checklist for presenters

- Place a **“Do not disturb”** sign at your door to avoid interruptions.
- As a presenter, you must **join the webinar 20 minutes prior to the start time** so everything can be tested and adjusted as needed.
- Use headsets** for better audio quality and turn off computer speakers to avoid echoes.
- Adjust room lightning and temperature** and remember to keep a **bottle of water** next to you.
- Press **mute when not speaking** – every noise comes through.
- Remember **not to type** during the broadcast as that will be picked up on the recording.
- Turn off ringer** or cell phones in the room, disable email alerts and any other pop-up notifications or sounds.
- Close other software of applications** on your computer.
- Moderator will help you test the slide presentation and changing presenters and sharing screens.
- 3 minutes prior to the webinar, the first speaker should be ready with their opening slide up on their screen.

2.3 After the webinar

- After the webinar, **the moderator** will organise a short feedback session with all partners involved to discuss how the event was and what can be improved.
- Recordings must be reviewed by **the moderator** and if needed edited, to avoid any attendees' personal information to go public.
- After the review, the webinars recording along with the slides will be posted by the dissemination team in ABC 21 website repository.
- The moderator will send an email to all participants thanking them for their attendance and add the link for the download of the recording and slides.
- The dissemination team should check if recordings and materials should be forward or posted in any other platforms.

At the end, e7 will make a brief analysis of the webinar, counting how many attendees were present, if objectives were accomplished and if the task was fulfilled.

3. Webinar #1: Energy and Comfort Indicators

“Energy and comfort assessment: important new advances introduced in international standards. Which implications arise for EU and African policies?”

3.1 Overview

The ABC 21 Webinar on Energy and Comfort Indicators, titled "Energy and comfort assessment: important new advances introduced in international standards. Which implications arise for EU and African policies?" was conducted as part of the [eceee Summer Study 2021](#) program on June 9th 2021. This webinar aimed to explore the advancements, the critical aspects and variables associated with energy and comfort indicators in buildings, based on an analysis of literature and international standards. One of the objective was also to present a common set of physical concepts, definitions, and nomenclature to ensure better communication, reduced errors, and improved design and construction guidelines in the building sector.

Based on an analysis of the literature and international standards, the project investigated in a critical manner and consolidate the main variables and aspects involved on the topic of energy and comfort indicators applied to buildings.

All the actors involved in the building sector, from designers to contractors, from regulators to policymakers should use consistently the same set of physical concepts, definitions and nomenclature regarding the energy and comfort indicators in buildings. This would ensure better results in for devising clear design and construction guidelines. Importantly, it will also reduce the costs involved in communication difficulties and misunderstandings leading to design and construction errors and subsequent costly remediation work.

EU has created via its Directives a legislative infrastructure (mandatory Building performance certificates, cost optimal methodology, mandatory nearly Zero Energy Buildings, National renovation plans) and support actions. But also limitations have come by a non-uniformity across countries in the definition of overall building performance in terms of energy needs, delivered energy, total or non-renewable primary energy. This creates barriers to effective analyse, communicate and compare methods.

The webinar raised the attention also on the thermal comfort models and their main advancements in standards (e.g. in ASHRAE 55:2020, the extension of the applicability of the adaptive comfort model to buildings that have a mechanical cooling system installed, as long as the system is not running), which are described in detail in the related deliverables on energy and comfort indicators available on the ABC 21 project website.

3.2 Agenda

The webinar featured expert presentations on key topics related to energy and comfort indicators:

[1] IPCC Report on Buildings

- Presenter: [Pr. Diana Ürge-Vorsatz](#) – Vice Chair of Working Group III of the Intergovernmental Panel on Climate Change (IPCC). Professor at the

Department of Environmental Sciences and Policy at the Central European University (CEU).

[2] EN-ISO 52000: 2017

- Presenter: [Pr. Lorenzo Pagliano](#) from Politecnico di Milano - A staple race: the 3 indicators for overall energy performance of buildings, and priority on reduction of energy needs for heating and cooling - Which implications arise for EPBD recast and legislation/regulation under preparation in Africa?

[3] ASHRAE 55: 2020

- Presenter: [Pr. Salvatore Carlucci](#) from Cyprus Institute - The background and development of ASHRAE 55: 2020 - Advances on Thermal comfort in buildings – from research evidence to standards - Comfort optimal scenarios at lowest energy now explicitly recognised in standards and available to policymaker and designers in EU and Africa

[4] Discussion about “How to build on the new energy and comfort developments for needed enhancements of policies in EU and Africa?” between webinar attendees and invitee [Adrian Joyce](#) – Secretary General at EuroACE, Campaign Director for Renovate Europe. 1

3.3 Recording & attendance

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 session at the **eceee Summer Study** conference in June 2021, with the participation of:

- Prof.Dr. Diana Urge-Vorsatz: Vice-chair of IPCC WG-III & Professor at CEU)
- Prof.Dr. Salvatore Carlucci: Professor at Cyl.
- Prof.Dr. Lorenzo Pagliano: Professor at PoliMi.

Click on the video to watch the recording.



The webinar witnessed the simultaneous participation of 40 individuals, with an estimated 60% from Europe and 40% from Africa. The recording of the webinar received 194 views on YouTube. Efforts were made to disseminate the webinar's content through direct invitations sent to 48 allies and stakeholders. Additionally, an article summarizing the webinar was published on the Construction 21 platform, and the project's social media channels on LinkedIn and Twitter were utilized for further promotion.

Category	Numbers
Attendance:	40 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 60% European ▪ 40% African

Recording link	https://youtu.be/DDuiDITT77Y
Recording views	194 YouTube views
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 48 allies, stakeholders ▪ Article on 1 platform: Construction 21 ▪ Project Social Media: LinkedIn & Twitter

3.4 Outcomes

The ABC 21 Webinar on Energy and Comfort Indicators had significant outcomes in terms of fostering synergies with other organizations, encouraging participation in policy events and discussions, and providing direct inputs to various EU organizations. The critical analysis and consolidation of energy and comfort indicators in buildings contributed to the development of clearer design and construction guidelines. The webinar facilitated discussions among partners of the consortium, policymakers, and the general audience, resulting in valuable inputs for reports and further policy development in the project. The insights gained from the webinar will contribute to the establishment of a regulatory and conceptual common ground, ultimately promoting a near-zero emission building sector.

4 Webinar #2: Local Building Materials

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

4.1 Overview

The ABC 21 Webinar on Local Building Materials, conducted in collaboration with PEEB, ACT, and GlobalABC, presented innovative work on the use of local construction materials and their potential to decarbonize the building sector. This webinar addressed the pressing issue of global emissions from energy caused by the production of building materials and construction activities, which account for 10% of these emissions. The webinar aimed to explore resource efficiency, circular economy approaches, the use of local sustainable materials, and the decarbonisation of conventional materials as effective strategies to significantly reduce emissions.

The webinar emphasized the substantial increase in global construction activity, with an area equivalent to Paris being added to the built surface every week. Developing countries, particularly in Africa and Asia, experience rapid growth in construction. However, this expansion comes with environmental consequences, necessitating the adoption of sustainable practices. Resource efficiency, circular economy approaches, and the use of local and low-carbon materials have the potential to make a significant impact. Despite the existence of solutions developed by companies worldwide, there is a need for dedicated efforts to scale up these solutions.

4.2 Agenda

The webinar featured a range of presentations and discussions on strategies to address embodied carbon, the role of policy and finance, and the need to shift towards low-carbon materials. The agenda included:

- [1] **Welcome & housekeeping** | Anna Zinecker, PEEB (moderator)
- [2] **Embodied Carbon – A hidden heavyweight for the climate:** Strategies to address embodied carbon | Jérémy Bourgault (PEEB)
- [3] **Strategies to tackle embodied carbon:**
 - Avoid: resource efficiency and circular economy | Chitra K Vishwanathan, Architect Biome Environmental Solutions, India
 - Shift: local and bio-based materials | by [Pr. Asmae Khaldoun](#), Al-Akhwayn University, Morocco & Ernest Dione, MEDD Senegal (ABC21 project)
 - Improve: decarbonising conventional materials | Marlène Dresch, ACT Initiative & Anupam Badola - Assistant General Manager at Dalmia Cement (Bharat) Ltd, India
- [4] **Panel discussion:**
 - How can policy and financing support the decarbonisation of building materials?

- How can policy support the shift towards the production and use of low-carbon materials?
- In the absence of good data, how can public and private investments be channelled towards less CO2-intensive construction?

[5] Key take-aways for GlobalABC’s work on building materials by Jonathan Duwyn, GlobalABC/UNEP

4.3 Recording & attendance

BUILDING MATERIALS
A HIDDEN HEAVYWEIGHT FOR THE CLIMATE

Asmae Khaldoun
 Associate Professor, AUI, Morocco

Ernest Dione
 Deputy Director, DEEC, Senegal

How can we scale-up local and bio-based materials to protect the climate?

Picture: Shireenah Shuhaili/Unsplash



The webinar witnessed the active participation of 92 individuals, with approximately 80% from Europe and 20% from Africa. The recording of the webinar received 168 views on YouTube. Efforts were made to disseminate the webinar's content through direct invitations to 120 allies and stakeholders, articles published on two platforms (Build Up and Construction 21), and promotion on project social media platforms such as LinkedIn and Twitter.

Category	Numbers
Attendance:	92 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 80% European ▪ 20% African
Recording link	https://youtu.be/VqHtBdjYo5I
Recording views	168 YouTube views
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 120 allies, stakeholders ▪ Article on 2 platforms: Build Up, Construction 21 ▪ Project Social Media: LinkedIn & Twitter

4.4 Outcomes

The event successfully addressed the urgent need for sustainable practices in the construction sector. It showcased strategies to tackle embodied carbon through resource efficiency, circular economy approaches, and the use of local and low-carbon materials. The panel discussion highlighted the role of policy and financing in supporting the decarbonisation of building materials and the importance of directing investments towards less CO₂-intensive construction. The webinar provided valuable insights and recommendations for GlobalABC's ongoing efforts in the field of building materials and the discussions helped shape some of the deliverables from the project.

5 Webinar #3: Weather Files and Climate Indicators

The generation and application of weather files for future and current weather in building energy simulations, specifically in warm climate areas in Europe and Africa.

5.1 Overview

The ABC 21 Webinar on Weather Files and Climate Indicators focused on the generation and application of weather files for building energy simulations in warm climate areas of Europe and Africa. This webinar aimed to address the lack of available information on weather files in African cities and raise awareness about the importance of using weather files in building design to create more resilient constructions. The webinar provided insights into the upcoming climate change challenges, the generation of future weather files, and the presentation of open access weather files for selected locations in Europe and Africa, developed in ABC 21.

5.2 Agenda

The webinar featured the following agenda:

- [1] **Introduction:** Welcome attendees and short explanation of the project | by [Pr. Lorenzo Pagliano](#) from Politecnico di Milano.
- [2] **Weather files and climate indicators for current and future weather in Africa and EU** | by [Pr. Guilherme Carrilho da Graça](#) from University of Lisbon.
 - Upcoming climate change and challenges
 - Generation of future weather files for thermal simulation
 - Presentation of open access weather files for selected Africa locations
- [3] **Simulation of the impact of future weather on the bioclimatic performance of a kindergarten** | by [Pr. Guilherme Carrilho da Graça](#) from University of Lisbon.
- [4] **Presentation of an energy efficient kindergarten design** | by [Pr. Guilherme Carrilho da Graça](#) from University of Lisbon.
 - Simulated performance of the kindergarten in selected African cities in current and future weather.
 - Impact of using standard and local materials

[5] Q&A and closure

5.3 Recording & attendance

WEBINAR: Weather files & climate indicators for current and future weather in Africa and the EU

Monday, Nov 28th 2022 | 13h CET

Africa-Europe Bioclimatic Collaboration

GUILHERME CARRILHO DA GRAÇA
Senior Researcher & Assistant Professor at the University of Lisbon

For more information about this webinar and more access our website: www.abc21.eu

The webinar witnessed the simultaneous participation of 35 individuals, with an estimated 85% from Europe and 15% from Africa. The recording of the webinar received 30 views on YouTube. Efforts were made to disseminate the webinar's content through direct invitations sent to 50 allies and stakeholders. Additionally, articles summarizing the webinar were published on the Build Up and Construction 21 platforms. The project's social media channels on LinkedIn and Twitter were also utilized for further promotion.

Category	Numbers
Attendance:	35 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 85% European ▪ 15% African
Recording link	https://youtu.be/HNVSBGkdV9c
Recording views	30 YouTube views
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 50 allies, stakeholders ▪ Article on 2 platforms: Build Up, Construction 21 ▪ Project Social Media: LinkedIn & Twitter

5.4 Outcomes

The outcomes of the webinar were twofold. Firstly, it raised awareness about the limited availability of weather files in African cities, emphasizing the need to address this gap. Secondly, it provided valuable information to building designers on how weather files are generated and how to effectively utilize them in building design to improve climate resilience. The webinar highlighted the significance of incorporating future weather conditions and climate change considerations by assessing the energy performance and the occupants' thermal comfort under future weather scenarios through building energy simulations for optimizing design and ensuring long-term sustainability.

6 Webinar #4: Policies for Bioclimatic Design, Local Materials and Comfort Indicators

Discussion about initiatives in the EU and Africa to encompass bioclimatic design and thermal comfort into policies and building codes.

6.1 Overview

On January 26th, ABC 21 organized an open webinar focused on the political and regulatory landscape surrounding bioclimatic design, the use of local materials, and comfort indicators in Africa and the EU. The webinar aimed to discuss initiatives and policies in these regions that promote energy efficiency and bioclimatic practices. Professor Lorenzo Pagliano and several invited speakers shared their expertise on the subject.

Conducted in French, the session provided an opportunity for the public to engage in discussions regarding various topics, such as the need for a common technical language, envelope-first policies, incentives for orderly progress, energy efficiency certificates, ensuring basic energy needs, progressive tariffs, and certification of bio-based and geo-sourced materials. The need for a common technical language (on energy, comfort, and resilience to extreme events) to clearly define policies and building codes, and enable the transfer of successful experiences.

6.2 Agenda

The webinar consisted of the following agenda:

- [1] **Developments on energy efficiency regulations for buildings in the EU and Africa** | by [Pr. Lorenzo Pagliano](#) from Politecnico di Milano.
- [2] **The African experience in developing building codes: Performance and descriptive approaches** | by [Vincent Kitio](#) from UN-Habitat in Kenya.
- [3] **Moroccan experience and initiatives towards an energy efficiency code in buildings** | by [Ilyas Essabai](#) from Ministry of Housing and Urban Policy of Morocco
- [4] **Developments on the Senegal building code** | by [Ernest Dione](#) the coordinator of Typha project and energy efficiency consultant.
- [5] **Q&A and closure**

6.3 Recording & attendance

WEBINAR: Politique et réglementation en matière de conception bioclimatique, d'utilisation de matériaux locaux et d'indicateurs de confort en Afrique et dans l'UE
Jeudi, Jan 26th 2023 | 14h CET

Africa-Europe Bioclimatic Collaboration 21

Lorenzo Pagliano
Prof. Building Physics at POLIMI
Head of end-use Efficiency Research Group eERG.

+ Experts invités

For more information about this webinar and more access our website: www.abc21.eu

The webinar had a total of 33 participants attending simultaneously. The attendees originated from diverse backgrounds, with an estimated breakdown of 20% European and 80% African participants. The webinar was recorded and made available on YouTube, where it received 52 views. Additionally, the webinar was disseminated through various channels, including direct invitations sent to 50 allies and stakeholders, an article published on two platforms (Build Up), and promotion on project social media accounts such as LinkedIn and Twitter.

Category	Numbers
Attendance:	33 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 20% European ▪ 80% African
Recording link	https://youtu.be/6-RzzQbBS2k
Recording views	52 YouTube views
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 50 allies, stakeholders ▪ Article on 2 platforms: Build Up ▪ Project Social Media: LinkedIn & Twitter

6.4 Outcomes

The webinar provided valuable insights and outcomes regarding policies for bioclimatic design, local materials, and comfort indicators. Important discussions were conducted, analyzing different strategies for handling building codes in the EU and Africa, particularly focusing on bioclimatic design and energy-efficient buildings.

Some key takeaways from the discussions include the importance of establishing a common technical language to define policies and building codes across regions. This would enable effective communication and the transfer of successful experiences. The significance of "envelope-first" policies was emphasized, highlighting the need to prioritize building envelope improvements to ensure the reduction of the energy need for heating and the energy need for

cooling and avoid imposing unattainable challenges on energy networks and decarbonization efforts.

Another crucial aspect discussed was the need for stable incentives that have minimal impact on public budgets and debt, enabling orderly progress in the building sector. The case of energy efficiency certificates funded by levies on energy prices was presented as a potential solution to promote energy efficiency in buildings.

Furthermore, discussions focused on strategies to balance basic energy needs at affordable prices while discouraging excessive energy use. Progressive tariffs, where energy prices per unit increase with consumption, were explored as a potential mechanism to achieve this goal.

The webinar also highlighted the importance of certifications to ensure the structural and thermal performance of bio-based and geo-sourced materials. Certification systems play a vital role in enabling the reliable and widespread use of these materials in construction practice, promoting sustainability and environmental responsibility.

Overall, the webinar successfully facilitated knowledge sharing and provided a platform for in-depth discussions on important topics related to bioclimatic design, local materials, and comfort indicators. The recorded session and subsequent dissemination efforts, including the article publication and social media promotion, have contributed to a wider reach of the information. The outcomes of the webinar have the potential to influence policy development in both Africa and the EU, driving sustainable and energy-efficient practices in the building sector.

7 Webinar #5: Case Studies for Bioclimatic Design in Europe, Africa and La Réunion

Presentation of selected case studies, located in different climates in Africa and the EU, in terms of bioclimatic design and thermal comfort performance in warm periods.

7.1 Overview

The literature review (e.g. the ASHRAE Global Thermal Comfort Database II) highlights that there are few monitored data and occupants' feedback coming from monitoring campaigns of indoor thermal comfort parameters in African buildings. One of the main goals of ABC 21 project was to cover this information gap – collecting data about operating buildings that are good examples of sustainable solutions, which could serve as exemplary case studies to be replicated at a wider scale.

In this webinar, a set of bioclimatic principles applicable in warm climates have been presented through case studies located in mainland Africa, Indian Ocean and South of Europe.

The webinar illustrated the methodology used for thermal comfort assessment of buildings, which includes a phase of monitoring of indoor thermal comfort parameters and the development of questionnaires to collect information from the occupants about their satisfaction with the indoor environment.

Some of the calculated thermal comfort indicators for the selected case studies have been presented together with lessons learned and ways of improving thermal comfort.

7.2 Agenda

The webinar agenda was as follows:

[1] Introduction | by [Pr. François Garde](#) and [Virginie Grosdemouge](#) from La Reunion University

- Short explanation of the project and work on case studies
- Need for performance data – instrumentation setup
- Thermal comfort – Main principles and parameters of influence

[2] Presentation of the Botticelli Project, in Italy | by [Pr. Lorenzo Pagliano](#) from Politecnico di Milano.

- Localisation and climate
- Bioclimatic Design Principles
- Thermal comfort assessment
- Lessons learned & recommendations

[3] Presentation of Ruinha house in Portugal | by [Pr. Alessio Battistella](#) from Politecnico di Milano.

- Localisation and climate

- Bioclimatic Design Principles
 - Thermal comfort assessment
 - Lessons learned & recommendations
- [4] **Presentation of the Mbakadou school, in Senegal** | by [Virginie Grosdemouge](#) from La Reunion University
- Localisation and climate
 - Bioclimatic Design Principles
 - Thermal comfort assessment
 - Lessons learned & recommendations
- [5] **Presentation of the ESIROI building, in La Reunion** | by [Pr. François Garde](#) from La Reunion University
- Localisation and climate
 - Bioclimatic Design Principles
 - Thermal comfort assessment
 - Lessons learned & recommendations
- [6] **Ways of improving thermal comfort** | by [Pr. François Garde](#) from La Reunion University
- [7] **Q&A and closure**

7.3 Recording & attendance

WEBINAR: “Bioclimatic design & thermal comfort performance of buildings: in warm climates. Case studies from Europe, Africa and La Reunion.”
 Friday, March 31st 2023 | 13h30 CET

Pr. François Garde
 Department of Sustainable construction,
 University of La Reunion

Virginie Grosdemouge
 Researcher at Lab. of Physics &
 Mathematical Engineering for Energy and
 the Environment, University of La Reunion

Alessio Battistella | arch. PhD
 Department of Architecture and Urban
 Studies (DASTU), Politecnico di Milano

Pr. Lorenzo Pagliano
 Building Physics & head of end-use
 Efficiency Research Group eERG,
 Politecnico di Milano

For more information about this webinar and more access our website: www.abc21.eu

The webinar witnessed a simultaneous participation of 43 attendees. The participants came from diverse backgrounds, with an estimated breakdown of 70% European and 30% African attendees. The webinar was recorded and can be accessed on YouTube. The recording garnered 28 views on the platform, indicating its reach and engagement.

To ensure wider dissemination of the webinar's content, several channels were utilized. Direct invitations were sent to 50 allies and stakeholders, ensuring targeted outreach. Additionally, an article summarizing the webinar was published on two platforms, specifically Build Up, allowing for greater exposure and accessibility. The project's social media accounts on LinkedIn and Twitter were actively utilized to promote the webinar, further expanding its reach to a wider audience.

Category	Numbers
Attendance:	43 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 70% European ▪ 30% African
Recording link	https://youtu.be/rXlzvSs9GdI
Recording views	28 YouTube views
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 50 allies, stakeholders ▪ Article on 2 platforms: Build Up ▪ Project Social Media: LinkedIn & Twitter

7.4 Outcomes

The webinar not only provided valuable insights into bioclimatic principles applicable in warm climates through case studies but also highlighted the significance of collecting relevant information and measured data during the project. The data collected during the project proved to be instrumental in analysing and better understanding the comfort levels achievable through

the proper application of bioclimatic strategies and design. This empirical data helped in identifying effective approaches to lower energy needs in buildings while ensuring optimal thermal comfort in warmer climates.

The methodology used for thermal comfort assessment of buildings was shared, shedding light on the systematic approach employed to evaluate and quantify thermal comfort. Attendees gained insights into the various calculated thermal comfort indicators used to assess the performance of the showcased case studies. These indicators offered a comprehensive understanding of the effectiveness of bioclimatic design solutions in maintaining comfortable indoor environments in warm climate zones.

The presenters shared valuable lessons learned from each case study, including the challenges encountered, successful design strategies, and recommendations for further improvement. This knowledge exchange provided a practical framework for architects, engineers, and stakeholders interested in implementing sustainable building solutions that prioritize thermal comfort and energy efficiency in warm climates.

8 Webinar #6: Net Zero Carbon Architecture as a Solution to Africa Housing Challenge

8.1 Overview

The Urban Basic Services Community of Practice organised a session on Net Zero Carbon Architecture as a Solution to Africa Housing Challenge. The session, expected to bring together UN-Habitat staff working or interested in sustainable and affordable housing, was held on Thursday 18th May 2023 from 14:00 – 16:00 EAT and offered an opportunity to learn about cutting-edge developments in the field of climate-friendly architecture and their contribution to social housing shortage.

UBS's (Urban Energy Solutions) team focuses on three key 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. To further advance these efforts, Urban Energy Solutions team has partnered with several distinguished organizations, including Swiss Resource Centre & Consultancies for Development (Skat Consulting Ltd), Africa Europe Bioclimatic Collaboration 21 (ABC 21), and Patriarche Architectures. The main objectives were:

- Promote climate-conscious architecture
- Address the issue of affordable housing using sustainable and eco-friendly design principles

8.2 Agenda

Moderation: Vincent Kitio, Lead Urban Energy Solutions team, Urban Basic Services Section

- [1] **14:00- 14:05:** Welcome remarks and introduction- Vincent Kitio
- [2] **14:05- 14:15:** Overview of UN-Habitat work on adequate housing for all- Vincent Kitio, UN- Habitat
- [3] **14:15- 14:30:** Experience Working on Sustainable Housing- Léa Delpech, Patriarche Architectures
- [4] **14:30- 14:50:** Africa and Bioclimatic Architecture- Francois Garde, Africa Europe Bioclimatic Collaboration 21 (ABC 21) - Lorenzo Pagliano (POLIMI) and François Garde (UR).
- [5] **14:50- 15:00:** Mass supply of Low Carbon Houses in Africa- Daniel Wyss, Swiss Resource Centre & Consultancies for Development (Skat Consulting Ltd)
- [6] **15:00- 15:15:** Application of EDGE tool in Africa- Blaise Mempouo, Association pour la Recherche et la Promotion de l'Énergie Durable en Afrique Centrale (ARPEDAC)
- [7] **15:15- 15:30:** Othalo low carbon architecture-Frank Cato Lahti, OTHALO™

8.3 Recording & attendance

WEBINAR: "Net Zero Carbon Architecture as a Solution to Africa Housing Challenge"

Thursday, May 18th 2023 | 14h EAT or 13h CEST

We are pleased to invite you to attend a session on **Net Zero Carbon Architecture as a Solution to Africa Housing Challenge**. The session, expected to bring together people interested in sustainable and affordable housing, to learn about cutting-edge developments in the field of climate-friendly architecture and their contribution to social housing shortage.

UN-HABITAT
FOR A BETTER URBAN FUTURE

ABC 21

www.abc21.eu

Online event open to the public:

May 18th

14h-16h EAT | 13h-15h CEST

[Click here to access the meeting](#) or SCAN ME

The webinar witnessed a simultaneous participation of 43 attendees, representing a diverse range of backgrounds. Based on estimations, approximately 20% of the participants were European, while 70% were of African origin. The efforts of UN-HABITAT helped us to reach broader audience of African stakeholders.

Efforts were made to disseminate the webinar's content through various channels. Direct invitations were sent to 50 allies and stakeholders, ensuring targeted outreach and engagement with relevant individuals and organizations. Additionally, the project leveraged its social media presence on platforms such as LinkedIn and Twitter to actively promote the webinar and create wider awareness among their respective audiences.

Category	Numbers
Attendance:	43 persons simultaneously
Attendees origin (estimation):	<ul style="list-style-type: none"> ▪ 20% European ▪ 70% African
Recording link	https://youtu.be/Erm7fzyWUDY
Dissemination	<ul style="list-style-type: none"> ▪ Direct invitation sent to 50 allies, stakeholders ▪ Project Social Media: LinkedIn & Twitter ▪ Website: Link

8.4 Outcomes

The webinar on "Net Zero Carbon Architecture as a Solution to Africa Housing Challenge" showcased the commitment of the partnering organizations to address the housing challenge in Africa through sustainable and eco-friendly design principles. In addition to the valuable

insights shared during the session, the webinar also opened up possibilities for future collaborations among the partners and other African and international groups.

The webinar served as a catalyst for potential collaborations, encouraging attendees to explore partnerships and exchange knowledge. The discussions and insights shared during the session laid the foundation for future joint initiatives and projects that aim to advance sustainable and affordable housing in Africa.

The partnering organizations showcased their commitment to addressing the housing challenge in Africa and expressed their openness to collaborating with other African and international groups. These collaborations have the potential to drive forward sustainable and eco-friendly housing initiatives, ensuring a brighter future for affordable housing in Africa.

9 Final remarks

The series of webinars conducted as part of the ABC 21 project have yielded significant outcomes and valuable insights in the fields of energy and comfort indicators, local building materials, weather files and climate indicators, policies for bioclimatic design, and case studies for bioclimatic design. These webinars brought together experts, policymakers, stakeholders, and participants from Europe and Africa, fostering collaboration and knowledge sharing to drive sustainable practices in the building sector.

The webinar on energy and comfort indicators provided a critical analysis of the variables and aspects involved in building energy and comfort assessment. By establishing a set of physical concepts and definitions, the webinar aimed to create a common framework to improve communication among all the actors involved in the building sector, from designers to contractors, from regulators to policymakers. Quantifying building performance through KPIs is useful in new constructions to the planning, design, construction, and commissioning phases and in existing buildings is necessary when performing fault detection and diagnostics, measurement and verification, along with making retrofit decisions. The outcomes of this webinar will contribute to clearer design and construction guidelines as a necessary basis for effective work. We had in this session a majority of European participants.

The webinar on local building materials emphasized the importance of resource efficiency, circular economy approaches, and the use of local sustainable materials in decarbonizing the building sector. The discussions highlighted the need to scale up solutions and provided valuable insights for ongoing efforts in this area. The webinar's outcomes will contribute to sustainable practices and the reduction of embodied carbon in the construction industry. Again we had a predominance of European attendees.

The webinar on weather files and climate indicators raised awareness about the limited availability of weather files in African cities and highlighted the importance of utilizing weather files in building design for resilience. The webinar provided valuable information on weather file generation and utilization, contributing to more resilient building design in warm climate areas. The webinar had students and researchers from Europe as major attendants.

The webinar on policies for bioclimatic design, local materials, and comfort indicators addressed initiatives and policies in the EU and Africa that promote energy efficiency and bioclimatic practices. The discussions focused on the need for a common technical language, envelope-first policies, stable incentives, and certification of sustainable materials. The outcomes of this webinar have the potential to influence policy development and drive sustainable practices in both regions. This webinar was held in French and that facilitate the collaboration and participation of African attendees.

The webinar on case studies for bioclimatic design presented exemplary cases in different climates, showcasing the application of bioclimatic principles and improving thermal comfort performance. The webinar provided valuable lessons learned and highlighted the importance of collecting relevant data. The outcomes of this webinar will contribute to the replication of sustainable solutions and the optimization of thermal comfort in warm climate zones.

The webinar on net-zero carbon architecture as a solution to Africa's housing challenge focused on promoting climate-conscious architecture and addressing affordable housing using sustainable design principles. The webinar emphasized the commitment of partnering

organizations and offered best practices in the field. The outcomes of this webinar will contribute to the advancement of sustainable and affordable housing solutions in Africa. It was a predominantly African audience.

Overall, the ABC 21 webinars have successfully facilitated knowledge sharing, collaboration, and the dissemination of valuable insights. The project's efforts in promoting energy efficiency, sustainable materials, bioclimatic design, and thermal comfort optimization are essential aspects of the building sector that need to be more implemented.