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Regional Center for Renewable Energy and Energy Efficiency  
المركز الاقليمي للطاقة المتجددة وكفاءة الطاقة



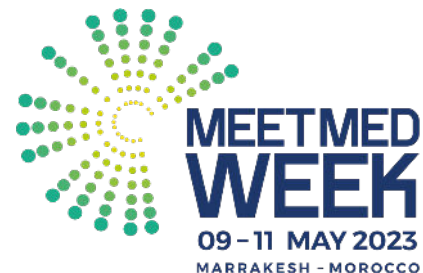
Mitigation Enabling Energy Transition in the MEDiterranean region

# Sustainable Construction in Mediterranean Climate

ABDESSELAM Mohamed SOLENER

10 May 2023  
Marrakech

- Acquire a global vision of the eco-construction approach in the Mediterranean climate through a synthetic overview of the eco-construction training;
- Establish the main concepts and define a common term within the profession.
- Make people want to build ecologically through several examples



**Mots clés** : Sustainable construction, passive building, bioclimatic, life cycle, energy efficiency, Negawatt approach, life cycle analysis, grey energy, natural resources, deconstruction, global cost.

The target audiences are :

- project owners,
- architects design offices
- and companies.

Remaining on a generalist register, other more specialised MOOCs will complete and develop the fields and disciplines to be mastered in the context of eco-construction and develop the fields and disciplines to be mastered in the context of eco-construction.

**Eco-construction or sustainable construction:** minimising the environmental impact of a building over its **life cycle** requires :

- **Designing the envelope according to a bioclimatic approach** to meet the comfort needs of the occupants, using local natural resources as much as possible;
- **Controlling energy consumption** for each use of the occupants (Négawatt approach) but also the energy used to construct the building by favouring bio-based materials (LCA)
- , i.e. over the life cycle of the build**Making choices and trade-offs guided by a global cost** approaching and not just the initial investment

## **1st Week – Building with the climate: scope in tropical humid zones**

- Parameters of comfort
- Building practices: learning from the past
- Challenges of building in tropical humid zones
- Designing buildings to suit the local climates
- Minimizing internal heat loads
- Strategy to design buildings for the future
- Life cycle impacts of buildings

## **2nd Week – Approaches and methodological steps**

- Urbanism and sustainable neighbourhood design
- Climate responsive building design
- Design methodologies for naturally conditioned buildings
- Lowering embodied energy in buildings
- Highly adapted design in constrained environments
- Optimizing energy use in buildings
- The overall cost approach applied to buildings

## **3rd Week – Feedback from experiences and the role of building users**

- The role of stakeholders in the construction chain
- Client-side planning
- Key role of building occupants
- Computer tools to assess building energy performance
- Sharing experiences of low-energy buildings

## Format :

Week	Deliverable	
<b>1st Week - Building with the climate: scope in tropical humid zones</b>	8 videos 1 video + forum	Brainstorming (to create a word cloud) Quiz <b>Case study: understanding the site</b> Provision of documents and resources
<b>2nd Week - Approaches and methodological steps</b>	8 videos 1 video + forum	Quiz <b>Case study: climate analysis</b> Provision of documents and resources
<b>3rd Week - Feedback from experiences and the role of building users</b>	7 videos 1 video + forum	Quiz <b>Case study: setting up the project in the site</b> Virtual classes on local materials Provision of documents and resources

## Module 1

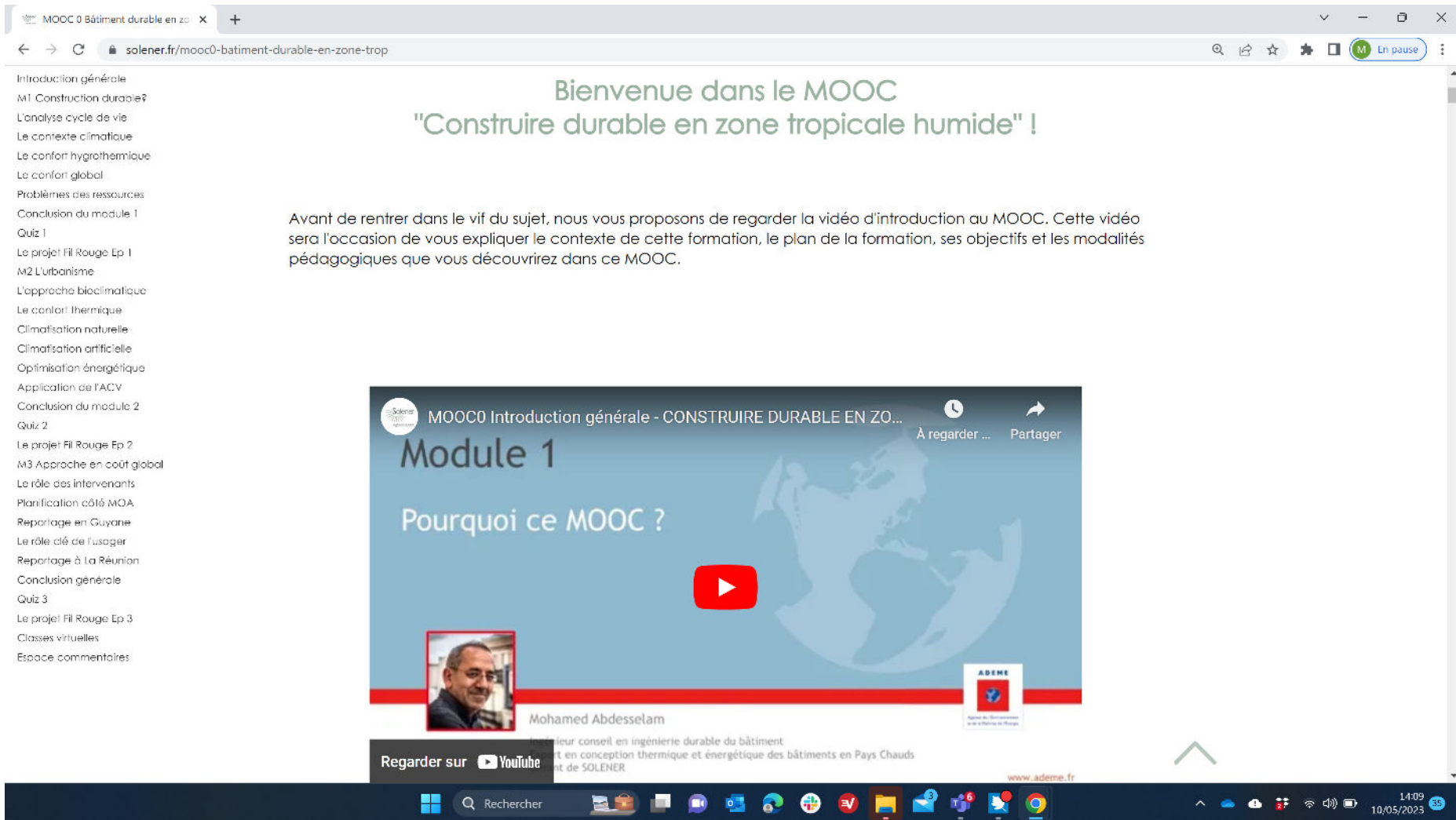
Introduction générale  
M1 Construction durable?  
L'analyse cycle de vie  
Le contexte climatique  
Le confort hygrothermique  
Le confort global  
Problèmes des ressources  
Conclusion du module 1  
Quiz 1  
Le projet Fil Rouge Ep 1

## Module 2

M2 L'urbanisme  
L'approche bioclimatique  
Le confort thermique  
Climatisation naturelle  
Climatisation artificielle  
Optimisation énergétique  
Application de l'ACV  
Conclusion du module 2  
Quiz 2  
Le projet Fil Rouge Ep 2

## Module 3

M3 Approche en coût global  
Le rôle des intervenants  
Planification côté MOA  
Reportage en Guyane  
Le rôle clé de l'utilisateur  
Reportage à La Réunion  
Conclusion générale  
Quiz 3  
Le projet Fil Rouge Ep 3  
Classes virtuelles  
Espace commentaires



MOOC 0 Bâtiment durable en zone tropicale

solener.fr/mooc0-batiment-durable-en-zone-trop

Introduction générale  
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## Bienvenue dans le MOOC

### "Construire durable en zone tropicale humide" !

Avant de rentrer dans le vif du sujet, nous vous proposons de regarder la vidéo d'introduction au MOOC. Cette vidéo sera l'occasion de vous expliquer le contexte de cette formation, le plan de la formation, ses objectifs et les modalités pédagogiques que vous découvrirez dans ce MOOC.

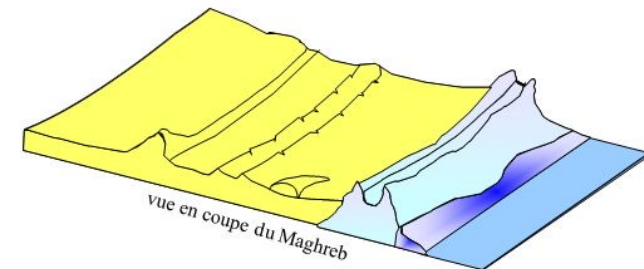
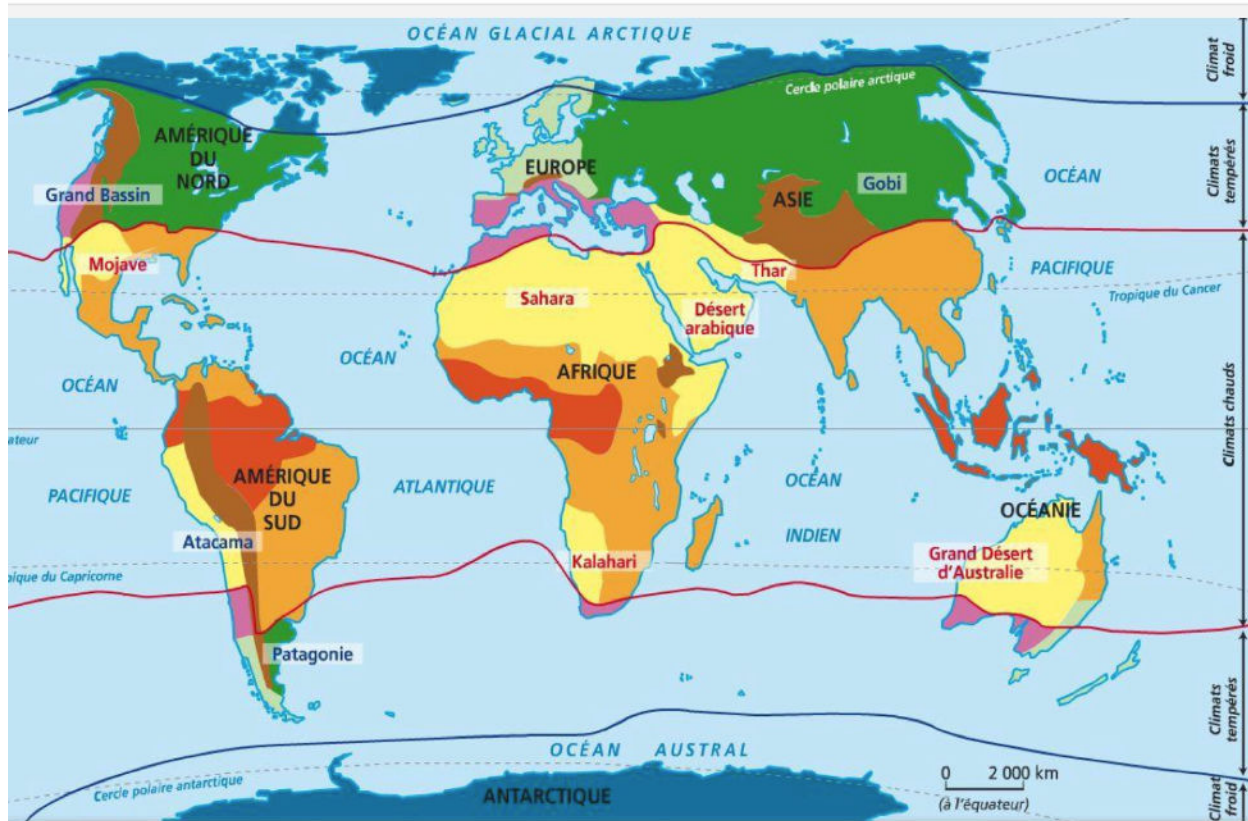
MOOC0 Introduction générale - CONSTRUIRE DURABLE EN ZO...  
Module 1  
Pourquoi ce MOOC ?

Mohamed Abdesselam

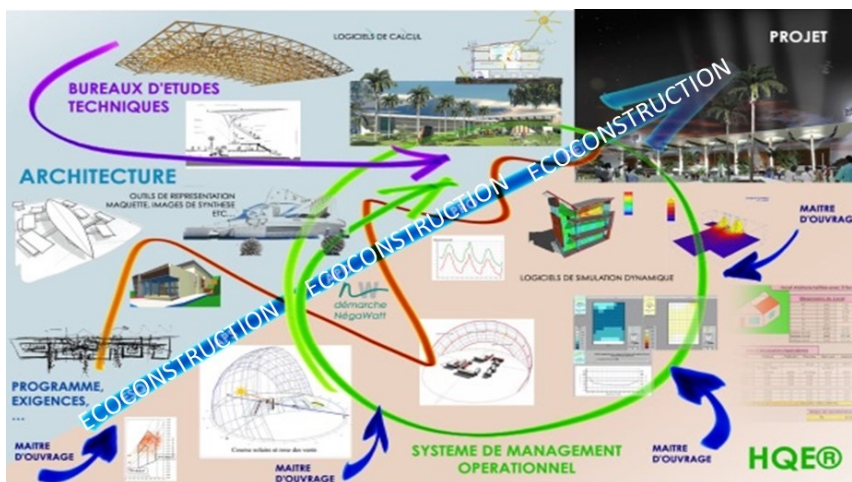
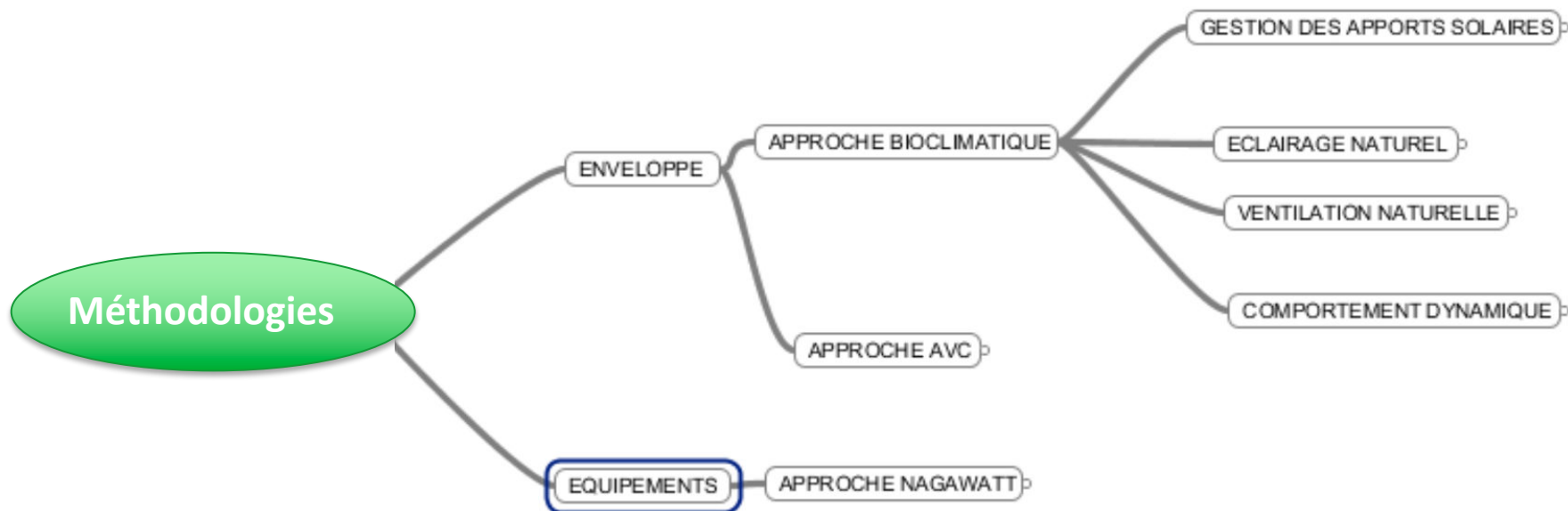
Regarder sur  YouTube

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-  *Climat montagnard*
-  *Climat désertique*





# Contact us!



Mitigation Enabling Energy Transition in the MEDiterranean region  
**Together We Switch to Clean Energy**

For any inquiries or comments, please  
don't hesitate to contact us

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Organization: ADEME



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 [www.meetmed.org](http://www.meetmed.org)

 meetMED Project

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