

Session

Creation of short and long-term plans for implementing improvements

Building Renovation Hierarchy exercise

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Agenda

Let's meet

The canvas we will use

Case study 1

Case study 2

Conclusions

Let's meet

Associate Professor at the Cyprus University of Technology, working primarily on

(a) predicting energy production from solar systems,

(b) how innovation and entrepreneurship can assist in our efforts for decarbonization and

(c) decoding energy data of buildings



What we will do

We will work through **2 real-world case studies** to identify and prioritize energy efficiency improvements, considering factors such as building components, financial constraints, and opportunities for savings.

The canvas

6 Areas

1. Windows
2. Cooling/heating
3. Lighting
4. PV
5. Green roof
6. Insulation

Building Renovation Hierarchy: The Canvas

TIMEPA
The world for better

Exercise: Creation of short and long-term plans for implementing improvements

Measure

Cost

Savings

↑
Priority



Follow our journey!



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Instructions

Measure / Which category of the previous 6 does the measure target?

Cost / Complete with 1-3 € symbols depending on the investment needed for this measure

(€ low, €€ medium, €€€ high)

Savings / Complete with 1-3 % symbols depending on the savings expected from this measure

(% low, %% medium, %%% high)

Building Renovation Hierarchy: The Canvas

TIMEPAC
The new BIC for Campus

Exercise: Creation of short and long-term plans for implementing improvements

	Measure	Cost	Savings
Priority ↑			

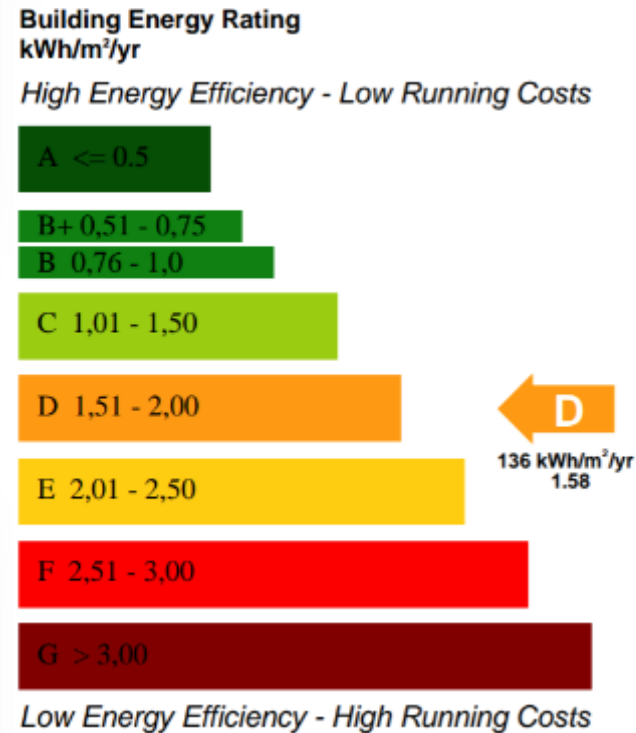
Follow our journey!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101019715. The project is a joint effort of the European Commission, the European Union and the University of Twente. The project is a joint effort of the European Commission, the European Union and the University of Twente. The project is a joint effort of the European Commission, the European Union and the University of Twente.

1. Get into teams of 4-5 people
2. Brainstorm renovation measures with you team using post-its
3. Write 1 measure you propose for each of the 6 categories along with their associated cost and savings expected.

Case study 1

Public school in the suburbs



Built in 1969

Hosts 200 students

Annual consumption of primary energy
136kWh/m²/yr (136 conventional energy, 0 RES)

Issues with moisture

Single-glazed windows

Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



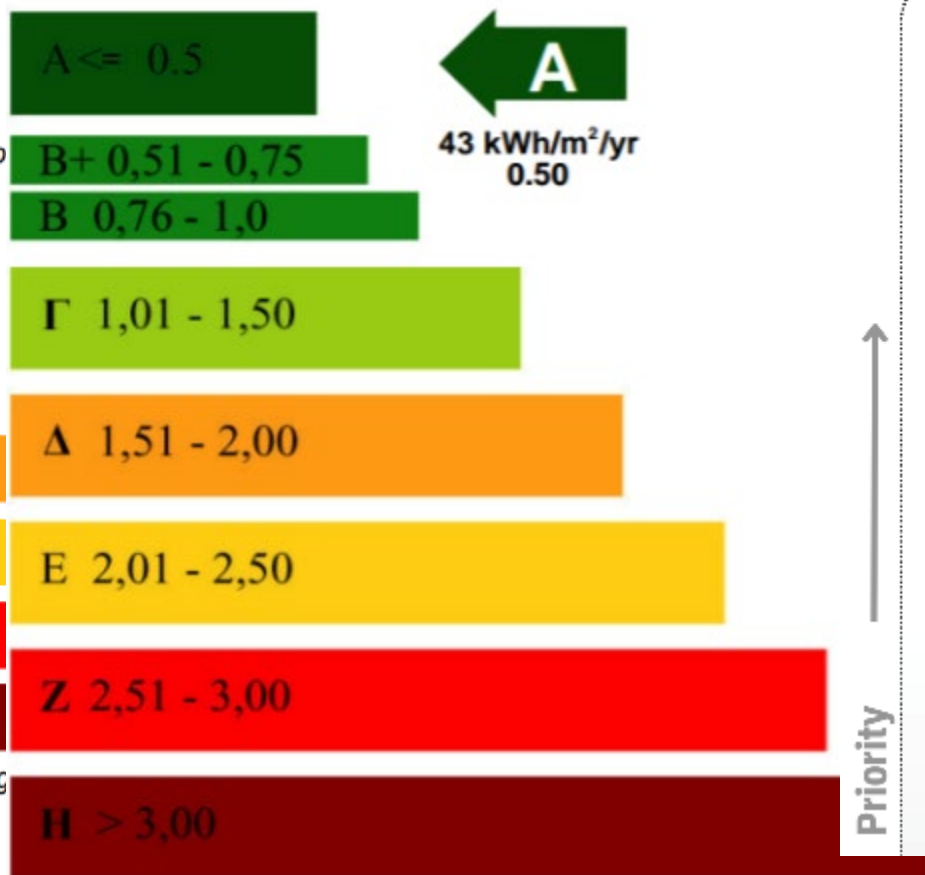
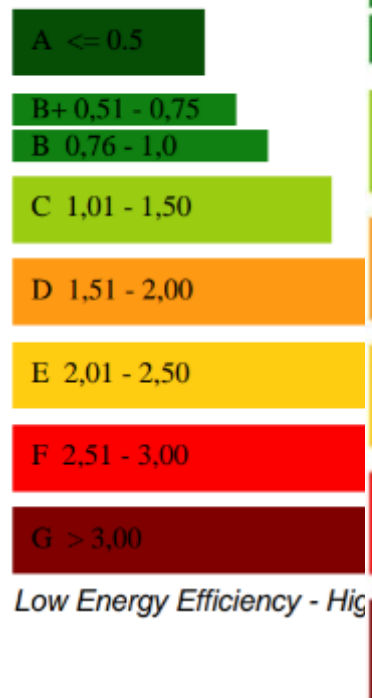


Ενεργειακή Απόδοση Κτιρίου kWh/m²/yr

Ψηλή Ενεργειακή Απόδοση - Χαμηλό Λειτουργικό

Building Energy Rating
kWh/m²/yr

High Energy Efficiency - Low



Χαμηλή Ενεργειακή Απόδοση - Ψηλό Λειτουργικό Κόστος

Exercise: Creation of short and long-term plans for implementing improvements

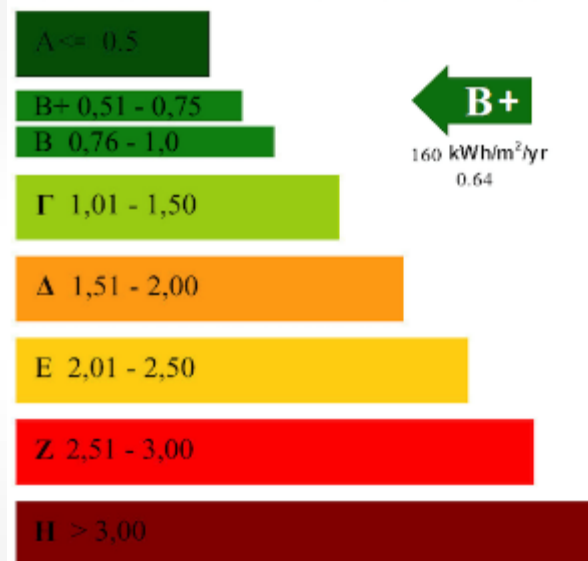
Measure	Cost	Savings
Insulation	€€€	%%%
Windows	€€€	%%%
Lighting	€€	%
PV	€€	%%
Green Roof	€	----
Cooling/ Heating	X	X

Case study 2

Office in historic city centre

Ενεργειακή Απόδοση Κτιρίου
kWh/m²/yr

Ψηλή Ενεργειακή Απόδοση - Χαμηλό Λειτουργικό Κόστος



Χαμηλή Ενεργειακή Απόδοση - Ψηλό Λειτουργικό Κόστος

Located in Nicosia **city centre**

Detached with **listed buildings**

Single-glazed windows

Hosts 10 people (in rotation)

Low air quality

Total energy consumption
160kWh/m²/yr

(160 conventional energy,
0 RES)

Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



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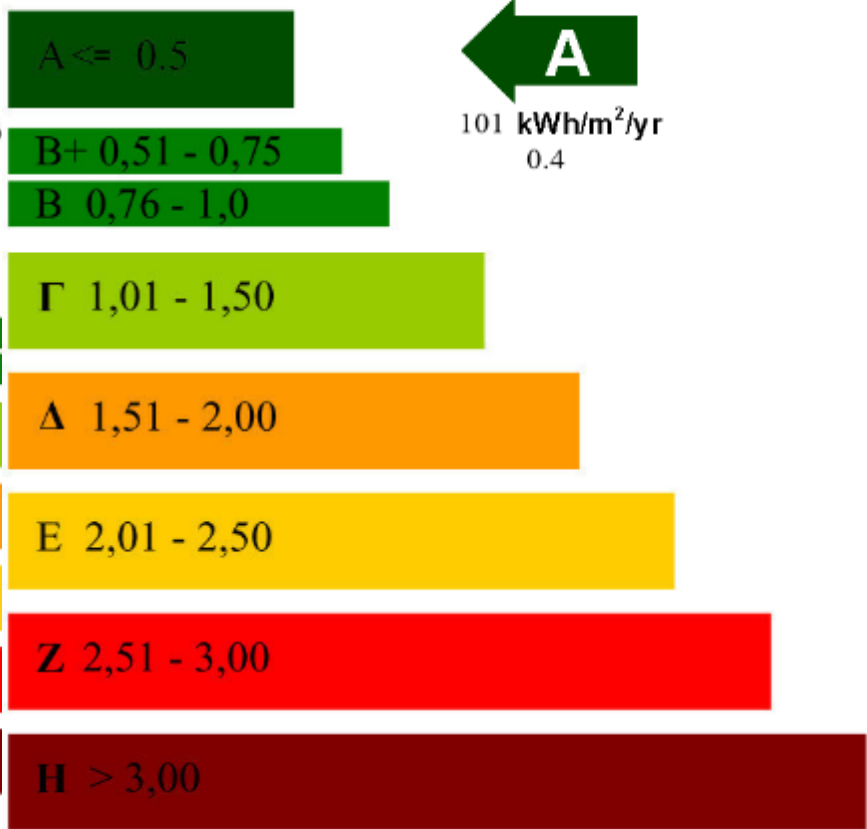
Case study 2 / Office in historic city centre





Ενεργειακή Απόδοση Κτιρίου kWh/m²/yr

Ψηλή Ενεργειακή Απόδοση - Χαμηλό Λειτουργικό Κόστος



101 kWh/m²/yr
0.4

Exercise: Creation of short and long-term plans for implementing improvements

Measure	Cost	Savings
Windows	€€	%%%
Cooling/H heating	€	%%
PV	€€	%%%
Lighting	€	%
Green Roof	€€€	---
Insulation	X	X

Χαμηλή Ενεργειακή Απόδοση - Ψηλό Λειτουργικό Κόστος

Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 1 / Public school in the suburbs



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



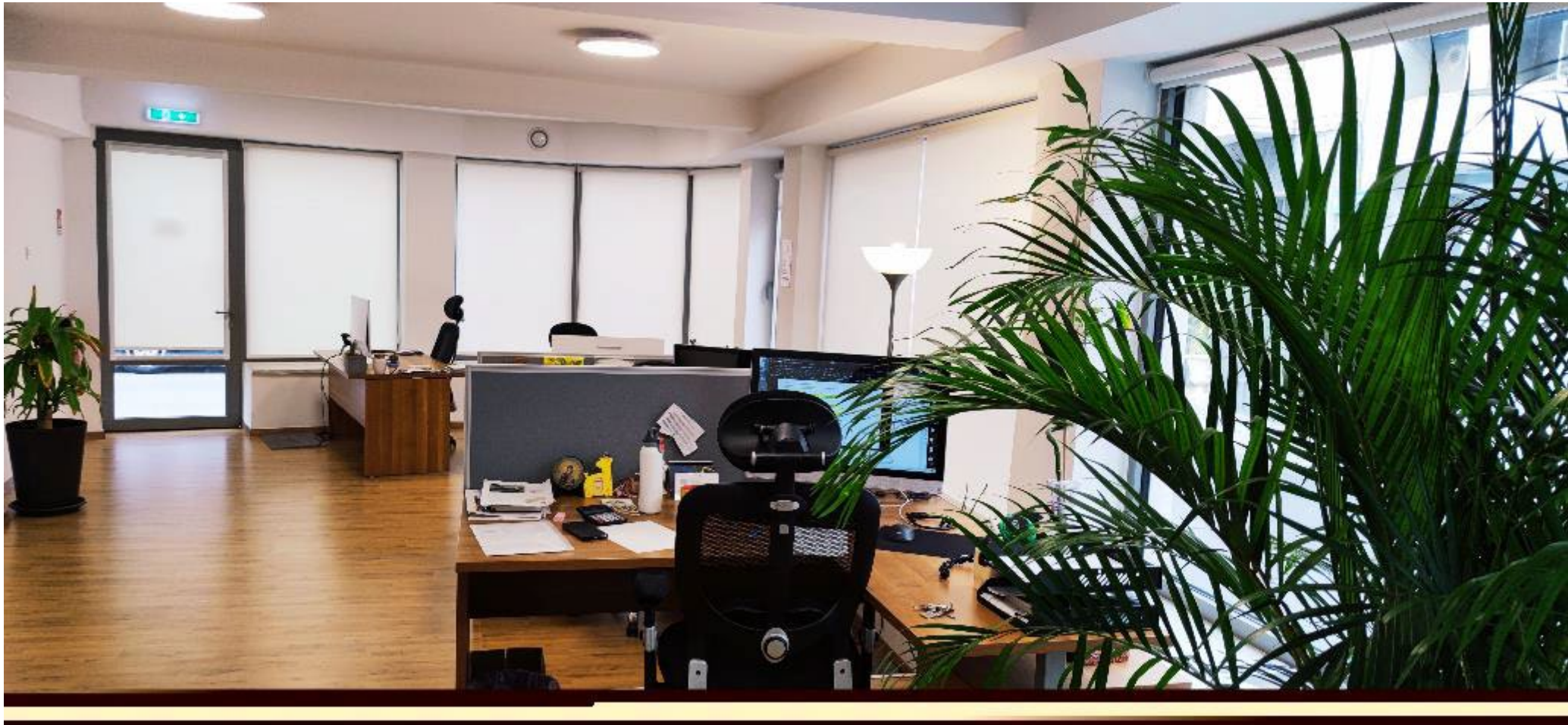
Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Case study 2 / Office in historic city centre



Conclusions

Buildings are **predictable...**

... but **unique.**

There is no **one-size-fits-all** solution...

... but we can **guestimate.**

We need to take into account specific **priorities and constraints.**

Če želite več informacij obiščite našo spletno stran www.timepac.eu ali nas kontaktirajte na

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Hvala za vašo pozornost!