my building is green
A LIFE PROJECT

LIFE my building is green

LIFE17 CCA/EN/00088

Application of Nature-Based Solutions for local adaptation of educational and social buildings to Climate Change

Action: E 2.1
Deliverable: BADAJOZ CONFERENCE
Deliverable: Conference in Badajoz.
Date: Dec/2019

LIFE my building is green - LIFE17 CCA/EN/00088

Deliverable: Conference in Badajoz Date:

Dec/2019

Data Project

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(%) of eligible costs:	59,99 %

Data Beneficiary

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1. SUMMARY EN ESPAÑOL

This deliverable will summarize everything that happened around the Congress held in Badajoz on November 13, 2019: The process carried out to organize it, its objectives, the dissemination, assistance and participation, and the conclusions obtained in each paper will be explained, including the pooling at the end of the conference.

In schools it is necessary to insulate buildings, shade them, implant school gardens and green areas, use natural materials, and educate in energy consumption, energy saving and biodiversity.

The purpose of the Congress was to improve the dissemination and social impact of the objectives of the project: raise awareness of how the NBS are a measure of local adaptation to climate change in buildings. The main thread was climate change, its consequences - especially in terms of user comfort - and the need to adapt to it, for which the NBS affected one of the possible measures, whose impacts are positive.

2. CONFERENCE OBJECTIVES. DISSEMINATION

2.1. INTRODUCTION

In compliance with the Communication Plan of the **LIFE myBUILDINGisGREEN** Project, within the Action E2. Communication activities for the target audience, Diputación de Badajoz has been in charge of holding a Conference in the city of Badajoz on the impact and functionality of Nature Based Solutions as sustainable tools for climate adaptation in buildings and cities.

The event was organized through a series of conferences grouped by thematic blocks that dealt with aspects such as the impact of climate change on public buildings, management of the housing stock, innovative NBS technology, climate adaptation measures, certification and quality systems, etc.

2.2. TARGET AUDIENCE

Taking into account the objectives of the project, the potential attendees were the target groups identified within the project - at regional level - in the Communication Plan developed by Diputación de Badajoz:

Public Administrations

- General Secretariat of Education and Employment of the Regional Government of Extremadura
- General Secretariat of Ecological Transition and Sustainability of the Regional Government of Extremadura
- General Secretariat of Mobility, Transport and Housing of the Regional Government of Extremadura
- Solana de los Barros City Council
- Évora City Hall
- Porto City Hall
- Extremadura Federation of Municipalities and Provinces

Directors, managers and users of education centers

- Cloister C.P Gabriela Mistral de Solana de los Barros
- Faláo de Porto Basic School Staff
- Horta das Figueiras de Évora School Cloister
- Associations of Mothers, Fathers and Students of Educational Centers

Building sector

- Official Association of Architects of Extremadura
- Official Association of Quantity Surveyors and Technical Architects of Badajoz
- APDECOBA (Badajoz Provincial Association of Construction Entrepreneurs)
- Extremadura Energy Agency

Vocational Training Centers

- Polytechnic University School of Cáceres. University of Extremadura
- Nuestra Señora de Bótoa Secondary School in Badajoz, Spain.
- San Roque de Badajoz Secondary School, Badajoz

Considering the technical level of the conference, a moderate attendance was expected. Between 50 and 100 people.

2.3. DISSEMINATION

The usual dissemination channels were used in addition to the channels specific to each target audience identified:

- A mailing campaign was conducted to all target groups.

-We used each group's own dissemination channels (professional associations, public administrations, training centers, etc.).

-The event was disseminated in the social media profiles of La Cocosa (Facebook, Twitter) belonging to the Area of Rural Development and Sustainability of the Provincial Council of Badajoz, in which, through information pills launched gradually, the program and the speakers that made up the conference were presented. Also, dissemination was made through the corporate websites of the Badajoz Provincial Council, the Rural Development and Sustainability Area and the project's website. At the same time, information was provided to the different partners for the dissemination of the event through their dissemination networks.

-The educational centers identified as the target audience were visited, posters were put up with information about the event and those in charge were contacted directly.

In order to efficiently achieve the objectives, a set of dissemination materials was designed specifically for the purpose of the Conference:

-Posters in A2 size.

-Flyers in seed paper.

-Credentials on seed paper.

-Event program for attendees on seed paper.

-Photocall canvas

-50x50x50 cm cubes with corporate images.

-stage tarpaulins.

-lectern panel.

3. CONFERENCE PROGRAM. ORGANIZATION.

3.1 CONFERENCE BLOCKS

The purpose of the Congress was to improve the dissemination and social impact of the project's objectives: to raise awareness of how NBS are a measure of local adaptation to climate change in buildings. The common thread was climate change, its consequences -especially in terms of user comfort- and the need to adapt to it, for which NBS are one of the possible measures, whose impacts are positive.

The consequences of climate change in buildings directly affect the well-being of the occupants, so it is of primary interest to raise awareness of this issue (even more) among stakeholders. A presentation of significant authorities was planned, to convey the importance of the issue. Finally, the Councilor for Ecological Transition and Sustainability, Ms. Olga García, and the Deputy for Rural Development and Sustainability attended the event,
D. Lorenzo Molina (0). The event continued with a presentation on the consequences of climate change, especially in buildings and mitigation and adaptation measures (1), and on adaptation strategies at territorial level (Junta de Extremadura, Porto and Alentejo) (1).

Adaptation solutions should consist of near-zero energy cost solutions (bioclimatic architecture). In this sense, presentations were organized on bioclimatic architecture measures (2) and nature-based solutions (2), both on roofs and facades.

Finally, two LIFE projects were presented as examples of the use of NBS, giving way to a round table (4) where all the speakers interacted with the attendees, answering their questions.

Outside the hall, a space for networking and exhibition of products and solutions related to the purpose of the event was proposed.

FINAL CONFERENCE PROGRAM

08:00h Reception

09:00h (0)- WELCOME AND PRESENTATION

Regional Minister of Ecological Transition and Sustainability of the Regional Government of Extremadura, Ms. Olga Garcia.

Deputy of the Rural Development and Sustainability Area, Mr. Lorenzo Molina.

09:30h (1)- IMPACT OF CHANGE CLIMATE CHANGE ON BUILDING. INTERNATIONAL, EUROPEAN AND NATIONAL STRATEGIES.

-30'. Mr. Jose Antonio Tenorio. Civil Engineer, Senior Scientist at the Eduardo Torroja Institute (CSIC).

10:00h (1)- STRENGTHS REGIONAL FROM ADAPTATION TO TO CLIMATE CHANGE. EXTREMADURA 2030

-10'. Fernando Babiano. General Direction of Architecture, Junta de Extremadura.

-10'. Teresa Batista, Central Alentejo, Comunidade Intermunicipal Alentejo Central.

-10'. Nuno Morais. Porto. Porto. Municipal Chamber

10:30h Networking Coffee Break

11:00h (2)- ADAPTATION MEASURES TO CLIMATE CHANGE. NATURE-BASED SOLUTIONS

-30'. Mr. Javier Neila, Architect Escuela Técnica Superior de Arquitectura de Madrid.

11:30h (2)- NATURE-BASED SOLUTIONS FOR ADAPTATION TO CLIMATE CHANGE. ROOFS. FACADES.

-30'. Paulo Palha, president of the Associação Nacional de Coberturas Verdes (National Association of Green Roofs).

-30'. FACADES: Mr. Daniel Lacueva, vice-president of the Spanish Association of Green Roofs and Vertical Landscaping.

12:30h (3)- EUROPEAN PROJECTS APPLYING NBS:

-15'. D. Belén Feijoó, LIFE LUGO + BIODINÁMICO

-15'. Mr. Miguel Ángel Antón; LIFE MYBUILDINGISGREEN

13:00h (4)-ROUND TABLE

Tenorio, Neila, Palha, Lacueva, LIFE projects

3.2 EXHIBITION

The event was preceded by an exhibition of products and materials related to NBS to be applied as a solution for climate change adaptation.

The following stands were present:

-LIFE-LUGO+BIODYNAMIC Project

-LIFE-MY BUILDING IS GREEN project. Green roof bag system.

-Diadem. Projar. Drainage products for green roofs and facades.

-Rain Bird. Products for the irrigation of green areas.

-Urban Therapy -Diputación de Badajoz. Vertical garden system.

-Vertiarte. El Torruco Nurseries. BIOFIVER. Green roof and vertical gardening system.

-Project LIFE-MY BUILDING IS GREEN. Évora model. Diffusion material.


URBAN GREEN UP
RENATURING URBAN PLANNING TO FIGHT CLIMATE CHANGE VIA NATURE-BASED SOLUTIONS
FRONT-RUNNER CITIES
Soluciones naturales para la adaptación de edificios al cambio climático

3.3 LOGISTICS. COSTS. CONTRACTING.

The event was held in the assembly hall of the S.XXI Building in Badajoz with a capacity for more than 400 people.
The following services were required for the development of the project:

-contact, transportation and lodging of four speakers specialized in the subject of the Conference.

-Attendee registration system.

-organization and coordination of the event.

-reception, accreditation, assistance to speakers.

-Presenter-conductor of the event.

-Audio-image system, lighting.

-Catering for business breakfast-networking.

-Exhibition of NBS.

-Dissemination of the event and the project through: as per section 2.3.

In order to comply with the above, the corresponding administrative procurement files were promoted in compliance with the "*Instruction of October 31, 2018 on the processing of minor contracts in the scope of the Provincial Council of Badajoz and the entities that make up the provincial public sector*":

-contract for DESIGN AND PRODUCTION SERVICE OF THE CORPORATE IMAGE OF THE CONFERENCE IN BADAJOZ OF THE LIFE-MYBUILDINGISGREEN PROJECT.

-contract for the PRODUCTION SERVICE OF COMMUNICATION MATERIAL FOR THE DISSEMINATION OF ACTIVITIES OF THE LIFE MY BUILDING IS GREEN PROJECT.

-contract for SERVICE OF COORDINATION, DYNAMIZATION, ASSISTANCE TO SPEAKERS AND ORGANIZATION OF THE CONFERENCE IN BADAJOZ OF THE LIFE-MYBUILDINGISGREEN PROJECT.

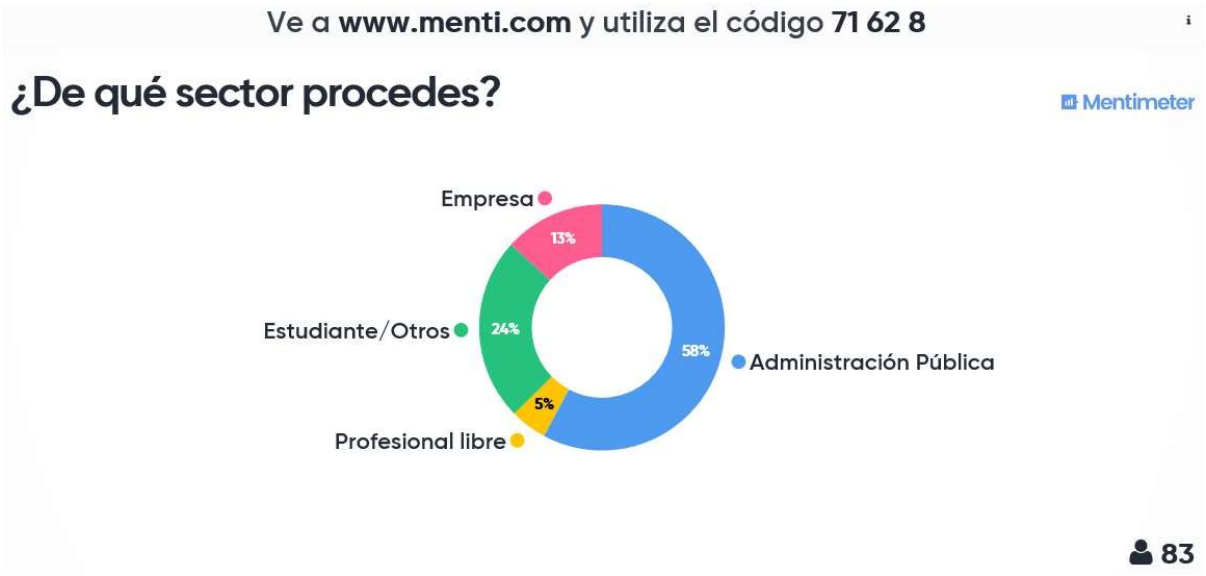
-contract for catering services for attendees and speakers participating in the conference in BADAJOZ of the LIFE-MY BUILDING IS GREEN PROJECT.

-SUPPLY AND INSTALLATION CONTRACT FOR FAVE SYSTEM PROTOTYPE SUBSTRUCTURE AND VERTICAL GARDEN SUPPORT FOR THE LIFE MYBUILDINGISGREEN PROJECT.

4. RESULTS.

The Conference was successfully held on the day and at the place planned. It was attended by **115 people** (higher than expected). Most of the attendees came from the Public Administration and to a lesser extent, students/others, companies and freelancers.

Simultaneous online surveys and consultations with attendees were conducted during the event:



A summary of the main topics discussed during the different blocks of presentations is attached:

09:00h (0)- WELCOME AND PRESENTATION

After attending to the media in the anteroom, the authorities proceeded to inaugurate the Conference:

-The Councilor for Ecological Transition and Sustainability of the Regional Government of Extremadura, Ms. Olga Garcia, opened the conference insisting that the frequency and intensity of extreme weather events are "*the tangible consequences of a crisis caused by us,*

human beings, and that it is a threat to our welfare, to our economy and to biodiversity", and recalling that Extremadura is especially vulnerable.

He explained how the Regional Government of Extremadura is committed to the necessary adaptation and mitigation measures. In this sense, he advanced that his department will provide a significant budget allocation for energy saving and efficiency policies in public buildings as of next year.

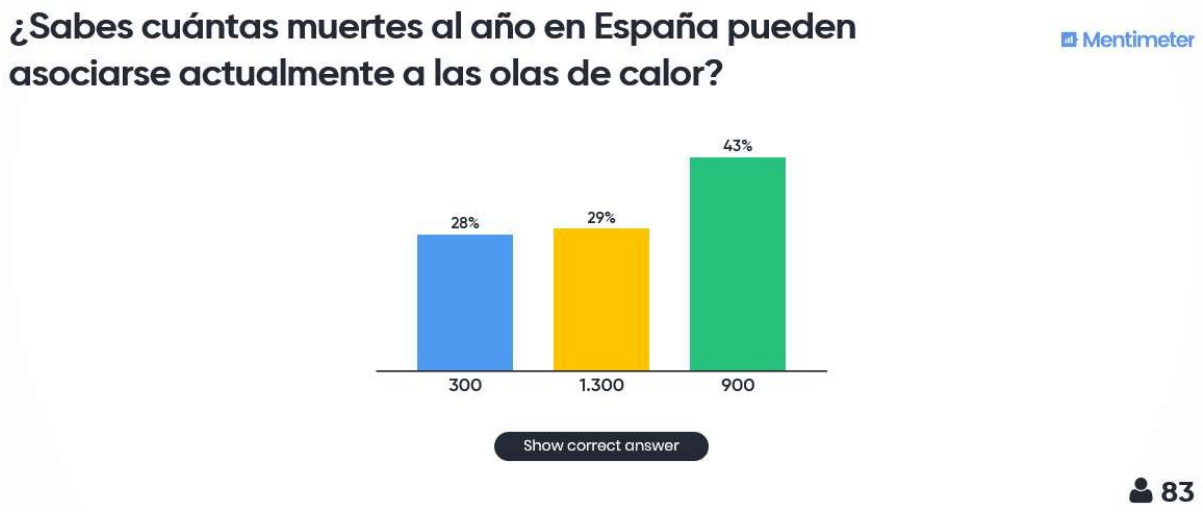
-Then the Deputy of the Area of Rural Development and Sustainability of the Provincial Council of Badajoz, Mr. Lorenzo Molina, remarked the need to take action against Climate Change. Lorenzo Molina, remarked the need to take measures to face Climate Change, explaining how the provincial institution, and specifically the Rural Development and Sustainability Area, is developing several projects in this sense, also in the line of territorial structuring and fight against depopulation: MOVEM Plan, SMART-ENERGY Plan, URBANSOL Project, ADAPTA-BIOPHILIA Project, or the LIFE-MY BUILDING IS GREEN Project itself, which is organizing the event.

The Councilor for Ecological Transition of the Regional Government of Extremadura and the Deputy of the Rural Development and Sustainability Area of the Badajoz Provincial Council


de edificios
al cambio
climático
tve
rne
Porto.


Soluciones
naturales
para la
daptación
e edificios
cambio
limático
tve

Before giving way to the first block of presentations, an online survey was conducted to raise awareness of climate change among attendees:

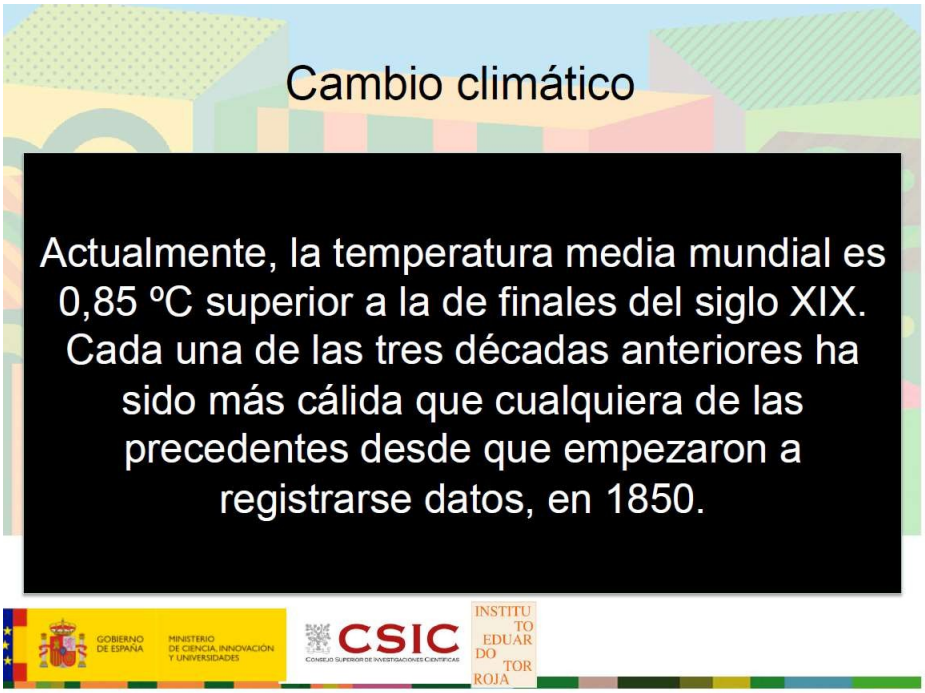


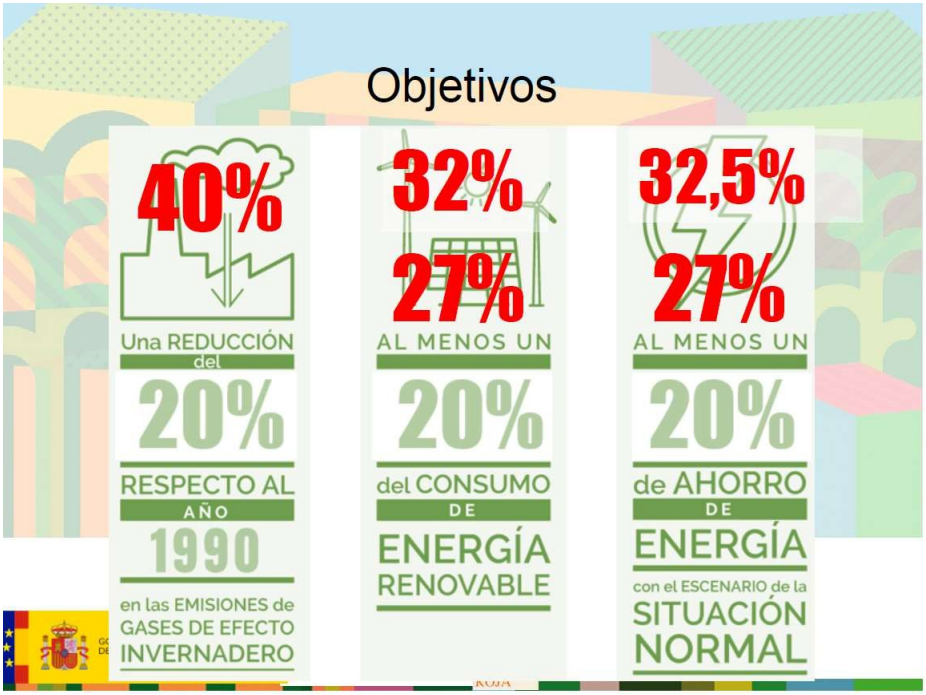
09:30h (1)- IMPACT OF CLIMATE CHANGE ON BUILDING. INTERNATIONAL, EUROPEAN AND NATIONAL STRATEGIES.

-D**. Jose Antonio Tenorio**. Civil Engineer, Senior Scientist at the Eduardo Torroja Institute (CSIC) presented data on temperature increase record, on the updating of objectives on GHG emissions and energy efficiency, and on the necessary changes in international, European and Spanish policies.

He discussed the importance of the common ground on environmental issues: circular economy, energy efficiency and sustainability, also from the perspective of the concept of "opportunity". He recalled the pillars on which sustainability in building is based: environment, social and economic aspects.

He explained the different European Directives related to the matter and their transposition to Spain, highlighting for example the Long-term Strategy for Energy Rehabilitation in the building sector in Spain (ERESEE 2014 and 2017).




Objetivos
40%
Una REDUCCIÓN del
20%
RESPECTO AL AÑO
1990
en las EMISIONES de GASES DE EFECTO INVERNADERO
32%
27%
AL MENOS UN
20%
del CONSUMO DE
ENERGÍA RENOVABLE
32,5%
27%
AL MENOS UN
20%
de AHORRO DE
ENERGÍA
con el ESCENARIO de la
SITUACIÓN NORMAL


Transposición de directivas. Regulación
• Ley de Ordenación de la Edificación.
• Código Técnico de la Edificación. Orden FOM/1635/2013, de 10 de septiembre, por la que se actualiza el Documento Básico DB-HE "Ahorro de Energía", del Código Técnico de la Edificación, aprobado por Real Decreto 314/2006, de 17 de marzo (BOE de 12 de septiembre de 2013)
• Reglamento de Instalaciones Térmicas de Edificios. Real Decreto 238/2013, de 5 de abril
• Certificación Energética de Edificios. Real Decreto 235/2013, de 5 de abril
• Ley 8/2013, de Rehabilitación, Regeneración y Renovación urbanas
• ...
GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES
CSIC
EDUARDO TORROJA


Transposición de directivas.
Medidas aprobadas
Real Decreto 244/2019, de 5 de abril, por el que se regulan las condiciones administrativas, técnicas y económicas del autoconsumo de energía eléctrica.
Real Decreto 56/2016, de 12 de febrero, por el que se transpone la Directiva 2012/27/UE
Real Decreto 233/2013, de 5 de abril, por el que se regula el Plan Estatal de fomento del alquiler de viviendas, la rehabilitación edificatoria, y la regeneración y renovación urbanas, 2013-2016. (BOE de 10 de abril de 2013).
Línea ICO para la "Rehabilitación de viviendas y edificios" 2013 y 2014, dentro de la línea "ICO empresas y emprendedores" 2013 y 2014.
Programa PAREER del Instituto para la Diversificación y Ahorro de la Energía (IDAE): "Programa de ayudas a proyectos integrales de ahorro y eficiencia energética en edificios de viviendas"
Fondo JESSICA-F.I.D.A.E. Fondo de Inversión para financiar proyectos de eficiencia energética y energías renovables.
"Proyecto Clima", del MAGRAMA.
Plan PIMA SOL. Real Decreto 635/2013, de 2 de agosto, por el que, en desarrollo del "Plan de Impulso al Medio Ambiente en el sector hotelero PIMA Sol"
Plan Nacional de Acción de Eficiencia Energética 2014-2020


Oportunidades
Mejora ambiental, reducción emisiones sector difuso.
Mejora económica. Dependencia energética
Inversión productiva, ahorro para hogares.
Dinamización del sector de la construcción.
Generación de empleo.
Renovación del parque existente.
Renovación de la ciudad.
Incremento de nivel de vida.

10:00h (1)- STRENGTHS REGIONAL FROM ADAPTATION TO TO CLIMATE CHANGE. EXTREMADURA 2030

D. Fernando Babiano, Technical Architect of the General Directorate of Architecture and Building Quality of the Regional Government of Extremadura, presented examples of regional strategies for climate change adaptation measures. In particular, he presented the LIFE RENATURAL NZEB project "Natural and recycled materials and products to achieve Nearly Zero Energy Consumption Buildings with low carbon footprint", with similar objectives to those of the LIFE-MYBUILDING IS GREEN project, which is starting now:

-Teresa Batista, from the Intermunicipal Community of Central Alentejo, explained the work carried out so far in the framework of the LIFE-MYBUILDING IS GREEN project, with an introduction on the existing problems in Central Alentejo related to climate change. Within the framework of the LIFE project, he explained the actions carried out to date, highlighting the participatory process of students and parents in defining the solutions to be implemented in the school.

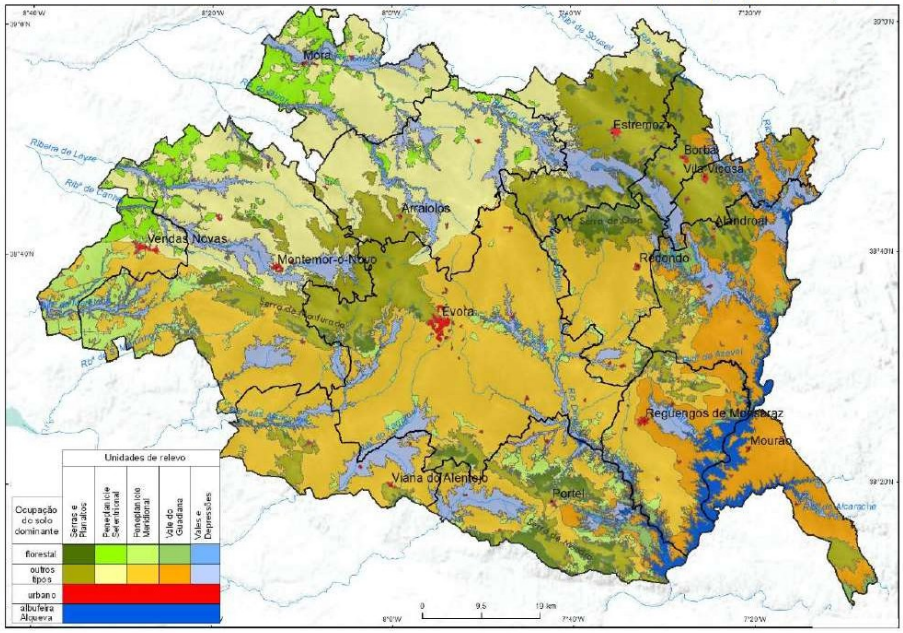
Cenários climáticos para o Alentejo Central

António Lopes, IGOT-UL, 2018

URCH - Unidades de Resposta Climática Homogénea do Alentejo Central

São áreas com condições semelhantes de topografia, exposição, ventilação natural, etc., que dependendo da diversidade de tipos de cobertura e ocupação do solo, interagem de modo particular com a camada limite da atmosfera

traduzem a variedade dos climas locais



18 y 19 de febrero - jornadas técnicas del proyecto mBiG en Évora

- **18 /02 -** Visita a las escuelas básicas de Horta de Figueiras (Évora) y EB D. João IV (en Vila Viçosa).

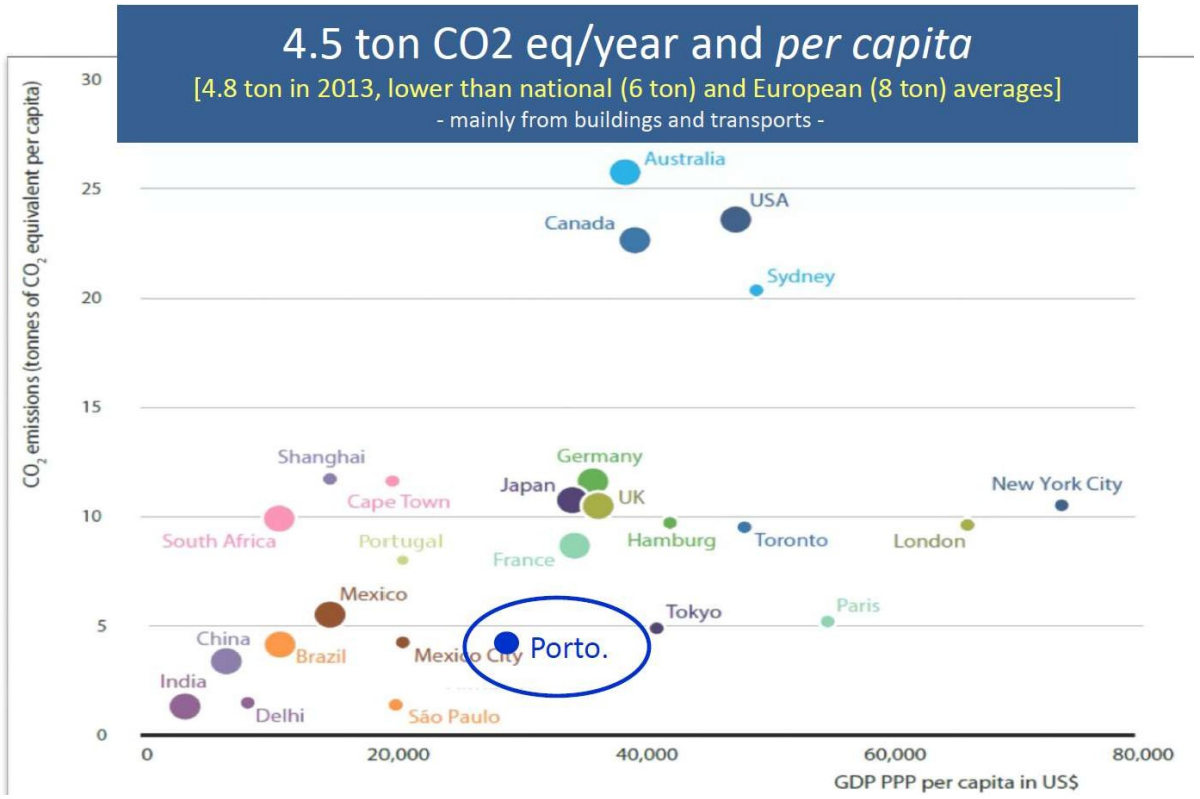

2009

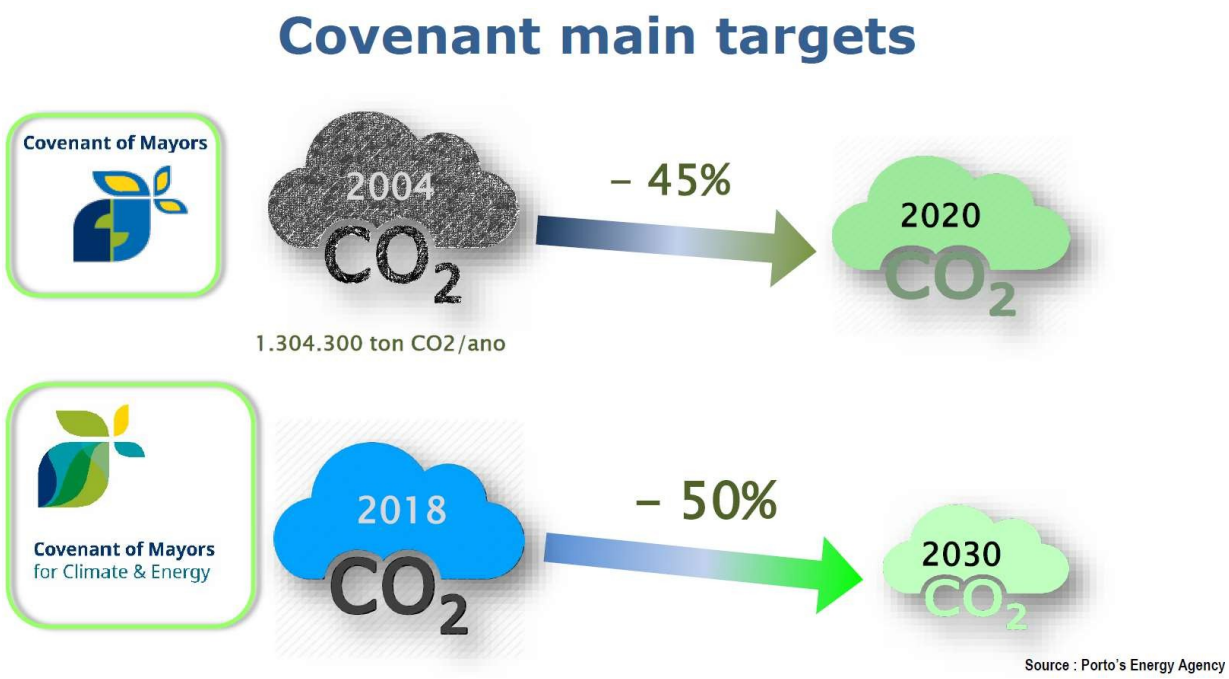

Cisterna graduada para medir a recolecção de água
Caudalímetro para medir consumos
Temporizador de rega
Pluviómetro

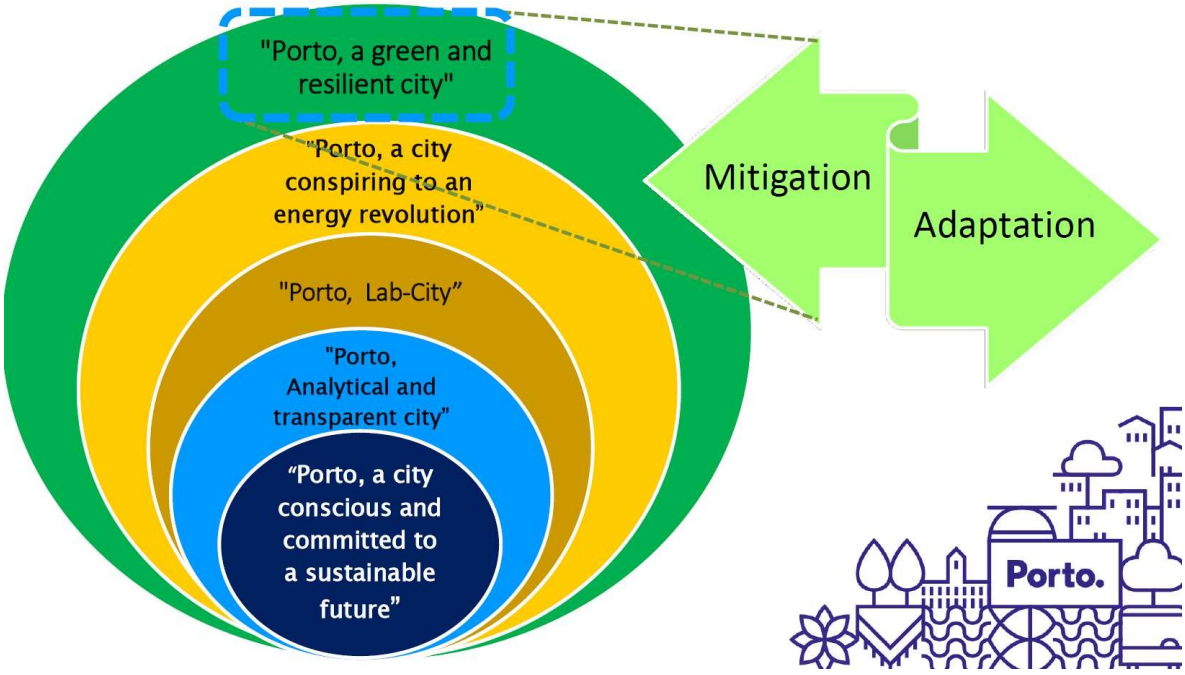
- Nuno Morais, from the Cãmara Municipal de Oporto, presented the strategies that the municipality of Oporto is implementing as measures to adapt to climate change.

He initially provided data on current CO2 emissions, and on the strategy guiding the municipality: the Covenant of Mayors.

As significant measures he showed the actions carried out in transportation (metro and electric vehicles, with reductions of 45,000 T and 500 T of CO2, respectively), municipal strategies (ClimAdaPT.Local) and other measures related to Nature-Based Solutions: the 5th façade (Green roofs), expansion of urban forests (FUN- Porto, producing native species, promoting the planting of species on private properties, disseminating the history of the city's trees, establishing a network of green spaces related to the transport network, and the restoration of degraded areas), and urban orchards. The Porto Bioclimatic Index has been established for the management of results.




Covenant main targets
Covenant of Mayors
2004
CO2
– 45%
2020
CO2
1.304.300 ton CO2/ano
Covenant of Mayors
for Climate & Energy
2018
CO2
– 50%
2030
CO2
Source : Porto's Energy Agency


"Porto, a green and resilient city"
"Porto, a city conspiring to an energy revolution"
"Porto, Lab-City"
"Porto, Analytical and transparent city"
"Porto, a city conscious and committed to a sustainable future"
Mitigation
Adaptation
Porto.

"FUN-Porto"
Urban Forest
Expansion

Urban farms
Vegetable
gardens

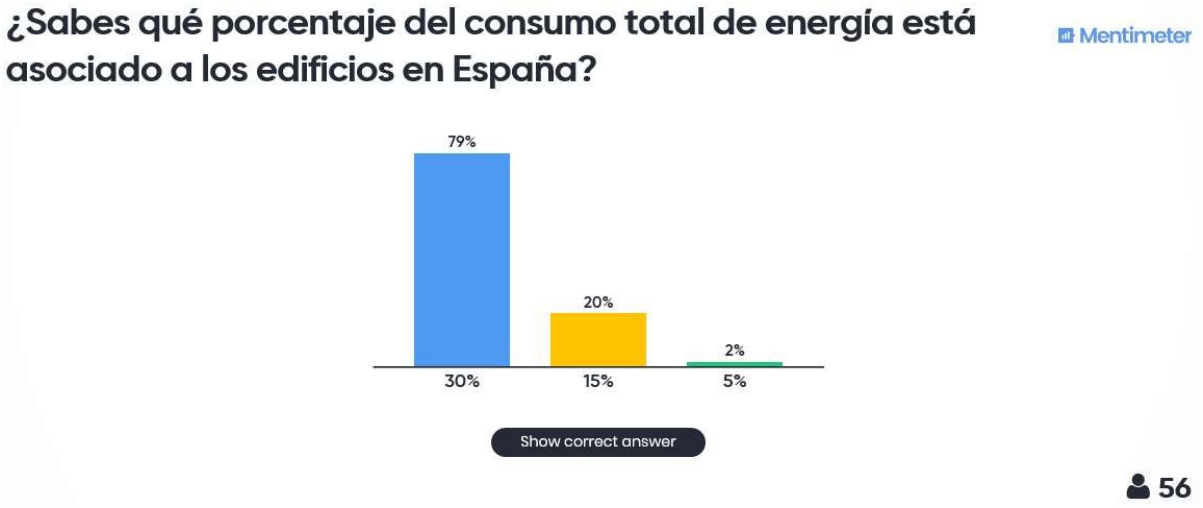
Streams &
Water bodies
Rehabilitation

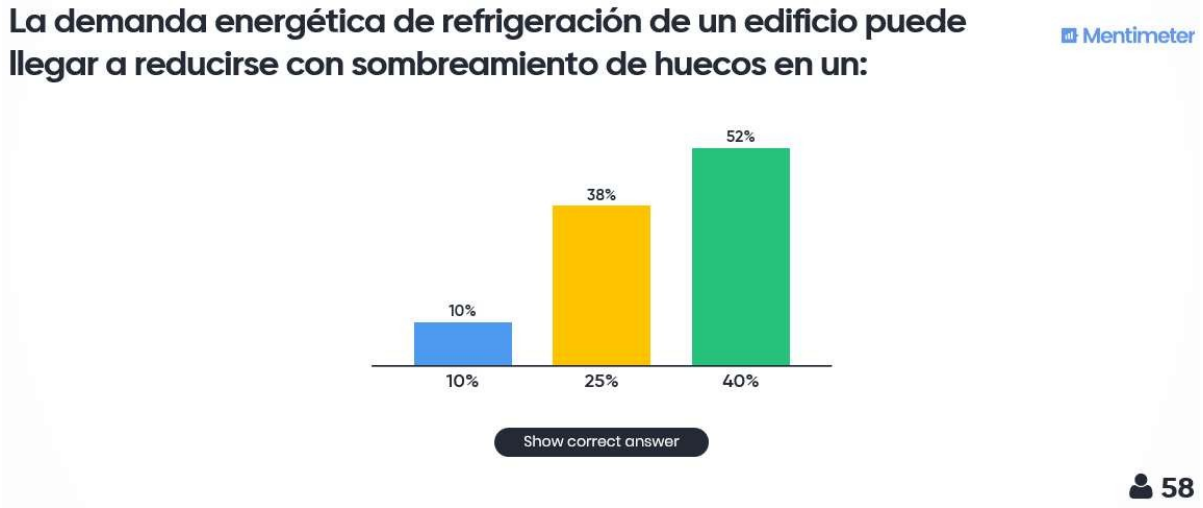
"5th Facade project"
Green roofs

10:30h Networking Coffee Break

In the space prepared for this purpose at the entrance to the hall, an exhibition area of products and materials related to NBS for buildings was set up (see point 3.2) while a coffee-breakfast was served for attendees and speakers. During this time, opinions were exchanged and the different solutions on display were observed.

At the end of the break, the attendees were mobilized with a new survey to raise awareness of the need to act on climate change in buildings:





11:00h (2)- ADAPTATION MEASURES TO CLIMATE CHANGE. NATURE-BASED SOLUTIONS

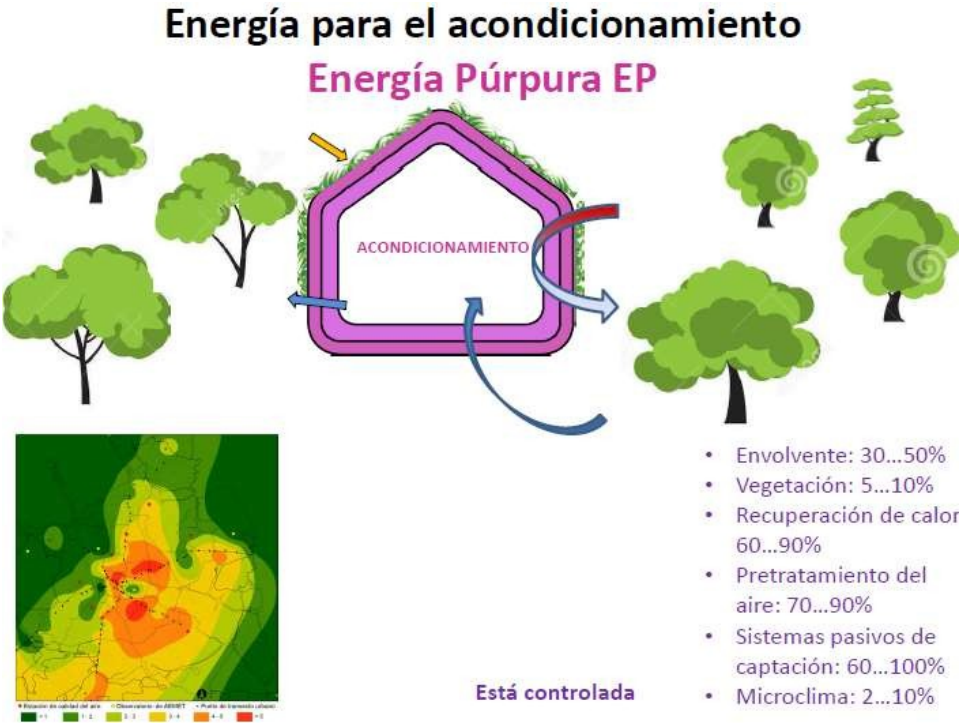
-D**. Javier Neila**, PhD Architect, professor at the Escuela Técnica Superior de Arquitectura de Madrid spoke about "the energy lost in the building".

Neila unpacked the problem, seeking to clarify and develop answers to the following questions: What is a zero-energy building in the context of climate change adaptation? What is a zero-energy building?
If it is defined as "A highly efficient sustainable construction that does not consume energy and does not pollute", Neila raises the following doubts:
-does not consume anything? anything? how do you define that amount?
-what type of energy? the one from conditioning? only that one? any others? which ones?
-If it is very efficient, does it involve the installations? will there be consumption therefore? renewable energy?
-What is a sustainable building? Is sustainability money? Is it energy?
-pollution, water vapor from any combustion or human activity? NOx from an oil-fired power plant? CH4 from food decomposition? CO2 from boiler combustion? ...

He explained each of the polluting energies that are linked to the building and mentioned the state of the art in relation to each of them:
1. Easy-to-find energy:
-Energy for conditioning. It is controlled.
-Energy for domestic hot water. It is controlled.
-Energy for electrical services. It is a matter of budget and space.

2. Energy without apparent responsibility
-Energy from transportation linked to the building. The electric car consumes 17.4% of gasoline energy consumption. Public transport, electric, bicycle, etc., reduce energy consumption. Today it is still not easy to control.

3. Lost energy
-Energy from drinking water. It can represent up to one third of the energy consumed by the building.
-Energy of building materials. The energy expenditure for the production of building construction materials is very significant and is not sufficiently valued today. Such expenditure represents the equivalent of 104 years of energy expenditure related to the conditioning in the case of a 200 m2 residential building.
Clearly NOT CONTROLLED.
-Energy from daily waste. It could become almost all the energy for conditioning.
-Energy from food consumed. Food production and transportation can consume more than twice as much energy as they provide. It is profitable to transport food from up to 60 km away. It is necessary to think about local food production. It is alarming to note that "One third of the food produced does not reach the consumer and ends up in the garbage...along with the energy used and the greenhouse gases already emitted into the atmosphere that this entails".



Energía para el ACS

Energía roja ER

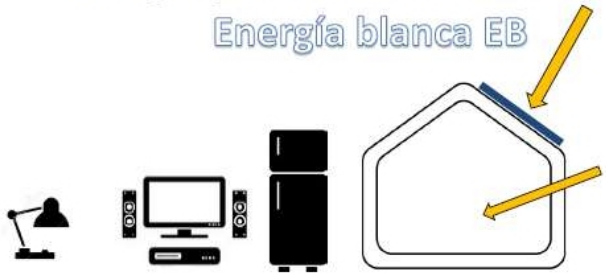
Energía necesaria por persona y año: 648 MJ/año
En una vivienda de 4 personas:
2592 MJ/año (**720 kWh/año, un 12% del acondicionamiento**)

Un sistema solar puede cubrir entre el 40 y el 70%
Restaría: 777…1555 MJ/año (216…432 kWh/año)

Equivaldría a un 3…7% del acondicionamiento.
Está controlada

Energía para los servicio eléctricos

Energía blanca EB



- Uso de la luz natural:
  Un FIN entre 2 y 10% en todos los locales reduciría el uso del alumbrado artificial a la mitad
- Uso de energía solar fotovoltaica puede resolver el resto.

Es una cuestión de presupuesto y espacio

Energía embebida en los materiales

Energía gris EG

Passivhaus:
Acondicionamiento: 15 +15 = 30 kWh/m²·año

Una vivienda de 200 m² consume al año:
6 000 kWh (21,6 GJ)

104 años consumiendo energía en el acondicionamiento para alcanzar la energía gastada en los materiales

Total vivienda 200 m²:

Ventanas (10): 1459 GJ
Muros exteriores: 173 GJ
Forjados: 431 GJ
Resto 200 GJ
Total: 2 263 GJ (11 315 MJ/m²)

Energía del agua

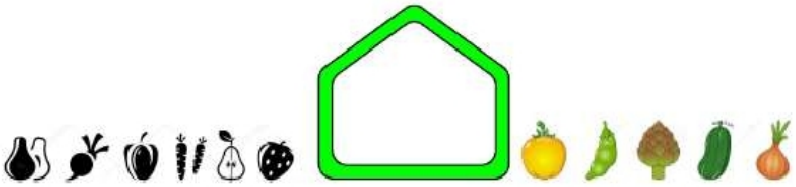
Energía azul EA

- Electrodomésticos eficientes
- Recogida de agua de lluvia
- Tratamiento y reutilización de aguas grises

Puede llegar a estar controlad

Energía de los alimentos

Energía Verde EV



Energía aportada por una lechuga: 100 kJ (333 MJ/tonelada)
1/5 de la aportación calórica de una tonelada de peras.

¿Desde qué distancia es rentable traerla? ¿60 km máximo?
Posiblemente es necesario cultivarlas a pie de edificio

...en resumen

- No se puede hablar de **eficiencia energética** y **adaptación al cambio climático** sin considerar todas las energías vinculadas al edificio
- No podremos decir tampoco que un edifico es **no contaminante** si no vinculamos todos los conceptos e intentamos cerrar sus ciclos de materia y energía

LA ENERGÍA RECOBRADA

11:30h (2)- NATURE-BASED SOLUTIONS FOR ADAPTATION TO CLIMATE CHANGE. ROOFS. FACADES.

-Paulo Palha, president of the Associação Nacional de Coberturas Verdes spoke about GREEN COVERS. He first raised awareness about the importance of preserving nature on Earth with relative data:

-The planet Earth is 4,400,000,000 years old, the Amazon River is 9,000,000,000 years old, and Homosapiens is 350,000 years old.

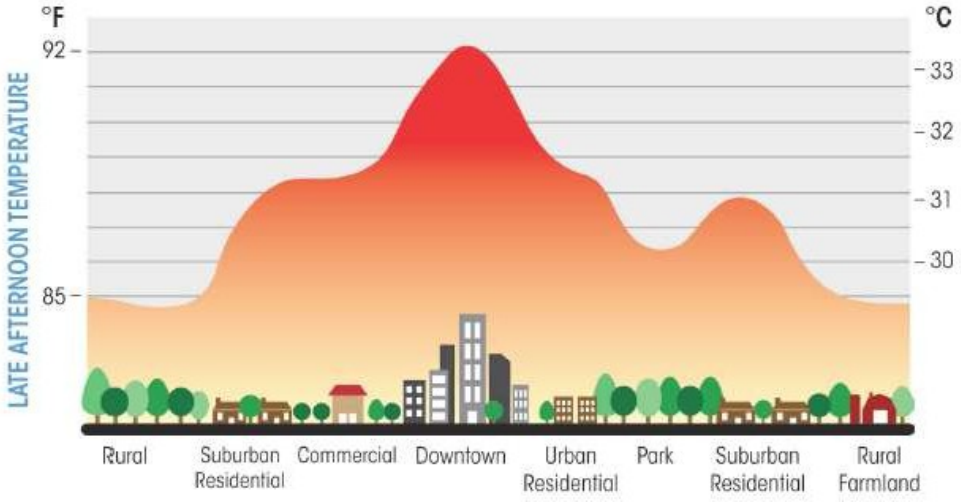
-Humanity needs vegetation to live, from which we receive oxygen, food, and fundamental ecosystem services.

-Resources are limited, and the population is growing daily (more than 150 people per minute...).

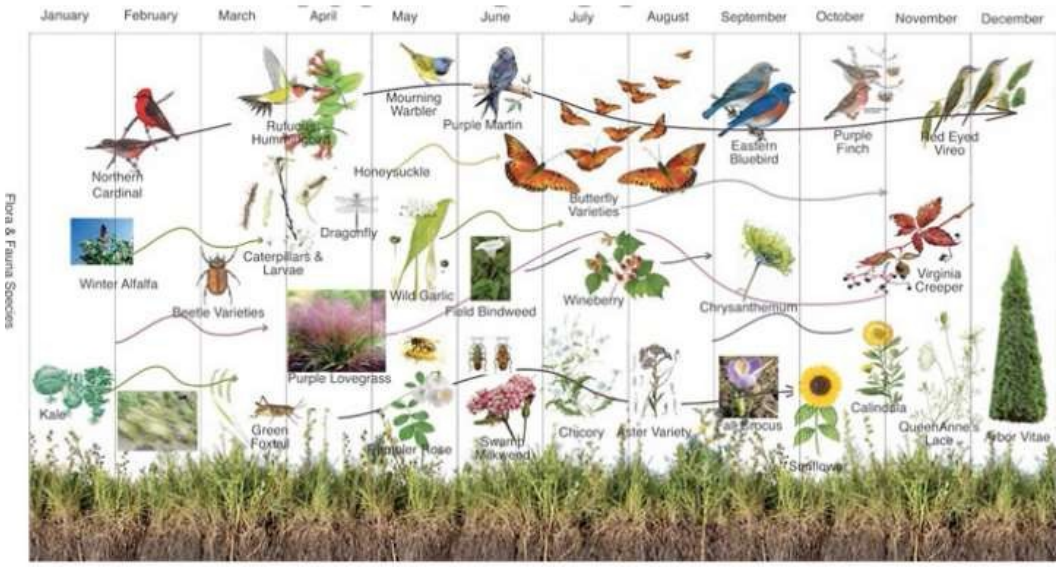
Advocates green infrastructure and its public and private benefits already known in the scope of this project (temperature reduction, CO2 emissions, heat island effect reduction, noise reduction, biodiversity increase, food production, job creation, economic development, real estate revaluation, etc.).

beneficio público

Redução do efeito
de ilha de calor



beneficio publico



Promoção da biodiversidade e nichos ecológicos

Conclusões

Sobre o futuro das cidades

As estruturas construídas têm obrigatoriamente que responder a responsabilidades ambientais e sociais.

Edificios do futuro vão obrigatoriamente:

- exportar energia;
- reutilizar evapotranspirar e infiltrar água da chuva;
- produzir alimentos;
- captar poluição e produzir oxigénio
- incorporar resíduos na sua construção

-D**. Daniel Lacueva**, vice-president of the Spanish Association of Green Roofs and Vertical Landscaping spoke about GREEN FACADES AND VERTICAL GARDENS.

He established the differences between vertical garden and vegetal wall, and broke down a classification of vertical gardens, with numerous examples of each of them, going on to explain the basic concepts of vertical cultivation, and not forgetting the need to build safely in these vertical works: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de edificios
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para la adaptación
de edificios
al cambio climático
Badajoz | Edificio Siglo XXI
13 DE NOVIEMBRE DE 2019
Edificio "consorcio"
E.Browne i B.Huidobro (1993)


para la adaptación
de edificios
al cambio climático
13 DE NOVIEMBRE DE 2019
Gaviones lana de roca (obra
:Haritz Natural solutions)


para la adaptación
de edificios
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Sistemas textiles extensivos
Obra:Patrick Blanc_Caixa Forum Madrid


climático
13 DE NOVIEMBRE DE 2019
CONCEPTOS BASICOS
DEL CULTIVO
VERTICAL
Soporte
Limitado
- grueso 2 cm / 16cm.
- peso /densidad 25/185 Kg/m2
- est. química capacidad / disponibilidad
- est. física compactación / finos
Nutrición
Limitada
- relación densidad plantación/25-96uni/m2
cantidad de medio de cultivo
- relación durabilidad / coste
Luz
Condicionada
- por crecimiento vegetativo
- (?) lugar de instalación.
Agua
-calidad mínima necesaria. DESCALCIFICADORES!
-correcta distribución.
- no afectar al soporte. Camara ventilación
-control de drenajes.

12:30h (3)- EUROPEAN PROJECTS APPLYING NBS:

-Ms. **Belén Feijoó**, explained the LIFE LUGO + BIODYNAMIC project that will implement Galician wood structures in a demonstration building ("Green impulse") that will use passive architecture concepts and renewable energies; urban agriculture, a special plan, and implementation of green areas (arboretum, chestnut grove, hardwoods, enil, energy, ...).


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Productos estructurales con maderas gallegas:
Lámina reticular con Eucalyptus globulus
Fabricación manual de arcos con madera de Pinus radiata de Galicia,
en las instalaciones de PEMADE.


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Edificio demostrativo: "Impulso Verde"
Espacio de descanso. Pl. 3ª
Sección

-D**. Miguel Ángel Antón** explained the LIFE MYBUILDINGISGREEN Project, organizer of the event, thanking previously the public and speakers for their attendance.

The project aims to determine the extent to which nature-based solutions can help school buildings adapt to climate change. To this end, it has designed several prototypes related to green roofs, shading of facades and exteriors with plant systems, ventilation, and draining pavements. The building is currently being monitored and data on temperatures and CO2 concentrations were provided, as well as data on the objectives pursued, including a 50% reduction in energy consumption for cooling.

Soluciones naturales para la adaptación de edificios al cambio climático

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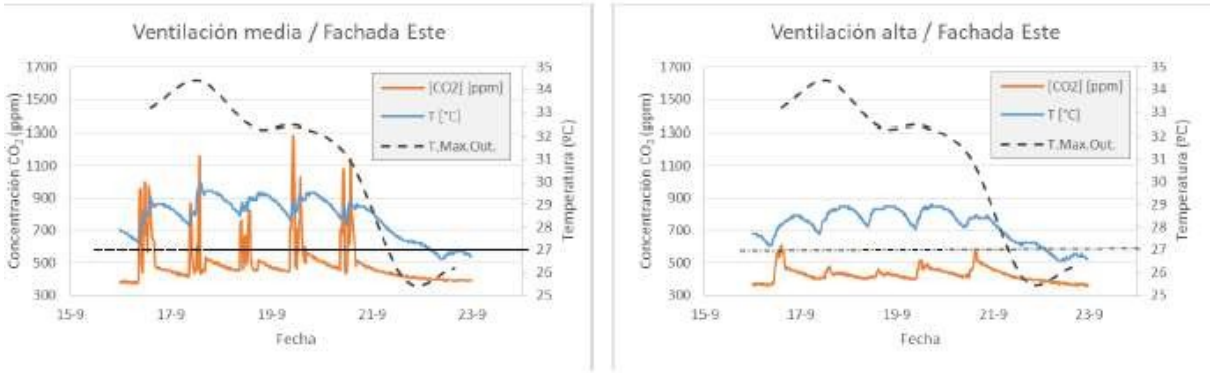
El problema

Máxima temperatura para tener confort térmico: 27ºC



Monitorización de la concentración interior de CO_2 y de la temperatura en clases (perfiles de ejemplo en una semana tipo de septiembre).

Soluciones naturales para la adaptación de edificios al cambio climático

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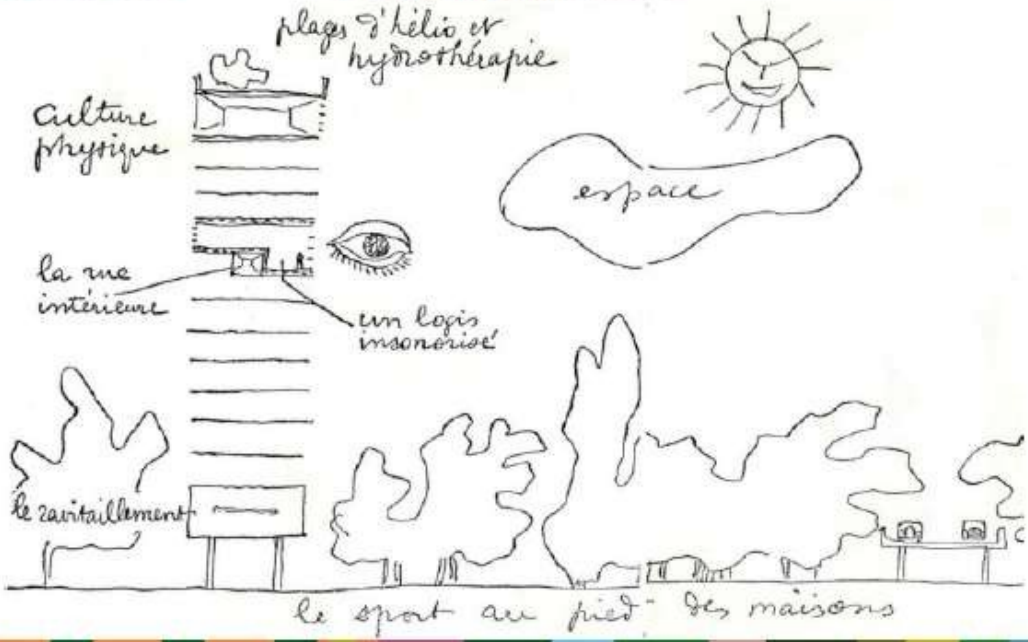


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13:00h (4)-ROUND TABLE

Finally, **Neila, Palha, Lacueva, Belén Feijoó, and Miguel Antón** participated in a round table moderated by Salustiano Torre, who posed several questions related to the purpose of the event.

Bearing in mind that in new buildings we already know how to deal with the problem of climate change, it was recalled the importance of conducting prior analysis in the case of existing buildings, in order to decide how to act: insulation, shading of openings, thinking about the energy lost, the necessary presence of nature to adopt solutions, ...

The participation of the attendees included questions on the need for ventilation in existing buildings through protocols, and on the need to increase biodiversity in schools (with the presence of plants and insects), understanding this as a positive aspect, addressing in particular possible cases of incompatibilities.

As exemplary, simple and concise measures for schools and colleges, it was proposed to "plant a tree", "plant gardens", educate in sustainability (create the subject of the analysis of the energy consumed by the school), use of natural materials, ...

He concluded the conference by receiving numerous congratulations from the attendees for the organization of the conference.

5. ANNEXES.

5.1. ATTENDEES.

5.2. ADVERTISING AND COMMUNICATION ELEMENTS

- Posters in A2 size.
- Flyers on seed paper.
- Seed paper credentials.
- Cloth Bags
- Event program for attendees on seed paper.

- Photocall canvas

- Cubes 50x50x50 cm with corporate images.
- Stage tarpaulins.
- Lectern panel.

5.3. PRESENTATION OF THE CONFERENCE AT A PRESS CONFERENCE

4/4 El CEIP Gabriela Mistral de Solana de los Barros, elegido por el proyecto europeo LIFE MyBuildingisGreen para la implantación de Soluciones Basadas en la Naturaleza

INICIO CONSTRUCCIÓN SOSTENIBLE REHABILITACIÓN ARQUITECTURA MATERIALES INSTALACIONES ENERG

Inicio » Construcción Sostenible » LIFE MyBuildingisGreen elige un colegio en Badajoz para implantar soluciones basadas en la naturaleza

LIFE MyBuildingisGreen elige un colegio en Badajoz para implantar soluciones basadas en la naturaleza

Publicado: 03/10/2019

El proyecto europeo LIFE MyBuildingisGreen, en el que participa la Diputación de Badajoz, ya ha seleccionado el centro escolar que hará de edificio piloto de esta fase del proyecto y donde se van a aplicar las soluciones basadas en la naturaleza (NBS) para la adaptación local de edificios docentes y sociales al cambio climático.

De izquierda a derecha: Isabel Ponce, concejala del Ayuntamiento de Solana de los Barros, Lorenzo Molina, diputado delegado del Área de Desarrollo Rural y Sostenibilidad, y Miguel Antón, técnico responsable del proyecto LIFE – MyBuildingisGreen.

El centro elegido es el Colegio de Educación Infantil y Primaria (CEIP) Gabriela Mistral de Solana de los Barros. Así lo anunció el pasado 1 de octubre en rueda de prensa Lorenzo Molina, diputado delegado del Área de Desarrollo Rural y Sostenibilidad de la Institución Provincial, acompañado de Isabel Ponce, concejala del Ayuntamiento de Solana de los Barros, y Miguel Antón, técnico responsable del proyecto LIFE – MyBuildingisGreen.

Tal y como indicaron en la rueda de prensa se trata del primer proyecto LIFE que se concede a la diputación, con el cual se pretende abordar la problemática de las altas temperaturas en los centros escolares.

Para la elección del centro se han empleado, en primer lugar, criterios técnicos sobre la configuración y características de cubiertas y fachadas, y sobre la orientación del edificio, realizándose una preselección y posterior selección del edificio más idóneo.

Implantación de prototipos basados en la naturaleza

5.4. MEDIA CLIPPING.

RURAL DEVELOPMENT AND SUSTAINABILITY AREA

DIPUTACIÓN DE BADAJOZ

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TELEVISION

MY BUILDING IS GREEN	Canal Extremadura TV	Now Extremadura | Minute 59:50	https://bit.ly/33YG9qC
MY BUILDING IS GREEN	Extremadura TV Channel	Extremadura News 1 | Minute 07:48	https://bit.ly/37h2sKg
MY BUILDING IS GREEN	Extremadura TV Channel	Extremadura News 2 | Minute 08:27	https://bit.ly/2Qth9Eg
MY BUILDING IS GREEN	TVE	Extremadura News | Minute 09:40	https://bit.ly/35aoI6J

RADIO

MY BUILDING IS GREEN	Canal Extremadura Radio	Hora Punta | Minuto 10	https://bit.ly/2NTF2my
MY BUILDING IS GREEN	Canal Extremadura Radio	Last Hour | Minute 12	https://bit.ly/35dpD6E
MY BUILDING IS GREEN	RNE	Chronicle Extremadura | Minute 27:27	https://bit.ly/35cT2xy
MY BUILDING IS GREEN	RNE	Extremadura Afternoon News | Minute 5	https://bit.ly/35bpHn9

DIGITAL PRESS

MY BUILDING IS GREEN	Regional Government of Extremadura	The Regional Ministry for Ecological Transition and Sustainability will strengthen energy saving and efficiency policies in buildings in 2020	https://bit.ly/2XmILwh
MY BUILDING IS GREEN	ElDiario.es	Vines to fight climate change	https://bit.ly/2CTbe3q
MY BUILDING IS GREEN	InfoProvincia	MORE THAN A HUNDRED PEOPLE MEET IN BADAJOZ TO FIGHT AGAINST CLIMATE CHANGE THROUGH THE NBS	https://bit.ly/32WJ4z5
MY BUILDING IS GREEN	Canal Extremadura	VINES TO FIGHT CLIMATE CHANGE	https://bit.ly/37i7oOY
MY BUILDING IS GREEN	EURO EFE	Vines to adapt buildings to climate change	https://bit.ly/33X1CQJ