

Course guide

290256 - DISEDES - How to Design an Efficient and Healthy Building. Use of Passivhaus and Well Standards

Last modified: 21/06/2023

Unit in charge: Vallès School of Architecture
Teaching unit: 753 - TA - Department of Architectural Technology.
Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Optional subject).
Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Dr. Roger Señís
Others: Professors amb certificació Passivhaus i Well

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

1. To give the necessary tools and resources to the student to, through research and practical cases, delve into passive designs applying the requirements of the Passivhaus standard and Well architecture to create environments that enhance health and well-being well-being, while addressing the commitment to the climate emergency (energy efficiency and nZEB buildings).
2. Develop a Passivhaus-type residential project, in accordance with the guidelines of the Passive House Institute (PHI) and the Passivhaus Building Platform (PEP).
3. Know and make use of the PHPP (Passivhaus Planning Program) to accredit the Passivhaus certification of the planned home.



CONTENTS

How to design an efficient and healthy building. Use of Passivhaus and Well standards

Description:

We are increasingly aware of the importance of reducing the environmental impact that human activities cause. If we want to continue enjoying nature, we need to go a step beyond ecology, and this is the idea that regenerative architecture captures. It is proposed to develop projects that learn from the conditions and traditions of the place. We will seek to minimize the inevitable environmental impact in all construction through the efficient consumption of energy and the maximum use of resources (the use of materials, life cycle, ecological footprint, etc.), while we will seek to promote regenerative architecture and neuroarchitecture.

A house that applies neuroarchitecture is not seen in an obvious way, it is not distinguishable with the naked eye, but it is felt. And we notice it through all our senses, even when we sleep. In this sense, the strategies of the Passivhaus and Well standards, among others that we will discover, become very useful tools for this purpose.

Specific objectives:

1. To give the necessary tools and resources to the student to, through research and practical cases, delve into passive designs applying the requirements of the Passivhaus standard and Well architecture to create environments that enhance health and well-being while addressing the commitment to the climate emergency (energy efficiency and nZEB buildings).
2. Develop a Passivhaus-type residential project, in accordance with the guidelines of the Passive House Institute (PHI) and the Passivhaus Building Platform (PEP).
3. Know and make use of the PHPP (Passivhaus Planning Program) to accredit the Passivhaus certification of the planned home.

Related activities:

-

Full-or-part-time: 60h

Theory classes: 60h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Wassouf, Micheel. Passivhaus : de la casa pasiva al estándar : la arquitectura pasiva en climas cálidos = da casa passiva à norma : a arquitectura passiva em climas quentes [on line]. Barcelona: Gustavo Gili, 2014 [Consultation: 06/10/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=3226032>. ISBN 9788425226366.
- Hopfe, Christina J. ed. The Passivhaus designer's manual : a technical guide to low and zero energy buildings. New York: Routledge, 2015. ISBN 9780415522694.
- Granados Menéndez, Helena. Rehabilitación energética de edificios. Madrid: Tornapunta, 2012. ISBN 9788415205562.
- Zhivov, Alexander M. Deep energy retrofit - a guide for decision makers [on line]. Cham, Switzerland: EBC : Springer, 2021 [Consultation: 06/10/2022]. Available on: <https://link-springer-com.recursos.biblioteca.upc.edu/book/10.1007/978-3-030-66211-0>. ISBN 3030662101.
- Meadows, Donella. The limits to growth : the 30-year update [on line]. White River Junction: Chelsea Green Pub, 2004 [Consultation: 11/10/2022]. Available on: <https://donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf>. ISBN 9781931498586.