



**Skills perimeter definition
(Task 2-Results 1, 2, 3 and 4)**

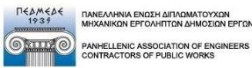


**Nature Based Solutions:
Green roofs training for urban and building sustainability**

2021-KA220-VET-7D7D053A

Erasmus + programme

Key Action 2. Cooperation partnerships in Vocational Education and Training



**Co-funded by
the European Union**

Naturbuild project is co-funded by the European Union’s Erasmus+ programme. The contents of this publication are the sole responsibility of Naturbuild Partnership and neither the European Commission nor the Spanish Service for the internationalization of Education (Sepie) are responsible for any use that may be made of the information contained therein.

Document data

PROJECT TITLE	Nature Based Solutions: Green roofs training for urban and building sustainability
PROJECT ACRONYM	Naturbuild
AGREEMENT NUMBER	2021-KA220-VET-7D7D053A
PROJECT DURATION	February 2022 – August 2024
PROJECT TASK	Task 2. Expert’s surveys to set the skills perimeter and define the expected scope and Learning Outcomes of the Module.
RESULTS LINKED	R1. Global awareness module R2. Installation module R3. Maintenance module R4. Deconstruction module
AUTHORS	P1. Fundación Laboral de la Construcción P2. Laboratório Nacional de Energia e Geologia P3. Pedmede Somateioe P4. Scuola Edile Piacenza
LEVEL OF DISSEMINATION	Public

VERSION	DATE	COMMENTS
1	15/11/2022	Creation of the document structure and development of the chapter 3. Surveys
2	15/01/2022	Introduction of survey’s results
3	08/05/2022	Introduction of final skills perimeter





Contenido

About Naturbuild	5
Methodology	6
Surveys	7
Introduction (Common to all modules).....	7
Module 1. Global awareness about green roofs (PEDMEDE)	7
Module 2. Installation of green roofs (LNEG)	8
Module 3. Maintenance of green roofs (FLC)	9
Module 4. Deconstruction of green roofs (SCUOLA EDILE)	10
Skills perimeter	14







About Naturbuild

Naturbuild project seeks to create a comprehensive, module-based training course to skill construction blue-collar workers in the installation, maintenance, and deconstruction of nature-based solutions for urban and building sustainability, improving education, awareness and institutional capacity on buildings and cities impact mitigation.

The Partnership will collaborate from February 2022 to August 2024 to design an online course, structured in 4 modules:

-  Module 1. Awareness-raising: necessary training to gain a perspective on the benefits that green roofs bring not only to improve the building's energy bills, but also to the urban climate and biodiversity.
-  Module 2. Green roof installation: on the steps to follow to install different solutions depending on the type of roof.
-  Module 3. Maintenance of green roofs: on how to preserve the different elements of green roofs: vegetation, installations, etc.
-  Module 4. Deconstruction of green roofs: on how to deconstruct a green roof to install a new one, and how to deconstruct a common roof to install a green roof.

All modules will be developed separately but under the same work methodology:

-  Task 1. Documentary analysis to gather the latest legislation, documentation, and practices at EU and national levels.
-  Task 2. Identification of the scope and learning outcomes.
-  Task 3. Expert's consultation to deepen the results of the previous task.
-  Task 4. Development of the content based on the needs identified in the previous tasks.
-  Task 5. Pilot testing with experts.
-  Task 6. Translation.

This document collects the information regarding Task 2, provided by the project's partners and experts working [in the four countries working in the Partnership](#).

Methodology

All NATURBUILD training modules are developed following the same tasks. When the first task has dealt with the searching of normative and possible legal requirements in the installation, maintenance, and deconstruction of green roofs, as well as identify good practices, the second task is regarding the design of the skills perimeter of each Module.

This skills perimeter must be described in terms of learning outcomes according to level 3 of EQF. Its definition comes from the analysis of the answers to surveys answered by 26 experts.

There have been 4 surveys, one per module, defined to identify the importance of the learning outcomes required in each module, the transversal competences, and the didactic resources.

Answers have been analysed in depth, focusing all the efforts in the adjustment of the learning outcomes with the target group.

This document describes the final work obtained.

Survey definition

Introduction (Common to all modules)

Naturbuild is a European Project that will develop an on-line course on installation, maintenance, and deconstruction of green roofs.

The course aims to reskill and upskill to blue-collar workers of construction sector and to attract workers of other activities as a job opportunity.

More information about the project [here](#).

Q1.- In your country and in your opinion, does this profile exist in your country?

- Yes
- No
- Comments

Module 1. Global awareness about green roofs (PEDMEDE)

This module will last 8 hours and has the aim to raise awareness on nature-based solutions and benefits it brings to the building performance, urban climate, and biodiversity.

Please, answer the questions considering the target of the course:

QX: In one/two sentences: what are the most important topics that the student (blue-collar) should learn about benefits of green roofs after 8 hours of training? (Open question)

QX: Please, rate the importance of the following topics to be included in this module (1=very low important, 4=very important):

- To identify the elements and its features of a green roof system
- To identify the national regulation that affects green roof installation, maintenance, and deconstruction.
- To relate green roofs to the benefits for the building performance
- To relate green roofs to the benefits for the urban climate and climate changes challenges
- To relate green roofs to the benefits for biodiversity
- To relate green roofs to the benefits in the socio-economic area
- To identify the financial incentives for installing green roofs

QX: Please, please tell us how much time you would give to each topic (multiple choice, only one answer. Options: 0,5 h; 1h; 1,5h; 2h)

- To identify the elements and its features of a green roof system
- To identify the national regulation that affects green roof installation, maintenance, and deconstruction.
- To relate green roofs to the benefits for the building energy performance
- To relate green roofs to the benefits for the urban climate and climate changes challenges
- To relate green roofs to the benefits for biodiversity
- To relate green roofs to the benefits in the socio-economic area

- To identify the financial incentives for installing green roofs

QX: Would you consider that other aspects should be taught to raise awareness about the importance of green roofs? (Open question)

QX. What behavioural skills do you think people working in green roofs should have? (Multiple choice, 5 answers maximum. Options: teamwork, critical thinking, creativity, problem-solving attitude, to identify risks and safety measures; Properly dispose of waste; Communicate correctly with the person in charge to solve contingent problems; Work feeling part of a team; others – write)

QX. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? (Multiple choice. Options: video, Serious game, 3d figure, other -write/propose-).

Module 2. Installation of green roofs (LNEG)

This module will last 25 hours and has the aim to provide clear instruction on the steps to be followed in each phase of the installation process.

Please, answer the questions considering the target of the course:

QX: In one/two sentences: what are the most important skills that the student (blue-collar) should learn about green roofs installation after 25 hours of training? (Open question)

QX: Which kind of professions take part in the installation of green roofs stage and what are they main tasks? (Multiple choice, several options possible: electrician, contractors, bricklayers, plumbers, gardeners, others -write-)

QX: Please, rate the importance of the following topics to be included in this module (1=very low important, 4=very important):

- To distinguish between different types of green roofs
- To identify the aspects to consider when designing a green roof
- To relate the green roof construction requirements for new construction
- To relate the green roof construction requirements for rehabilitation
- To identify the construction requirements of vegetation areas for new construction
- To identify the construction requirements of vegetation areas for rehabilitation
- To distinguish different stages of installation of combined solution with solar systems and green roof systems
- To distinguish different stages of installation of non-green areas (i.e. pavement in gardens)
- To calculate the installation costs (i.e. subcontract services)
- To identify risks and measures to be implemented during the installation of green roofs.

QX: Please, please tell us how much time you would give to each topic (multiple choice, only one answer. Options: 0,5 h; 1h; 1,5h; 2h; 2,5h; 3h)

- To distinguish between different types of green roofs
- To identify the aspects to consider when designing a green roof
- To relate the green roof construction requirements for new construction

- To relate the green roof construction requirements for rehabilitation
- To identify the construction requirements of vegetation areas for new construction
- To identify the construction requirements of vegetation areas for rehabilitation
- To distinguish different stages of installation of combined solution with solar systems and green roof systems
- To distinguish different stages of installation of non-green areas (i.e. pavement in gardens)
- To calculate the installation costs (i.e. subcontract services)
- To identify risks and measures to be implemented during the installation of green roofs.

QX. Would you consider that other aspects should be taught regarding the installation of green roofs? (Open question)

QX. What behavioural skills do you think green roof installers should have? (Multiple choice, 5 answers maximum. Options: teamwork, critical thinking, creativity, problem-solving attitude, to identify risks and safety measures to be implemented during the installation of roofs; Properly dispose of waste; Communicate correctly with the person in charge to solve contingent problems; Work feeling part of a team; others – write)

QX. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? (Multiple choice. Options: video, Serious game, 3d figure, other -write/propose-).

Module 3. Maintenance of green roofs (FLC)

Module 3 will last 25 hours, and it has de objective of providing instruction on the steps to be followed in the different maintenance tasks.

Please, answer the questions considering the target of the course:

QX: In one/two sentences: what are the most important skills that the student (blue-collar) should learn about green roofs maintenance after 25 hours of training? (Open question)

QX: Which kind of professions take part in the maintenance of green roofs stage and what are they main tasks? (multiple choice, several options possible: electrician, contractors, bricklayers, plumbers, gardeners, others -write-)

QX. Please, rate the importance of the following topics to be included in this module (1=very low important, 4=very important):

- To identify the different constructive elements to maintain: encounters in the roof, waterproofing, etc.
- To distinguish the different installations to maintain and the type of damage to repair (drainage, irrigation network (mention to the types of networks), HVAC elements, etc.)
- To identify the fittings/furniture and auxiliary elements to maintain (light pergolas, trellises, playground equipment, etc.)
- To relate the living ecosystems to actions of maintenance (depending on the climates of the four countries and the types of roofs).

- To elaborate a checklist of verification (identification of pathologies and solutions).
- To identify risks and measures to be implemented during the maintenance of green roofs.
- Monitoring of solar radiation, air temperature and relative humidity and soil temperature and soil humidity

QX: Please, please tell us how much time you would give to each topic (multiple choice, only one answer. Options: 0,5 h; 1h; 1,5h; 2h; 2,5h; 3h)

- To identify the different constructive elements to maintain: encounters in the roof, waterproofing, etc.
- To distinguish the different installations to maintain and the type of damage to repair (drainage, irrigation network (mention to the types of networks), HVAC elements, etc.)
- To identify the fittings/furniture and auxiliary elements to maintain (light pergolas, trellises, playground equipment, etc.)
- To relate the living ecosystems to actions of maintenance (depending on the climates of the four countries and the types of roofs).
- To elaborate a checklist of verification (identification of pathologies and solutions).
- To identify risks and measures to be implemented during the maintenance of green roofs.
- Monitoring of solar radiation, air temperature and relative humidity and soil temperature and soil humidity

QX. Would you consider that other aspects should be taught regarding the maintenance of green roofs? (Open question)

QX. What behavioural skills do you think green roof maintenance should have? (Multiple choice, 5 answers maximum. Options: teamwork, critical thinking, creativity, problem-solving attitude, to identify risks and safety measures to be implemented during the maintenance works; Properly dispose of waste; Communicate correctly with the person in charge to solve contingent problems; Work feeling part of a team; others – write)

QX. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? (Multiple choice. Options: video, Serious game, 3d figure, other -write/propose-).

Module 4. Deconstruction of green roofs (SCUOLA EDILE)

This module will last 8 hours, and it has the objective to provide information about:

- How to deconstruct a green roof to install a new one. This may happen for cases in which the green roof was not properly installed or for those green roofs that are not sustainable (for example, due to the type of vegetation used) and thus a more appropriate one should be installed.
- How to deconstruct a (normal) roof. For those cases in which the green roof is to be installed in a building where a common roof is installed.

Please, answer the questions considering the target of the course:

QX: In one/two sentences: what are the most important techniques and topics that the student (blue-collar) should learn about green roofs deconstruction after 8 hours of training? (Open question)

QX.- Please, rate the importance of the following topics to be included in this module (1=very low important, 4=very important):

- To identify the average durability of green roofs and Life Cycle Analysis
- To identify the reasons for uninstalling a green roof
- To detect problems that cannot be solved with maintenance or single parts
- To relate the steps on deconstruction according to present vegetation (to choose between reuse and recycle)
- To find problems linked to humidity and water leaks due to incorrect waterproofing (how to properly dispose of waste)
- To calculate the deconstruction costs
- To distinguish types of common roofs that could be uninstalled to convert them into green roofs
- To identify materials of roofs that can be disposed or reused
- To relate common technologies between green roof and common roof
- To identify risks and safety measures to be implemented during the deconstruction of roofs.

QX: Please, please tell us how much time you would give to each topic (multiple choice, only one answer. Options: 0,5 h; 1h; 1,5h; 2h)

- To identify the average durability of green roofs and Life Cycle Analysis
- To identify the reasons for uninstalling a green roof
- To detect problems that cannot be solved with maintenance or single parts
- To relate the steps on deconstruction according to present vegetation (to choose between reuse and recycle)
- To find problems linked to humidity and water leaks due to incorrect waterproofing (how to properly dispose of waste)
- To calculate the deconstruction costs
- To distinguish types of common roofs that could be uninstalled to convert them into green roofs
- To identify materials of roofs that can be disposed or reused
- To relate common technologies between green roof and common roof
- To identify risks and safety measures to be implemented during the deconstruction of roofs.

QX. Would you consider that other aspects should be taught regarding the deconstruction of green roofs? (Open question)

QX. What behavioural skills do you think green roof installers should have? (Multiple choice, 5 answers maximum. Options: teamwork, critical thinking, creativity, problem-solving attitude, to identify risks and safety measures to be implemented during the

deconstruction of roofs; Properly dispose of waste; Communicate correctly with the person in charge to solve contingent problems; Work feeling part of a team; others – write)

QX. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? (Multiple choice. Options: video, Serious game, 3d figure, other -write/propose-).

Survey results

Naturbuild. Module 1. Global awareness about green roofs

4 απαντήσεις

[Να δημοσιευτούν τα αναλυτικά στοιχεία](#)

1. Όνομα της εταιρείας/του ιδρύματός σας

4 απαντήσεις

Unicert/Techniki Ekpaideutiki

ΤΟΠΟΣ LANDSCAPE ΜΑΡΙΑ ΣΙΔΕΡΗ ΚΑΙ ΣΙΑ Ε.Ε.

ΦΙΛΑΝΤΑΡΑΚΗ ΜΑΡΙΑ

ΗΛΙΑΣ ΜΠΟΥΡΑΣ ΚΑΙ ΣΙΑ ΕΕ

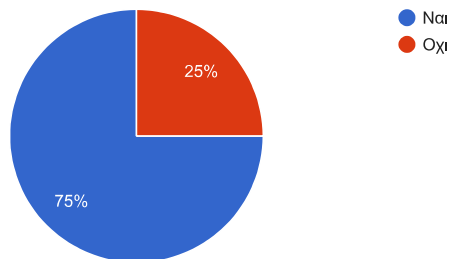
 Αντιγραφή

2. Το Naturbuild είναι ένα ευρωπαϊκό έργο που θα αναπτύξει ένα διαδικτυακό μάθημα για την εγκατάσταση, τη συντήρηση και την αποδόμηση των πράσινων στεγών.

Το μάθημα στοχεύει στην επανεκπαίδευση και την αναβάθμιση των εργατών του κατασκευαστικού τομέα και στην προσέλκυση εργαζομένων άλλων δραστηριοτήτων ως ευκαιρία απασχόλησης.

Στη χώρα σας και κατά τη γνώμη σας, υπάρχει αυτό το ολιστικό προφίλ;

4 απαντήσεις



3. Η Ενότητα 1 αυτού του μαθήματος ονομάζεται Παγκόσμια ευαισθητοποίηση (Global awareness) σχετικά με τις πράσινες στέγες και όλες οι παρακάτω ερωτήσεις σχετίζονται με αυτή την ενότητα.

Αυτή η ενότητα θα διαρκέσει 8 ώρες και έχει ως στόχο την ευαισθητοποίηση σχετικά με τις λύσεις που βασίζονται στη φύση και τα οφέλη που επιφέρει στην απόδοση του κτιρίου, το αστικό κλίμα και τη βιοποικιλότητα.

Παρακαλούμε, απαντήστε στις ερωτήσεις λαμβάνοντας υπόψη το στόχο του μαθήματος.

Πρώτα απ' όλα: Σε μία/δύο προτάσεις: Ποια είναι τα πιο σημαντικά θέματα που πρέπει να μάθει ο μαθητής (εργατοτεχνίτης) για τα οφέλη των πράσινων στεγών μετά από 8 ώρες εκπαίδευσης;

4 απαντήσεις

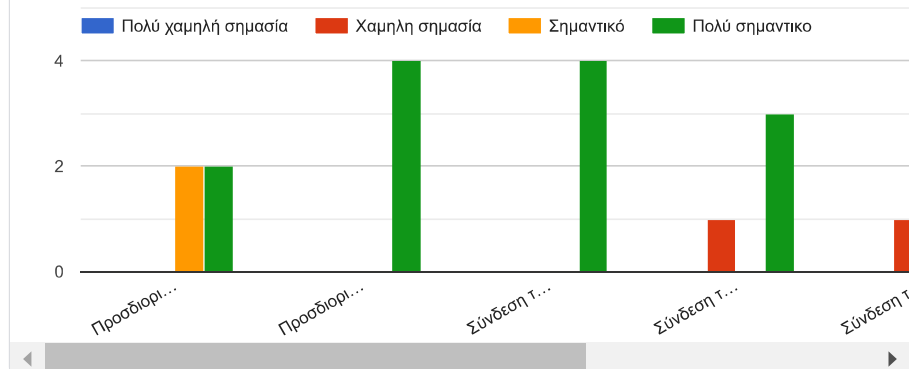
Πιστεύω πως είναι βασικό να αναλυθούν τα οφέλη κάθε πρακτικής που σχετίζεται με τις πράσινες στέγες. Αυτό, καταρχάς, προϋποθέτει μια βασική γνώση του νομοθετικού πλαισίου. Όχι με την θεωρητική του έννοια αλλά ως προς τη μετουσίωση των Ευρωπαϊκών οδηγιών στην πράξη. Με αυτό τον τρόπο θα είναι ξεκάθαρος στον εργατοτεχνίτη τόσο ο λόγος που ακολουθείται η πρακτική όσο και το συγκριτικό της πλεονέκτημα σε σχέση με άλλες.

Την επίδρασή τους στο περιβάλλον και στην καθημερινότητα μας καθώς και τον τρόπο κατασκευής και συντήρησης.

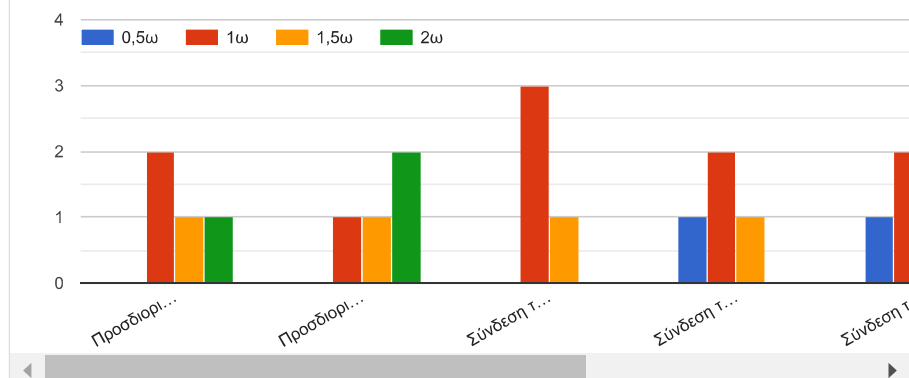
ΧΡΗΣΙΜΟΤΗΤΑ ΚΑΙ ΤΡΟΠΟΣ ΚΑΤΑΣΚΕΥΗΣ

ΠΙΣΤΕΥΩ ΟΤΙ ΠΡΕΠΕΙ ΝΑ ΚΑΤΑΛΑΒΕΙ ΚΑΛΑ ΤΗ ΧΡΗΣΙΜΟΤΗΤΑ ΤΩΝ ΠΡΑΣΙΝΩΝ ΣΤΕΓΩΝ ΚΑΙ ΜΕ ΤΗΝ ΑΝΑΛΥΣΗ ΤΩΝ ΚΑΤΩΘΙ ΘΕΜΑΤΩΝ ΘΑ ΚΑΤΑΝΟΗΣΕΙ ΑΡΚΕΤΑ ΘΕΜΑΤΑ

4. Παρακαλώ, βαθμολογήστε τη σημασία των ακόλουθων θεμάτων που πρέπει να περιλαμβάνονται στην Ενότητα 1. Παγκόσμια ευαισθητοποίηση σχετικά με τις πράσινες στέγες [Αντιγραφή](#)



5. Παρακαλώ, πείτε μας πόσο χρόνο θα αφιερώνετε σε κάθε θέμα [Αντιγραφή](#)



6. Θα θεωρούσατε ότι θα έπρεπε να διδάσκονται και άλλες πτυχές για την ευαισθητοποίηση σχετικά με τη σημασία των πράσινων στεγών;

4 απαντήσεις

Νομίζω πως στο κομμάτι της ευαισθητοποίησης οι ήδη υπάρχουσες εκπαιδευτικές ενότητες θα καλύπτουν το μαθητεύμενο.

Όχι

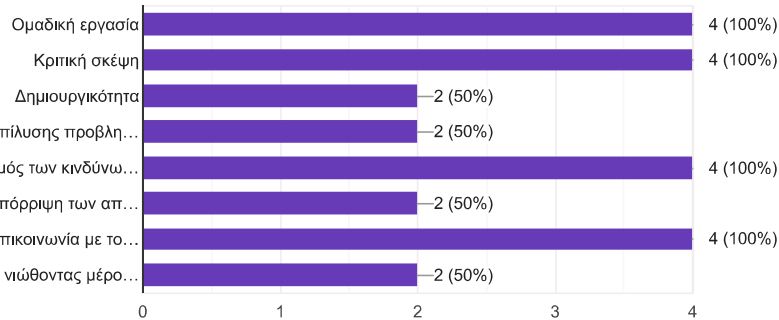
ΟΧΙ

NOMIZΩ OTI H ANALYΣH TΩN ANΩTEPΩ EINAI APKETA

7. Ποιες δεξιότητες συμπεριφοράς πιστεύετε ότι πρέπει να έχουν οι άνθρωποι που εργάζονται σε πράσινα δώματα; Επιλέξτε 5 απαντήσεις το πολύ.

 Αντιγραφή

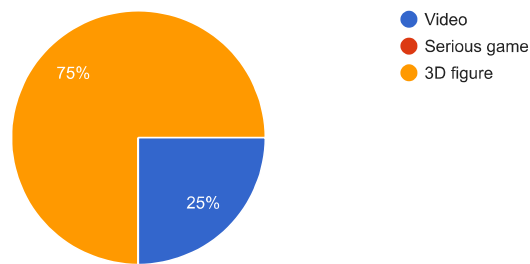
4 απαντήσεις



8. Λαμβάνοντας υπόψη ότι το μάθημα θα είναι διαδικτυακό, ποιο είδος εκπαιδευτικών πόρων και μέσων υποστήριξης θα θεωρούσατε καταλληλότερο για αυτή την ενότητα; Εάν θέλετε να μοιραστείτε κάποιον εκπαιδευτικό πόρο, παρακαλούμε χρησιμοποιήστε την επιλογή "Άλλο" για να το δηλώσετε.

 Αντιγραφή

4 απαντήσεις



Αυτό το περιεχόμενο δεν έχει δημιουργηθεί και δεν έχει εγκριθεί από την Google. [Αναφορά κακής χρήσης - Όροι Παροχής Υπηρεσιών - Πολιτική απορρήτου](#)

Google Φόρμες





Naturbuild. Module 2 Installation of green roofs

6

Respuestas

84:55

Tiempo medio para finalizar

Activo

Estado

1. Name of your company/institution

6

Respuestas

Respuestas más recientes

"CICCOPN - Centro de Formação Profissional da Industria da...

"Cenfic"

"ANCV"

2. **Naturbuild** is a European project that will develop an **on-line course on installation, maintenance, and deconstruction of green roofs.**

The course aims to reskill and upskill to blue-collar workers of construction sector and to attract workers of other activities as a job opportunity.

In your country, **does a holistic profile** (worker for installation - maintenance and deconstruction of green roofs) **exist?**

● Yes	0
● No	6
● Otras	0



3. **Module 2 of this course is named Installation of green roofs, and all the following questions are regarding this module.**

This module will last 25 hours and has the aim to provide clear instruction on the steps to be followed in each phase of the installation process.

Please, answer all the following questions considering the target of the course.

First of all: In one/two sentences, what are **the most important skills** that the student (blue-collar) should learn about green roofs installation after 25 hours of training?

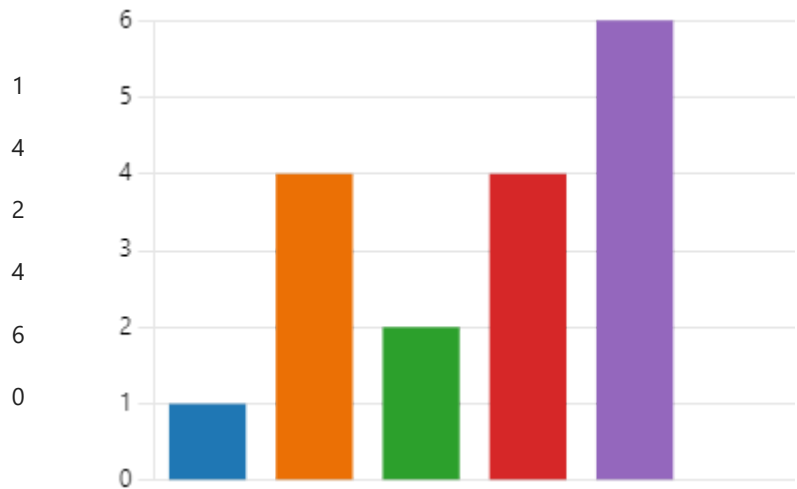
6
Respuestas

Respuestas más recientes

- "- Adequate knowledge of the types of plants to be used in gr...
- "Structural protection of buildings Monitoring and maintena...
- "Principles / main functions of a green roof; the function of t...

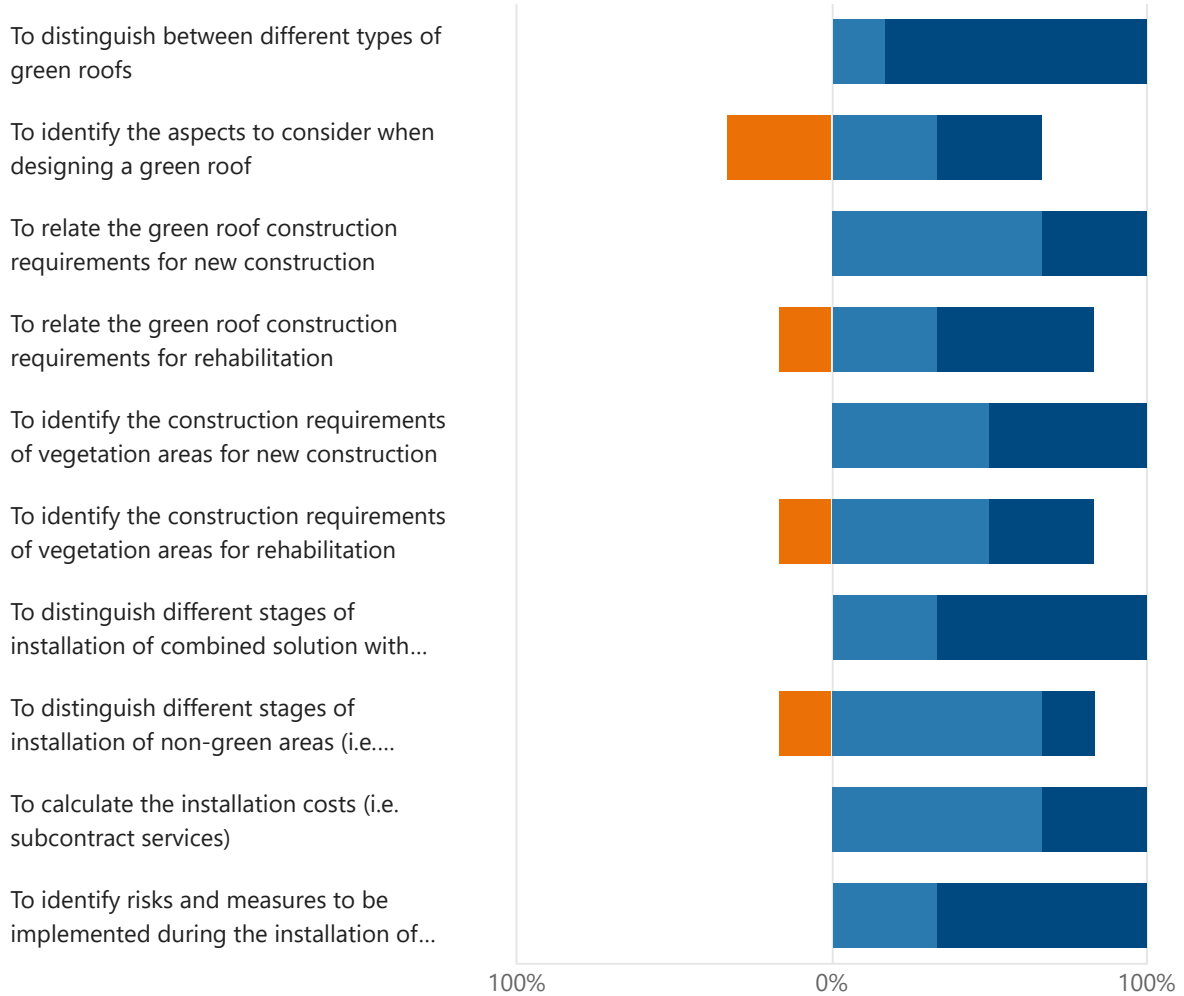
4. Which kind of **professions** take part in the installation of green roofs stage and what are they main tasks?

- Electricians
- Contractors
- Bricklayers
- Plumbers
- Gardeners
- Otras



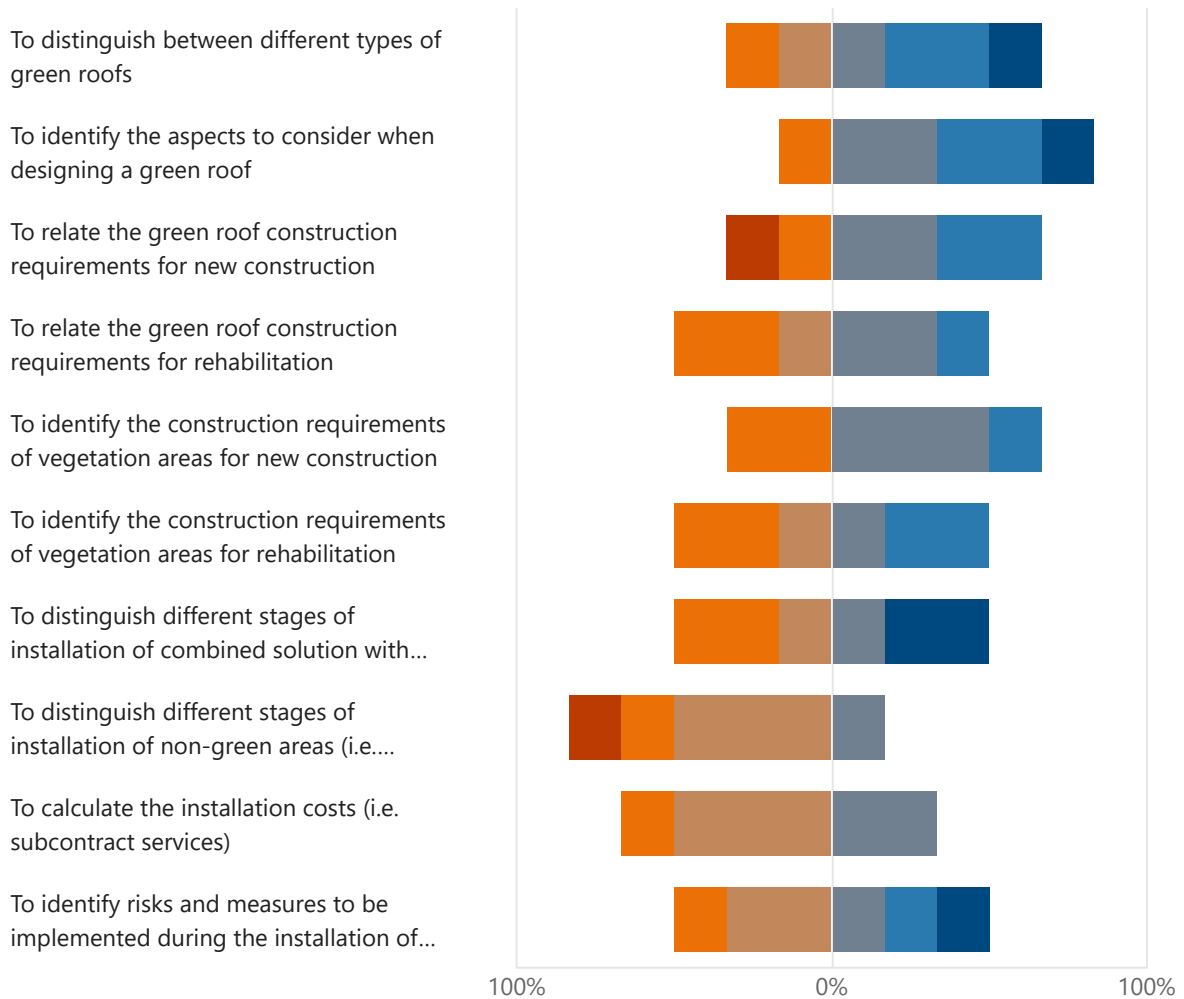
5. Please, rate the importance of the following topics to be included in Module 2.
Installation of green roofs

Very low importance Very important



6. Please, please tell us how much time you would give to each topic

0,5h 1h 1,5h 2h 2,5h 3h



7. Would you consider that other aspects should be taught regarding the installation of green roofs?

Respuestas más recientes

6

Respuestas

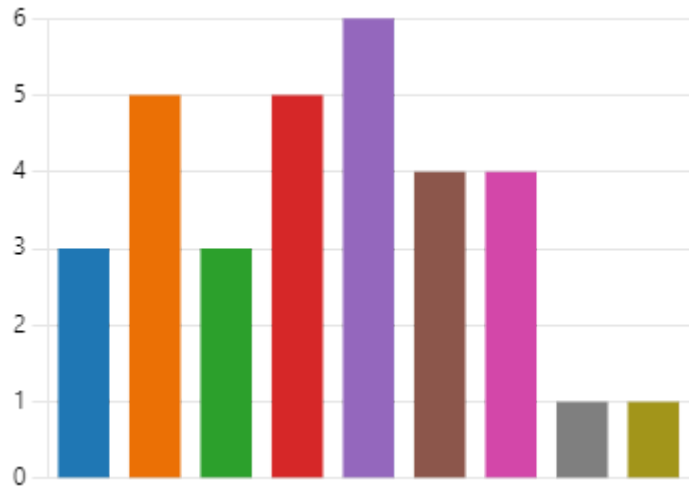
"- Knowledge of water efficiency; - knowledge about water re..."

"No"

"Major errors, different systems, maintenance"

8. What behavioural skills do you think green roof installers should have? Choose 5 options maximum.

● Teamwork	3
● Critical thinking	5
● Creativity	3
● Problem-solving attitude	5
● To identify risks and safety meas...	6
● Properly dispose of waste	4
● Communicate correctly with the...	4
● Work feeling part of a team	1
● Otras	1



9. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? If you want to share some training resource, please use "Other" option to indicate it.

● Video	6
● Serious game	2
● 3d figure	2
● Otras	2



Proyecto Naturbuild. Formación en mantenimiento de cubiertas verdes

7
Respuestas

11:46
Tiempo medio para finalizar

Activo
Estado

1. Nombre de su empresa/organización en la que trabaja

7
Respuestas

Respuestas más recientes
"Green Building Council España"
"GBCe"
"Green Building Council España"

2. **Naturbuild** es un proyecto europeo que desarrollará un **curso online sobre instalación, mantenimiento y deconstrucción de cubiertas verdes**, con una duración de 70 horas.

Las organizaciones que estamos trabajando en este curso queremos ofrecer una oportunidad de formación y recualificación de trabajadores en nuevas oportunidades laborales del sector de la construcción.

En tu opinión, ¿Existe en España un puesto de trabajo que se ocupe tanto de la instalación, como del mantenimiento y de la deconstrucción de cubiertas verdes?

- Sí 2
- No 3
- Otras 2



3. Esta encuesta quiere su opinión acerca del Módulo 3 de este curso: **MANTENIMIENTO DE CUBIERTAS VERDES.**

Este Módulo 3 tiene 25 horas y tiene el objetivo de proporcionar instrucciones precisas sobre los pasos a seguir en las diferentes tareas de mantenimiento de cubiertas verdes.

Por favor, conteste a las preguntas pensando en que el alumnado será personal de instalación, operarios/as.

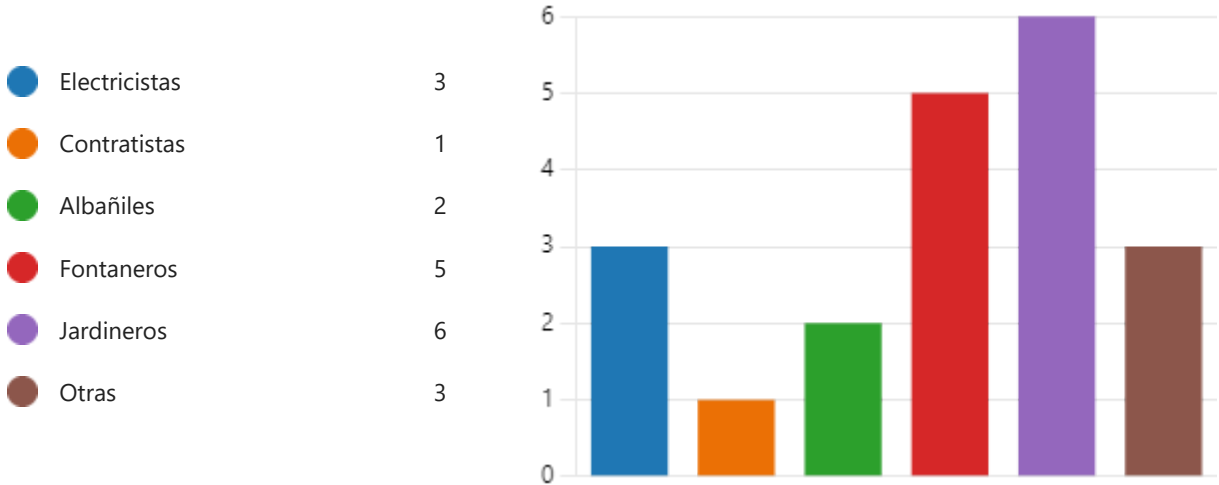
Lo primero de todo: ¿podría resumir en una o dos frases qué es lo más importante que el trabajador debería saber y saber hacer después de 25 horas de formación en mantenimiento de cubiertas verdes?

7
Respuestas

Respuestas más recientes

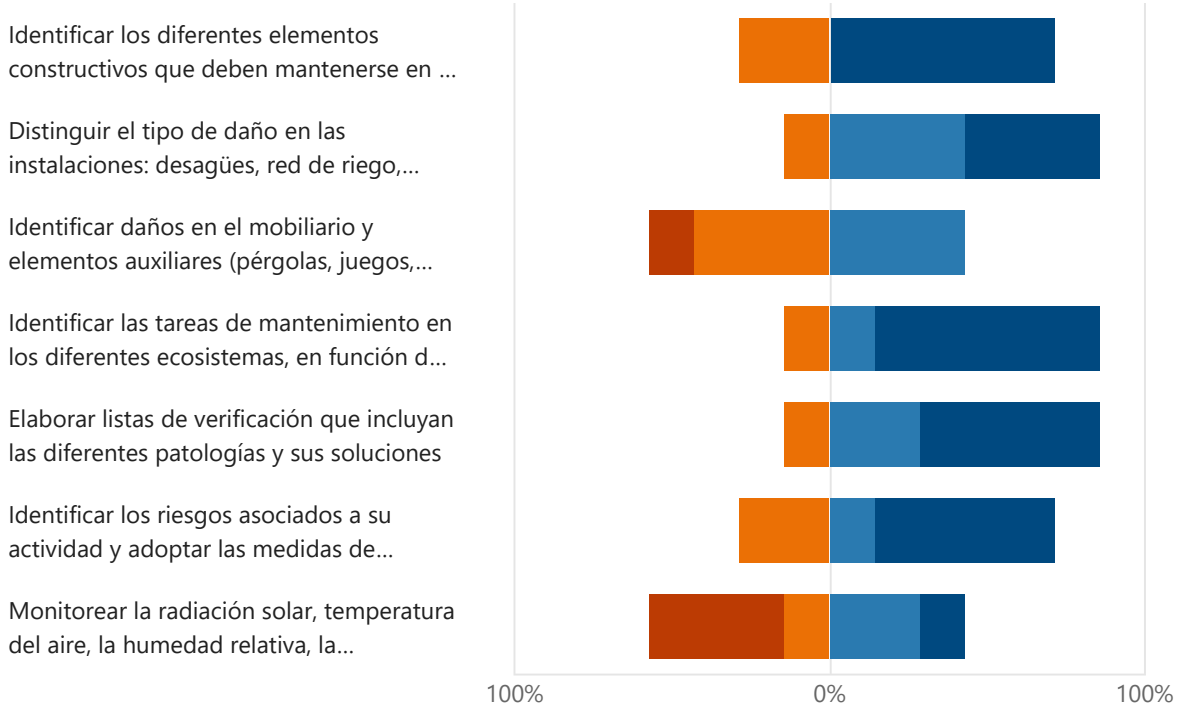
- "Ser capaz de elaborar un protocolo de mantenimiento preve...
- "Las necesidades de riego y de drenaje de cada sistema de cu...
- "Cuáles plantas son aptas para qué tipo de cubierta y cuánto...

4. Qué profesionales están involucrados en el mantenimiento de cubiertas verdes?



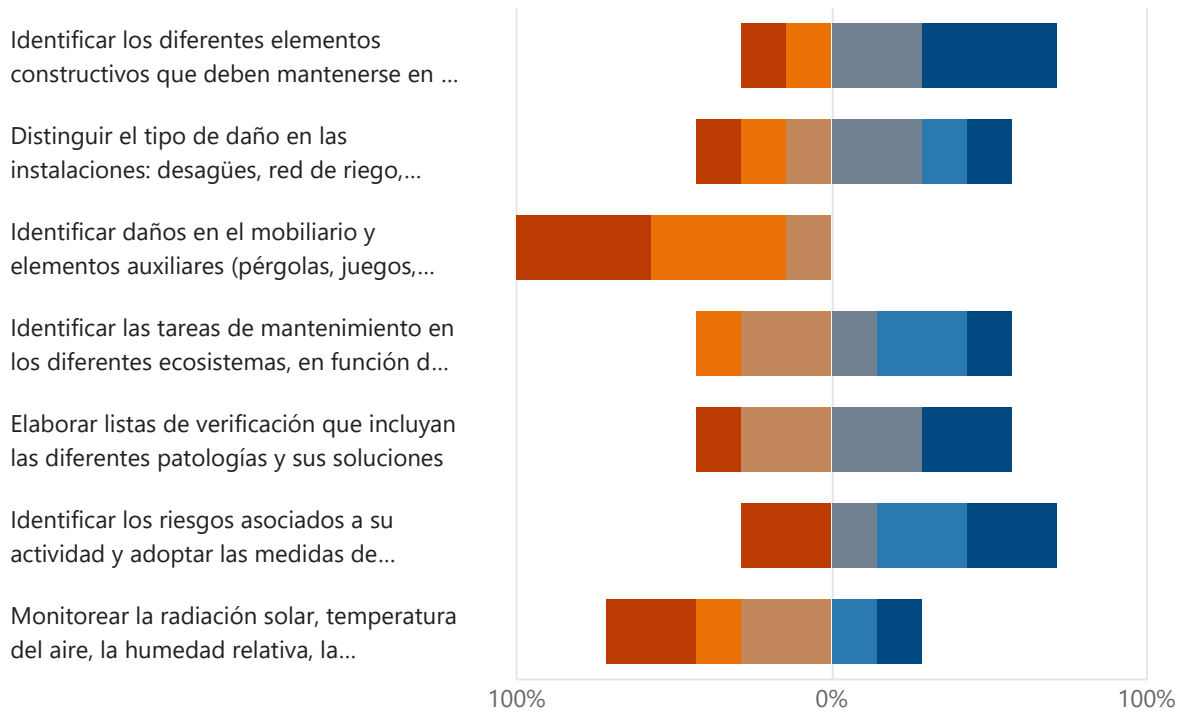
5. Valora la importancia de los siguientes contenidos que proponemos incluir en el Módulo 3: Mantenimiento de cubiertas verdes (1=muy poco importante; 2=Muy importante)

■ 1 ■ 2 ■ 3 ■ 4



6. Por favor, proponga cuánto tiempo dedicaría a cada contenido

0,5h 1h 1,5h 2h 2,5h 3h



7. Añadiría algún otro contenido a los anteriores?

7
Respuestas

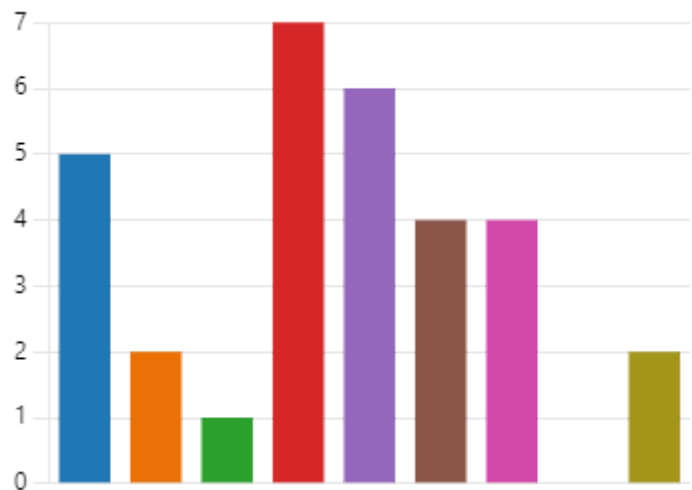
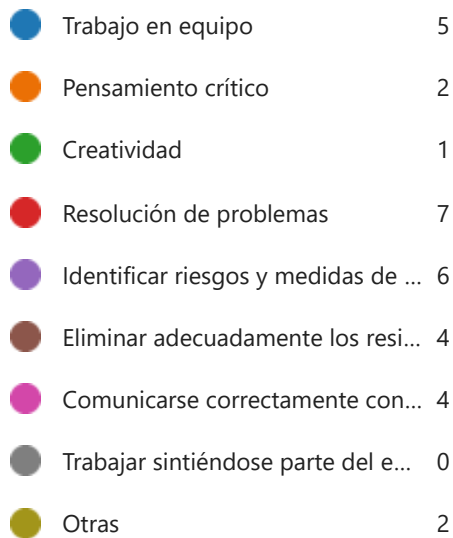
Respuestas más recientes

"Conocer las previsiones de cambio climático en los próximos...

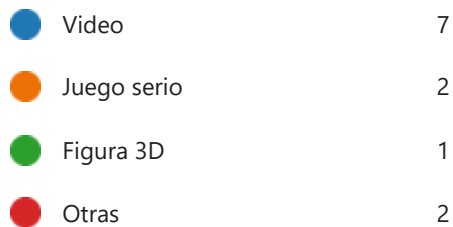
"Habilidades comunicativas de cara al cliente. Saber transmit...

"Los tiempos dependen de la superficie de la cubierta y si es ...

8. ¿Qué tipo de habilidades más relacionadas con la actitud cree que es importante que tengan los trabajadores que operan en trabajos de mantenimiento de cubiertas verdes? (Escoja un máximo de 5)



9. Teniendo en cuenta que el curso será on-line, ¿qué tipo de recurso didáctico cree que es más apropiado para acompañar al contenido teórico? Si ya conoce algún recurso y quiere compartirlo con nosotros, por favor, escríbalo en la opción "Otras"



Naturbuild. Module 4. Deconstruction of green roofs.

9

Respuestas

13:00

Tiempo medio para finalizar

Activo

Estado

1. **Naturbuild** is a European project that will develop an **on-line course on installation, maintenance, and deconstruction of green roofs**.

The course aims to reskill and upskill to blue-collar workers of construction sector and to attract workers of other activities as a job opportunity.

In your country, **does a holistic profile** (worker for installation - maintenance and deconstruction of green roofs) **exist**?

● Yes	0
● No	8
● Otras	1



2. Module 4 of this course is named Deconstruction of green roofs, and all the following questions are regarding this module.

This module will last 8 hours, and it has the objective to provide information about:

- How to deconstruct a green roof to install a new one. This may happen for cases in which the green roof was not properly installed or for those green roofs that are not sustainable (for example, due to the type of vegetation used) and thus a more appropriate one should be installed.
- How to deconstruct a (normal) roof. For those cases in which the green roof is to be installed in a building where a common roof is installed.

Please, answer the questions considering the target of the course.

First of all, write in one/two sentences: what are the most important techniques and topics that the student (blue-collar) should learn about green roofs deconstruction after 8 hours of training?

9

Respuestas

Respuestas más recientes

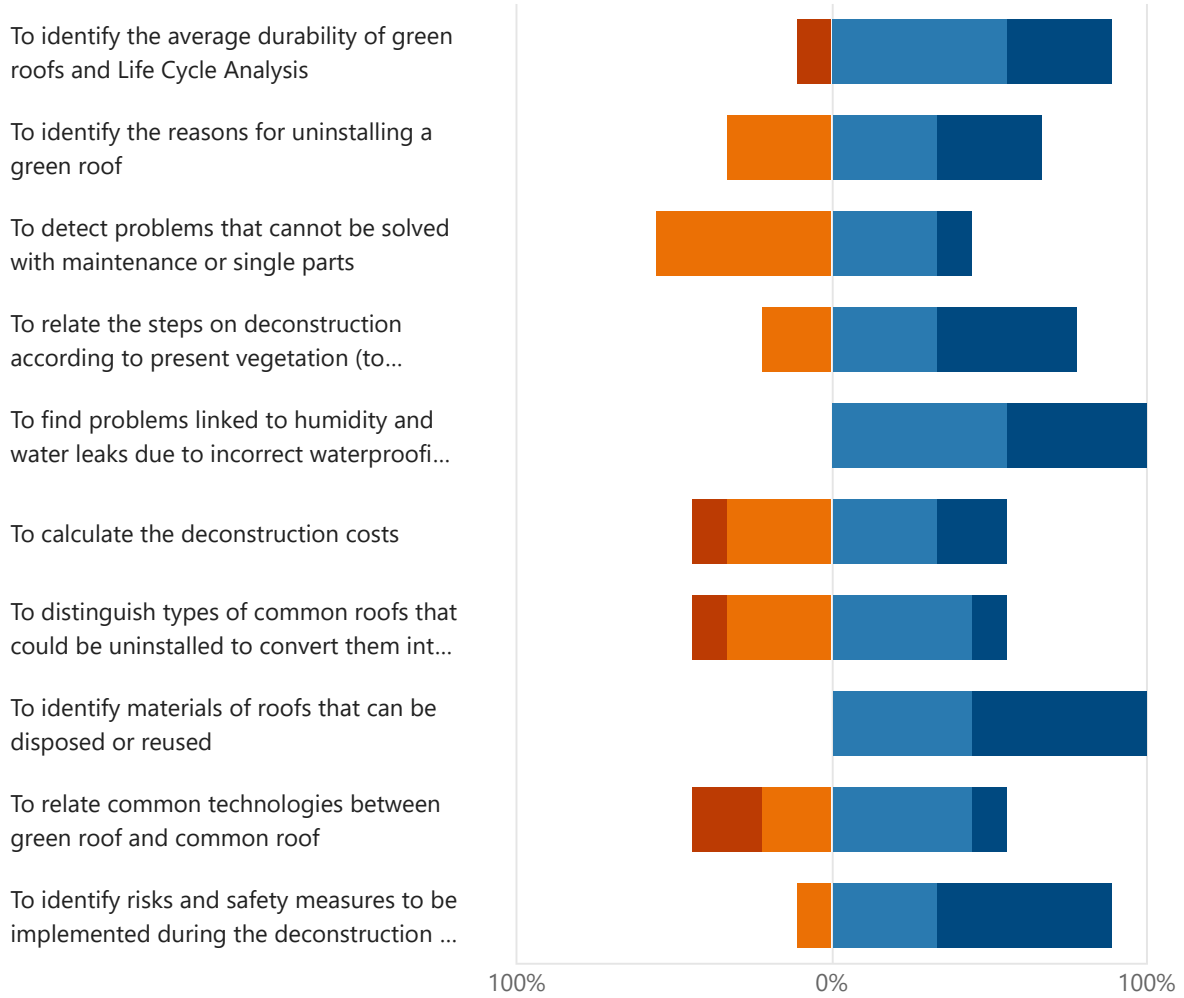
"- *messa in sicurezza in cantiere (linea vita, lavorazioni che a...*

"*safety of working at height, insulation techniques, loss preve...*

" *Come decostruire un tetto (normale). Per quei casi in cui il t...*

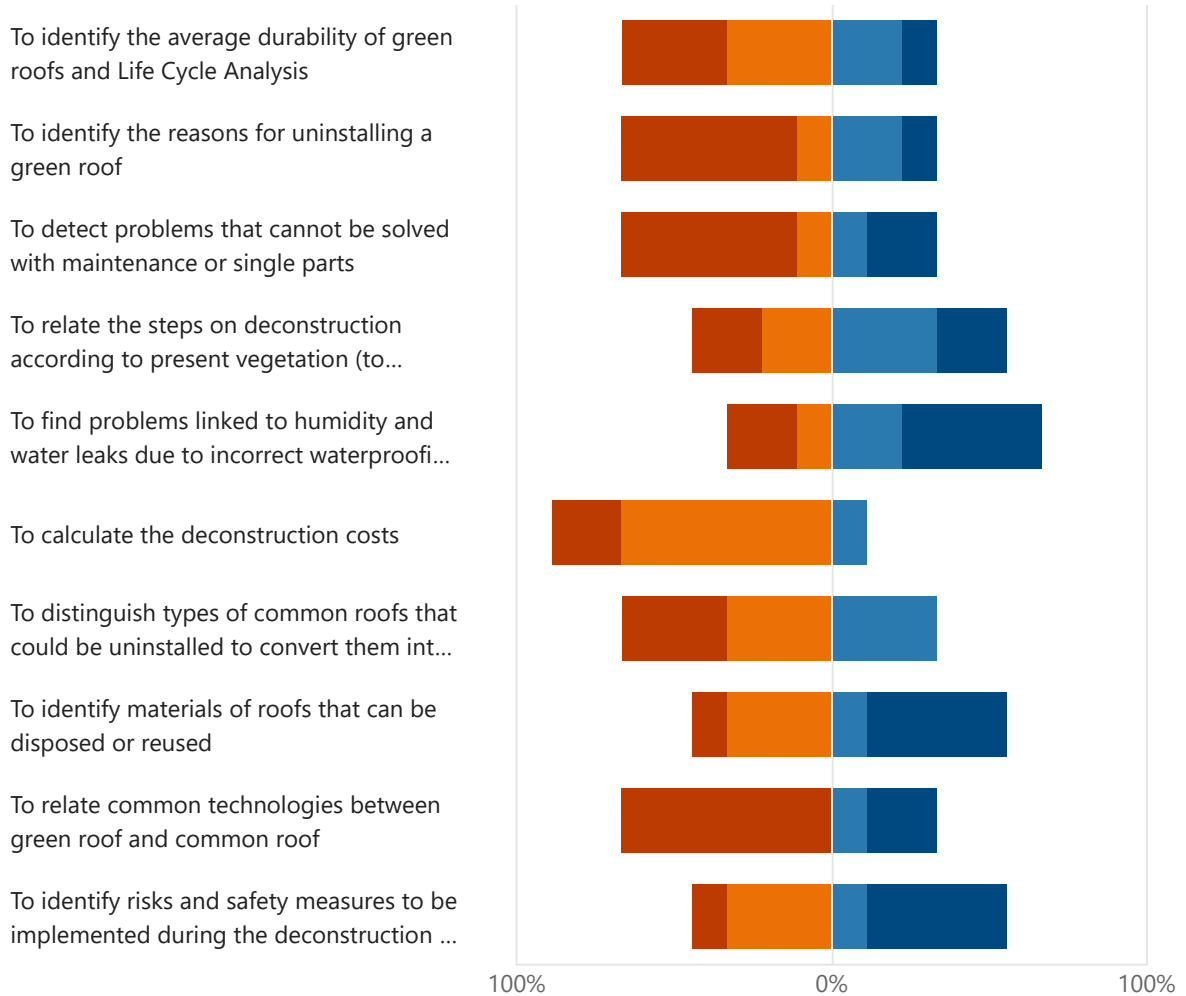
3. Please, rate the importance of the following topics to be included in Module 4. Deconstruction of green roofs

Very low important Very important



4. Please, please tell us how much time you would give to each topic

0,5h 1h 1,5h 2h



5. Would you consider that other aspects should be taught regarding the deconstruction of green roofs?

9
Respuestas

Respuestas más recientes

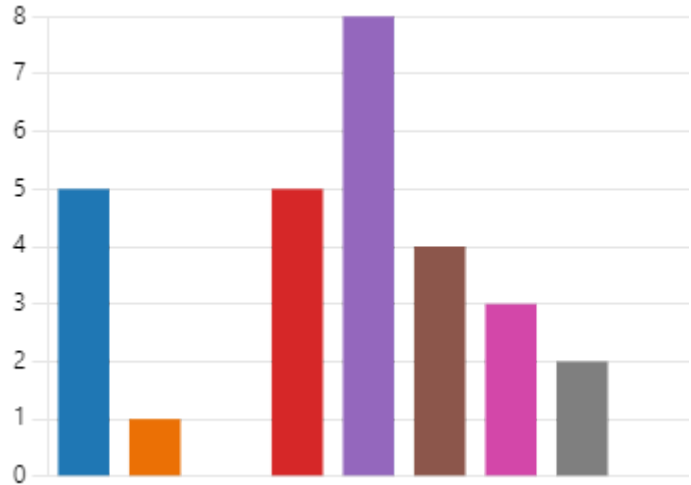
"No."

"n"

"gli argomenti trattati mi sembrano sufficienti"

6. What behavioural skills do you think that workers that deconstruct green roofs should have? Choose 5 options maximum.

- Teamwork 5
- Critical thinking 1
- Creativity 0
- Problem-solving attitude 5
- To identify risks and safety meas... 8
- Properly dispose of waste 4
- Communicate correctly with the... 3
- Work feeling part of a team 2
- Otras 0



7. Considering that the course will be on-line, which kind of training resource and supports would you find it more suitable for this module? If you want to share some training resource, please use "Other" option to indicate it.

- Video 7
- Serious game 0
- 3d figure 3
- Otras 0



Skills perimeter

MODULE 1		Global Awareness of green roofs	
LEARNING OUTCOMES	KNOWLEDGE	SKILLS	RESPONSIBILITY AND AUTONOMY
LO1_To identify the notion of nature-based solutions	<ul style="list-style-type: none"> To identify what are nature-based solutions To identify the main characteristics and basic principles of nature-based solutions 	<ul style="list-style-type: none"> To identify what are nature-based solutions 	<ul style="list-style-type: none"> To describe the basic principles of nature-based solutions and green roofs To identify the fundamental concept related to green roofs and nature-based solutions
LO2_To acknowledge green roofs with circular economy (benefits of the building performance, environmental aspects -biodiversity, urban climate and climate change challenges-)	<ul style="list-style-type: none"> To identify the benefits of green roofs in performance of buildings To match the benefits of green roofs in biodiversity To identify the benefits of green roofs in urban climate To relate the benefits of green roofs in climate challenges mitigation 	<ul style="list-style-type: none"> To identify green roofs applications towards establishment of diverse flora and fauna To identify on green roofs applications towards stormwater management To outline green roofs applications towards the reduction of Greenhouse Gas Emissions To identify general implications of green roofs installation maintenance and deconstruction 	<ul style="list-style-type: none"> To describe the contribution of green roofs to the circular economy To identify the fundamental concepts related to green roofs and nature-based solutions.
LO3_To identify the elements and features of a green roof system	<ul style="list-style-type: none"> To outline the elements and features of a green roof system To identify the different parts of a green roof system 	<ul style="list-style-type: none"> To identify general components of green roofs installation, maintenance, and deconstruction 	<ul style="list-style-type: none"> To describe the basic different parts of green roofs To identify the fundamental concepts related to green roofs

			and nature-based solutions.
LO4_ To identify the basic elements of Green Roofs Works (Occupation/ H&S risks)	<ul style="list-style-type: none"> ▪ To identify the occupations related to the green roofs works. ▪ To outline the fundamental tasks of workers ▪ To identify the main health and safety risks of workers 	<ul style="list-style-type: none"> ▪ To relate the main activities and responsibilities of workers according to their occupations in green roofs works ▪ To identify the basic information regarding the health and safety issues of workers 	<ul style="list-style-type: none"> ▪ To describe the basic duties and health and safety risks of workers ▪ To identify the fundamental concepts related to green roofs and nature-based solutions.

MODULE 2 Installation of green roofs			
LEARNING OUTCOMES	KNOWLEDGE	SKILLS	RESPONSABILITY AND AUTONOMY
LO1- To assimilate and recognize the importance of Planning	<ul style="list-style-type: none"> ▪ To identify the main elements considered within the green roof planning typologies of green roofs, structural requirements, and material Specifications 	<ul style="list-style-type: none"> ▪ To differentiate the typologies of green roofs, the structural requirements, and materials specifications 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning ▪ To operate based on occupational risk prevention measures ▪ To consider green economy approach in the tasks performed

<p>LO2 – To identify the construction requirements for green roofs.</p>	<ul style="list-style-type: none"> ▪ To acknowledge terms of stability, singular elements, slip and erosion protection, and irrigation installation, within the design of the green-roof project 	<ul style="list-style-type: none"> ▪ To distinguish the needs in terms of stability, singular elements, slip and erosion protection, and irrigation installation, within the design of the green-roof project 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To operate on the basis of occupational risk prevention measures ▪ To consider green economy approach in the tasks performed
<p>LO3 – To identify the construction requirements of vegetation areas</p>	<ul style="list-style-type: none"> ▪ To acknowledge the design in terms of waterproofing membrane protective layer, drainage layer, filtering layer, substrate layer and vegetation layer, within the design of the green-roof project 	<ul style="list-style-type: none"> ▪ To recognise the steps and tasks to carry out the project in terms of waterproofing membrane protective layer, drainage layer, filtering layer, substrate layer and vegetation layer 	<ul style="list-style-type: none"> ▪ To collaborate with the different occupations and levels of supervision in a green roof construction ▪ To operate on the basis of occupational risk prevention measures ▪ To consider green economy approach in the tasks performed
<p>LO4 – To assimilate and recognize and the compatibility with green roofs and solar systems</p>	<ul style="list-style-type: none"> ▪ To acknowledge the terms of compatibility of green roofs and solar systems, within the green-roof project. 	<ul style="list-style-type: none"> ▪ To recognise the steps and tasks to carry out the construction in terms of compatibility of green roofs and solar systems." 	<ul style="list-style-type: none"> ▪ To collaborate with the different occupations and levels of supervision in a green roof construction ▪ To operate based on occupational risk prevention measures. ▪ To consider green economy approach in the tasks performed

LO5 – To recognize the compatibility with green roofs and rainwater recovery and recycling, and with others non-green areas	<ul style="list-style-type: none"> ▪ To acknowledge the terms of the construction in terms of compatibility of green roofs and other non-green areas and rainwater recovery and recycling to improve water efficiency 	<ul style="list-style-type: none"> ▪ To recognise the steps and tasks to carry out the construction in terms of compatibility between green roofs and other non-green areas and rainwater recovery and recycling to improve water efficiency 	<ul style="list-style-type: none"> ▪ To collaborate with the different occupations and levels of supervision in a green roof construction ▪ To operate based on occupational risk prevention measures ▪ To consider green economy approach in the tasks performed
LO6 – To recognize the installation costs	<ul style="list-style-type: none"> ▪ To acknowledge the principles inherent of installation costs 	<ul style="list-style-type: none"> ▪ To operate considering the installation costs 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To operate on the basis of occupational risk prevention measures ▪ To consider green economy approach in the tasks performed

MODULE 3 Maintenance of green roofs			
LEARNING OUTCOMES	KNOWLEDGE	SKILLS	RESPONSIBILITY AND AUTONOMY
LO1_ To relate solutions for pathologies in constructive elements	<ul style="list-style-type: none"> ▪ To identify the constructive elements that need to be maintained ▪ To relate the constructive element with the most common 	<ul style="list-style-type: none"> ▪ To elaborate checklists about constructive elements and their elements to be visually verified ▪ To identify the steps for an appropriate 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper

	<p>pathologies that may occur.</p> <ul style="list-style-type: none"> ▪ To recognize the frequency of review of each constructive element 	<p>fixing of the constructive elements</p> <ul style="list-style-type: none"> ▪ To detect “hot spots” ▪ To select the best proceeding to repair damage to the waterproofing. ▪ To describe the proceeding of waste management 	<p>planning</p> <ul style="list-style-type: none"> ▪ To operate based on occupational risk prevention measures ▪ To consider green economy approach in the tasks performed
<p>LO2_To identify solutions for pathologies in installations</p>	<ul style="list-style-type: none"> ▪ To identify the installations (mainly the irrigation and drainage system) that need to be maintained ▪ To relate the installation with the most common pathologies that may occur ▪ To recognize the frequency of review of installations 	<ul style="list-style-type: none"> ▪ To elaborate a checklist about different installations and their elements to be visually verified ▪ To order the steps for the control, regulation and cleaning of drainage and irrigation systems ▪ To recognize how to find leaks and bad conditions of the waterproofing, especially where it meets vertical and drainage elements ▪ To recognize how to find accumulation of water (puddles) and in the appearance of the plants ▪ To check solar panels and HVAC systems 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning ▪ To operate based on occupational risk prevention measures ▪ To consider green economy approach in the tasks performed

<p>LO3_To recognize solutions for pathologies in the living ecosystems</p>	<ul style="list-style-type: none"> ▪ Identify the different type that need to be maintained ▪ To relate the installation with the most common pathologies that may occur ▪ To recognize the frequency of review of vegetation 	<ul style="list-style-type: none"> ▪ To relate different preventive maintenance protocol according to the type of green roof and climatic conditions ▪ To identify the steps to be followed for the mowing ▪ To recognize how to prune different plants ▪ To discriminate weeds and how to remove them ▪ To identify plant diseases and bad conditions of the substrate ▪ To estimate the watering according to vegetation type ▪ To take decisions whether maintain or remove plants ▪ To describe the characteristics of fertilisation and disease control works ▪ To recognize how to find accumulation of water (puddles) and in the appearance of the plants ▪ To estimate how the climate change forecasts for the coming years has influence in the maintenance tasks to these changes 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning ▪ To operate based on occupational risk prevention measures ▪ To consider green economy approach in the tasks performed
<p>LO4_To identify solutions for pathologies in auxiliary elements</p>	<ul style="list-style-type: none"> ▪ Identify the auxiliary elements (light pergolas, trellises, playground) that need to be maintained ▪ To relate the installation with the most common pathologies that may occur ▪ To recognize the frequency of 	<ul style="list-style-type: none"> ▪ To elaborate a checklist about different auxiliary elements and furniture to be visually verified and cleaned ▪ To name the steps of preservation of varnishes and paints ▪ To recognize proper and not appropriate fixings and anchorages 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning ▪ To operate based on occupational risk prevention

	review of installations		measures To consider green economy approach in the tasks performed
LO5_ To monitor of solar radiation, air temperature, relative humidity	<ul style="list-style-type: none"> To list the different parameters to be measured 	<ul style="list-style-type: none"> To manage the monitoring tools. To collect data given by the monitoring 	<ul style="list-style-type: none"> To recognise the different levels of supervision in a green roof construction To collaborate with the decision markers to ensure a proper planning To operate based on occupational risk prevention measures To consider green economy approach in the tasks performed

MODULE 4 Deconstruction of green roofs (PENDANT OF REVIEWING)			
LEARNING OUTCOMES	KNOWLEDGE	SKILLS	RESPONSIBILITY AND AUTONOMY
LO1_ To identify risks and safety measures to be implemented during the deconstruction of roofs	<ul style="list-style-type: none"> To be aware of and identify the required calculations, can describe, explain, interpret, and present them. To be aware of the elements of technical design. 	<ul style="list-style-type: none"> To define construction plans, diagrams and graphs. To draw up drawings and figures in plans To identify the costs necessary for development 	<ul style="list-style-type: none"> To recognise the different levels of supervision in a green roof construction To operate on the basis of occupational risk prevention measures. to combine (to considerer) waste

			<p>management with work on the basis of responsible green economy policies</p>
<p>LO2_ To relate the steps on deconstruction according to present vegetation (to choose between reuse and recycle)</p>	<ul style="list-style-type: none"> ▪ To be aware of traditional materials for a roof ▪ To knowledge of building materials technology elements ▪ To describe the organization of construction sites and processes ▪ To be aware of deconstruction steps according to present vegetation ▪ To identify materials of roofs that can be disposed or reused ▪ To identify the average durability of green roofs and Life Cycle Analysis 	<ul style="list-style-type: none"> ▪ To recognise between different types of green roofs. ▪ To relate the green roof construction requirements for rehabilitation. ▪ To detect different stages of installation of combined solutions with solar system and green roof. ▪ To order the steps of the different stages of installation of non-green areas (pavement in gardens) ▪ To select materials to be separated in compliance with the logic of the Circular economy and the reuse or landfill of construction waste. ▪ To order the steps of her/his workplace in compliance with the arrangements of materials and work tools. ▪ To detect problems that cannot be solved with maintenance or single parts ▪ To find problems linked to humidity and water leaks due to incorrect 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning. ▪ To operate based on occupational risk prevention measures. ▪ To consider green economy approach in the tasks performed.

		waterproofing	
LO3_ To relate the steps on deconstruction of a common roof to convert it in a green roof	<ul style="list-style-type: none"> ▪ To be aware of the traditional materials for a roof, types and characteristics of building materials including ecological materials ▪ To be aware of various materials resulting from demolition ▪ To distinguish types of common roofs that could be uninstalled to convert them into green roofs ▪ To identify materials of roofs that can be disposed or reused 	<ul style="list-style-type: none"> ▪ To identify traditional materials for a roof and building materials technology elements ▪ To acknowledge to lay out of building site ▪ To recognize the deconstruction steps according to present vegetations ▪ To select between reuse and recycle ▪ To find problems linked to humidity and water leaks due to incorrect waterproofing 	<ul style="list-style-type: none"> ▪ To recognise the different levels of supervision in a green roof construction ▪ To collaborate with the decision markers to ensure a proper planning. ▪ To operate based on occupational risk prevention measures. ▪ To consider green economy approach in the tasks performed.

