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OERCO2 project

INTELLECTUAL OUTPUT 1

1.1.3. REPORT ABOUT LEVEL OF ACCEPTANCE OF PROFESSIONAL IN THE INTERNATIONAL SEMINAR OF MURCIA

DESCRIPTION OF THE INTERNATIONAL SEMINAR

This seminar has been used as the starting point and presentation of the OERCO2 project, as an integral part of the Intellectual Output 1-Study of the methodology for calculation of CO2 of constructive processes and analysis of life cycle.

The purpose of this seminar, in addition to being used as an official presentation of the project, is to collect information from the event attendees, who are experts in the different fields of construction. Surveys were used as a means of collecting information, in order to take advantage of the feedback from experts to be used as the foundation on which to build the methodology for the calculation of CO2 as well as the OERCO2, to make it much more adequate to cover the real needs of the construction sector.

At the entrance to the event, each of the attendants was given a survey, which corresponded to two different typologies, depending on the profile provided in the previous registration, found two different types of survey adequate to two areas within the construction sector , Academic and Professional field. The survey was conducted voluntarily, obtaining a great response from the attendants who showed a high percentage of participation.

The seminar had a total of 45 attendants. 10 of them, were part of the project consortium and 5 were speakers of the event. Of the remaining 30 attendants, 27 conducted the survey, obtaining 14 surveys for the professional field and 13 for the academic area.

The feedback from experts' will be used to make a methodology to be applied for coming courses and contents. A special focus. will be done in OER Platform, with the organization of round tables covering different topics. Experts in construction sector will attend this event and participate in the round tables, as well as representatives, both professors and students, of the main educational centres related to construction sector.

The attendance registration to the event, could be made via two channels:

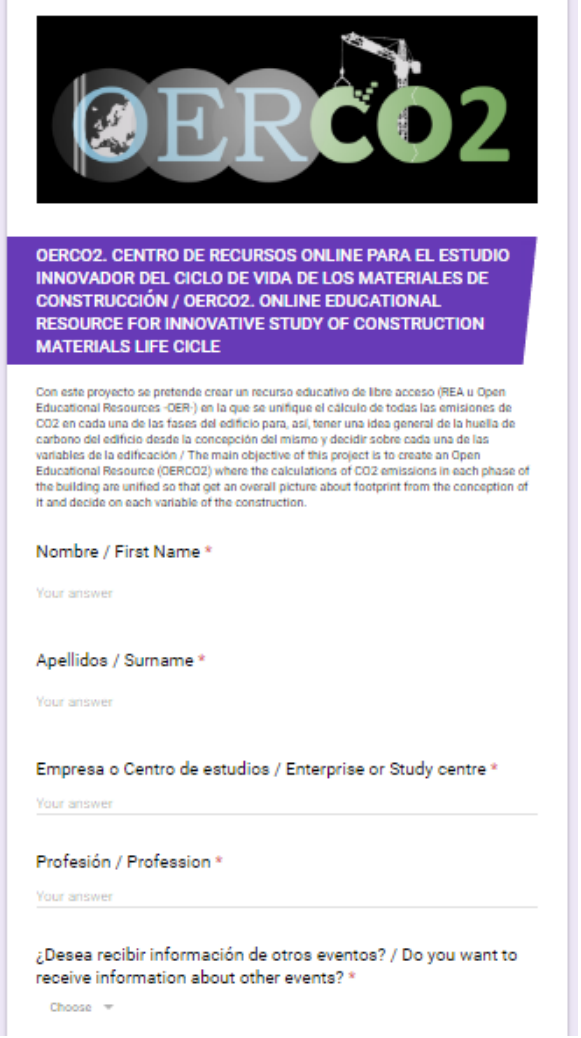
- The first, as the image shows, was via telematic, and can be done in advance.

Through telematic via, 19 registrations were received at the seminar.

- The second registration channel was in situ on the day of the seminar, through the installation of an accreditation point for this purpose.

A total of 26 entries were counted at the accreditation point.

LINK DE INSCRIPCIÓN



OERCO2. CENTRO DE RECURSOS ONLINE PARA EL ESTUDIO INNOVADOR DEL CICLO DE VIDA DE LOS MATERIALES DE CONSTRUCCIÓN / OERCO2. ONLINE EDUCATIONAL RESOURCE FOR INNOVATIVE STUDY OF CONSTRUCTION MATERIALS LIFE CICLE

Con este proyecto se pretende crear un recurso educativo de libre acceso (REA u Open Educational Resources -OER-) en la que se unifique el cálculo de todas las emisiones de CO2 en cada una de las fases del edificio para, así, tener una idea general de la huella de carbono del edificio desde la concepción del mismo y decidir sobre cada una de las variables de la edificación / The main objective of this project is to create an Open Educational Resource (OERCO2) where the calculations of CO2 emissions in each phase of the building are unified so that get an overall picture about footprint from the conception of it and decide on each variable of the construction.

Nombre / First Name *

Your answer

Apellidos / Surname *

Your answer

Empresa o Centro de estudios / Enterprise or Study centre *

Your answer

Profesión / Profession *

Your answer

¿Desea recibir información de otros eventos? / Do you want to receive information about other events? *

Choose

COAMU, Official College of Architects of the Region of Murcia, hosted the International Seminar, but it was organized by CTM.

The event was held 25th October 2016, the day after the first transnational meeting of the project, in COAMU and this is the agenda of the International Seminar:

Friday, 25th	**International Seminar place: COAMU, Colegio Oficial de Arquitectos de la Región de Murcia. Calle Poeta Jara Carrillo, 5. 30004.**
09.15 - 09.30	**Registration**
09.30 - 10.00	**Presentation of the OERCO2 project and the Consortium**
10.00 - 10.20	**State of the art. Regulations and EPDs**
10.20 - 10.40	**Curricula and Open Educational Resource (OER)**
10.40 - 11.00	**Methodologies for calculations of CO2**
11.00 - 11.15	**Question time**
11.15 - 11.30	**Coffee-Break**
	Experts and round table
11.30 - 12.00	**JLZ2 arquitectos (Jorge López López + Víctor Martín Tomas)**
12.00 - 12.30	**OX arquitectura (Javier Blesa + Alicia Cabrera)**
12.30 - 13.00	**Bonsai arquitectos (Luis Llopis + Eva Chacón)**
13.00 - 13.20	**Round table**
13.20 - 13.30	**Closure of the International Seminar**

According to the agenda of the International Seminar, were made the following interventions:

1. Welcome participants by host organization (CTM). It was carried out by Mr. Javier Fernández Cortés, the Director of the Marble and Stone Technological Centre.

2. Presentation of the OERCO2 project and the Consortium. It was carried out by Dr. Jaime Solís Guzmán, the coordinator of the project and the contact person of the University of Sevilla (USE).

3. State of the art. Regulations and EPDs. Mr. David Caparrós Pérez, the co-coordinator of the project and the contact person of CTM, was in charge of explaining this point.

4. Curricula and Open Educational Resource (OER). It was presented and explained by Mr. David Caparrós Pérez (CTM).

5. Methodologies for calculations of CO2. Dr. Jaime Solís Guzmán (USE), presented this section and its procedure.

The seminar also was attended by professionals of recognized prestige who were part of a Table of Experts, where they first told about their experiences in relation to sustainable construction:

- **JLZ2 arquitectos (Jorge López López + Víctor Martín Tomas)** www.jlz2arquitectos.com
- **OX arquitectura (Javier Blesa + Alicia Cabrera)** www.oxarquitectura.com
- **Bonsai arquitectos (Luis Llopis + Eva Chacón)** www.bonsaiarquitectos.es

NUMBER OF ATTENDANTS

The total attendance to the OERCO2 International Seminar were 45 attendants, of which 11 are participants of the OERCO2 project:

CertiMaC Soc. Cons. a r. L. (CertiMaC)

- Elena Casiraghi
- Luca Laghi

Universidad de Sevilla (USE)

- Jaime Solís Guzmán
- Madelyn Marrero Meléndez

Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM).

- David Caparrós Pérez
- Javier Fernández Cortés

Centro Tecnologico da Ceramica e do Vidro (CTCV)

- Marisa Almeida

Universitatea Transilvania din Brasov (UTBV)

- Radu Muntean

Asociatia Romania Green Building Council (RoGBC)

- Monica Ardeleanu

- Steven Borncamp

External Expert

- Alejandro Martínez Rocamora

In conclusion, the total number of attendants, who they are not linked to the organisations of the project, were 35, of which 1 are foreigner experts.

QUESTIONNAIRE

During the seminar, a survey was distributed to take into account the opinion of the attendants about the results of OERCO2 project, where the total number of surveys compiled were 27.

Two types of surveys were delivered depending on the area to which the attendees belonged. Professional and Academic scope.

Next, it can be checked the two types of questionnaires.

ENCUESTA EN EL ÁMBITO ACADÉMICO

Q0 Encuesta facilitada por:
- ❑ Universidad de Sevilla (US)
- ❑ Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)
- ❑ CertiMaC Soc. Cons. a r. L. (CertiMaC)
- ❑ Centro Tecnologico da Ceramica e do Vidro (CTCV)
- ❑ Universitatea Transilvania Din Brasov (UTBV)
- ❑ Asociatia Romania Green Building Council (RoGBC)
- ❑ Otro _____

Q1 ¿Cuál es su profesión?
- ❑ Profesor
- ❑ Estudiante
- ❑ Otro _____

Q2 Estudios:
- ❑ Arquitecto
- ❑ Ingeniero
- ❑ Gestor de proyectos (Project manager)
- ❑ Arquitecto técnico/Ingeniero de Edificación
- ❑ Otro _____

Q3 ¿En qué país estudia/trabaja?
- ❍ España
- ❍ Italia
- ❍ Portugal
- ❍ Rumanía
- ❍ Otro _____

Q4 ¿Cuál es el nivel de integración sobre aspectos medioambientales de sus estudios?
- ❍ Ninguno
- ❍ Bajo
- ❍ Medio
- ❍ Alto

Q5 Sobre las siguientes áreas de experiencia, ¿cuáles de éstas es posible estudiar en su universidad?
- ❍ Eficiencia energética
- ❍ Impacto medioambiental de materiales
- ❍ Gestión de residuos
- ❍ Gestión de las aguas
- ❍ Normativa medioambiental
- ❍ Arquitectura bioclimática
- ❍ Otros_____

Q6 De acuerdo a sus estudios, ¿cuánta influencia piensa que tiene sobre la selección de materiales y productos de construcción en un proyecto típico de edificación?
- ❍ Ninguna influencia
- ❍ Poca influencia
- ❍ Alguna influencia
- ❍ Fuerte influencia
- ❍ Total influencia

OERCO2
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2016-1-ES01-KA203-025422

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Q7 ¿Quién cree que tiene mayor influencia sobre la selección de materiales y productos de construcción en un proyecto típico de edificación?

	Ninguna influencia	Poca influencia	Alguna influencia	Fuerte influencia	Total influencia
Arquitecto	❍	❍	❍	❍	❍
Ingeniero civil/de estructuras	❍	❍	❍	❍	❍
Cliente	❍	❍	❍	❍	❍
Constructor	❍	❍	❍	❍	❍
Servicios de ingeniería	❍	❍	❍	❍	❍
Urbanista	❍	❍	❍	❍	❍
Gestor de proyectos (Project Manager)	❍	❍	❍	❍	❍
Arquitecto técnico/Ingeniero de edificación	❍	❍	❍	❍	❍
Consultor medioambiental	❍	❍	❍	❍	❍
Promotor	❍	❍	❍	❍	❍
Funcionario público/ Normativas	❍	❍	❍	❍	❍
OCT (Organismo de Control Técnico)	❍	❍	❍	❍	❍

Consortium members: Universidad de Sevilla (US), Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM), CertiMaC Soc. Cons. a r. L. (CertiMaC), Centro Tecnologico da Ceramica e do Vidro (CTCV), Universitatea Transilvania Din Brasov (UTBV), Asociatia Romania Green Building Council (RoGBC).

Q8 ¿Qué conocimiento tiene sobre los siguientes materiales y productos de construcción?

	Amplio conocimiento	Conocimiento básico	Poco/ningún conocimiento
Brettstapel. Sistema constructivo con madera maciza	❍	❍	❍
Madera contralaminada (CLT)	❍	❍	❍
Paneles aislados estructurales (SIPs)	❍	❍	❍
Balas de paja (ya sean de carga, de relleno o modulares)	❍	❍	❍
Tapial	❍	❍	❍
Ladrillo sin cocer	❍	❍	❍
Cob	❍	❍	❍
Adobe	❍	❍	❍
Cáñamo (incluyendo compuestos de limo y cáñamo)	❍	❍	❍
Limecrete (Espuma de vidrio reciclada aislante)	❍	❍	❍
Cartón (tubos o paneles)	❍	❍	❍
Etileno-TetraFluoroEtileno (ETFE)	❍	❍	❍
Poliméricos Reforzados con Fibras Inorgánicas (FRP)	❍	❍	❍
Cemento Geopolimérico	❍	❍	❍
Hormigones con residuos agrícolas (p.e. cáscaras de arroz, fibras vegetales o cáscaras de frutos secos)	❍	❍	❍
Hormigones con residuos del post-consumo (p.e. plásticos, vidrios o neumáticos)	❍	❍	❍
Hormigones con residuos procedentes de demoliciones	❍	❍	❍
Hormigones con residuos procedentes de residuos industriales (p.e. escoria siderúrgica, cenizas de lodos de depuración, humo de sílice)	❍	❍	❍
Suelos de placas alveolares prefabricadas	❍	❍	❍
Desenrollo optimizado de mallas de refuerzo (mallazo)	❍	❍	❍
Áridos reciclados	❍	❍	❍
Madera plástica reciclada	❍	❍	❍
Acero recuperado	❍	❍	❍
Madera recuperada	❍	❍	❍

Q9 *Para todos los materiales que eligió en la Q8 con 'Amplio conocimiento';* **En general, ¿cuál es la razón por la que escogería estos materiales?*** (*Se permiten múltiples respuestas)

❍ Bajo coste
❍ Solicitado por el cliente
❍ Solicitado por el arquitecto, ingeniero o constructor.
❍ Encaja con los valores de la compañía
❍ Moralmente obligado a usar materiales de bajo impacto
❍ Ofrece un mejor comportamiento estructural
❍ Ofrece un bajo coste operacional
❍ Ganancia de puntos en relación a valoraciones relacionadas con criterios medioambientales (p.e. BREEAM, LEED)
❍ Reducción de plazos de ejecución
❍ Cuestiones estéticas
❍ Mejora de la 'salud' de los ocupantes del edificio
❍ Requerimientos normativos
❍ Otro/s_____

Comentarios* (*no es obligatorio contestar)

OERCO2
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Q10 *Para todos los materiales que eligió en la Q8 con 'Amplio conocimiento' o 'conocimiento básico';* **Habiendo elegido que posee un amplio conocimiento o conocimiento básico en varios de estos materiales, ¿por cuál razón no los escogería?*** (*Se permiten múltiples respuestas)

- ❍ No son apropiados para los tipos de proyecto a los que estoy vinculado
- ❍ Demasiado caro
- ❍ Experiencias negativas de compañeros de profesión
- ❍ Percepción negativa por parte de los clientes
- ❍ Percepción negativa por parte de otros profesionales
- ❍ Comportamiento térmico o estructural insuficiente
- ❍ Preocupación sobre su durabilidad
- ❍ Falta de conocimiento técnico o formación
- ❍ Escasa disponibilidad del material
- ❍ Baja disponibilidad de obreros cualificados
- ❍ Demasiado tiempo en el proceso de diseño
- ❍ Escasez de estándares
- ❍ Escasez de guías de diseño
- ❍ Escasez de casos de estudios o proyectos demostrativos
- ❍ No encaja con la cultura de los clientes
- ❍ Cuestiones legales y de seguros.
- ❍ Otro/s_____

Comentarios* (*no es obligatorio contestar)

Q11 Pensando de una manera más general sobre los materiales alternativos en la construcción, ¿qué importancia cree que tienen los siguientes factores en relación a dificultar su uso?

	Nada importante	Poco importante	Importante	Muy importante	Extremadamente importante
Altos costes	❍	❍	❍	❍	❍
Cultura y prácticas institucionales establecidas	❍	❍	❍	❍	❍
Diseño insuficiente e información sobre ejecución	❍	❍	❍	❍	❍
Falta de conocimiento y destrezas en el diseño	❍	❍	❍	❍	❍
Déficit de trabajadores cualificados	❍	❍	❍	❍	❍
Escasez de normativas	❍	❍	❍	❍	❍
Escasez de proyectos demostrativos	❍	❍	❍	❍	❍
Limitaciones de tiempo	❍	❍	❍	❍	❍
Mala prensa	❍	❍	❍	❍	❍
Naturaleza conservadora de los clientes	❍	❍	❍	❍	❍
Percepción negativa de la industria	❍	❍	❍	❍	❍

Q12 ¿Qué importancia cree que tienen las siguientes estrategias siendo útiles para fomentar el uso de materiales y productos de construcción alternativos?

	Nada importante	Poco importante	Importante	Muy importante	Extremadamente importante
Alto valor en criterios de evaluación (p.e. BREEAM)	❍	❍	❍	❍	❍
Normativa regulando el límite de carbono emitido en construcción	❍	❍	❍	❍	❍
Reducción en los costes de material	❍	❍	❍	❍	❍
Mayor conciencia medioambiental de los clientes	❍	❍	❍	❍	❍
Mayor información sobre los materiales en su ejecución y diseño	❍	❍	❍	❍	❍
Mayor número de proyectos demostrativos y casos de estudio	❍	❍	❍	❍	❍
Formación en diseño con materiales alternativos	❍	❍	❍	❍	❍

OERCO2
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2016-1-ES01-KA203-025422

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ENCUESTA EN EL ÁMBITO PROFESIONAL

Q0 Encuesta facilitada por:
- ❑ Universidad de Sevilla (US)
- ❑ Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)
- ❑ CertiMaC Soc. Cons. a r. L. (CertiMaC)
- ❑ Centro Tecnologico da Ceramica e do Vidro (CTCV)
- ❑ Universitatea Transilvania Din Brasov (UTBV)
- ❑ Asociatia Romania Green Building Council (RoGBC)
- ❑ Otro _____

Q1 ¿Cuál suele ser su función principal en los proyectos?
- ❑ Arquitecto
- ❑ Constructor
- ❑ Ingeniero
- ❑ Gestor de proyectos (Project Manager)
- ❑ Arquitecto técnico/Ingeniero de edificación
- ❑ Consultor medioambiental
- ❑ Promotor
- ❑ Funcionario público
- ❑ Otro _____

Q2 ¿En qué país trabaja?
- ❍ España
- ❍ Italia
- ❍ Portugal
- ❍ Rumanía
- ❍ Otro _____

Q3 ¿Durante cuántos años ha estado vinculado al sector de la construcción?
- ❍ Menos de 2 años
- ❍ De 2 a 5 años
- ❍ De 6 a 10 años
- ❍ De 11 a 15 años
- ❍ De 16 a 20 años
- ❍ Más de 20 años

Q4 Aproximadamente, ¿cuántos empleados hay en su empresa?
- ❍ 1 (trabajador por cuenta propia)
- ❍ 2-13
- ❍ 14-34
- ❍ 35-59
- ❍ 60-114
- ❍ 115-599
- ❍ 600-1199
- ❍ 1200+
- ❍ NS/NC

Q5 De acuerdo a su profesión, ¿cuánta influencia piensa que tiene sobre la selección de materiales y productos de construcción en un proyecto típico de edificación?
- ❍ Ninguna influencia
- ❍ Poca influencia
- ❍ Alguna influencia
- ❍ Fuerte influencia
- ❍ Total influencia

OERCO2
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Q6 ¿Quién cree que tiene mayor influencia sobre la selección de materiales y productos de construcción en un proyecto típico de edificación?

	Ninguna influencia	Poca influencia	Alguna influencia	Fuerte influencia	Total influencia
Arquitecto	❍	❍	❍	❍	❍
Ingeniero civil/de estructuras	❍	❍	❍	❍	❍
Cliente	❍	❍	❍	❍	❍
Constructor	❍	❍	❍	❍	❍
Servicios de ingeniería	❍	❍	❍	❍	❍
Urbanista	❍	❍	❍	❍	❍
Gestor de proyectos (Project Manager)	❍	❍	❍	❍	❍
Arquitecto técnico/Ingeniero de edificación	❍	❍	❍	❍	❍
Consultor medioambiental	❍	❍	❍	❍	❍
Promotor	❍	❍	❍	❍	❍
Funcionario público/ Normativas	❍	❍	❍	❍	❍
OCT (Organismo de Control Técnico)	❍	❍	❍	❍	❍

Consortium members: Universidad de Sevilla (US), Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM), CertiMaC Soc. Cons. a r. L. (CertiMaC), Centro Tecnologico da Ceramica e do Vidro (CTCV), Universitatea Transilvania Din Brasov (UTBV), Asociatia Romania Green Building Council (RoGBC).

Q7 ¿Qué conocimiento tiene sobre los siguientes materiales y productos de construcción?

	Usado en proyecto(s)	Conocido, pero no usado	Poco/ningún conocimiento
Brettstapel. Sistema constructivo con madera maciza	❍	❍	❍
Madera contralaminada (CLT)	❍	❍	❍
Paneles aislados estructurales (SIPs)	❍	❍	❍
Balas de paja (ya sean de carga, de relleno o modulares)	❍	❍	❍
Tapial	❍	❍	❍
Ladrillo sin cocer	❍	❍	❍
Cob	❍	❍	❍
Adobe	❍	❍	❍
Cáñamo (incluyendo compuestos de limo y cáñamo)	❍	❍	❍
Limecrete (Espuma de vidrio reciclada aislante)	❍	❍	❍
Cartón (tubos o paneles)	❍	❍	❍
Etileno-TetraFluoroEtileno (ETFE)	❍	❍	❍
Poliméricos Reforzados con Fibras Inorgánicas (FRP)	❍	❍	❍
Cemento Geopolimérico	❍	❍	❍
Hormigones con residuos agrícolas (p.e. cáscaras de arroz, fibras vegetales o cáscaras de frutos secos)	❍	❍	❍
Hormigones con residuos del post-consumo (p.e. plásticos, vidrios o neumáticos)	❍	❍	❍
Hormigones con residuos procedentes de demoliciones	❍	❍	❍
Hormigones con residuos procedentes de residuos industriales (p.e. escoria siderúrgica, cenizas de lodos de depuración, humo de sílice)	❍	❍	❍
Suelos de placas alveolares prefabricadas	❍	❍	❍
Desenrollo optimizado de mallas de refuerzo (mallazo)	❍	❍	❍
Áridos reciclados	❍	❍	❍
Madera plástica reciclada	❍	❍	❍
Acero recuperado	❍	❍	❍
Madera recuperada	❍	❍	❍

Q8 *Para todos los materiales que eligió en la Q7 'Usado en proyecto(s)';* **¿Con qué frecuencia ha usado estos materiales?**

❍ Únicamente en uno
❍ En múltiples proyectos
❍ Son considerados o usados de forma rutinaria en todos los proyectos

Q9 *Para todos los materiales que eligió en la Q7 'Usado en proyecto(s)';* **¿Cuál es su valoración en relación a su experiencia en el uso de estos materiales?**

❍ Muy negativa
❍ Negativa
❍ Ni negativa ni positiva
❍ Positiva
❍ Muy positiva

Comentarios* (*no es obligatorio contestar)

OERCO2
CENTRO DE RECURSOS ONLINE PARA EL ESTUDIO INNOVADOR DEL CICLO DE VIDA DE LOS MATERIALES DE CONSTRUCCIÓN
2016-1-ES01-KA203-025422

Co-funded by the Erasmus+ Programme of the European Union

Consortium members: Universidad de Sevilla (US), Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM), CertiMaC Soc. Cons. a r. L. (CertiMaC), Centro Tecnologico da Ceramica e do Vidro (CTCV), Universitatea Transilvania Din Brasov (UTBV), Asociatia Romania Green Building Council (RoGBC).

Q10 *Para todos los materiales que eligió en la Q7 'Usado en proyecto(s)';* **Pensando en los proyectos en los cuales usó estos materiales, ¿cuál es la razón por la que los escogería?*** (*Se permiten múltiples respuestas)

- ❍ Bajo coste
- ❍ Solicitado por el cliente
- ❍ Solicitado por el arquitecto, ingeniero o constructor
- ❍ Encaja con los valores de la compañía
- ❍ Moralmente obligado a usar materiales de bajo impacto
- ❍ Ofrece un mejor comportamiento estructural
- ❍ Ofrece un bajo coste operacional
- ❍ Ganancia de puntos en relación a valoraciones relacionadas con criterios medioambientales (p.e. BREEAM, LEED)
- ❍ Reducción de plazos de ejecución
- ❍ Cuestiones estéticas
- ❍ Mejora de la 'salud' de los ocupantes del edificio
- ❍ Requerimientos normativos
- ❍ Otro/s_____

Comentarios* (*no es obligatorio contestar)

Q11 *Para todos los materiales que eligió en la Q7 'Usado en proyecto(s)';* **¿Usaría estos materiales de nuevo?**

- ❍ Sí
- ❍ No

Comentarios* (*no es obligatorio contestar)

Q12 *Para todos los materiales que eligió en la Q7 'Conocido, pero no usado';* **Habiendo elegido que conoce, pero no ha usado determinados materiales en ningún proyecto, ¿cuáles son los motivos por los que no ha usado dichos materiales?*** (*Se permiten múltiples respuestas)

- ❍ No son apropiados para los tipos de proyecto a los que estoy vinculado
- ❍ Demasiado caro
- ❍ Experiencias negativas de compañeros de profesión
- ❍ Percepción negativa por parte de los clientes
- ❍ Percepción negativa por parte de otros profesionales
- ❍ Comportamiento térmico o estructural insuficiente
- ❍ Preocupación sobre su durabilidad
- ❍ Falta de conocimiento técnico o formación
- ❍ Escasa disponibilidad del material
- ❍ Baja disponibilidad de obreros cualificados
- ❍ Demasiado tiempo en el proceso de diseño
- ❍ Escasez de estándares
- ❍ Escasez de guías de diseño
- ❍ Escasez de casos de estudios o proyectos demostrativos
- ❍ No encaja con la cultura de los clientes
- ❍ Cuestiones legales y de seguros
- ❍ Otro/s_____

Comentarios* (*no es obligatorio contestar)

OERCO2
CENTRO DE RECURSOS ONLINE PARA EL ESTUDIO INNOVADOR DEL CICLO DE VIDA DE LOS MATERIALES DE CONSTRUCCIÓN
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Q13 Pensando de una manera más general sobre los materiales alternativos en la construcción, ¿qué importancia cree que tienen los siguientes factores en relación a dificultar su uso?

	Nada importante	Poco importante	Importante	Muy importante	Extremadamente importante
Altos costes	❍	❍	❍	❍	❍
Cultura y prácticas institucionales establecidas	❍	❍	❍	❍	❍
Diseño insuficiente e información sobre ejecución	❍	❍	❍	❍	❍
Falta de conocimiento y destrezas en el diseño	❍	❍	❍	❍	❍
Déficit de trabajadores cualificados	❍	❍	❍	❍	❍
Escasez de normativas	❍	❍	❍	❍	❍
Escasez de proyectos demostrativos	❍	❍	❍	❍	❍
Limitaciones de tiempo	❍	❍	❍	❍	❍
Mala prensa	❍	❍	❍	❍	❍
Naturaleza conservadora de los clientes	❍	❍	❍	❍	❍
Percepción negativa de la industria	❍	❍	❍	❍	❍

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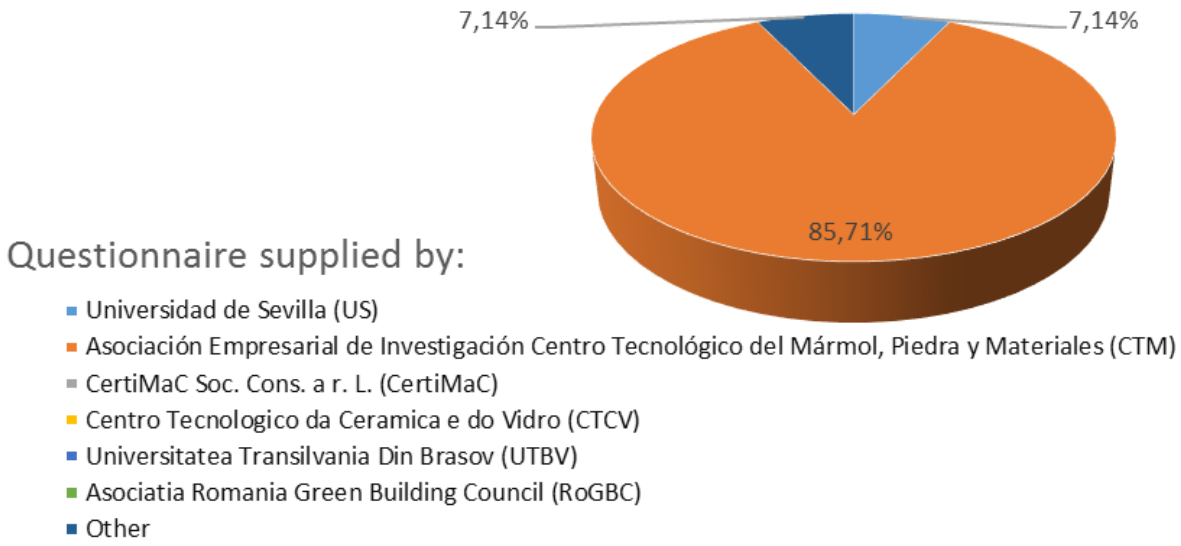
Q14 ¿Qué importancia cree que tienen las siguientes estrategias siendo útiles para fomentar el uso de materiales y productos de construcción alternativos?

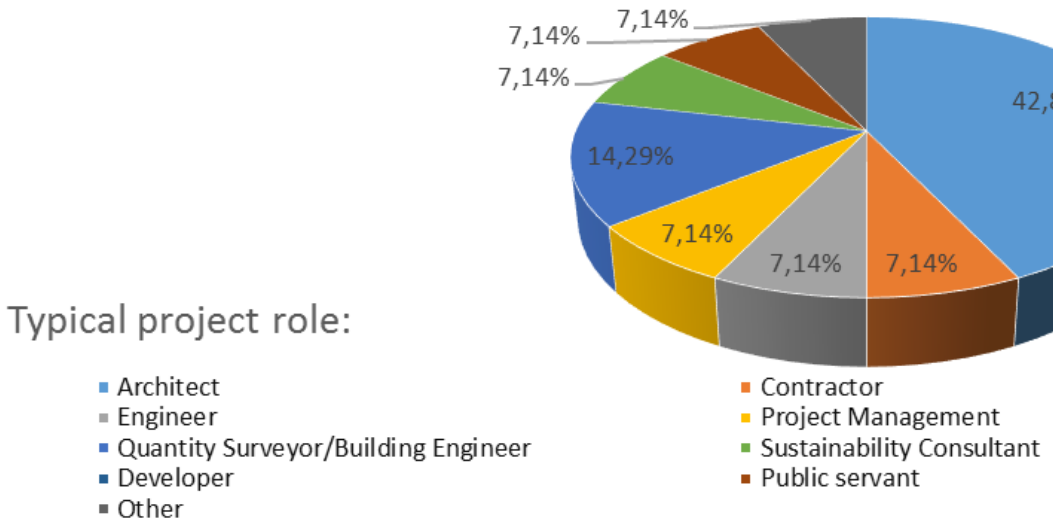
	Nada importante	Poco importante	Importante	Muy importante	Extremadamente importante
Alto valor en criterios de evaluación (p.e. BREEAM)	❍	❍	❍	❍	❍
Normativa regulando el límite de carbono emitido en construcción	❍	❍	❍	❍	❍
Reducción en los costes de material	❍	❍	❍	❍	❍
Mayor conciencia medioambiental de los clientes	❍	❍	❍	❍	❍
Mayor información sobre los materiales en su ejecución y diseño	❍	❍	❍	❍	❍
Mayor número de proyectos demostrativos y casos de estudio	❍	❍	❍	❍	❍
Formación en diseño con materiales alternativos	❍	❍	❍	❍	❍

RESULTS OF THE SURVEY FOR PROFESSIONALS

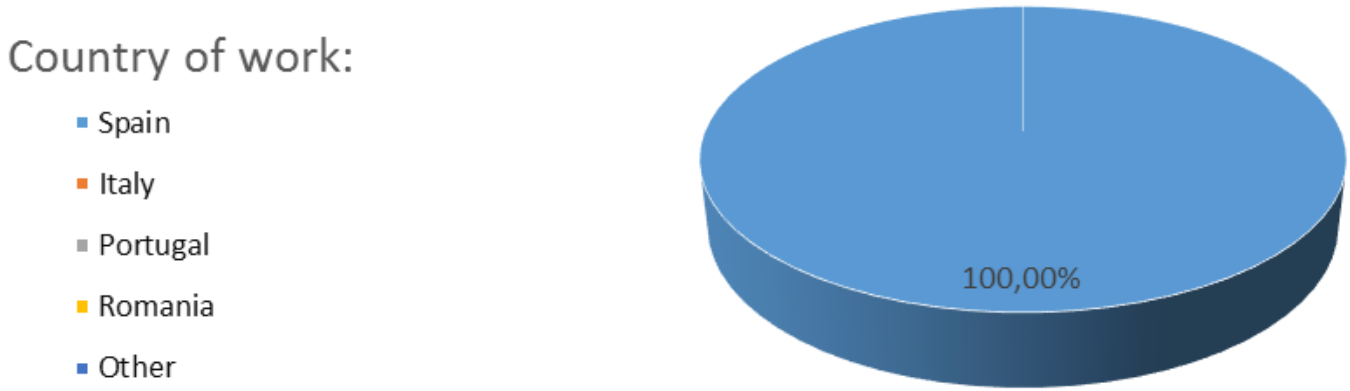
Q0 Questionnaire supplied by:	%	No. Answers
Universidad de Sevilla (US)	7,14%	1
Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)	85,71%	12
CertiMaC Soc. Cons. a r. L. (CertiMaC)	0,00%	0
Centro Tecnologico da Ceramica e do Vidro (CTCV)	0,00%	0
Universitatea Transilvania Din Brasov (UTBV)	0,00%	0
Asociatia Romania Green Building Council (RoGBC)	0,00%	0
Other	7,14%	1



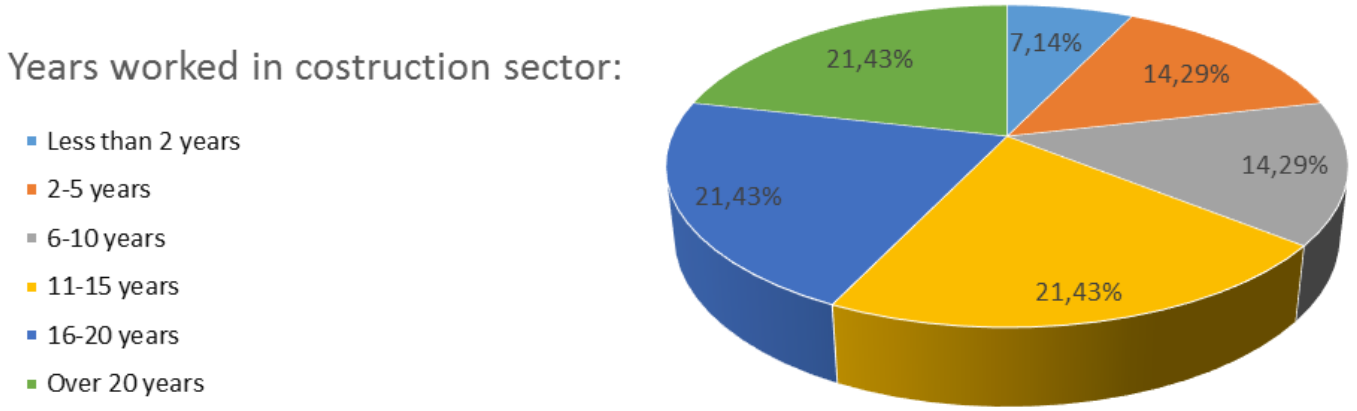
Q1 What is your typical project role?	%	No. Answers
Architect	42,86%	6
Contractor	7,14%	1
Engineer	7,14%	1
Project Management	7,14%	1
Quantity Surveyor/Building Engineer	14,29%	2
Sustainability Consultant	7,14%	1
Developer	0,00%	0
Public servant	7,14%	1
Other	7,14%	1



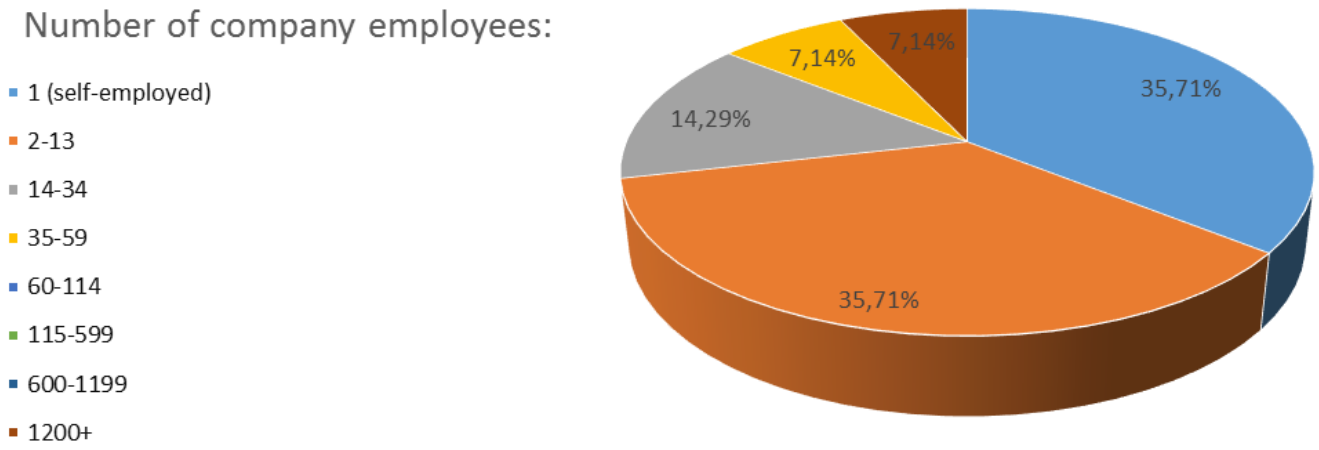
Q2 In which country do you normally work?	%	No. Answers
Spain	100,00%	14
Italy	0,00%	0
Portugal	0,00%	0
Romania	0,00%	0
Other	0,00%	0



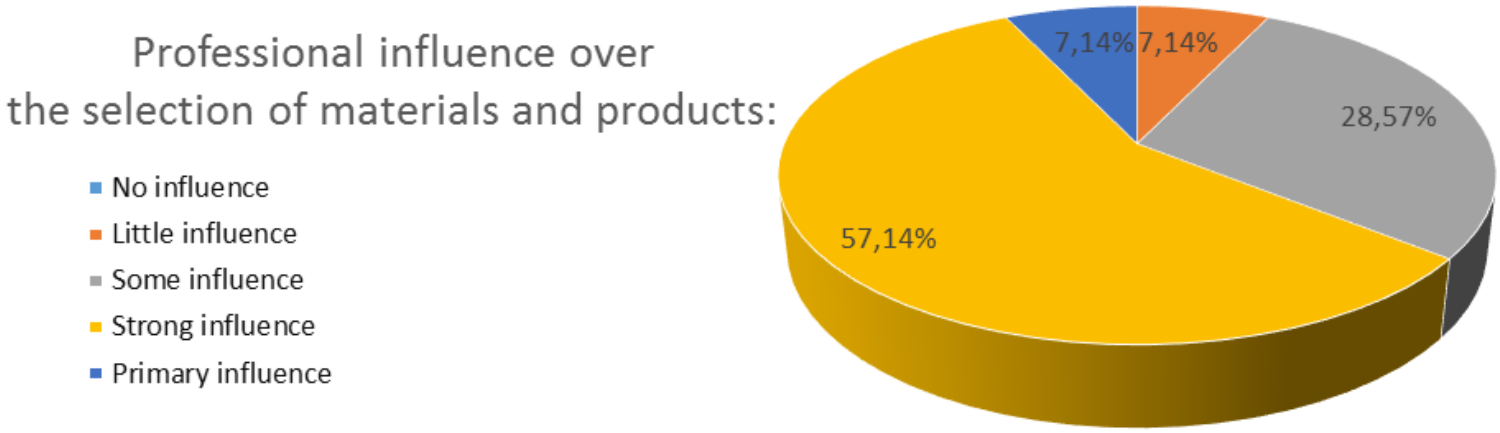
Q3 For how many years have you worked linked to in construction sector?	%	No. Answers
Less than 2 years	7,14%	1
2-5 years	14,29%	2
6-10 years	14,29%	2
11-15 years	21,43%	3
16-20 years	21,43%	3
Over 20 years	21,43%	3



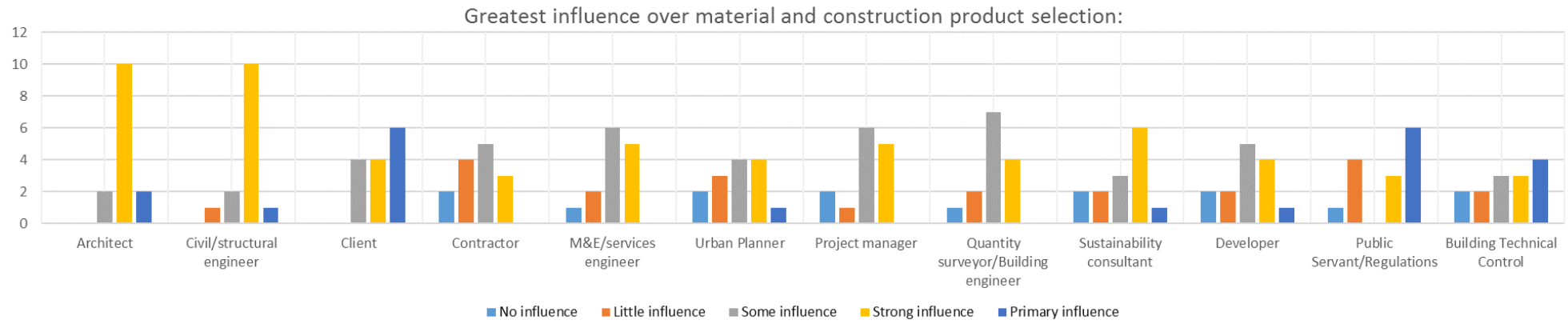
Q4 Approximately how many staff does your company directly employ?	%	No. Answers
1 (self-employed)	35,71%	5
2-13	35,71%	5
14-34	14,29%	2
35-59	7,14%	1
60-114	0,00%	0
115-599	0,00%	0
600-1199	0,00%	0
1200+	7,14%	1
Don't know	0,00%	0



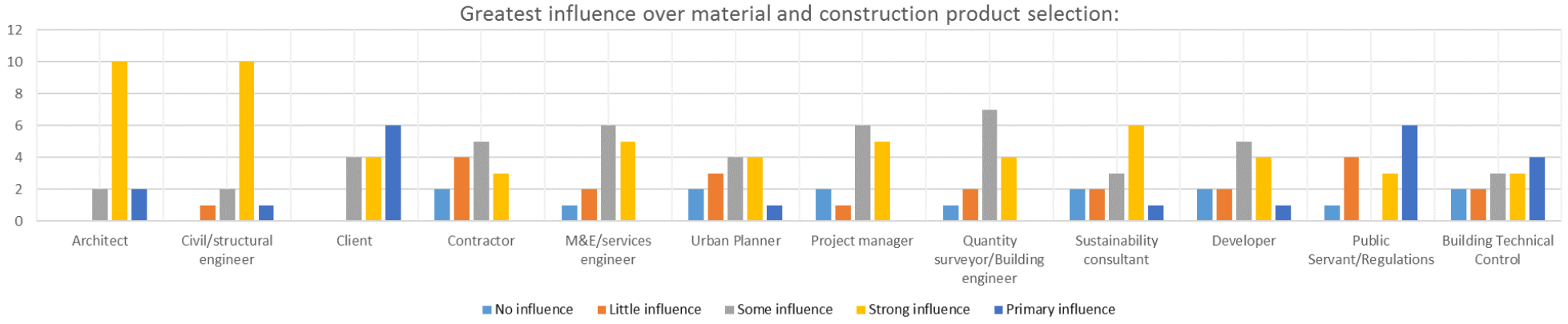
Q5 According to your profession, how much influence do you think that you have over the selection of materials and construction products on a typical project?	%	No. Answers
No influence	0,00%	0
Little influence	7,14%	1
Some influence	28,57%	4
Strong influence	57,14%	8
Primary influence	7,14%	1



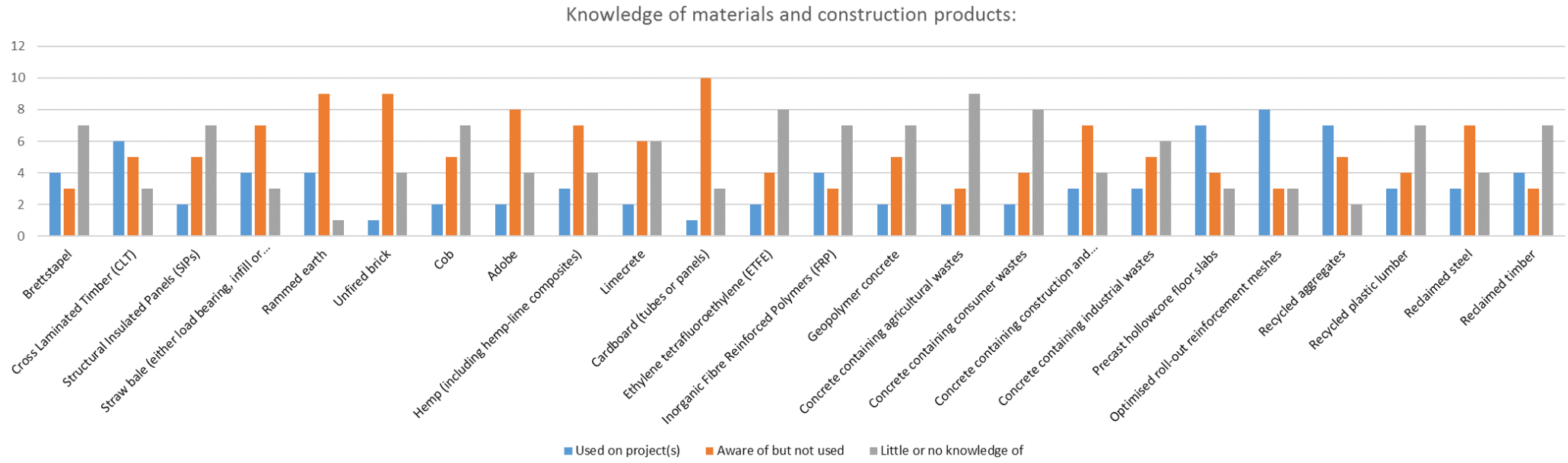
Q6 Who do you believe has the greatest influence over material and construction product selection on a typical project?	No influence	Little influence	Some influence	Strong influence	Primary influence
Architect	0	0	2	10	2
Civil/structural engineer	0	1	2	10	1
Client	0	0	4	4	6
Contractor	2	4	5	3	0
M&E/services engineer	1	2	6	5	0
Urban Planner	2	3	4	4	1
Project manager	2	1	6	5	0
Quantity surveyor/Building engineer	1	2	7	4	0
Sustainability consultant	2	2	3	6	1
Developer	2	2	5	4	1
Public Servant/Regulations	1	4	0	3	6
Building Technical Control	2	2	3	3	4



Q6 Who do you believe has the greatest influence over material and construction product selection on a typical project?	No influence	Little influence	Some influence	Strong influence	Primary influence
	%	%	%	%	%
Architect	0,00%	0,00%	14,29%	**71,43%**	14,29%
Civil/structural engineer	0,00%	7,14%	14,29%	**71,43%**	7,14%
Client	0,00%	0,00%	28,57%	**28,57%**	42,86%
Contractor	14,29%	28,57%	**35,71%**	21,43%	0,00%
M&E/services engineer	7,14%	14,29%	**42,86%**	35,71%	0,00%
Urban Planner	14,29%	**21,43%**	28,57%	28,57%	7,14%
Project manager	14,29%	7,14%	**42,86%**	35,71%	0,00%
Quantity surveyor/Building engineer	7,14%	14,29%	**50,00%**	28,57%	0,00%
Sustainability consultant	14,29%	14,29%	**21,43%**	42,86%	7,14%
Developer	14,29%	14,29%	35,71%	**28,57%**	7,14%
Public Servant/Regulations	7,14%	**28,57%**	0,00%	21,43%	42,86%
Building Technical Control	14,29%	14,29%	**21,43%**	21,43%	28,57%



Q7 What is your knowledge of the following materials and construction products?	Used on project(s)	Aware of but not used	Little or no knowledge of
Brettstapel	4	3	7
Cross Laminated Timber (CLT)	6	5	3
Structural Insulated Panels (SIPs)	2	5	7
Straw bale (either load bearing, infill or modular)	4	7	3
Rammed earth	4	9	1
Unfired brick	1	9	4
Cob	2	5	7
Adobe	2	8	4
Hemp (including hemp-lime composites)	3	7	4
Limecrete	2	6	6
Cardboard (tubes or panels)	1	10	3
Ethylene tetrafluoroethylene (ETFE)	2	4	8
Inorganic Fibre Reinforced Polymers (FRP)	4	3	7
Geopolymer concrete	2	5	7
Concrete containing agricultural wastes	2	3	9
Concrete containing consumer wastes	2	4	8
Concrete containing construction and demolition wastes	3	7	4
Concrete containing industrial wastes	3	5	6
Precast hollowcore floor slabs	7	4	3
Optimised roll-out reinforcement meshes	8	3	3
Recycled aggregates	7	5	2
Recycled plastic lumber	3	4	7
Reclaimed steel	3	7	4
Reclaimed timber	4	3	7

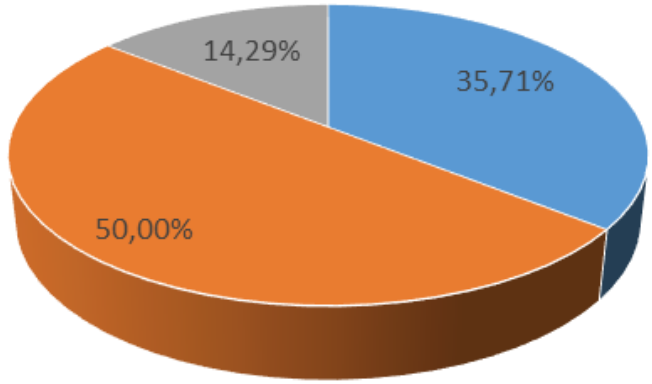

Knowledge of materials and construction products:
12
10
8
6
4
2
0
Brettstapel
Cross Laminated Timber (CLT)
Structural Insulated Panels (SIPs)
Straw bale (either load bearing, infill or...
Rammed earth
Unfired brick
Cob
Adobe
Hemp (including hemp-lime composites)
Limecrete
Cardboard (tubes or panels)
Ethylene tetrafluoroethylene (ETFE)
Inorganic Fibre Reinforced Polymers (FRP)
Geopolymer concrete
Concrete containing agricultural wastes
Concrete containing consumer wastes
Concrete containing construction and...
Concrete containing industrial wastes
Precast hollowcore floor slabs
Optimised roll-out reinforcement meshes
Recycled aggregates
Recycled plastic lumber
Reclaimed steel
Reclaimed timber
Used on project(s)
Aware of but not used
Little or no knowledge of

Q7 What is your knowledge of the following materials and construction products?	Used on project(s)	Aware of but not used	Little or no knowledge of
	%	%	%
Brettstapel	28,57%	21,43%	**50,00%**
Cross Laminated Timber (CLT)	42,86%	**35,71%**	21,43%
Structural Insulated Panels (SIPs)	14,29%	**35,71%**	50,00%
Straw bale (either load bearing, infill or modular)	28,57%	50,00%	**21,43%**
Rammed earth	28,57%	**64,29%**	7,14%
Unfired brick	7,14%	**64,29%**	28,57%
Cob	14,29%	35,71%	**50,00%**
Adobe	14,29%	**57,14%**	28,57%
Hemp (including hemp-lime composites)	21,43%	**50,00%**	**28,57%**
Limecrete	14,29%	**42,86%**	42,86%
Cardboard (tubes or panels)	7,14%	**71,43%**	21,43%
Ethylene tetrafluoroethylene (ETFE)	14,29%	28,57%	**57,14%**
Inorganic Fibre Reinforced Polymers (FRP)	28,57%	**21,43%**	50,00%
Geopolymer concrete	14,29%	**35,71%**	50,00%
Concrete containing agricultural wastes (e.g. rice husks, vegetable fibres or nut shells)	14,29%	21,43%	**64,29%**
Concrete containing consumer wastes (e.g. plastics, glass or tyres)	14,29%	28,57%	**57,14%**
Concrete containing construction and demolition wastes	21,43%	**50,00%**	28,57%
Concrete containing industrial wastes (e.g. steel slag, sewage sludge ash, silica fume)	21,43%	**35,71%**	42,86%
Precast hollowcore floor slabs	50,00%	**28,57%**	21,43%
Optimised roll-out reinforcement meshes	57,14%	**21,43%**	21,43%
Recycled aggregates	50,00%	**35,71%**	14,29%
Recycled plastic lumber	21,43%	**28,57%**	50,00%
Reclaimed steel	21,43%	**50,00%**	28,57%
Reclaimed timber	28,57%	**21,43%**	50,00%

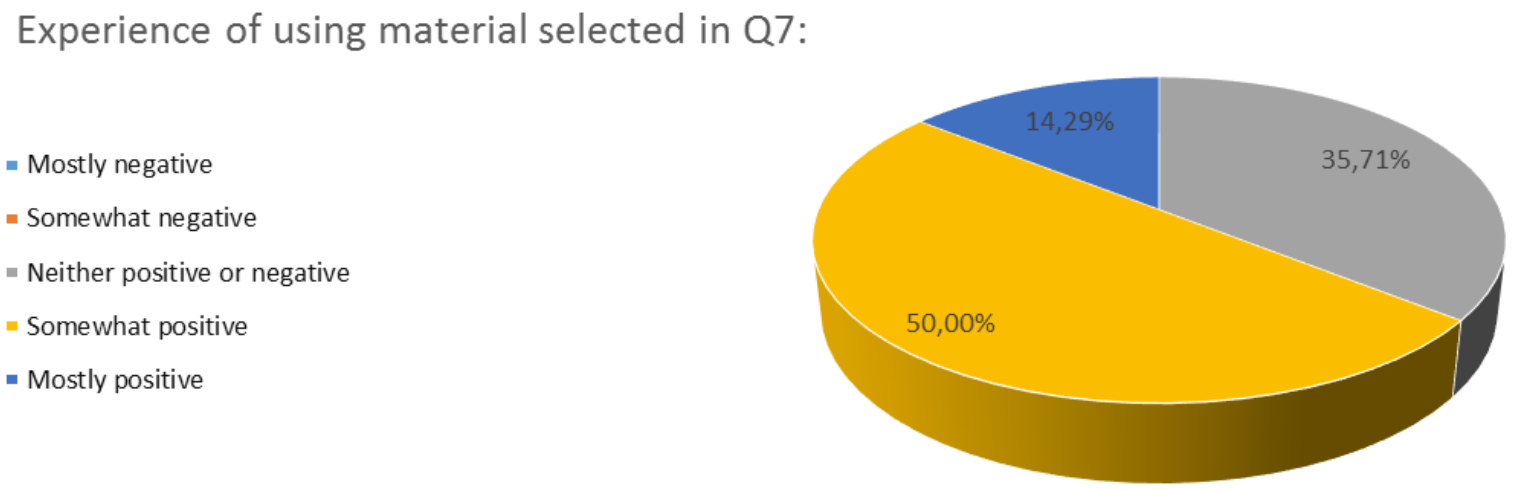
Q8 For all materials for which 'Used on project(s)' is selected in Q7; How often have you used each of these materials?	%	No. Answers
On a single project	35,71%	5
On multiple projects	50,00%	7
Material is routinely used or considered on all projects	14,29%	2

Frequency of use of the material selected in Q7:

- On a single project
- On multiple projects
- Material is routinely used or considered on all projects



Q9 For all materials for which 'Used on project(s)' is selected in Q7; How would you rate your experience of using each of these materials?	%	No. Answers
Mostly negative	0,00%	0
Somewhat negative	0,00%	0
Neither positive or negative	35,71%	5
Somewhat positive	50,00%	7
Mostly positive	14,29%	2



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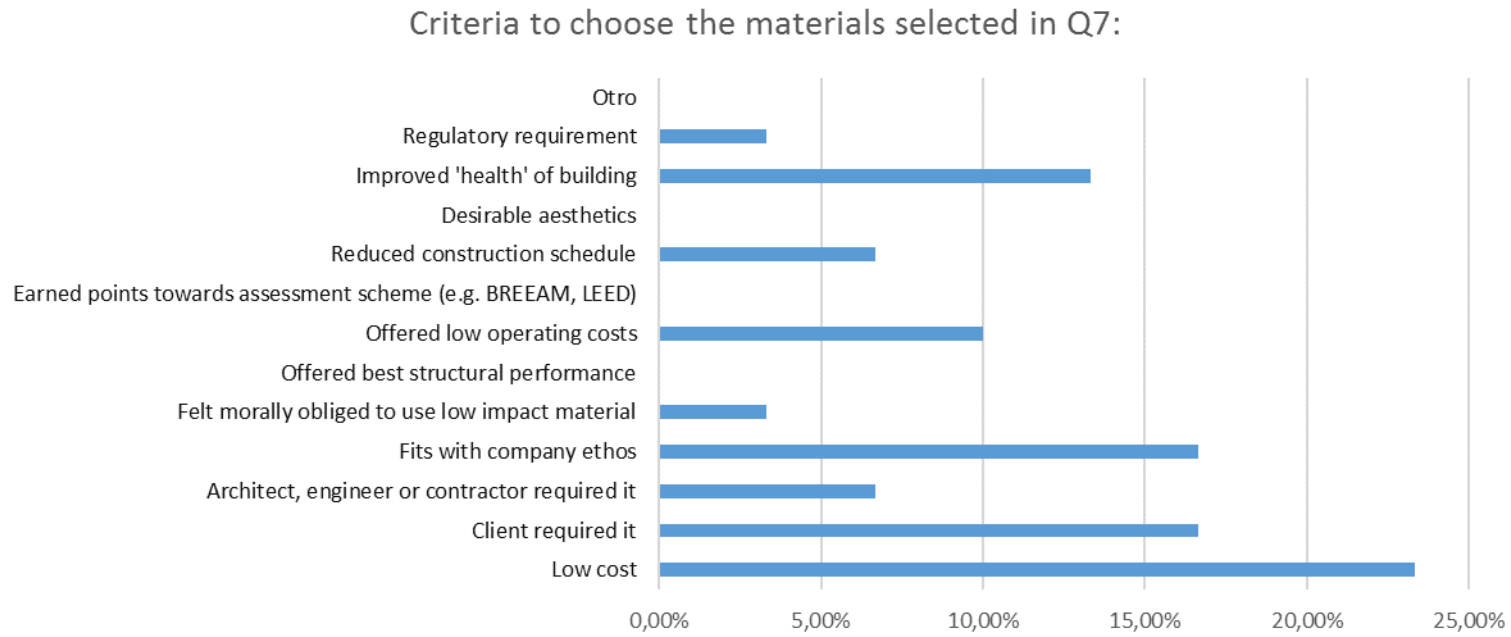
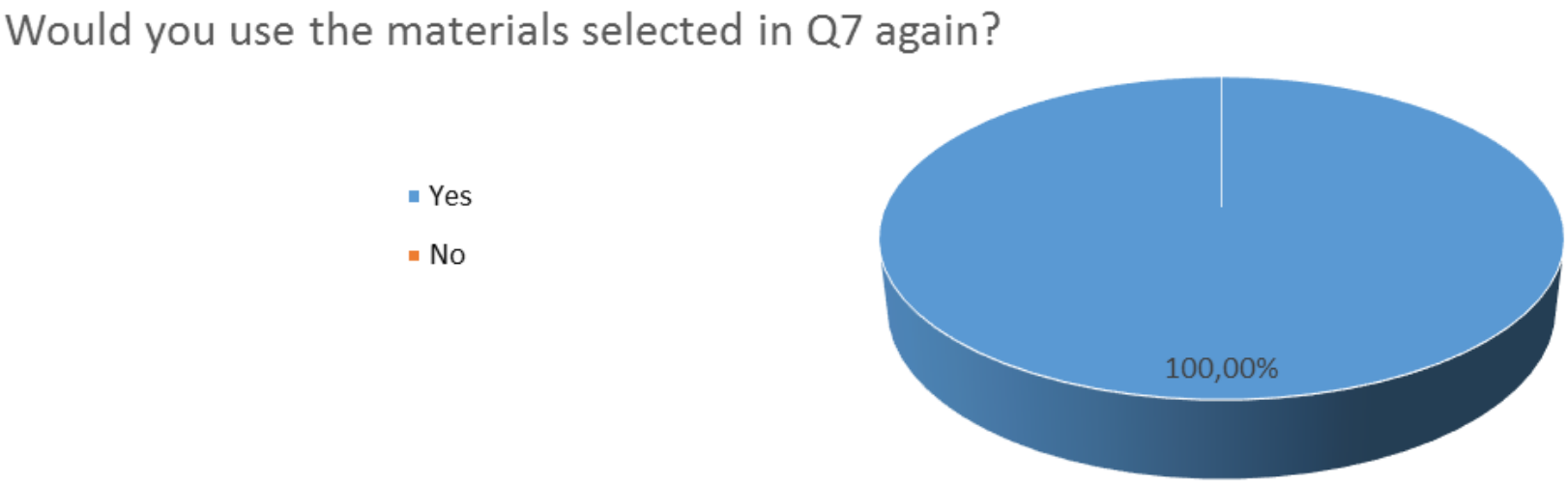
Q10 For all materials for which 'Used on project(s)' is selected in Q7; Thinking about the projects on which you used these materials. Why did you choose to use these materials?	%	No. Answers
Low cost	23,33%	7
Client required it	16,67%	5
Architect, engineer or contractor required it	6,67%	2
Fits with company ethos	16,67%	5
Felt morally obliged to use low impact material	3,33%	1
Offered best structural performance	0,00%	0
Offered low operating costs	10,00%	3
Earned points towards assessment scheme (e.g. BREEAM, LEED)	0,00%	0
Reduced construction schedule	6,67%	2
Desirable aesthetics	0,00%	0
Improved 'health' of building	13,33%	4
Regulatory requirement	3,33%	1
Other	0,00%	0



Q11 For all materials for which 'Used on project(s)' is selected in Q7; Would you use these materials again?	%	No. Answers
Yes	100,00%	14
No	0,00%	0



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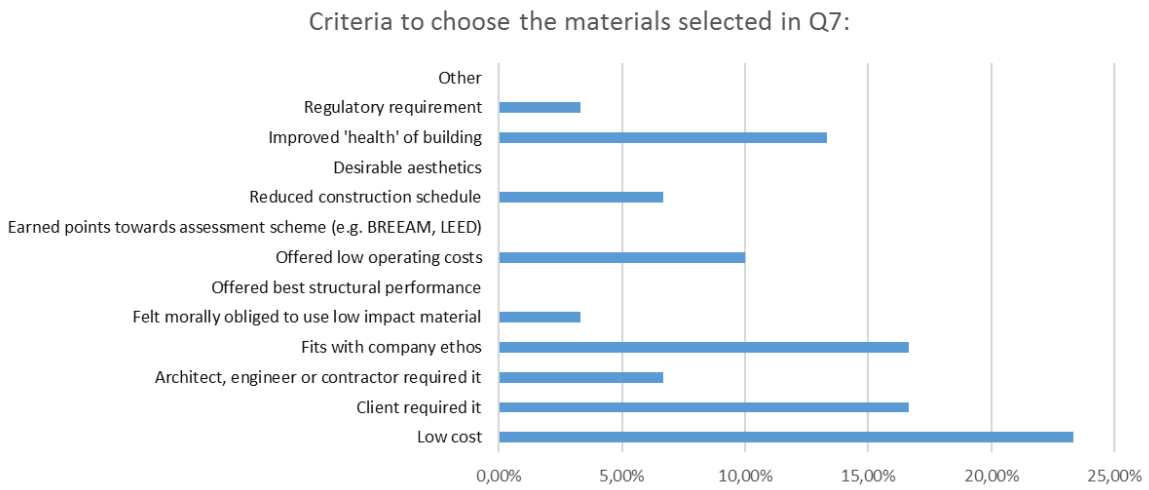
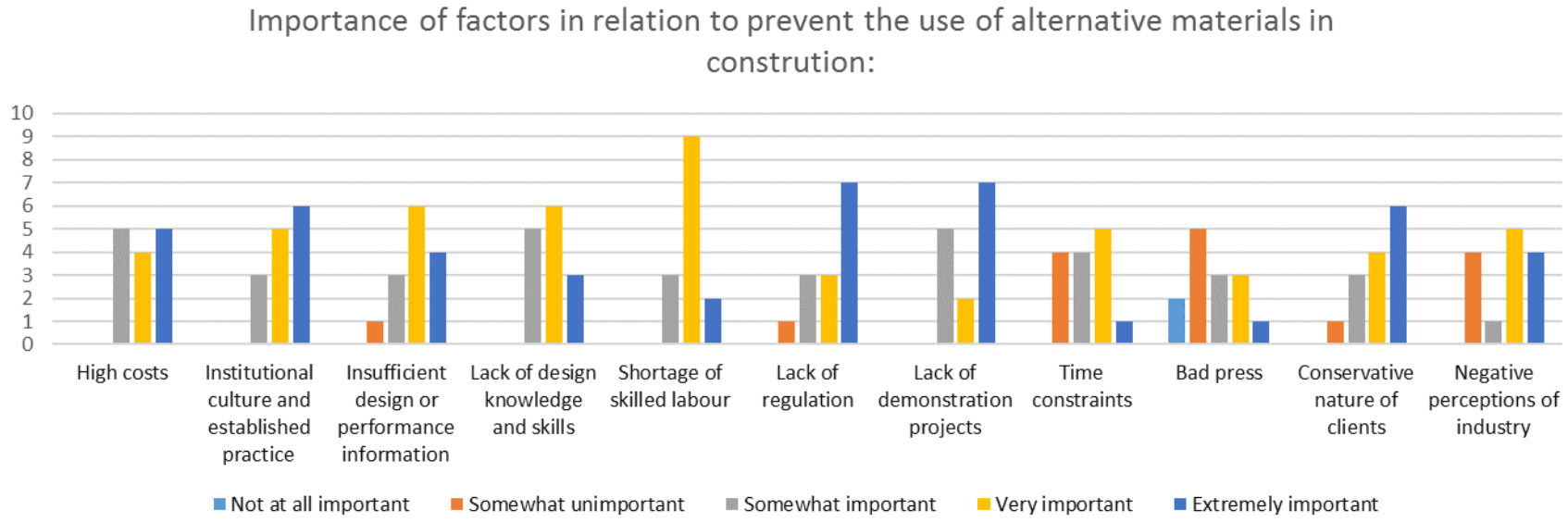
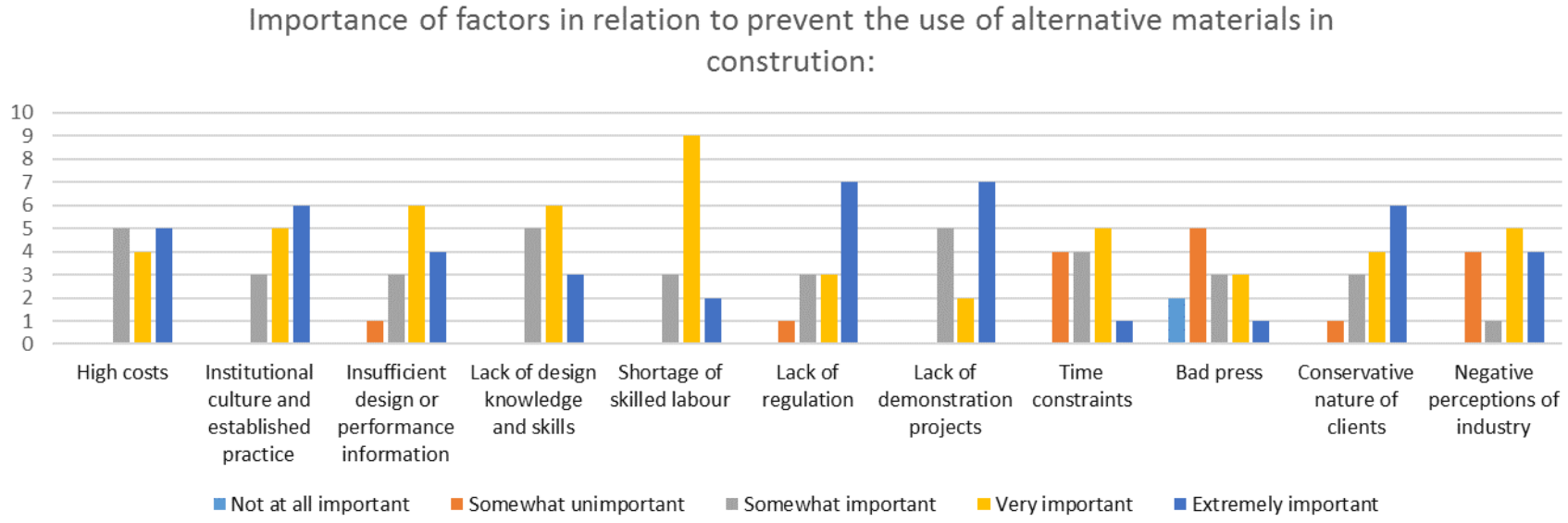
Q12 For all materials for which 'Aware of but not used' is selected in Q7; You stated that you are aware of but have not used the following materials on a project. Why have you chosen not to use these materials?	%	No. Answers
Not appropriate for type of projects I am typically engaged in	4,17%	2
Too costly	6,25%	3
Negative experiences of colleagues	0,00%	0
Negative perceptions held by clients	2,08%	1
Negative perceptions held by other project professionals	0,00%	0
Insufficient structural or thermal performance	0,00%	0
Concerns about durability	6,25%	3
Lack of technical knowledge or training	20,83%	10
Low availability of materials	6,25%	3
Low availability of skilled labour	4,17%	2
Too time consuming to design with	0,00%	0
Lack of established standards	10,42%	5
Lack of design guides and tools	14,58%	7
Lack of case studies or demonstration projects	12,50%	6
Insufficient fit with culture of clients	8,33%	4
Insurance issues	2,08%	1
Otro	2,08%	1



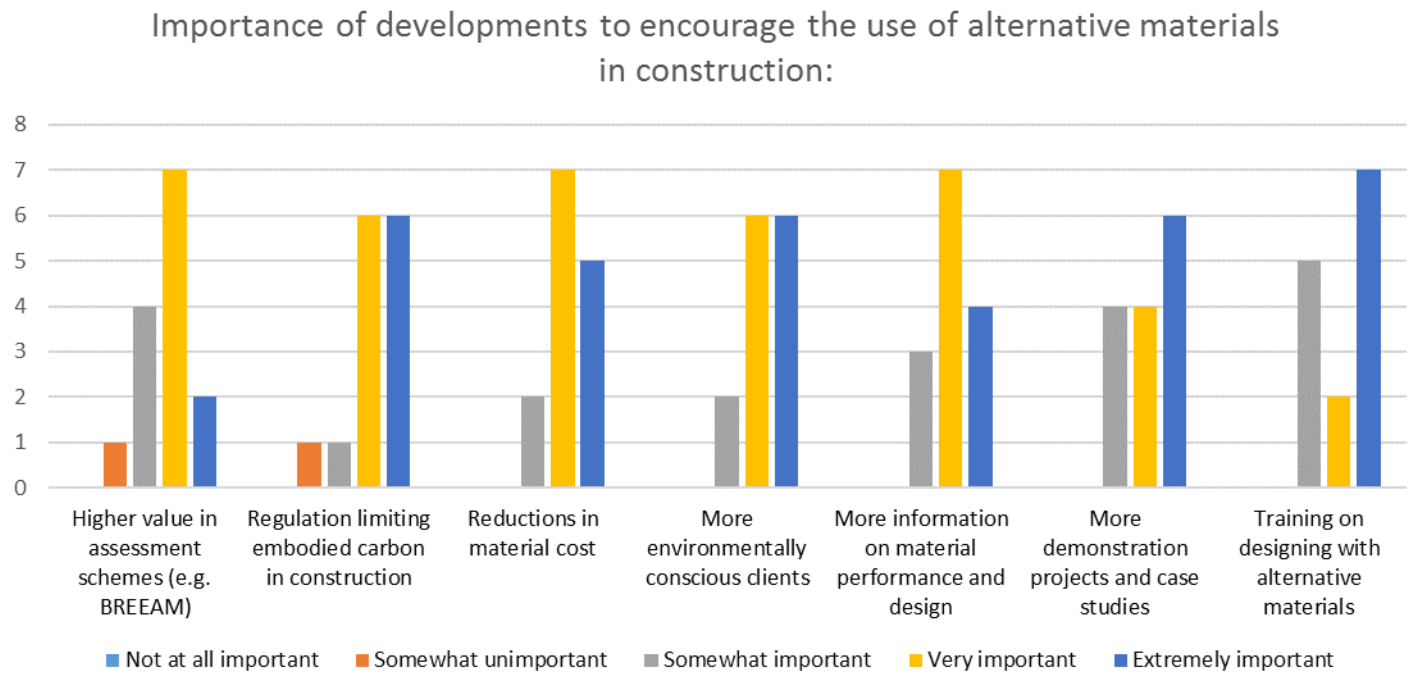
Q13 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
High costs	0	0	5	4	5
Institutional culture and established practice	0	0	3	5	6
Insufficient design or performance information	0	1	3	6	4
Lack of design knowledge and skills	0	0	5	6	3
Shortage of skilled labour	0	0	3	9	2
Lack of regulation	0	1	3	3	7
Lack of demonstration projects	0	0	5	2	7
Time constraints	0	4	4	5	1
Bad press	2	5	3	3	1
Conservative nature of clients	0	1	3	4	6
Negative perceptions of industry	0	4	1	5	4



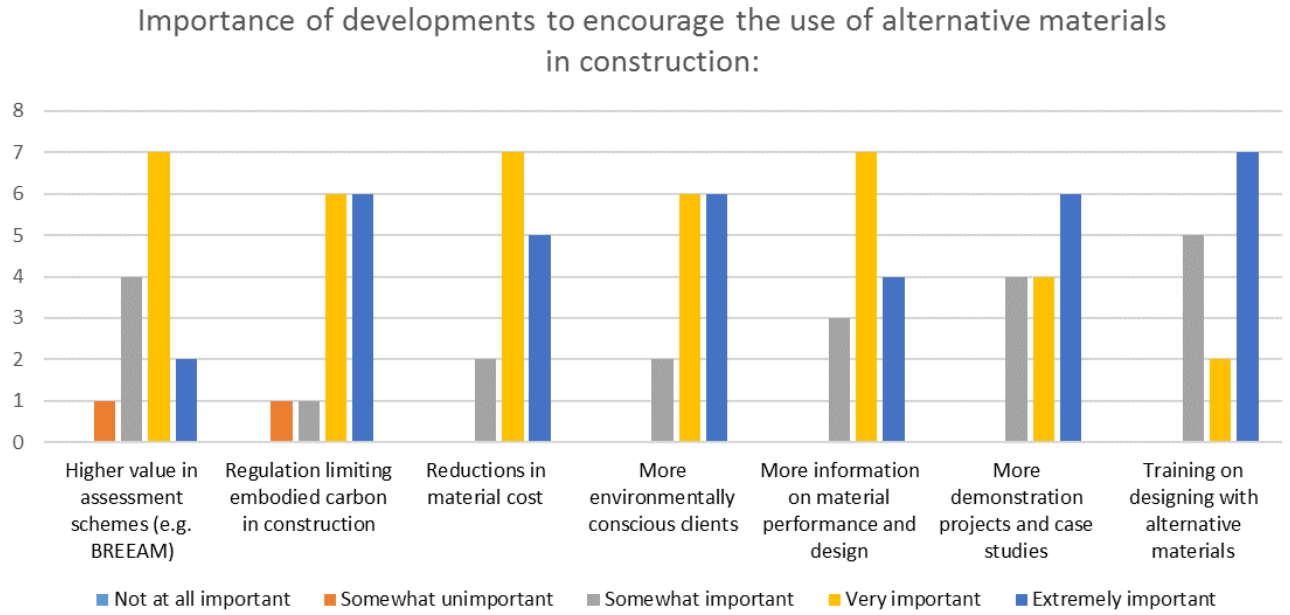
Q13 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
	%	%	%	%	%
High costs	0,00%	0,00%	35,71%	**28,57%**	35,71%
Institutional culture and established practice	0,00%	0,00%	21,43%	**35,71%**	42,86%
Insufficient design or performance information	0,00%	7,14%	21,43%	**42,86%**	28,57%
Lack of design knowledge and skills	0,00%	0,00%	35,71%	**42,86%**	21,43%
Shortage of skilled labour	0,00%	0,00%	21,43%	**64,29%**	14,29%
Lack of regulation	0,00%	7,14%	21,43%	**21,43%**	50,00%
Lack of demonstration projects	0,00%	0,00%	**35,71%**	**14,29%**	50,00%
Time constraints	0,00%	28,57%	**28,57%**	35,71%	7,14%
Bad press	14,29%	**35,71%**	21,43%	21,43%	7,14%
Conservative nature of clients	0,00%	7,14%	21,43%	**28,57%**	42,86%
Negative perceptions of industry	0,00%	28,57%	**7,14%**	35,71%	28,57%



Q14 How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
Higher value in assessment schemes (e.g. BREEAM)	0	1	4	7	2
Regulation limiting embodied carbon in construction	0	1	1	6	6
Reductions in material cost	0	0	2	7	5
More environmentally conscious clients	0	0	2	6	6
More information on material performance and design	0	0	3	7	4
More demonstration projects and case studies	0	0	4	4	6
Training on designing with alternative materials	0	0	5	2	7

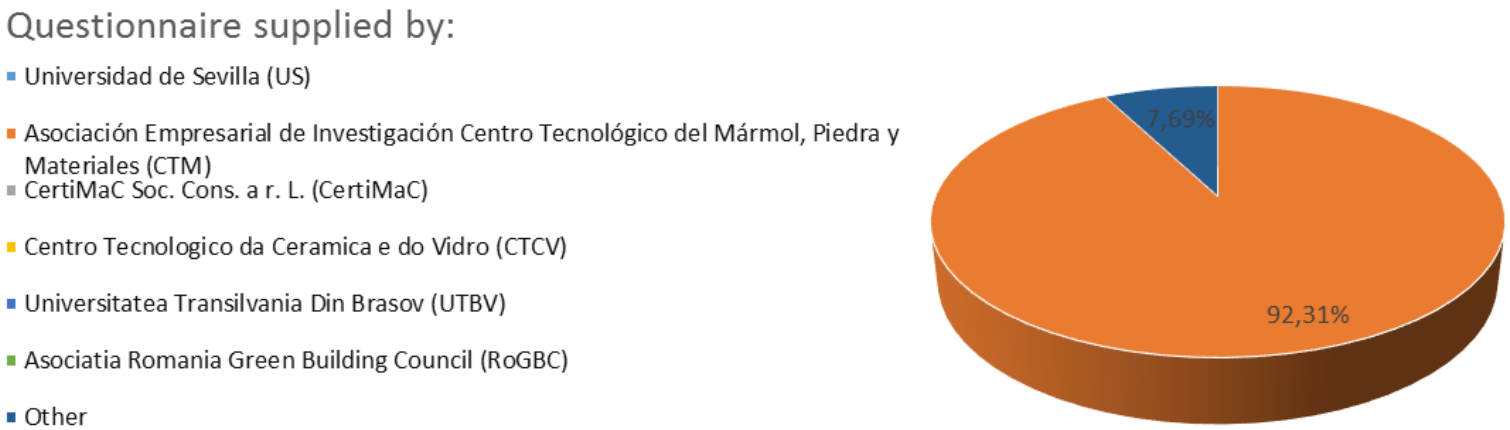


Q14 How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
	%	%	%	%	%
Higher value in assessment schemes (e.g. BREEAM)	0,00%	7,14%	**28,57%**	50,00%	14,29%
Regulation limiting embodied carbon in construction	0,00%	7,14%	7,14%	**42,86%**	42,86%
Reductions in material cost	0,00%	0,00%	14,29%	**50,00%**	35,71%
More environmentally conscious clients	0,00%	0,00%	14,29%	**42,86%**	42,86%
More information on material performance and design	0,00%	0,00%	21,43%	**50,00%**	28,57%
More demonstration projects and case studies	0,00%	0,00%	28,57%	**28,57%**	42,86%
Training on designing with alternative materials	0,00%	0,00%	35,71%	**14,29%**	50,00%

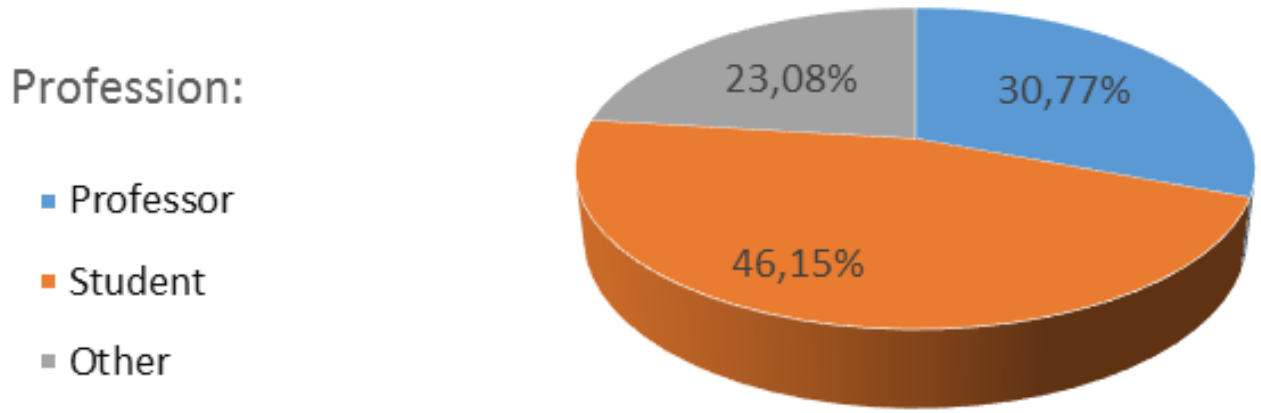


RESULTS OF THE SURVEY AT ACADEMIC LEVEL

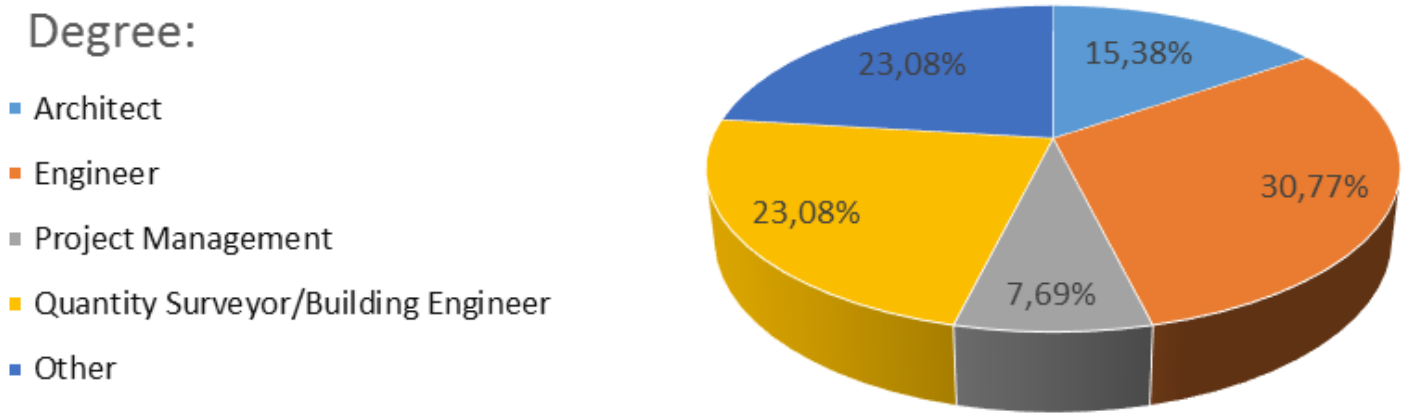
Q0 Questionnaire supplied by:	%	No. Answers
Universidad de Sevilla (US)	0,00%	0
Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)	92,31%	12
CertiMaC Soc. Cons. a r. L. (CertiMaC)	0,00%	0
Centro Tecnologico da Ceramica e do Vidro (CTCV)	0,00%	0
Universitatea Transilvania Din Brasov (UTBV)	0,00%	0
Asociatia Romania Green Building Council (RoGBC)	0,00%	0
Other	7,69%	1



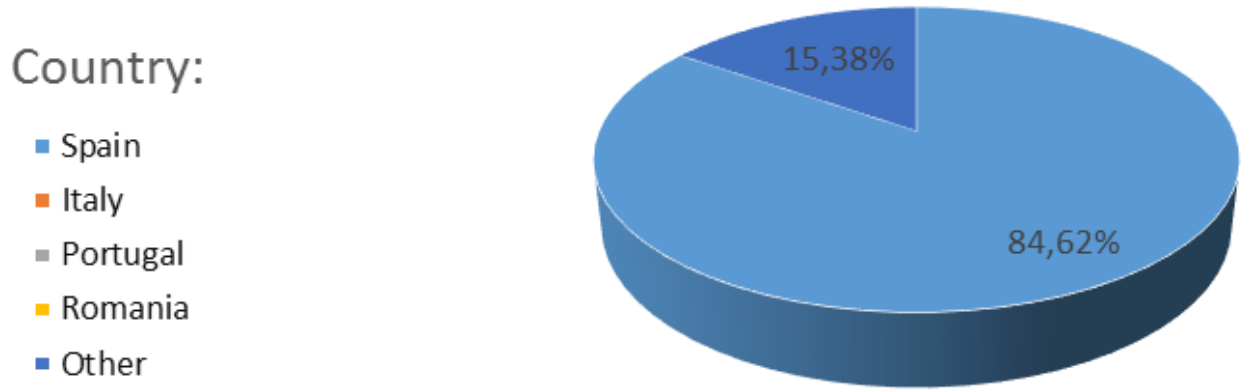
Q1 What is your profession?	%	No. Answers
Professor	30,77%	4
Student	46,15%	6
Other	23,08%	3



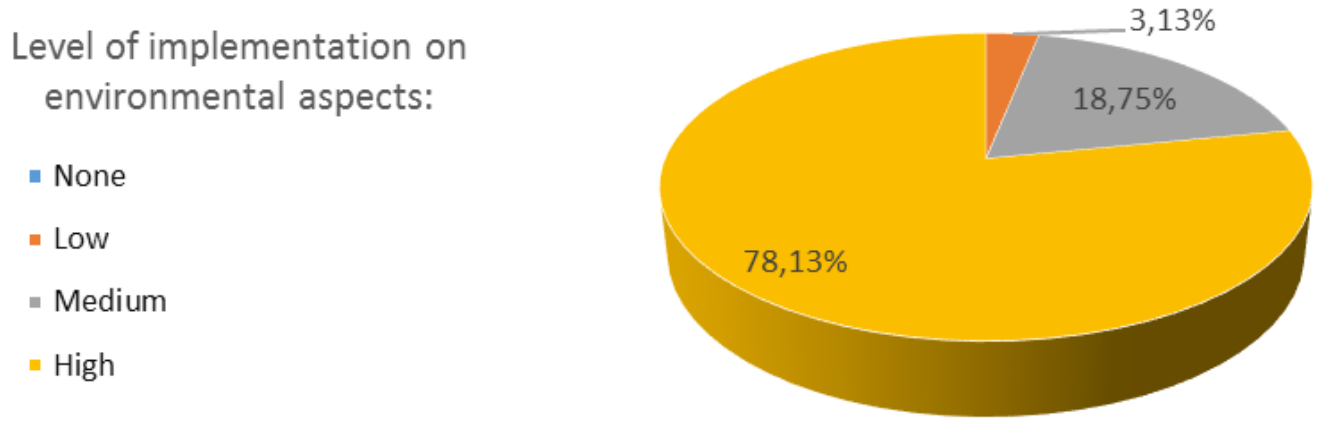
Q2 Degree	%	No. Answers
Architect	15,38%	2
Engineer	30,77%	4
Project Management	7,69%	1
Quantity Surveyor/Building Engineer	23,08%	3
Other	23,08%	3



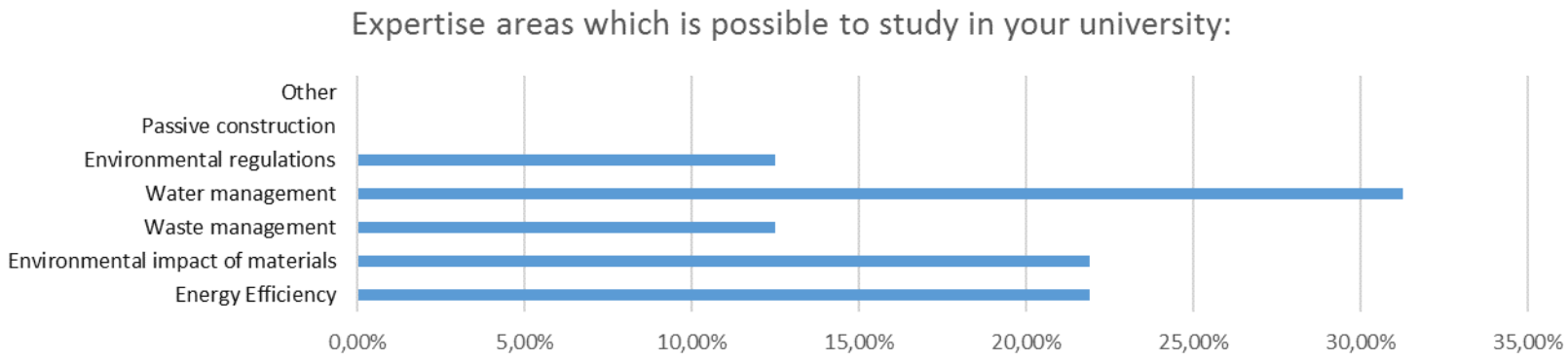
Q3 In which country do you study/work?	%	No. Answers
Spain	84,62%	11
Italy	0,00%	0
Portugal	0,00%	0
Romania	0,00%	0
Other	15,38%	2



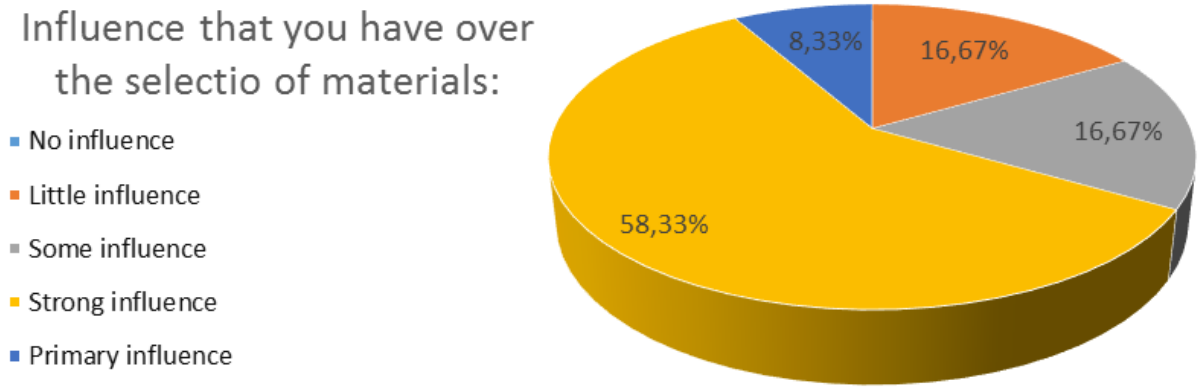
Q4 How is the level of implementation on environmental aspects in your studies?	%	No. Answers
None	0,00%	0
Low	3,13%	1
Medium	18,75%	6
High	78,13%	25



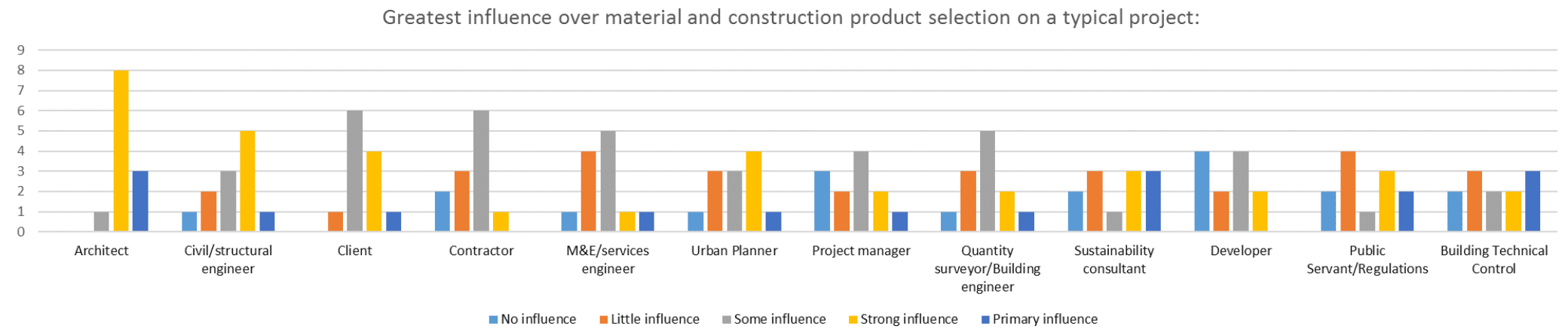
Q5 About the following expertise areas, which of them it is possible to study in your university?	%	No. Answers
Energy Efficiency	21,88%	7
Environmental impact of materials	21,88%	7
Waste management	12,50%	4
Water management	31,25%	10
Environmental regulations	12,50%	4
Passive construction	0,00%	0
Other	0,00%	0



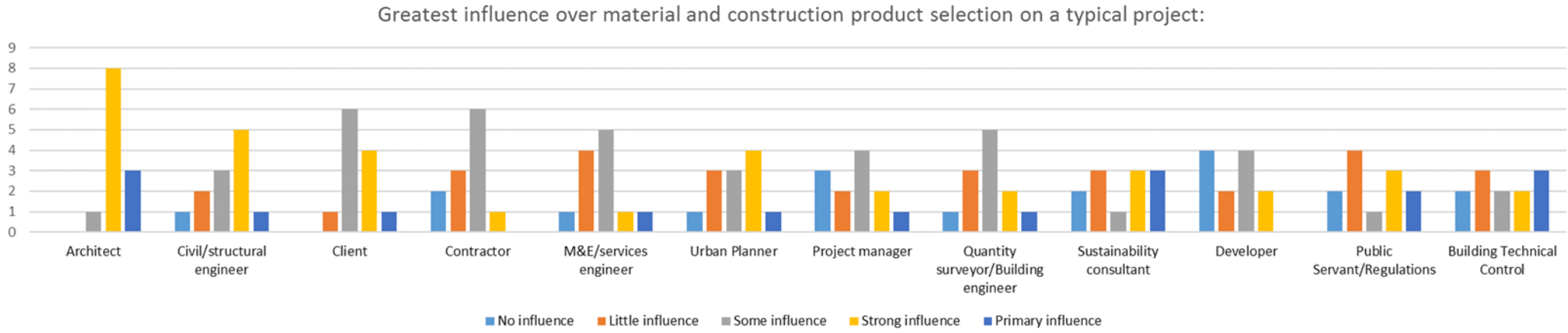
Q6 According to your degree, how much influence do you think that you have over the selection of materials and construction products on a typical project?	%	No. Answers
No influence	0,00%	0
Little influence	16,67%	2
Some influence	16,67%	2
Strong influence	58,33%	7
Primary influence	8,33%	1



Q7 Who do you believe has the greatest influence over material and construction product selection on a typical project?	No influence	Little influence	Some influence	Strong influence	Primary influence
Architect	0	0	1	8	3
Civil/structural engineer	1	2	3	5	1
Client	0	1	6	4	1
Contractor	2	3	6	1	0
M&E/services engineer	1	4	5	1	1
Urban Planner	1	3	3	4	1
Project manager	3	2	4	2	1
Quantity surveyor/Building engineer	1	3	5	2	1
Sustainability consultant	2	3	1	3	3
Developer	4	2	4	2	0
Public Servant/Regulations	2	4	1	3	2
Building Technical Control	2	3	2	2	3



Q7 Who do you believe has the greatest influence over material and construction product selection on a typical project?	No influence	Little influence	Some influence	Strong influence	Primary influence
	%	%	%	%	%
Architect	0,00%	0,00%	8,33%	**66,67%**	25,00%
Civil/structural engineer	8,33%	16,67%	25,00%	**41,67%**	8,33%
Client	0,00%	8,33%	**50,00%**	33,33%	8,33%
Contractor	16,67%	25,00%	**50,00%**	8,33%	0,00%
M&E/services engineer	8,33%	33,33%	**41,67%**	8,33%	8,33%
Urban Planner	8,33%	25,00%	**25,00%**	33,33%	8,33%
Project manager	25,00%	16,67%	**33,33%**	16,67%	8,33%
Quantity surveyor/Building engineer	8,33%	25,00%	**41,67%**	16,67%	8,33%
Sustainability consultant	16,67%	25,00%	**8,33%**	25,00%	25,00%
Developer	33,33%	16,67%	**33,33%**	16,67%	0,00%
Public Servant/Regulations	16,67%	**33,33%**	8,33%	25,00%	16,67%
Building Technical Control	16,67%	25,00%	**16,67%**	16,67%	25,00%



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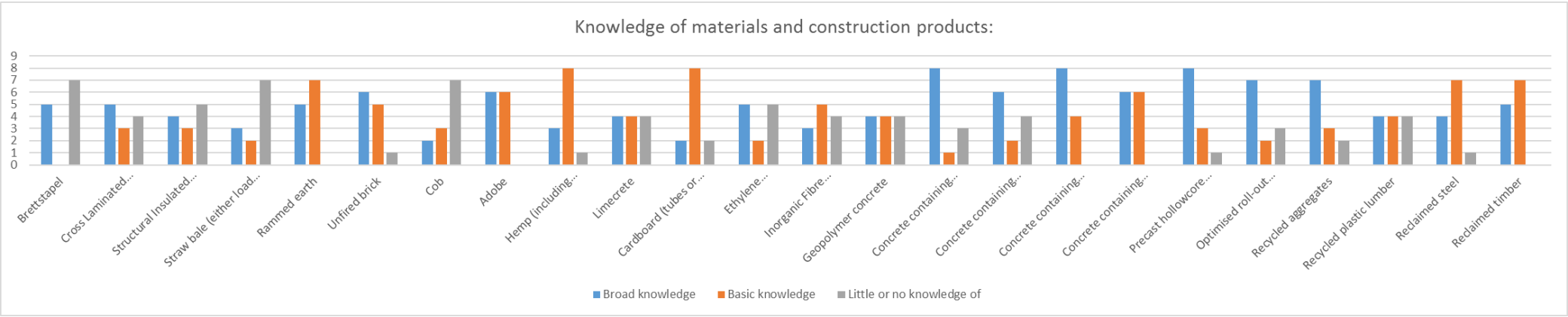
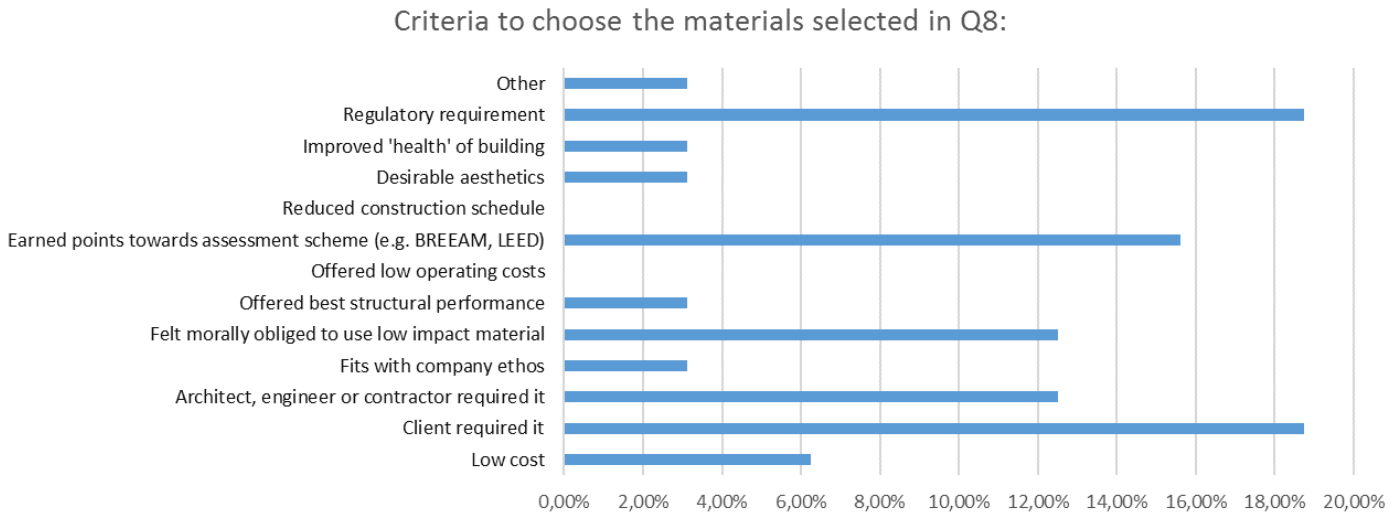
Q8 What is your knowledge of the following materials and construction products?	Broad knowledge	Basic knowledge	Little or no knowledge of
Brettstapel	5	0	7
Cross Laminated Timber (CLT)	5	3	4
Structural Insulated Panels (SIPs)	4	3	5
Straw bale (either load bearing, infill or modular)	3	2	7
Rammed earth	5	7	0
Unfired brick	6	5	1
Cob	2	3	7
Adobe	6	6	0
Hemp (including hemp-lime composites)	3	8	1
Limecrete	4	4	4
Cardboard (tubes or panels)	2	8	2
Ethylene tetrafluoroethylene (ETFE)	5	2	5
Inorganic Fibre Reinforced Polymers (FRP)	3	5	4
Geopolymer concrete	4	4	4
Concrete containing agricultural wastes (e.g. rice husks, vegetable fibres or nut shells)	8	1	3
Concrete containing consumer wastes (e.g. plastics, glass or tyres)	6	2	4
Concrete containing construction and demolition wastes	8	4	0
Concrete containing industrial wastes (e.g. steel slag, sewage sludge ash, silica fume)	6	6	0
Precast hollowcore floor slabs	8	3	1
Optimised roll-out reinforcement meshes	7	2	3
Recycled aggregates	7	3	2
Recycled plastic lumber	4	4	4
Reclaimed steel	4	7	1
Reclaimed timber	5	7	0


Knowledge of materials and construction products:
9
8
7
6
5
4
3
2
1
0
Brettstapel
Cross Laminated...
Structural Insulated...
Straw bale (either load...
Rammed earth
Unfired brick
Cob
Adobe
Hemp (including...
Limecrete
Cardboard (tubes or...
Ethylene...
Inorganic Fibre...
Geopolymer concrete
Concrete containing...
Concrete containing...
Concrete containing...
Concrete containing...
Precast hollowcore...
Optimised roll-out...
Recycled aggregates
Recycled plastic lumber
Reclaimed steel
Reclaimed timber
Broad knowledge
Basic knowledge
Little or no knowledge of

Q8 What is your knowledge of the following materials and construction products?	Broad knowledge	Basic knowledge	Little or no knowledge of
	%	%	%
Brettstapel	41,67%	0,00%	**58,33%**
Cross Laminated Timber (CLT)	41,67%	**25,00%**	33,33%
Structural Insulated Panels (SIPs)	33,33%	**25,00%**	41,67%
Straw bale (either load bearing, infill or modular)	25,00%	16,67%	**58,33%**
Rammed earth	41,67%	**58,33%**	0,00%
Unfired brick	50,00%	**41,67%**	8,33%
Cob	16,67%	25,00%	**58,33%**
Adobe	50,00%	**50,00%**	0,00%
Hemp (including hemp-lime composites)	25,00%	**66,67%**	8,33%
Limecrete	33,33%	33,33%	**33,33%**
Cardboard (tubes or panels)	16,67%	**66,67%**	16,67%
Ethylene tetrafluoroethylene (ETFE)	41,67%	16,67%	**41,67%**
Inorganic Fibre Reinforced Polymers (FRP)	25,00%	41,67%	**33,33%**
Geopolymer concrete	33,33%	33,33%	**33,33%**
Concrete containing agricultural wastes (e.g. rice husks, vegetable fibres or nut shells)	66,67%	**8,33%**	25,00%
Concrete containing consumer wastes (e.g. plastics, glass or tyres)	50,00%	16,67%	**33,33%**
Concrete containing construction and demolition wastes	66,67%	**33,33%**	0,00%
Concrete containing industrial wastes (e.g. steel slag, sewage sludge ash, silica fume)	50,00%	**50,00%**	0,00%
Precast hollowcore floor slabs	66,67%	**25,00%**	8,33%
Optimised roll-out reinforcement meshes	58,33%	**16,67%**	25,00%
Recycled aggregates	58,33%	**25,00%**	16,67%
Recycled plastic lumber	33,33%	**33,33%**	33,33%
Reclaimed steel	33,33%	**58,33%**	8,33%
Reclaimed timber	41,67%	**58,33%**	0,00%

Q9 For all materials for which 'Broad knowledge' is selected in Q8; In general aspects, which is reason you would choose to use these materials?	%	No. Answers
Low cost	6,25%	2
Client required it	18,75%	6
Architect, engineer or contractor required it	12,50%	4
Fits with company ethos	3,13%	1
Felt morally obliged to use low impact material	12,50%	4
Offered best structural performance	3,13%	1
Offered low operating costs	0,00%	0
Earned points towards assessment scheme (e.g. BREEAM, LEED)	15,63%	5
Reduced construction schedule	0,00%	0
Desirable aesthetics	3,13%	1
Improved 'health' of building	3,13%	1
Regulatory requirement	18,75%	6
Other	3,13%	1



Q10 For all materials for which 'Broad knowledge or Basic knowledge' is selected in Q8. You stated that you have broad or basic knowledge of the mentioned materials. Which is reason you wouldn't choose to use these materials?	%	No. Answers
Not appropriate for type of projects I am typically engaged in	0,00%	0
Too costly	21,95%	9
Negative experiences of colleagues	2,44%	1
Negative perceptions held by clients	2,44%	1
Negative perceptions held by other project professionals	2,44%	1
Insufficient structural or thermal performance	4,88%	2
Concerns about durability	12,20%	5
Lack of technical knowledge or training	9,76%	4
Low availability of materials	4,88%	2
Low availability of skilled labour	7,32%	3
Too time consuming to design with	0,00%	0
Lack of established standards	9,76%	4
Lack of design guides and tools	9,76%	4
Lack of case studies or demonstration projects	7,32%	3
Insufficient fit with culture of clients	0,00%	0
Insurance issues	4,88%	2
Other	0,00%	0

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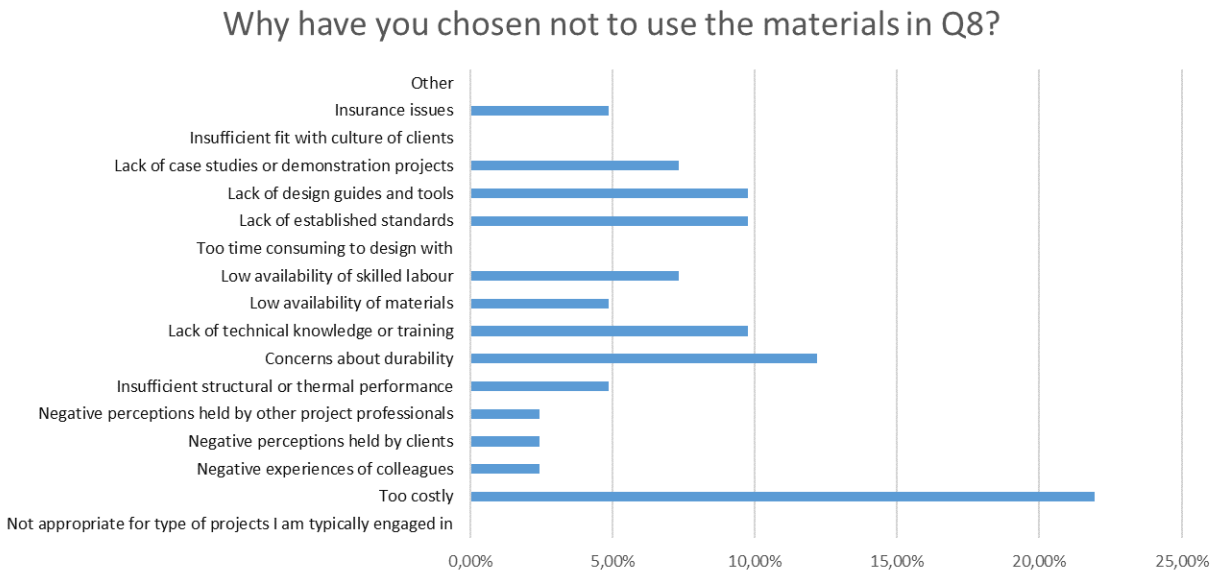
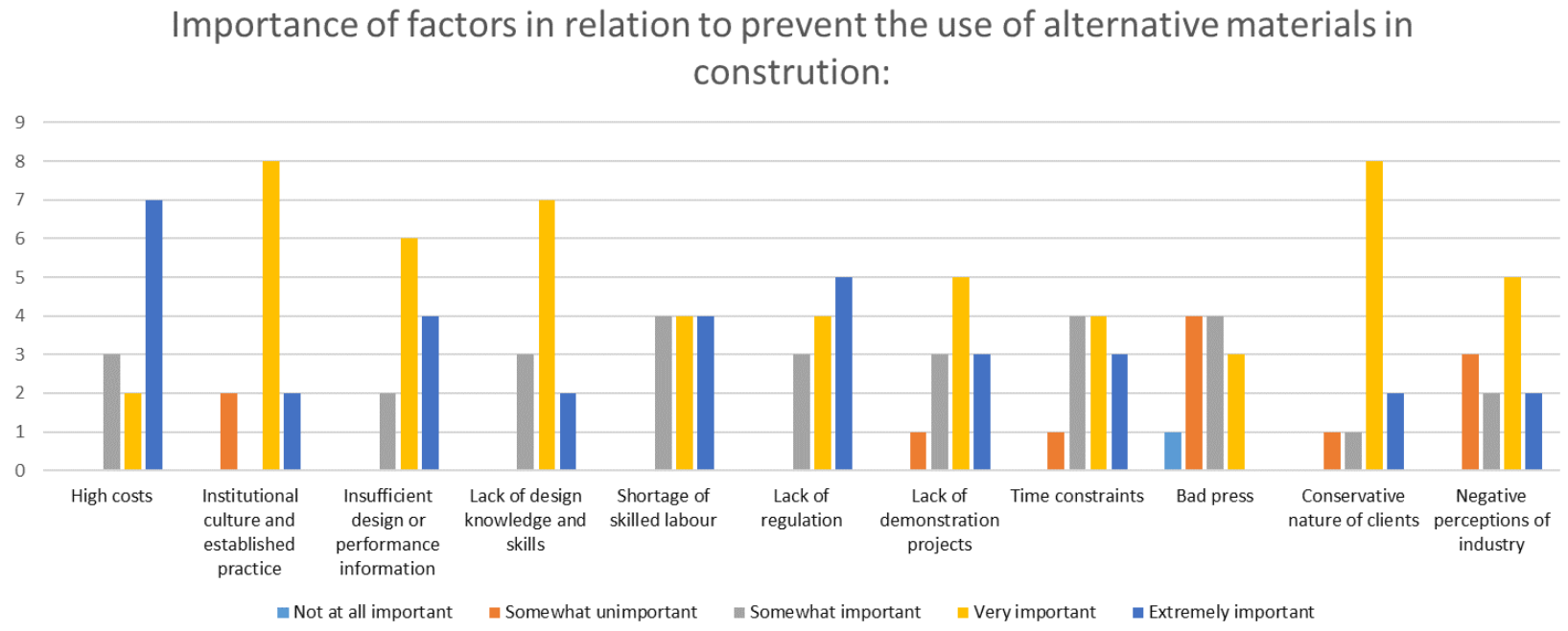
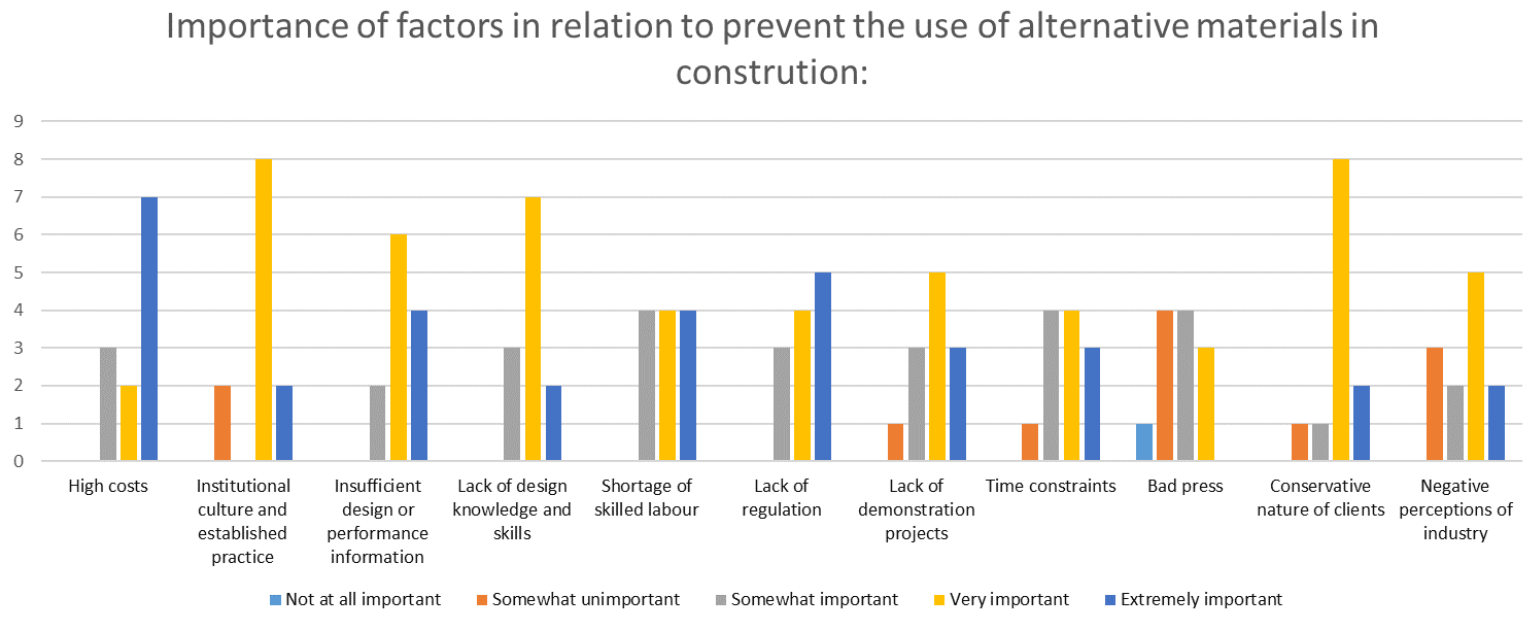


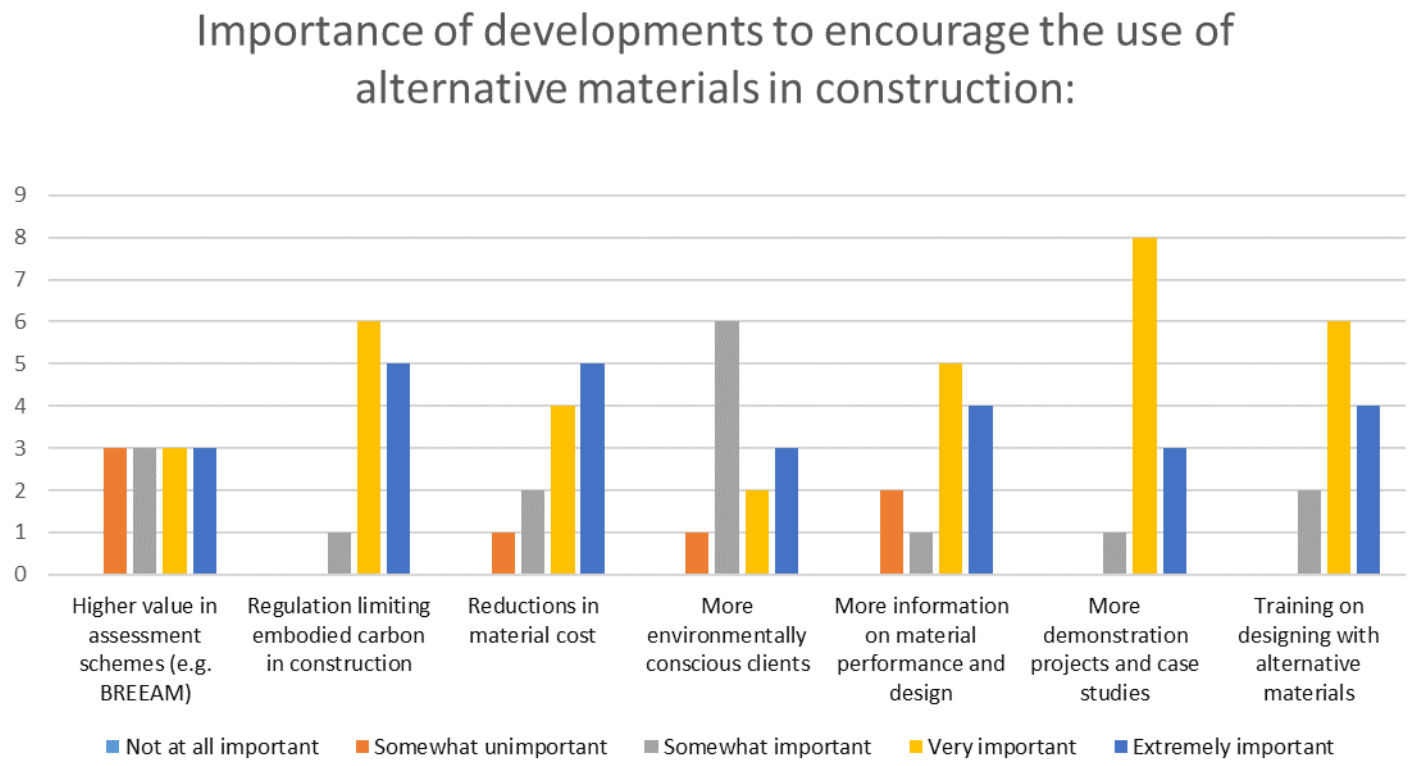
Q11 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
High costs	0	0	3	2	7
Institutional culture and established practice	0	2	0	8	2
Insufficient design or performance information	0	0	2	6	4
Lack of design knowledge and skills	0	0	3	7	2
Shortage of skilled labour	0	0	4	4	4
Lack of regulation	0	0	3	4	5
Lack of demonstration projects	0	1	3	5	3
Time constraints	0	1	4	4	3
Bad press	1	4	4	3	0
Conservative nature of clients	0	1	1	8	2
Negative perceptions of industry	0	3	2	5	2



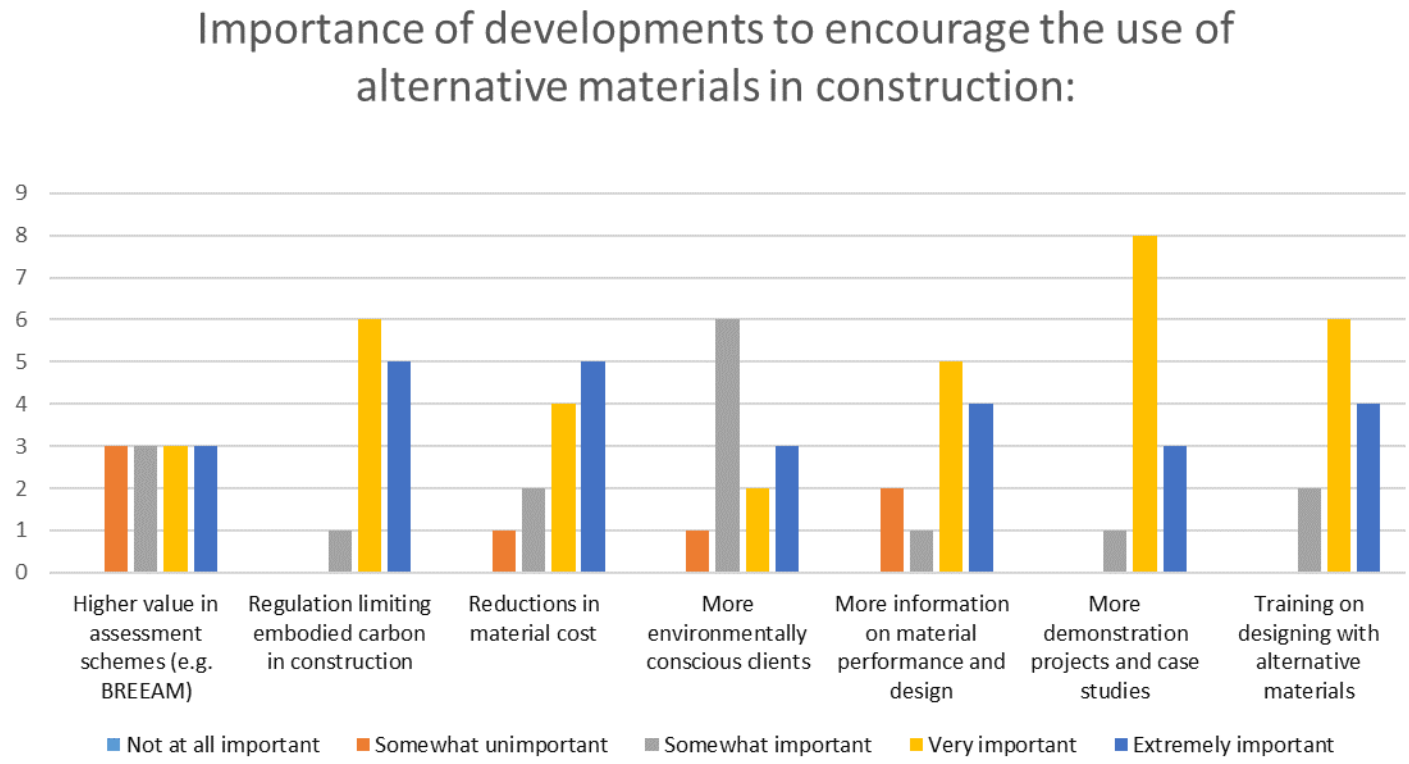
Q11 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
	%	%	%	%	%
High costs	0,00%	0,00%	25,00%	**16,67%**	58,33%
Institutional culture and established practice	0,00%	16,67%	0,00%	**66,67%**	16,67%
Insufficient design or performance information	0,00%	0,00%	16,67%	**50,00%**	33,33%
Lack of design knowledge and skills	0,00%	0,00%	25,00%	**58,33%**	16,67%
Shortage of skilled labour	0,00%	0,00%	33,33%	**33,33%**	33,33%
Lack of regulation	0,00%	0,00%	25,00%	**33,33%**	41,67%
Lack of demonstration projects	0,00%	8,33%	25,00%	**41,67%**	25,00%
Time constraints	0,00%	8,33%	33,33%	**33,33%**	25,00%
Bad press	8,33%	33,33%	**33,33%**	25,00%	0,00%
Conservative nature of clients	0,00%	8,33%	8,33%	**66,67%**	16,67%
Negative perceptions of industry	0,00%	25,00%	**16,67%**	41,67%	16,67%



Q12 How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
Higher value in assessment schemes (e.g. BREEAM)	0	3	3	3	3
Regulation limiting embodied carbon in construction	0	0	1	6	5
Reductions in material cost	0	1	2	4	5
More environmentally conscious clients	0	1	6	2	3
More information on material performance and design	0	2	1	5	4
More demonstration projects and case studies	0	0	1	8	3
Training on designing with alternative materials	0	0	2	6	4



Q12 How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
	%	%	%	%	%
Higher value in assessment schemes (e.g. BREEAM)	0,00%	25,00%	**25,00%**	25,00%	25,00%
Regulation limiting embodied carbon in construction	0,00%	0,00%	8,33%	**50,00%**	41,67%
Reductions in material cost	0,00%	8,33%	16,67%	**33,33%**	41,67%
More environmentally conscious clients	0,00%	8,33%	50,00%	**16,67%**	25,00%
More information on material performance and design	0,00%	16,67%	8,33%	**41,67%**	33,33%
More demonstration projects and case studies	0,00%	0,00%	8,33%	66,67%	25,00%
Training on designing with alternative materials	0,00%	0,00%	16,67%	50,00%	33,33%



MAIN RESULTS OF THE SURVEY

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At the Seminar level, the main results of the survey are shown in the table below. The specific answers to the questionnaire of each score, as well as the questions common to both will be exposed, in order to benchmark the results to analyse the most significant differences.

ACADEMIC LEVEL			
Q1	Student	Professor	Other
	6	4	3
Q2	Engineer	Building engineer	Architect
	4	3	2
Q3	Spain	Other	Rest of answers
	11	2	0
Q4	Medium	High	Low
	6	5	1
Q5	Water management	Energy efficiency	Environmental impacts of materials
	10	7	7
Q6	Some influence	No influence	Little Influence
	7	2	2

PROFESSIONAL SCOPE			
Q1	Architect	Building engineer	Rest of answers
	6	3	3
Q2	Spain	Rest of answers	
	14	0	
Q3	Over 20 years 16-20 years	6-10 years 2-5 years	Less than 2 years
	3	2	1
Q4	1 (self-employed) 2-13	14-34	35-59
	5	2	1
Q5	Strong influence	Some influence	Little / Primary influence
	8	4	1

How much influence do you think that you have over the selection of materials and construction products on a typical project?

Depending on the profession or grade of the respondent, it is observable that professionals consider that they have more influence on the decision to choose the materials and construction products on a project, against the some influence that is considered to have at Academic level.

ACADEMIC LEVEL		
Q7	Greatest influence over material and construction product selection on a typical project:	
	Architect	Strong influence
	Civil/structural engineer	Strong influence
	Client	Some influence
	Contractor	Some influence
	M&E/services engineer	Some influence
	Urban Planner	Strong influence
	Project manager	Some influence
	Quantity surveyor/Building engineer	Some influence
	Sustainability consultant	Little influence
	Developer	No influence
	Public Servant/Regulations	Little influence
	Building Technical Control	Strong influence

PROFESSIONAL SCOPE		
Q6	Greatest influence over material and construction product selection on a typical project:	
	Architect	Strong influence
	Civil/structural engineer	Strong influence
	Client	Primary influence
	Contractor	Some influence
	M&E/services engineer	Some influence
	Urban Planner	Strong influence Some influence
	Project manager	Some influence
	Quantity surveyor/Building engineer	Some influence
	Sustainability consultant	Strong influence
	Developer	Some influence
	Public Servant/Regulations	Primary influence
	Building Technical Control	Primary influence

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Professional emphasizes in this point the great influence that the client has in the decision in front of the some influence shown at Academic level

In the same way, in the case of sustainability consultant and regulations, Professionals show greater influence

ACADEMIC LEVEL		
Q8	What is your knowledge of the following materials and construction products?	
	Brettstapel	Little or no knowledge
	Cross Laminated Timber (CLT)	Broad knowledge
	Structural Insulated Panels (SIPs)	Little or no knowledge
	Straw bale (either load bearing, infill or modular)	Little or no knowledge
	Rammed earth	Basic knowledge
	Unfired brick	Broad knowledge
	Cob	Little or no knowledge
	Adobe	Broad knowledge Basic
	Hemp (including hemp-lime composites)	Basic knowledge
	Limecrete	Basic knowledge
	Cardboard (tubes or panels)	Basic knowledge

PROFESSIONAL SCOPE		
Q7	What is your knowledge of the following materials and construction products?	
	Brettstapel	Little or no knowledge
	Cross Laminated Timber (CLT)	Used on project(s)
	Structural Insulated Panels (SIPs)	Little or no knowledge
	Straw bale (either load bearing, infill or modular)	Aware of but not used
	Rammed earth	Aware of but not used
	Unfired brick	Aware of but not used
	Cob	Little or no knowledge
	Adobe	Aware of but not used
	Hemp (including hemp-lime composites)	Aware of but not used
	Limecrete	Aware of but not used
	Cardboard (tubes or panels)	Aware of but not used

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It is noted that on this point, saves some exceptions referred, It is worrying that both for Academic and Professional score, the level of knowledge of these materials is basic and its use in building is scarce

Ethylene tetrafluoroethylene (ETFE)	Broad knowledge	Ethylene tetrafluoroethylene (ETFE)	Little or no knowledge
Inorganic Fibre Reinforced Polymers (FRP)	Basic knowledge	Inorganic Fibre Reinforced Polymers (FRP)	Little or no knowledge
Geopolymer concrete	Basic knowledge Little or no knowledge	Geopolymer concrete	Little or no knowledge
Concrete containing agricultural wastes	Broad knowledge	Concrete containing agricultural wastes	Little or no knowledge
Concrete containing consumer wastes	Broad knowledge	Concrete containing consumer wastes	Little or no knowledge
Concrete containing construction and demolition wastes	Broad knowledge	Concrete containing construction and demolition wastes	Aware of but not used
Concrete containing industrial wastes	Basic knowledge	Concrete containing industrial wastes	Little or no knowledge
Precast hollowcore floor slabs	Broad knowledge	Precast hollowcore floor slabs	Used on project(s)
Optimised roll-out reinforcement meshes	Broad knowledge	Optimised roll-out reinforcement meshes	Used on project(s)
Recycled aggregates	Broad knowledge	Recycled aggregates	Used on project(s)
Recycled plastic lumber	Broad knowledge	Recycled plastic lumber	Little or no knowledge
Reclaimed steel	Basic knowledge	Reclaimed steel	Aware of but not used
Reclaimed timber	Basic knowledge	Reclaimed timber	Little or no knowledge

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It is noted that on this point, saves some exceptions referred, It is worrying that both for Academic and Professional score, the level of knowledge of these materials is basic and its use in building is scarce

How often have you use these material (Q7) and how would you rate your experience of using each of these materials? Would you use these materials again?

PROFESSIONAL SCOPE			
Q8	On multiple projects	On a single project	Material is routinely used or considered on all projects
	7	5	2
Q9	Somewhat positive	Neither positive or negative	Mostly positive
	7	5	2
Q11	Yes	No	
	14	0	

The level of acceptance of materials by professionals, once they have used them, is generally positive

About the questions about the opinion of the respondents, the most common answers were:

- No confirmation about their performance after installation.
- All materials used for LCA.
- These materials are important for human spece.

Why did you choose to use these materials?

ACADEMIC LEVEL			
Q9	Client required it / Regulatory requeriment	Earned points towards assessment scheme	Architect, engineer or contractor required it / Felt morally obliged to use low impact material
	6	5	4
Q10	Too costly	Concerns about durability	Lack of technical knowledge or training/established standards/ design guides and tools
	9	5	4

Why have you chosen not to use these materials?

PROFESSIONAL SCOPE			
Q10	Low cost	Client required it / Fits with company ethos	Improved "health" of building
	7	5	4
Q12	Lack of technical knowledge or training	Lack of design guides and tools	Lack of case studies or demostration projects
	10	7	6

At this point, it is remarkable how at Professional score the cost is an advantage for the use of these materials, while it is a disadvantage at Academic level

ACADEMIC LEVEL		
Q11	How important do you believe the following factors are in preventing their use?	
	High costs	Extremely important
	Institutional culture and established practice	Very important
	Insufficient design or performance information	Very important
	Lack of design knowledge and skills	Very important
	Shortage of skilled labour	Somewhat important Very important Extremely important
	Lack of regulation	Extremely important
	Lack of demonstration projects	Very important
	Time constraints	Somewhat important Very important
	Bad press	Somewhat unimportant Somewhat important
	Conservative nature of clients	Very important
	Negative perceptions of industry	Very important

PROFESSIONAL SCOPE		
Q13	How important do you believe the following factors are in preventing their use?	
	High costs	Very important
	Institutional culture and established practice	Very important
	Insufficient design or performance information	Very important
	Lack of design knowledge and skills	Very important
	Shortage of skilled labour	Very important
	Lack of regulation	Very important
	Lack of demonstration projects	Somewhat important
	Time constraints	Somewhat important
	Bad press	Somewhat unimportant
	Conservative nature of clients	Very important
	Negative perceptions of industry	Somewhat important

ACADEMIC LEVEL		
Q12	How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	
	Higher value in assessment	Very important
	Regulation limiting embodied carbon in construction	Very important
	Reductions in material cost	Extremely important
	More environmentally conscious clients	Very important
	More information on material performance and design	Very important
	More demonstration projects and case studies	Very important
	Training on designing with alternative materials	Very important

PROFESSIONAL SCOPE		
Q14	How important do you believe the following developments could be in encouraging greater use of alternative materials and construction products?	
	Higher value in assessment	Somewhat important
	Regulation limiting embodied carbon in construction	Very important
	Reductions in material cost	Very important
	More environmentally conscious clients	Very important
	More information on material performance and design	Very important
	More demonstration projects and case studies	Very important
	Training on designing with alternative materials	Very important

At this point, there is a reconciliation of Professional and Academic level point of view

MANY THANKS!