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

This project has been funded with support from the European Commission.
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OERCO2 project

INTELLECTUAL OUTPUT 1

1.2.1. REPORT WITH THE MATERIALS USED IN THE CONSTRUCTION OF BUILDINGS

PROFESSIONAL LEVEL

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)

DESCRIPTION OF THE SURVEY

This report has been used as presentation of the survey's results 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 survey is to collect information from the respondents, who are experts in the different fields of construction. Surveys were used as a means of collecting information, in order to analysed the construction methods of the countries involved and materials used in each process to be taken into account when making the total count of CO2 emissions is produced.

A survey was given or sent to each of the respondents, which corresponded to partner or enterprises within the network of the consortium partners. Some of them were sent by email and others were delivered in hand in project presentations

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 total of collected forms had a total of 142, both online and handwritten filled forms. 45 of them, were engineers, 34 were Quantity Surveyors or Building Engineers, 22 Architects and the remaining are other professionals related to construction sector.

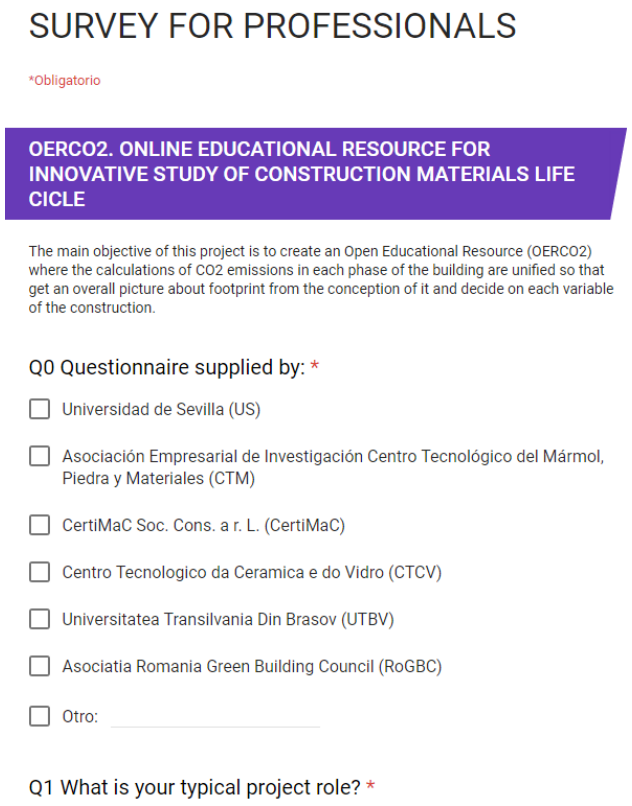
The feedback from experts' will be used to compile the most common materials and constructive processes in each participant country and to make the total count of CO2 emissions is produced.

LANGUAGES OF QUESTIONNAIRES

ENGLISH

LINKS

SURVEY FOR PROFESSIONALS



SURVEY FOR PROFESSIONALS

*Obligatorio

OERCO2. ONLINE EDUCATIONAL RESOURCE FOR INNOVATIVE STUDY OF CONSTRUCTION MATERIALS LIFE CICLE

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.

Q0 Questionnaire supplied by: *

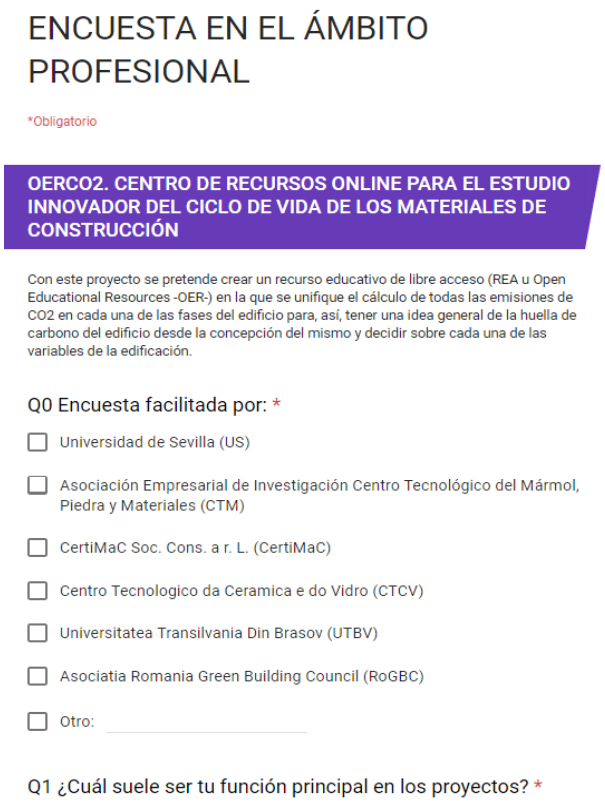
- [ ] Universidad de Sevilla (US)
- [ ] Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)
- [ ] CertiMaC Soc. Cons. a r. L. (CertiMaC)
- [ ] Centro Tecnologico da Ceramica e do Vidro (CTCV)
- [ ] Universitatea Transilvania Din Brasov (UTBV)
- [ ] Asociatia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

Q1 What is your typical project role? *

SPANISH

LINKS

ENCUESTA EN EL ÁMBITO PROFESIONAL



ENCUESTA EN EL ÁMBITO PROFESIONAL

*Obligatorio

OERCO2. CENTRO DE RECURSOS ONLINE PARA EL ESTUDIO INNOVADOR DEL CICLO DE VIDA DE LOS MATERIALES DE CONSTRUCCIÓN

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.

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 tu función principal en los proyectos? *

LANGUAGES OF QUESTIONNAIRES

ITALIAN

LINKS

QUESTIONARIO PER I PROFESSIONISTI DEL SETTORE COSTRUZIONI

QUESTIONARIO PER I PROFESSIONISTI DEL SETTORE COSTRUZIONI

*Obligatorio

OERCO2. ONLINE EDUCATIONAL RESOURCE FOR INNOVATIVE STUDY OF CONSTRUCTION MATERIALS LIFE CICLE

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.

Q0 Questionario fornito da: *

- [ ] 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 Qual' è il tuo ruolo in un progetto? *

PORTUGUESE

LINKS

INQUÉRITO A PROFISSIONAIS

INQUÉRITO A PROFISSIONAIS

*Obligatorio

OERCO2. RECURSOS EDUCATIVOS ONLINE PARA O ESTUDO INOVADOR DO CICLO DE VIDA DE MATERIAIS DE CONSTRUÇÃO.

O principal objetivo deste projeto é a criação de Recursos Educativos online (OERCO2) onde os cálculos das emissões de CO2 em cada etapa do processo construtivo do edifício são unificados de forma a obter-se uma pegada global desse edifício desde a etapa de conceção, permitindo decidir sobre cada variável da construção.

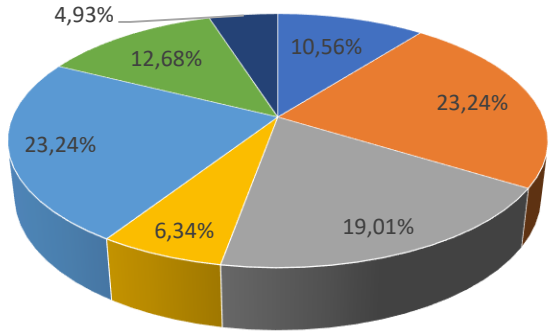
Q0 Questionário fornecido por: *

- [ ] 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 Qual é a sua função na elaboração de um projeto? *

- [ ] Arquiteto

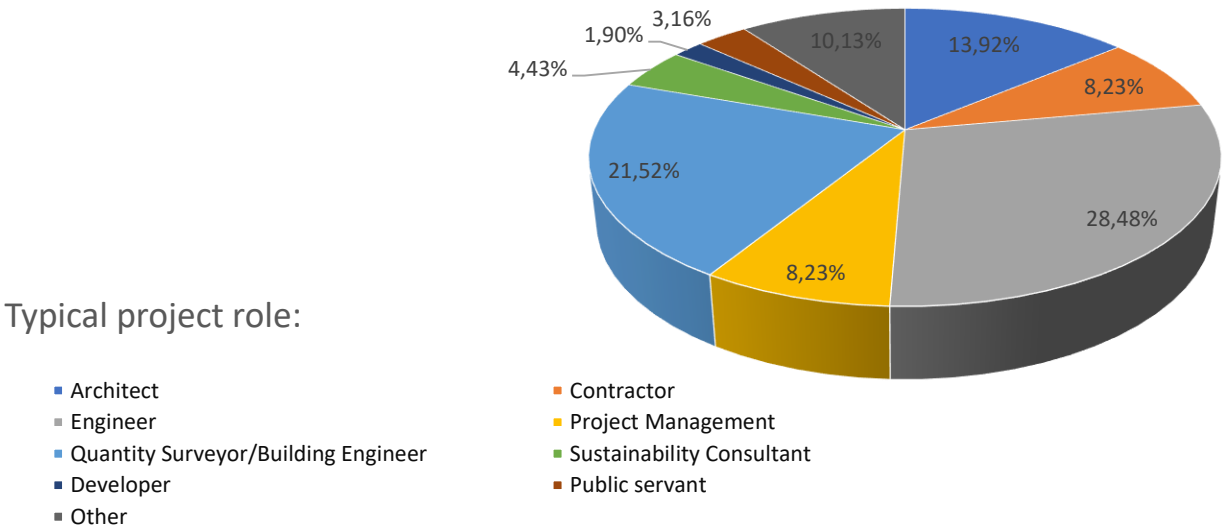
Q0 Questionnaire supplied by:	%	No. Answers
Universidad de Sevilla (US)	10,56%	15
Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)	23,24%	33
CertiMaC Soc. Cons. a r. L. (CertiMaC)	19,01%	27
Centro Tecnologico da Ceramica e do Vidro (CTCV)	6,34%	9
Universitatea Transilvania Din Brasov (UTBV)	23,24%	33
Asociatia Romania Green Building Council (RoGBC)	12,68%	18
Other	4,93%	7



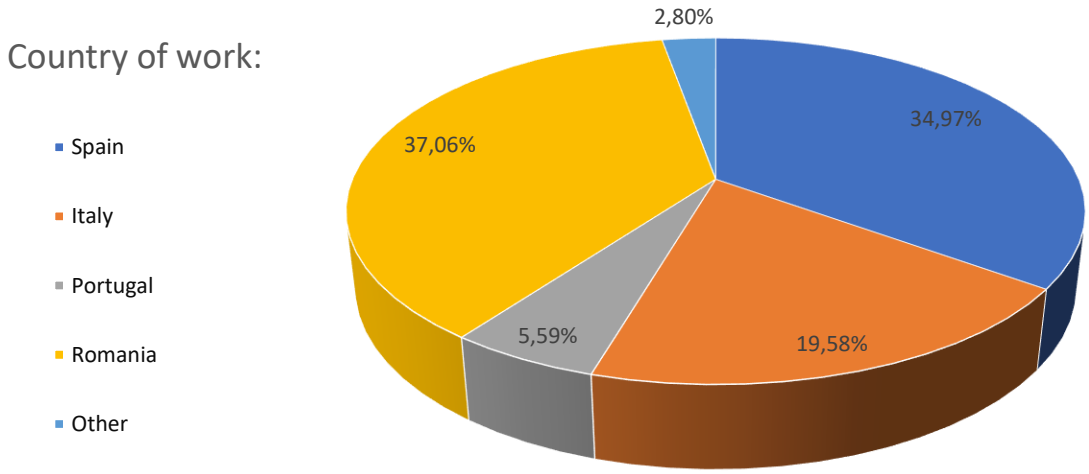
Questionnaire supplied by:

- 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)
- Other

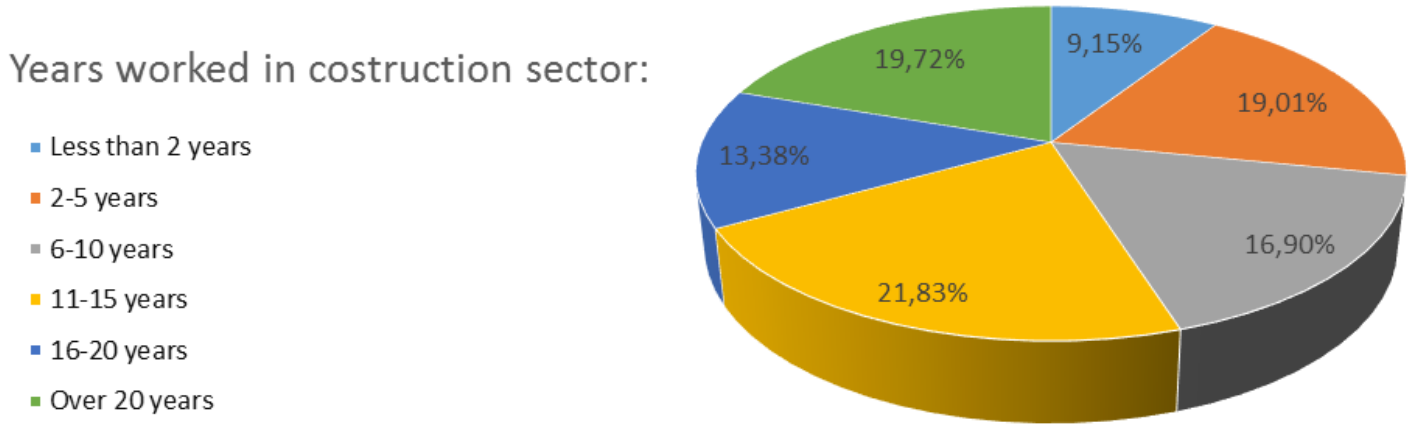
Q1 What is your typical project role?	%	No. Answers
Architect	13,92%	22
Contractor	8,23%	13
Engineer	28,48%	45
Project Management	8,23%	13
Quantity Surveyor/Building Engineer	21,52%	34
Sustainability Consultant	4,43%	7
Developer	1,90%	3
Public servant	3,16%	5
Other	10,13%	16



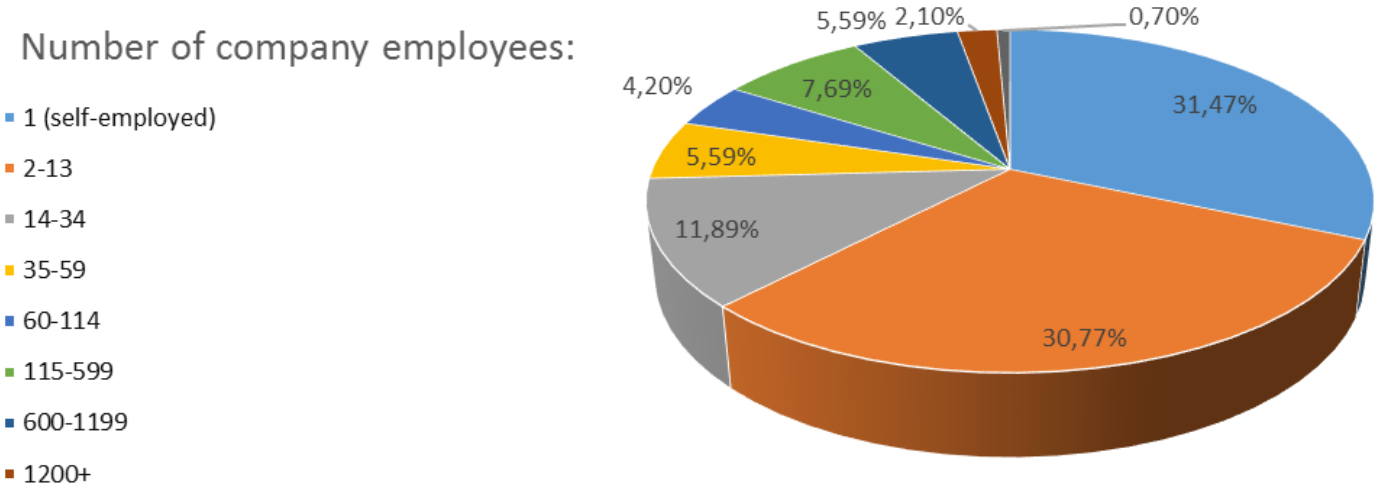
Q2 In which country do you normally work?	%	No. Answers
Spain	34,97%	50
Italy	19,58%	28
Portugal	5,59%	8
Romania	37,06%	53
Other	2,80%	4



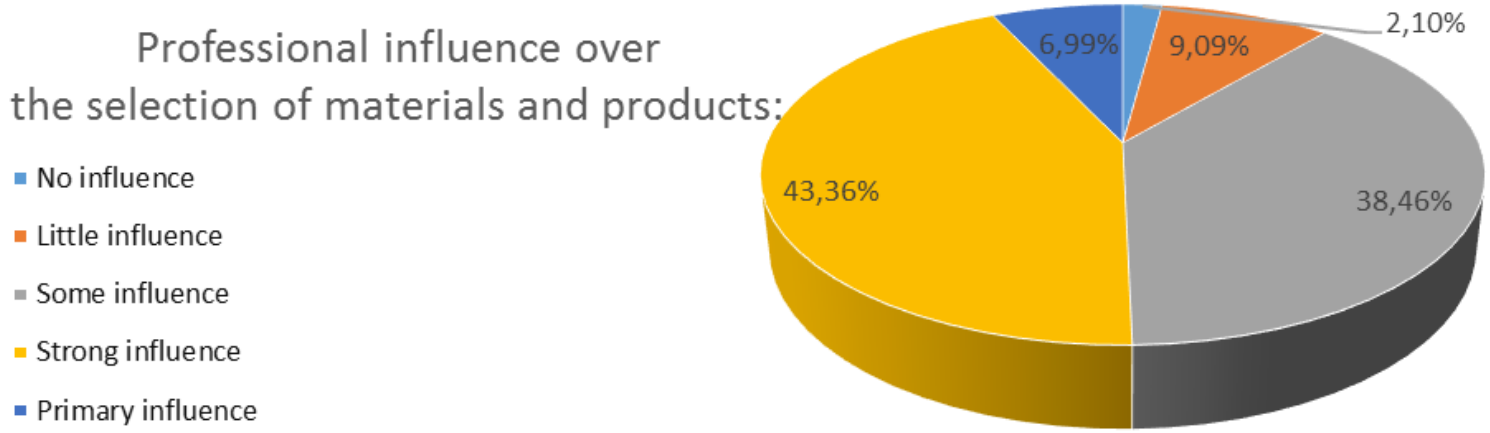
Q3 For how many years have you worked linked to in construction sector?	%	No. Answers
Less than 2 years	9,15%	13
2-5 years	19,01%	27
6-10 years	16,90%	24
11-15 years	21,83%	31
16-20 years	13,38%	19
Over 20 years	19,72%	28



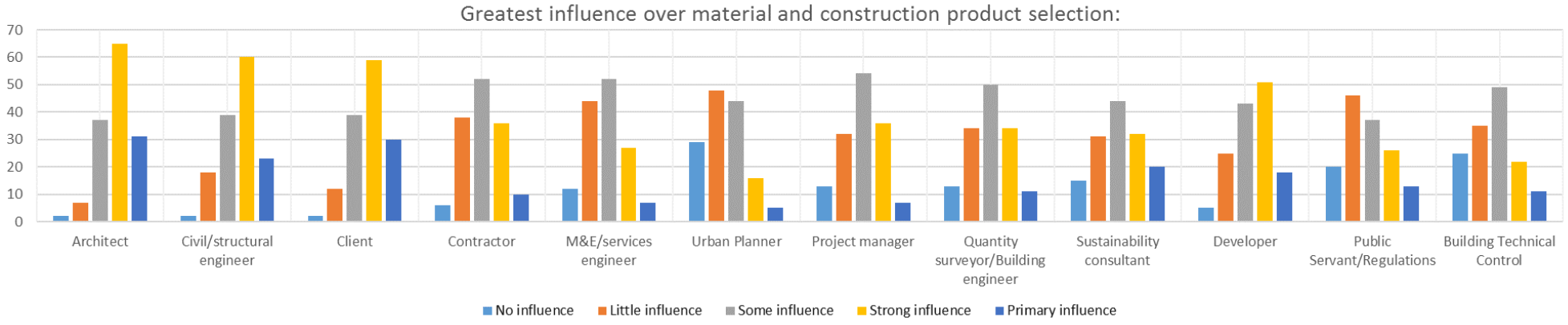
Q4 Approximately how many staff does your company directly employ?	%	No. Answers
1 (self-employed)	31,47%	45
2-13	30,77%	44
14-34	11,89%	17
35-59	5,59%	8
60-114	4,20%	6
115-599	7,69%	11
600-1199	5,59%	8
1200+	2,10%	3
Don't know	0,70%	1



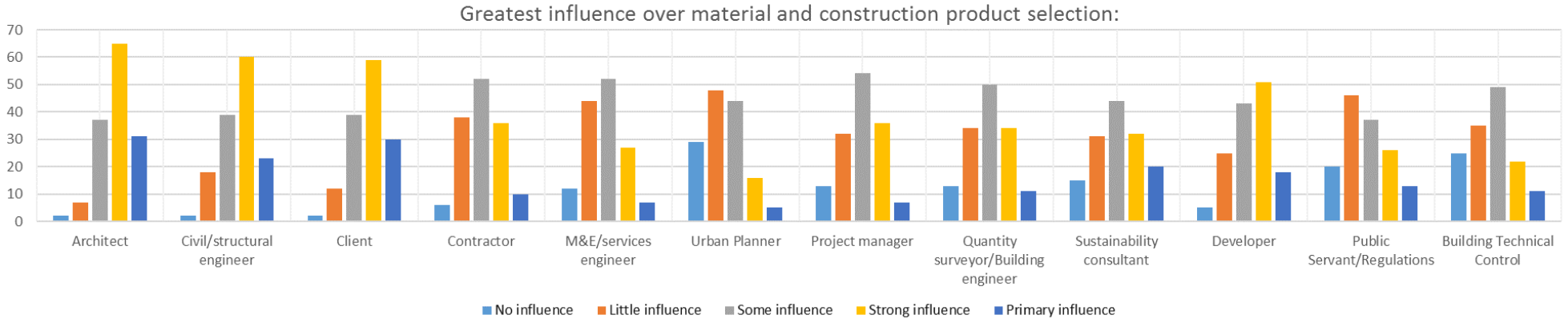
Q5 According to your profession, how much influence do you think that you have over the selection of materials and construction products on a typical project?	%	No. Answers
No influence	2,10%	3
Little influence	9,09%	13
Some influence	38,46%	55
Strong influence	43,36%	62
Primary influence	6,99%	10



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	2	7	37	65	31
Civil/structural engineer	2	18	39	60	23
Client	2	12	39	59	30
Contractor	6	38	52	36	10
M&E/services engineer	12	44	52	27	7
Urban Planner	29	48	44	16	5
Project manager	13	32	54	36	7
Quantity surveyor/Building engineer	13	34	50	34	11
Sustainability consultant	15	31	44	32	20
Developer	5	25	43	51	18
Public Servant/Regulations	20	46	37	26	13
Building Technical Control	25	35	49	22	11



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	1,41%	4,93%	26,06%	**45,77%**	21,83%
Civil/structural engineer	1,41%	12,68%	27,46%	**42,25%**	16,20%
Client	1,41%	8,45%	27,46%	**41,55%**	21,13%
Contractor	4,23%	26,76%	**36,62%**	25,35%	7,04%
M&E/services engineer	8,45%	30,99%	**36,62%**	19,01%	4,93%
Urban Planner	20,42%	**33,80%**	30,99%	11,27%	3,52%
Project manager	9,15%	22,54%	**38,03%**	25,35%	4,93%
Quantity surveyor/Building engineer	9,15%	23,94%	**35,21%**	23,94%	7,75%
Sustainability consultant	10,56%	21,83%	**30,99%**	22,54%	14,08%
Developer	3,52%	17,61%	30,28%	**35,92%**	12,68%
Public Servant/Regulations	14,08%	**32,39%**	26,06%	18,31%	9,15%
Building Technical Control	17,61%	24,65%	**34,51%**	15,49%	7,75%



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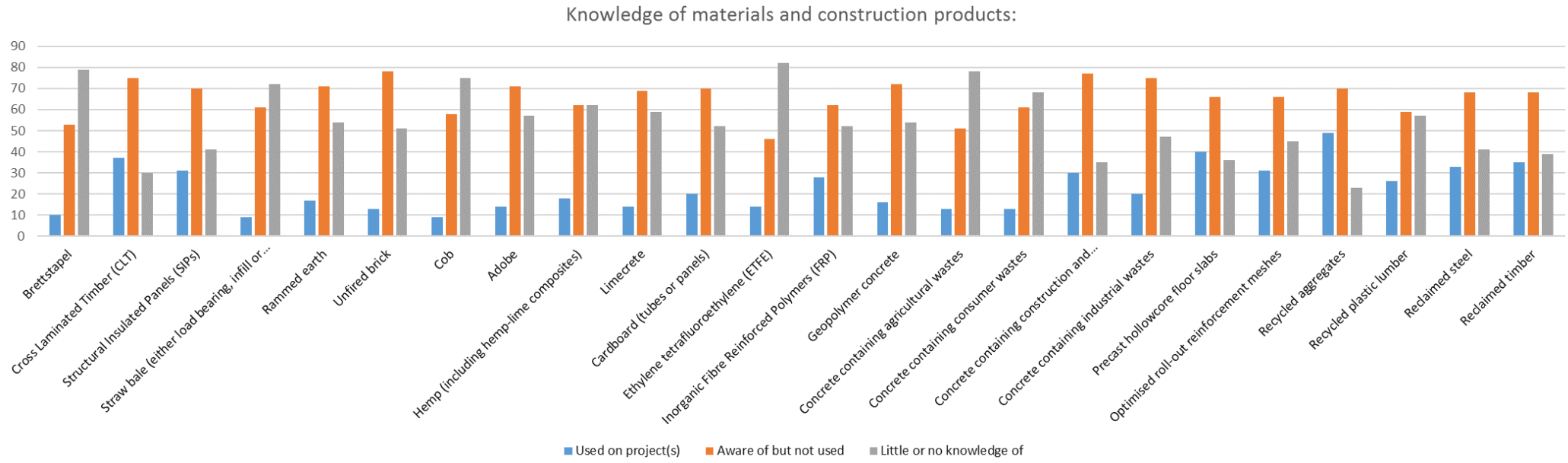
Q7 What is your knowledge of the following materials and construction products?	Used on project(s)	Aware of but not used	Little or no knowledge of
Brettstapel	10	53	79
Cross Laminated Timber (CLT)	37	75	30
Structural Insulated Panels (SIPs)	31	70	41
Straw bale (either load bearing, infill or modular)	9	61	72
Rammed earth	17	71	54
Unfired brick	13	78	51
Cob	9	58	75
Adobe	14	71	57
Hemp (including hemp-lime composites)	18	62	62
Limecrete	14	69	59
Cardboard (tubes or panels)	20	70	52
Ethylene tetrafluoroethylene (ETFE)	14	46	82
Inorganic Fibre Reinforced Polymers (FRP)	28	62	52
Geopolymer concrete	16	72	54
Concrete containing agricultural wastes (e.g. rice husks, vegetable fibres or nut shells)	13	51	78
Concrete containing consumer wastes (e.g. plastics, glass or tyres)	13	61	68
Concrete containing construction and demolition wastes	30	77	35
Concrete containing industrial wastes (e.g. steel slag, sewage sludge ash, silica fume)	20	75	47
Precast hollowcore floor slabs	40	66	36
Optimised roll-out reinforcement meshes	31	66	45
Recycled aggregates	49	70	23
Recycled plastic lumber	26	59	57
Reclaimed steel	33	68	41
Reclaimed timber	35	68	39

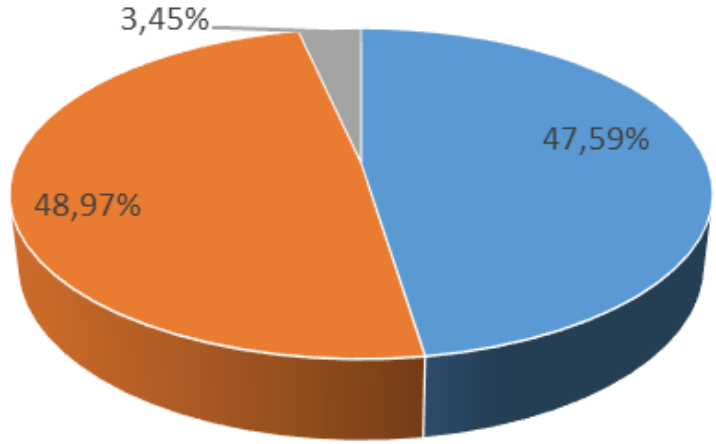

Knowledge of materials and construction products:
90
80
70
60
50
40
30
20
10
0
Brettstapel
Cross Laminated Timber (CLT)
Structural Insulated Panels (SIPs)
Straw bale (either load bearing, infill or...
Rammed earth
Unfired brick
Cob
Adobe
Hemp (including hemp-lime composites)
Limecrete
Cardboard (tubes 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	7,04%	37,32%	**55,63%**
Cross Laminated Timber (CLT)	26,06%	**52,82%**	21,13%
Structural Insulated Panels (SIPs)	21,83%	**49,30%**	28,87%
Straw bale (either load bearing, infill or modular)	6,34%	42,96%	**50,70%**
Rammed earth	11,97%	**50,00%**	38,03%
Unfired brick	9,15%	**54,93%**	35,92%
Cob	6,34%	40,85%	**52,82%**
Adobe	9,86%	**50,00%**	40,14%
Hemp (including hemp-lime composites)	12,68%	**43,66%**	**43,66%**
Limecrete	9,86%	**48,59%**	41,55%
Cardboard (tubes or panels)	14,08%	**49,30%**	36,62%
Ethylene tetrafluoroethylene (ETFE)	9,86%	32,39%	**57,75%**
Inorganic Fibre Reinforced Polymers (FRP)	19,72%	**43,66%**	36,62%
Geopolymer concrete	11,27%	**50,70%**	38,03%
Concrete containing agricultural wastes (e.g. rice husks, vegetable fibres or nut shells)	9,15%	35,92%	**54,93%**
Concrete containing consumer wastes (e.g. plastics, glass or tyres)	9,15%	42,96%	**47,89%**
Concrete containing construction and demolition wastes	21,13%	**54,23%**	24,65%
Concrete containing industrial wastes (e.g. steel slag, sewage sludge ash, silica fume)	14,08%	**52,82%**	33,10%
Precast hollowcore floor slabs	28,17%	**46,48%**	25,35%
Optimised roll-out reinforcement meshes	21,83%	**46,48%**	31,69%
Recycled aggregates	34,51%	**49,30%**	16,20%
Recycled plastic lumber	18,31%	**41,55%**	40,14%
Reclaimed steel	23,24%	**47,89%**	28,87%
Reclaimed timber	24,65%	**47,89%**	27,46%

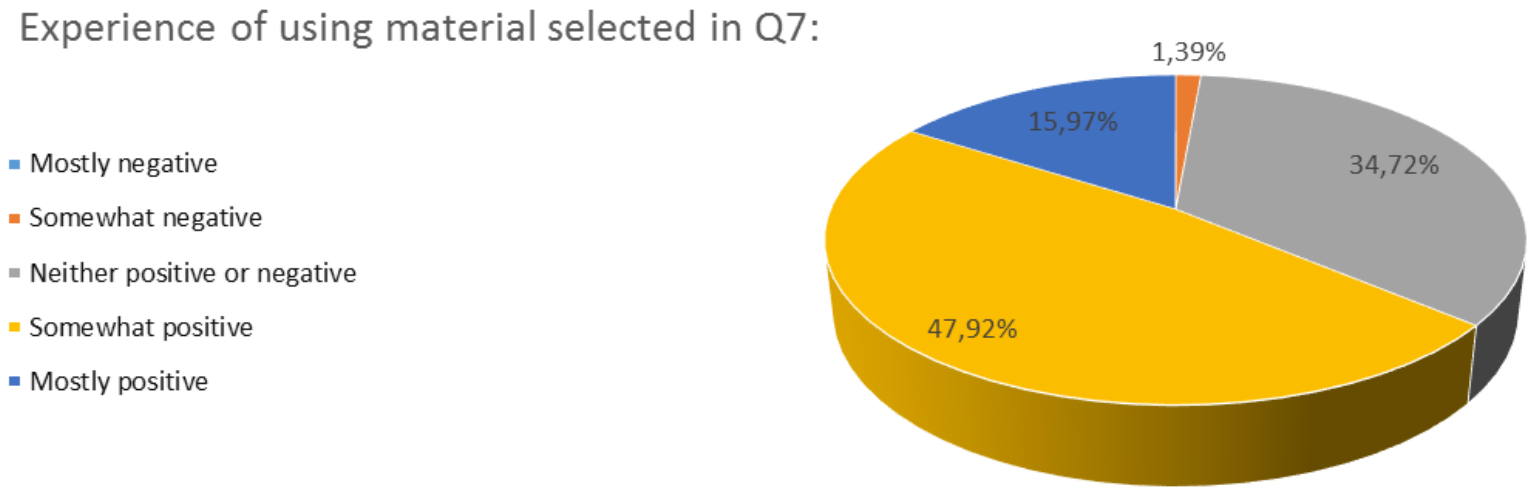
Q8 For all materials for which 'Used on project(s)' is selected in Q7; How often have you used each of these materials?	%	No. Answers
On a single project	47,59%	69
On multiple projects	48,97%	71
Material is routinely used or considered on all projects	3,45%	5

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	1,39%	2
Neither positive or negative	34,72%	50
Somewhat positive	47,92%	69
Mostly positive	15,97%	23



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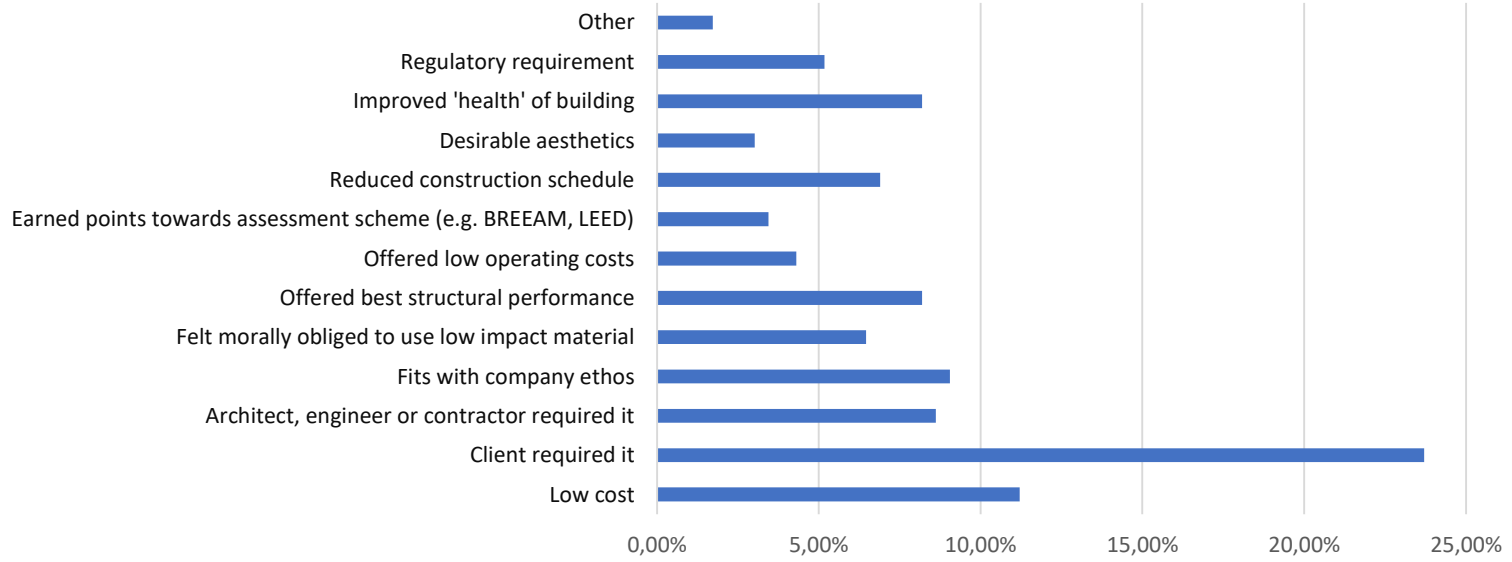
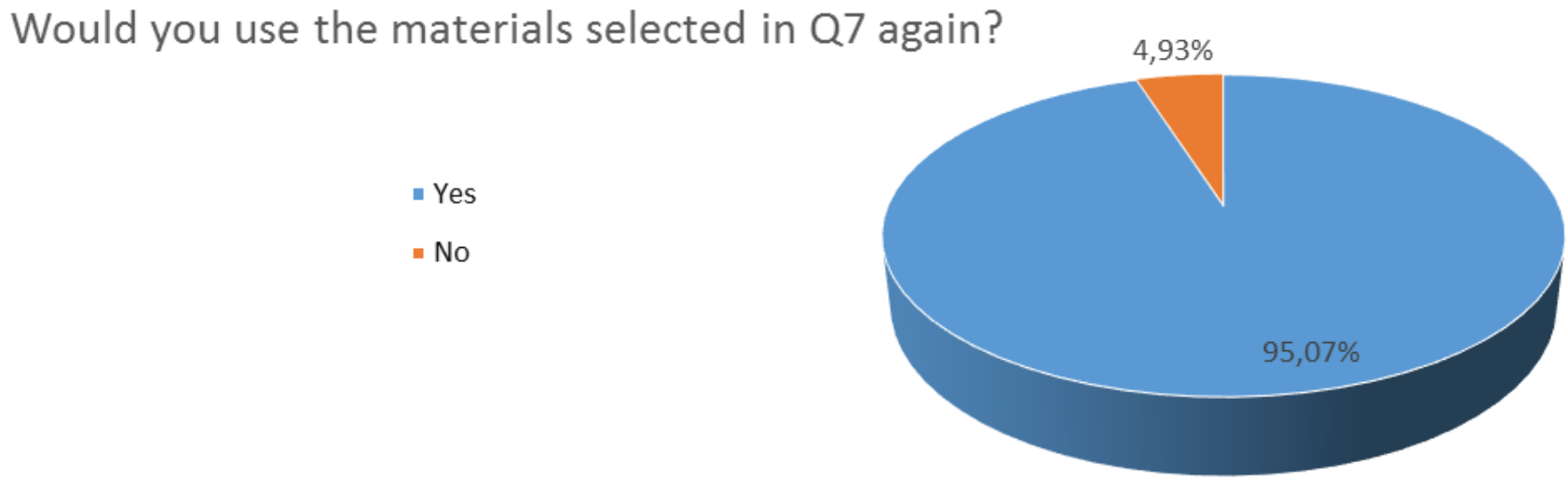
Q10 For all materials for which 'Used on project(s)' is selected in Q7; Thinking about the projects on which you used these materials. Why did you choose to use these materials?	%	No. Answers
Low cost	11,21%	26
Client required it	23,71%	55
Architect, engineer or contractor required it	8,62%	20
Fits with company ethos	9,05%	21
Felt morally obliged to use low impact material	6,47%	15
Offered best structural performance	8,19%	19
Offered low operating costs	4,31%	10
Earned points towards assessment scheme (e.g. BREEAM, LEED)	3,45%	8
Reduced construction schedule	6,90%	16
Desirable aesthetics	3,02%	7
Improved 'health' of building	8,19%	19
Regulatory requirement	5,17%	12
Other	1,72%	4

Criteria to choose the materials selected in Q7:



Q11 For all materials for which 'Used on project(s)' is selected in Q7; Would you use these materials again?	%	No. Answers
Yes	95,07%	135
No	4,93%	7



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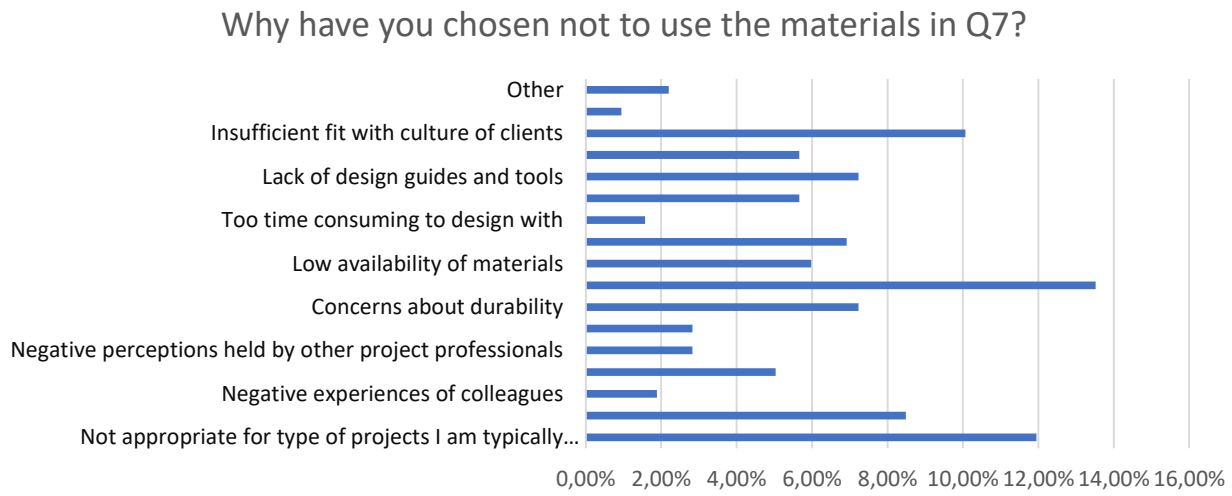
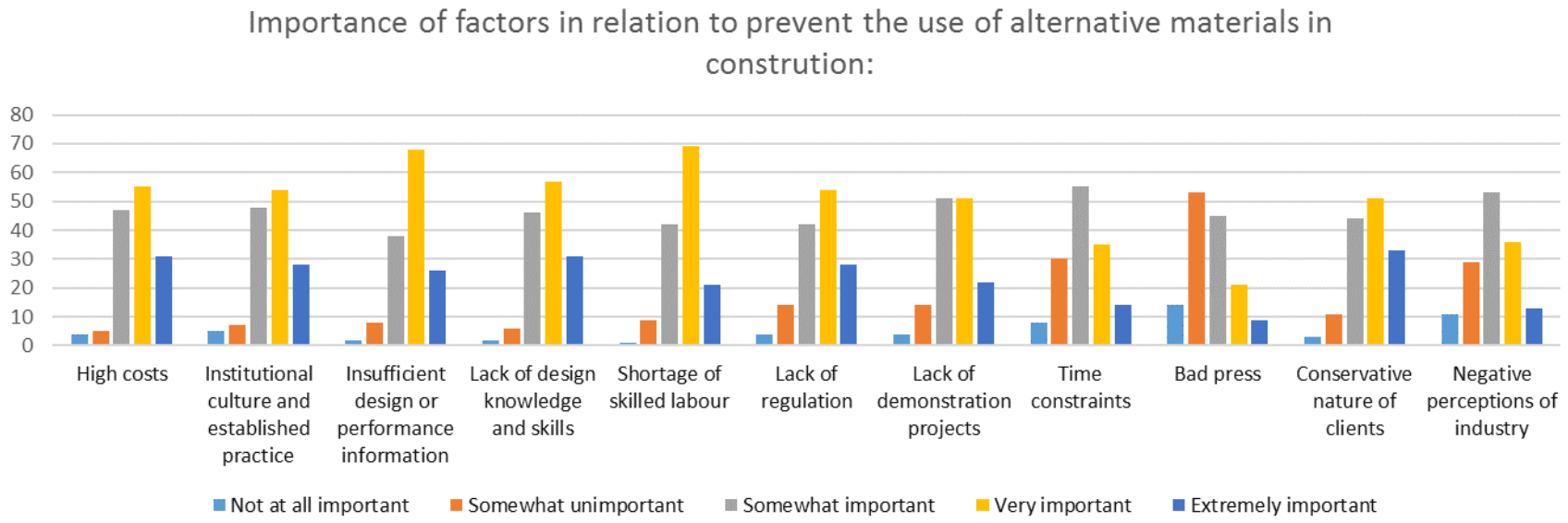
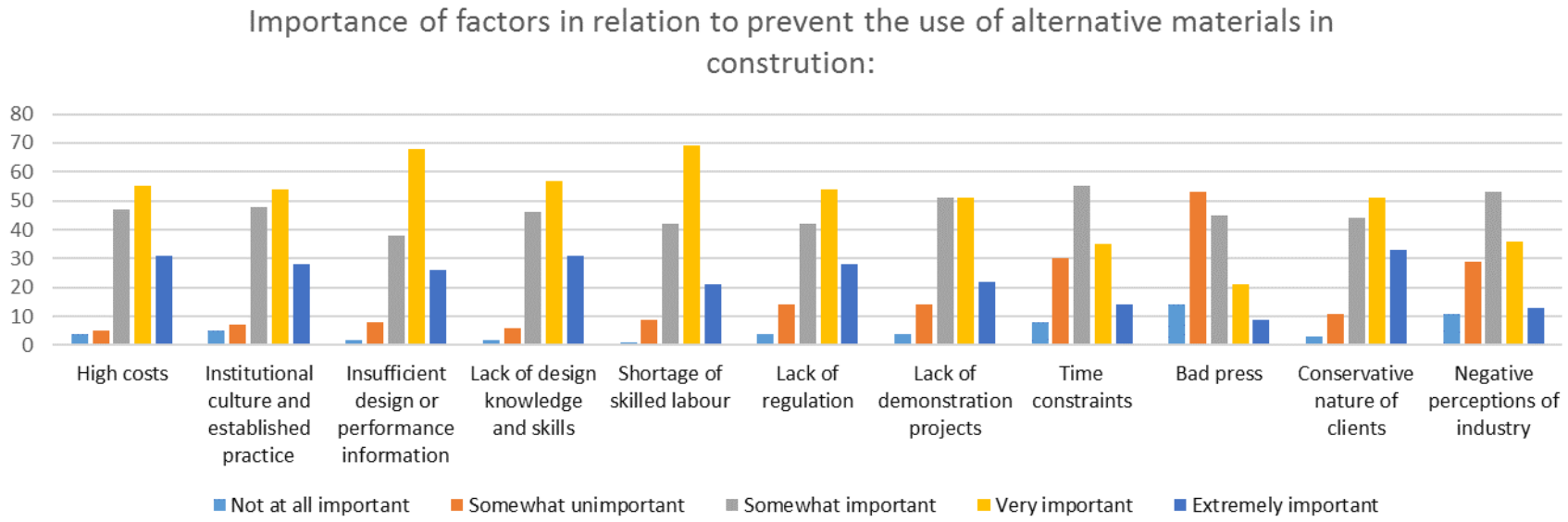
Q12 For all materials for which 'Aware of but not used' is selected in Q7; You stated that you are aware of but have not used the following materials on a project. Why have you chosen not to use these materials?	%	No. Answers
Not appropriate for type of projects I am typically engaged in	11,95%	38
Too costly	8,49%	27
Negative experiences of colleagues	1,89%	6
Negative perceptions held by clients	5,03%	16
Negative perceptions held by other project professionals	2,83%	9
Insufficient structural or thermal performance	2,83%	9
Concerns about durability	7,23%	23
Lack of technical knowledge or training	13,52%	43
Low availability of materials	5,97%	19
Low availability of skilled labour	6,92%	22
Too time consuming to design with	1,57%	5
Lack of established standards	5,66%	18
Lack of design guides and tools	7,23%	23
Lack of case studies or demonstration projects	5,66%	18
Insufficient fit with culture of clients	10,06%	32
Insurance issues	0,94%	3
Other	2,20%	7



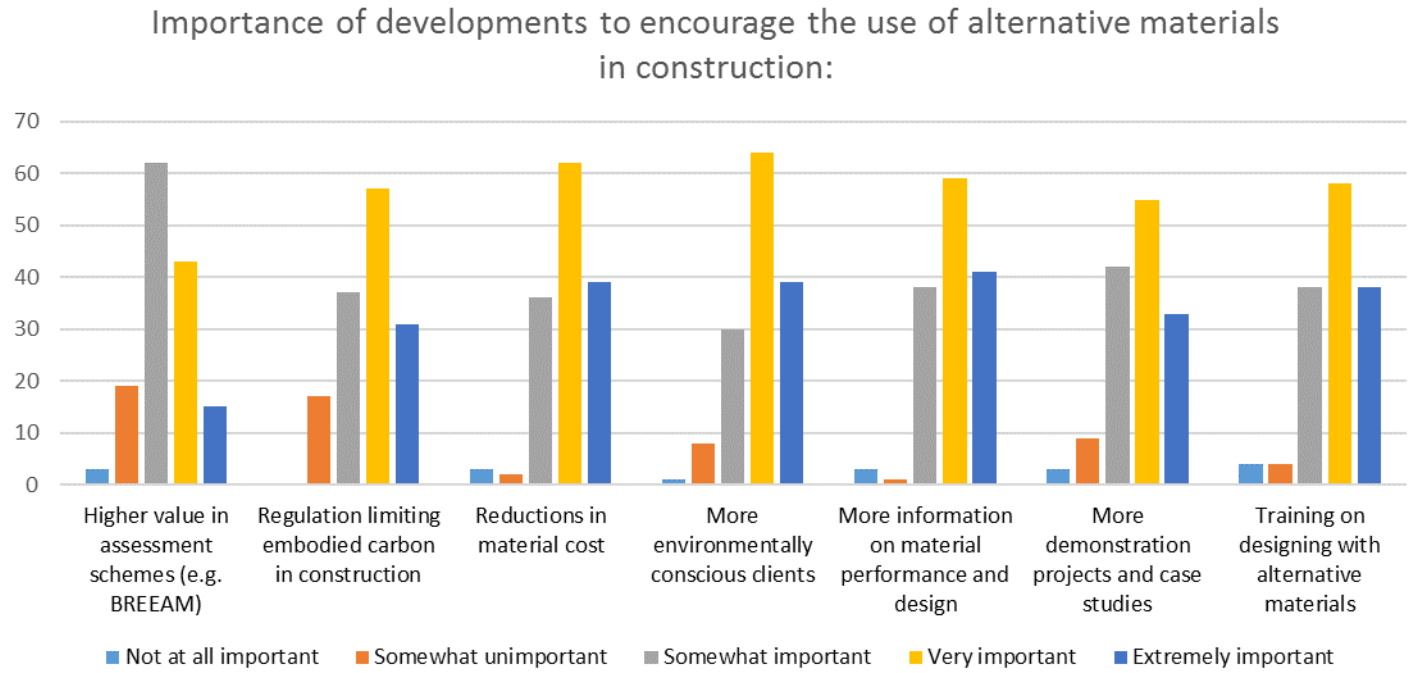
Q13 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
High costs	4	5	47	55	31
Institutional culture and established practice	5	7	48	54	28
Insufficient design or performance information	2	8	38	68	26
Lack of design knowledge and skills	2	6	46	57	31
Shortage of skilled labour	1	9	42	69	21
Lack of regulation	4	14	42	54	28
Lack of demonstration projects	4	14	51	51	22
Time constraints	8	30	55	35	14
Bad press	14	53	45	21	9
Conservative nature of clients	3	11	44	51	33
Negative perceptions of industry	11	29	53	36	13



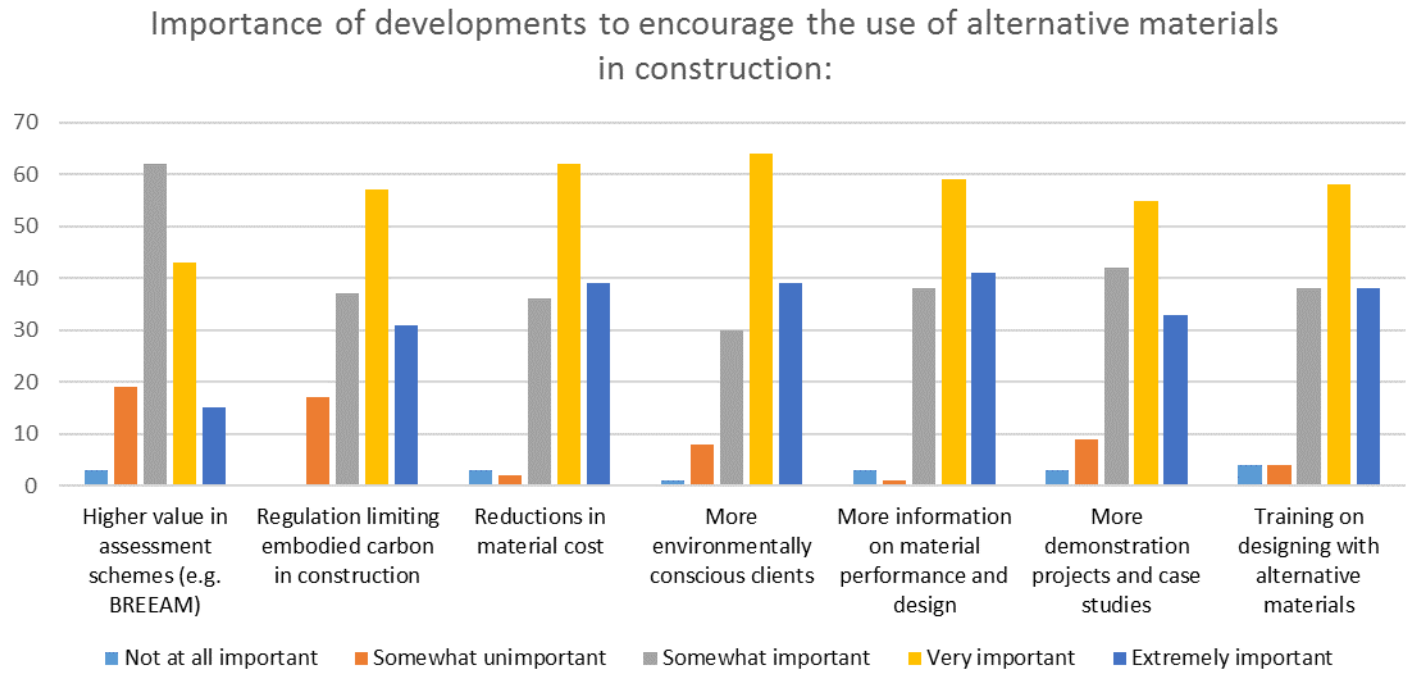
Q13 Thinking more generally about alternative materials in construction, how important do you believe the following factors are in preventing their use?	Not at all important	Somewhat unimportant	Somewhat important	Very important	Extremely important
	%	%	%	%	%
High costs	2,82%	3,52%	33,10%	**38,73%**	21,83%
Institutional culture and established practice	3,52%	4,93%	33,80%	**38,03%**	19,72%
Insufficient design or performance information	1,41%	5,63%	26,76%	**47,89%**	18,31%
Lack of design knowledge and skills	1,41%	4,23%	32,39%	**40,14%**	21,83%
Shortage of skilled labour	0,70%	6,34%	29,58%	**48,59%**	14,79%
Lack of regulation	2,82%	9,86%	29,58%	**38,03%**	19,72%
Lack of demonstration projects	2,82%	9,86%	**35,92%**	**35,92%**	15,49%
Time constraints	5,63%	21,13%	**38,73%**	24,65%	9,86%
Bad press	9,86%	**37,32%**	31,69%	14,79%	6,34%
Conservative nature of clients	2,11%	7,75%	30,99%	**35,92%**	23,24%
Negative perceptions of industry	7,75%	20,42%	**37,32%**	25,35%	9,15%



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)	3	19	62	43	15
Regulation limiting embodied carbon in construction	0	17	37	57	31
Reductions in material cost	3	2	36	62	39
More environmentally conscious clients	1	8	30	64	39
More information on material performance and design	3	1	38	59	41
More demonstration projects and case studies	3	9	42	55	33
Training on designing with alternative materials	4	4	38	58	38



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)	2,11%	13,38%	**43,66%**	30,28%	10,56%
Regulation limiting embodied carbon in construction	0,00%	11,97%	26,06%	**40,14%**	21,83%
Reductions in material cost	2,11%	1,41%	25,35%	**43,66%**	27,46%
More environmentally conscious clients	0,70%	5,63%	21,13%	**45,07%**	27,46%
More information on material performance and design	2,11%	0,70%	26,76%	**41,55%**	28,87%
More demonstration projects and case studies	2,11%	6,34%	29,58%	**38,73%**	23,24%
Training on designing with alternative materials	2,82%	2,82%	26,76%	**40,85%**	26,76%



RESULTS OF THE SURVEY

At Professional level, the main results of the survey found:

Q1	**What is your typical project role?**		
	Engineer	Building engineer	Architect
	45	34	22
Q2	**In which country do you normally work?**		
	Romania	Spain	Italy
	53	50	28
Q3	**For how many years have you worked linked to in construction sector?**		
	11-15 years	Over 20 years	2-5 years
	31	28	27
Q4	**Approximately how many staff does your company directly employ?**		
	1 (self-employed) 2-13	2-13	14-34
	45	44	17
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?**		
	Strong influence	Some influence	Little influence
	62	55	13
Q6	**Who do you believe has the greatest influence over material and construction product selection on a typical project?**		
	Architect		Strong influence
	Civil/structural engineer		Strong influence
	Client		Strong influence
	Contractor		Some influence
	M&E/services engineer		Some influence
	Urban Planner		Little influence
	Project manager		Some influence
	Quantity surveyor/Building engineer		Some influence
	Sustainability consultant		Some influence
	Developer		Strong influence
	Public Servant/Regulations		Little influence
	Building Technical Control		Some influence

- Almost half of respondents are engineers from Romania and they consider that they have strong influence over the selection of materials and construction products on a typical project.
- Public Servant/Regulations and Urban Planner have litlle influence about it.

RESULTS OF THE SURVEY

Q7	What is your knowledge of the following materials and construction products?	
	Brettstapel	Little or no knowledge
	Cross Laminated Timber (CLT)	Aware of but not used
	Structural Insulated Panels (SIPs)	Aware of but not used
	Straw bale (either load bearing, infill or modular)	Little or no knowledge
	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
	Ethylene tetrafluoroethylene (ETFE)	Little or no knowledge
	Inorganic Fibre Reinforced Polymers (FRP)	Aware of but not used
	Geopolymer concrete	Aware of but not used
	Concrete containing agricultural wastes	Little or no knowledge
	Concrete containing consumer wastes	Little or no knowledge
	Concrete containing construction and demolition wastes	Aware of but not used
	Concrete containing industrial wastes	Aware of but not used
	Precast hollowcore floor slabs	Aware of but not used
	Optimised roll-out reinforcement meshes	Aware of but not used
	Recycled aggregates	Aware of but not used
	Recycled plastic lumber	Aware of but not used
	Reclaimed steel	Aware of but not used
	Reclaimed timber	Aware of but not used

- Most of respondents have aware of these kinds of materials but they do not used it.
- There is no material that has been widely used in projects.

RESULTS OF THE SURVEY

Q8	**For all materials for which 'Used on project(s)' is selected in Q7; How often have you used each of these materials?**		
	On multiple projects	On a single project	Material is routinely used or considered on all projects
	71	69	5
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?**		
	Somewhat positive	Neither positive or negative	Mostly positive
	69	50	23
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?**		
	Client required it	Low cost	Fits with company ethos
	55	26	21
Q11	**For all materials for which 'Used on project(s)' is selected in Q7; Would you use these materials again?**		
	Yes	No	
	135	7	
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?**		
	Lack of technical knowledge or training	Not appropiate for type of projects I am typically engaged in	Insufficient fit with culture of clients
	43	38	32

- Most of respondents have used each of these materials on multiple or a single projects and their experience of using it was somewhat prositive.
- These materials were choosen because clients required it.
- They would use these materials again, but the main problema about that is the lack of technical knowledge or training.
- They consider that the least important is the bad press.

RESULTS OF THE SURVEY

Q13	**Thinking more generally about alternative materials in construction, 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 / Very important
	Time constraints	Somewhat important
	Bad press	Somewhat unimportant
	Conservative nature of clients	Very important
	Negative perceptions of industry	Somewhat important
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 schemes (e.g. BREEAM)	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

- Most of respondents believe that some measures have to be taken to encourage the use of alternative materials and construction products. For that reason, the OERCO2 Project is so necessary.

MANY THANKS!