Architectural Barometer Q1 2022

Sustainability and Circularity

April-2022

ARCHVISION a product by USP Marketing Consultancy

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About European Architectural Barometer

THE GOAL

The objective of the European Architectural Barometer of Arch-Vision is to offer profound insight into the current economic situation and trends among architectural firms in the Netherlands, Germany, the UK, France, Spain, Italy, Belgium and Poland. The European Architectural Barometer provides knowledge about the future building volumes and the way in which these building volumes will be realised (trends).

THE RESEARCH TOPICS

Recurring topic: Economic developments of architectural companies in Europe (order book and turnover development)

Quarterly theme topics in 2022:
Q1: Sustainability and Circularity
Q2: Trends in Material Usage
Q3: Decision Making in the Construction Industry
Q4: Love Brands

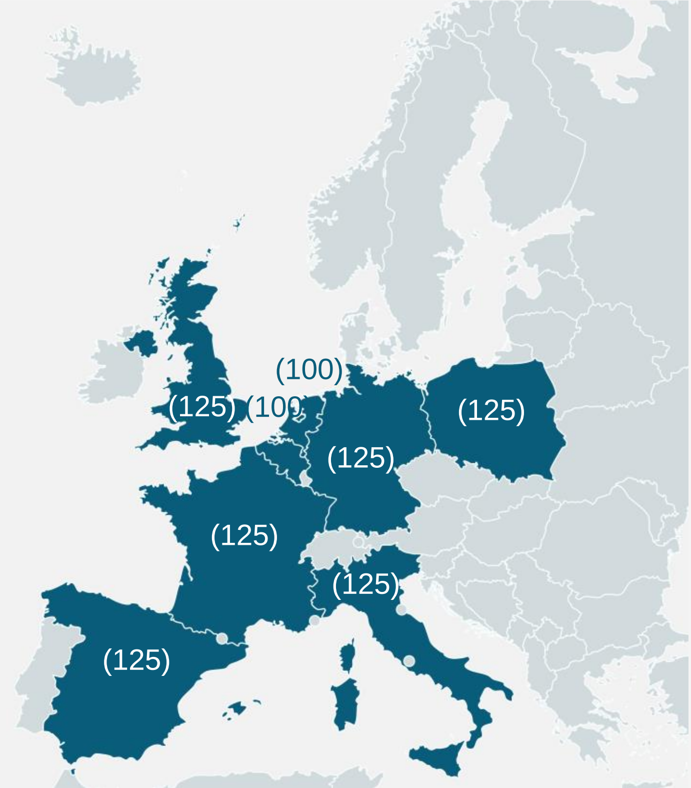
THE TIMELINE

Report Q4	Report Q1	Report Q2	Report Q3
January	April	July	November

COUNTRY SCOPE

(number of interviews conducted)

Background characteristics of the interviewed respondents can be found in the country-specific profiling, the architect chapter, and in the appendix as a European overview.



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Dummy data has been used on the following slides, this means no real data of this edition is shown.

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Impact of war in Ukraine

War impact

Do you expect that the war in Ukraine will have any impact on your work and in what way?

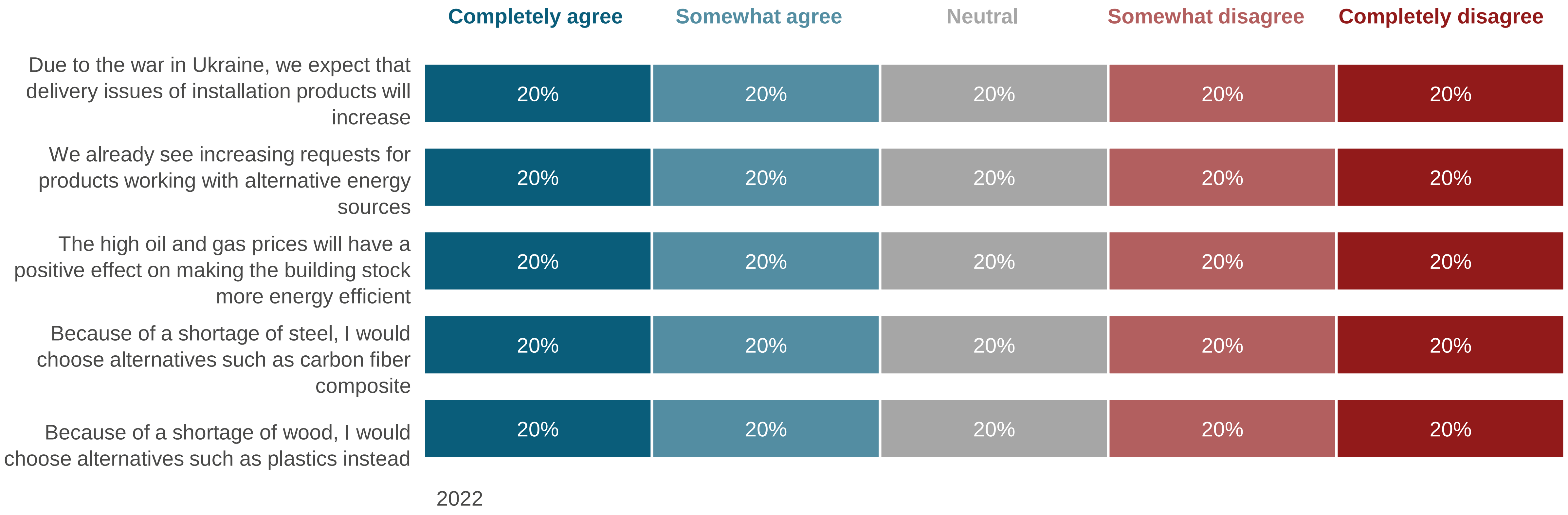
	Total	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	50%	%	%	%	%	%	%	%	%
xxx	40%	%	%	%	%	%	%	%	%
xxx	30%	%	%	%	%	%	%	%	%
xxx	20%	%	%	%	%	%	%	%	%
xxx	10	%	%	%	%	%	%	%	%
xxx	9%	%	%	%	%	%	%	%	%
xxx	8%	%	%	%	%	%	%	%	%
xxx	%	%	%	%	%	%	%	%	%

2022

All European architects

Delivery and demand for alternative energy ...

To what extent do you agree with the following statements?



Base: n=500, all European architects

XXX

XXX

Project status

How many new projects has your company scored/ been commissioned in Q1 2022?

	Total	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
new projects scored	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
projects postponed	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
projects cancelled	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0

2022

USP

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Postponed/cancelled projects

Which types of customers are mainly postponing or cancelling projects?

	Total	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
End consumers	40%	20%	20%	20%	20%	20%	20%	20%	20%
Property developers	35%	20%	20%	20%	20%	20%	20%	20%	20%
Business clients	30%	20%	20%	20%	20%	20%	20%	20%	20%
Investors	20%	20%	20%	20%	20%	20%	20%	20%	20%
Government / municipalities	10%	20%	20%	20%	20%	20%	20%	20%	20%
Housing associations / social housing	5%	20%	20%	20%	20%	20%	20%	20%	20%
Main contractors	2	20%	20%	20%	20%	20%	20%	20%	20%

2022

If >0 projects postponed or cancelled

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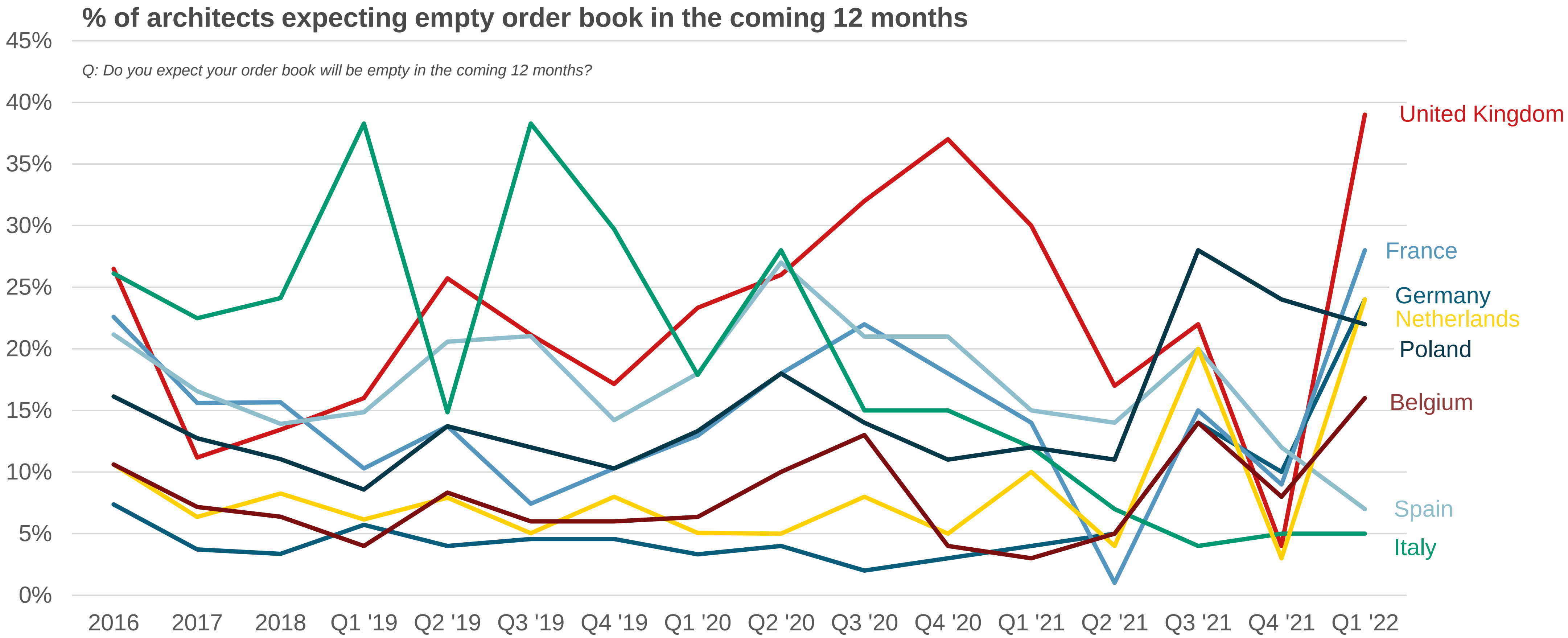
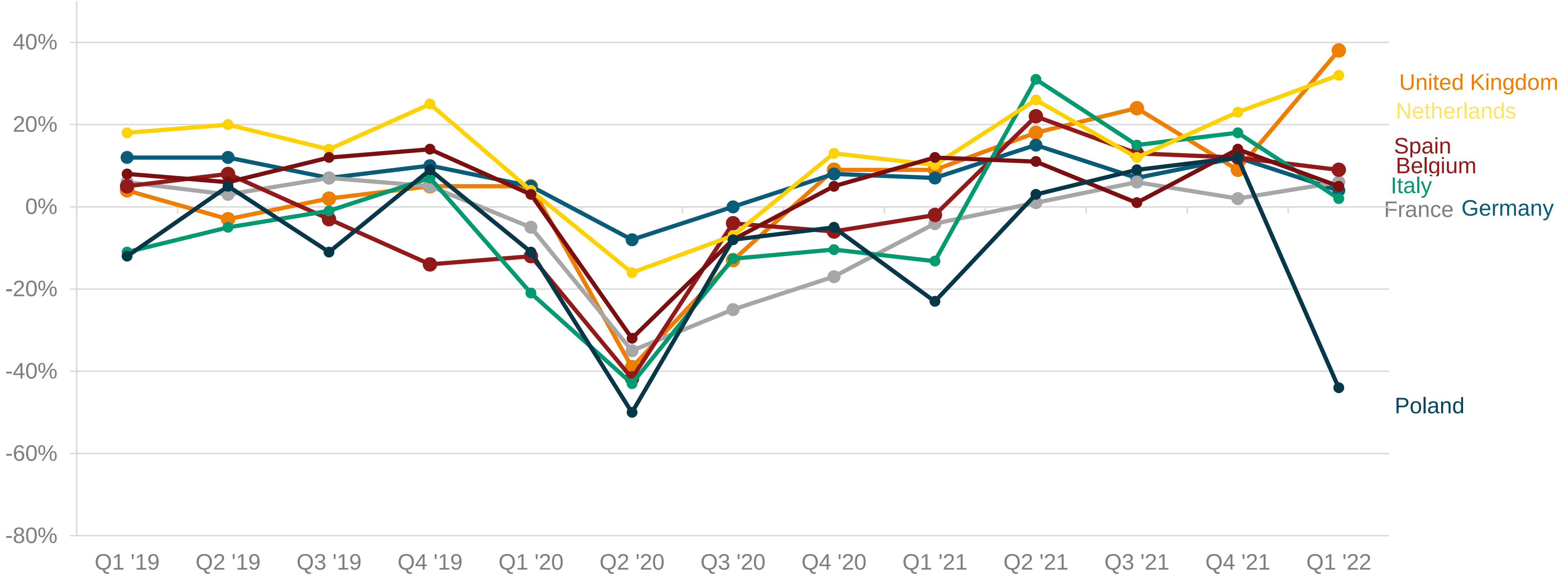

% of architects expecting empty order book in the coming 12 months
Q: Do you expect your order book will be empty in the coming 12 months?
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2016
2017
2018
Q1 '19
Q2 '19
Q3 '19
Q4 '19
Q1 '20
Q2 '20
Q3 '20
Q4 '20
Q1 '21
Q2 '21
Q3 '21
Q4 '21
Q1 '22
United Kingdom
France
Germany
Netherlands
Poland
Belgium
Spain
Italy

XXX

Architects' experience regarding their turnover
(saldo of architects reporting increase minus architects reporting a decrease)

Q: How did your turnover develop in the past quarter compared to the same period one year ago?



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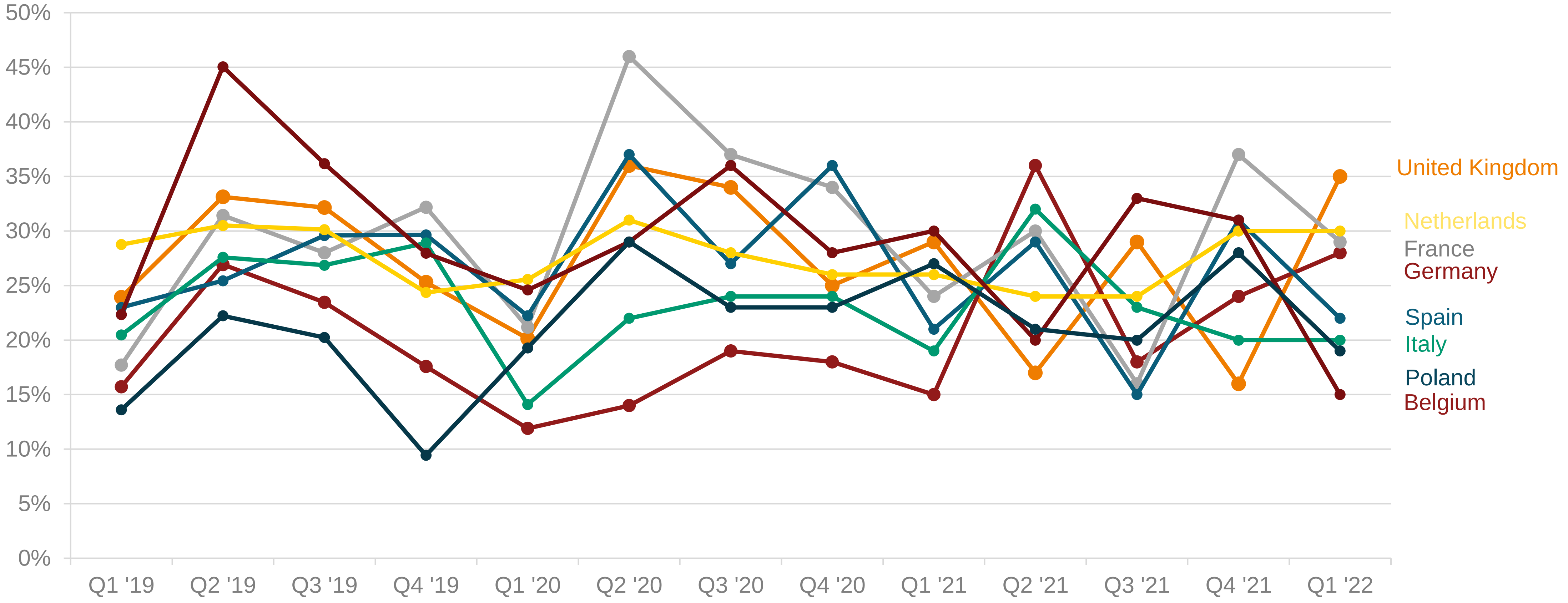
% of architects experiencing cancelled projects

Q: How many projects have been cancelled in the past quarter?



Forecast 2020 European overview

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•*See the country slides for more detailed information on the developments per construction segment.*

•*Volumes are in billion euros at 2013 prices.*

Forecast 2021 European overview

XXX

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- *See the country slides for more detailed information on the developments per construction segment.*
- *Volumes are in billion euros at 2013 prices.*

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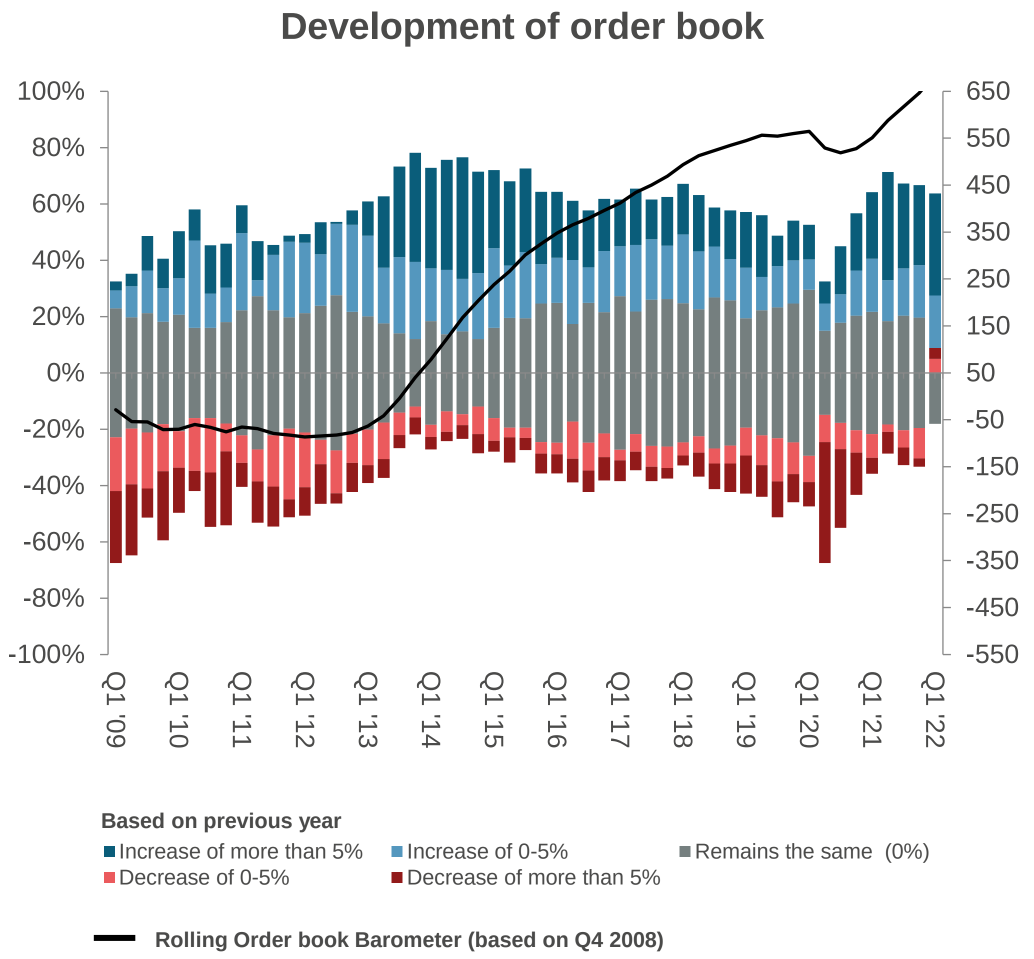
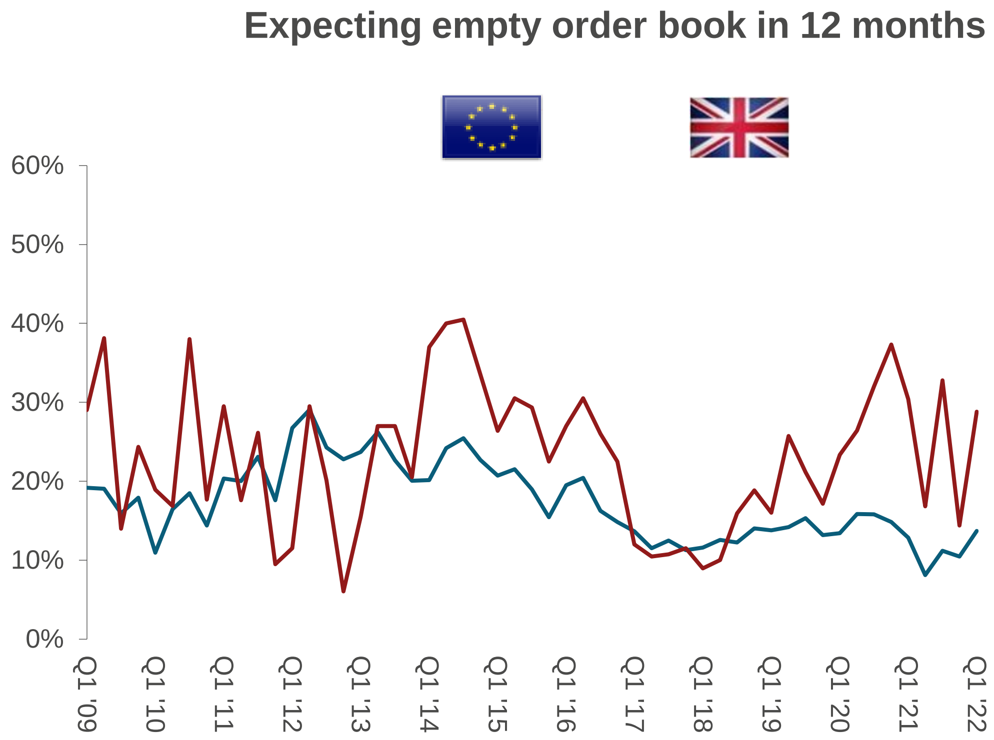
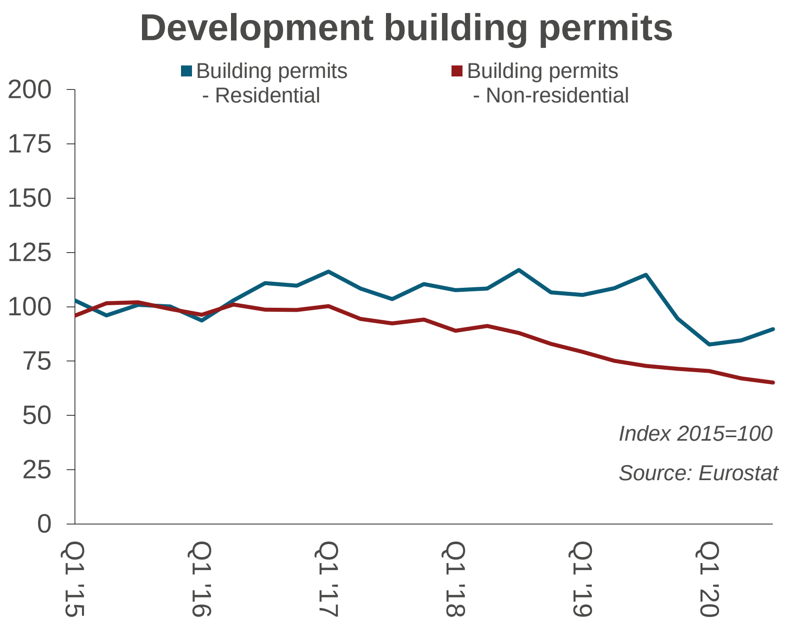
The order book development





The building permits

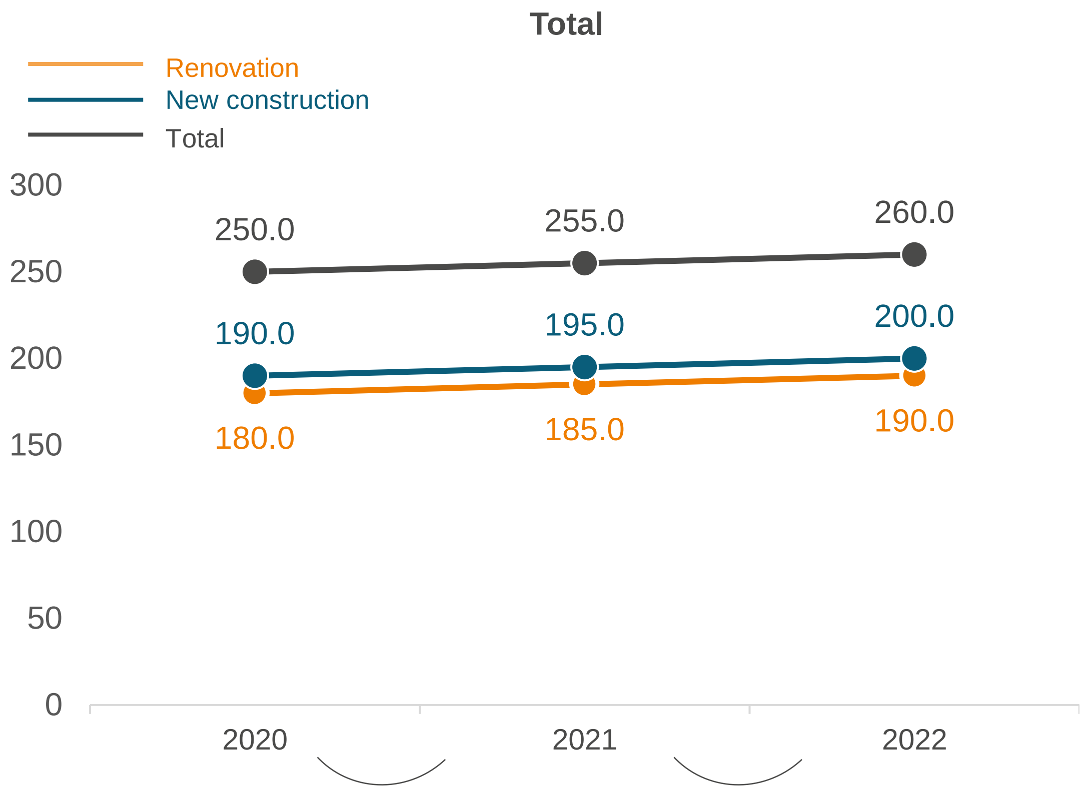


Economic and construction related indicators	Value Q1 2020	Value Q4 2020	Value Q1 2021	Q-2-Q development
GDP (quarterly growth rate) (%)*	0.0	16.0	n/a	Positive
Consumer confidence indicator**	-8.8	-17.0	-19.4	Negative
Industrial confidence indicator**	-18.5	-24.8	-20.5	Positive
Construction confidence indicator**	-15.5	n/a	n/a	n/a
Production value buildings (index 2015=100)**	111.5	96.1	n/a	Positive
Architects with postponed projects (%)***	44	56	42	Positive
Architects with cancelled projects (%)***	25	35	25	Positive
Building permits residential (index 2015=100)**	94.6	89.7	n/a	Positive
Building permits non-residential (index 2015=100)**	71.4	65.1	n/a	Negative

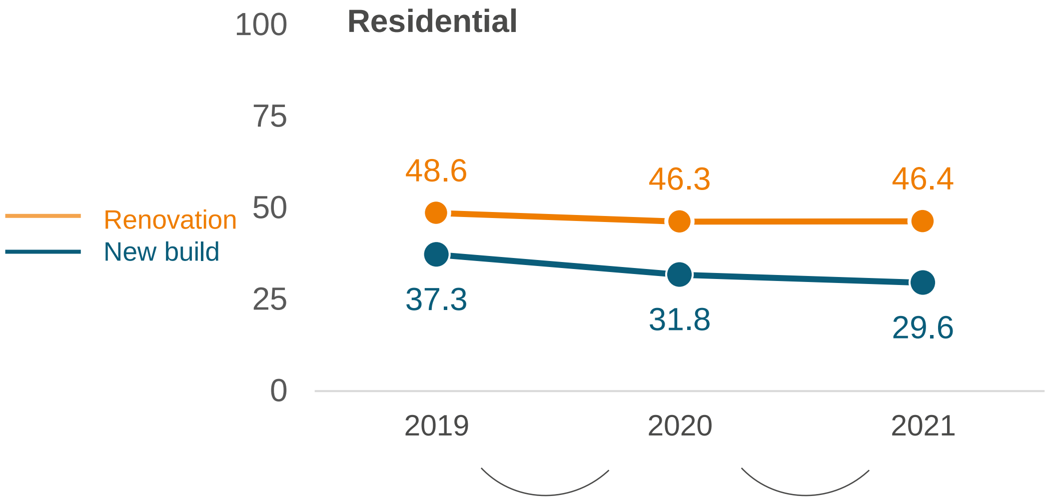
*Source: * Country statistical office; ** Eurostat, *** Arch-Vision*

Forecast of building volumes

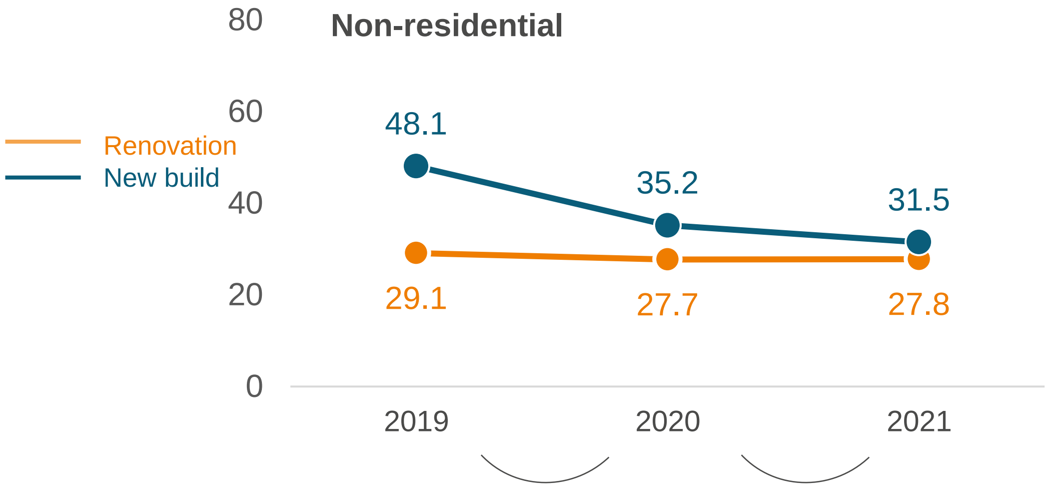
(% change year over year)



% change in total output % %



% change in residential output % %



% change in non-residential output % %

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Sustainability and Circularity in construction

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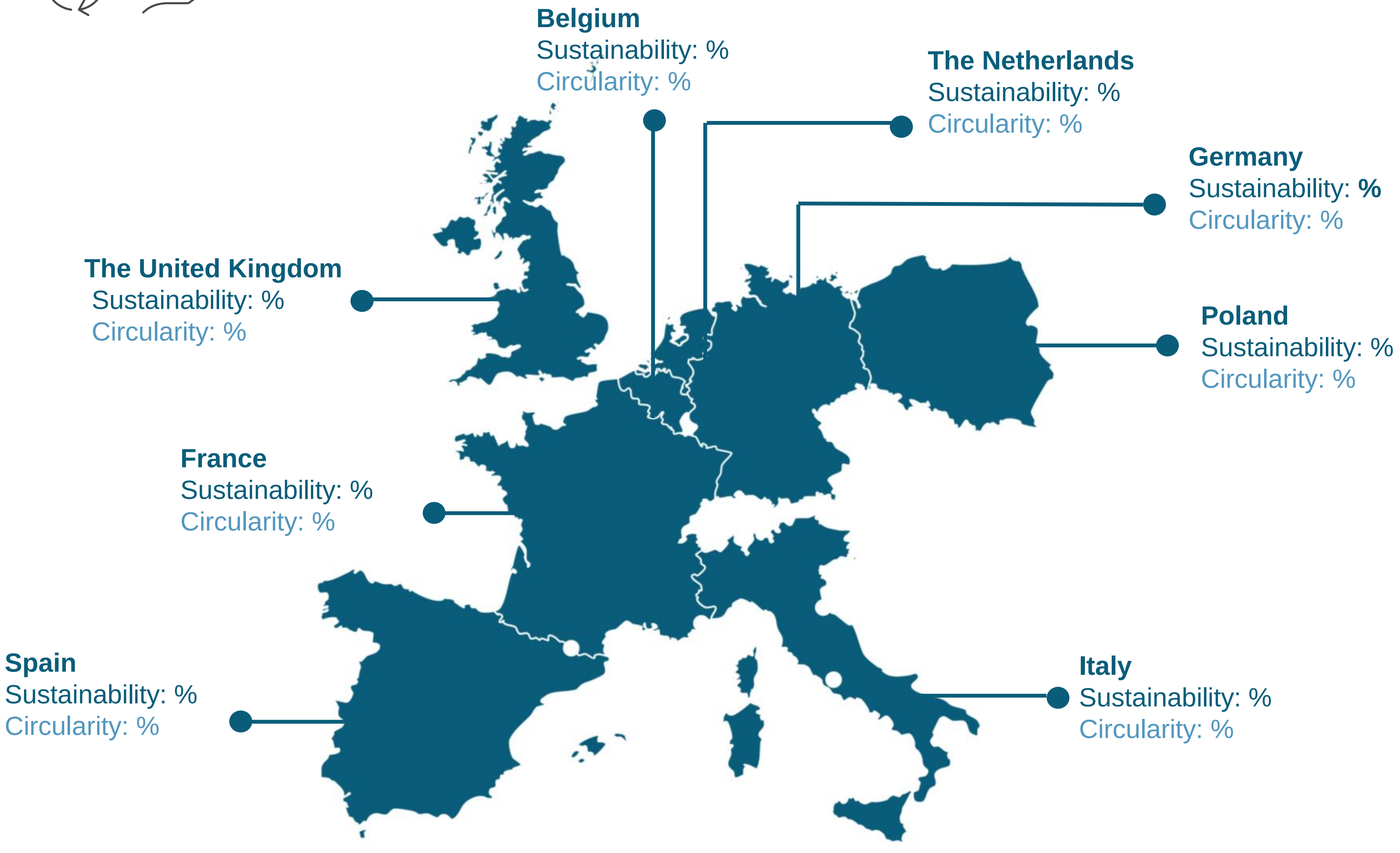
Sustainable/ circular construction

*To what extent is **your company** involved in **sustainable/ circular** construction economy? – "Actively involved"* answers



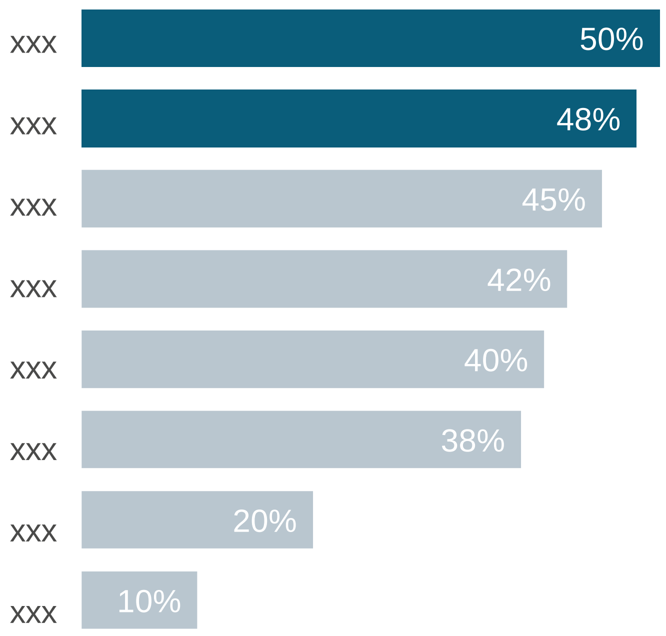
Country	Sustainability ranking 2022*	Circularity ranking 2022*
Netherlands	%	%
United Kingdom	%	%
Spain	%	%
Belgium	%	%
Germany	%	%
Italy	%	%
France	%	%
Poland	%	%

* "Actively involved" answers

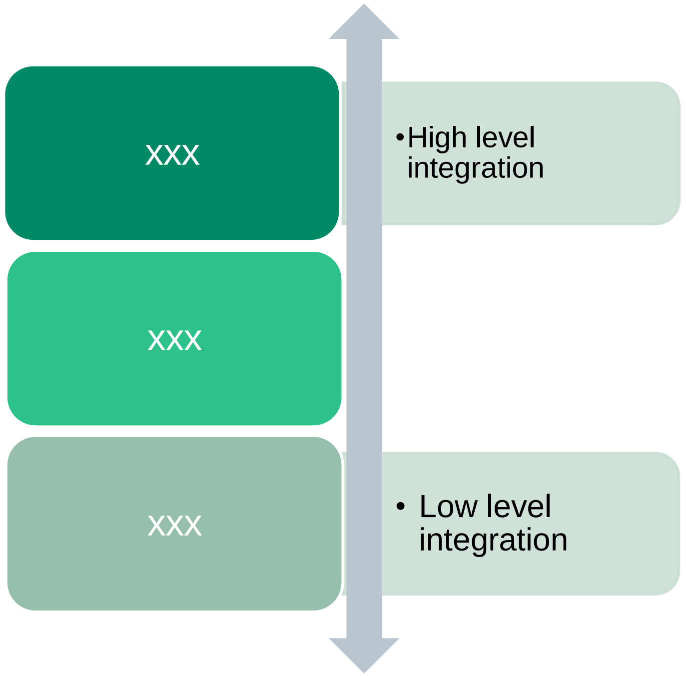
The perception of circularity

Perception of circular construction

*What describes **circular construction** best according to you?*



Integration of circularity into construction in stages



Sustainability and circularity in construction

Reading guide

Definitions of sustainable and circular construction used when introducing the topic to the respondents:

Sustainable construction is defined as *a way of building which aims at reducing the (negative) health and environmental impacts caused by the construction process, buildings, or the built-up environment*.

Circular economy is a system aimed at eliminating waste and the continual use of resources. In a circular construction, *all parties involved in the building cycle process take minimising the use and maximising the reuse of buildings and building materials* into account from the very start of the construction process.

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Sustainable construction

*To what extent is **your company** involved in **sustainable** construction economy?*

	Actively involved	Aware, but not involved	Unaware of the concept	Actively involved	Aware, but not involved	Unaware of the concept
Europe	35%	35%	30%	35%	35%	30%
Germany (n=100)	35%	35%	30%	35%	35%	30%
United Kingdom (n=100)	35%	35%	30%	35%	35%	30%
France (n=100)	35%	35%	30%	35%	35%	30%
Italy (n=100)	35%	35%	30%	35%	35%	30%
Spain (n=100)	35%	35%	30%	35%	35%	30%
Netherlands (n=100)	35%	35%	30%	35%	35%	30%
Belgium (n=100)	35%	35%	30%	35%	35%	30%
Poland (n=100)	35%	35%	30%	35%	35%	30%

2022

Base: n=x, all European architects

Awareness among architects about sustainability

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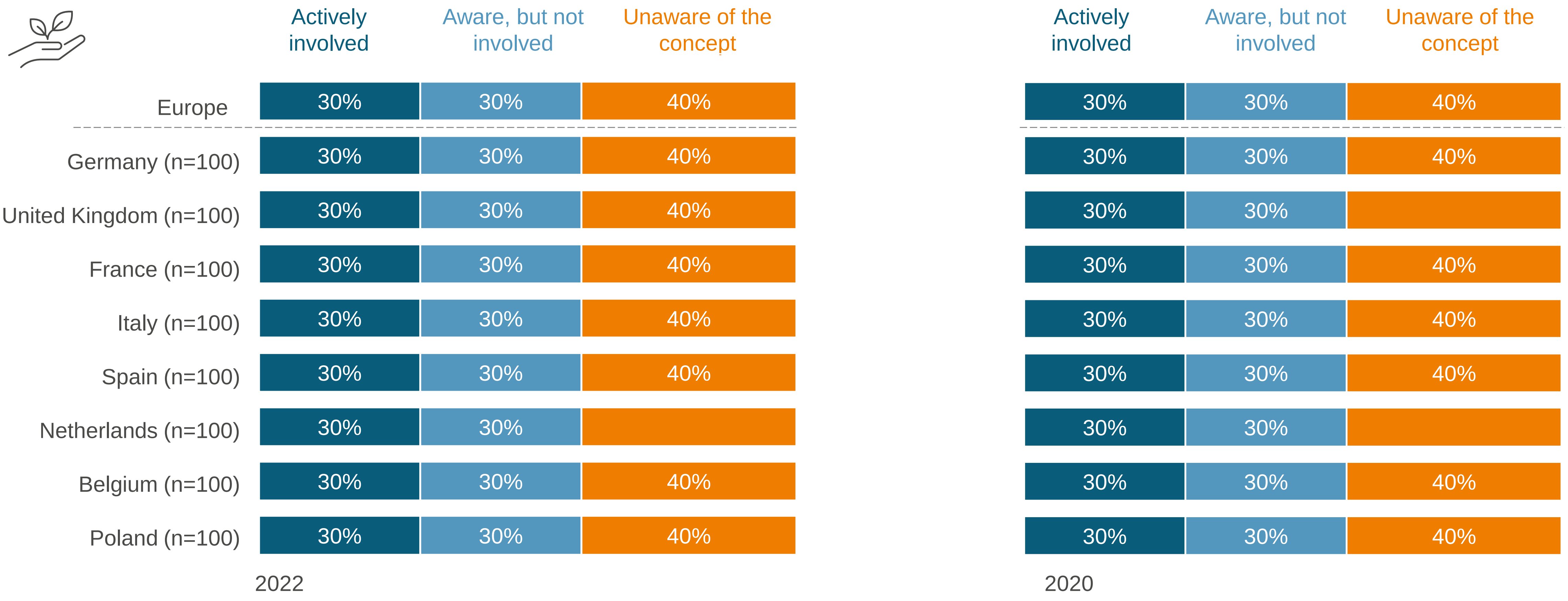
Sustainable construction

*To what extent is **your company** involved in **sustainable** construction economy?*



Base: 2022 n=x, 2020 n=x, all European architects

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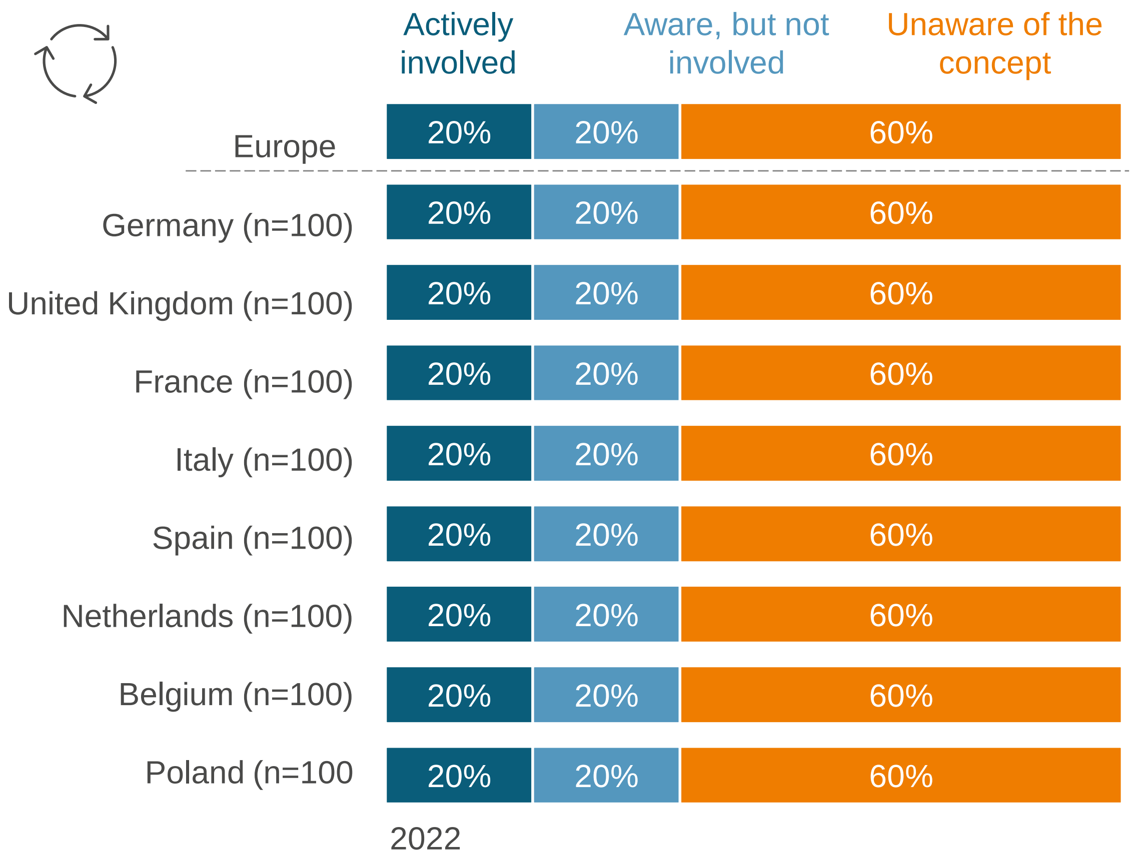
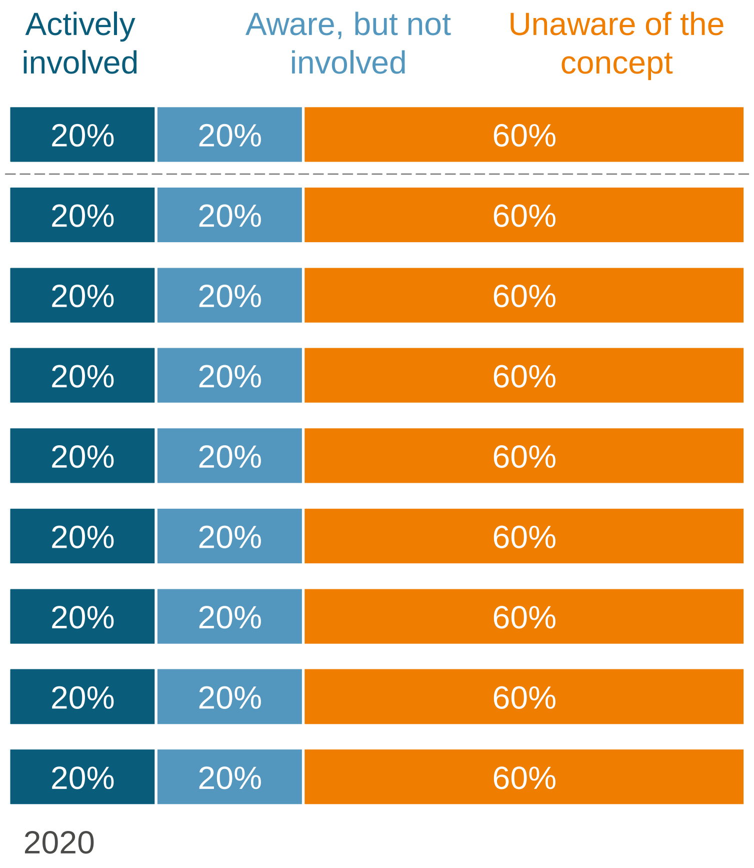
Circular construction

*To what extent is **your company** involved in **circular** construction economy?*





Base: n=x, 2020 n=x, all European architects

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Share of projects where sustainability is taken into account
What would be approximately the share of your projects where sustainability is taken into account?

		Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
Share of projects of architects **actively involved** in sustainability	**63%**	63%	63%	63%	63%	63%	63%	63%	63%
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
Share of projects of **all architects** (including not aware and not active architects)	**63%**	63%	63%	63%	63%	63%	63%	63%	63%

All European architects assigned either to the sustainability or circularity block

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Share of projects where circularity is taken into account

What would be approximately the share of your projects where circularity is taken into account?

		Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
Share of projects of architects **actively involved** in circularity	**42%**	42%	42%	42%	42%	42%	42%	42%	42%
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
Share of projects of **all architects** (including not aware and not active architects)	**42%**	42%	42%	42%	42%	42%	42%	42%	42%

All European architects assigned either to the sustainability or circularity block

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Perception of sustainable construction

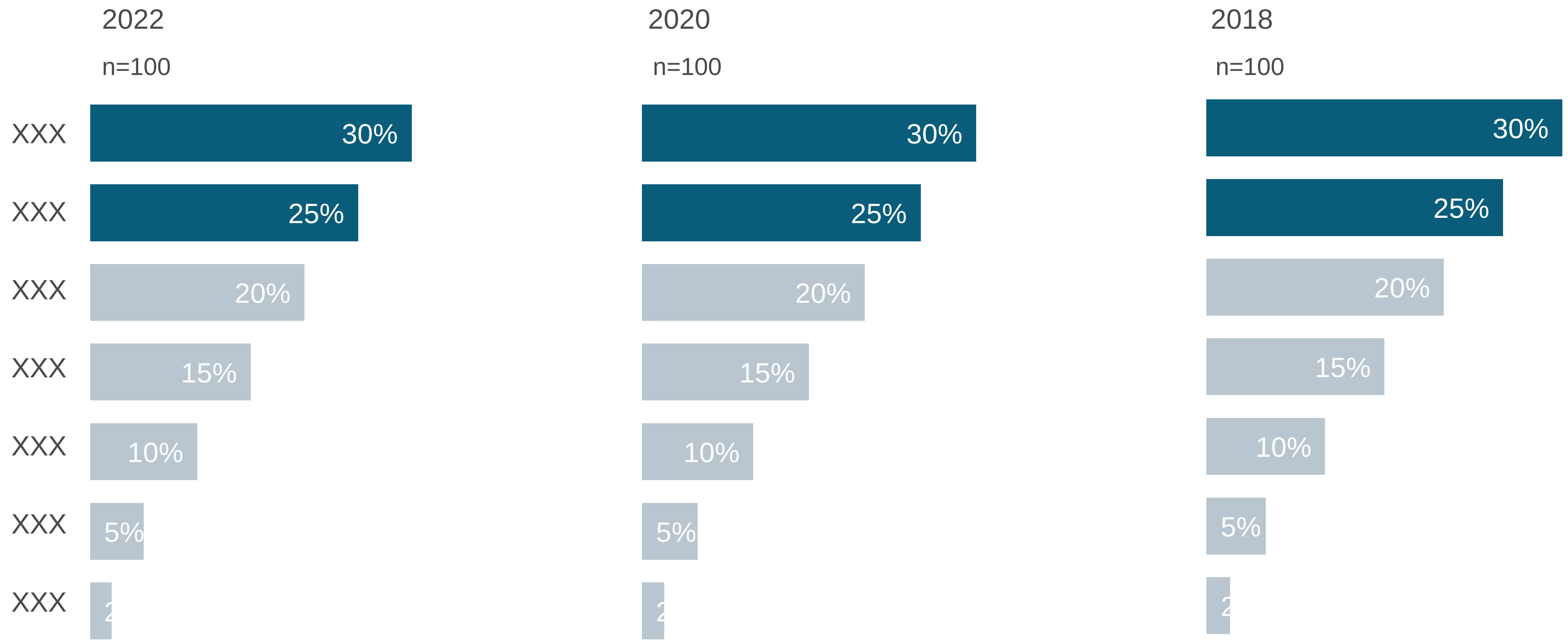
*What describes **sustainable construction** best according to you?*

	Total Q1 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=950	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
XXX	95%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	90%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	85%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	80%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	75%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	70%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	60%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	50%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	45%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	40%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	35%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	20%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	%	30%	30%	30%	30%	30%	30%	30%	30%
XXX	5	30%	30%	30%	30%	30%	30%	30%	30%
XXX		30%	30%	30%	30%	30%	30%	30%	30%

XXX

Perception of sustainable construction

*What describes **sustainable construction** best according to you?*



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Perception of circular construction

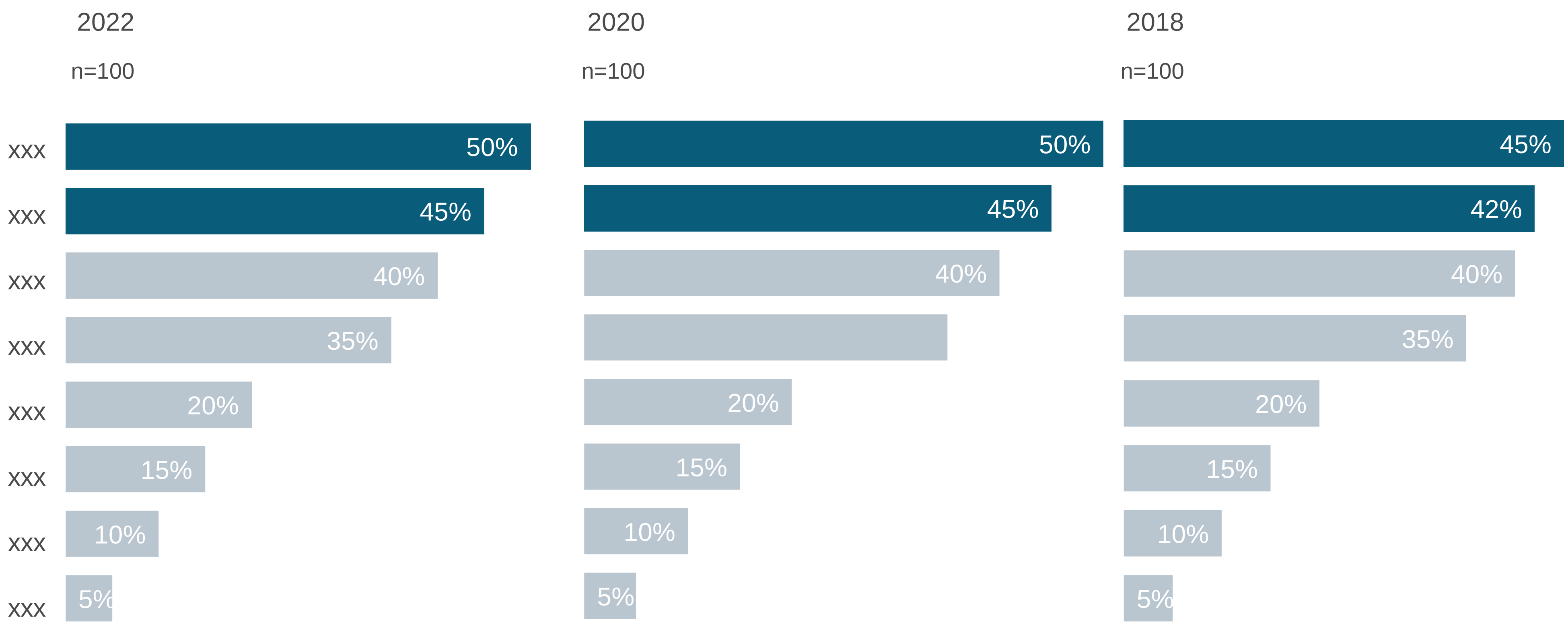
*What describes **circular construction** best according to you?*

	Total	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=950	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	40%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	32%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	27%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	22%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	18%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	13%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	9%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	8%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	7%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	6%	64%	64%	64%	64%	64%	64%	64%	64%
xxx		64%	64%	64%	64%	64%	64%	64%	64%
xxx		64%	64%	64%	64%	64%	64%	64%	64%
xxx	3%	64%	64%	64%	64%	64%	64%	64%	64%
xxx	2	64%	64%	64%	64%	64%	64%	64%	64%

XXX

Perception of circular construction

*What describes **circular construction** best according to you?*



*Data not available

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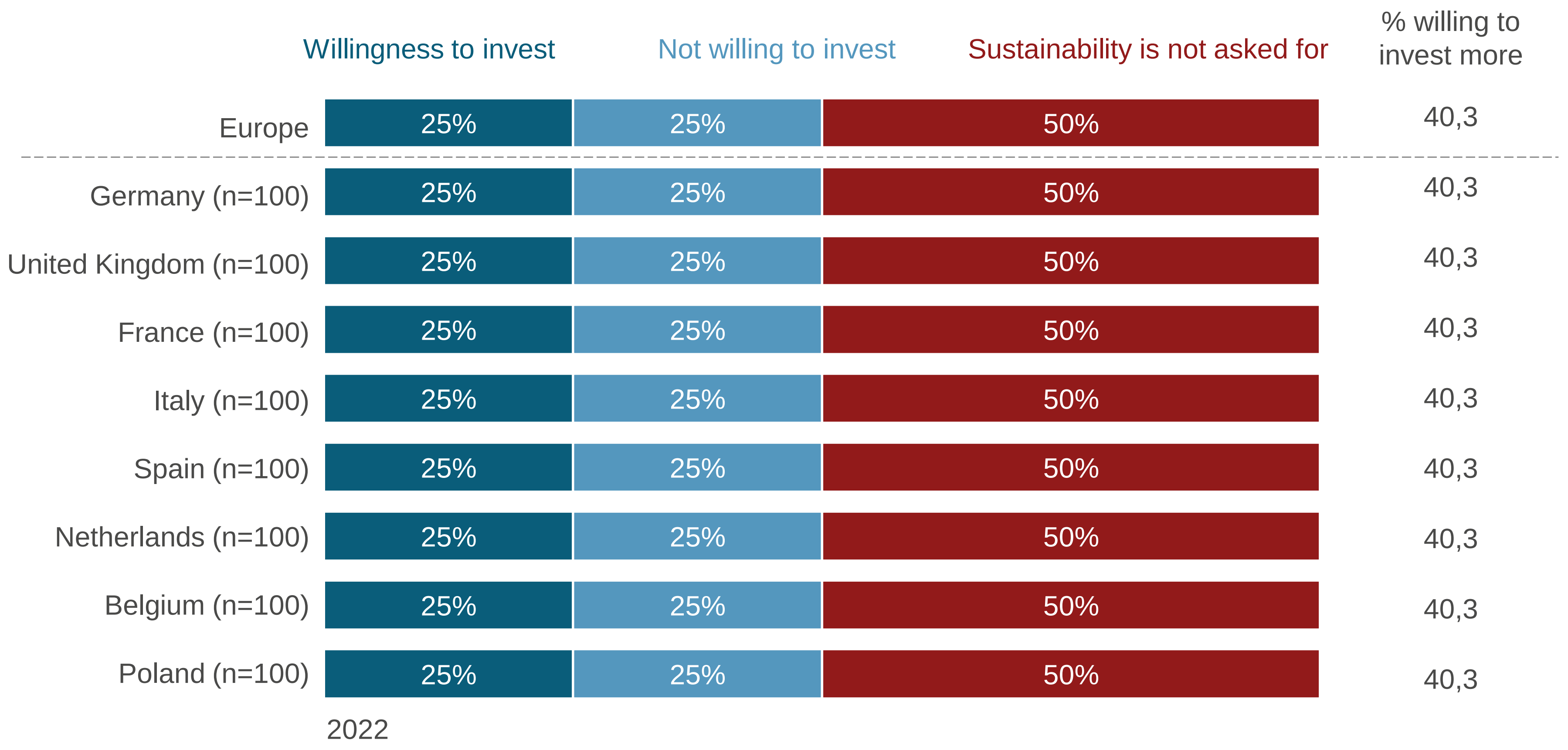
Willingness to invest in **sustainability**

To what extent do your clients ask for sustainability and are they willing to invest more in it?



Base: n=x, all European architects assigned either to the sustainability or circularity block

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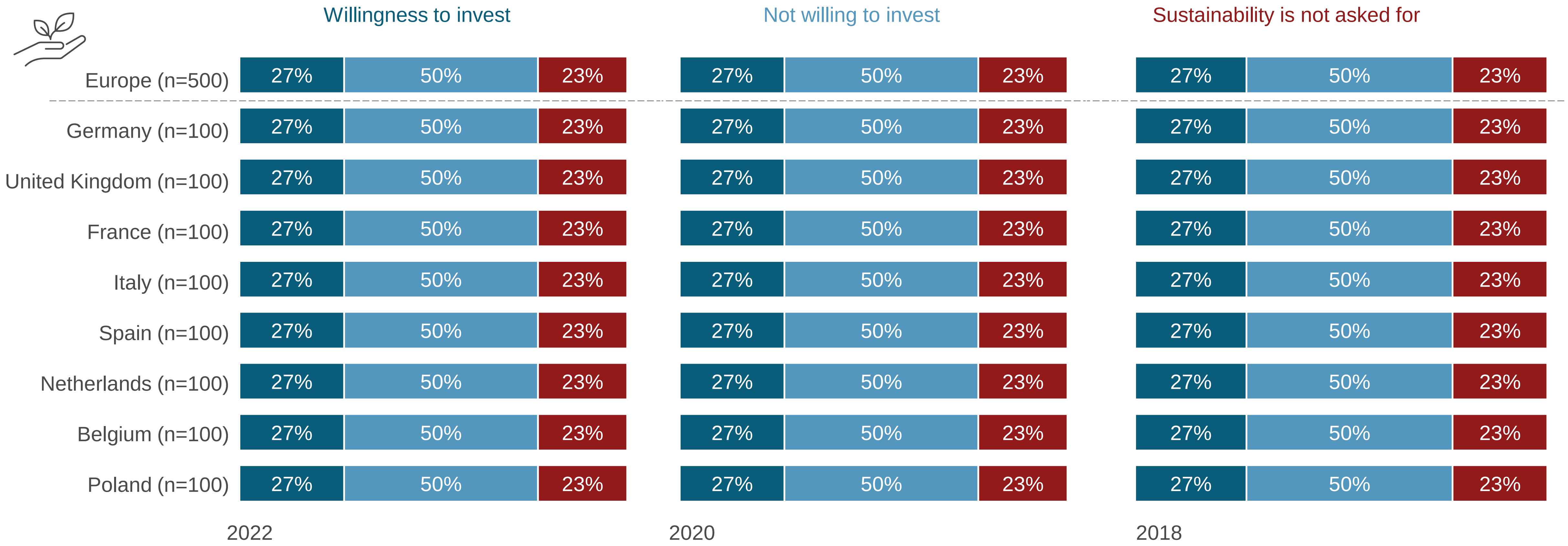
Willingness to invest in **sustainability**

To what extent do your clients ask for sustainability and are they willing to invest more in it?



Base: n=500, all European architects assigned either to the sustainability or circularity block

Base: n=500, all European architects involved in sustainability

Base: n=500, all European architects

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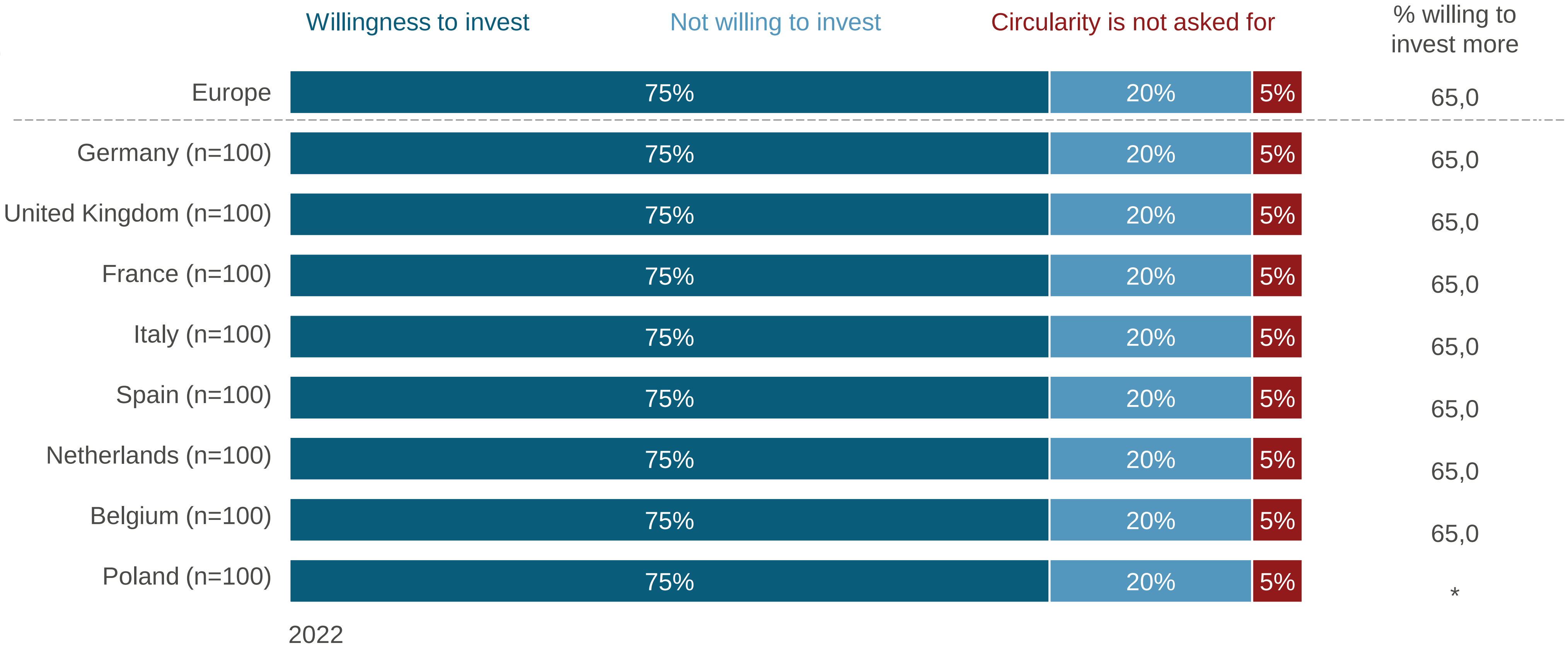
Willingness to invest in **circularity**

To what extent do your clients ask for circularity and are they willing to invest more in it?



Base: n=x, all European architects assigned either to the sustainability or circularity block

*Data not available

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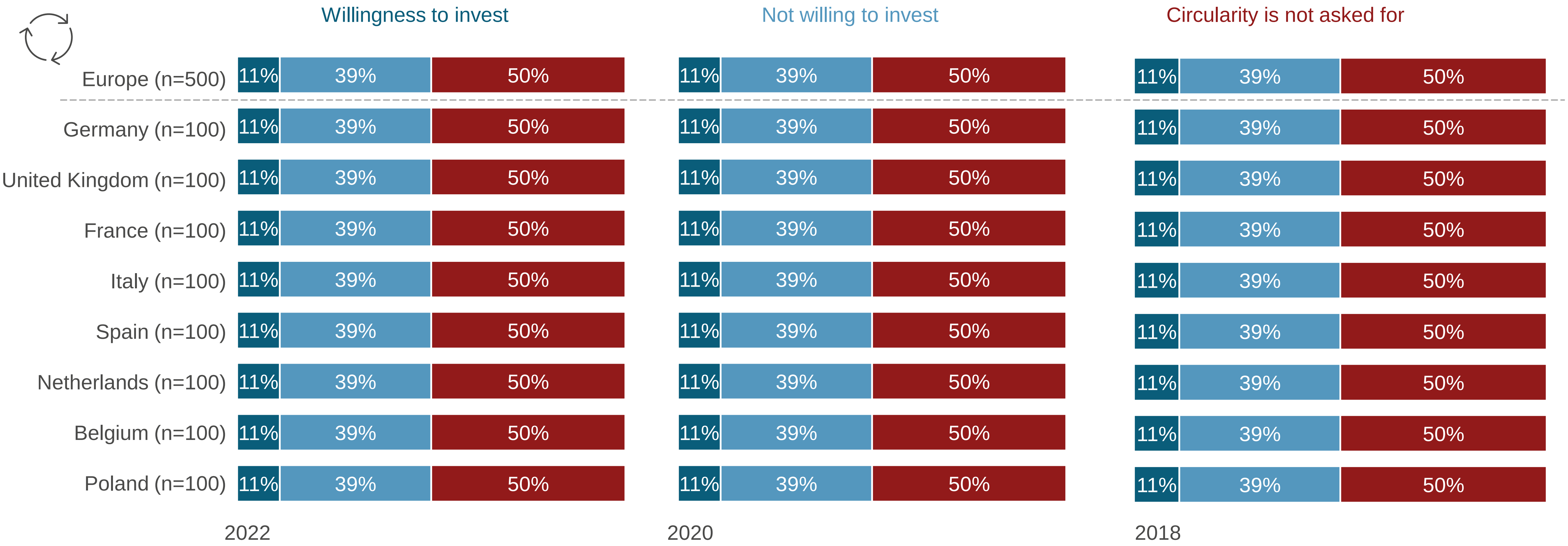
Willingness to invest in **circularity**

To what extent do your clients ask for circularity and are they willing to invest more in it?



Base: n=x, all European architects assigned either to the sustainability or circularity block

Base: n=x, all European architects involved in circularity

Base: n=x, all European architects

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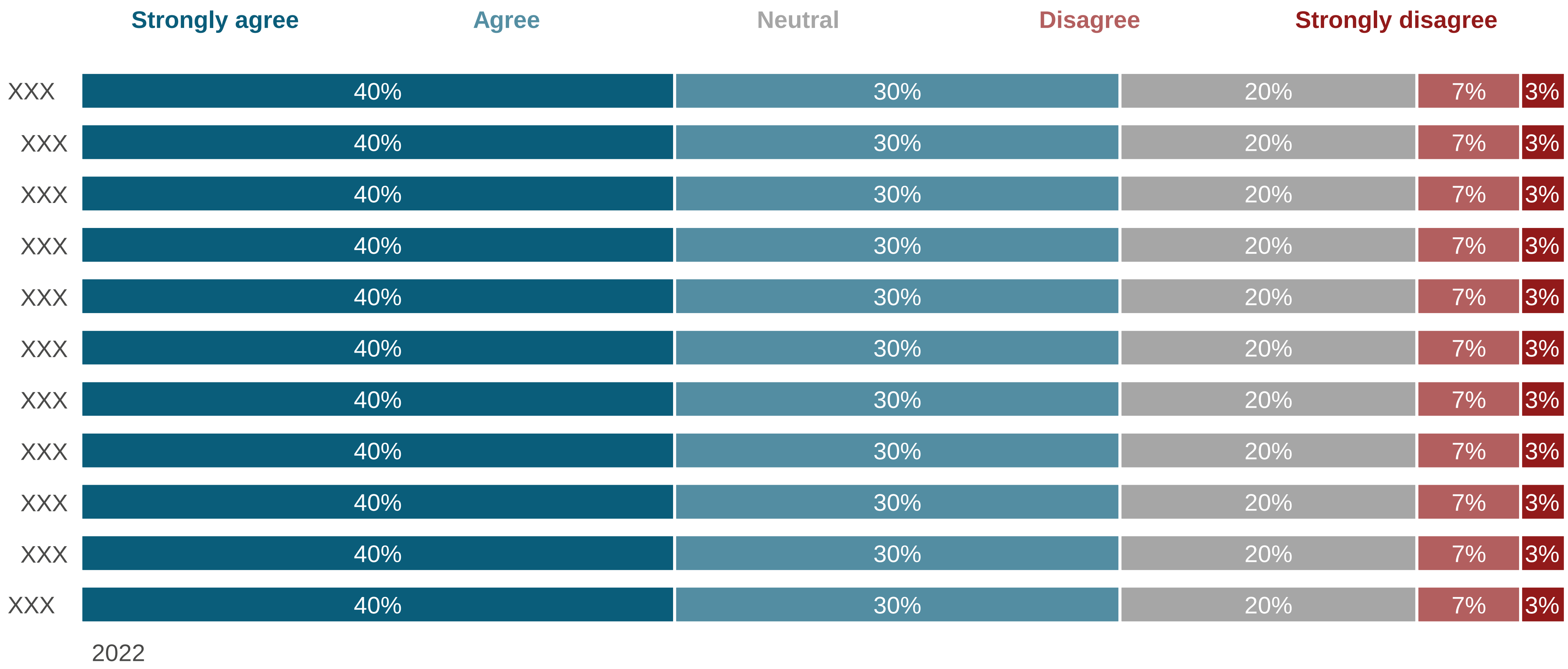
Building components

*To what extent do you agree that the following building **components** can be used for creating sustainable buildings?*



Base: n=x, all European architects assigned either to the sustainability or circularity block

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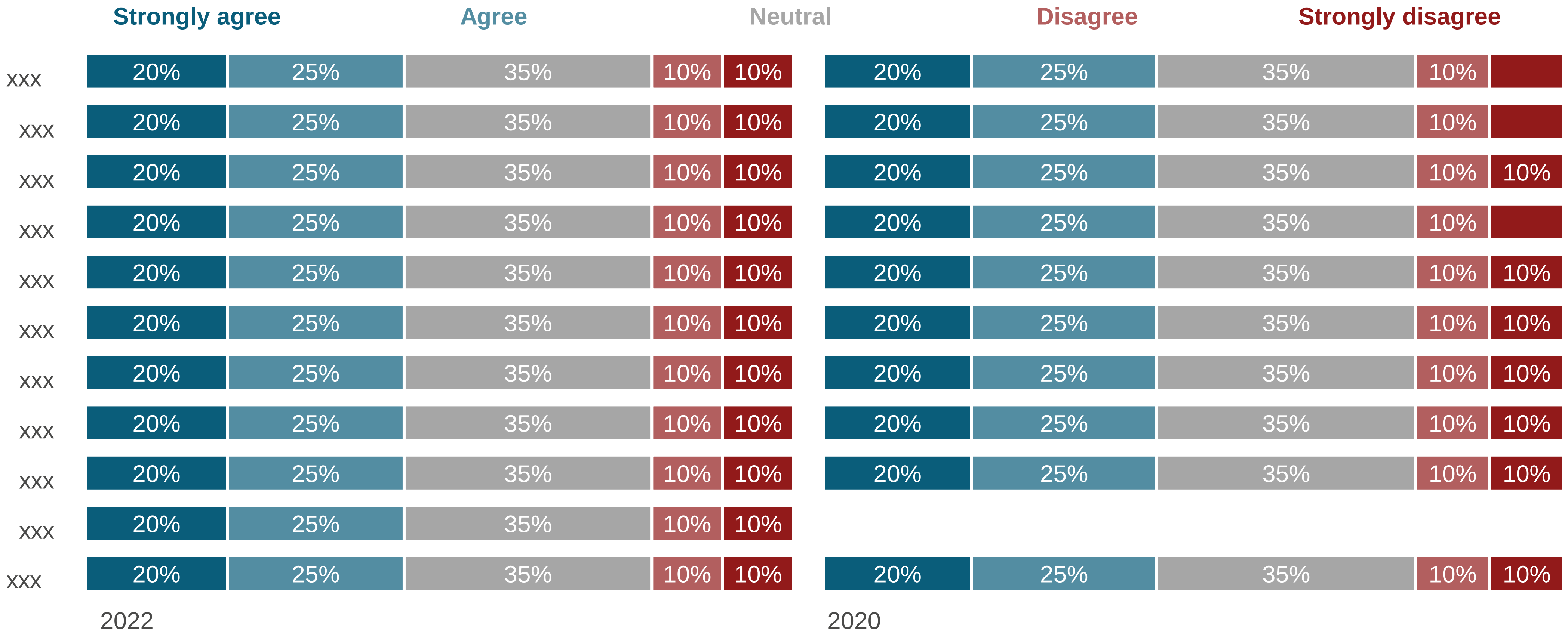
Building components

*To what extent do you agree that the following building **components** can be used for creating sustainable buildings?*



Base: 2022 n=x, 2020 n=x, all European architects assigned either to the sustainability or circularity block

*Not measured in 2020

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Fully circular construction economy

When do you think we can speak of a fully circular construction economy?

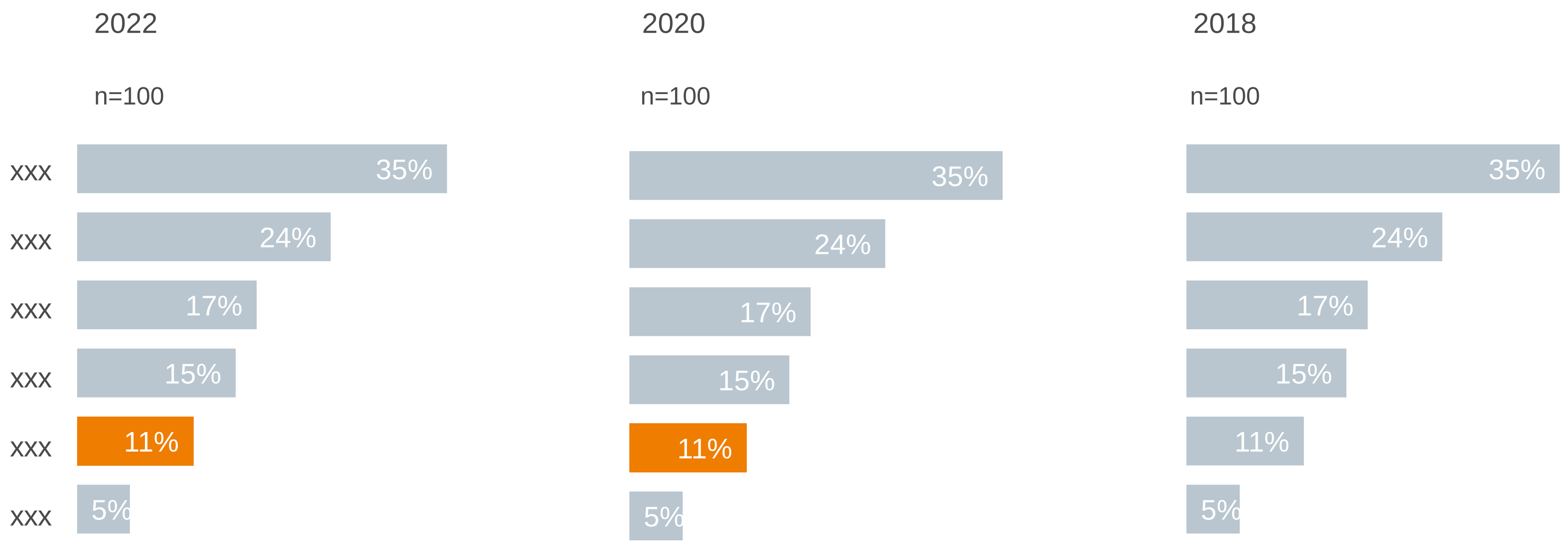
	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	50%	21%	21%	21%	21%	21%	21%	21%	21%
xxx	40%	21%	21%	21%	21%	21%	21%	21%	21%
xxx	32%	21%	21%	21%	21%	21%	21%	21%	21%
xxx	25%	21%	21%	21%	21%	21%	21%	21%	21%
xxx	17%	21%	21%	21%	21%	21%	21%	21%	21%
xxx	5%	21%	21%	21%	21%	21%	21%	21%	21%

Base: n=x, all European architects assigned either to the sustainability or circularity block

Architects are getting increasingly negative in believing it is possible to obtain a fully circular economy

Fully circular construction economy

When do you think we can speak of a fully circular construction economy?



Base: n=100, all European architects assigned either to the sustainability or circularity block

Base: n= 100, all European architects assigned either to the sustainability or circularity block

Base: n= 100, all European architects

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Driving forces

Which other stakeholders other than architects are influential when it comes to promoting sustainable construction?

	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx		[illegible]	30%	30%	30%	30%	30%	30%	30%
xxx		[illegible]	30%	30%	30%	30%	30%	30%	30%
xxx		[illegible]	30%	30%	30%	30%	30%	30%	30%
xxx	50%	[illegible]	30%	30%	30%	30%	30%	30%	30%
xxx	40%	30%	30%	30%	30%	30%	30%	30%	30%
xxx	30%	30%	30%	30%	30%	30%	30%	30%	30%
xxx	20%	30%	30%	30%	30%	30%	30%	30%	30%
xxx	10%	30%	30%	30%	30%	30%	30%	30%	30%
xxx	5%	30%	30%	30%	30%	30%	30%	30%	30%
xxx	2	30%	30%	30%	30%	30%	30%	30%	30%

Base: n=500, all European architects assigned either to the sustainability or circularity block

USP

XXX

Driving forces

Which other stakeholders other than architects are influential when it comes to promoting circular building construction?

	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	23%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	23%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	20%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	19%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	16%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	12%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	11%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	9%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	4%	40%	40%	40%	40%	40%	40%	40%	40%
xxx	3%	40%	40%	40%	40%	40%	40%	40%	40%

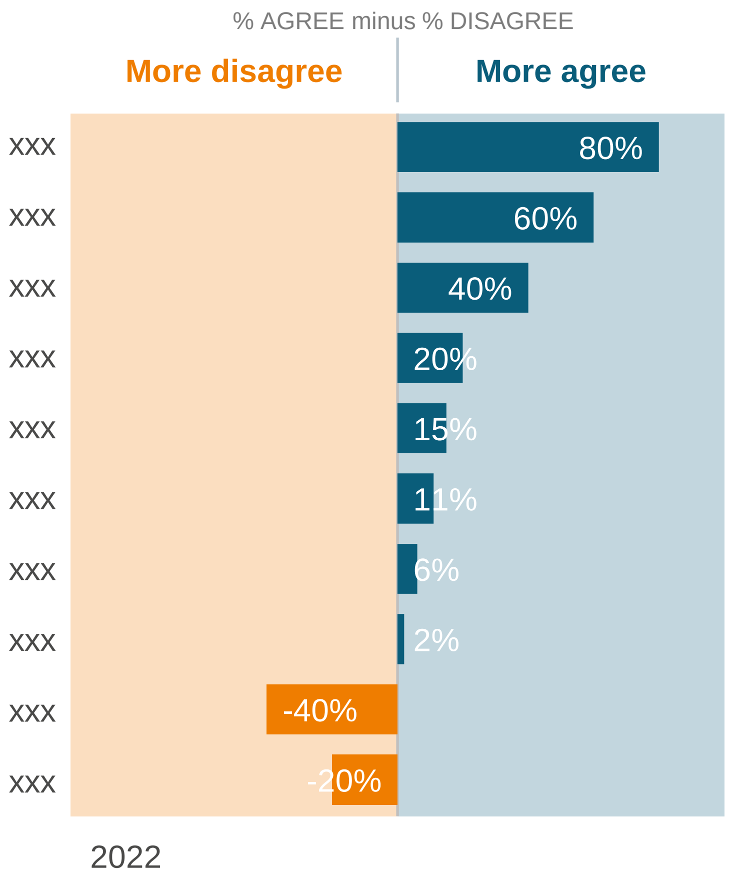
Base: n=500, all European architects assigned either to the sustainability or circularity block

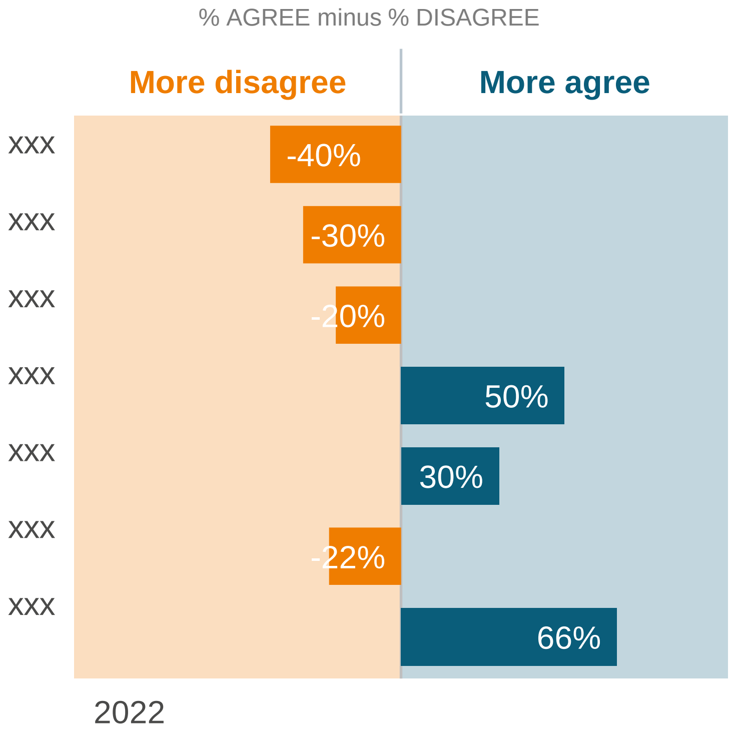
XXX

XXX

Building materials

*To what extent do you agree that the following **materials** can be used for creating sustainable buildings?*



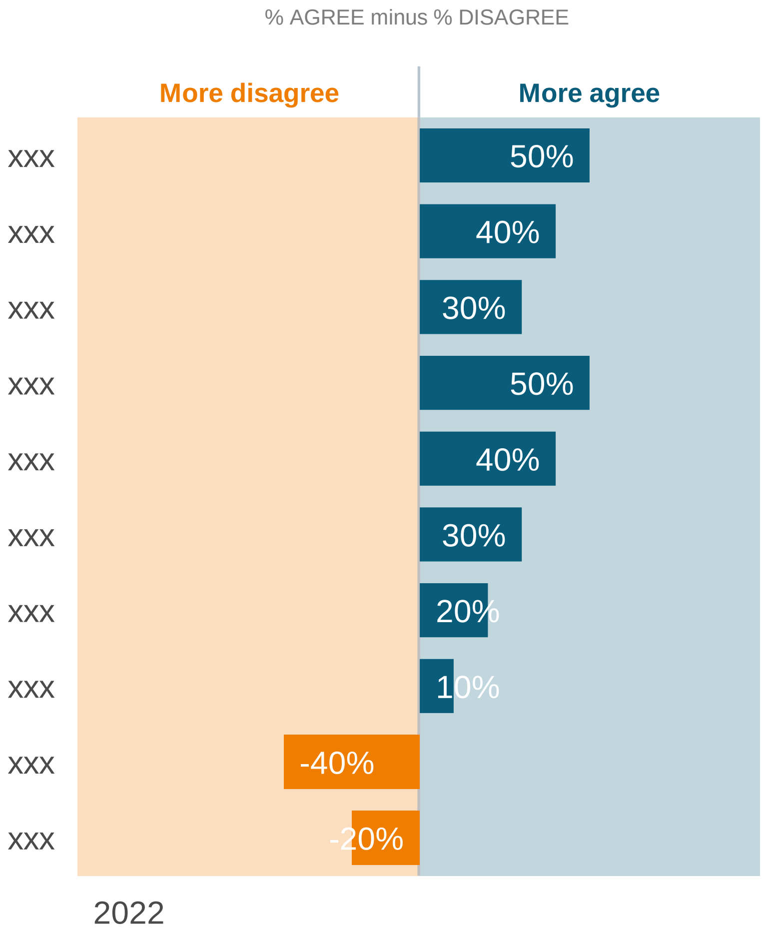


Base: n=x, all randomly assigned to the sustainability block

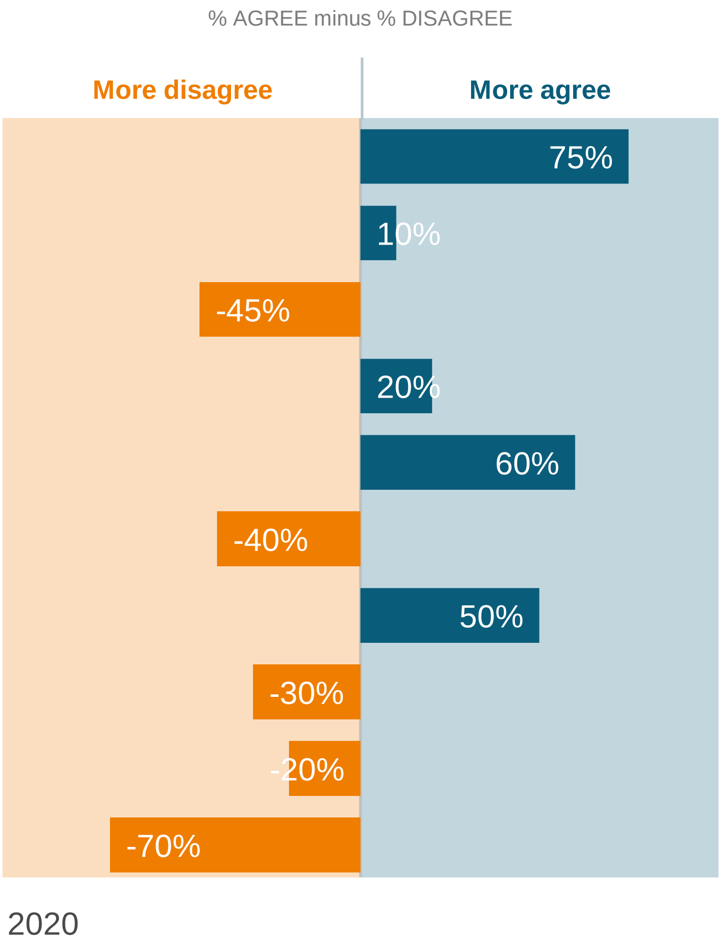
XXX

Building materials

*To what extent do you agree that the following **materials** can be used for creating sustainable buildings?*



Base: n=x, all randomly assigned to the sustainability block

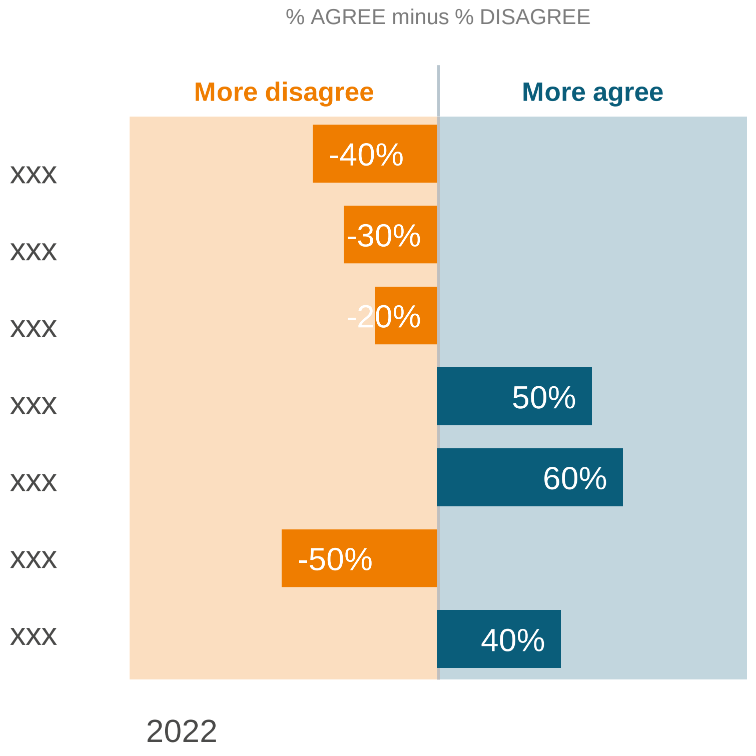


Base: n=x, all randomly assigned to the sustainability block

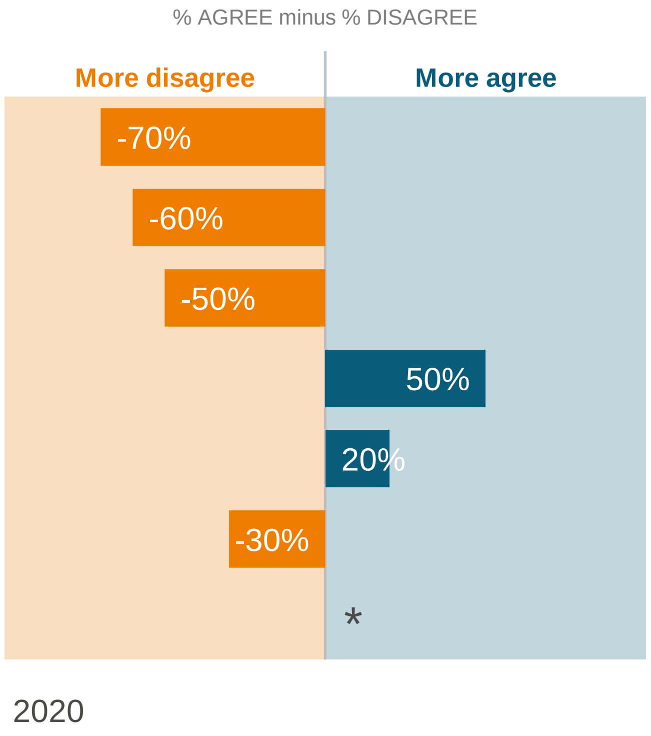
XXX

Building materials

*To what extent do you agree that the following **materials** can be used for creating sustainable buildings?*



Base: n=x, all randomly assigned to the sustainability block



Base: n=x, all randomly assigned to the sustainability block

*Data not available

USP

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To what extent do you agree with the following statements?

Statement	2022 Strongly agree	2022 Agree	2022 Neutral	2022 Disagree	2022 Strongly disagree	2020 Strongly agree	2020 Agree	2020 Neutral	2020 Disagree	2020 Strongly disagree
Circular construction will only succeed if the actors in the construction process are changing their mindset	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Material passports are crucial to have to capture the information about used products	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Building material suppliers have a major influence on driving circular construction	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
It is unclear to many actors in the construction industry what the impact of circularity can be	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

Base: 2022 n=500, 2020 n=500, all European architects assigned either to the sustainability or circularity block

USP

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XXX

Usage of sustainability products

Which sustainable building products or solutions do you use in your projects?

	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	40%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	38%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	35%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	32%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	28%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	25%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	15%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	10%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	5%	27%	27%	27%	27%	27%	27%	27%	27%
xxx	2	27%	27%	27%	27%	27%	27%	27%	27%

If actively involved in sustainable construction

USP

XXX

Information sources

What are your main information sources when it comes to information on sustainability in relation to materials?

	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
Manufacturer websites	50%	34%	34%	34%	34%	34%	34%	34%	34%
Architectural magazines	40%	34%	34%	34%	34%	34%	34%	34%	34%
Specialized media	30%	34%	34%	34%	34%	34%	34%	34%	34%
Associations	20%	34%	34%	34%	34%	34%	34%	34%	34%
Forums and congresses	10%	34%	34%	34%	34%	34%	34%	34%	34%
(Specialised) trade shows	20%	34%	34%	34%	34%	34%	34%	34%	34%
Multi-brand platforms or portals	5	34%	34%	34%	34%	34%	34%	34%	34%
Blogs	1%	34%	34%	34%	34%	34%	34%	34%	34%

Base: n=x, all European architects assigned either to the sustainability or circularity block

XXX

Certifications

Which sustainability certifications are most important in the construction industry?

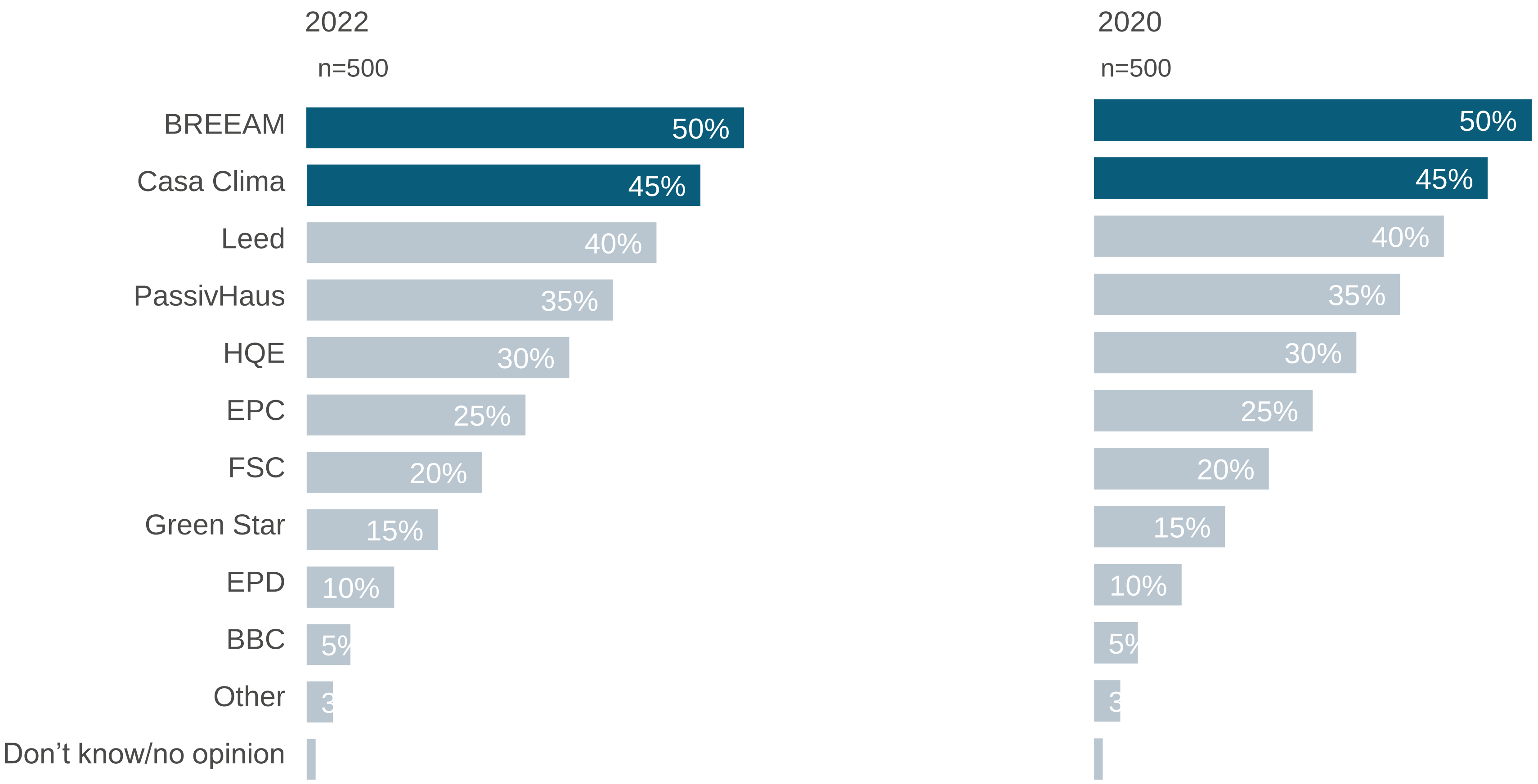
	Total 2022	Germany	UK	France	Italy	Spain	Netherlands	Belgium	Poland
	n=500	n=100	n=100	n=100	n=100	n=100	n=100	n=100	n=100
xxx	20%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	22%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	24%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	26%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	28%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	30%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	32%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	34%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	36%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	10%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	20%	11%	11%	11%	11%	11%	11%	11%	11%
xxx	44%	11%	11%	11%	11%	11%	11%	11%	11%

All European architects

XXX

Certifications

Which sustainability certifications are most important in the construction industry?



All European architects assigned either to the sustainability or circularity block

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Sample and methodology of the research

Most architectural firms have less than two FTE. Nevertheless, the focus of the European Architectural Barometer is on the larger firms. Therefore, the research is only conducted among architectural firms with two FTE and more. As the study is focused on architects active in construction, architects that are solely active in interior or landscaping are excluded from the research.

The table below shows the number of successful interviews in each country. The difference between the gross sample of respondents that were reached (all reached numbers) and the net sample of respondents that were reached, was caused by those architects who could not be contacted or had an incorrect phone number, and those who did not meet the selection criteria (mostly due to the fact that the architectural firms had less than two FTE). The difference between the net sample of respondents reached and the response are the number of architects who refused to participate.

Response								
Gross sample (all attempts to approach respondents)	1000	1000	1000	1000	1000	1000	1000	1000
Net sample (all approached respondents)	1000	1000	1000	1000	1000	1000	1000	1000
Completed interviews	1000	1000	1000	1000	1000	1000	1000	1000
Response percentage (interviews/ net sample)	1000	1000	1000	1000	1000	1000	1000	1000

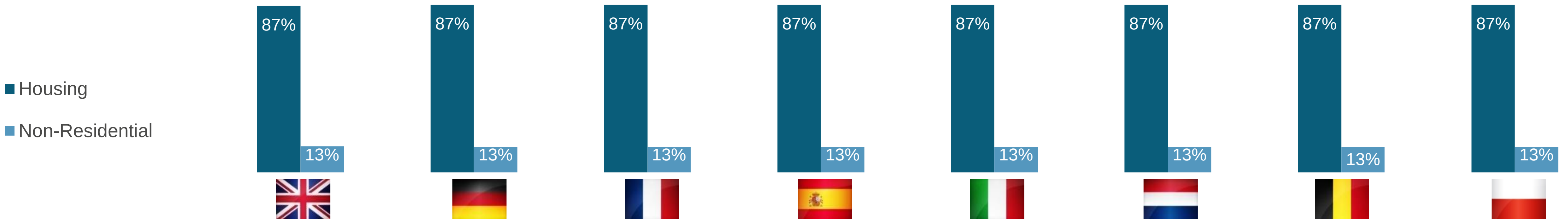
Background of the architects

The table below shows the average number of employees of the architectural firms within the current quarter of this research, divided by country. The architectural firms with one employee were excluded from this research. The second table shows the segments in which architects within this research are mostly active.

Number of FTE

Average	**9,0**	**9,0**	**9,0**	**9,0**	**9,0**	**9,0**	**9,0**	**9,0**
2 – 4 FTE	40%	40%	40%	40%	40%	40%	40%	40%
5 – 9 FTE	30%	30%	30%	30%	30%	30%	30%	30%
10 – 19 FTE	20%	20%	20%	20%	20%	20%	20%	20%
20 – 39 FTE	10	10	10	1 %	1	10	10	10
> 40 FTE	5	5	5			5%	5	5

Segment mostly active



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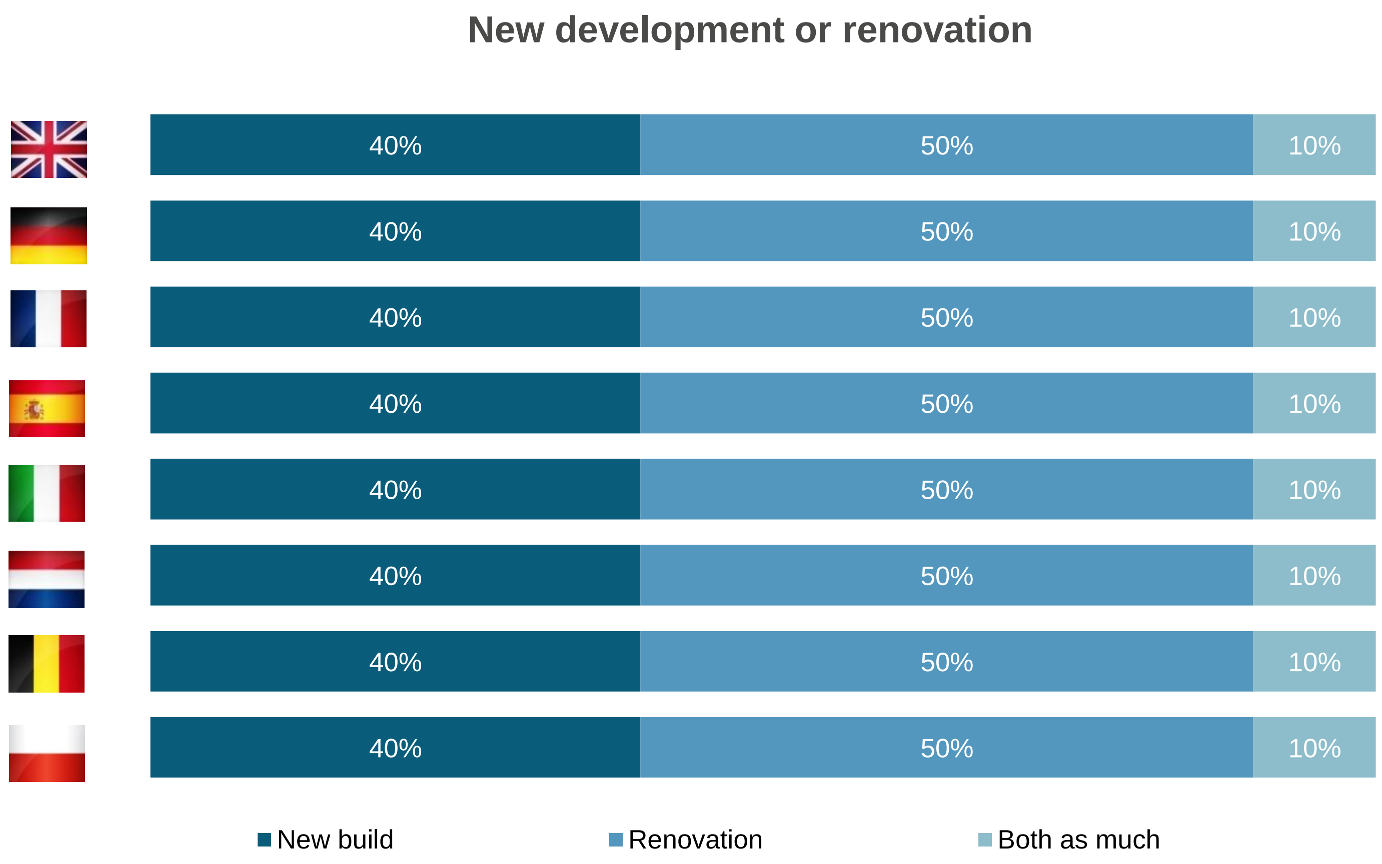
Background of the architects

The figure below shows the split in activities in new build and renovation.



About Arch-Vision

European Architectural Barometer

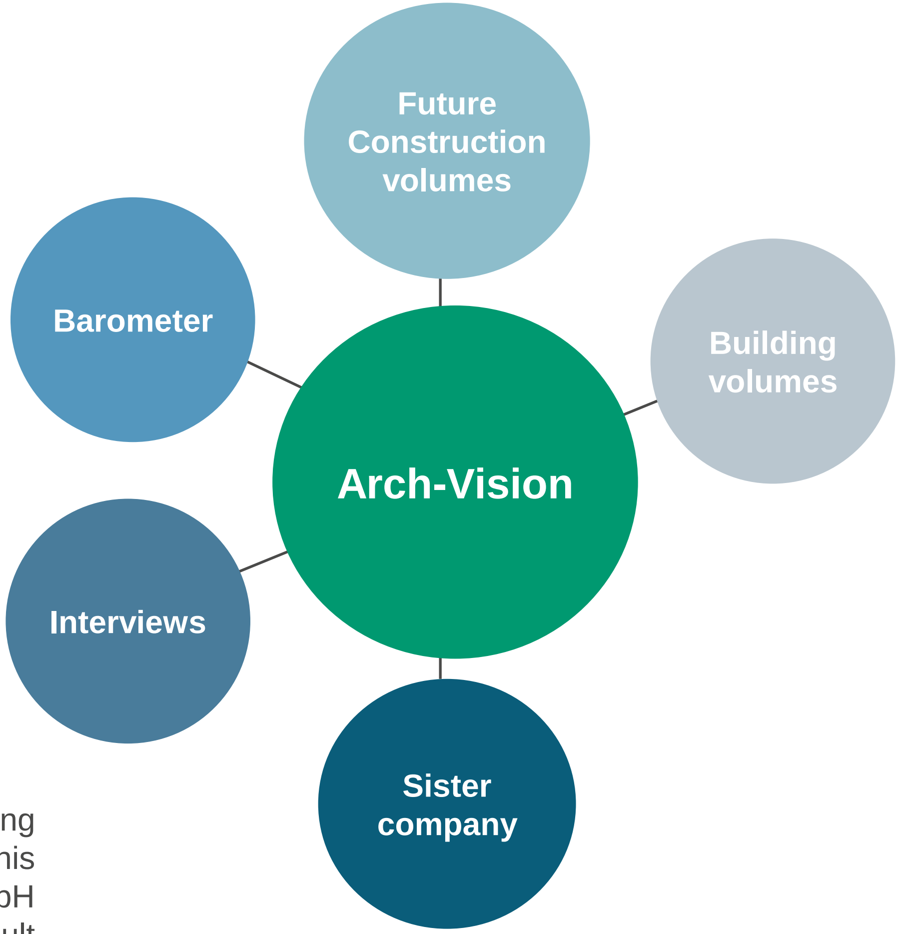
Architects have already been monitored by several institutes in quite diverging ways in the different countries. Arch-Vision launched this European Architectural Barometer for a more cohesive view. The European Architectural Barometer is extremely useful for organisations with a focus on Europe that also want to compare the activities of architects in different countries.

Interviews

All interviews are conducted by native speakers. From the third measurement onwards, two hundred interviews per country have been completed per measurement. The first two measurements were based on one hundred interviews per country. Later, for the Netherlands and Belgium, the measurements returned to one hundred interviews.

Sister company

Arch-Vision is a sister company of USP Marketing Consultancy (www.usp-mc.eu), BouwKennis (www.bouwkennis.nl), BauInfoConsult GmbH (www.bauinfoconsult.de) and BuildInfoConsult (www.buildinfoconsult.com). These are major agencies each providing full-service research support and specialised in the construction and real estate markets.



Future construction volumes

For decision makers charged with considerations of company resources, staffing and marketing strategy, a clear insight into future construction volumes is essential. However, economic indicators seldom provide an adequate picture of these volumes.

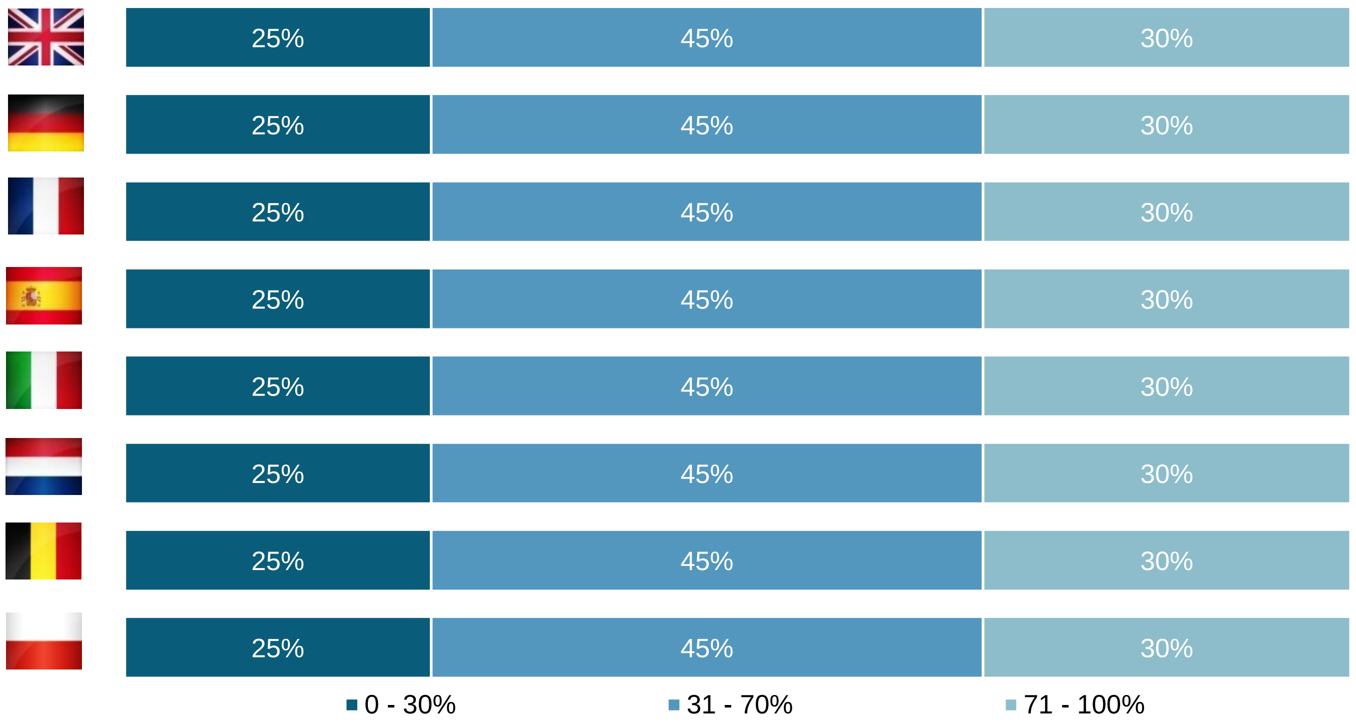
Building volumes

The construction industry operates in a delayed cyclical market, which means that buildings designed today will not be ready until at least two years from now. The economic activities of architectural firms provide a strong indication of the direction in which the construction sector will develop in terms of both building volumes and the way in which building volumes will be realised.

Results per segment

For three key questions from the current measurement of the European Architectural Barometer, the results are divided by architects that realise most of their sales in the residential segment (0% – 30% non-residential), by architects that realise sales in both segments (31% - 70% non-residential), and by architects that realise most of their sales in the non-residential segment (71% - 100% non-residential).

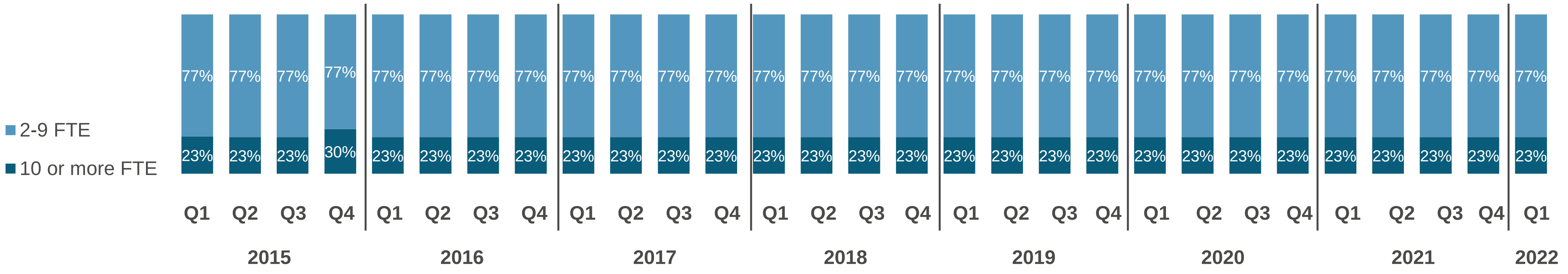
Segment most active

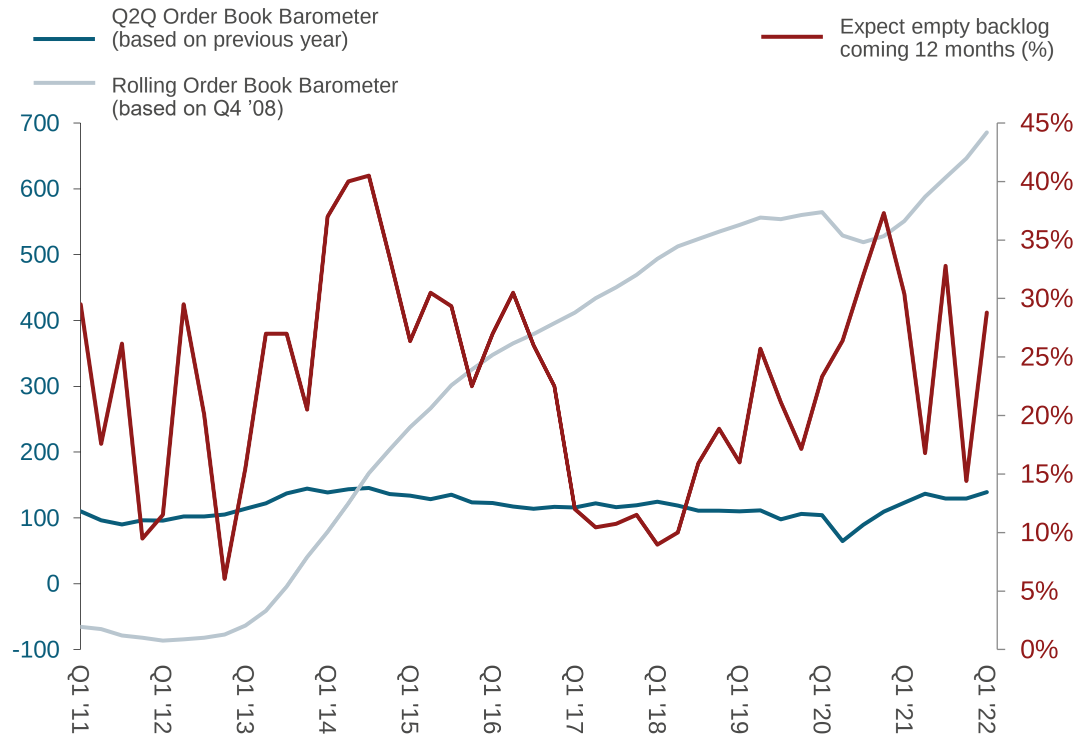


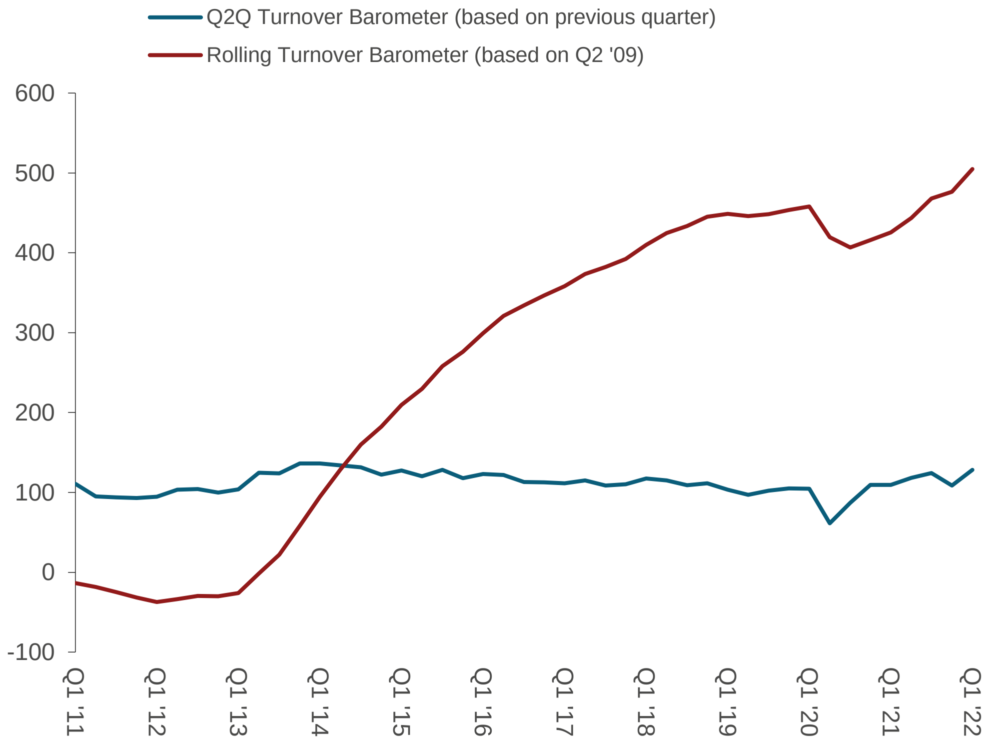
The tables on the following pages show the abovementioned split with regard to the following questions:

- **How did the turnover develop in this quarter compared to the previous quarter?**
- **How did your order book develop in this quarter compared to the same quarter last year?**
- **Do you expect that your order book might be empty these coming 12 months?**

Short-term outlook among British architects







Development turnover and order book

Development turnover (based on previous quarter)

% sales in non-residential	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100
Strongly increased (>5%)	32%	27%	47%	11%	3%	3%	6%	14%	12%	18%	11%	20%	19%	13%	6%	22%	28%	20%	8%	19%	17%	2%	7%	15%
Slightly increased (0-5%)	32%	27%	47%	11%	3%	3%	6%	14%	12%	18%	11%	20%	19%	13%	6%	22%	28%	20%	8%	19%	17%	2%	7%	15%
Stayed the same (0%)	32%	27%	47%	11%	3%	3%	6%	14%	12%	18%	11%	20%	19%	13%	6%	22%	28%	20%	8%	19%	17%	2%	7%	15%
Slightly decreased (0-5%)	32%	27%	47%	11%	3%	3%	6%	14%	12%	18%	11%	20%	19%	13%	6%	22%	28%	20%	8%	19%	17%	2%	7%	15%
Strongly decreased (>5%)	32%	27%	47%	11%	3%	3%	6%	14%	12%	18%	11%	20%	19%	13%	6%	22%	28%	20%	8%	19%	17%	2%	7%	15%
Barometer turnover	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**	**125**

Development order book (based on previous year)

% sales in non-residential	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100	0 - 30	31 - 70	71 - 100
Strongly increased (>5%)	29%	54%	35%	14%	14%	23%	8%	16%	17%	19%	18%	30%	33%	31%	38%	27%	21%	23%	15%	29%	17%	16%	17%	20%
Slightly increased (0-5%)	29%	54%	35%	14%	14%	23%	8%	16%	17%	19%	18%	30%	33%	31%	38%	27%	21%	23%	15%	29%	17%	16%	17%	20%
Stayed the same (0%)	29%	54%	35%	14%	14%	23%	8%	16%	17%	19%	18%	30%	33%	31%	38%	27%	21%	23%	15%	29%	17%	16%	17%	20%
Slightly decreased (0-5%)	29%	54%	35%	14%	14%	23%	8%	16%	17%	19%	18%	30%	33%	31%	38%	27%	21%	23%	15%	29%	17%	16%	17%	20%
Strongly decreased (>5%)	29%	54%	35%	14%	14%	23%	8%	16%	17%	19%	18%	30%	33%	31%	38%	27%	21%	23%	15%	29%	17%	16%	17%	20%
Barometer order book	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**134**

Expectation empty order book in the next 12 months

Expectation empty order book in the next 12 months

																								
% sales in non-residential	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**	**0 - 30**	**31 - 70**	**71 - 100**
Yes	32%	21%	30%	5%	3%	6%	13%	18%	23%	9%	11%	40%	11%	8%	0%	18%	13%	7%	9%	6%	0%	15%	21%	15%
No	32%	21%	30%	5%	3%	6%	13%	18%	23%	9%	11%	40%	11%	8%	0%	18%	13%	7%	9%	6%	0%	15%	21%	15%
Do not know	32%	21%	30%	5%	3%	6%	13%	18%	23%	9%	11%	40%	11%	8%	0%	18%	13%	7%	9%	6%	0%	15%	21%	15%

Methodology calculation of the Q2Q Saldo and Barometer

The European Architectural Barometer for the order book development and turnover development is calculated in the following way:

1. Respondents with a strong increase (>5%) are multiplied by 100
2. Respondents with a slight increase are multiplied by 50
3. Respondents that remained the same are multiplied by 0
4. Respondents with a slight decrease are multiplied by –50
5. Respondents with a strong decrease (>5%) are multiplied by –100
6. The sum of these values divided by 100, results in the Q2Q saldo.
7. Adding 100 to this saldo results in the Barometer figures, where 0 is the strongest possible decrease, 100 is stabilisation and 200 is the strongest possible increase.

The Barometer values calculated this way are presented in the report as Quarter to Quarter Turnover and Order book Barometer.

Example of calculation Q2Q Barometer value:

Development Turnover Spain	Q2 '15		Calculated Values
Increased by more than 5%	25%	x 100	2500
Slightly increased (0-5%)	28%	x 50	1400
Stayed the same (0%)	36%	x 0	0
Slightly decreased (0-5%)	3%	x -50	-150
Decreased by more than 5%	8%	x -100	-800

Q2Q Saldo = (2500 + 1400 – 150 – 800) / 100 = 30

Q2Q Barometer value = 100 + 30 = 130

Methodology calculation of the Q2Q Saldo and Barometer

To calculate the developments in the turnover and the order book with regard to the first measurement in 2009, Arch-Vision has developed the so-called Rolling Barometer. The Rolling Barometer is calculated as the cumulative sum of the Q2Q saldos of every quarter. The Rolling Barometer can drop or rise by 100 points per quarter at maximum.

Example: The Rolling Order Book Barometer is -66 after twelve quarters. In the worst case (all architects reporting a decrease of over 5% every quarter) the Rolling Barometer would be -1200. In the best case it would be 1200. Therefore a score of -66 in Q4 2011 means a slightly worse situation than in Q4 2008.

Barometer order book

	Q1'09	Q2'09	Q3'09	Q4'09	Q1'10	Q2'10	Q3'10	Q4 '10	Q1 '11	Q2 '11	Q3 '11	Q4 '11
Q2Q Barometer values	71	75	100	85	100	110	94	94	111	102	94	99
Saldo Q2Q Values	-29	-25	0	-15	0	10	-6	-6	11	2	-6	-1
		+ (-25)	+ (0)	+ (-15)	+ etc.							
Rolling Barometer Values	-29	-54	-54	-69	-69	-59	-65	-71	-60	-59	-65	**-66**

Future building volumes: building a model for prediction

USP

Building volumes

Architects are at the front of the construction sector. They are the first to perceive positive and negative changes. The current developments of architectural firms have a strong predictive impact on the total market. Arch-Vision publishes its predictions for the building volumes based on the developments experienced by architects.

The model

Arch-Vision uses a model based on eleven market indicators and Arch-Vision's own results. The model combines information about the economy, like construction requests and confidence figures, with data about the developments within architects' experience, such as changes in the turnover and the number of active architects. Only information that proved to have a strong correlative value on the building volume is used. Subsequently, every kind of data is weighed based on the predictive value.

High predictive value

To ensure the correctness of the predictive value, the model has been – with retroactive effects – compared to the actual growth and shrinkage of the construction volume since 2003 for the Dutch* market and since Q3 2009 for the remaining countries. The model turns out to possess a very high predictive value. Nevertheless, the forecast has to be interpreted with caution, as it remains a calculation. As with all predictions, the margin of error can be larger, comparable to the weather forecast: sometimes the Arch-Vision model can be inaccurate.

Calculation predictive value

The predictive value is calculated based on the consistency of the market indicators with construction volumes, for the renovation, maintenance and the new build markets. The correlation is determined by a regression analysis, i.e. a statistical technique for analysing data in which there is a (possible) specific connection, known as regression.

** Since 2003, the developments of architects in the Netherlands have been monitored by Arch-Visions' sister organisation BouwKennis. Therefore, it is possible for the Netherlands to calculate the connection between the architects and the building volume based on 10 years of data.*

Sustainability and circularity in construction

Questionnaire guide

This chapter focuses on the theme of Q1 2022: sustainability and circularity in the European construction world. As these two concepts go hand in hand – but are realised at different levels in the construction industry – respondents were first asked about their perception of each concept and the involvement of their companies in these concepts.

In order to capture as many details of both topics while keeping the attention of respondents, the questionnaire was designed in such a way that **respondents were assigned either to sustainability or circularity sub-blocks based on their companies' awareness and involvement in these topics**.

- If the company of the respondents is actively involved in one of the topics (either sustainability or circularity), they will route to the corresponding sub-block. If the company of the respondents is actively involved in both topics, they will randomly route to one of the sub-blocks. Only these respondents received specific questions on their company's related activities. Due to low activity in circular construction, **the number of observations in some countries did not allow us to report the results on a country level.**
- If the company of the respondents is aware but not actively involved in either of the topics, they will randomly route to one of the sub-blocks, but receive only the general questions on the topics.
- If the company of the respondents is not aware of either of the topics, they will randomly route to one of the sub-blocks. After being introduced to the topic, they will receive the general questions on the topics.

Future building volumes: Calculation

The Dutch market has been taken as a basis. The correlation between market volume regarding new build, maintenance and renovation on the one hand, and possible explanatory factors on the other hand, serves as a starting point.

The correlation with building volumes is tested for a total of eleven market indicators together with two outcomes of the European Architectural Barometer. The correlation of the following four indicators appeared to be strongest:

- Building permits – m² of useful floor area in non-residential buildings
- Building permits, number of dwellings
- Development of Turnover Barometer (European Architectural Barometer figures)
- Number of FTE working at architectural companies (European Architectural Barometer figures)

The predicting value of these indicators is between 54% and 91%. Because a longer history of data was not available for most countries, the development of these four indicators in the last four quarters and the four quarters before served as a guidance for this measurement. The used range of five indicators is not static and can be adjusted for future calculations. With the database becoming more complete, more reliable correlations can adjust the mix of indicators. A longer range of regression measurements shall replace the comparison of the last four quarters with the four quarters before.

The forecast is based on the market knowledge of USP Marketing Consultancy together with the market figures available, such as building permits and the developments among architects who are mainly active in renovation or new build as well as mainly active in residential or non-residential. Due to the limited number of quarters, a forecast based on a statistical model is not possible for now. The model that was used has a lower prediction value for this period. However, USP Marketing Consultancy aims at clarifying the general direction of the construction market development by publishing these data and the predictions will be updated in the coming reports.

Questionnaire – Standard

These questions are asked every measurement

1. How many employees (in FTE) does your company currently have, including yourself? [if less than 2 FTE, end of research]
2. What is your position?
3. As an architectural firm, are you mostly active in the segment housing, non-residential building, interior, or landscaping? [If interior or landscaping, end of research]
4. How many employees in FTE did your company have at the end of 2021?
5. How many employees in FTE did your company have at the end of 2020?
6. How many employees in FTE did your company have at the end of 2019?
7. If your turnover should relate to housing and non-housing, what percentage of your revenue do you get from housing-related jobs?
8. Are you mostly active in new build or renovation?
9. How did the turnover develop this quarter compared to the previous quarter? Decreased by more than 5%; slightly decreased (0-5%); stayed the same (0%); slightly increased (0-5%); strongly increased (more than 5%)
10. How did your order book develop in this quarter compared to the same quarter previous year? Decreased by more than 5%; slightly decreased (0-5%); stayed the same (0%); slightly increased (0-5%); strongly increased (more than 5%)
11. How many projects have been postponed in this quarter?
12. How many projects were not started and cancelled in this quarter?
13. Do you expect that your order book might be empty these coming 12 months?

Questionnaire – Theme questions

1. We will now go deeper into sustainability in the construction industry. What describes sustainable construction best according to you? [Spontaneous question]

2. What describes circular construction best according to you? [Spontaneous question]

3. To what extent is your company involved in a sustainable and circular construction? You can answer on a scale of 1 to 3. [Read out the answer options]
- We are not aware of this topic
- We are aware but not actively involved
- We are actively involved in some projects
- Sustainable construction
- Circular construction

4. Which other stakeholders then architects are influential when it comes to promoting sustainable construction? [Spontaneous question]

5. To what extent do you agree that the following building components can be used for creating sustainable buildings? You can answer on a scale of 1 to 5. Where 1 = strongly disagree and 5 = strongly agree [Read out the answer options]
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree
- Roofs
- Ceilings
- Facades
- Floor covering
- Doors
- Facade windows
- Roof windows
- Inner walls
- Outer walls
- Electrical installations (e.g. switches/sockets)
- Smart home solutions

Questionnaire – Theme questions

6. To what extent do you agree that the following materials can be used for creating sustainable buildings? You can answer on a scale of 1 to 5. Where 1 = strongly disagree and 5 = strongly agree [Read out the answer options]

- Wood/ Timber
- Steel
- Aluminium
- Concrete
- Glass
- Cement
- Brick
- Plaster
- Plastics
- PVC
- Polyurethane insulation
- Polyurethane adhesives and sealants
- Polyurethane coatings
- Natural stone
- Ceramic
- Carpet

7. To what extent do your clients ask for sustainability and are they willing to invest more in it? [Read answers out loud]

- Sustainability is not asked for
- Sustainability is asked for, but the principal [client] is not willing to invest more in it
- Sustainability is asked for and the principal [client] is willing to invest more in it

8. How much more are clients willing to invest? [Numerical]

9. Which sustainability certifications are most important in the construction industry? [Spontaneous question]

10. What would be approximately the share of your projects where sustainability is taken into account?

- % of projects

11. What would be approximately the share of projects where sustainability is taken into account in your residential projects?

- % residential projects
- Don’t want to answer

Questionnaire – Theme questions

12. Which sustainable building products or solutions do you use in your projects? [Spontaneous question]

13. What are your main information sources when it comes to information on sustainability? [Spontaneous question]

14. Which other stakeholders then architects do you see as the most influential ones when it comes to promoting circular construction? [Spontaneous question]

15. When do you think we can speak of a fully circular construction economy? [Read answers out loud]

- 2030
- 2040
- 2050
- Later than 2050
- This will not happen
- Don’t know

16. To what extent do you agree with the following statements? You can answer on a scale of 1 to 5. Where 1 = strongly disagree and 5 = strongly agree [Read out the answer options]

- Circular construction will only succeed if the actors in the construction process are changing their mindset
- Building material suppliers have a major influence on driving circular construction
- Material passports are crucial to have to capture the information about used products
- It is unclear to many actors in the construction industry what the impact of circularity can be

17. To what extent do your clients ask for circularity and are they willing to invest more in it? [Read answers out loud]

- Circularity is not asked for
- Circularity is asked for, but the principal is not willing to invest more in it
- Circularity is asked for and the principal is willing to invest more in it

18. How much more are clients willing to invest? [Numerical]

19. What would be approximately the share of your projects where circularity is taken into account?

- % of projects
- Don’t want to answer

20. What would be approximately the share of projects where circularity is taken into account in your residential projects?

- % residential projects
- Don’t want to answer

USP

About USP

USP Marketing Consultancy

Head office | **Subsidiaries**

Rotterdam | **Düsseldorf** | **Zagreb**

Total
70

Research Analysts | **Project managers** | **Consultants**

Market specialist
installation, construction, home improvement and real estate

Dedicated and multi-client research

Active in the market for 28 years

250+ dedicated market research projects annually

Revenue distribution

80%
turnover coming from **international projects**

85%
turnover coming from **dedicated market research**, 15% from multi client

70%
turnover coming from **B2B**, 30% B2C

Research in
32
countries in 2020

68
focus groups

1,278
in-depth interviews

62,758
B2B CATI interviews

52,850
B2C online interviews

What we do

Examples

Segmentation

Customer journey

Branding

Concept/ product research

Customer satisfaction

Trends

Distribution research

Market exploration

Pricing

Market size

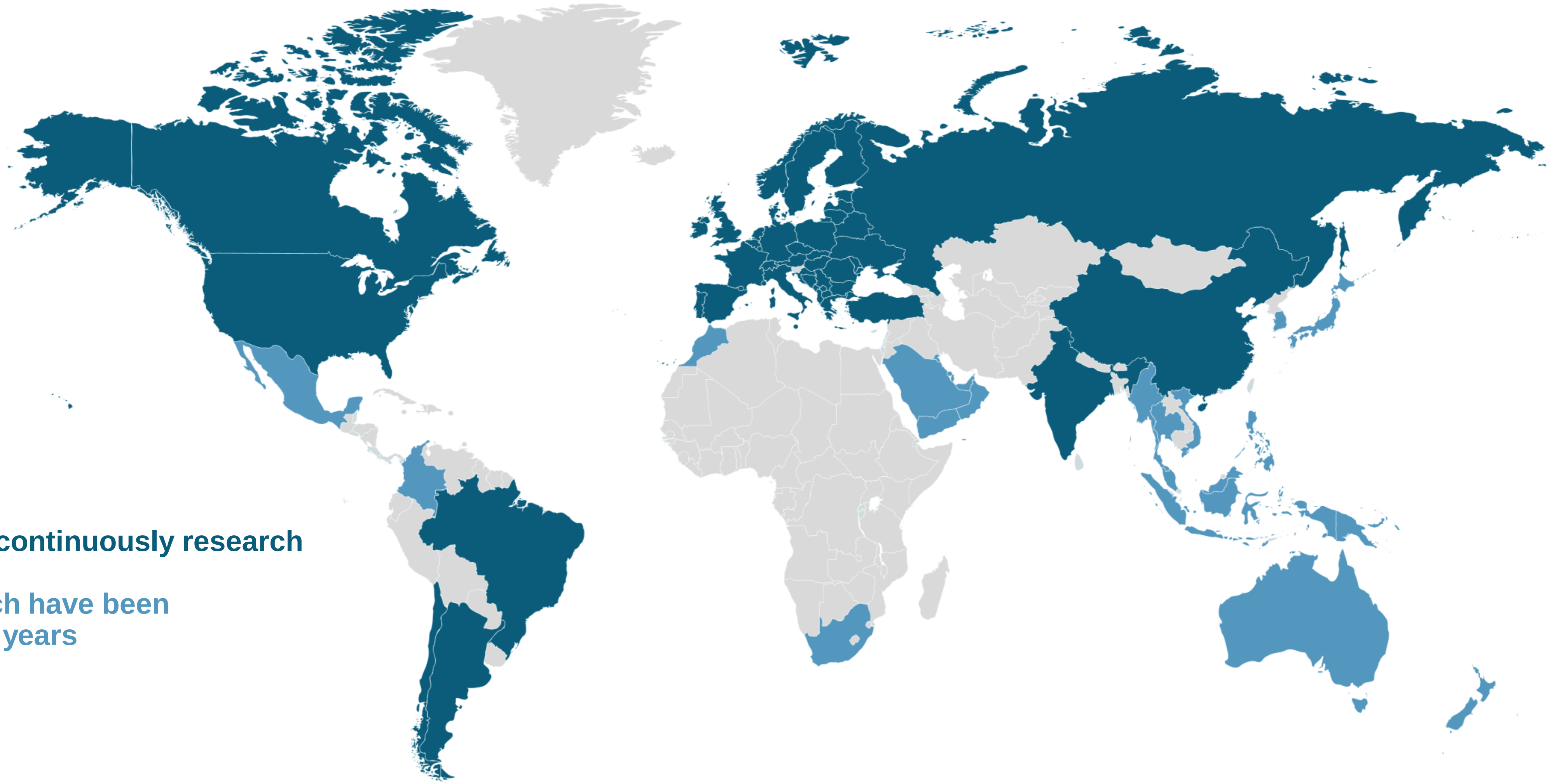
Dedicated market research

- Tailor made
- Driven by your information needs
- Advice & consultancy based on facts and over 25 years of experience in the industry
- Worldwide coverage
- B2B, B2C, qualitative and quantitive research or a combination of both
- Within our market specialism, all types of researches can be conducted
- Targeting the right audience, with the right questions at the right time.

Our multi-client research monitors

	European **Architectural** Barometer	European **Contractor** Monitor	European **Mechanical Installation** Monitor	European **Electrical Installation** Monitor	European **Painter Insight** Monitor	European **Home Improvement** Monitor
Target group	Architects	Building contractors	HVAC installers	Electrical installers	Professional painters	Consumers
Methodology						
Annual sample size	3,400 interviews	2,050 interviews	2,600 interviews	3,000 interviews	2,300 interviews	26,400 interviews
Country scope	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy	• Germany • United Kingdom • France • Netherlands • Belgium • Poland	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy • Denmark • Sweden	• Germany • United Kingdom • France • Netherlands • Belgium • Poland • Spain • Italy • Denmark • Sweden • Austria
Way of reporting	Quarterly	Bi-annually	Quarterly	Quarterly	Annually	Quarterly
2022 Theme topics	• Q1: Sustainability and Circularity • Q2: Trends in Material Usage • Q3: Decision Making in the Construction Industry • Q4: Love Brands	• H1: Prefab • H2: Digitalisation and BIM	• Q1: BIM • Q2: Prefab or direct buying from manufacturers • Q3: Smart buildings and products • Q4: Media orientation	• Q1: Sustainability • Q2: Smart buidings • Q3: Services in the installation market • Q4: Branding	• Trend tracking • Orientation and media usage • Brand performance scans	• Purchase channels • TBD

We are active globally



Countries which we continuously research

Other countries which have been researched in past 2 years

Principals of USP

Construction				DIY		Installation	
ASSA ABLOY	AkzoNobel	Wienerberger	HILTI	OBI	adeo	ABB	BOSCH
ArcelorMittal	DAW	3M	SAINT-GOBAIN	ALLEGION	maxeda DIY Group	GRUNDFOS	hager
etex inspiring ways of living	FESTOOL	Villeroy & Boch 1748	DSM	V33	Ideal Standard	Schneider Electric	LG Life's Good
icopal	Interface	WD-40	Dulux	BRIGGS & STRATTON	KOHLER	MITSUBISHI ELECTRIC	Panasonic
KNAUF	Owens Corning	UNILIN for smart living	PPG	fischer innovative solutions	KÄRCHER	VIESSMANN	Vaillant
ROCKWOOL	sto Building with conscience.	VELUX	stiho	WAGNER	GROHE	Signify	ShurTech Brands
Tarkett	TRESPA	tesa	DÖRKEN	Intergamma	Yale	sonepar	TTI

USP Marketing Consultancy