

TNS New Zealand Industry Needs Survey

July 2012

A research study to define building
industry information needs for the
immediate and longer term

CONSTRUCTION
INDUSTRY COUNCIL **CIC**

CSG **CONSTRUCTION
STRATEGY GROUP**
BUILDING INDUSTRY VALUE



TNS

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Section 1

Background

Background

- An Industry Needs Survey has been conducted for a number of years by BRANZ, the output from which has been used as a guide for determining and prioritising research projects
- With a decision to move to an industry wide research strategy, the existing BRANZ Industry Needs Survey was redesigned in consultation with key stakeholders, BRANZ, DBH (now MBIE), CIC and CSG
- An overarching objective is to provide an independent evidence base to help research funders and providers to understand the needs and priorities of the building and construction industry
- The Industry Needs Survey for 2012 was designed to provide information to support a range of key decisions concerning what the industry requires from researchers and funders, and what knowledge gaps need to be addressed in both the immediate and medium terms

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Section 2

Research Objectives

Research objectives

- The 2012 Industry Needs Survey was designed to provide actionable insights concerning the views, opinions and needs of the wider building industry and in particular, how these relate to the specific decisions that BRANZ is looking to make
- The following objectives were defined for the study:
 - To prioritise information needs for the immediate future based on the importance of the topic area and how well the existing body of knowledge is meeting the industry's needs
 - To establish differences in priorities and information needs for the immediate future by key industry groups
 - To identify expected information needs that the industry requires for the longer term



Section 3

Methodology & Technical Notes

The research

- The research was conducted between 13th June 2012 and 21st July 2012 using an online questionnaire and included all key industry sectors: architects, designers, builders, developers, educators, building officials, engineers, consultants and representatives of manufacturers and distributors
- Lists of names and email addresses were provided by BRANZ for industry members sorted by the relevant industry groups. These lists contained a total of 7,123 separate entries. Additionally, with the support of BRANZ, we were able to obtain membership lists from Master Builders, Certified Builders and the Building Officials Institute of NZ. Collectively these lists contained 4,089 entries and after removal of duplicate entries, the final list for the survey contained 9,677 unique records
- The lists were compiled progressively with invitations being sent out over the course of nine days; 13th to 21st June as follows:
 - Sample A containing 6,794 records was split into a pilot sample of 200 and a main sample of 6,594. Those on the pilot list were sent an initial invitation on the 13th June from which 17 completed surveys were achieved and downloaded the following day to verify the survey structure. Once detailed checking had been completed, invitations were sent to the remaining members within sample A
 - A further two lists were compiled over the next few days as information became available, these being managed as Sample B containing 1,551 names and Sample C containing 1,332 names
- Depending on when the initial invitation was sent, members received either two or three reminder notices, these being sent on the 21st, the 29th and a final notice on the 5th July. Although we advised that the survey would close on the 6th July, it remained open until 21 July at the request of BRANZ to enable further time for key stakeholders
- Respondents were offered an incentive to complete the survey by way of three prize draws each for a quality iPad device
- A total of 2,405 responses were achieved representing a response rate of 24.9%. The response rate is slightly higher than that achieved in 2010 (23%) when the survey was last conducted and importantly, the total number of responses is significantly greater than in 2010 (1,082)
- The maximum expected margin of error for the study using a 95% confidence interval is +/- 2.0%. BRANZ can therefore be confident that the results of the study are highly representative of the industry views and opinions
- Since lists were available from some industry organisations and not others, there is potential for some groups to be over or under represented in the sample. For this reason work was undertaken with industry bodies and with BRANZ to assess the broad structure of the industry to enable the sample data to be weighted to be reflective of the population. For the purpose of calculating weights, the industry population was determined to be comprised of Builders (64%), Engineers & Consultants (12%), Architects (7%), Designers (4%), Building Officials (4%), and Others (9%)
- Respondents have been classified in to occupational groups in consultation with BRANZ to provide meaningful analysis and comparisons
- Statistical significance tests have been conducted based on a 95% confidence interval comparing each industry group with the result for all other industry groups combined. Groups with a small sample size will have a wider confidence interval meaning that a larger difference relative to the mean of all other groups is necessary before the result is considered to be significantly different

The following table details response rate achieved by industry group

Response Rates by Group

Group	Completed	Sent	Response Rate
Builders ⁽¹⁾	1,050	6,240	16.8%
Building Officials ⁽²⁾	450	1,133	39.7%
Consultant / Educators / Other ⁽³⁾	420	761	55.2%
Architects	294	1,121	26.2%
Designers ⁽⁴⁾	191	422	45.3%
Total	2,405	9,677	24.9%

Notes: 1. Builders – includes builders , contractors and subcontractors

2. Building officials – includes crown institute members, government departmental staff and local government personnel

3. Consultants / Educators / Others - includes engineers , building surveyors and all others

4. Designers – includes draughtsperson and product specifier

The following table details the sample structure by industry group

Demographic Profile

Group	Responses	Proportion
Builders ⁽¹⁾	1,050	43.7%
Building Officials ⁽²⁾	450	18.7%
Architects	294	12.2%
Other ⁽³⁾	272	11.3%
Designers ⁽⁴⁾	191	7.9%
Consultants ⁽⁵⁾	108	4.5%
Educators	40	1.7%
Total	2,405	100%

Notes: 1. Builders – includes builders , contractors and subcontractors

2. Building officials – includes crown institute members, government departmental staff and local government personnel

3. Other – includes project managers, product agents, manufacturers, industry associations, developers, commercial building owners and builders merchants

4. Designers – includes draughtsperson and product specifier

5. Consultants – includes engineers and building surveyors



Section 4

Executive Summary

Key Take-outs

- **Eight topic areas have been identified by the industry study as being in need of new knowledge for the immediate future**
 - Productivity, New technology integration, Retrofitting and upgrading existing buildings, are universally identified as being important and having inadequate information
 - The second priority tier identified includes Business management, Building user behaviour and Construction management
 - Although the Building envelope and Materials durability have relatively high information adequacy scores, in absolute terms information adequacy is not considered to be high and given the importance of these two topics, we suggest that they be included within the priority topic list

- **Overall adequacy of information is low**
 - All industry groups evaluate the adequacy of the current body of knowledge poorly
 - Architects are more concerned than others about inadequacy of the current body of knowledge
 - Architects and consultants generally rate the current body of knowledge in relation to the identified priority topics less favourably than other groups

- **Longer term information needs**
 - Areas identified as most needing new information for the longer term include Materials durability, Structural engineering, Building envelope, Energy and insulation, Housing affordability, New technology integration and Productivity

Key Take-outs

■ Sources of Information

- Product specifications, Codes & standards and Compliance information are the areas that industry members most frequently seek information about with architects and designers being the most regular users
- BRANZ is the most frequently used source of information for product specifications and is also regularly used for fitting details and design information
- Manufacturers literature and BRANZ are regarded by the industry to be the most valuable sources of information

■ Internet offers further scope

- The internet is an important tool for the industry with architects, designers and consultants making the most frequent use
- Internet access remains dominated by traditional devices, PC's and laptops
- The use of other devices to access the internet such as iPads and smartphones is still emerging amongst the industry members and appears to have considerable potential
- There is high interest in receiving online journals and electronic appraisals and reasonable interest in viewing online video, but little interest in 'live chat'
- Collectively 2/3rds of the industry has a need for Continuing Professional Development, however about half note difficulties accessing information
- There is however a relatively low level of interest in completing Continuing Professional Development activities online. This area would be worth further examination given the previously noted existing use of the internet and interest in using the internet for other information

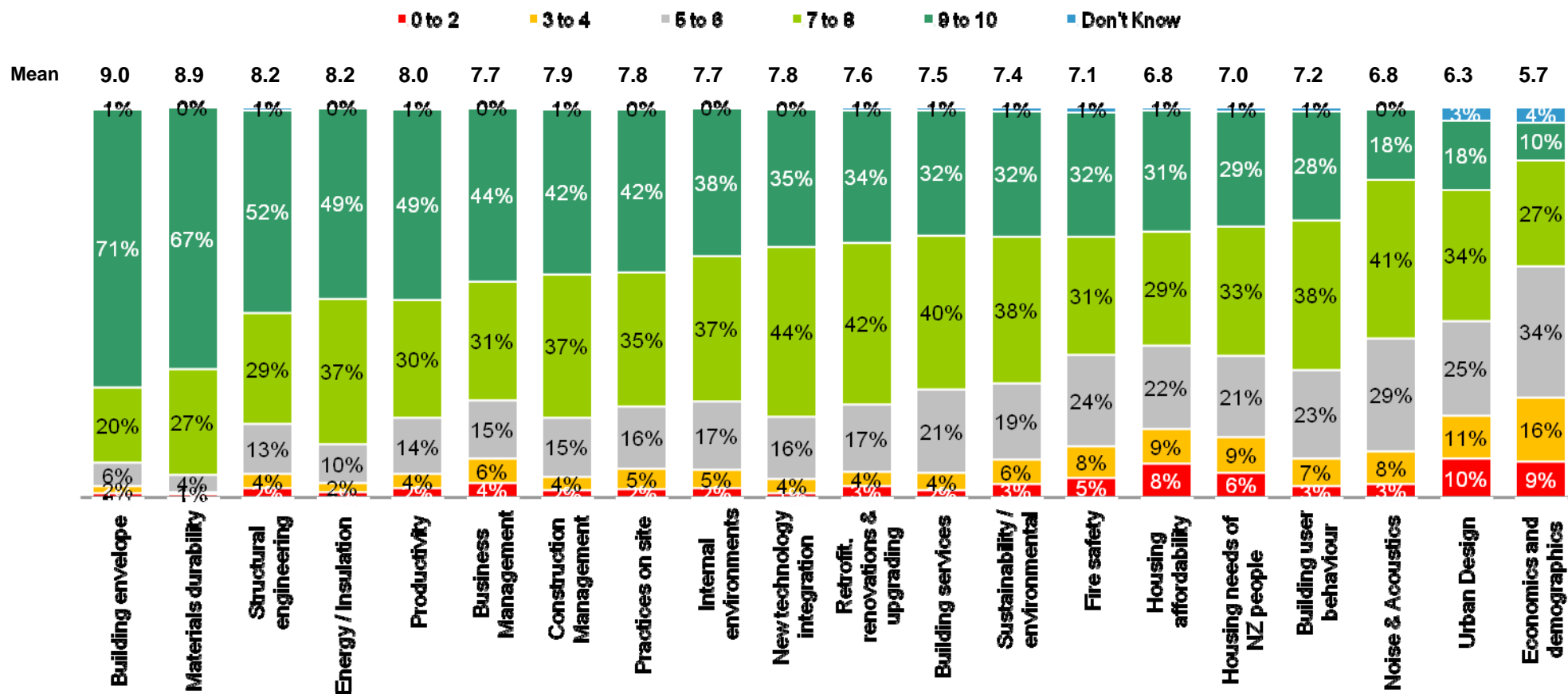


Section 5

Information Needs for the Immediate Future

The 'building envelope' and 'materials durability' are universally considered to be the most important areas for the industry to maintain comprehensive and quality information about, followed by 'structural engineering' and 'energy / insulation'

Importance of Having a Comprehensive Body of Knowledge⁽¹⁾⁽²⁾



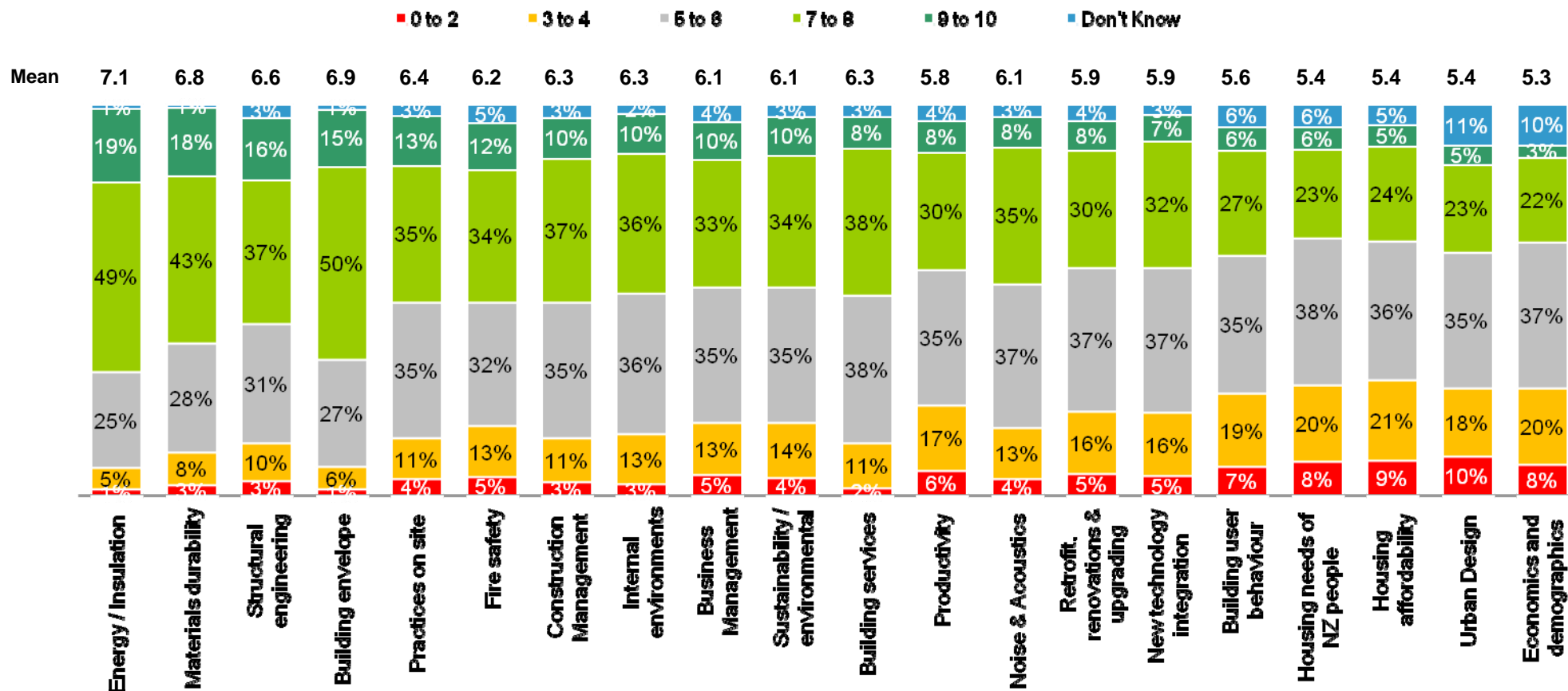
Notes: 1. Base: All Respondents n = 2,405;

2. INIF1.1 For your business to do the best possible job, how important is it for you to have a comprehensive body of knowledge about.... Provide a rating for each where 0 means 'not important' and 10 means 'highly important';

3. Data sorted by % 9-10

Overall, 'energy / insulation' and 'materials durability' are the areas that are currently seen to have the most adequate body of good quality knowledge while areas relating to 'housing needs', 'affordability', 'urban design' and 'economics and demographics' are the areas with the least adequate knowledge

Adequacy of the Current Body of Knowledge⁽¹⁾⁽²⁾



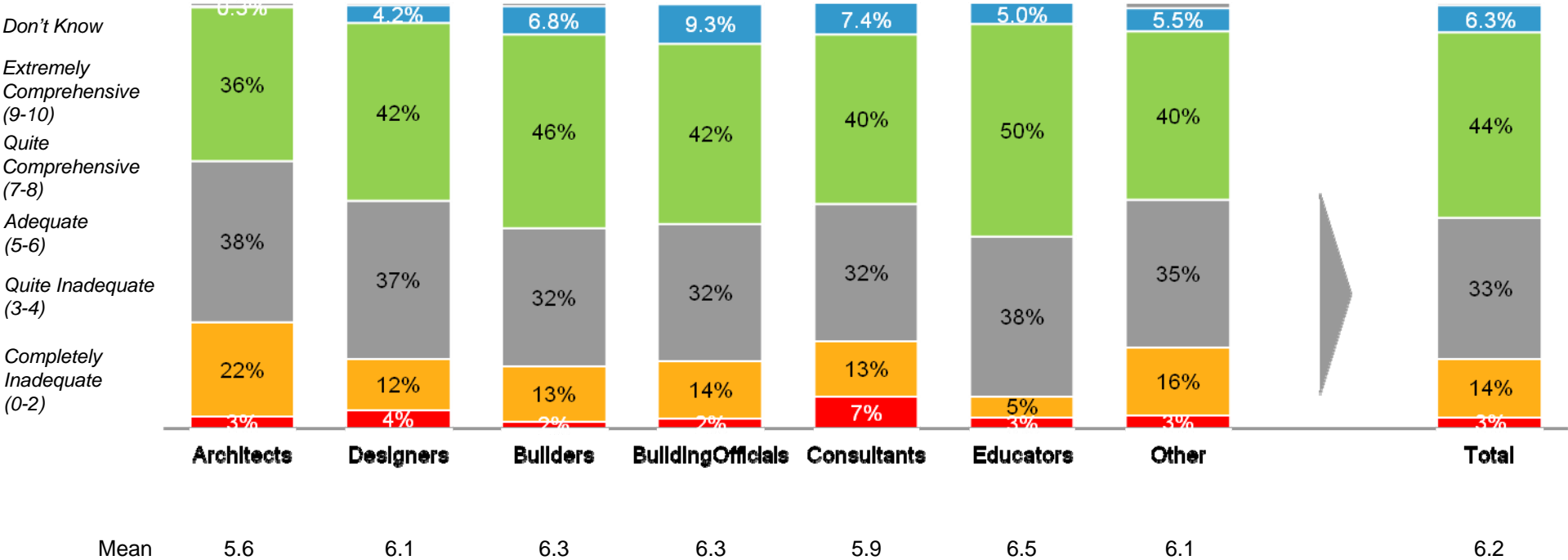
Notes: 1. Base: All Respondents n = 2,405;

2. INIF1.2 How would you rate the adequacy of the current body of knowledge about... Provide a rating for each where 0 means 'completely inadequate' and 10 means 'extremely comprehensive';

3. Data sorted by % 9-10

Overall, the industry does not consider that the current body of knowledge is particularly adequate with architects and consultants being somewhat more critical

Overall Adequacy of the Current Body of Knowledge by Sector ⁽¹⁾⁽²⁾



Notes: 1. Base: n = 2,405;
2. Thinking overall about how adequate the current body of knowledge is across all the major topic areas, how would you rate the overall adequacy of information that is available to you where 0=‘completely inadequate’ and 10=‘extremely comprehensive’

Plotting the importance of the various topic areas together with ratings for the adequacy of the current body of knowledge enables priorities to be determined, the most obvious being 'productivity', 'technology integration', 'retrofitting & renovations' and 'business management'

Topic Importance / Information Priority Matrix ⁽¹⁾⁽²⁾⁽³⁾



- Notes:
1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive
 3. Sample size n = 2,405

Prioritisation of Topics

1

- **Productivity** is evaluated by all industry groups as being an important topic with a relatively poor current body of knowledge

2

- **New Technology Integration** is similarly evaluated across the industry as a topic that it is important to have quality information for but the current body of knowledge is poor

3

- **Retrofitting and Renovations** is consistently evaluated by all industry groups as a topic that is important but has a poor level of current knowledge

4

- **Business Management** is of particular interest to builders who rate the topic as important and the level of knowledge low. The topic is of less concern to building officials, architects and designers

5

- **Building User Behaviour** is considered to be a moderate level priority topic that is of more concern to architects, designers and officials relative to other industry groups

6

- **Construction Management** is also a lower level priority since it is evaluated by most groups to have reasonably good knowledge relative to its importance. Designers and building officials are the two groups most concerned about construction management

7

- **Building Envelope** should be included within the priority topic list for the fact that it is consistently rated as a highly important topic across the industry (9.0), and while relative knowledge adequacy is high, in absolute terms the score is moderate (6.9)

8

- **Materials Durability** also needs to be considered for priority status as it is similarly a critically important topic (8.9) and while the relative score is high, in absolute terms it is moderate (6.8)

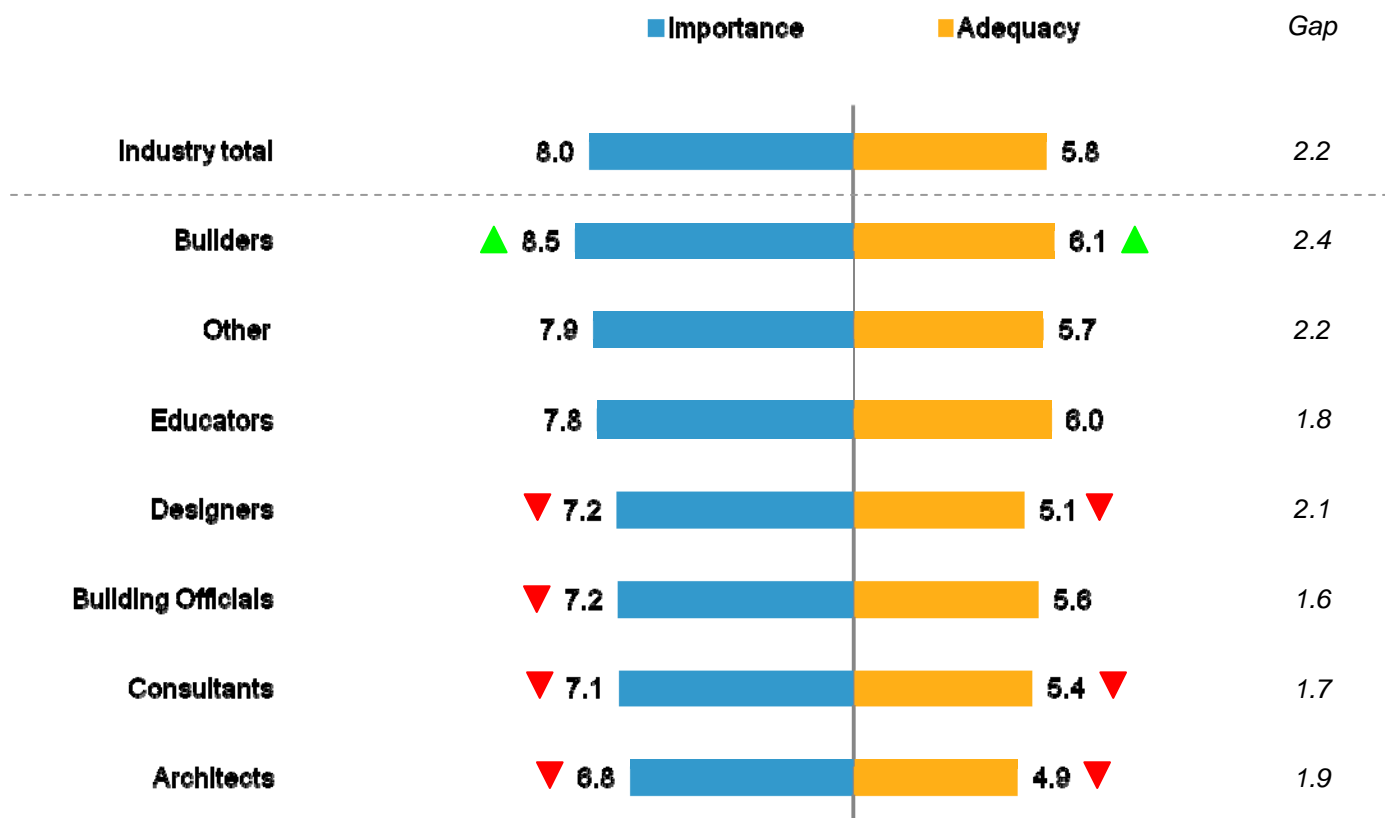


Section 6

Evaluation of Priority Areas Requiring New Information (Top Eight Priorities) for the Immediate Future

Builders identify productivity as being more important than other groups and although they also rate the current body of knowledge more favourably, the size of the gap between the two metrics indicates that builders believe the topic is in greater need of new knowledge relative to other groups

Productivity Importance and Adequacy by Sector⁽¹⁾⁽²⁾



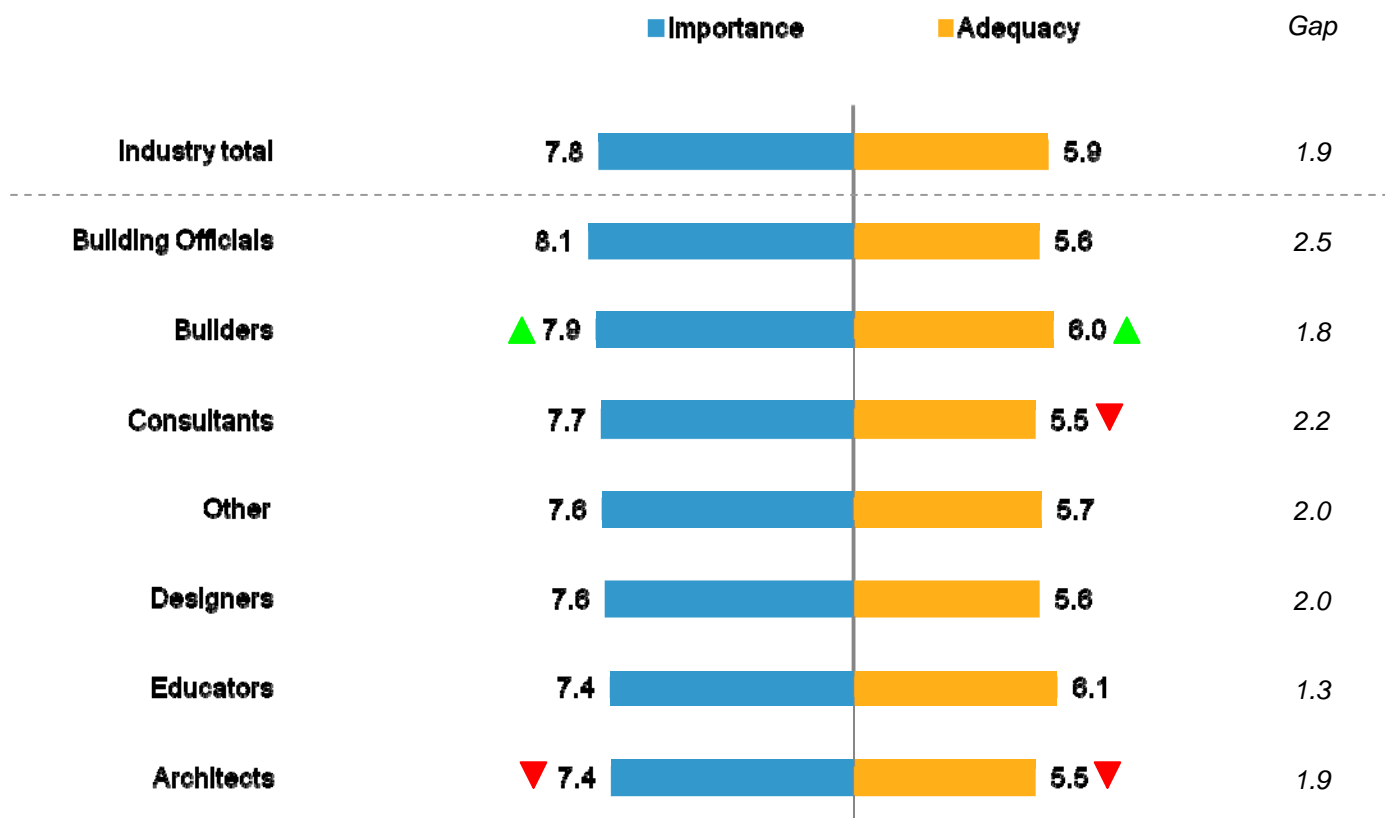
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Builders and building officials place a particularly high level of importance on new technology integration

New Technology Integration Importance and Adequacy by Sector⁽¹⁾⁽²⁾



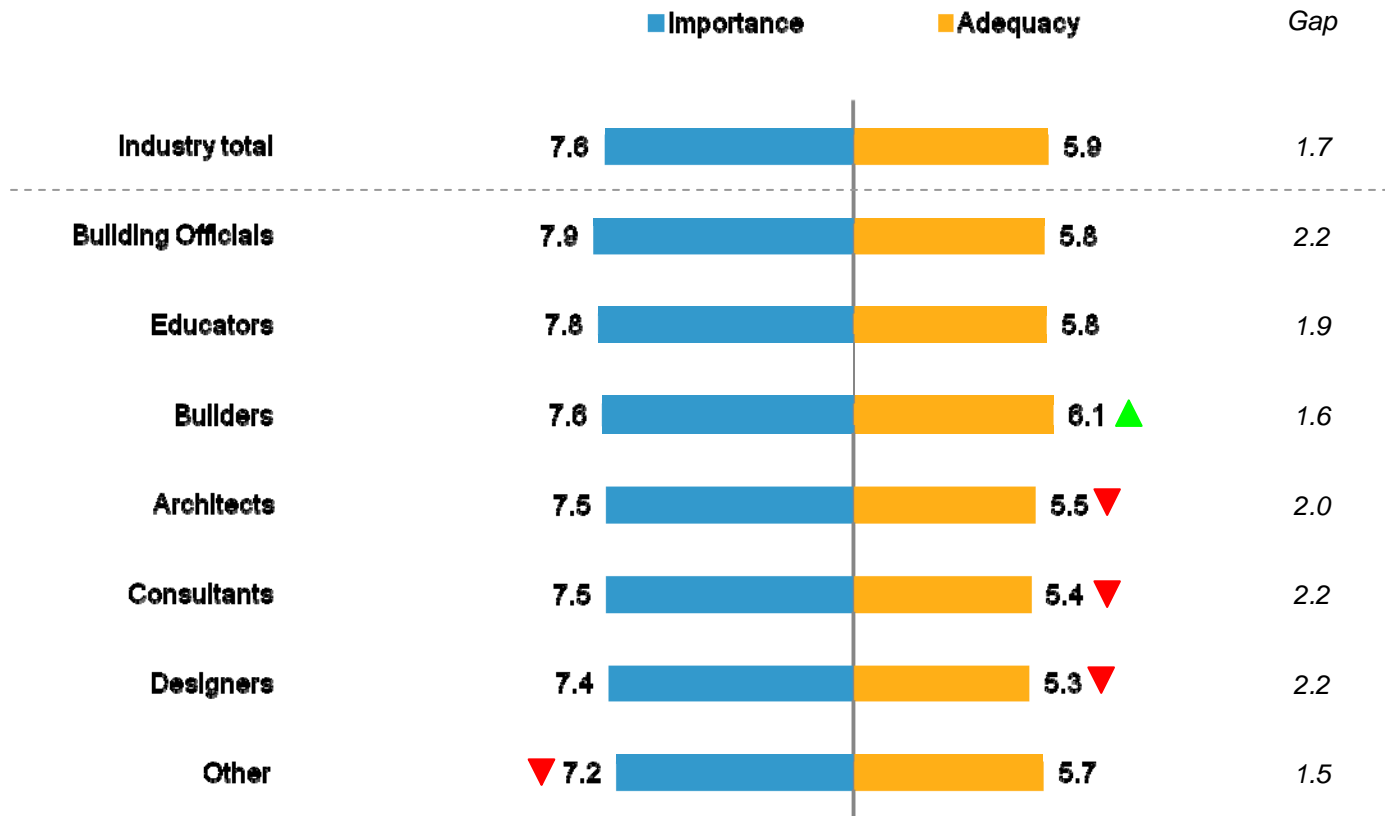
▲ Significantly higher than other industry groups combined
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Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

There is a high level of consistency as to the level of importance and perceived benefit from new information concerning renovations and upgrading existing buildings

Retrofit, Renovations & Upgrading Importance and Adequacy by Sector⁽¹⁾⁽²⁾



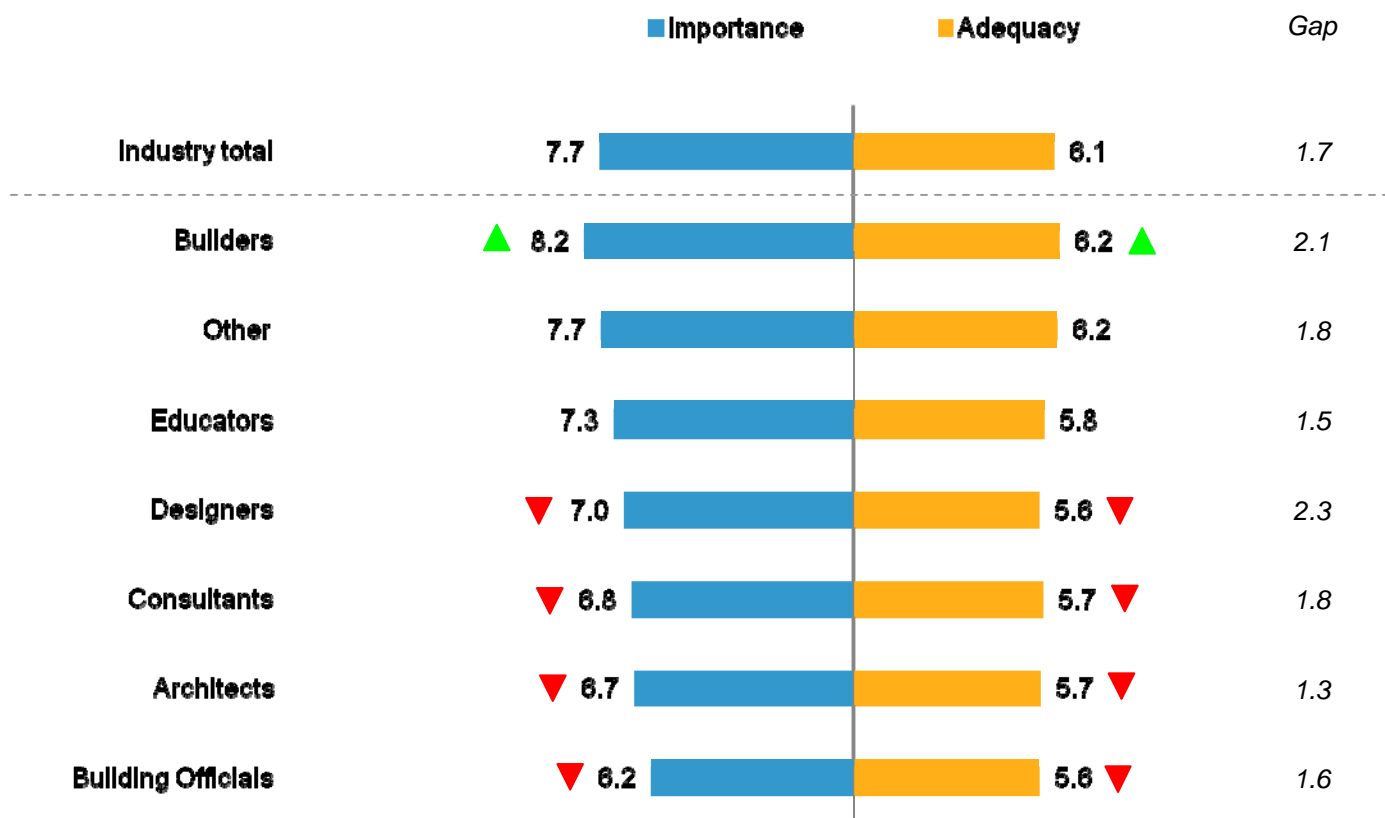
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

The need for new information concerning business management is relatively similar across the various groups

Business Management Importance and Adequacy by Sector⁽¹⁾⁽²⁾



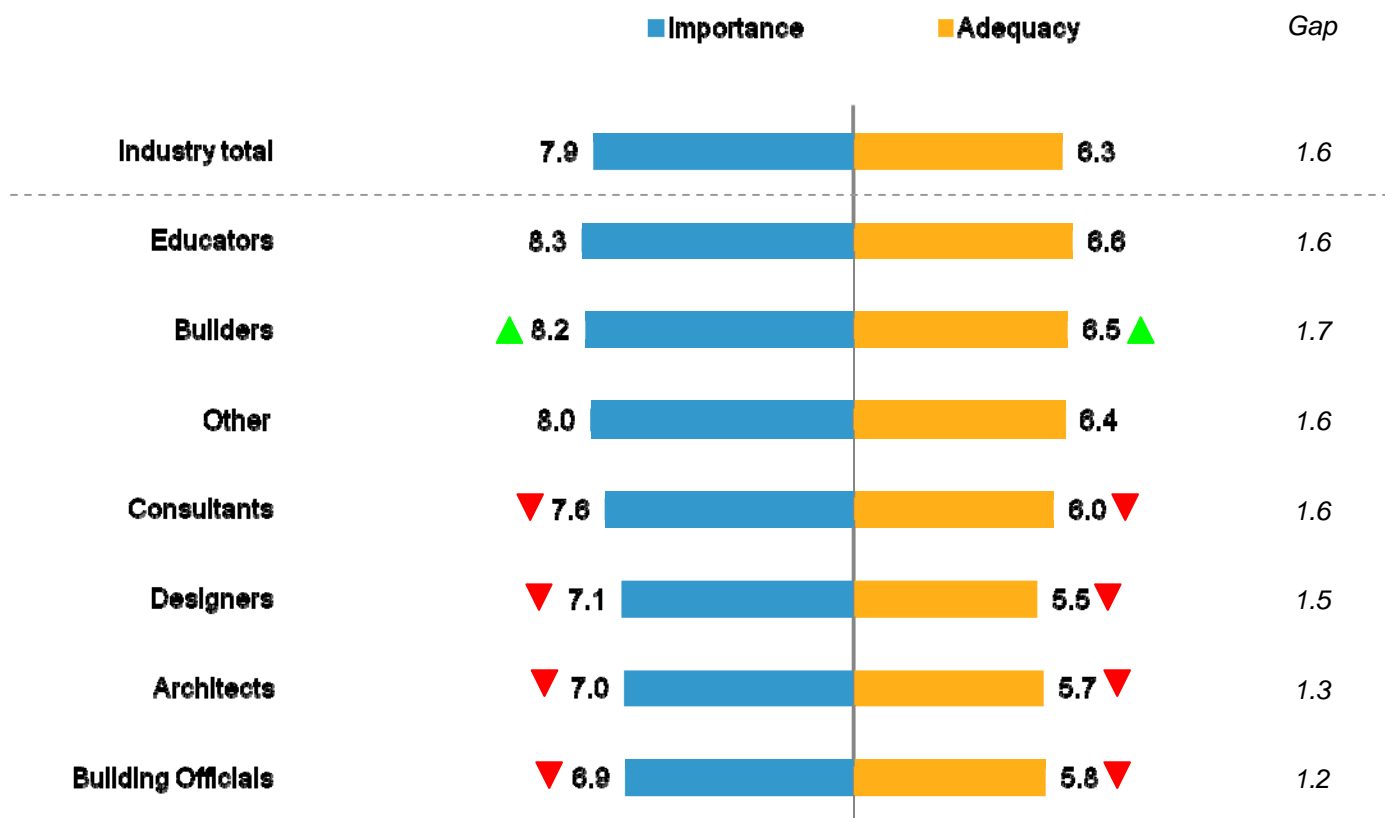
▲ Significantly higher than other industry groups combined
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Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Amongst the various industry groups, builders place the greatest importance on construction management and also consider a somewhat greater benefit will be achieved from the creation of new knowledge

Construction Management Importance and Adequacy by Sector⁽¹⁾⁽²⁾



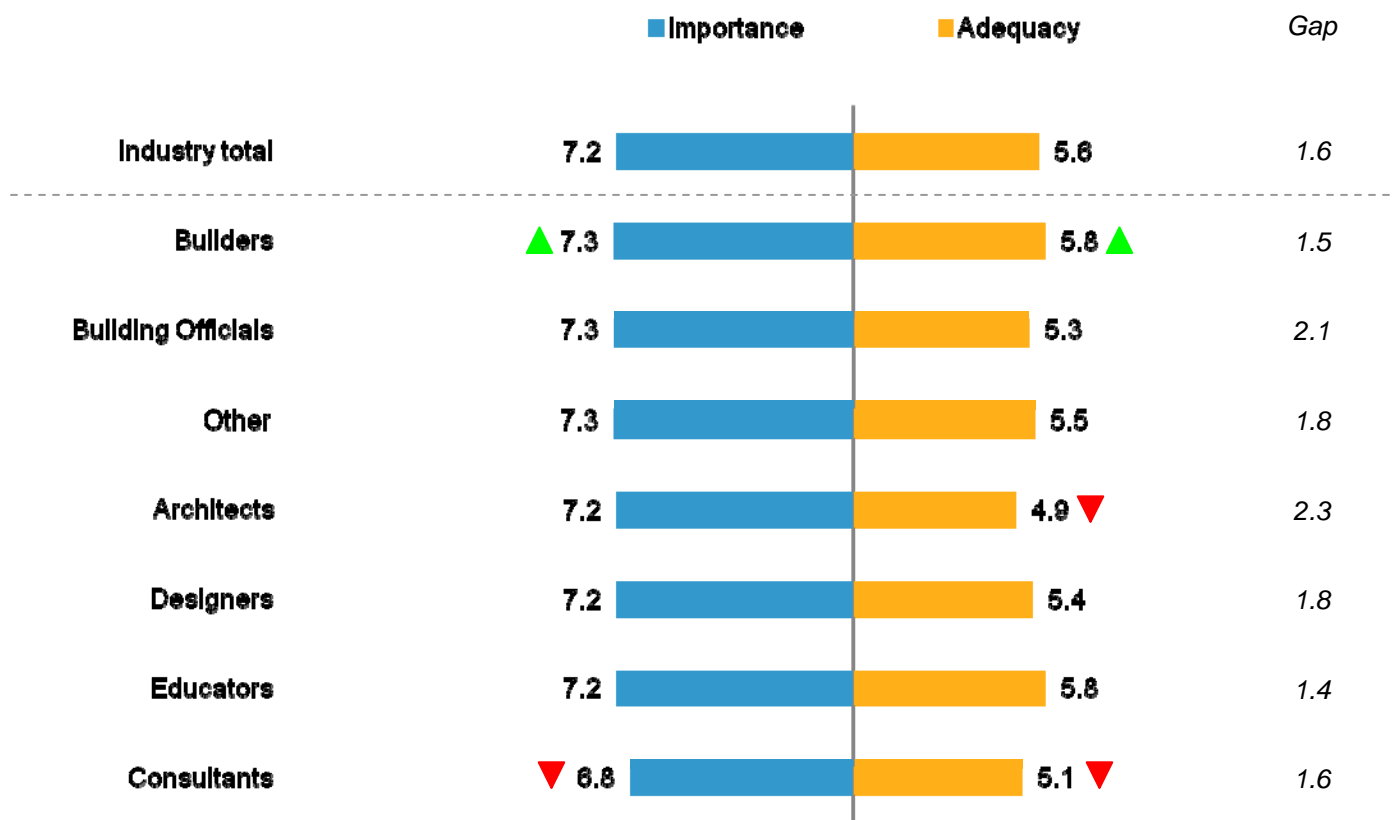
▲ Significantly higher than other industry groups combined
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Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Architects see greater value in developing new knowledge about building user behaviour than other groups

Building User Behaviour Importance and Adequacy by Sector⁽¹⁾⁽²⁾



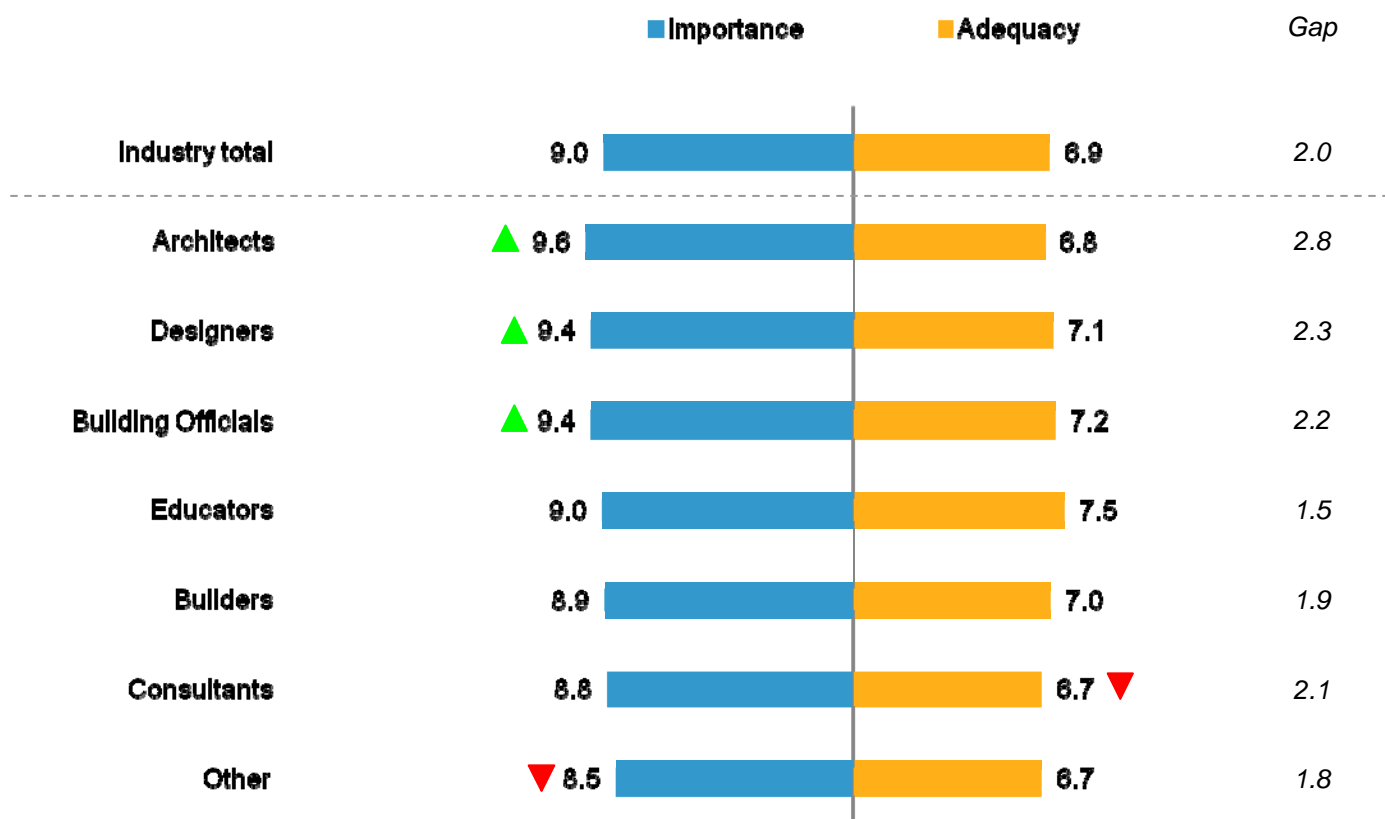
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Architects also identify a higher need for new information about the building envelope relative to other sector groups while builders and educators see a lower need

Building Envelope Importance and Adequacy by Sector⁽¹⁾⁽²⁾



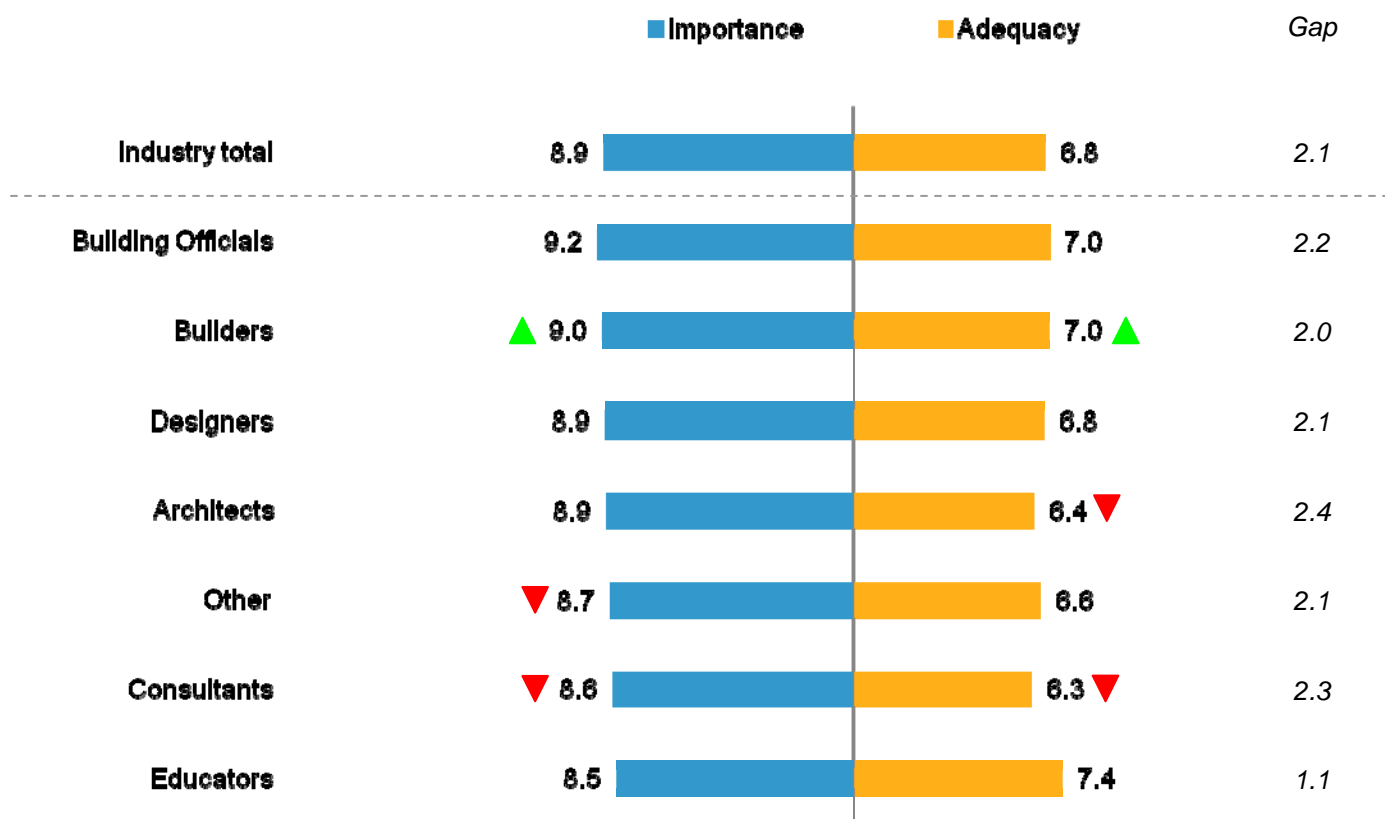
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Information for materials durability is ranked highly important by all groups with architects, consultants and building officials most believing that the topic would benefit from new information

Materials Durability Importance and Adequacy by Sector⁽¹⁾⁽²⁾



▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: n = 2405;

2. Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important; Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

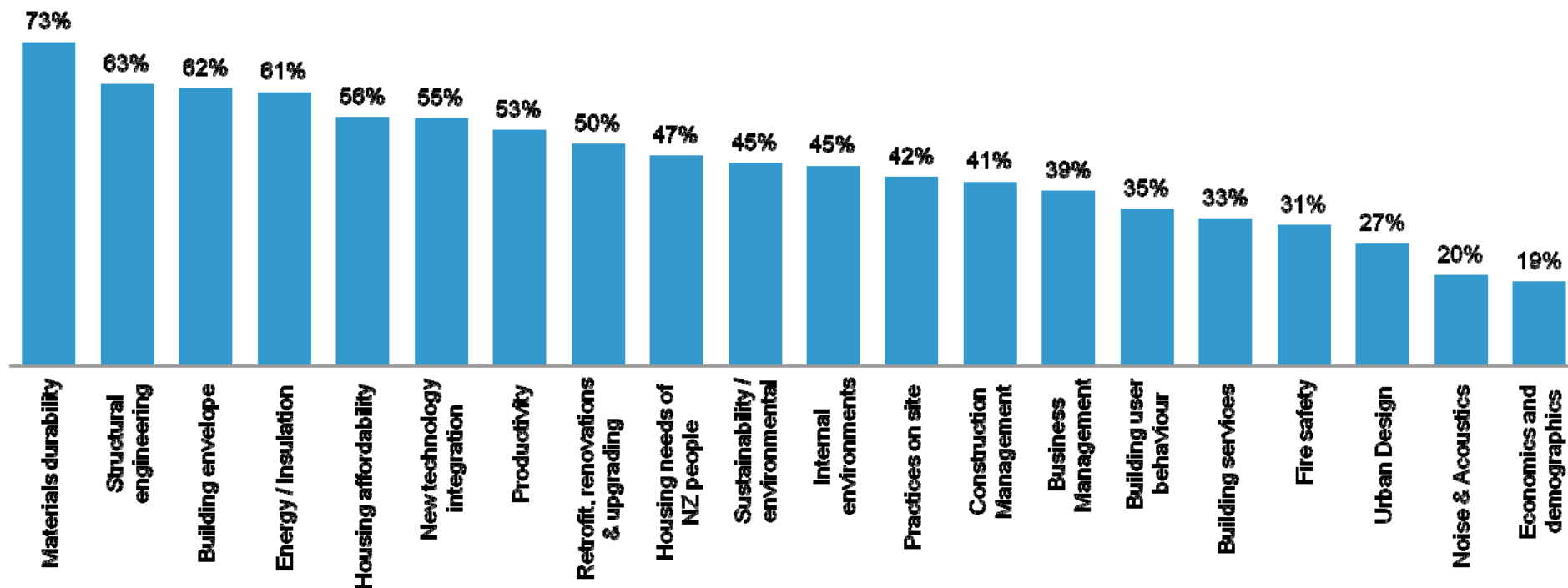


Section 7

Information for the Longer Term

When asked for the long term information needs (next 5 to 10 years), 73% cited 'materials durability' as the area most in need of new information followed by 'structural engineering', 'building envelope' and 'energy and insulation'

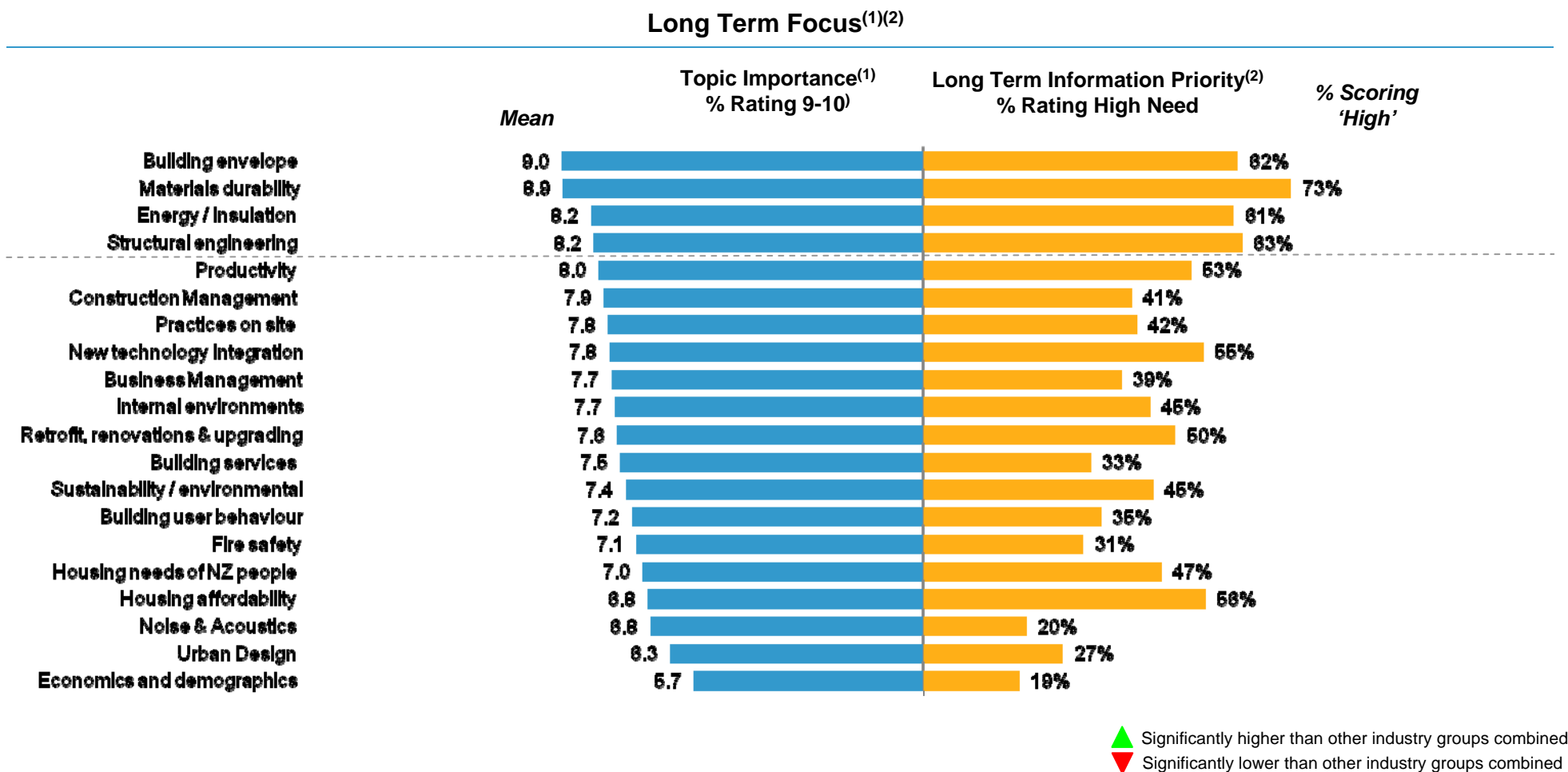
Importance Evaluation of Information for Next 5-10 Years (% Rating 'High')⁽¹⁾⁽²⁾



Notes: 1. Base: All Respondents n = 2405;

2. INLT1 Thinking now about the information priorities for the long term, 5-10 years, please rate each topic according to how much need there is for the industry to create new knowledge?. Rate 'High', 'Medium' or 'Low'

Topics that have been evaluated as the most important in terms of having quality information are also seen as the areas where new knowledge will be most needed for the longer term: 'building envelope', 'materials durability', 'structural engineering' and 'energy & insulation'

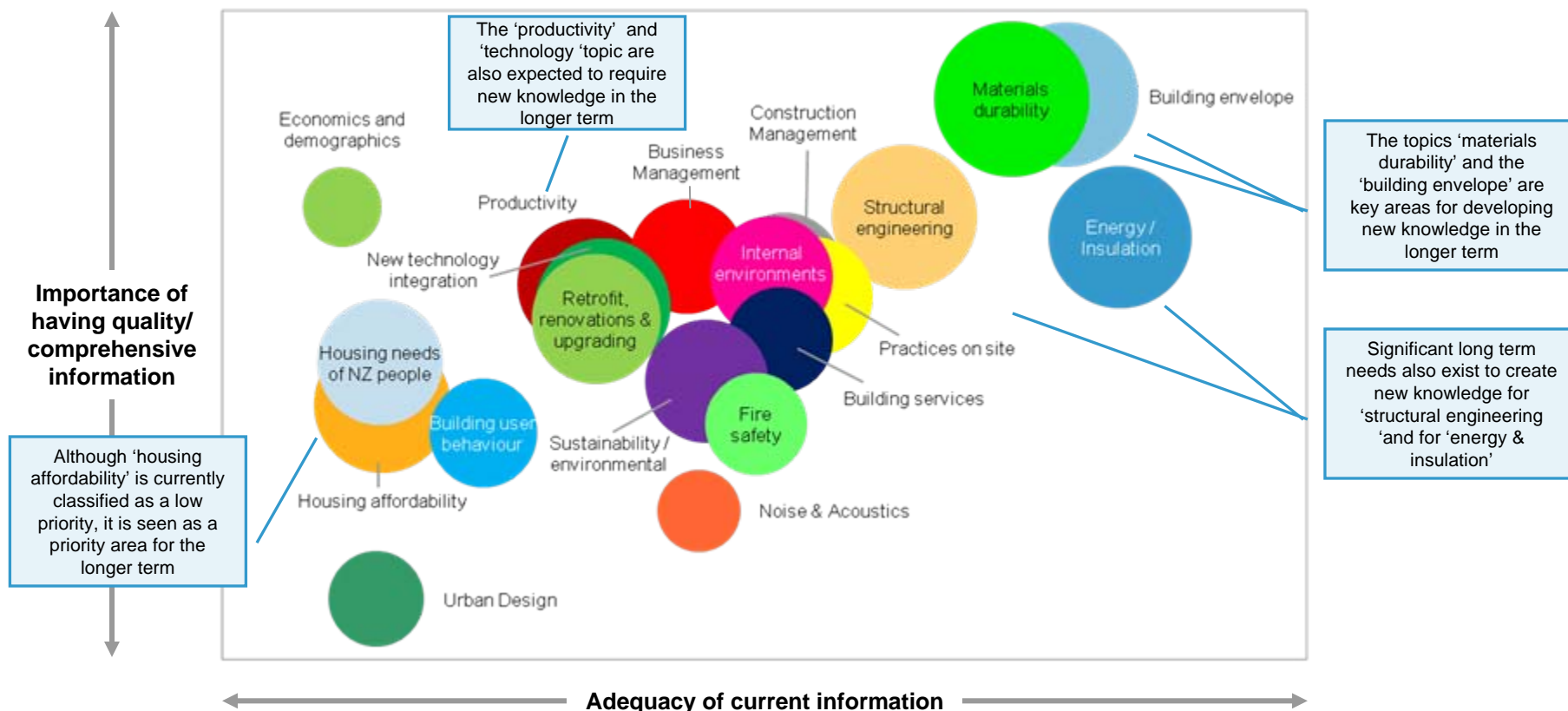


Notes: 1. How important is it for you to have a comprehensive body of good quality information about [topic]? 0 means 'Not at all important', 10 means 'Highly important';

2. Thinking about priorities for the longer term, 5-10 years, rate each topic accordingly to how much need is there for the industry to create new knowledge

Although, these topics, 'materials durability', 'building envelope', 'energy & insulation' and 'structural engineering' are all seen as having an adequate body of knowledge currently, it is clear that the wider industry believes that these need to remain a focus, as does 'productivity', technology and housing affordability'

Future Priority Focus: Long Term 5-10 Years⁽¹⁾⁽²⁾⁽³⁾



Builders have the highest concern for materials durability while it is predominantly building officials who are driving interest in structural engineering and fire safety or the longer term

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others
Building envelope	67%	59%	61%	70%	63%	73%	60%
Building services	26% ▼	27%	34% ▲	38%	30%	28%	33%
Building user behaviour	31%	35%	35%	40%	32%	30%	38%
Business Management	13% ▼	26% ▼	48% ▲	19% ▼	22% ▼	23%	37%
Construction Management	19% ▼	32%	45% ▲	34%	35% ▼	45%	44%
New technology integration	54%	51%	57%	62%	47% ▼	55%	57%
Economics and demographics	16%	15%	20%	14%	17%	28%	20%
Energy / Insulation	60%	74% ▲	61%	66%	56%	65%	59%
Fire safety	22% ▼	27%	29% ▼	62% ▲	40% ▲	33%	31%
Housing affordability	49%	58%	59% ▲	49%	45% ▼	58%	51%
Housing needs of NZ people	48%	43%	48%	47%	42%	55%	46%
Internal environments	43%	47%	43% ▼	52%	53% ▲	58%	45%
Materials durability	68%	66%	74% ▲	76%	71%	65%	69%
Noise & Acoustics	19%	17%	22% ▲	24%	15% ▼	25%	17%
Practices on site	22% ▼	29% ▼	46% ▲	41%	33% ▼	55%	44%
Productivity	33% ▼	40% ▼	58% ▲	37% ▼	43% ▼	53%	54%
Retrofit, renovations & upgrading	55%	56%	48% ▼	51%	58% ▲	43%	44%
Structural engineering	61%	54%	63%	74% ▲	63%	70%	61%
Sustainability / environmental	65% ▲	50%	45%	46%	39% ▼	45%	40%
Urban Design	50% ▲	36%	26%	23%	19% ▼	25%	30%
Base	294	191	1,050	450	108	40	272

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Notes: 1. Base: All Respondents n = 2405;

2. INLT1 Thinking now about the information priorities for the long term, 5-10 years, please rate each topic according to how much need there is for the industry to create new knowledge?. Rate 'High', 'Medium' or 'Low'

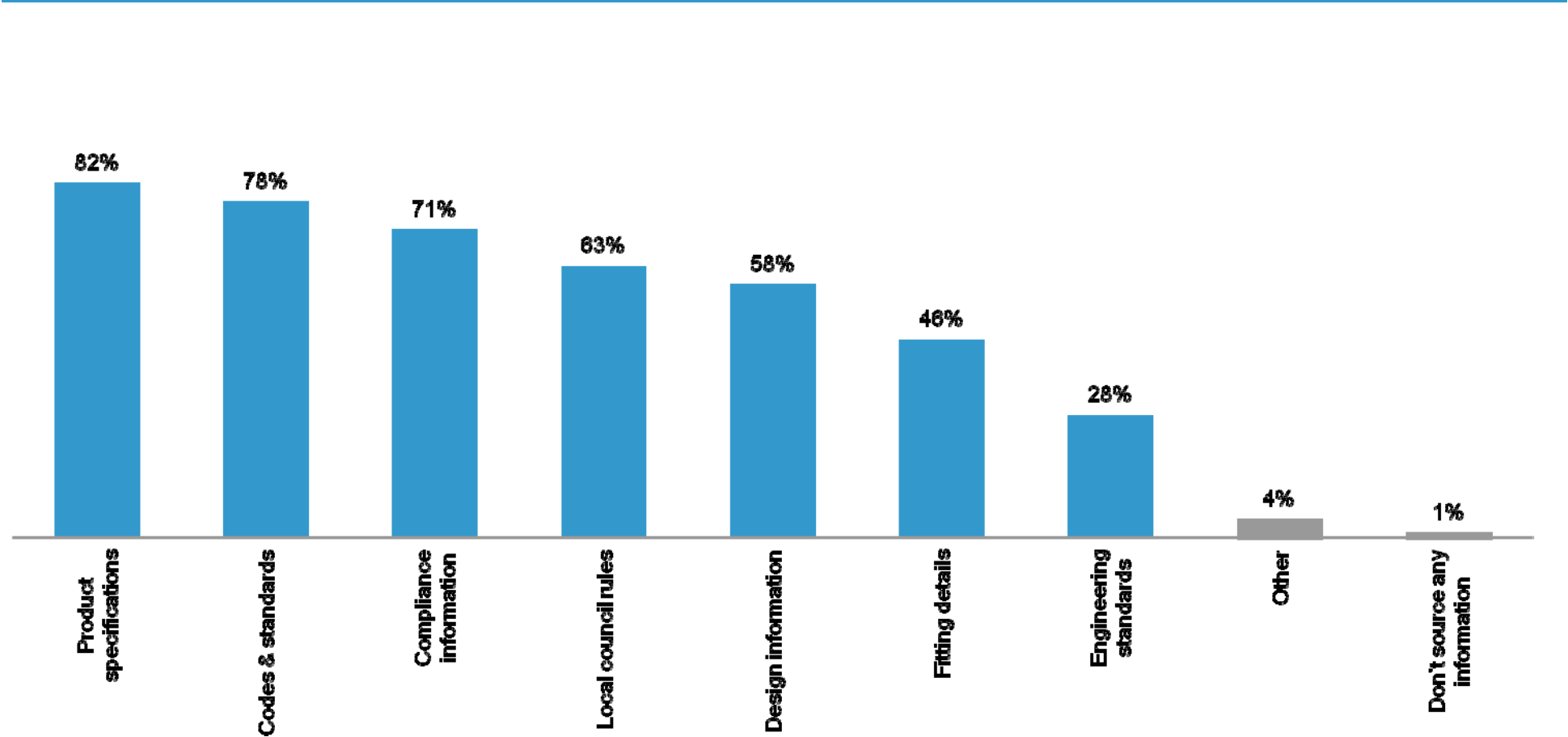


Section 8

Information Sources

Across the sector, information about product specifications, codes & standards and compliance is being sourced more frequently than other types of information

Proportion Sourcing Types of Information⁽¹⁾⁽²⁾

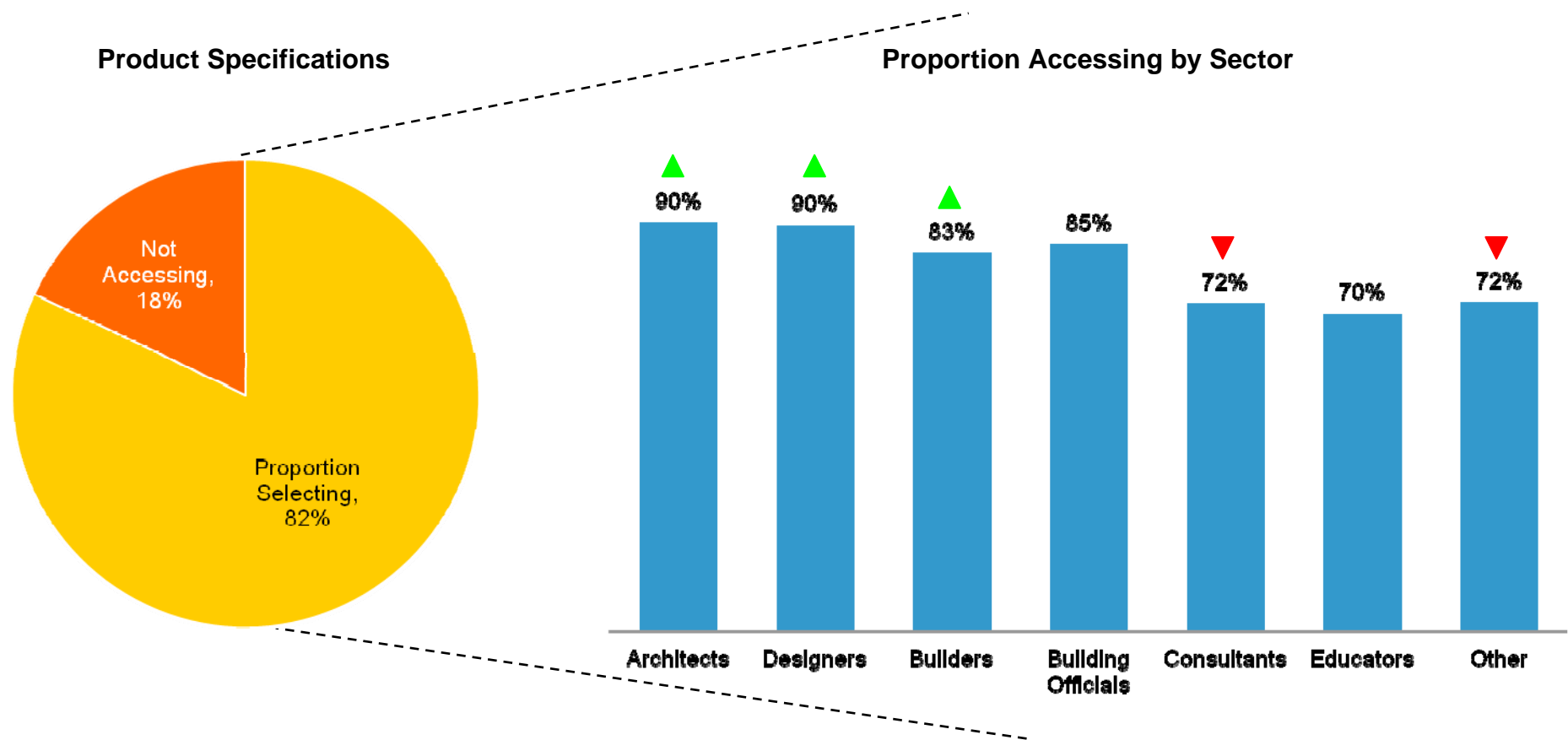


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Designers, architects and builders are most frequently interested in product specifications

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾

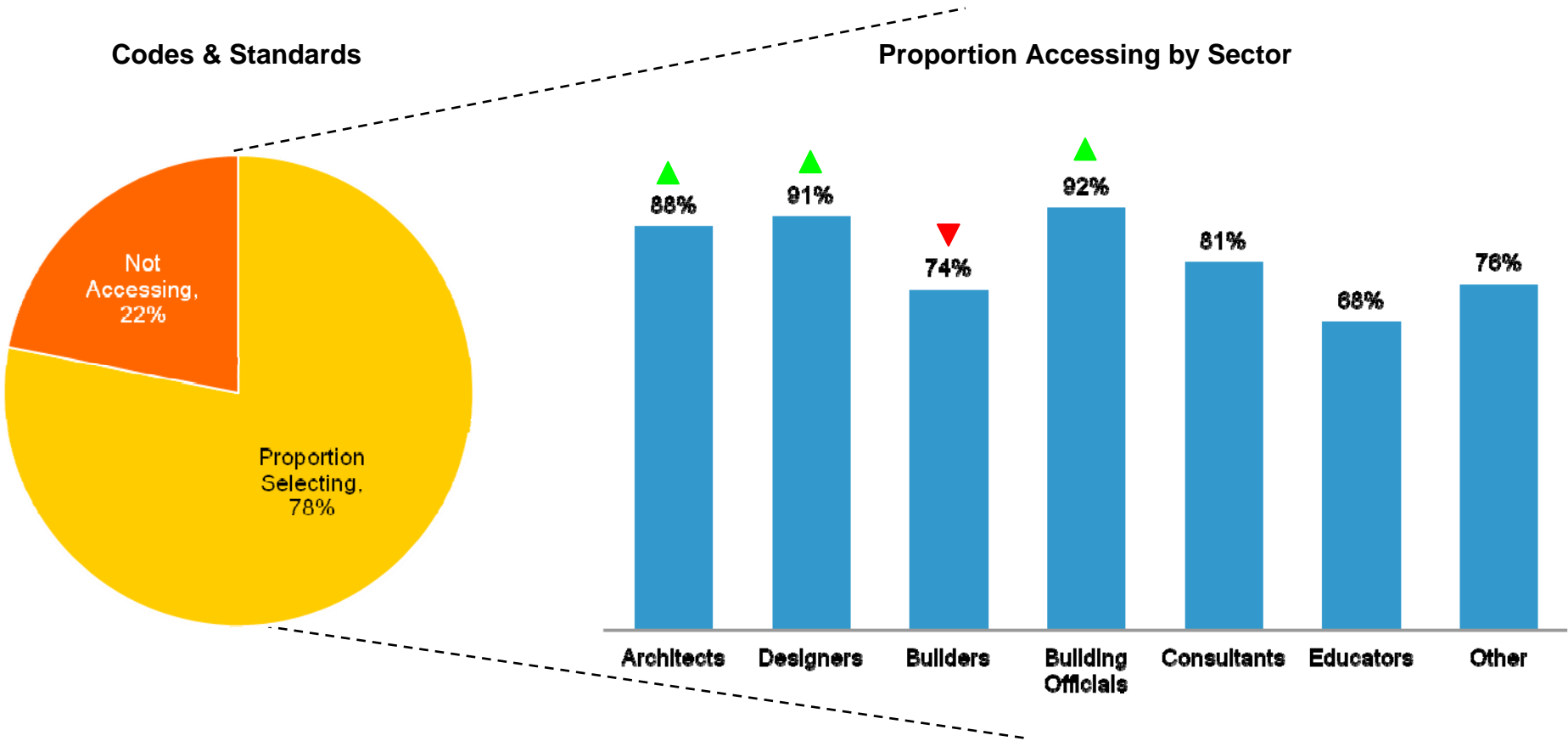


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Codes and standards information is also frequently used by architects and designers and also by building officials...

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾

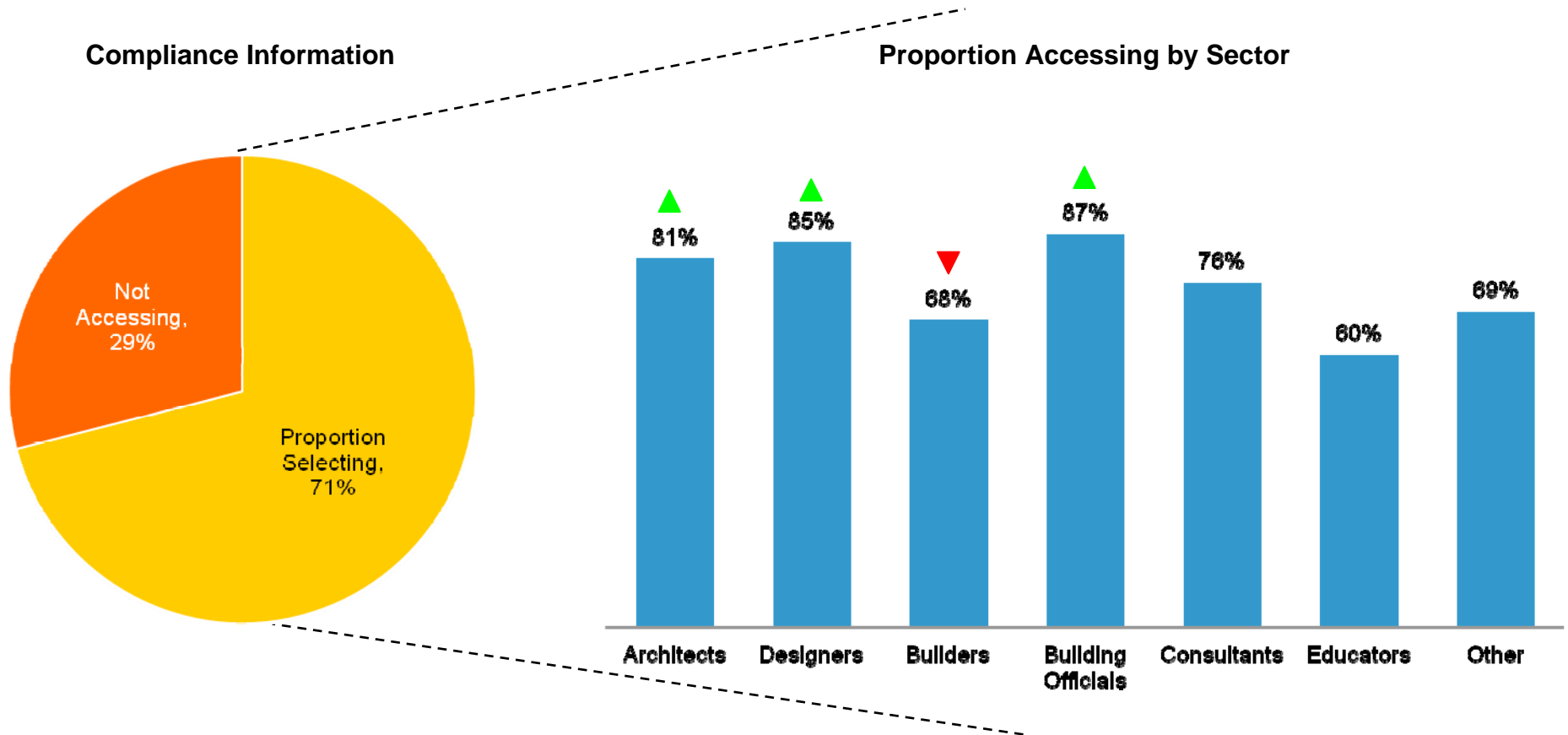


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

... as is compliance related information

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾



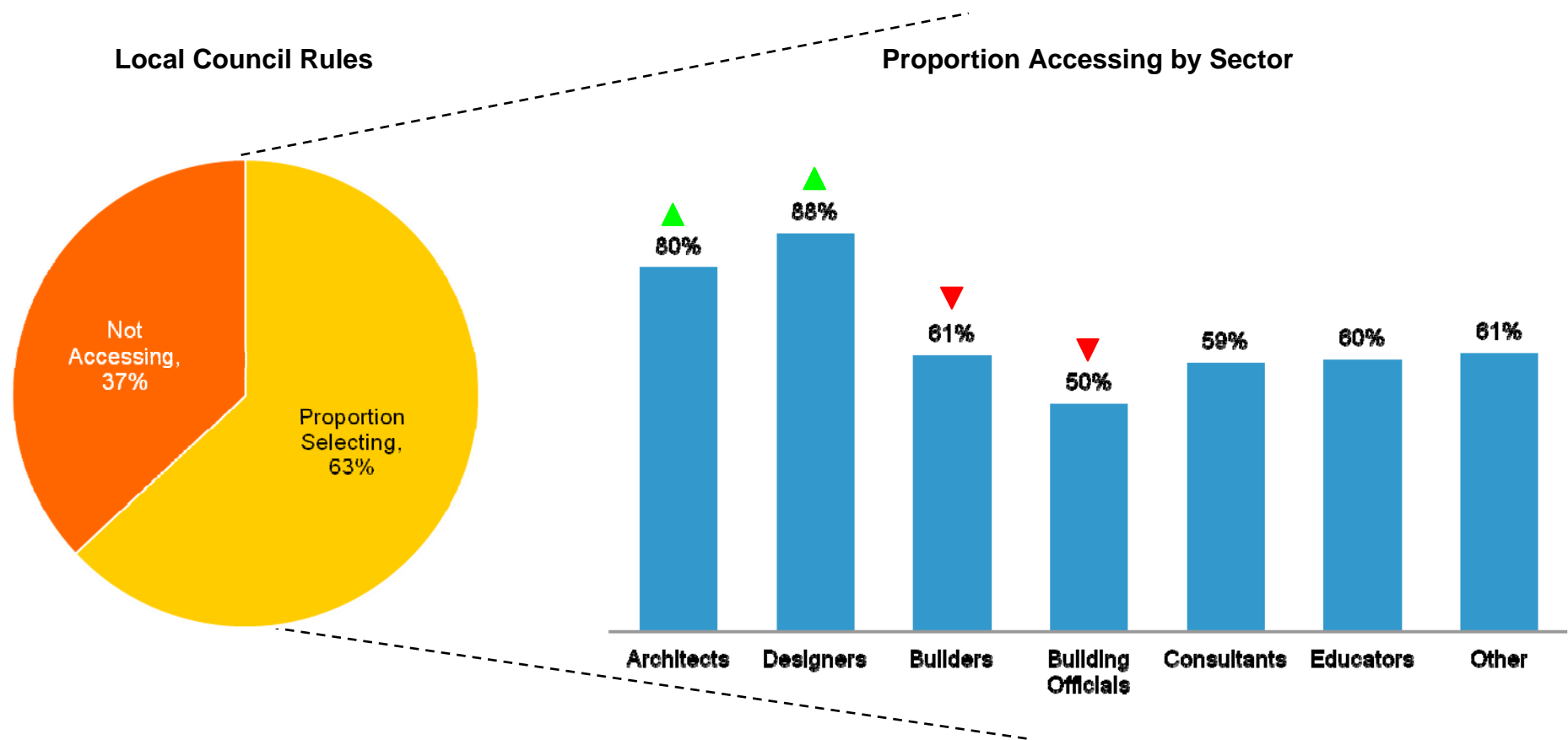
Notes: 1. Base: All Respondents n = 2405;

2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Local council rules and regulations are of most interest to architects and designers

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾

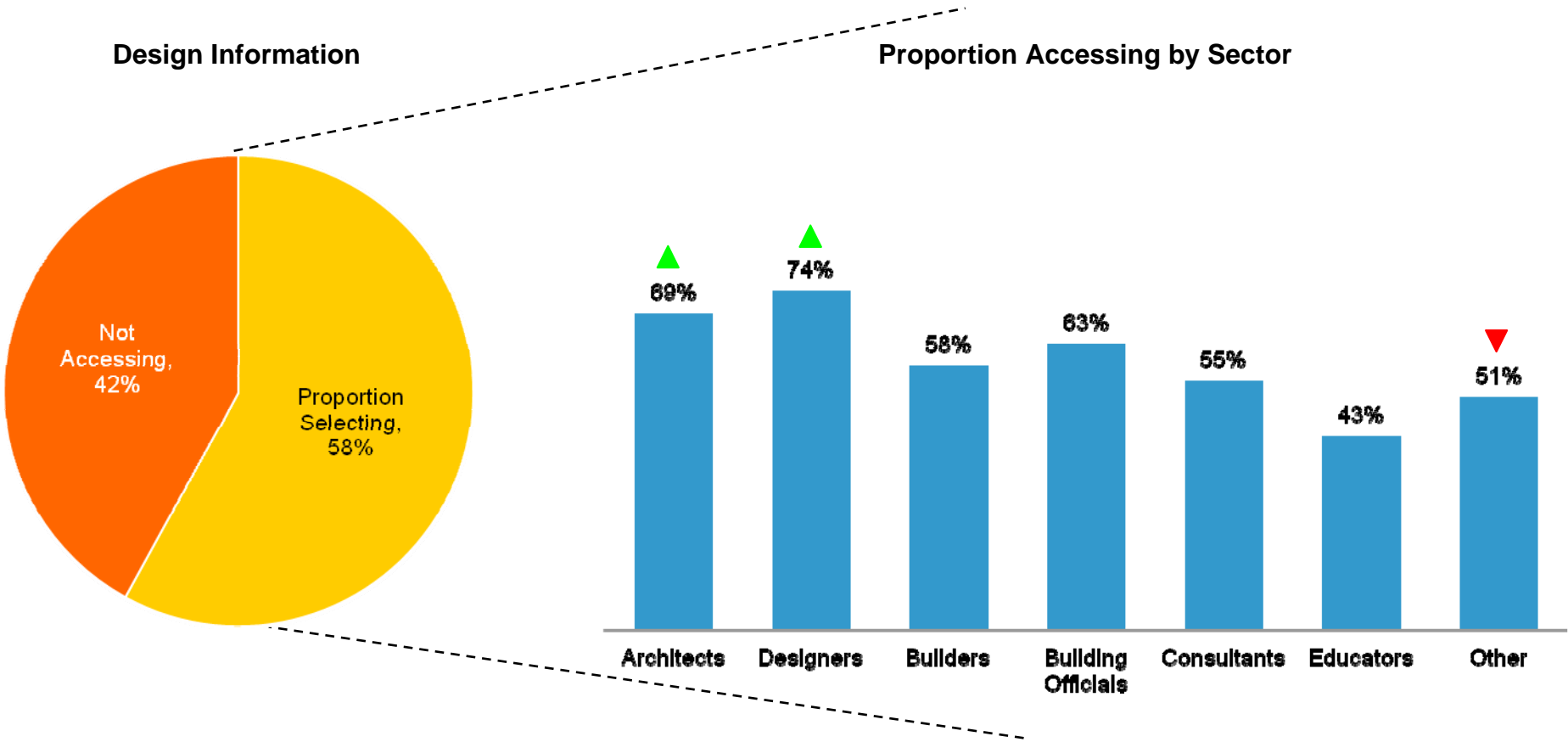


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Architects and designers are also more likely than other groups to be high users of design information

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾

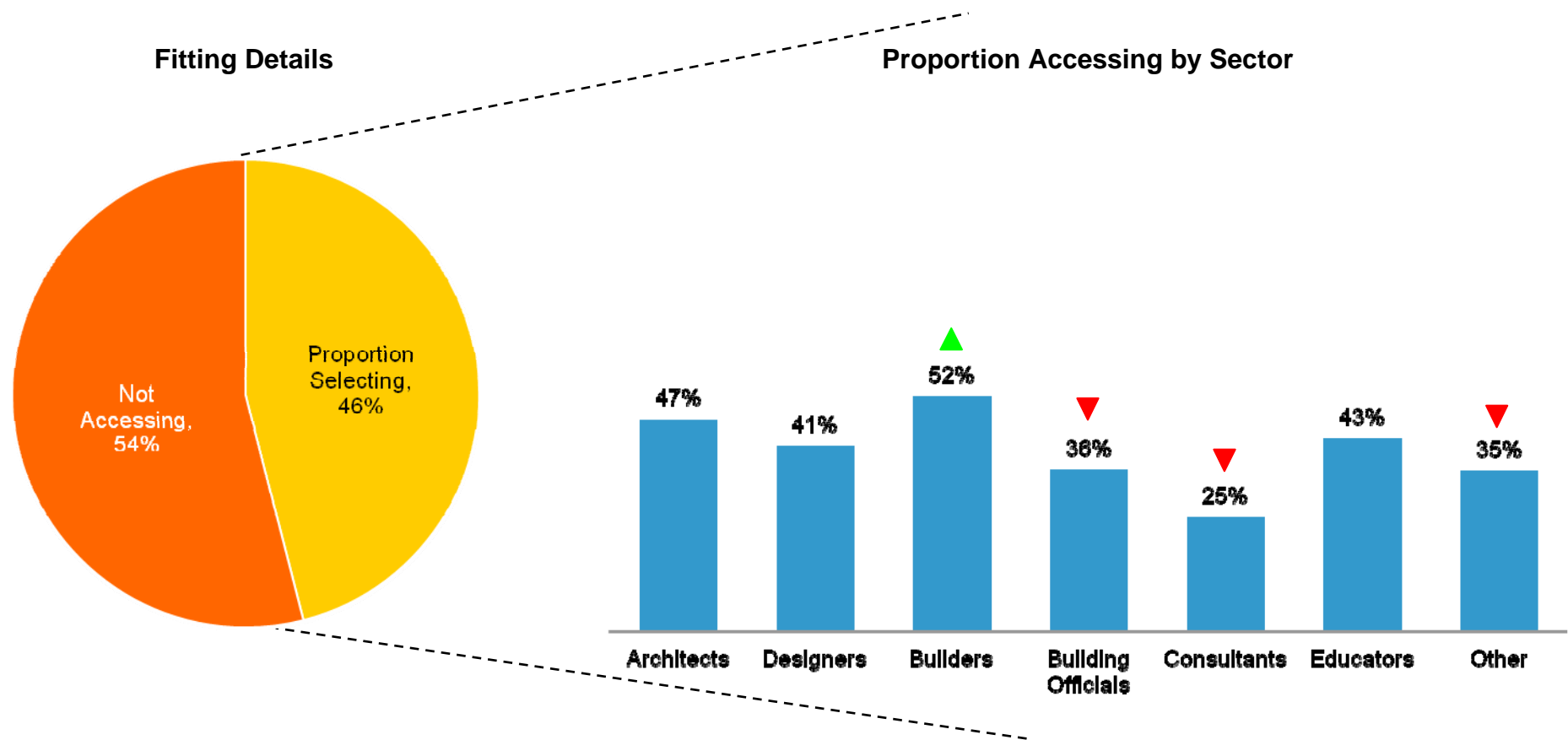


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Somewhat less than half of the industry has a regular interest in fitting details with builders being heavier users of this type of information relative to other groups

Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾

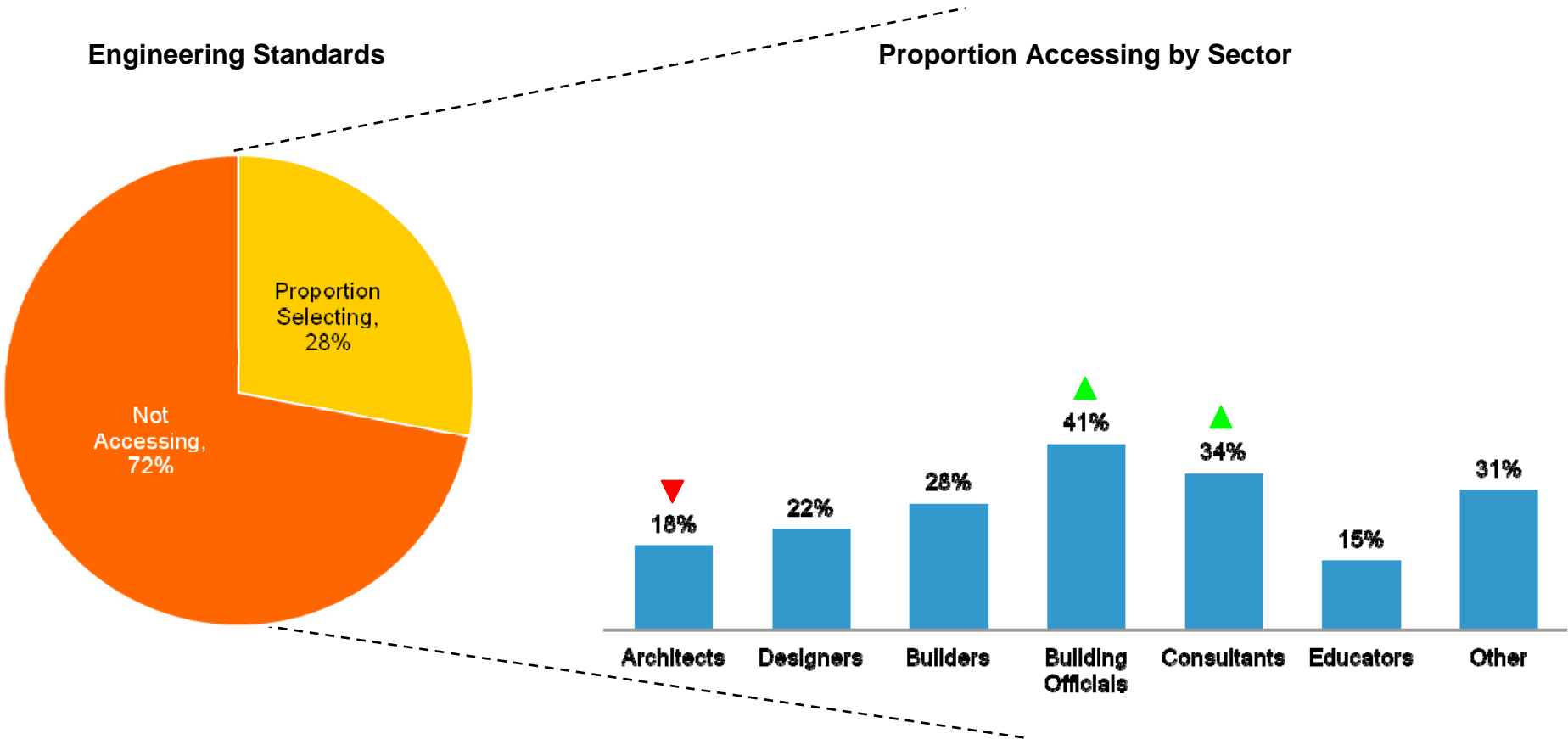


Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Less than a third of the industry has an interest in accessing engineering standards with this type of information most frequently being sought by building officials and consultants

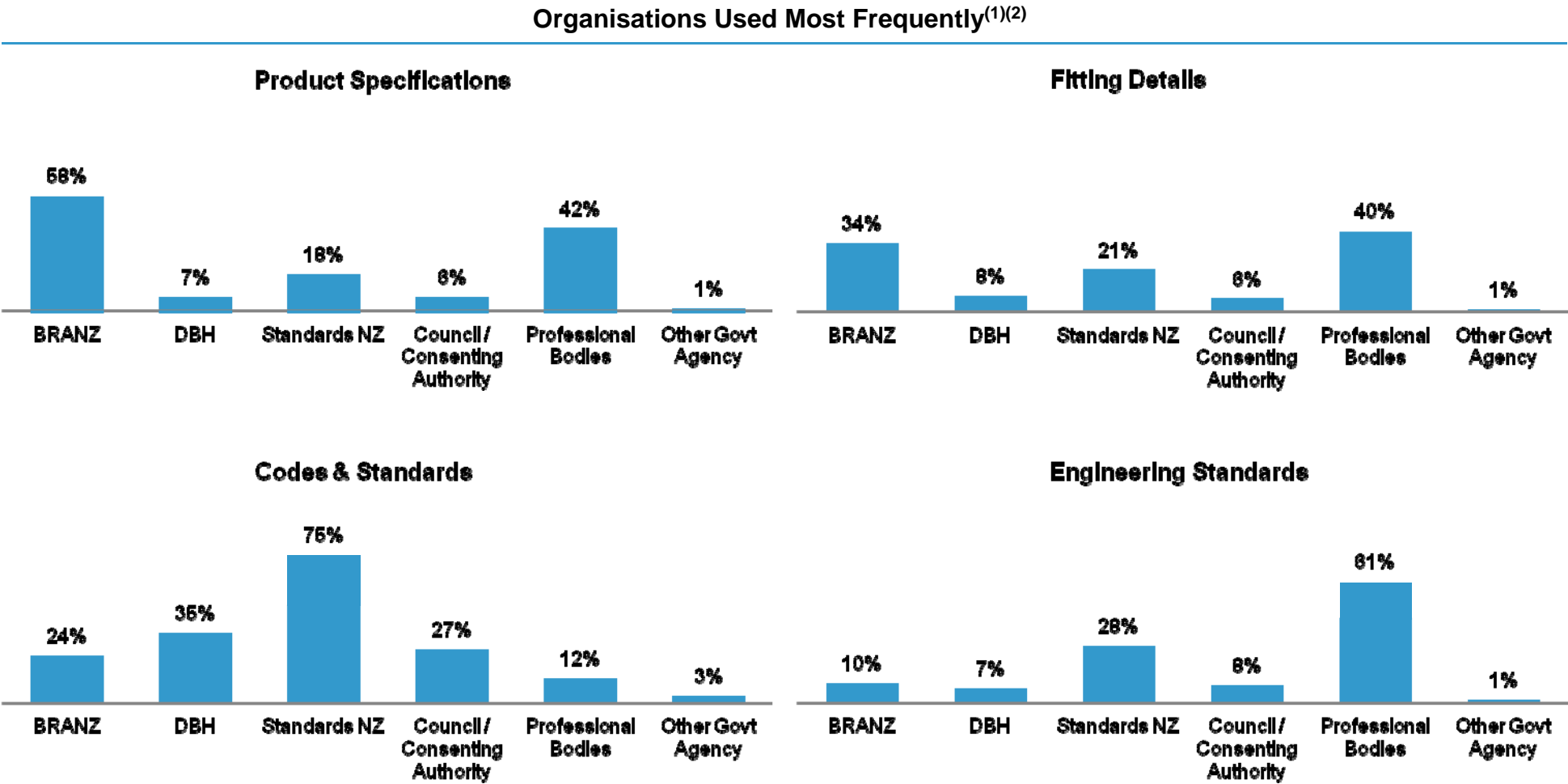
Type of Information Accessed Most Frequently⁽¹⁾⁽²⁾



Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

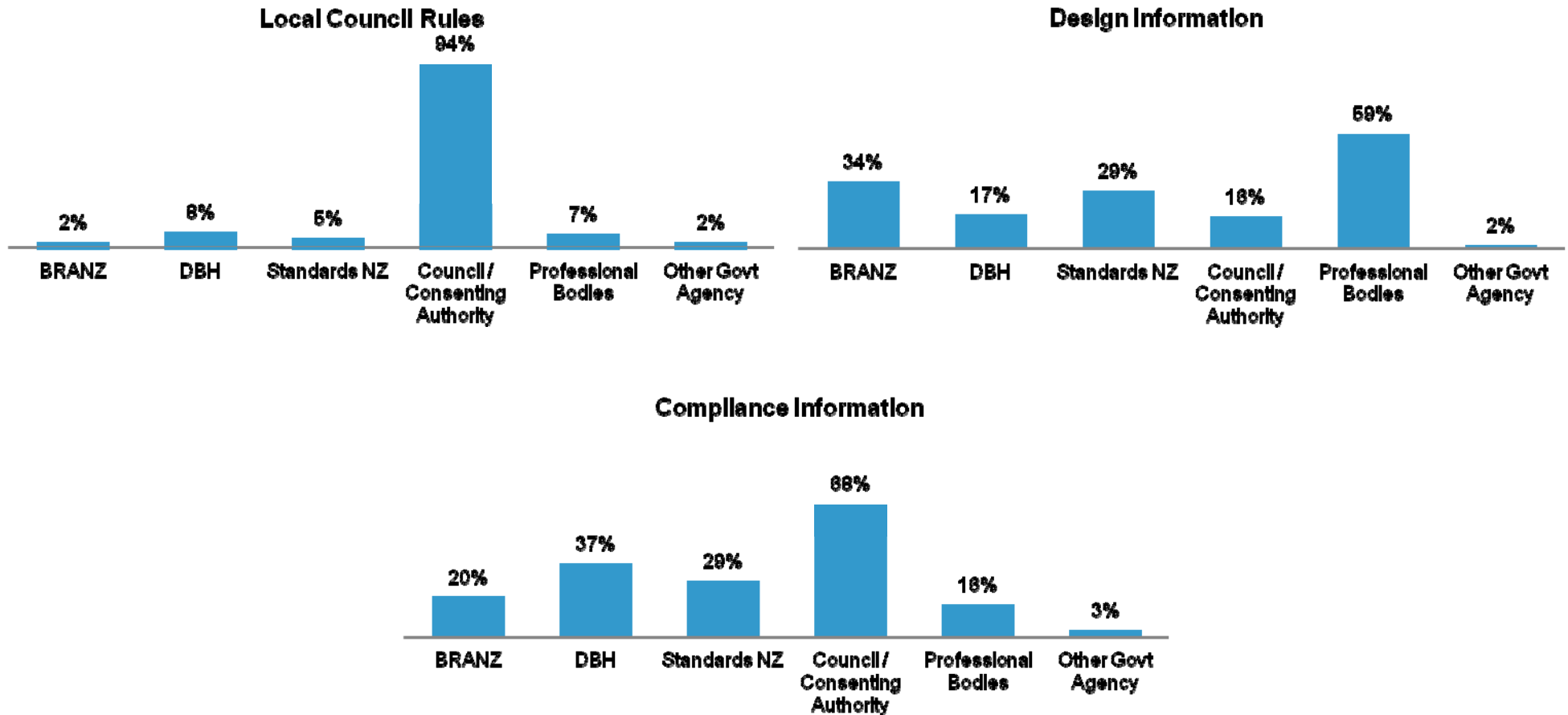
BRANZ is most frequently being used as a source of information in relation to ‘product specifications’ (58%), ‘fitting details’ (34%)...



Notes: 1. Base: All Respondents n = 2405;
2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

... and for 'design information' (34%)

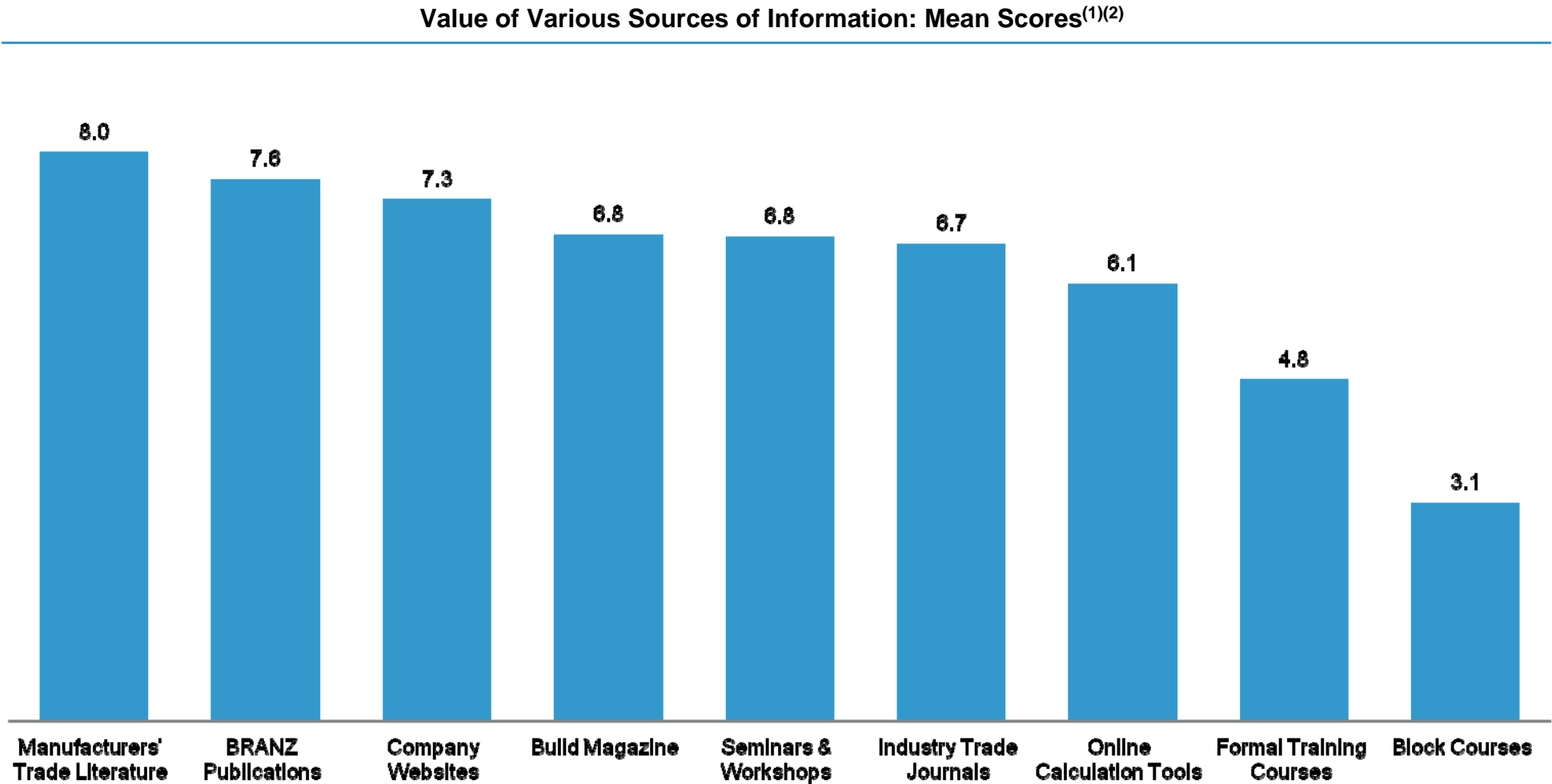
Organisations Used Most Frequently⁽¹⁾⁽²⁾



Notes: 1. Base: All Respondents n = 2405;

2. IS1 What are the general types of information that you most frequently need to source as part of your day-to-day activities?

Manufacturers trade literature and BRANZ publications stand out as the most valued sources of information and interestingly, are ranked ahead of websites

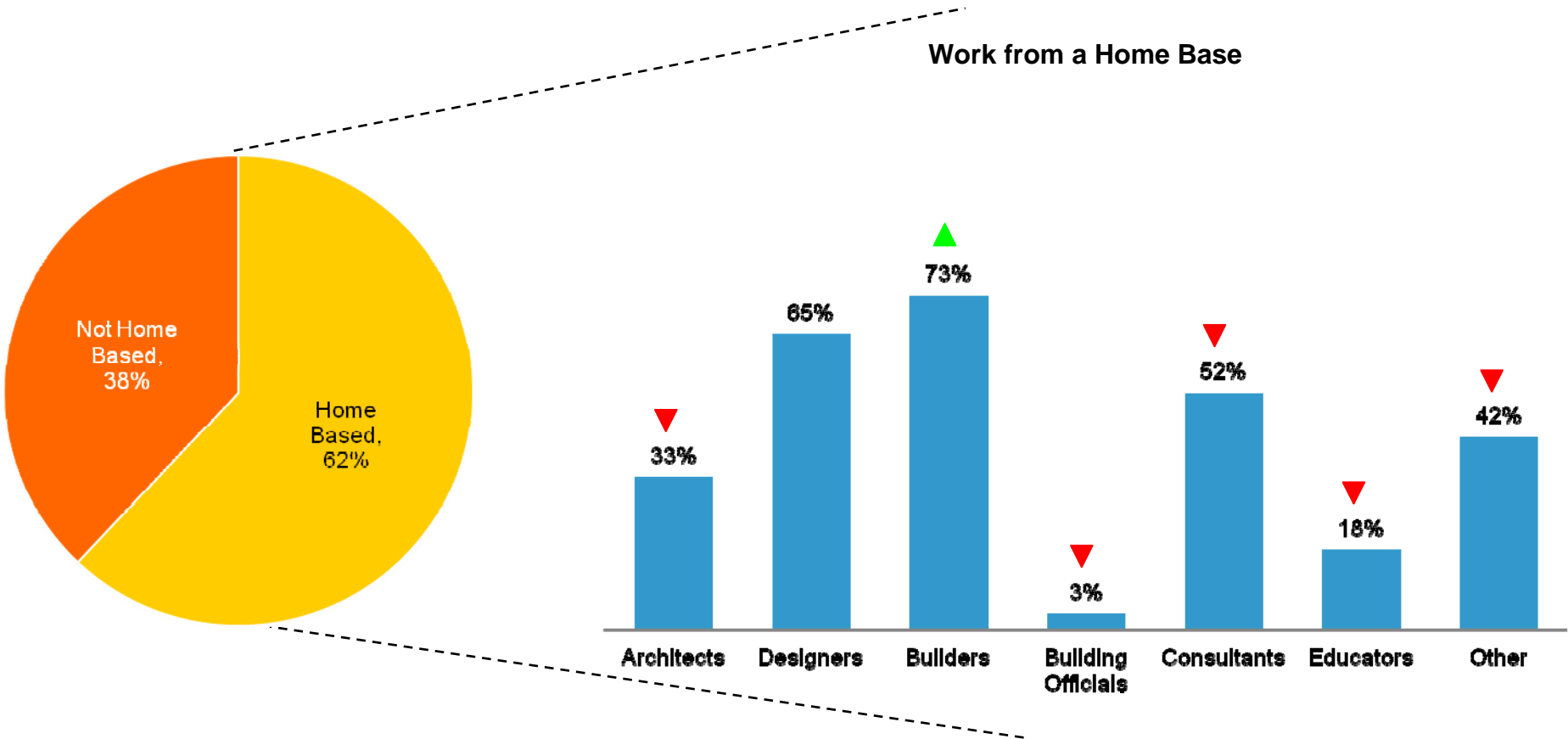


Notes: 1. Base: All Respondents n = 2405;

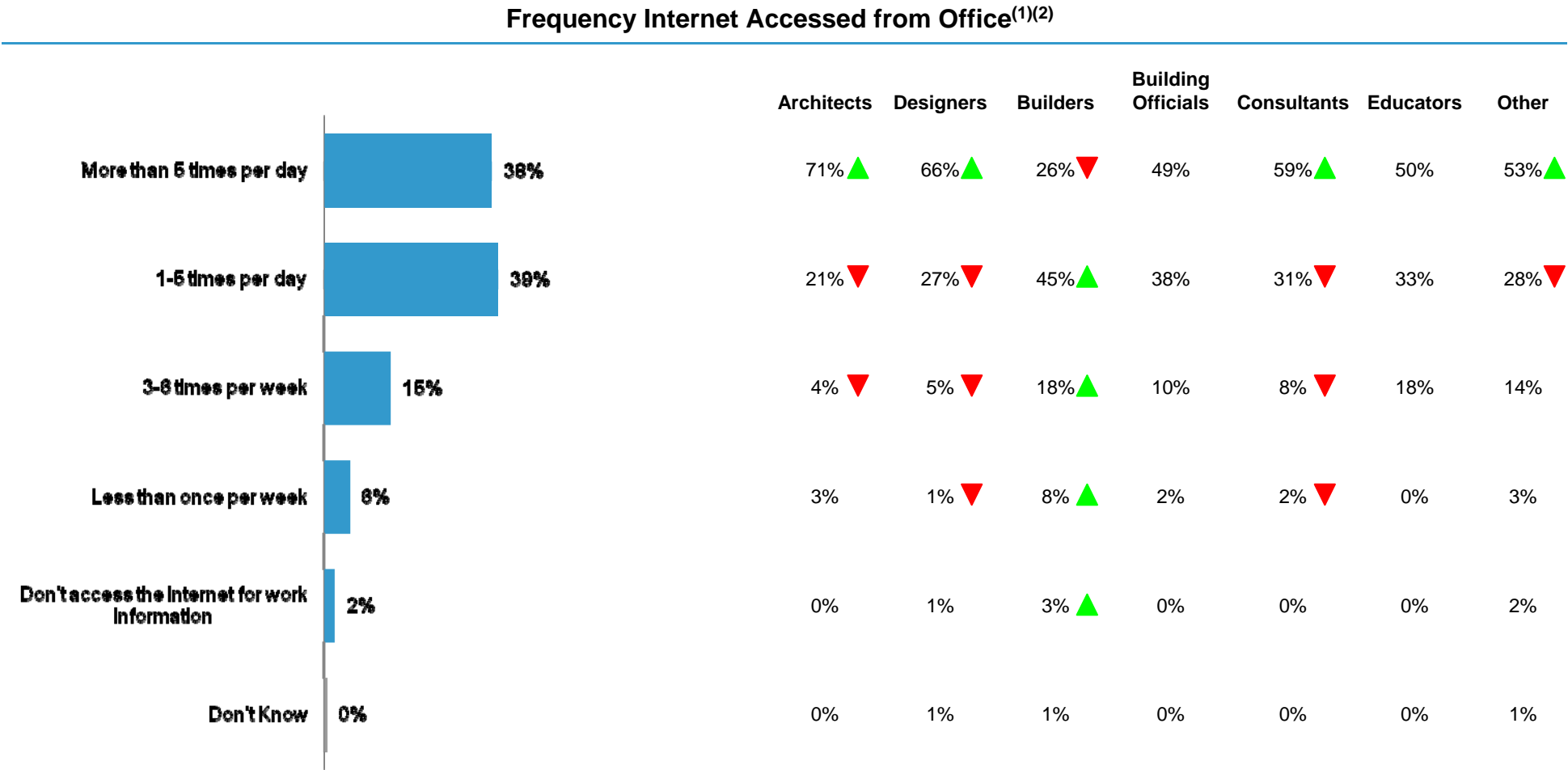
2. IS3 When seeking information to help with your work, how valuable are each of the following sources to you? Use the 0-10 scale where 0 means 'not valuable' and 10 means 'highly valued'

Overall, 62% of the sector is 'home based' with builders being significantly more likely to be working from a home office than others (73%), followed by designers (65%)

Proportion Working from Home Based Office⁽¹⁾⁽²⁾



Architects, designers and consultants tend to be the highest users of the internet with builders being less frequent users



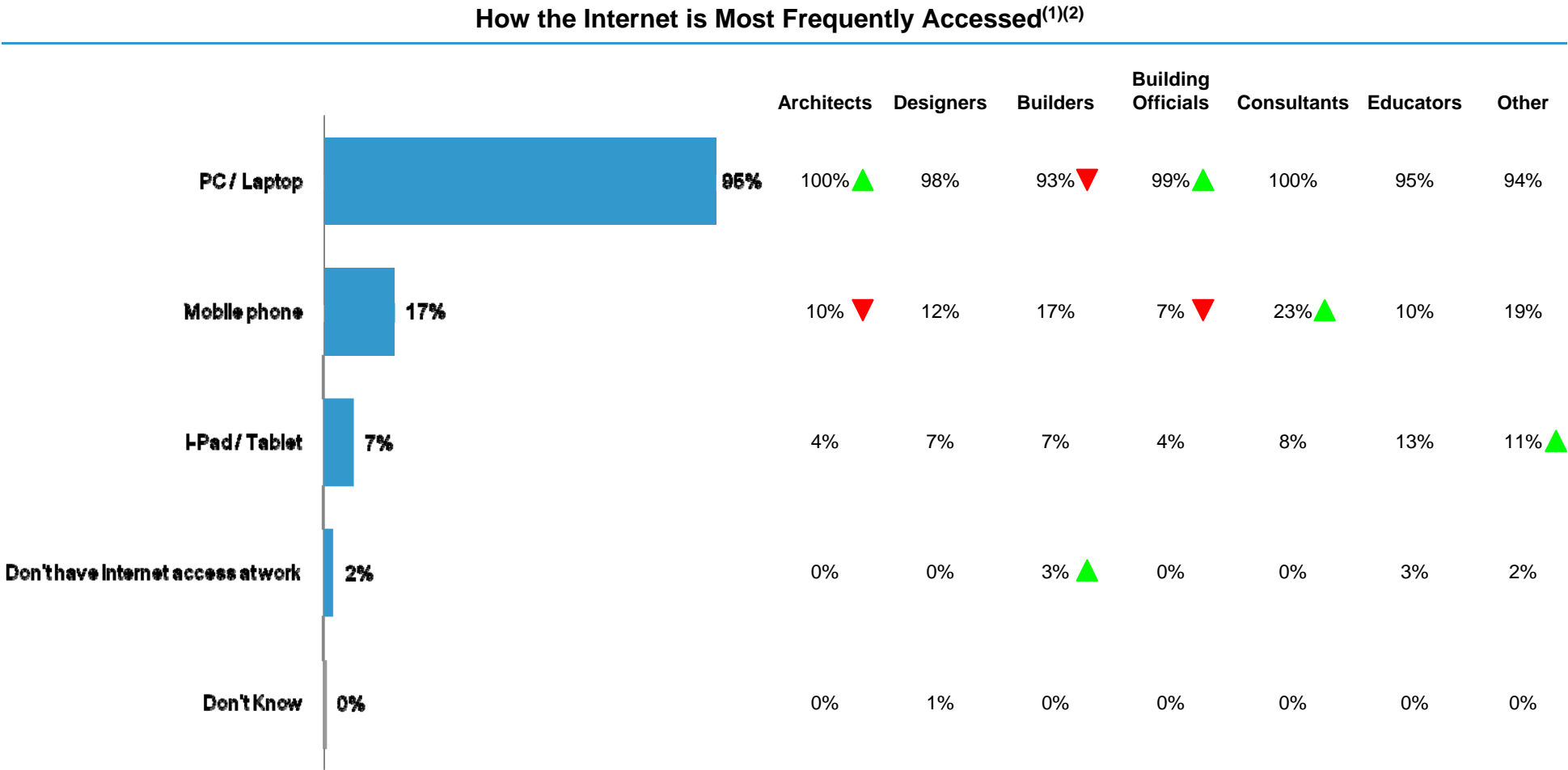
TNS

Notes: 1. Base: All Respondents n = 2,405;

2. IS8 During your normal working day, how frequently do you access the internet from your office?

BRANZ | 48

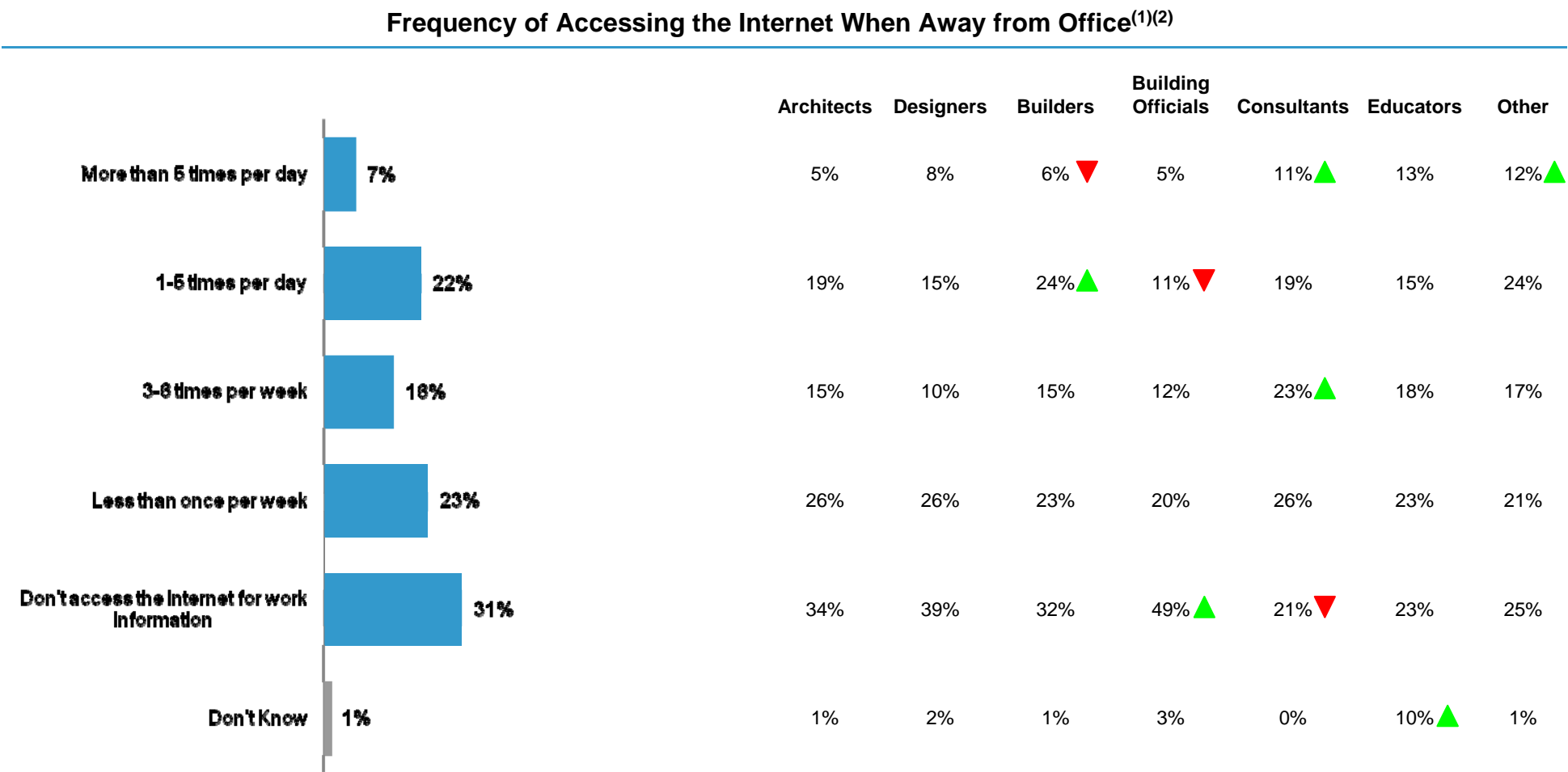
PC's and laptops remain the predominant technology for accessing the internet from work with relatively little use made of mobile phones other than within the consultant group (23%)



Notes: 1. Base: n = 2,405;
2. IS9 How do you normally access the internet when you are at your office?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

There is relatively little use made of the internet when away from the office (but not at home)

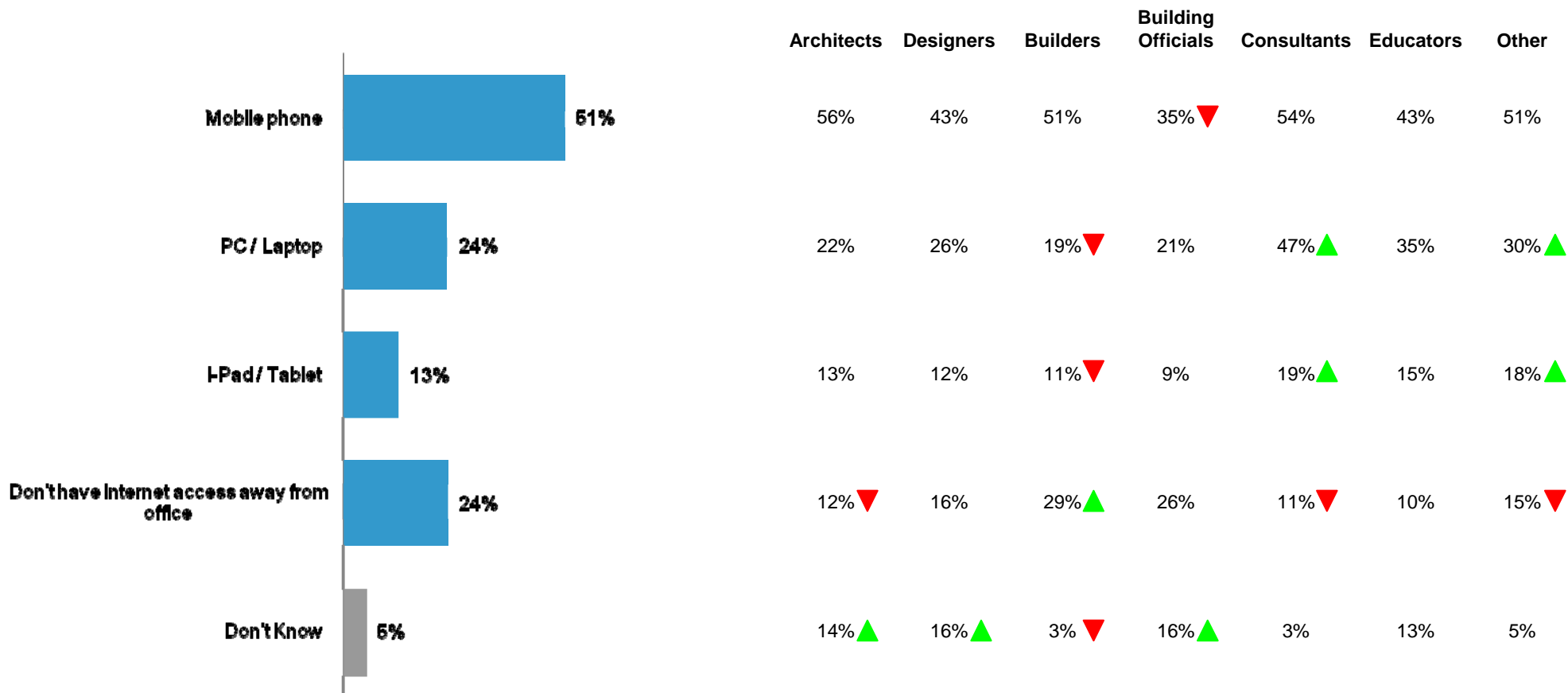


Notes: 1. Base: n = 2,405;
2. IS10 How frequently do you access the internet where you are away from your office (but not at home); e.g. when on site?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Mobile phone is the most frequently used device for accessing the internet when away from the office (51%)

How the Internet is Most Frequently Accessed When Away from Office?⁽¹⁾⁽²⁾

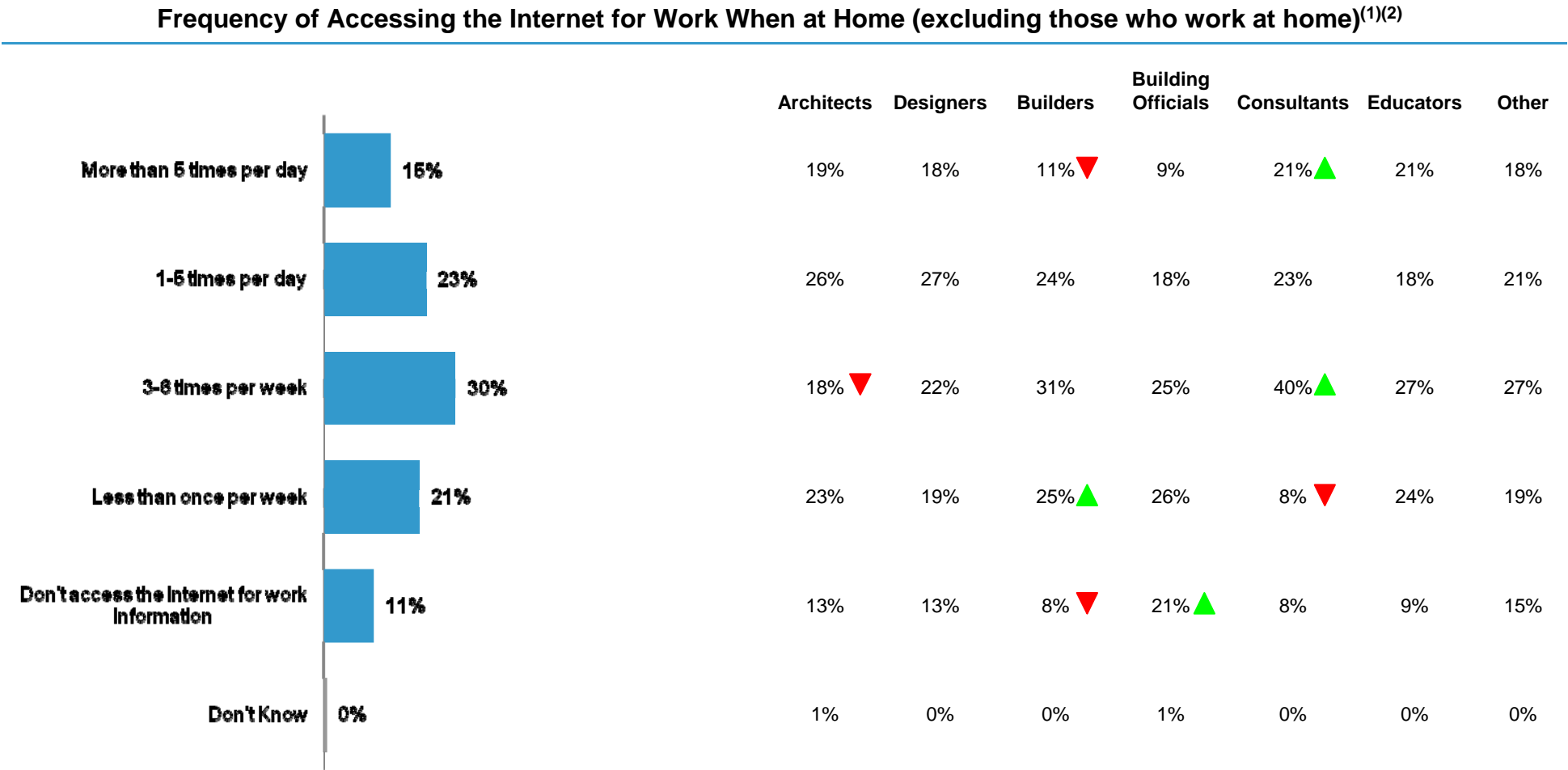



Notes: 1. Base: n = 2,405;

2. IS11 And by what means do you access the internet when away from your office (but not at home)?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Excluding those who work from home, relatively few regularly access the internet for work related information when at home

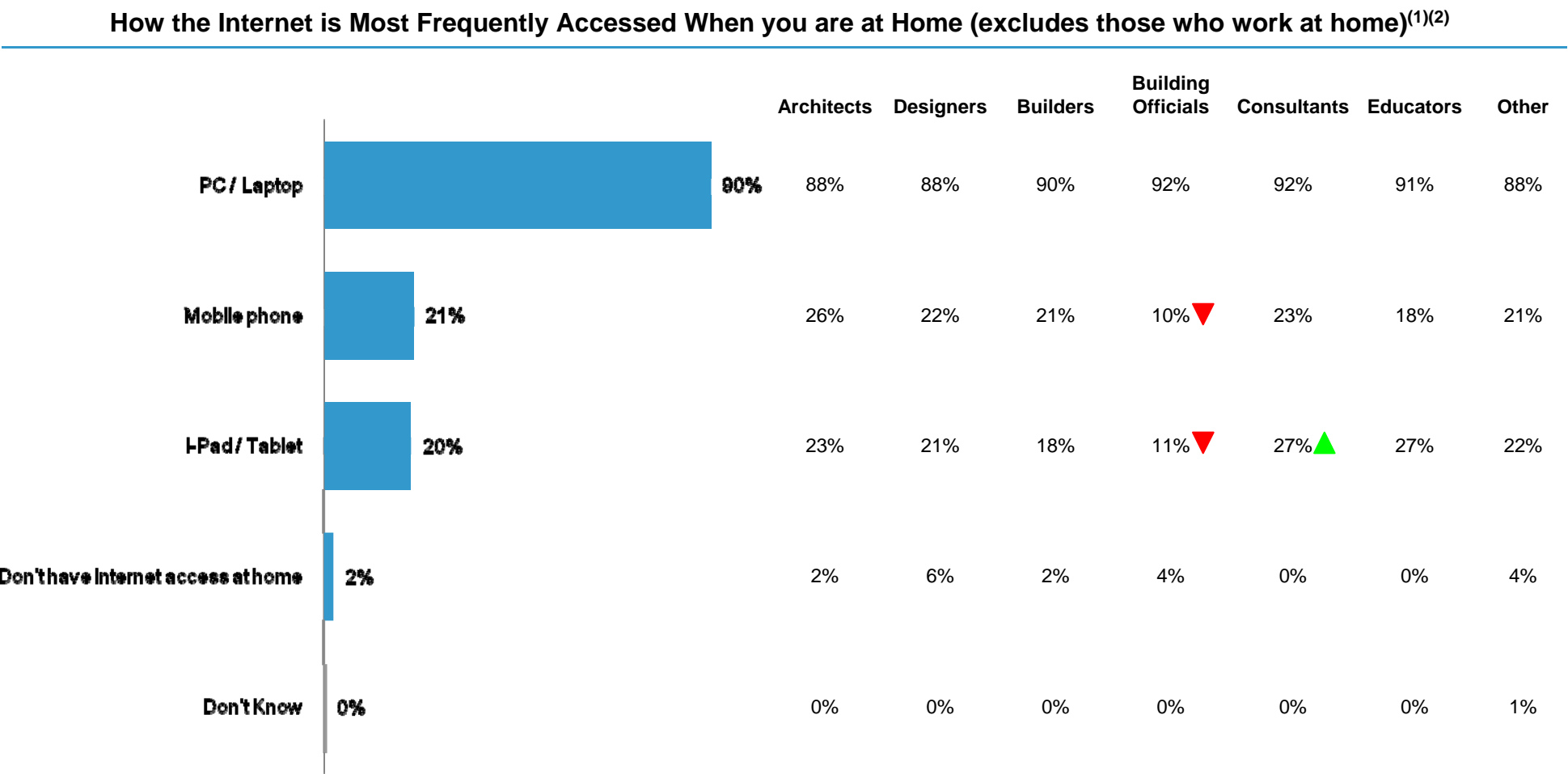




Notes: 1. Base: n = 1,219;

2. IS6 When at home, how frequently do you access the internet for work related information?

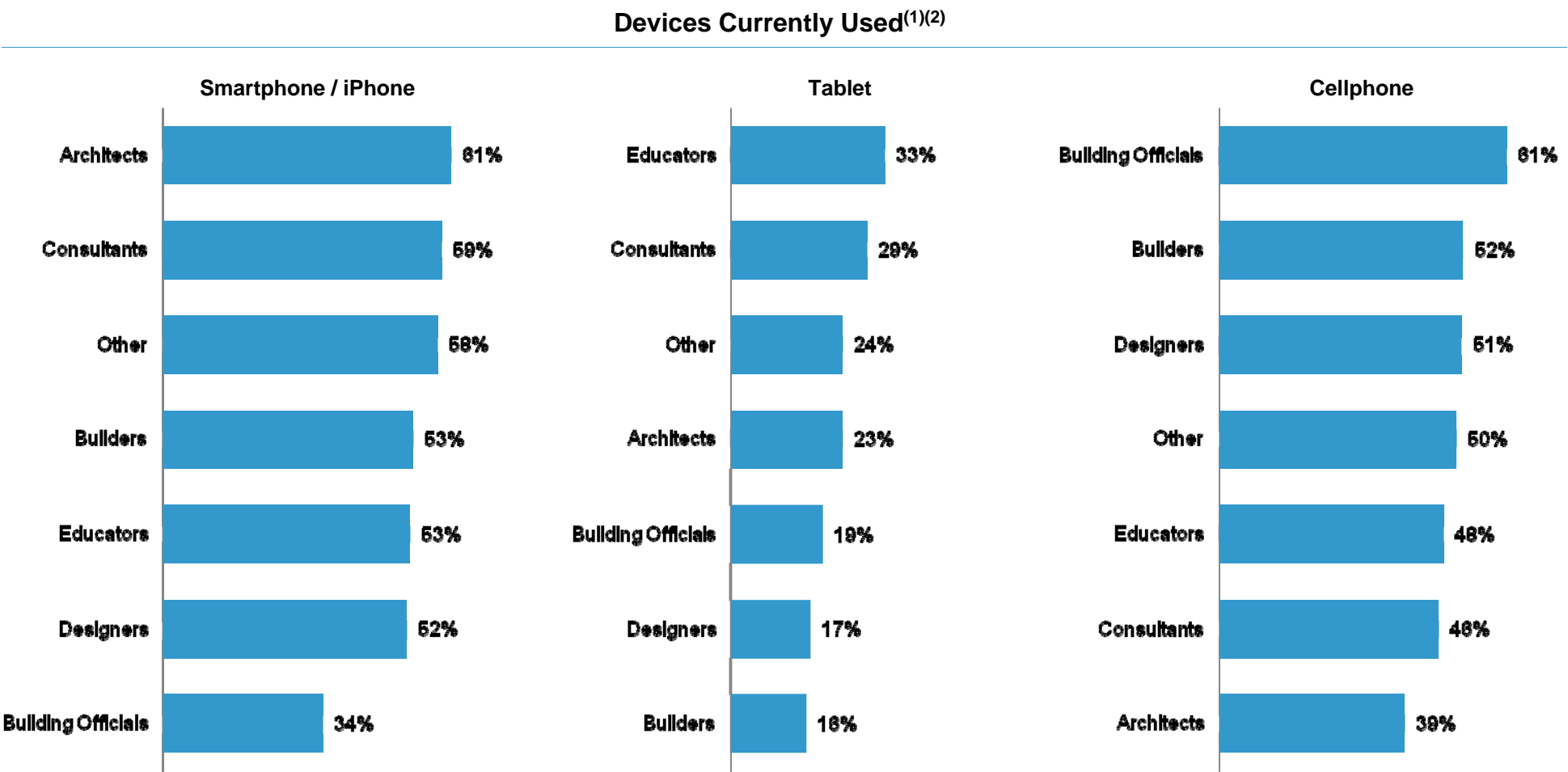
For those who do access the internet for work related information when at home, almost all (90%) are using PC's or laptops



Notes: 1. Base: n = 1,219;
2. IS7 How do you normally access the internet when you are at home?

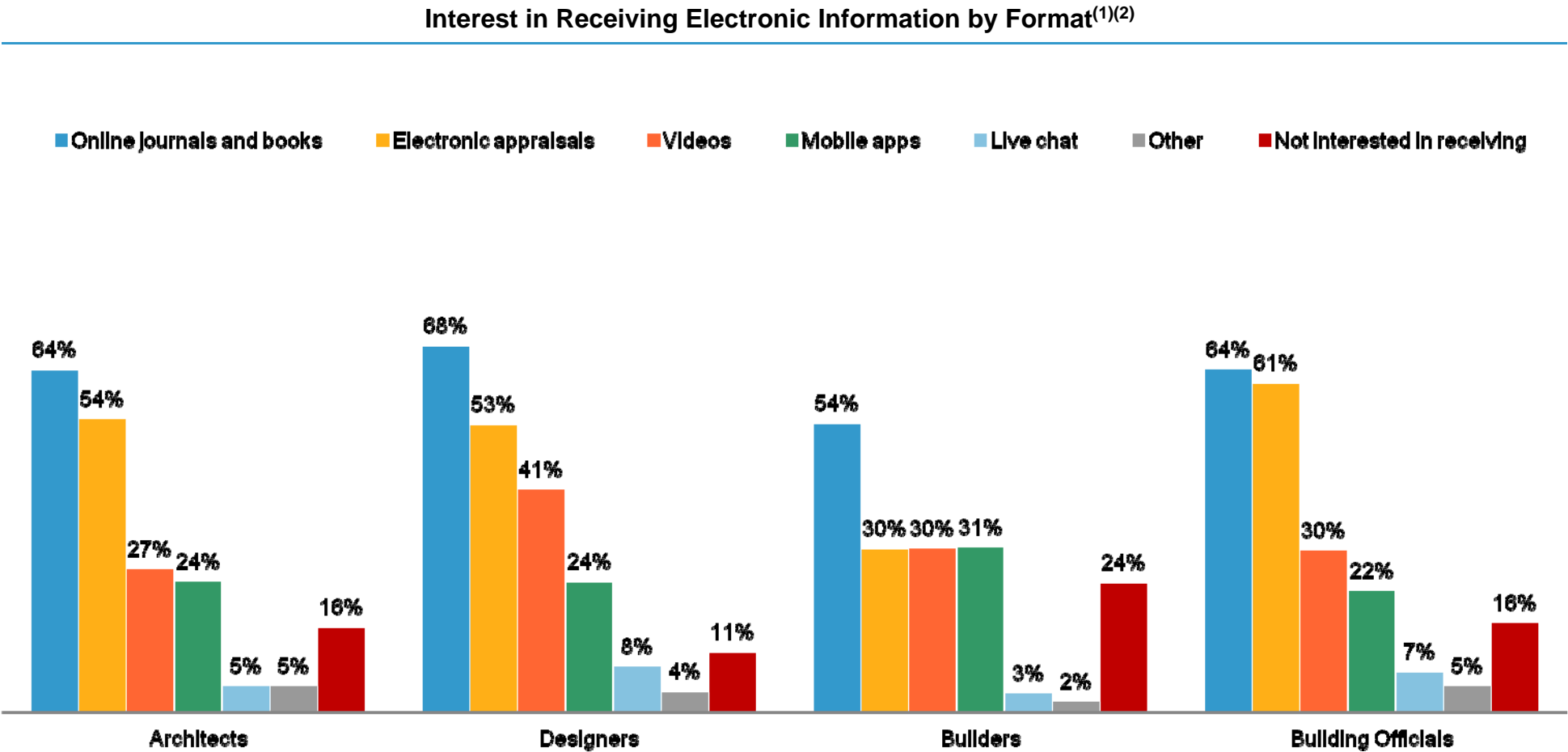
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Architects and consultants are the highest users of smartphones while tablet use remains relatively low across the industry

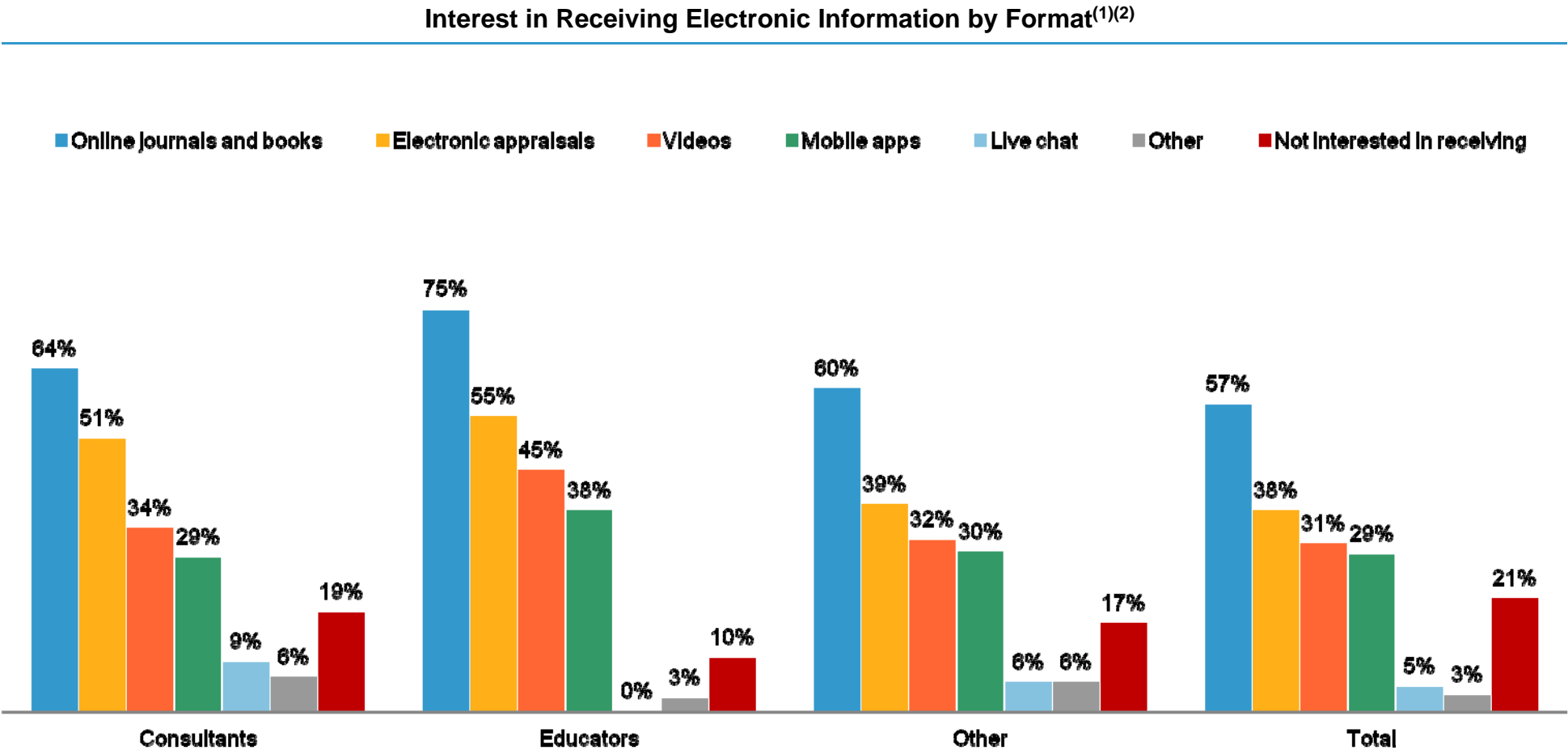


Notes: 1. Base: n = 2405;
2. IS13 Which of the following devices do you currently use? Select all that apply

Across the industry there is high interest in receiving online journals, in receiving copies of appraisals electronically, and there is reasonable interest in online videos but little interest in ‘live chat’

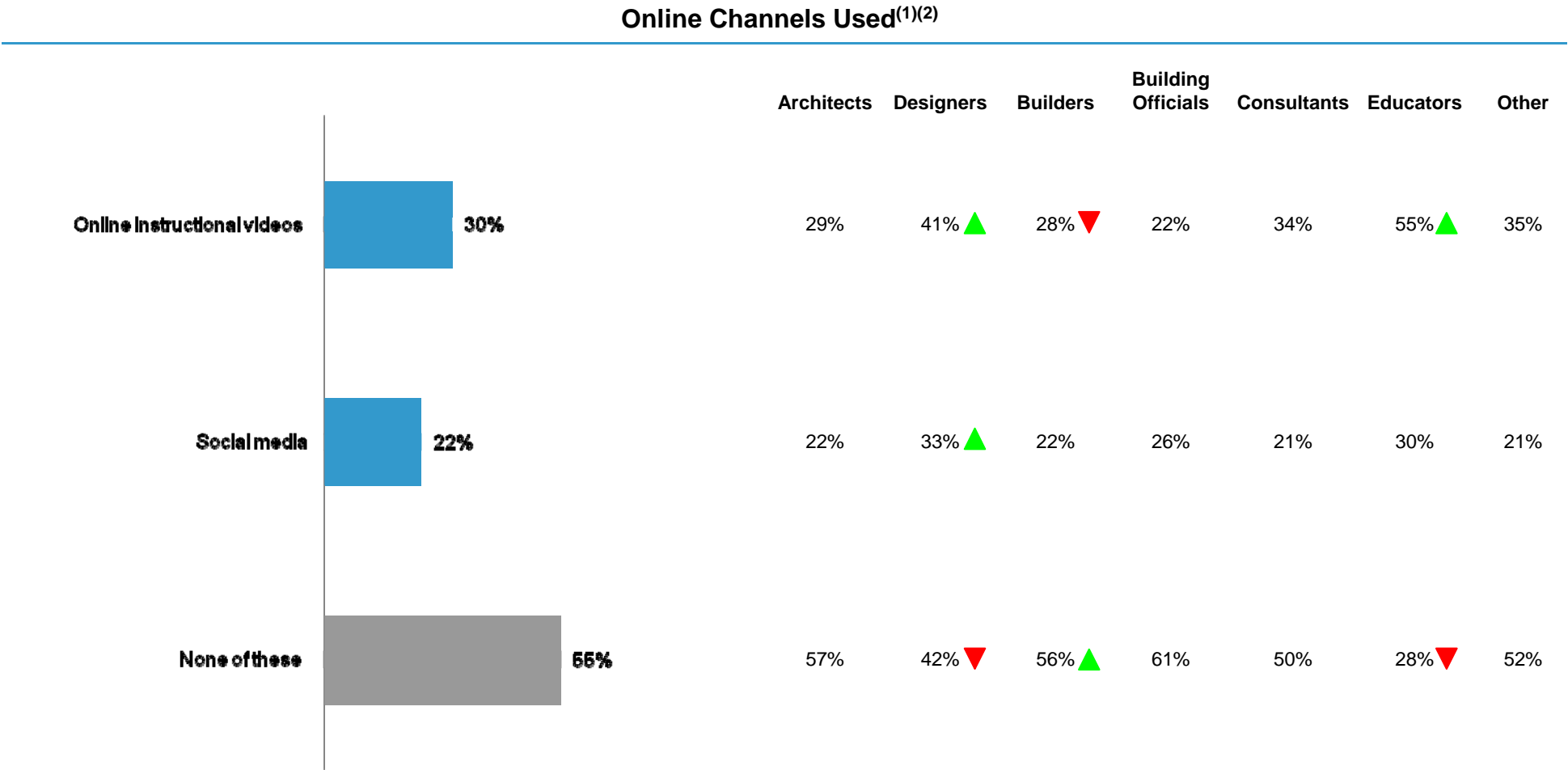


Educators have the highest interest in receiving electronic information and have the highest level of interest in online industry videos

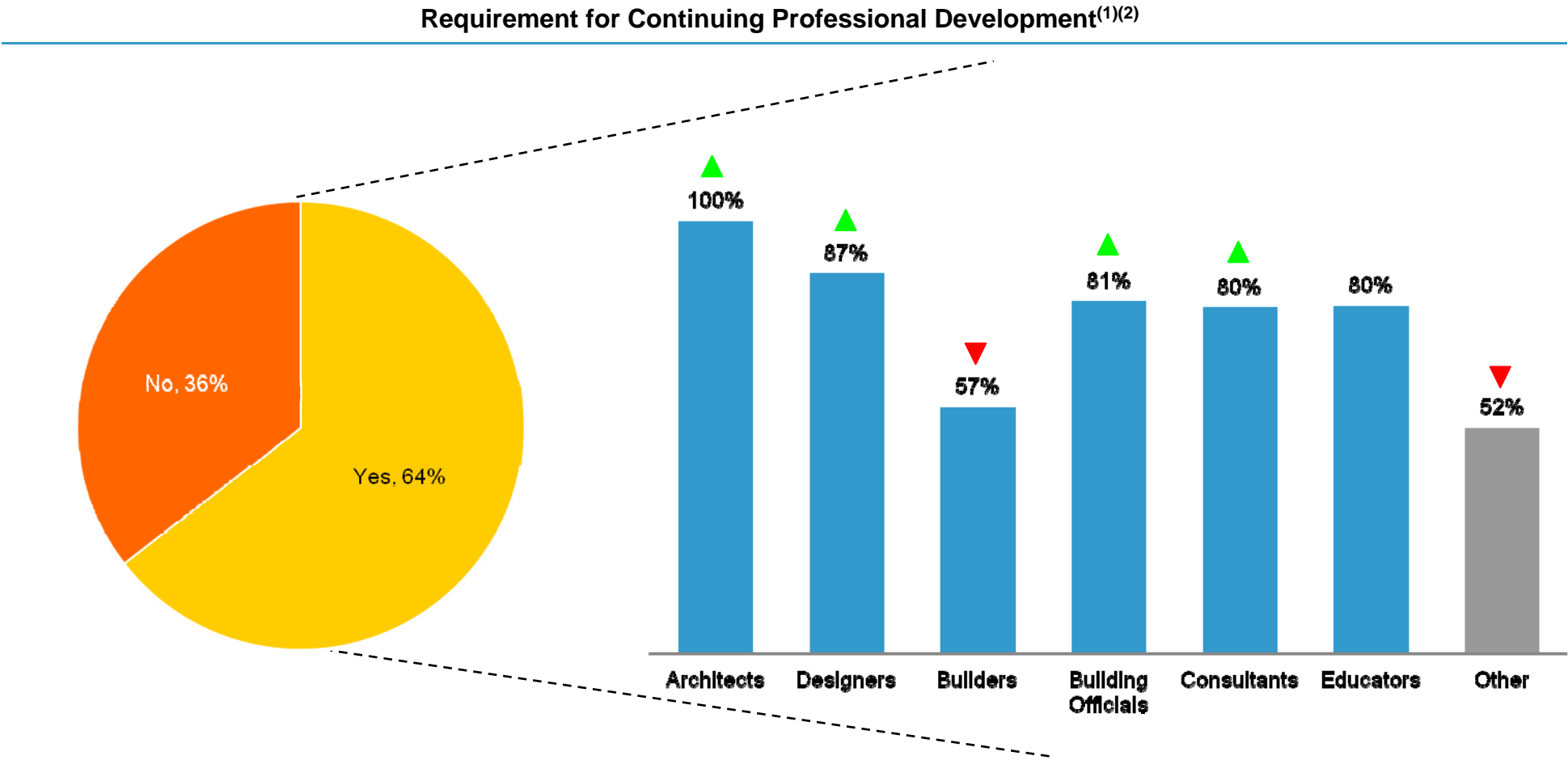


Notes: 1. Base: n = 2405;
2. IS12 Are you interested in receiving electronic information in the following formats?
Select all that apply

Only 30% of the industry is currently making use of online instructional videos with designers and educators being the most frequent users and builders, architects and building officials the least frequent

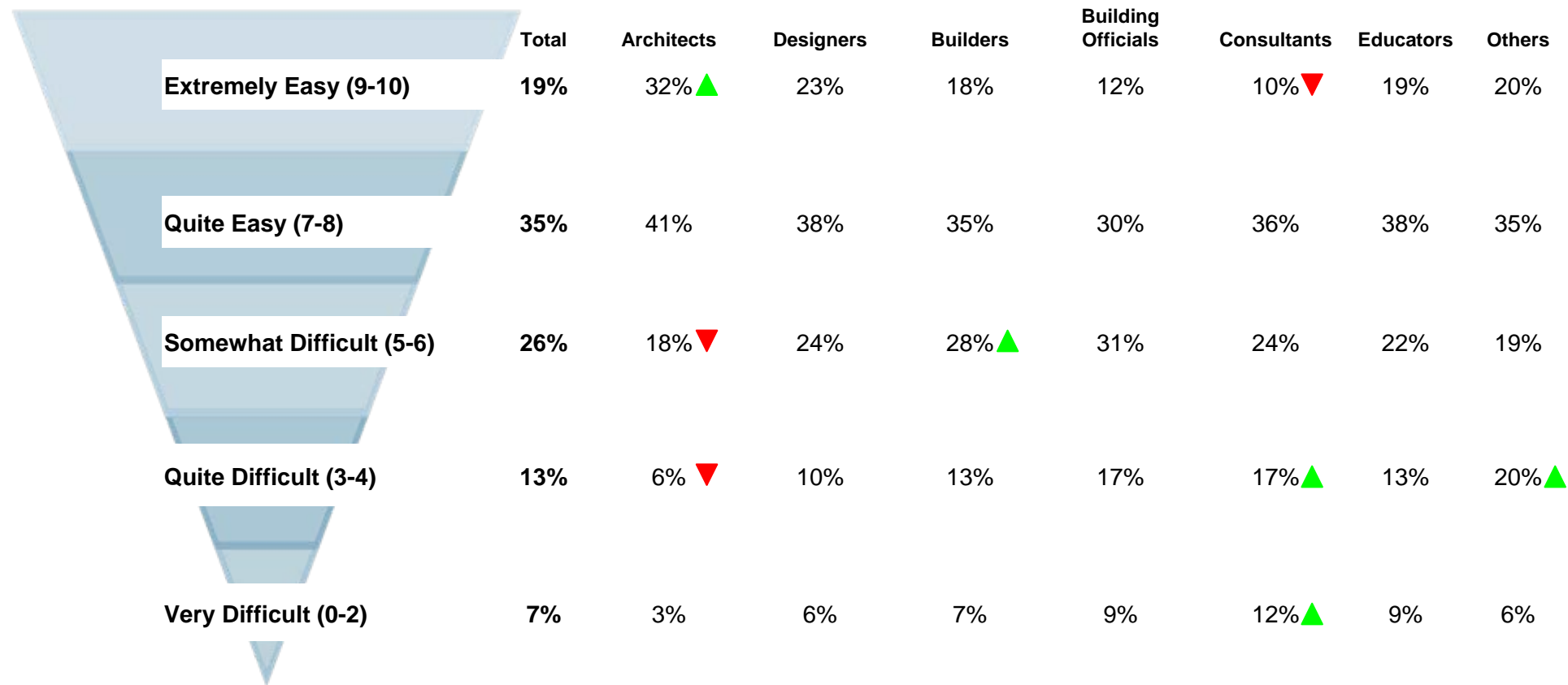


Collectively, two thirds of the industry has a need for continuing professional development with a high proportion of all sector groups other than builders and 'others' noting a need



Close to half of those who have a requirement for continuing professional development indicate that they have some level of difficulty accessing information suggesting that the internet could potentially be of greater benefit

Ease of Accessing Information for Continuing Professional Development⁽¹⁾⁽²⁾

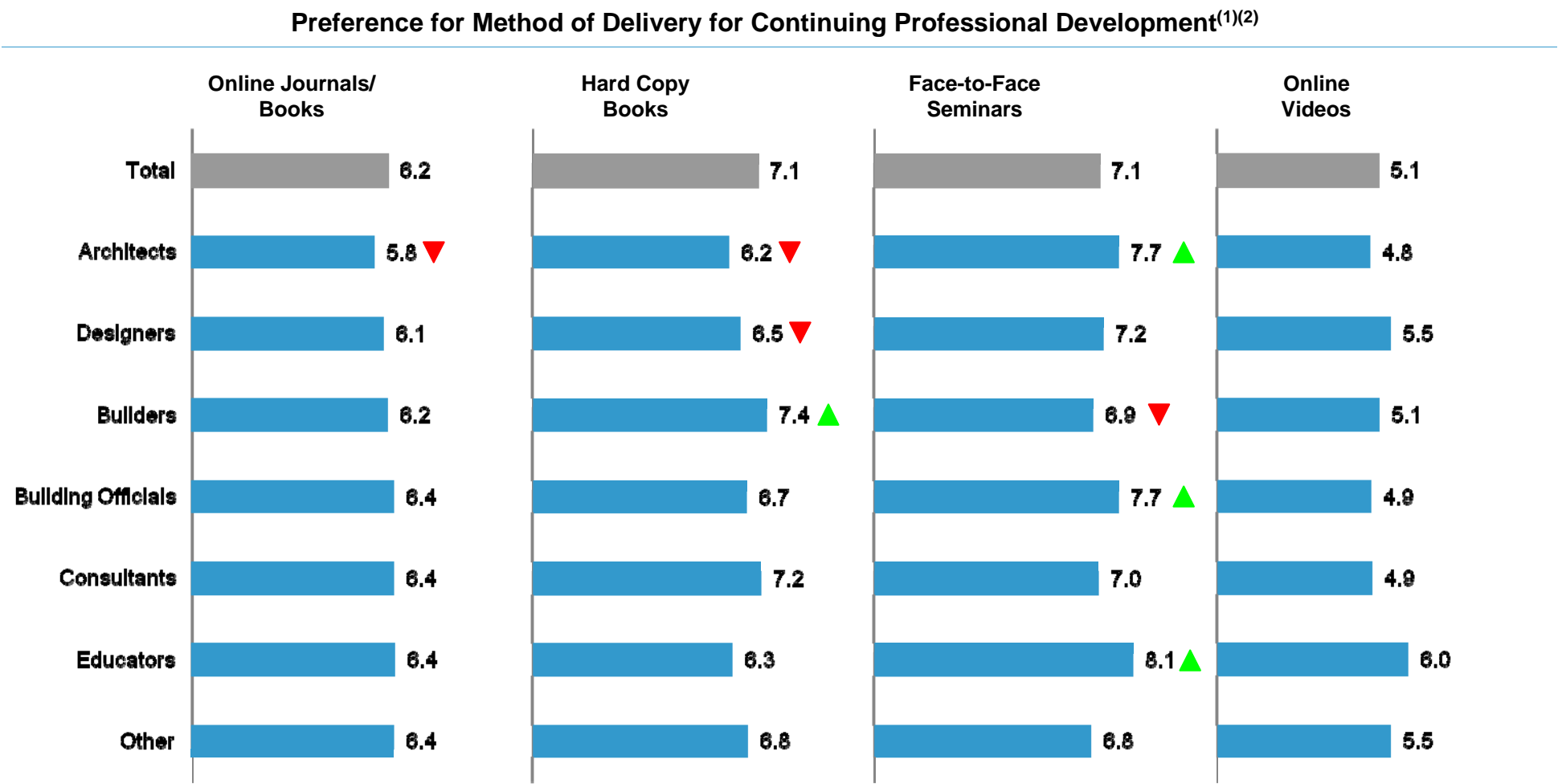


Notes: 1. Base: n = 1,679;

2. IS16 How easy do you find accessing information for 'Continuing Professional Development'? Use the 0-10 scale where 0 means 'very difficult' and 10 means 'extremely easy'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

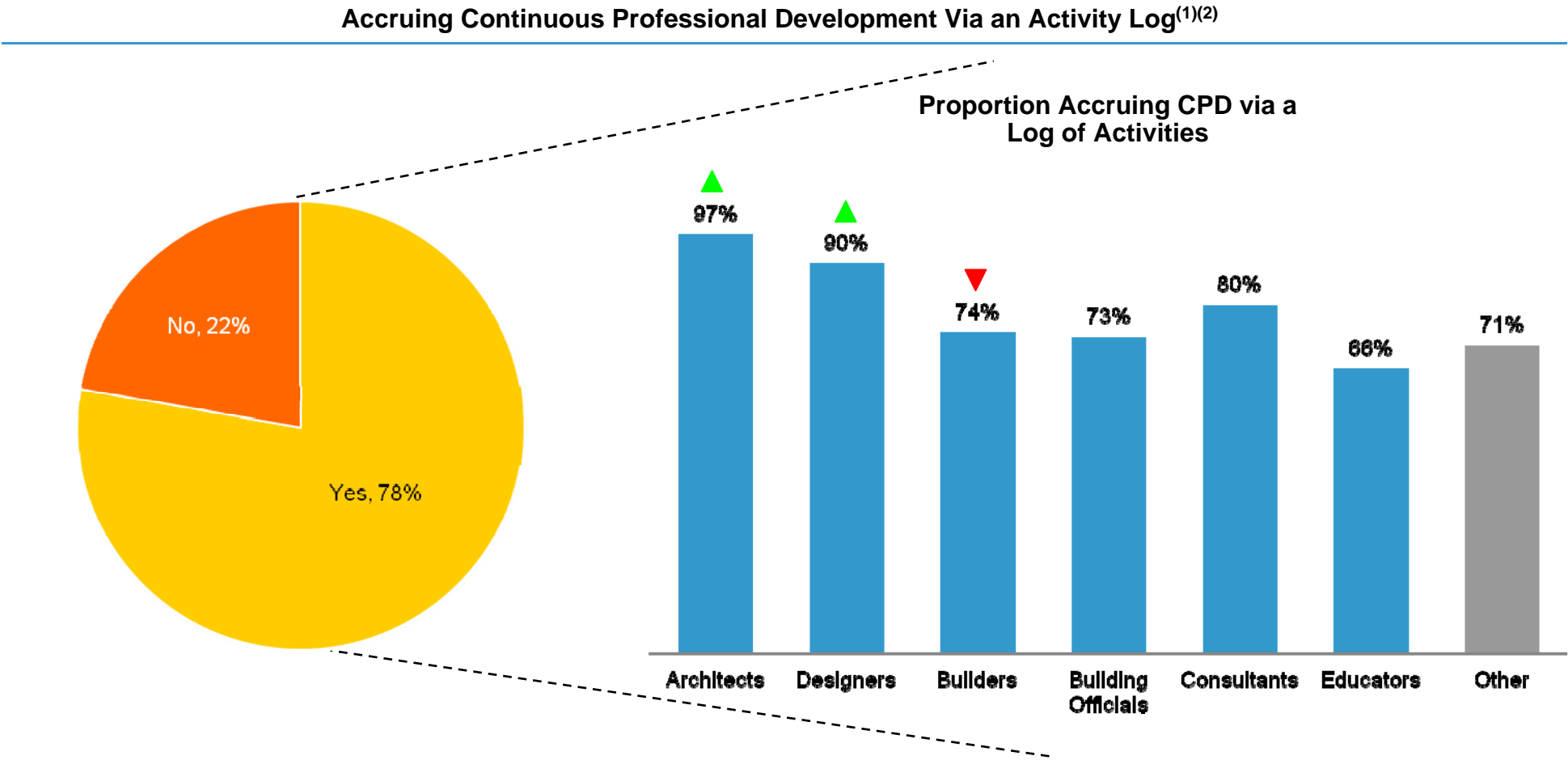
Hard copy books and face-to-face seminars are the most preferred delivery methods in relation to continuing development, although the large ‘builders’ segment has significantly greater interest in books and less interest in seminars



Notes: 1. Base: n = 1,679;
2. IS17 What preference do you have for each of the delivery methods in relation to 'Continuing Professional Development'? Use the 0-10 scale where 0 means 'not at all preferred' and 10 means 'highly preferred'

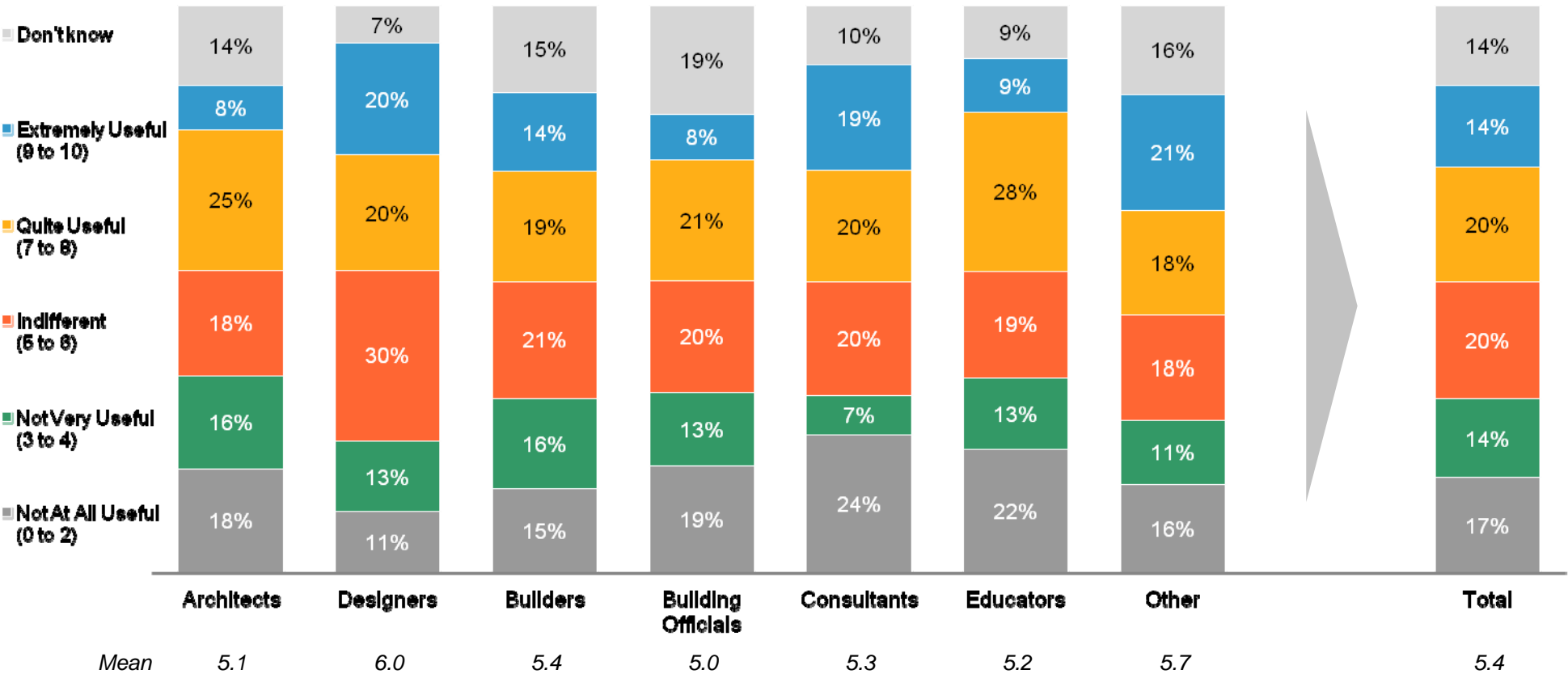
▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Overall 78% accrue their Continuing Professional Development points via an activity log although builders are less likely than other groups to be using an activity log



There is relatively low level of interest in completing Continuing Professional Development activities online via videos or webinars, with only a third of the industry members considering this ‘quite’ or ‘extremely’ useful

Usefulness of Completing Continuous Professional Development Online⁽¹⁾⁽²⁾

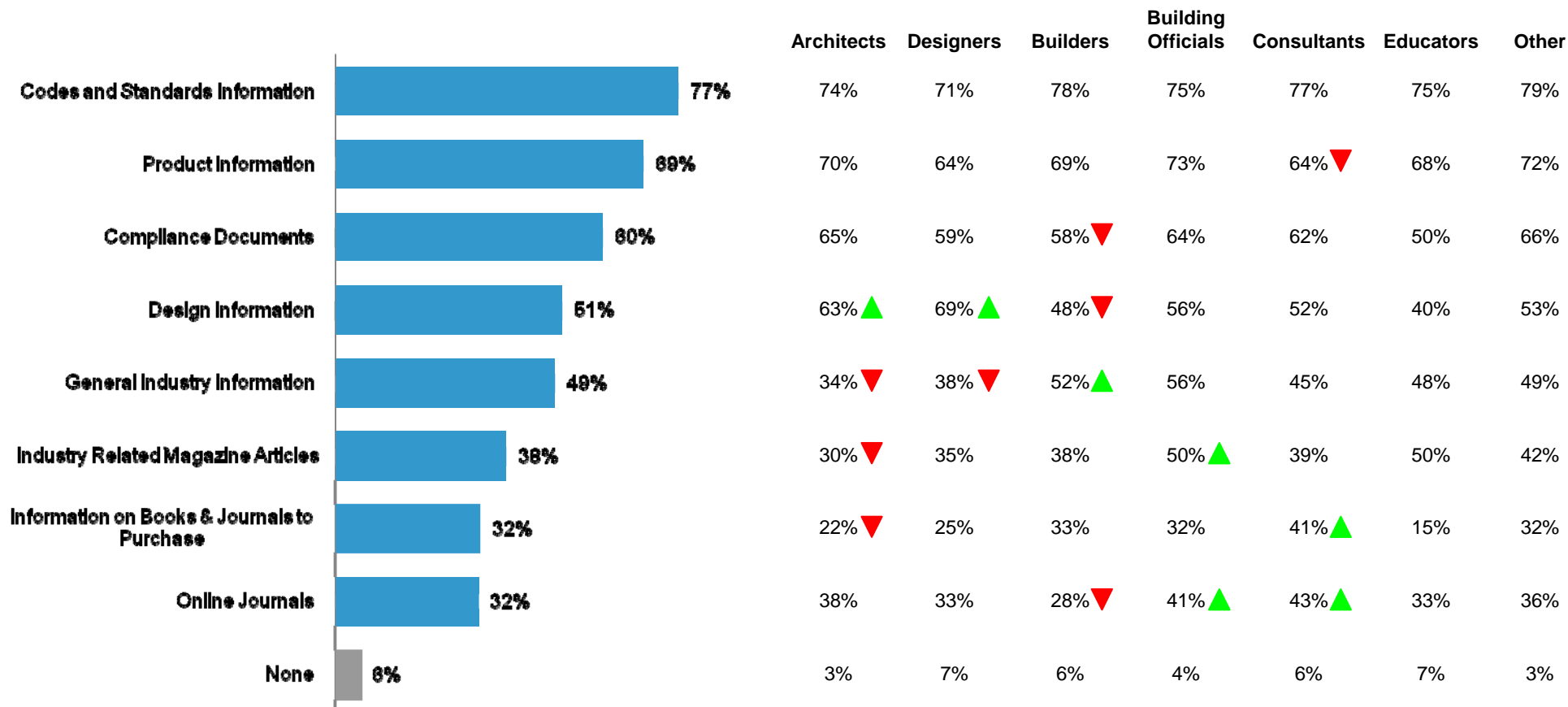


Notes: 1. Base: n = 1,679;
2. IS19 How useful is it to complete CPD activities online via video's or webinars? Use the 0-10 scale where 0 means 'not at all useful' and 10 means 'extremely useful'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

There is a consensus amongst industry groups that favours greater online access to codes and standards

Most Want to Have More Information About Electronically⁽¹⁾⁽²⁾



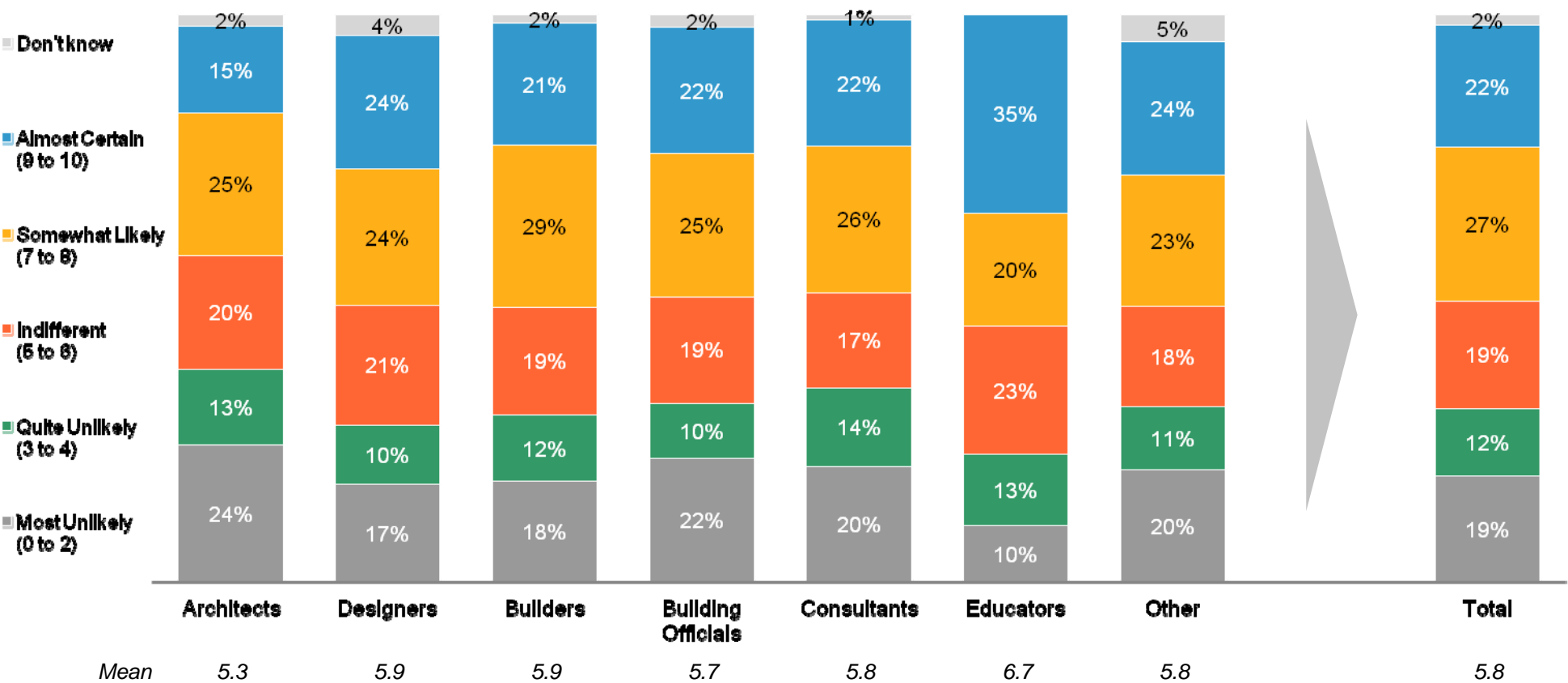
Notes: 1. Base: n = 2,405;

2. IS22 From the list below, which topics would you most want to have more information about available electronically?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

About half of industry members indicate that they would be at least somewhat likely to make use of ‘Youtube’ clips / webinars if these were available

Likelihood of Using ‘Youtube’ Clips/Webinars if Available Online⁽¹⁾⁽²⁾

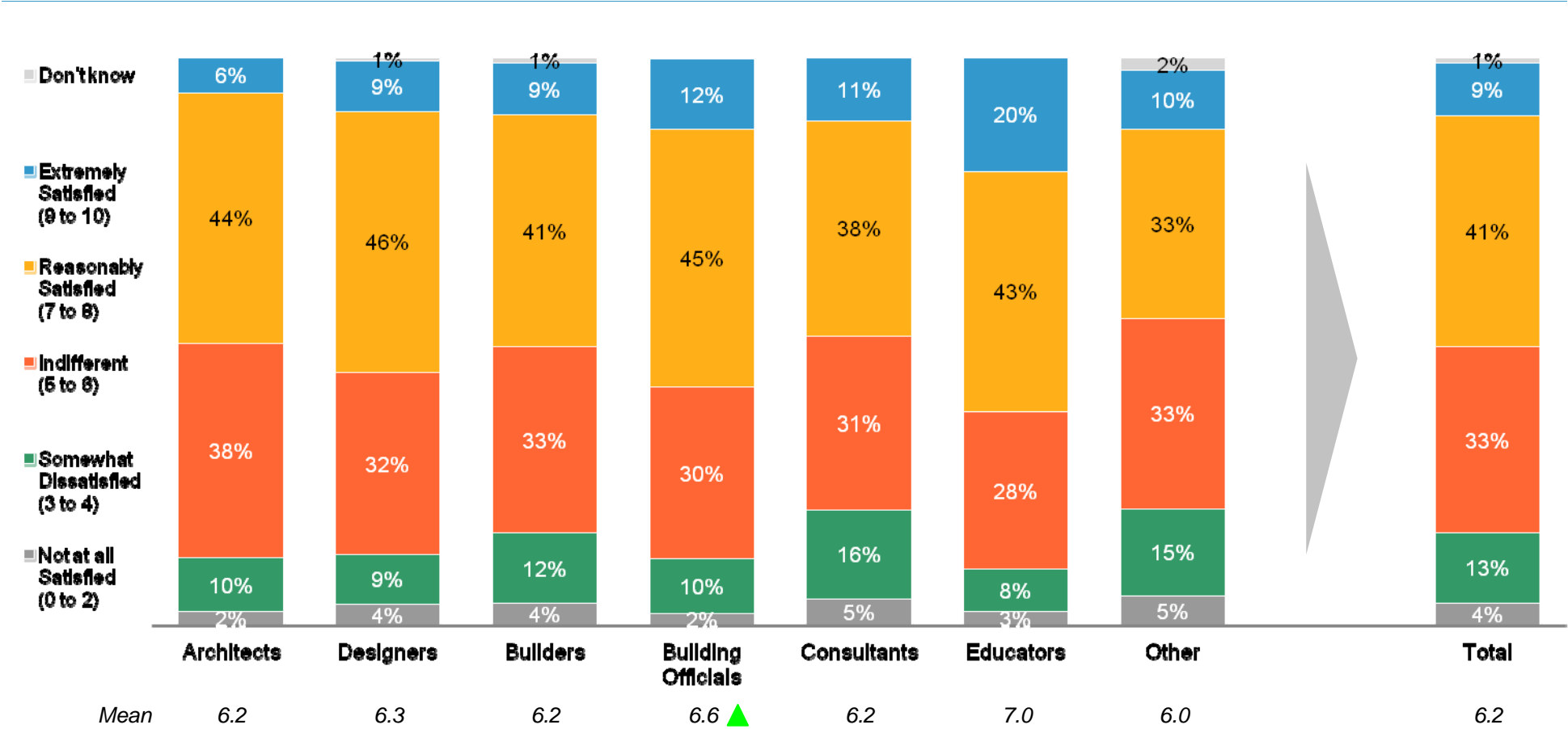


Notes: 1. Base: n = 2,405;
2. IS23 If there was a readily accessible library of ‘Youtube’ clips/webinars on topics of industry interest, how likely would you be to use them?

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Satisfaction with access to technical information is not particularly high at 6.2 on a 0-10 scale, and again this indicates that the internet could potentially be used to greater advantage

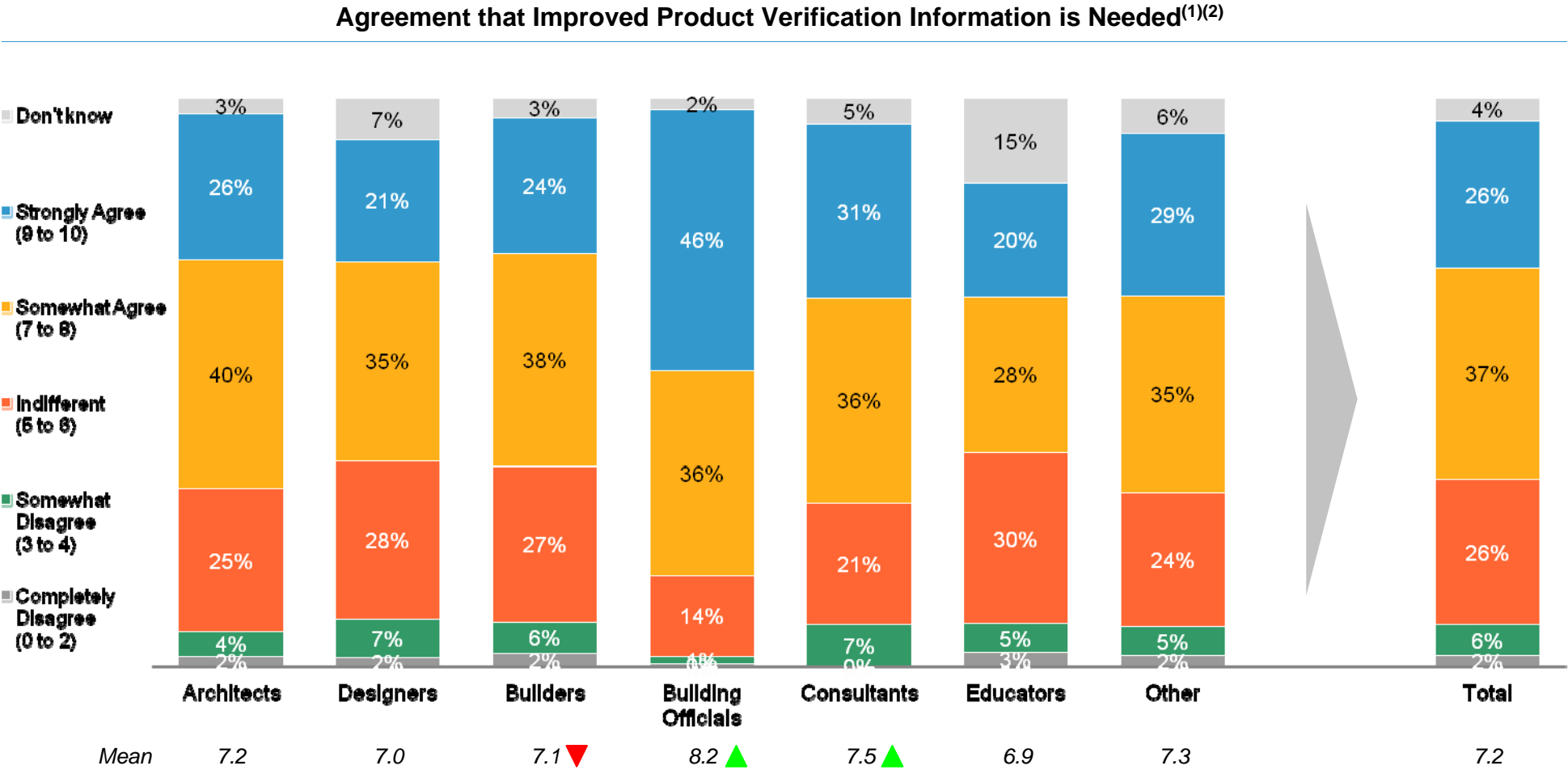
Satisfaction that Technical Information is Readily Accessible⁽¹⁾⁽²⁾



Notes: 1. Base: n = 2,405;
2. IS24 How satisfied are you that technical information is readily accessible to you? Use the 0-10 scale where 0 means 'not at all satisfied' and 10 means 'extremely satisfied'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

There is a reasonably strong level of agreement that improved product verification information is needed (63% somewhat or strongly agree), particularly amongst building officials and consultants

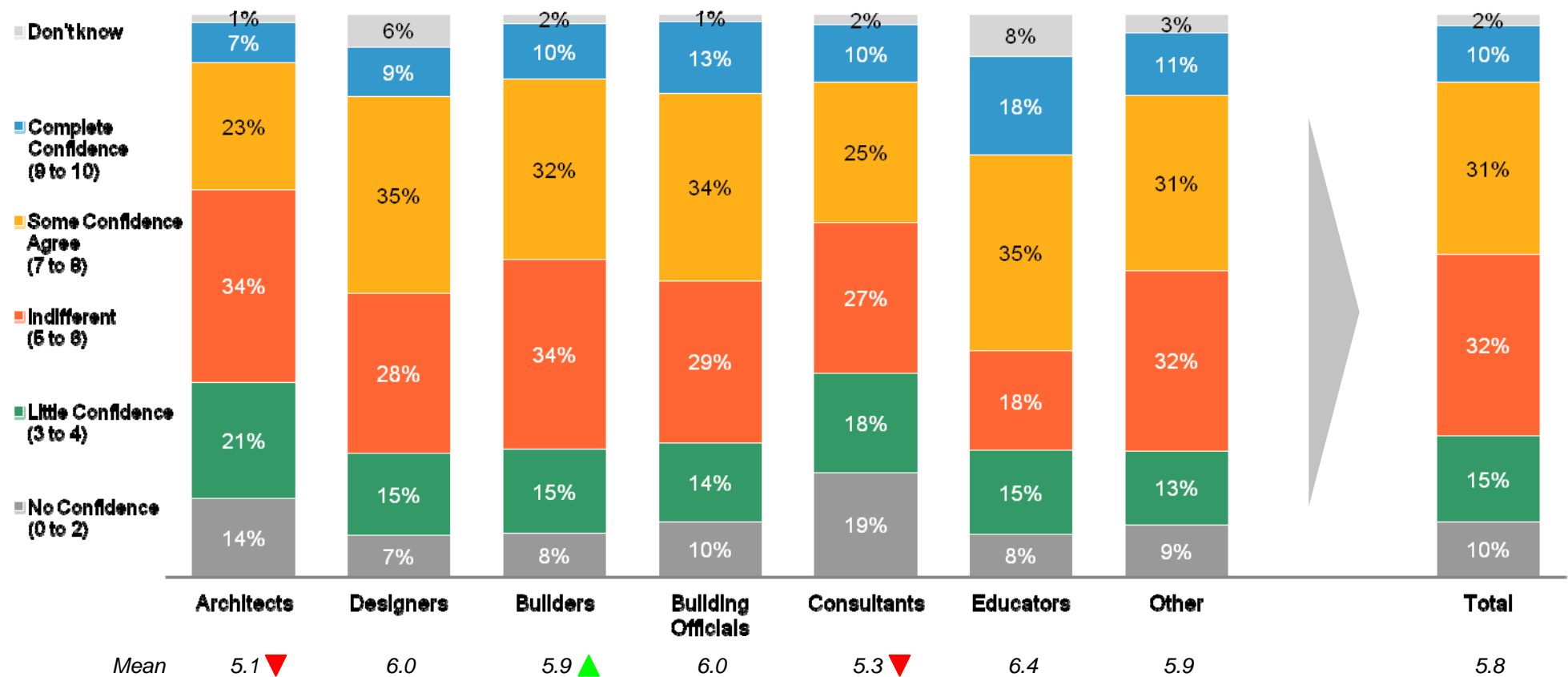


Notes: 1. Base: n = 2,405;
2. IS25 How much do you agree or disagree with the statement 'The New Zealand building industry needs improved product verification information'? Use the 0-10 scale where 0 means 'completely disagree' and 10 means 'strongly agree'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

The level of confidence that building products have been independently tested is low (5.8), particularly amongst architects (5.1) and consultants (5.3)

Level of Confidence that Products Have Been Tested by an Independent Third Party⁽¹⁾⁽²⁾



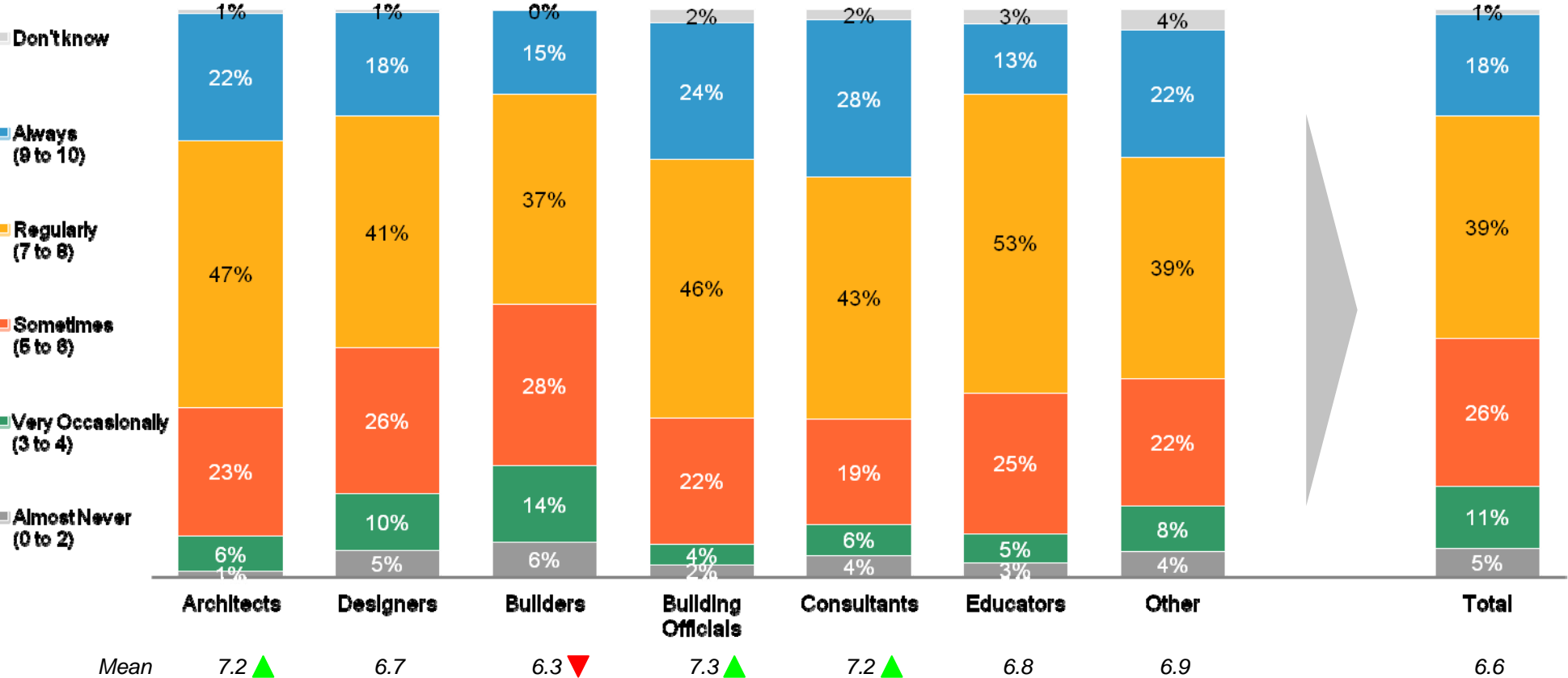
Notes: 1. Base: n = 2,405;

2. IS26 In terms of product verification, how much confidence do you have that products have been tested and confirmed for use in New Zealand by an independent third party? Use the 0-10 scale where 0 means 'no confidence at all' and 10 means 'complete confidence'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

Overall, 57% of industry members indicate that they regularly verify or search for additional information about products that they are about to use

Extent that Industry Members Verify or Search for Additional Information About Products⁽¹⁾⁽²⁾



Notes: 1. Base: n = 2,405;

2. IS27 To what extent do you verify or search for additional information about products you are about to use? Use the 0-10 scale where 0 means 'almost never' and 10 means 'always'

▲ Significantly higher than other industry groups combined
▼ Significantly lower than other industry groups combined

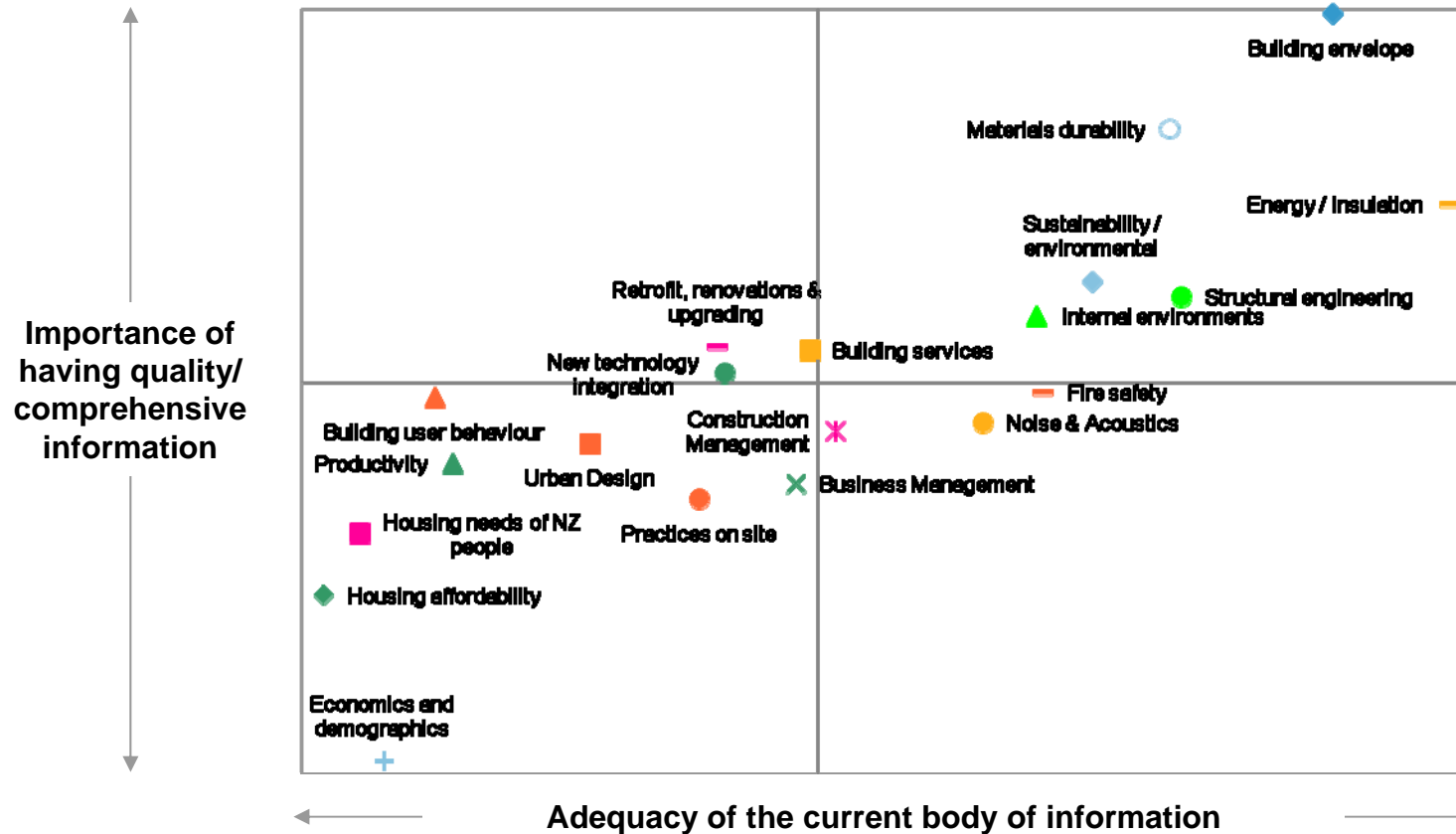


Section 9

Appendix I – Immediate Term Priorities by Industry Group

Importance Matrix – Architects

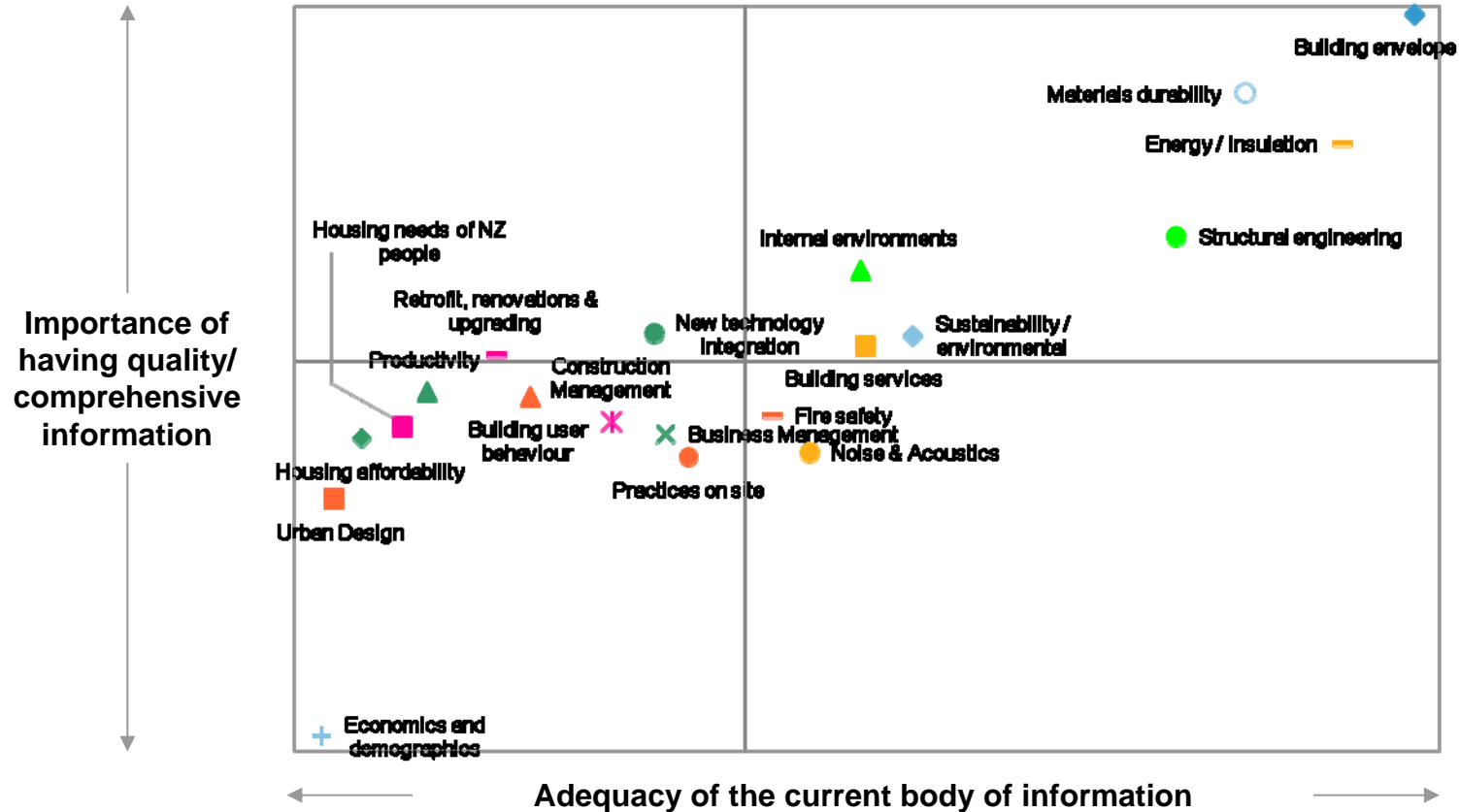
Importance Matrix – Architects⁽¹⁾⁽²⁾⁽³⁾



- Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
3. Sample size n = 294

Importance Matrix – Designers

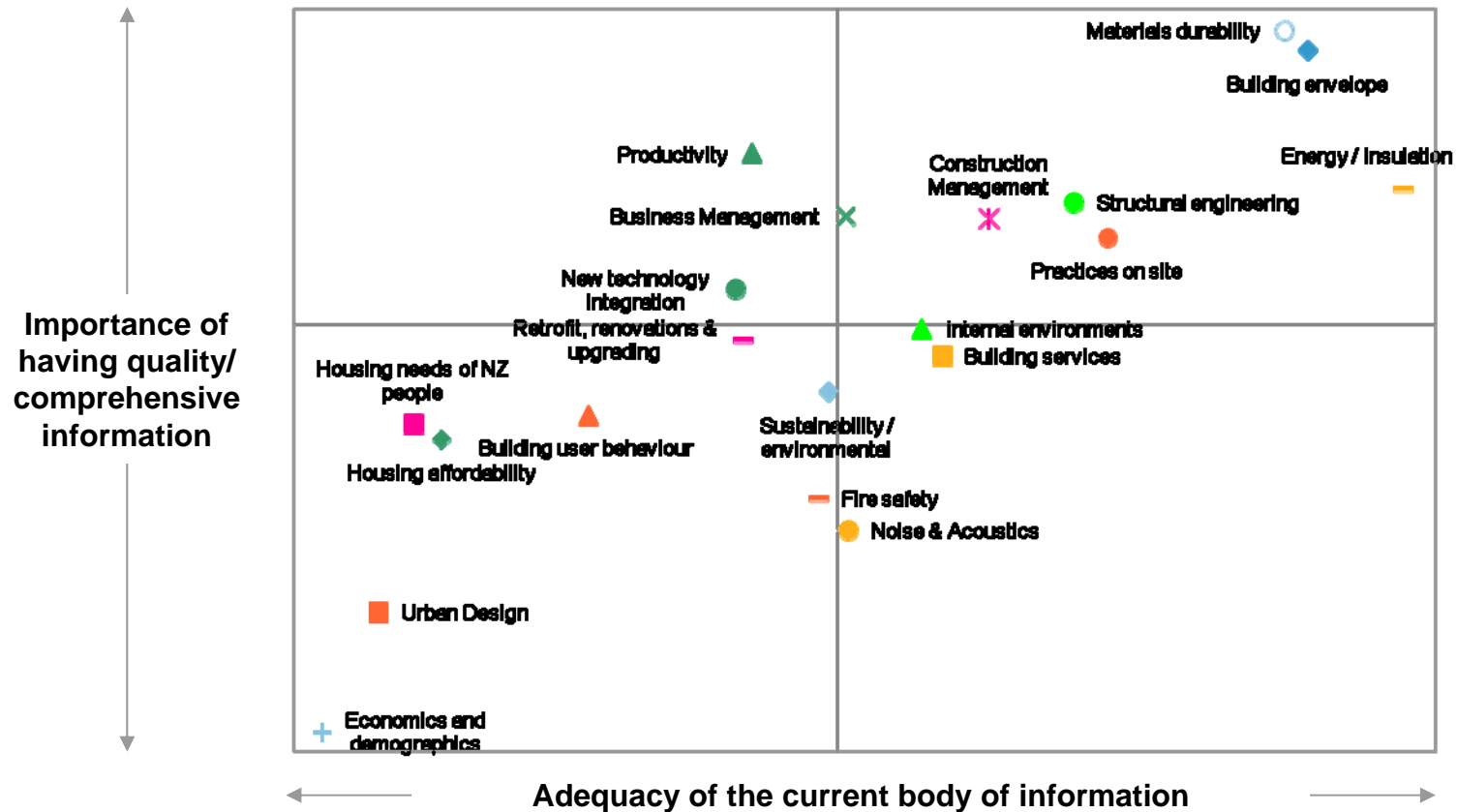
Importance Matrix – Designers⁽¹⁾⁽²⁾⁽³⁾



- Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
3. Sample size n = 191

Importance Matrix – Builders

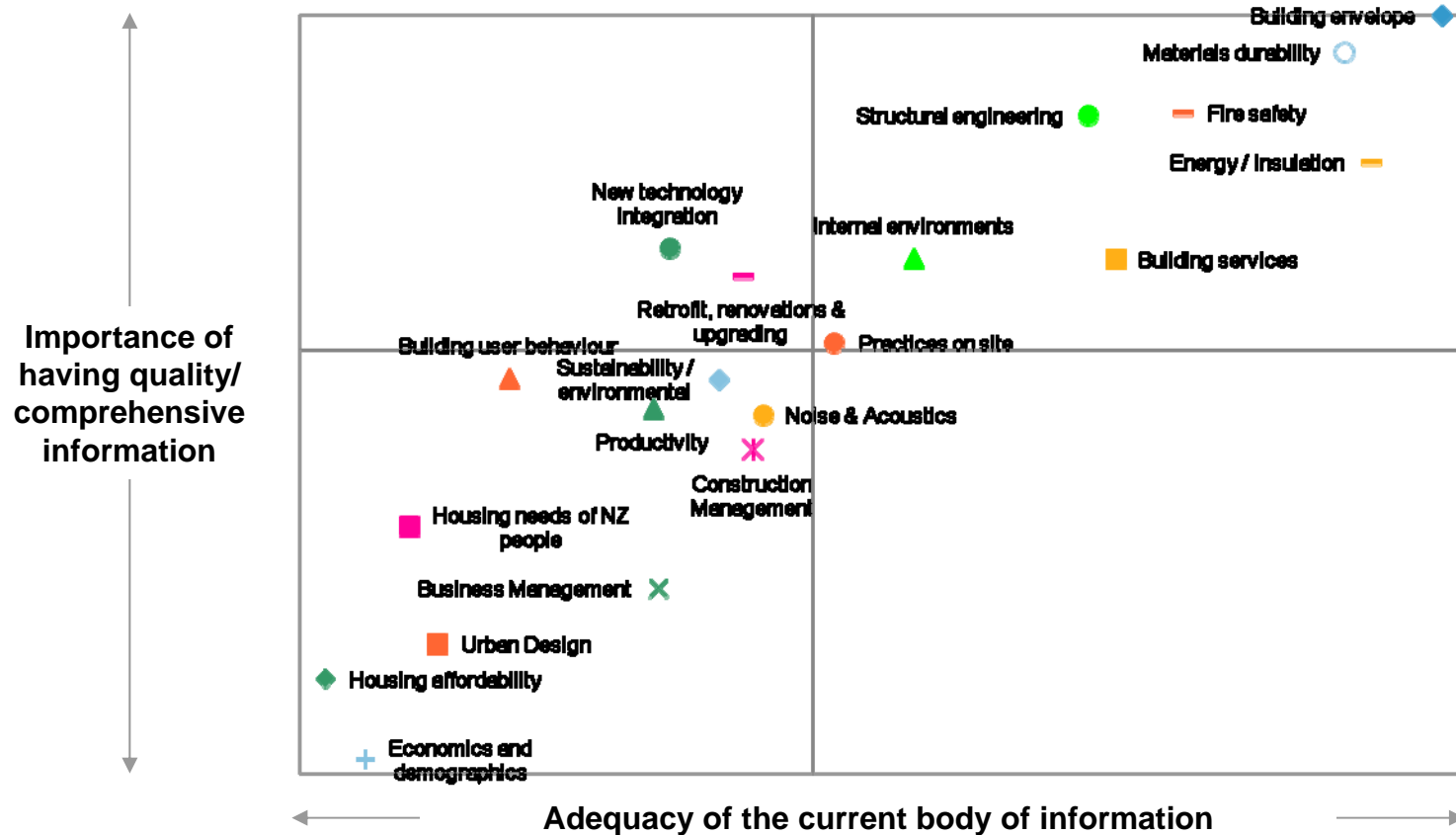
Importance Matrix – Builders⁽¹⁾⁽²⁾⁽³⁾



- Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
 3. Sample size n = 1,050

Importance Matrix – Building Officials

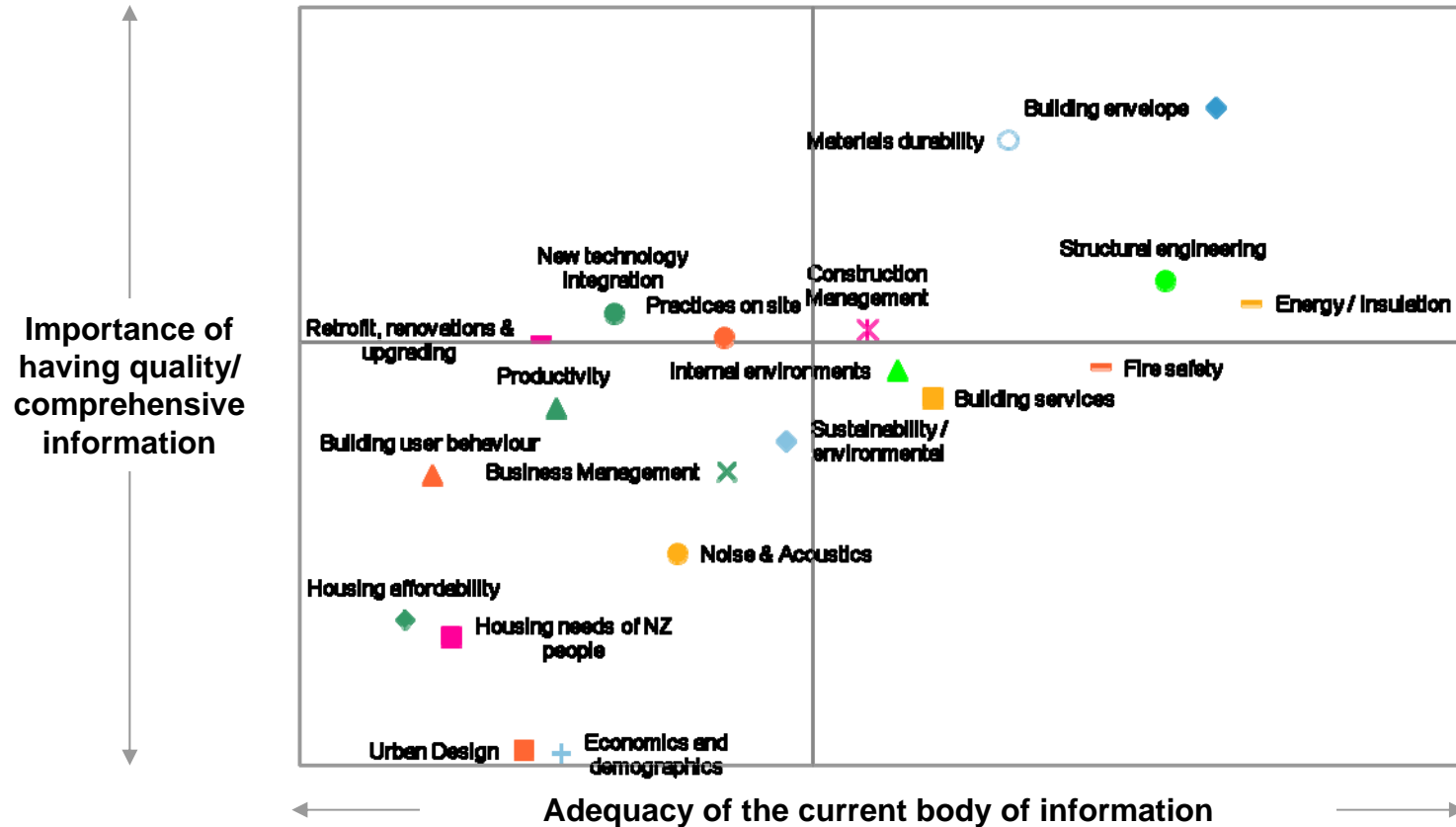
Importance Matrix – Building Officials⁽¹⁾⁽²⁾⁽³⁾



- Notes:
1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
 3. Sample size n = 450

Importance Matrix – Consultants

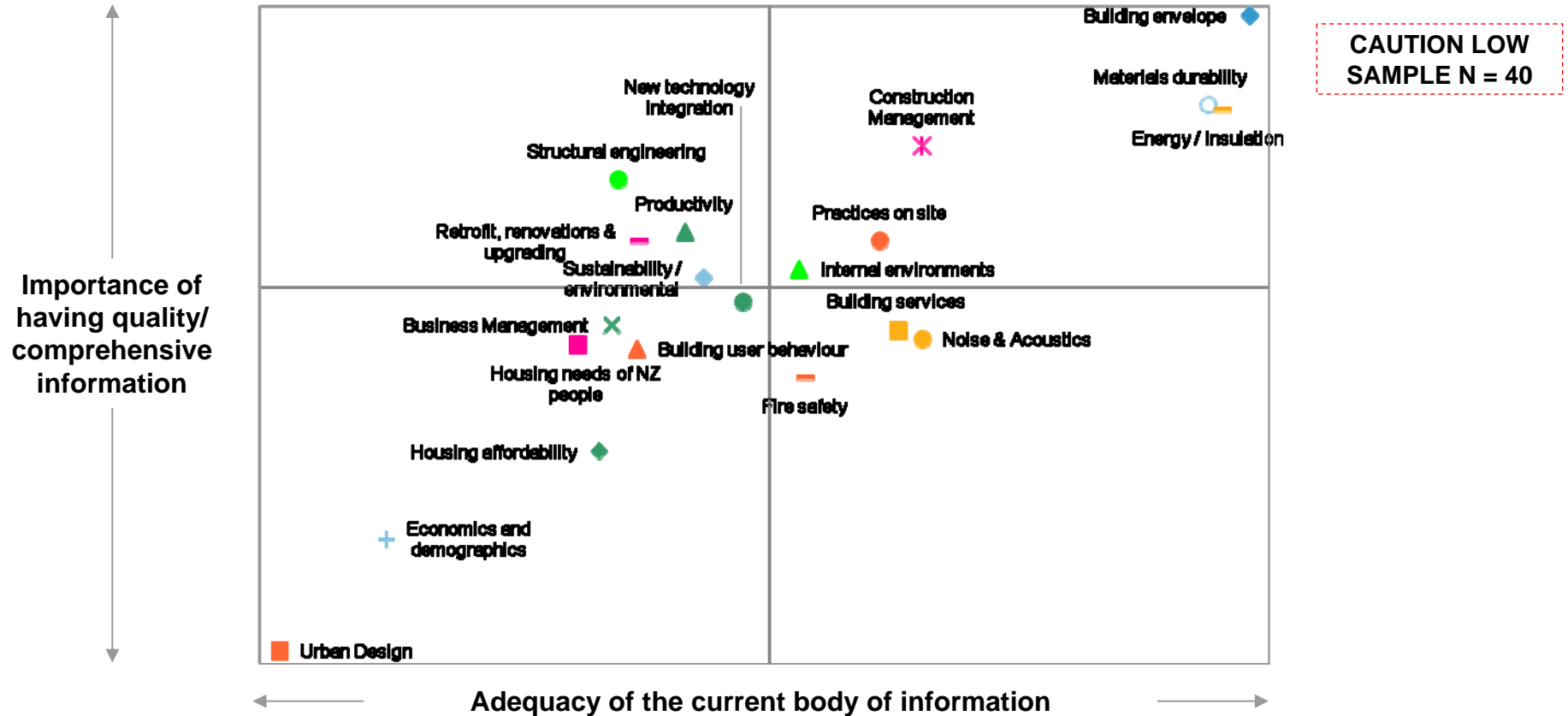
Importance Matrix – Consultants⁽¹⁾⁽²⁾⁽³⁾



- Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
3. Sample size n = 108

Importance Matrix – Educators

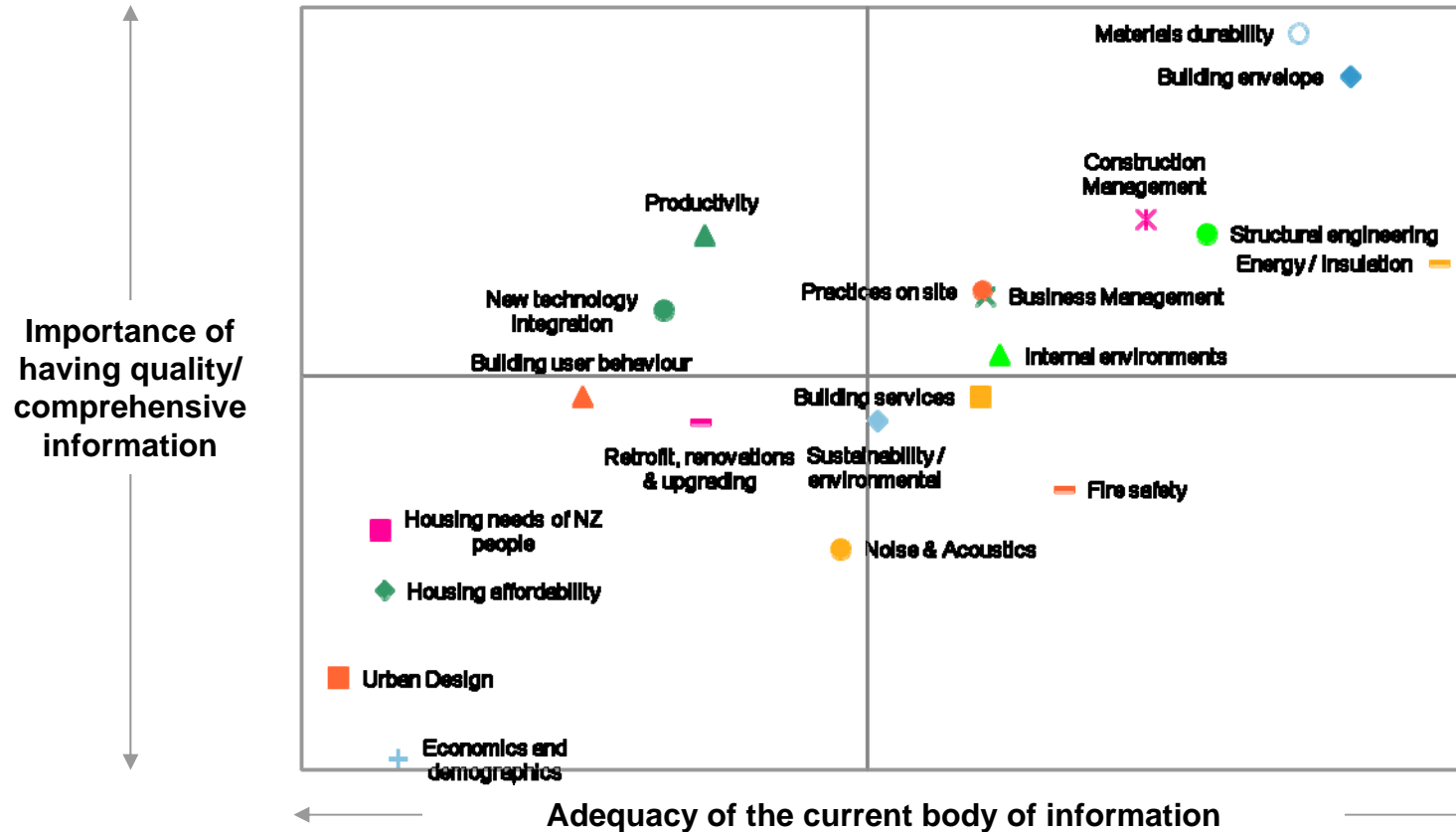
Importance Matrix – Educators⁽¹⁾⁽²⁾⁽³⁾



- Notes:
1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
 3. Sample size n = 40

Importance Matrix – Other Group

Importance Matrix – Other Group⁽¹⁾⁽²⁾⁽³⁾



- Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;
 3. Sample size n = 272

Table of information priorities

	Architect		Designers		Builders	
	Importance ⁽¹⁾	Adequacy ⁽²⁾	Importance	Adequacy	Importance	Adequacy
Building envelope	9.6	6.8	9.4	7.1	8.9	7.0
Building services	7.5	5.7	7.5	6.0	7.6	6.4
Building user behaviour	7.2	4.9	7.2	5.4	7.3	5.8
Business Management	6.7	5.7	7.0	5.6	8.2	6.2
Construction Management	7.0	5.7	7.1	5.5	8.2	6.5
New technology integration	7.4	5.5	7.6	5.6	7.9	6.0
Economics and demographics	5.0	4.8	5.3	4.9	5.9	5.3
Energy / Insulation	8.4	7.0	8.6	7.0	8.3	7.2
Fire safety	7.2	6.2	7.1	5.8	6.9	6.2
Housing affordability	6.0	4.7	7.0	5.0	7.2	5.5
Housing needs of NZ people	6.4	4.7	7.0	5.1	7.3	5.5
Internal environments	7.7	6.2	7.9	6.0	7.7	6.3
Materials durability	8.9	6.4	8.9	6.8	9.0	7.0
Noise & Acoustics	7.1	6.0	6.9	5.9	6.8	6.2
Practices on site	6.6	5.5	6.9	5.7	8.1	6.7
Productivity	6.8	4.9	7.2	5.1	8.5	6.1
Retrofit, renovations & upgrading	7.5	5.5	7.4	5.3	7.6	6.1
Structural engineering	7.8	6.5	8.1	6.6	8.2	6.6
Sustainability / environmental	7.9	6.3	7.5	6.1	7.4	6.2
Urban Design	6.9	5.2	6.6	5.0	6.4	5.4
Base	294		191		1,050	

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Table of information priorities (continued)

	Building Officials		Consultants		Educators	
	Importance ⁽¹⁾	Adequacy ⁽²⁾	Importance	Adequacy	Importance	Adequacy
Building envelope	9.4	7.2	8.8	6.7	9.0	7.5
Building services	8.0	6.5	7.2	6.1	7.3	6.6
Building user behaviour	7.3	5.3	6.8	5.1	7.2	5.8
Business Management	6.2	5.6	6.8	5.7	7.3	5.8
Construction Management	6.9	5.8	7.6	6.0	8.3	6.6
New technology integration	8.1	5.6	7.7	5.5	7.4	6.1
Economics and demographics	5.2	5.0	5.2	5.4	6.2	5.1
Energy / Insulation	8.6	7.0	7.7	6.8	8.5	7.5
Fire safety	8.8	6.7	7.4	6.5	7.0	6.3
Housing affordability	5.6	4.9	5.9	5.1	6.6	5.7
Housing needs of NZ people	6.5	5.1	5.8	5.2	7.2	5.7
Internal environments	8.0	6.1	7.3	6.1	7.6	6.3
Materials durability	9.2	7.0	8.6	6.3	8.5	7.4
Noise & Acoustics	7.1	5.8	6.3	5.6	7.2	6.6
Practices on site	7.5	6.0	7.5	5.7	7.8	6.5
Productivity	7.2	5.6	7.1	5.4	7.8	6.0
Retrofit, renovations & upgrading	7.9	5.8	7.5	5.4	7.8	5.8
Structural engineering	8.8	6.5	7.9	6.6	8.1	5.8
Sustainability / environmental	7.3	5.7	6.9	5.9	7.6	6.0
Urban Design	5.8	5.1	5.2	5.3	5.6	4.9
Base	450		108		40	

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Table of information priorities (continued)



	Others	
	Importance ⁽¹⁾	Adequacy ⁽²⁾
Building envelope	8.5	6.7
Building services	7.3	6.2
Building user behaviour	7.3	5.5
Business Management	7.7	6.2
Construction Management	8.0	6.4
New technology integration	7.6	5.7
Economics and demographics	5.9	5.3
Energy / Insulation	7.8	6.8
Fire safety	7.0	6.3
Housing affordability	6.6	5.2
Housing needs of NZ people	6.8	5.2
Internal environments	7.5	6.2
Materials durability	8.7	6.6
Noise & Acoustics	6.7	5.9
Practices on site	7.7	6.2
Productivity	7.9	5.7
Retrofit, renovations & upgrading	7.2	5.7
Structural engineering	7.9	6.5
Sustainability / environmental	7.2	6.0
Urban Design	6.3	5.2
Base	272	

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;

Table of information priorities, Key Stakeholders

	Key Stakeholders		Not Key Stakeholders	
	Importance ⁽¹⁾	Adequacy ⁽²⁾	Importance	Adequacy
Building envelope	7.8	6.7	9.0	7.0
Building services	6.2	5.7	7.6	6.3
Building user behaviour	6.4	4.8	7.3	5.6
Business Management	6.4	5.9	7.8	6.1
Construction Management	6.9	6.1	8.0	6.3
New technology integration	7.5	4.9	7.8	5.9
Economics and demographics	5.6	5.4	5.7	5.3
Energy / Insulation	7.0	6.9	8.3	7.1
Fire safety	6.3	6.6	7.1	6.2
Housing affordability	5.3	5.1	6.9	5.4
Housing needs of NZ people	5.6	5.2	7.0	5.4
Internal environments	6.7	6.1	7.7	6.3
Materials durability	7.9	6.2	9.0	6.8
Noise & Acoustics	5.8	5.9	6.8	6.1
Practices on site	7.1	5.6	7.8	6.4
Productivity	6.9	5.0	8.1	5.9
Retrofit, renovations & upgrading	7.4	5.6	7.6	5.9
Structural engineering	7.9	6.7	8.2	6.6
Sustainability / environmental	7.3	6.0	7.4	6.1
Urban Design	5.4	5.4	6.3	5.4
Base	114		2,291	

 Significantly higher than Not KS
 Significantly lower than Not KS

Notes: 1. Mean Importance Score for topic from INIF1; how important is it for you to have a comprehensive body of knowledge about <topic>, 0=not important, 10= highly important;
 2. Adequacy Score is satisfaction with the current body of knowledge from INIF1; how would you rate the adequacy of the current body of knowledge about <topic>, 0=completely inadequate, 10=extremely comprehensive;



Section 10

Appendix II –Adequacy of Information

Adequacy of information relating to Productivity

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Measures of productivity	4.4	4.6	5.1	4.6	4.3	4.5	5.3	5.0
Understanding of industry structures and processes	5.2	5.2	5.8	5.3	4.6	5.8	5.5	5.6
Availability and appropriateness of skills	4.5	4.9	5.5	5.1	4.2	4.8	5.2	5.2
Procurement	5.4	5.2	5.4	4.8	5.0	5.1	5.5	5.4
Impact of Canterbury rebuild	4.8	4.8	5.1	5.1	4.8	4.4	5.2	5.0
Maintaining quality while improving productivity	4.7	4.7	5.6	4.9	4.2	4.9	5.4	5.3
Base	94	69	475	113	36	15	107	909

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to New Technology Integration

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Interoperability of different systems	3.6	4.5	4.8	4	3.6	5.7	4.2	4.5
Client education & awareness	3.9	4.3	4.8	4.2	3.8	6.3	4.4	4.5
Technology standards	4.8	5.2	5.6	5.1	5.2	6.5	5.1	5.4
Electronic consenting	3.9	4	4.6	4.1	3.8	5.8	4.2	4.4
Development of mobile and tablet apps	3.9	4.3	4.8	4.3	4.1	5.5	4.3	4.6
Product identification technology & tagging	4.2	5	5.6	4.7	4.1	6.2	4.6	5.1
Base	91	47	283	187	38	11	87	744

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Retrofit, Renovations and Upgrading

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Triggers for when a Building Consent is required	6.1	5.8	6.1	5.4	5.2	5.4	5.4	5.8
Adaption of buildings to other use	4.9	5.1	5.5	4.8	4.6	4.6	4.9	5.2
Getting information on previous designs	4.6	4.9	4.9	4.6	4.0	3.9	4.6	4.7
Getting information on previous materials	4.2	4.3	4.9	4.5	3.7	4.1	4.7	4.6
Getting costs of various types of renovation	4.1	4.2	5.3	4.4	4.0	4.7	5.1	4.9
Assessment of remaining durability	3.9	4.2	5.2	4.2	3.3	4.7	4.7	4.7
Retrofit of services and insulation	5.1	4.9	5.8	4.7	4.8	5.3	5.4	5.4
Structural retrofitting	5.0	4.9	5.6	5.1	4.6	4.6	5.3	5.3
Structural survey techniques	4.7	4.6	5.2	4.4	4.4	4.1	5.0	4.9
Cost/benefit of retrofit, renovation, re-use	4.1	4.1	5.2	4.2	4.1	4.5	4.8	4.8
Base	114	84	353	181	45	15	93	885

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Business Management

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Business management skills	4.6	5.1	5.7	5.2	5.4	5.8	5.4	5.6
Impact of increased regulatory compliance	4.6	5.1	5.7	6.0	5.2	6.2	5.7	5.6
Training / availability of help /support	4.2	5.0	5.4	5.3	4.9	5.7	5.3	5.3
OSH requirements	5.6	5.1	6.5	6.5	6.2	7.2	6.3	6.4
Staff recruitment & retention	4.3	4.8	5.4	5.0	4.9	5.2	5.1	5.3
Base	69	53	437	70	31	16	99	775

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Construction Management

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Legal responsibilities & liabilities	5.3	5.4	5.7	5.5	5.1	6.4	5.4	5.6
Dispute resolution methodologies	4.8	4.8	5.3	5.4	5.1	5.9	5.3	5.2
Effectiveness of interactions between team	4.9	5.6	5.9	5.5	5.1	5.7	5.4	5.7
Utilisation of Prefabrication	4.5	5.0	5.6	5.6	5.1	6.5	5.4	5.5
Specification of tolerances	4.9	5.4	5.8	5.6	5.1	6.0	5.7	5.6
Standardisation of designs and components	4.6	5.1	5.5	5.7	5.4	5.9	5.4	5.4
Base	65	60	391	96	39	16	102	769

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Building User Behaviour

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Changing use of buildings	4.4	4.6	5.1	4.1	4.6	2.8	5.0	4.9
Information on operation & maintenance decisions	4.2	4.4	4.9	4.2	4.3	3.5	4.6	4.7
How occupant behaviour affects building performance	3.9	4.8	5.0	4.1	4.7	2.8	4.7	4.8
Ease of access to building information	4.6	5.4	5.8	5.0	5.0	3.1	5.0	5.4
Building amenity / comfort	5.1	5.5	5.9	5.2	5.2	4.5	5.2	5.6
Client understanding of quality to cost trade-offs	3.7	4.0	4.3	3.8	3.8	2.4	3.8	4.1
Base	134	63	295	172	42	11	77	794

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Building Envelope

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Envelope ventilation	5.3	5.7	6.2	6.1	5.4	6.5	5.9	5.9
Condensation in wall cavities	4.7	5.1	5.7	5.4	4.8	5.6	5.4	5.4
Groundwater evaporation	4.3	4.4	5.1	4.9	4.5	5.0	4.8	4.9
Airtightness strategies	5.1	5.4	6.0	5.6	5.5	6.3	5.6	5.8
Thermal bridging	5.6	5.6	5.9	5.9	5.1	6.3	5.3	5.7
Wind wash of insulation	3.8	4.2	5.1	4.8	4.4	4.5	4.6	4.8
Moisture issues	6.0	6.2	6.7	6.5	6.2	6.7	6.3	6.5
Weathertight building solutions	6.7	7.3	7.2	6.8	6.7	7.6	6.7	7.0
Air barriers	5.7	6.0	6.4	6.2	6.1	6.3	5.7	6.2
Base	183	117	510	259	64	20	121	1,274

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Materials Durability

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Compatibility of materials with one another	5.6	5.9	5.8	5.8	5.4	5.9	5.4	5.7
Assessment of new materials entering the market	3.8	4.7	5.2	4.5	4.4	5.3	4.6	4.9
definitions of failure criteria and service life	4.1	4.7	5.1	4.8	4.6	5.1	4.6	4.9
Durability of timber frames	6.1	6.3	6.8	6.8	6.3	6.8	6.2	6.6
Durability of steel frames	5.2	5.5	5.7	6.0	5.6	6.3	5.6	5.6
Durability of concrete structures	6.0	6.4	6.8	6.5	6.8	7.5	6.4	6.7
Durability performance of systems	4.5	5.3	5.7	5.5	5.3	5.9	5.3	5.5
Durability of structural systems	4.3	5.1	5.8	5.6	5.3	5.5	5.4	5.5
Reliability of accelerated test methods	4.4	4.6	5.0	5.1	4.9	4.6	4.7	4.9
Reliability of newly developed methods	3.7	4.6	4.9	4.8	4.3	5.6	4.5	4.7
Material service life	4.8	5.5	5.8	5.4	5.1	5.7	5.3	5.5
Resilience of materials	4.7	5.5	5.7	5.2	5.3	5.4	5.2	5.5
Disposal of materials	3.9	4.5	5.3	4.3	4.9	4.2	4.9	5.0
Reliance on producer statements	4.9	5.6	5.9	5.7	4.6	5.8	5.2	5.5
Base	143	81	429	192	61	12	128	1,046

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Structural and Earthquake Engineering

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Resilience of structures	5.1	5.6	5.6	5.2	5.9	5.1	5.5	5.6
Wind engineering	5.4	6.1	5.7	5.3	6.5	5.7	5.8	5.8
Seismic engineering	5.8	6.0	5.5	5.5	6.2	5.9	5.7	5.6
Commercial	5.2	4.8	5.2	4.9	5.6	5.4	4.8	5.2
Domestic	4.1	4.9	5.1	4.5	5.2	5.2	5.0	5.0
Non-structural components & systems	5.1	5.4	5.4	5.3	5.8	6.2	5.3	5.5
Structural elements of systems	5.9	5.9	6.0	5.7	5.9	5.8	5.8	5.9
Serviceability / amenity of structures	5.1	5.3	5.5	5.0	5.8	5.6	5.4	5.5
Risk assessment	4.9	5.8	5.4	5.1	5.4	5.8	5.3	5.4
Risk perception	4.5	4.5	5.3	4.8	4.8	5.5	5.2	5.1
Structural design of materials and systems	5.7	6.0	5.9	5.8	6.3	5.9	6.0	6.0
Damage avoidance design	4.4	4.9	5.2	4.5	4.9	5.2	4.9	5.0
Base	72	43	294	183	37	23	86	738

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Energy / Insulation

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Insulation installation & durability	6.0	5.8	6.5	5.7	5.4	6.1	5.4	6.1
Improved design for insulation	5.5	5.3	6.1	5.1	5.6	6.5	5.5	5.8
Innovative water heating systems	5.3	4.9	5.6	4.8	5.1	5.2	5.0	5.4
Insulation efficiency as installed	5.7	5.9	6.5	5.4	4.8	6.0	5.4	6.0
Design & incorporation of passive heating / cooling	5.4	5.3	5.5	4.7	4.9	5.6	4.9	5.3
Renewable energy systems	4.8	4.9	5.4	4.5	4.5	5.4	4.8	5.1
Retrofit of energy efficiency measures	4.9	4.7	5.5	4.8	4.6	5.3	4.9	5.2
Energy efficient heating and cooling	5.2	5.1	5.9	5.0	5.2	5.2	4.8	5.5
Base	87	71	274	160	43	20	66	721

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Practices on Site

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Achieved vs specified requirements	4.8	5.2	6.0	5.0	4.7	5.9	5.4	5.7
Efficiency of training methods	4.4	5.0	5.7	5.0	4.8	5.9	5.1	5.4
Ergonomics on site	3.8	4.7	5.2	4.1	4.5	5.9	4.6	4.9
Impact of information technology on site work	4.3	5.3	5.8	4.8	4.7	6.1	5.2	5.5
Interface between off-site manufacture vs site construction	4.4	5.0	5.6	5.2	4.8	6.1	5.6	5.4
Quality assurances application	4.5	5.3	5.9	4.8	4.8	5.7	5.3	5.6
Safety issues on site	6.3	6.3	7.3	6.4	5.9	7.7	7.0	7.0
Small-scale automation for site tasks	3.5	4.5	5.1	4.4	4.0	5.1	4.6	4.8
Disposal of demolition / site waste	4.7	4.8	5.7	4.7	4.7	6.2	5.2	5.4
Reducing site noise	4.1	5.2	5.4	4.7	4.6	5.3	5.2	5.2
Base	62	41	339	124	36	17	93	712

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Internal Environments

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Accessibility & design for different life-stages	5.3	5.6	5.4	5.5	5.4	4.6	4.7	5.3
Condensation and similar moisture problems	5.4	5.4	5.8	5.1	5.1	5.3	4.9	5.5
Design rules for space efficient offices	4.7	5.0	5.1	4.7	5.3	4.7	5.2	5.1
Health and productivity impacts of internal environments	4.6	5.1	5.5	4.8	4.6	4.4	5.0	5.2
Health and safety aspects of building materials	5.0	5.6	6.0	5.4	5.1	5.7	5.6	5.7
House airtightness & passive ventilation	5.3	5.2	5.7	5.2	5.5	3.9	5.3	5.5
Indoor air quality / Indoor pollutants	4.9	5.0	5.3	4.7	4.9	4.5	4.7	5.1
Toxic moulds	4.4	4.7	5.1	4.6	4.7	4.3	4.5	4.9
Ventilation options	5.5	5.7	5.8	5.7	5.5	5.1	5.4	5.7
Base	78	59	222	136	30	14	60	599

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Building Services

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Drainage & septic tank systems	5.4	6.2	6.7	6.5	7.0	6.6	6.2	6.6
Lifts & elevators	6.0	5.2	5.2	5.4	6.9	5.0	5.1	5.5
Lighting systems	5.9	5.6	6.4	5.7	6.3	6.7	5.7	6.2
Microbial control	4.1	4.1	4.7	4.9	5.5	4.2	4.1	4.7
Plumbing systems	6.3	6.4	7.0	6.9	7.3	7.6	6.6	6.9
Heating/cooling systems	5.6	5.8	6.6	5.8	5.9	7.1	6.0	6.3
Building monitoring systems	4.7	5.0	5.9	5.5	5.3	5.7	5.6	5.7
Base	83	64	277	153	32	10	81	700

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Sustainability and Environmental Issues

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Building environmental impact assessment schemes	3.9	4.2	4.7	4.3	4.3	5.1	5.0	4.6
Consequences of new environmental legislation	3.5	4.6	4.6	4.4	4.2	5.4	4.8	4.5
Impact of demonstration projects	4.1	4.9	4.9	4.3	3.8	3.9	5.0	4.7
Environmental performance of materials	4.8	5.1	5.3	4.7	4.5	5.6	5.1	5.1
Effects of climate change & variability	4.1	4.7	4.9	4.4	4.4	4.9	5.0	4.7
Cost of building sustainably	3.7	4.5	4.6	4.1	3.8	5.2	4.8	4.4
Life cycle assessment of impacts of materials and structures	3.8	4.4	5.0	4.3	4.3	5.4	4.9	4.7
Recycling and reuse in new & retrofit	4.2	4.7	4.7	4.1	4.1	4.6	4.7	4.5
Impact of council policy & regulation	3.8	5.1	4.9	5.4	4.1	4.9	4.7	4.7
Improved water conservation, use & management	4.8	4.7	5.1	4.6	4.5	5.0	5.1	4.9
Base	95	46	228	134	23	16	73	615

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Fire Safety Science & Engineering

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Resilience of buildings in fire	5.2	5.4	5.7	5.8	4.9	4.5	5.9	5.6
Performance-based fire safety engineering	5.1	5.3	5.7	5.7	5.8	5.2	5.8	5.6
Sustainability and fire	4.1	5.0	5.6	5.4	4.7	4.7	5.9	5.3
New technologies	4.5	5.1	5.5	5.3	4.7	4.7	6.1	5.3
Fire performance of construction materials	5.8	6.0	6.2	6.1	5.6	6.5	6.3	6.1
Sector performance	4.5	4.7	5.3	5.0	5.2	3.8	5.3	5.2
Fire science	4.7	4.8	5.3	5.4	5.7	6.0	5.7	5.3
Base	56	46	166	189	27	6	53	543

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Housing Affordability

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Land availability	3.7	4.5	4.6	4.2	5.0	3.5	4.4	4.6
Quality of existing housing stock	3.9	4.7	4.6	4.1	5.3	5.0	5.0	4.7
The quality of new housing provision	3.9	5.0	5.5	5.4	5.2	4.5	5.3	5.3
Understanding the New Zealand rental market	4.0	4.5	5.1	4.5	4.7	3.6	4.9	4.9
The standard of landlord services	3.7	4.4	4.7	4.0	4.1	4.5	4.9	4.6
The impact of migration	3.7	4.6	5.1	4.8	5.1	4.7	4.9	5.0
Planning for and managing change in housing markets	3.1	4.6	4.7	4.0	4.6	3.3	4.6	4.5
Housing and community regeneration	3.1	4.2	4.6	4.0	4.4	4.5	4.4	4.5
New ways of living - higher density housing	3.9	4.3	4.8	4.0	5.0	4.0	4.6	4.7
The role of housing in successful communities	4.1	4.7	5.4	4.8	5.5	4.2	5.1	5.2
Housing finance in New Zealand	4.5	5.2	5.7	4.9	6.3	4.5	5.0	5.6
Base	88	67	368	105	32	12	89	761

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined

Adequacy of information relating to Housing Needs of NZ's People

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Cultural suitability	3.9	4.7	5.0	4.8	4.8	3.1	4.8	4.9
Maori housing needs and aspirations	3.5	4.0	4.8	4.6	4.7	2.5	4.4	4.6
Meeting the housing needs of an ageing population	4.4	5.4	5.2	4.7	6.0	3.6	4.9	5.2
Housing vulnerable people	4.3	5.3	5.0	4.9	5.3	3.5	5.3	5.0
Designing / adapting housing to meet needs over time	4.0	5.3	5.2	4.8	5.8	3.2	5.1	5.1
Maintenance of NZ's existing house stock	4.3	4.2	4.6	4.2	4.4	4.2	4.8	4.6
Sustainable building methods and materials	5.3	5.4	5.8	5.4	6.3	4.9	5.9	5.8
Base	97	73	310	117	23	14	88	722

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined



Adequacy of information relating to Noise and Acoustics

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Acoustics privacy requirements	5.2	5.6	5.2	4.7	5.3	4.4	4.4	5.1
Acoustics separation technology	5.3	4.8	5.2	4.8	5.2	4.6	4.8	5.1
Effects of flanking noise	4.0	4.1	4.5	4.0	4.4	4.4	4.0	4.4
Understanding low frequency sound performance	4.2	4.0	4.5	3.7	4.3	3.9	4.0	4.3
Develop database of NZBC conforming acoustics details	4.1	4.4	4.9	4.0	4.8	4.4	4.2	4.7
Base	61	32	127	105	23	7	42	397

■ Significantly higher than other industry groups combined
■ Significantly lower than other industry groups combined



Adequacy of information relating to Urban Design

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Effect of legislation and regulations incl landuse classification & urban limits	4.1	4.8	4.7	5.1	5.3	5.3	4.8	4.7
Adapting and incorporating existing buildings	4.8	5.2	5.4	5.0	5.2	4.5	5.1	5.2
Mixed use buildings e.g. live / work	4.4	5.1	5.3	4.9	5.2	5.6	5.1	5.1
New buildings	5.9	6.4	6.5	6.0	6.6	6.5	6.2	6.4
Multi-unit dwellings – design, materials, performance	4.9	5.3	5.5	5.4	5.0	4.5	5.0	5.3
Impact of changing urban density	4.0	4.6	4.8	4.5	5.2	4.8	4.7	4.7
Working within site coverage rules	5.7	6.8	6.0	5.6	5.4	5.4	6.2	5.9
Issues working on tight sites	4.4	5.6	5.3	5.0	5.5	4.7	5.2	5.2
Base	100	54	178	90	15	11	61	509

 Significantly higher than other industry groups combined
 Significantly lower than other industry groups combined

Adequacy of information relating to Economics and Demographics

	Architects	Designers	Builders	Building Officials	Consultants	Educators	Others	Total
Cost of building operation	4.1	5.1	5.5	5.2	5.1	6.3	5.5	5.3
Cost / benefit of replace vs refurbish	3.4	4.3	5.2	4.8	4.4	4.5	4.9	4.9
Costs / benefits of alternative construction methods	3.1	4.8	5.3	4.9	4.6	4.5	4.8	5.0
Effects of a changed age structure in the population	3.4	4.9	5.1	4.4	4.8	4.3	4.6	4.9
Building to meet the needs of different ethnic / social groups	3.7	4.3	4.6	4.3	3.9	3.8	4.1	4.4
Lifecycle costs	3.4	4.1	5.0	4.6	4.4	4.4	4.7	4.7
Development pipelines / supply chains	3.7	4.1	5.1	4.9	5.3	5.7	4.2	4.9
Base	35	24	134	48	12	7	47	307

 Significantly higher than other industry groups combined
 Significantly lower than other industry groups combined