

Reimagining the ICCPC: Survey 1 - Perceptions of PB Codes and Design

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Preliminary Outcomes – Survey 1 – All Questions (as of 17 August 2021)

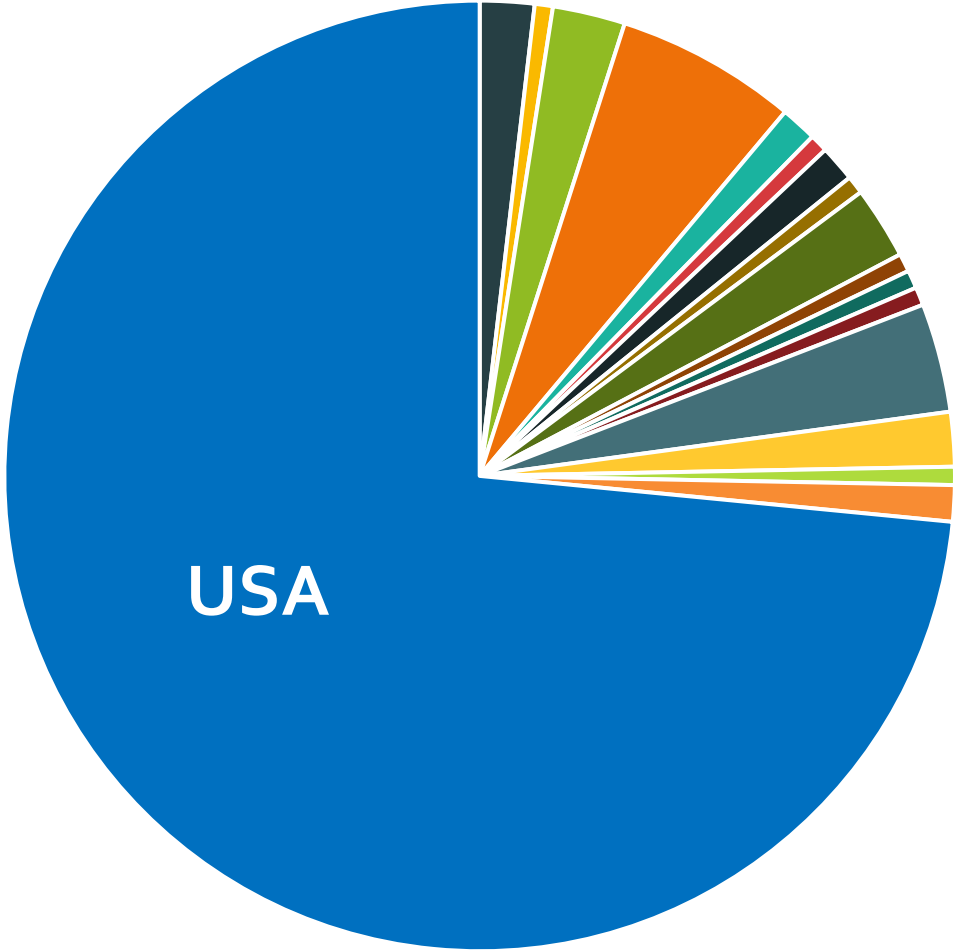
Overview and Context

- Aim was to obtain perceptions – no right or wrong answer.
- Some comments about lack of definitions, but it was decided that as a first survey, not to bias by providing too many details. This means there may be different interpretations, but that is OK at this stage.
- Data are based on 170 total responses, but for several questions only about 110 responses. Total number for each question noted (N = _).
 - Note that percentages for each specific question are based on number responding to that question, not a percentage of the overall respondents.
- High percentage of USA respondents, so data are somewhat indicative of USA.
 - Will take time to parse USA only data and to compare between countries, disciplines, etc. That will come later

Section 1 - Demographics

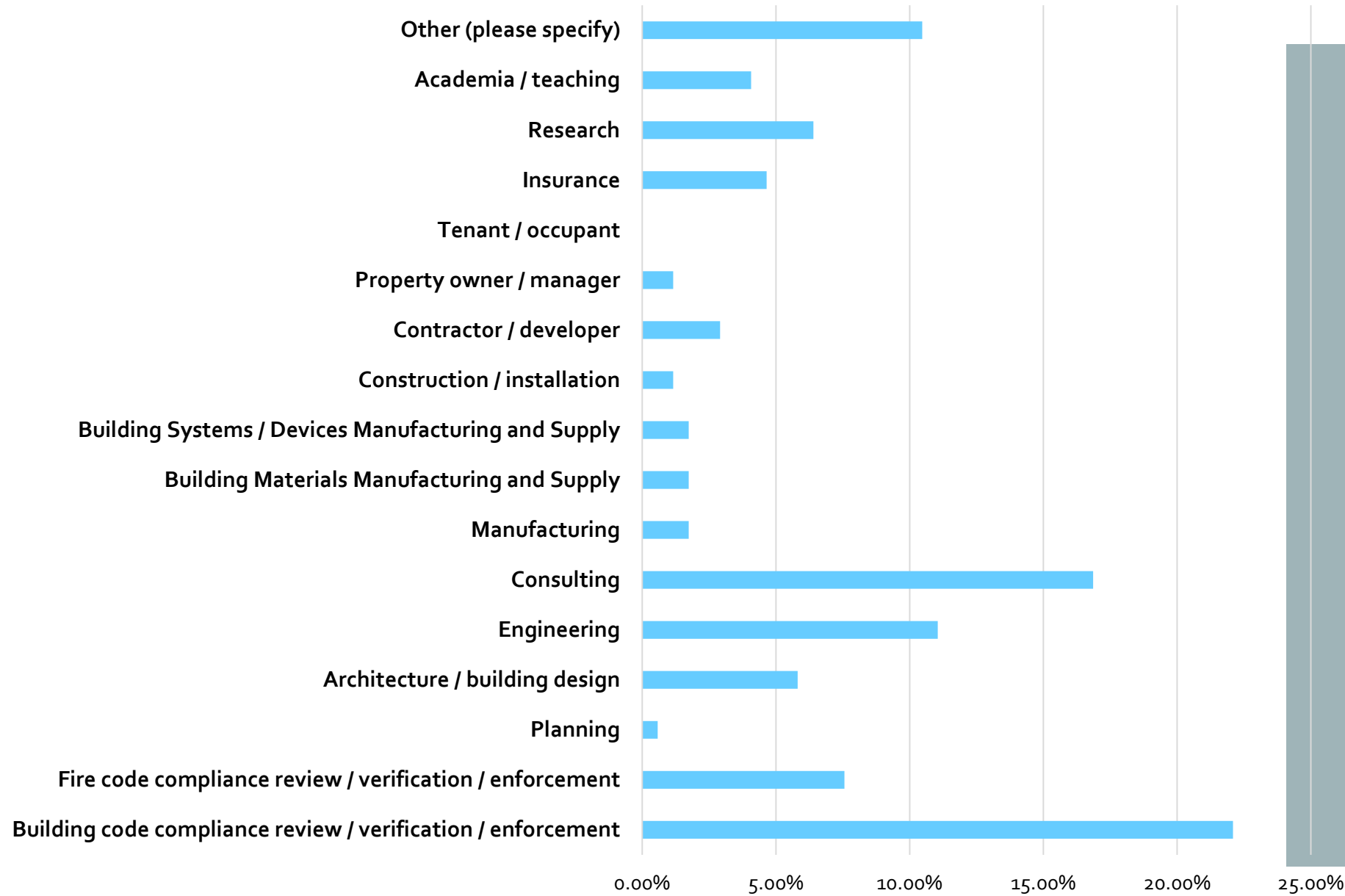
- This section collected basic information, such as country, state, sector, job function, education, and experience.

Q1: Country

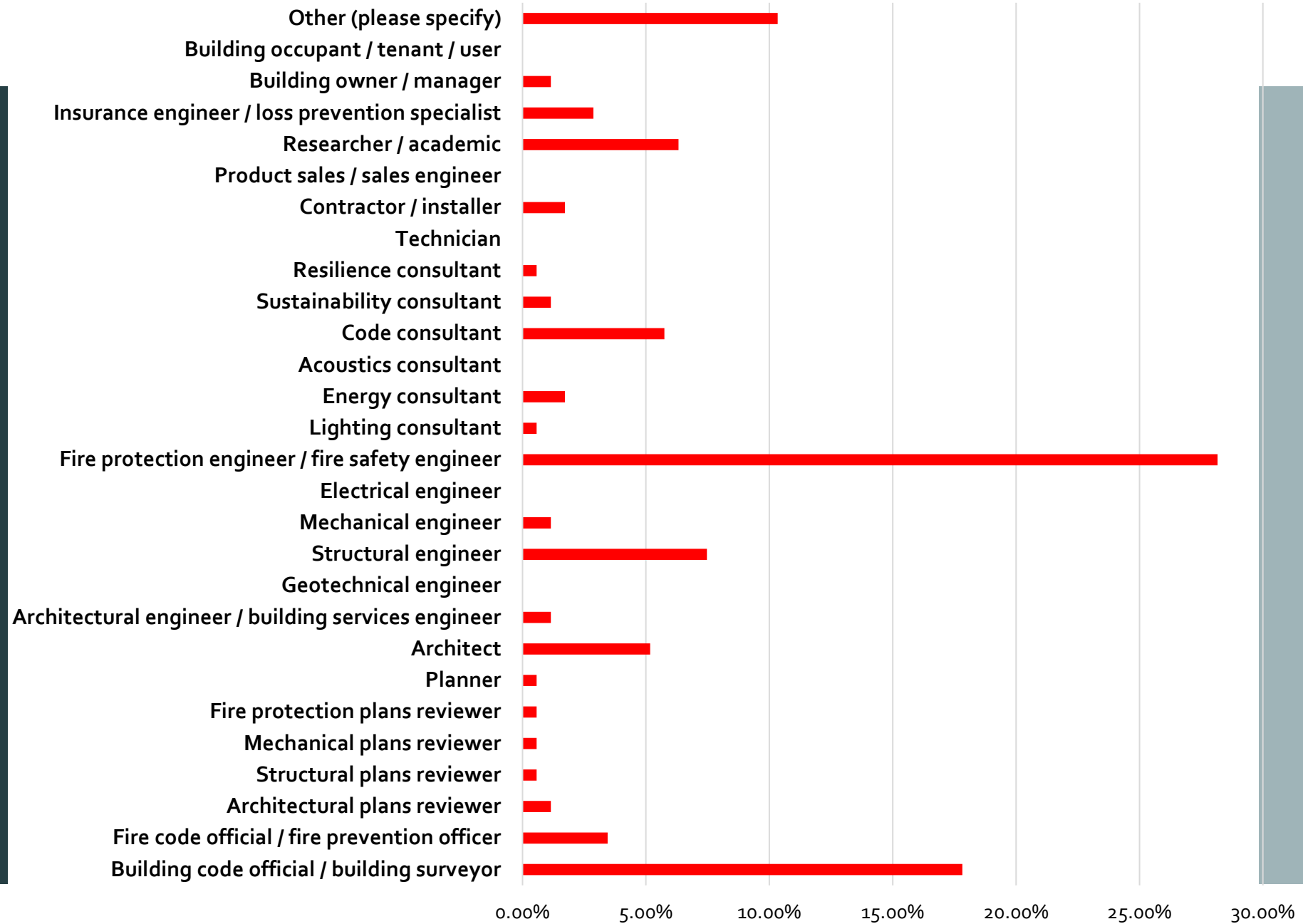


- Australia
- Belgium
- Canada
- England
- Germany
- Middle East
- Morocco
- Netherlands
- New Zealand
- Norway
- Russia
- Scotland
- Slovenia
- Sweden
- UAE
- UK
- USA

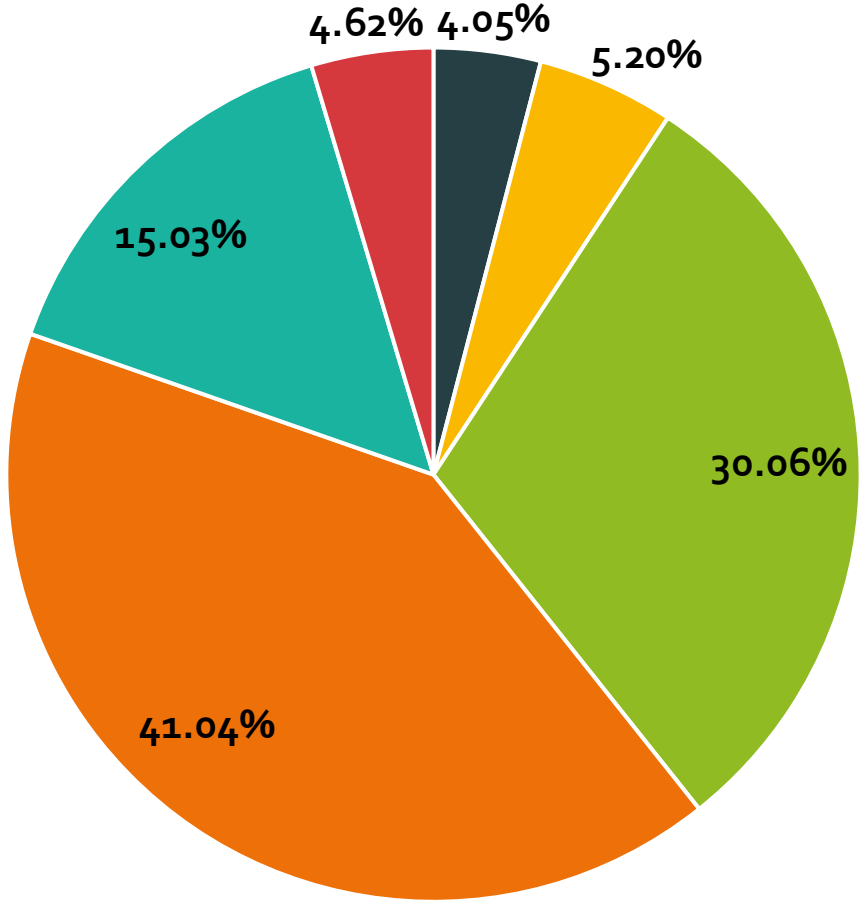
Q3: Sector



Q4: Primary Work Area / Function

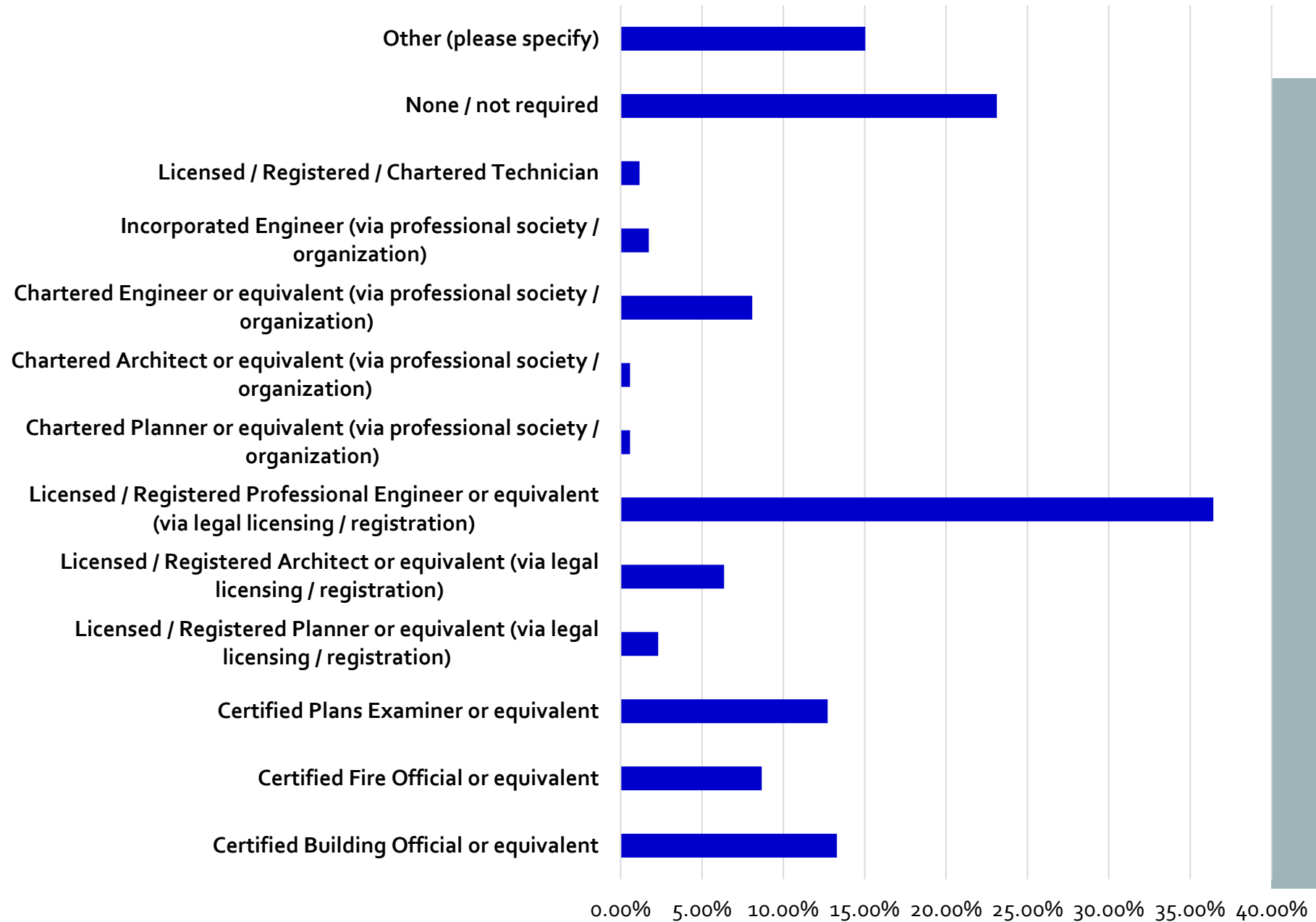


Q5: Education



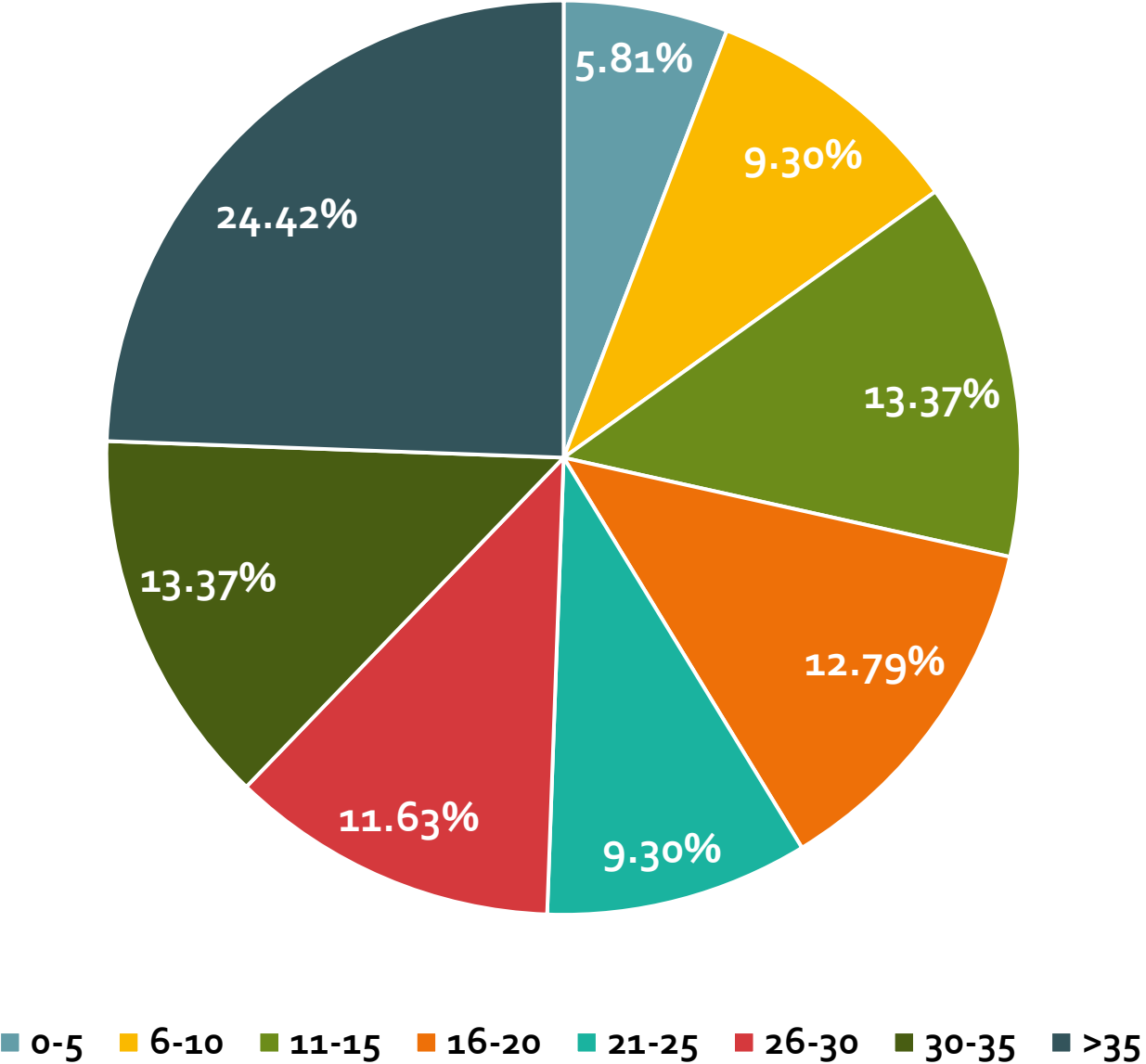
- High school
- Associates (2-year) degree
- BA/BS (4-year) degree
- MA/MS/MBA degree
- PhD/DSc/MD/JD or equivalent degree
- Other (please specify)

Q6: Licenses and Registration



0.00% 5.00% 10.00% 15.00% 20.00% 25.00% 30.00% 35.00% 40.00%

Q7: Year of Professional Experience



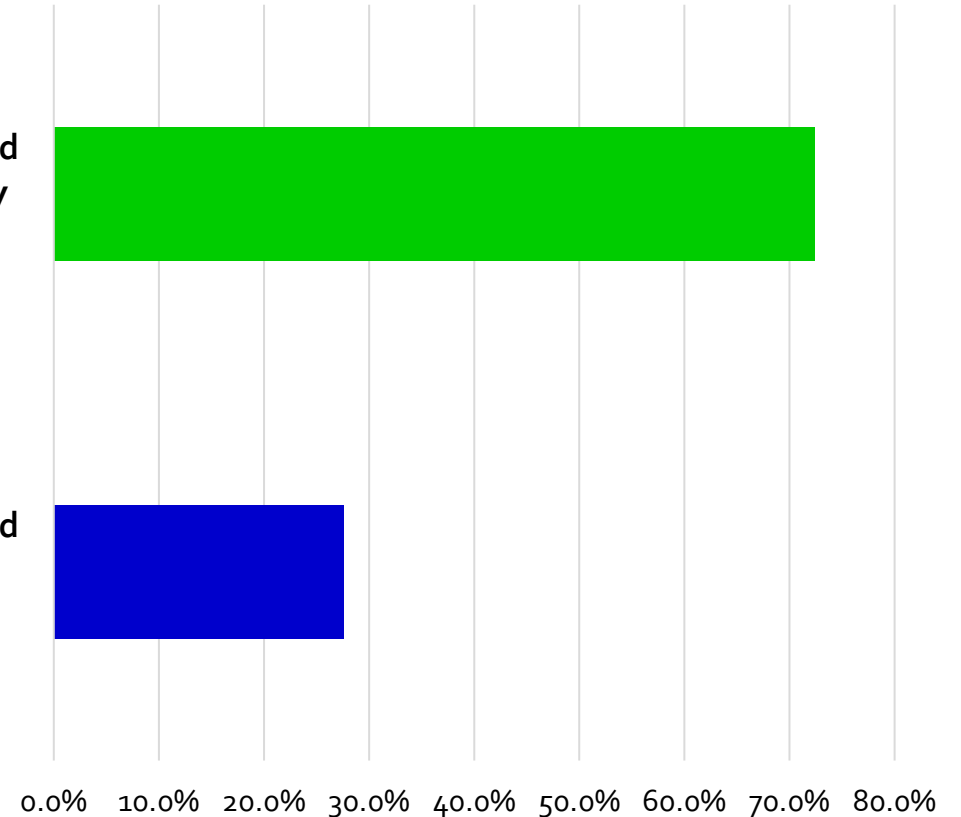
Section 2 – Overall Perceptions of PB Codes and Design

- This section focused on understanding the type of regulatory system respondents work in and how they perceive performance-based systems.

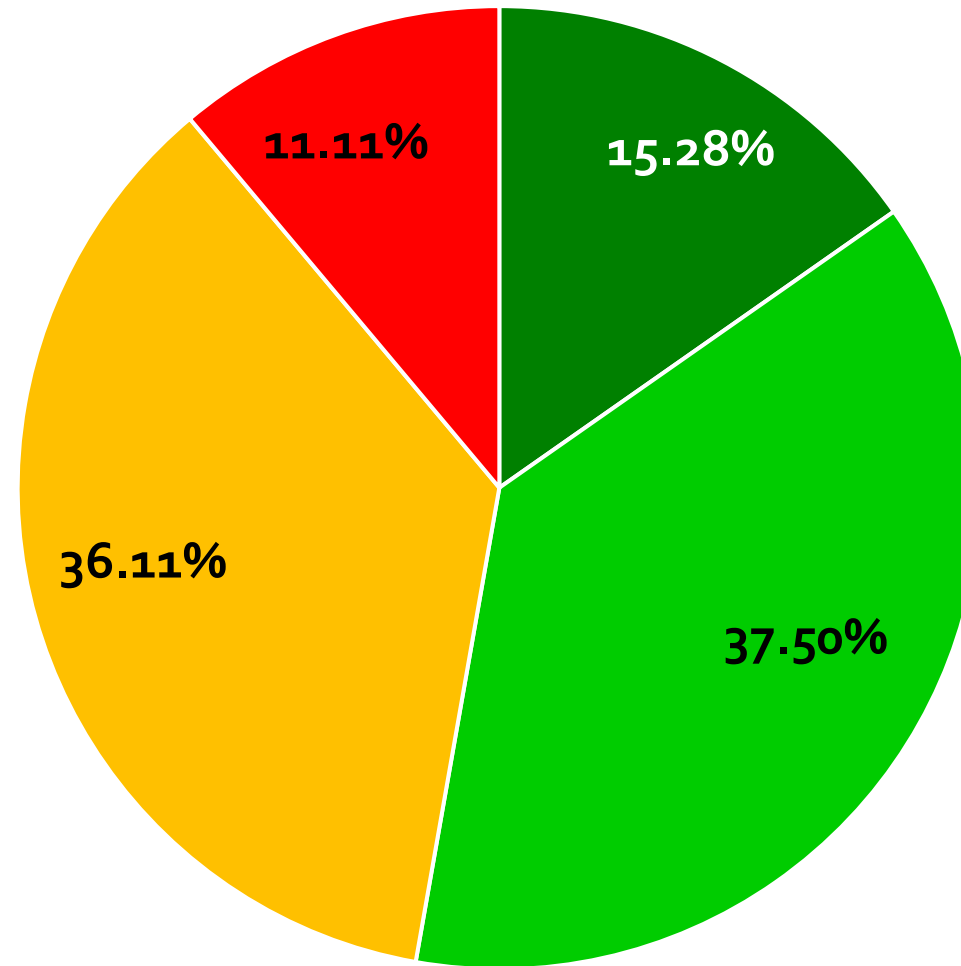
Q8: I currently work in a building code / regulatory system that is primarily

Prescriptive (i.e., a largely prescriptive-based code (regulation) establishes the regulatory requirements)

Performance-based (i.e., a performance-based code (regulation) establishes the regulatory requirements)

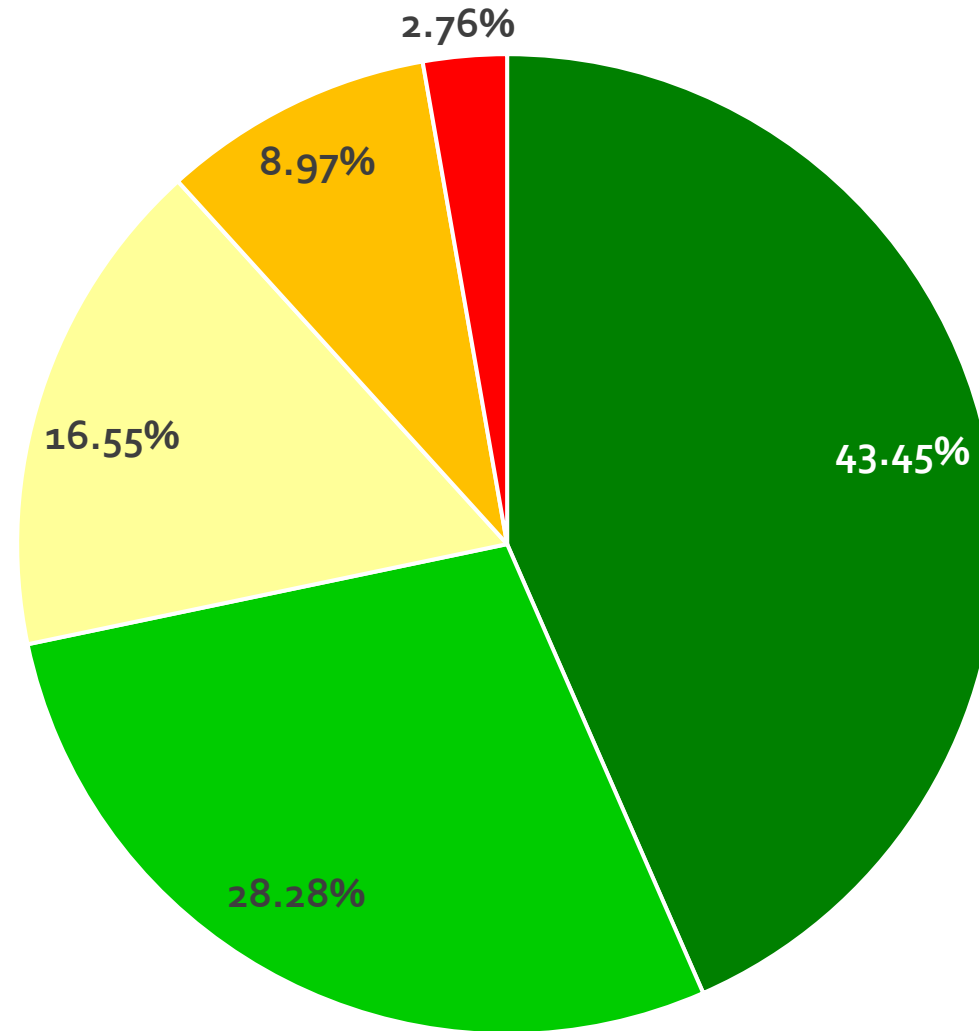


Q9: Please indicate how well you think the building regulatory system in your country / jurisdiction works today in facilitating well-performing buildings.



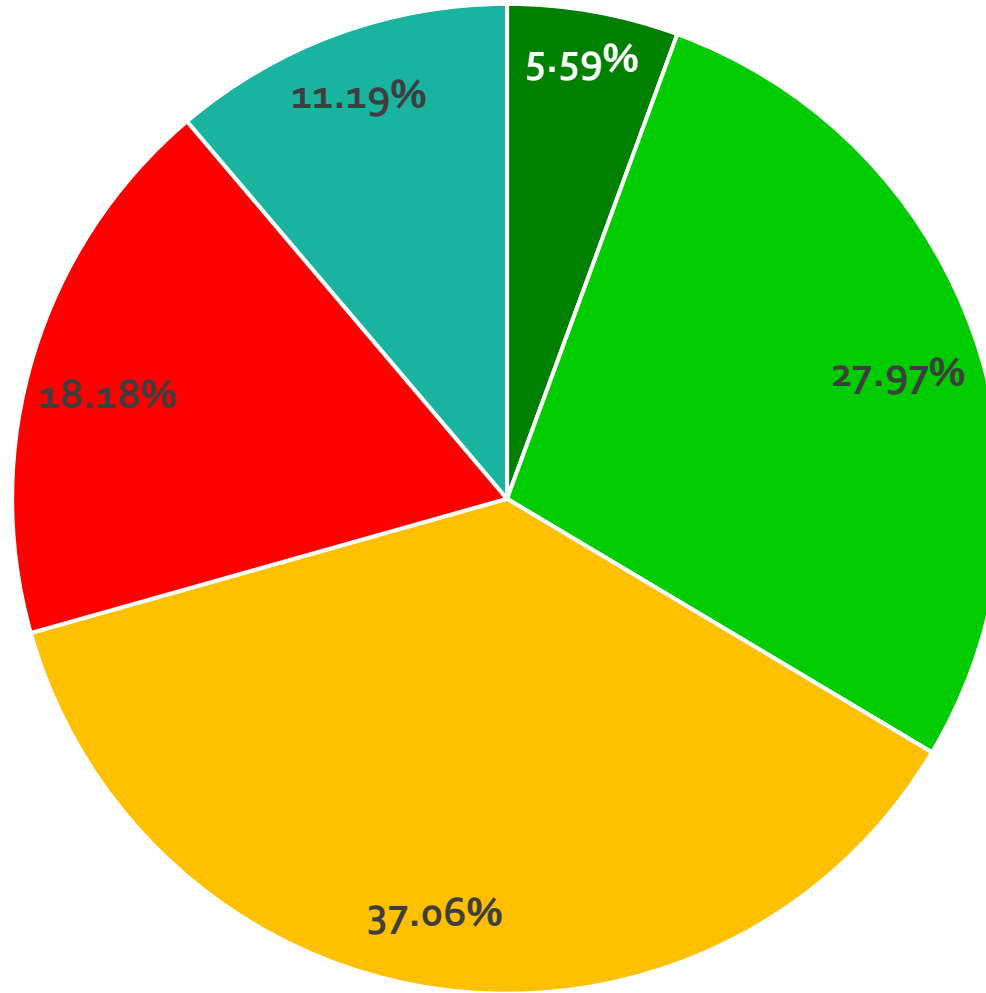
■ Very well ■ Well ■ Fair ■ Poor

Q10: I support the concept of a performance-based structure for building codes (regulation)



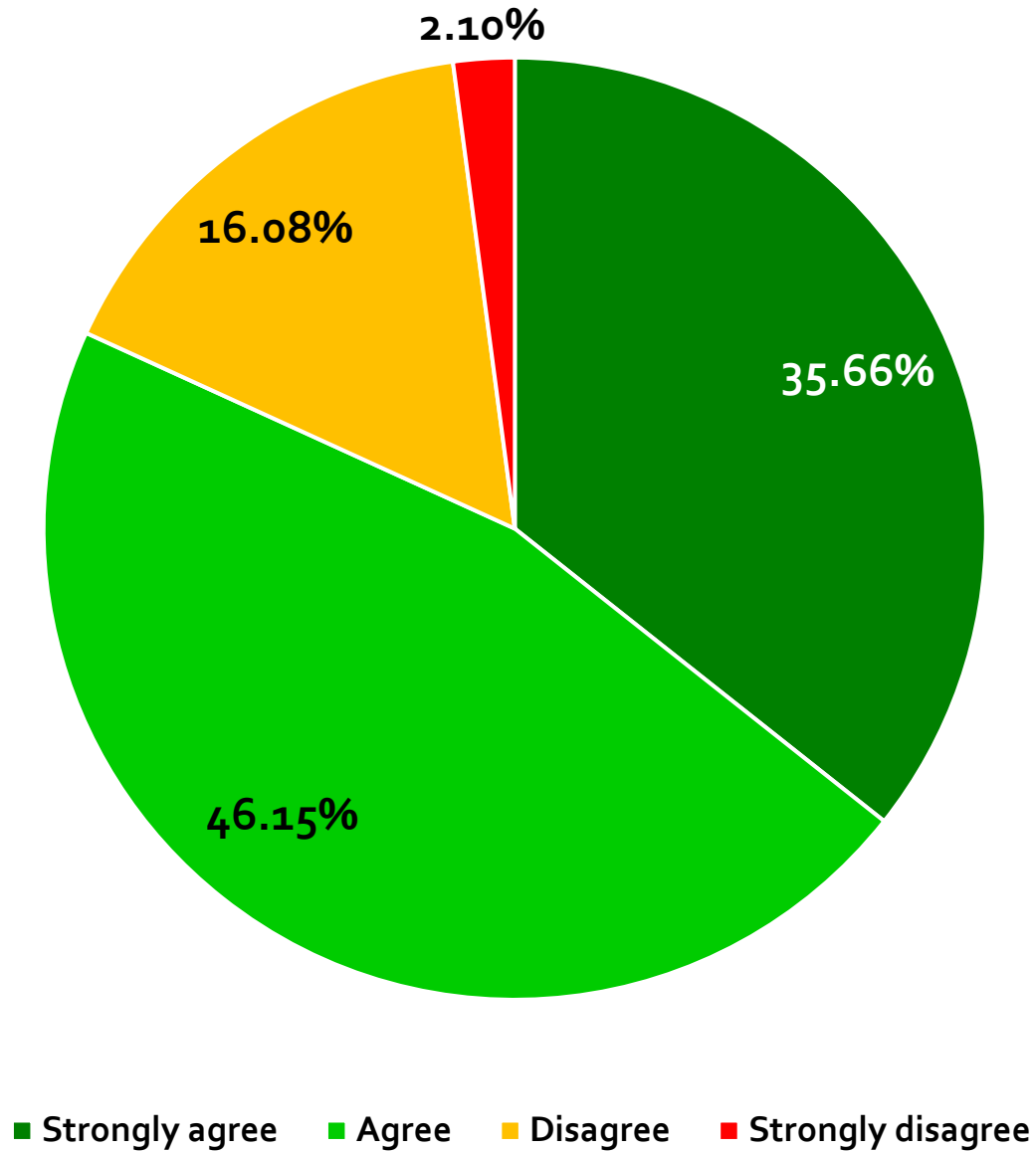
■ Strongly agree ■ Agree ■ Neither agree nor disagree ■ Disagree ■ Strongly disagree

Q11: I think that the performance-based building code that is being used or that is available to be adopted and used in my country or jurisdiction, and the necessary regulatory infrastructure to support its use (i.e., acceptable compliance documents and means of verification; adequate support mechanisms for review and approval of PB designs; appropriate system for practitioner qualifications; appropriate insurance structures; etc.), is adequate, appropriate and can be used with a high degree of confidence and comfort.

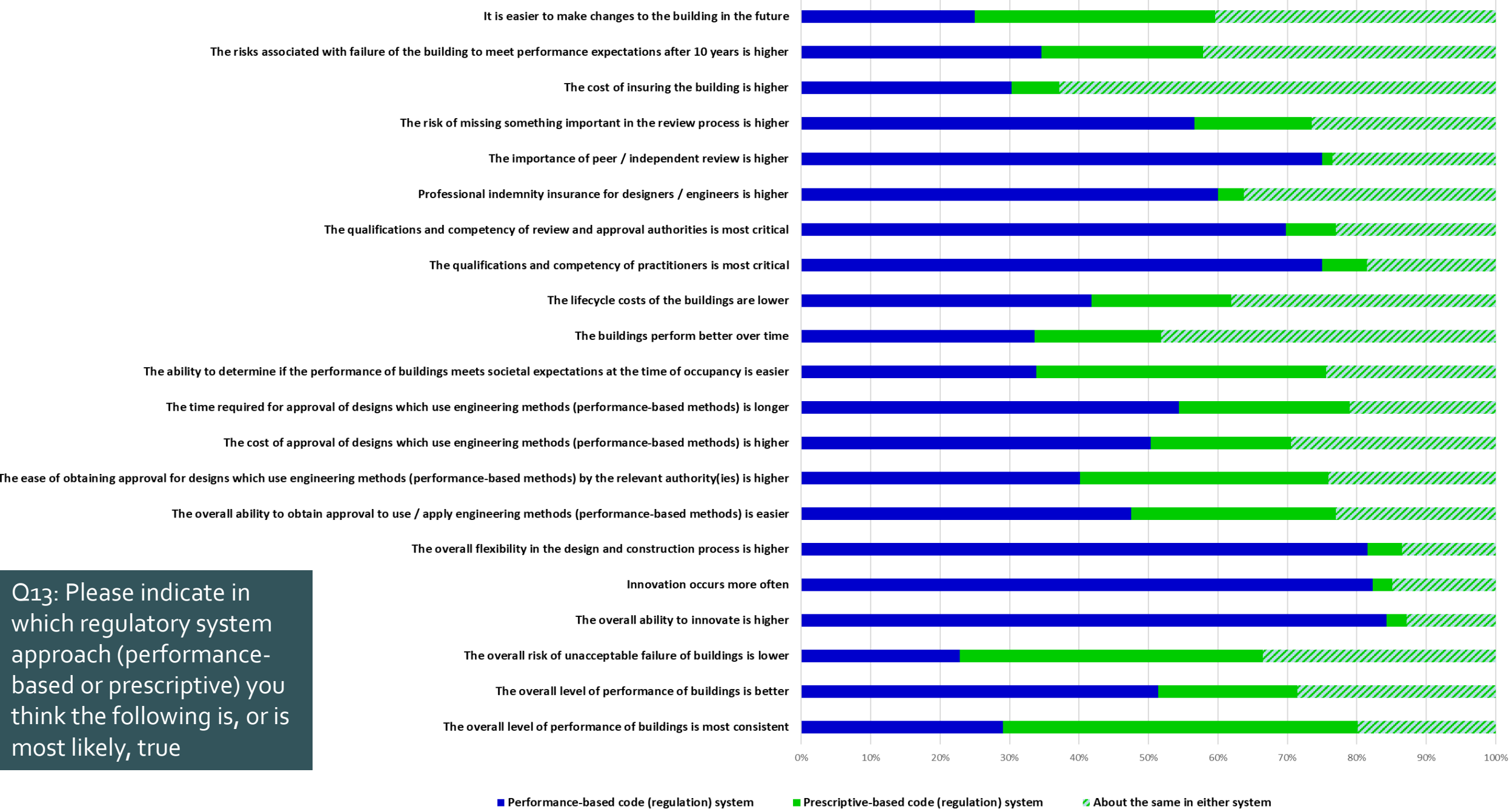


■ Strongly agree ■ Agree ■ Disagree ■ Strongly disagree ■ No opinion / not applicable

Q12: Regardless of my answer to Q 11, I think it is possible to develop and implement a performance-based building code (regulation), and supporting building regulatory system infrastructure (i.e., acceptable compliance documents and means of verification; adequate support mechanisms for review and approval of PB designs; appropriate system for practitioner qualifications; appropriate insurance structures; etc.), that I would be comfortable with and that I could use with confidence.

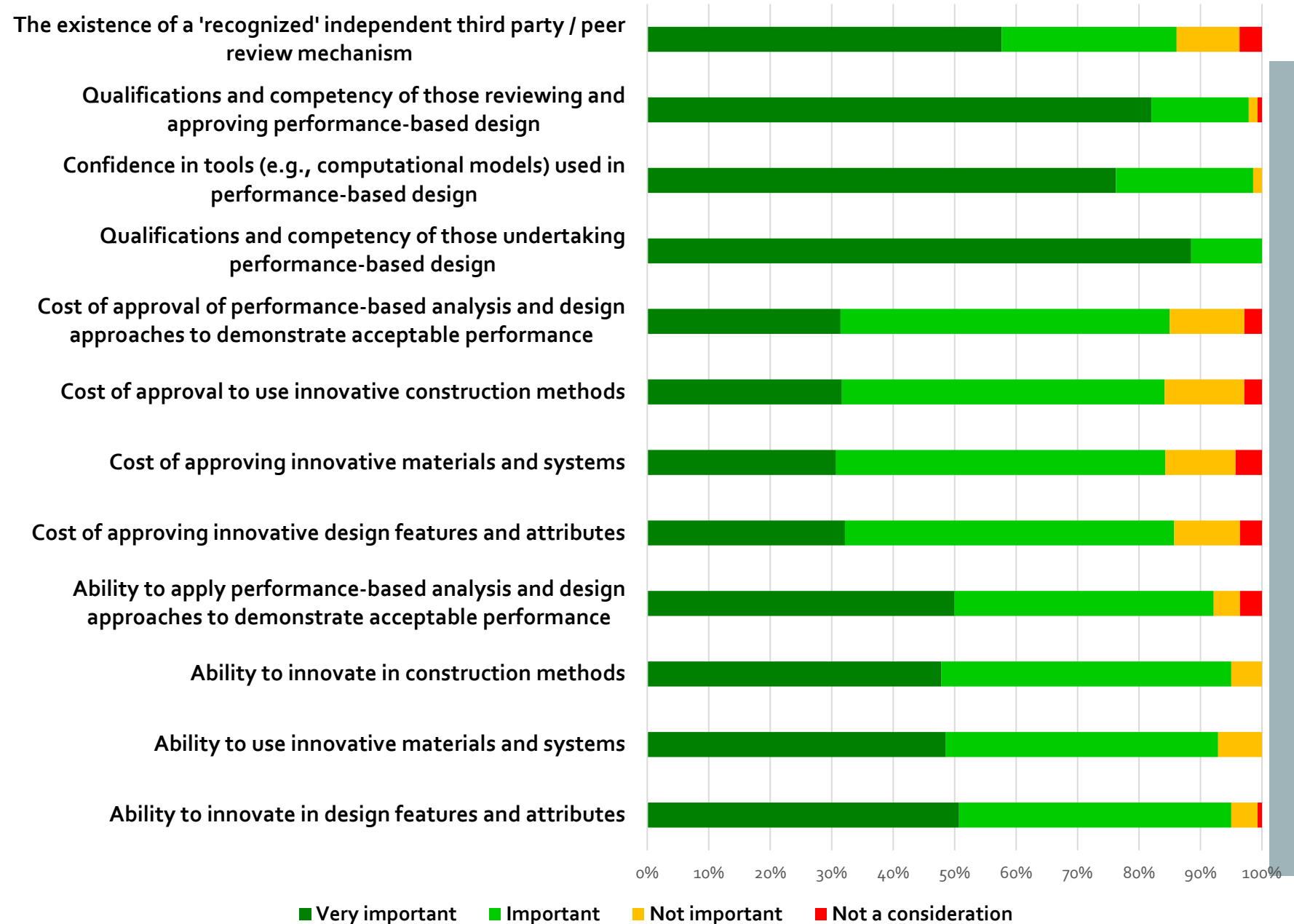


Q13: Please indicate in which regulatory system approach (performance-based or prescriptive) you think the following is, or is most likely, true



■ Performance-based code (regulation) system ■ Prescriptive-based code (regulation) system ■ About the same in either system

Q14: Please indicate the relative importance of the following attributes



■ Very important
 ■ Important
 ■ Not important
 ■ Not a consideration

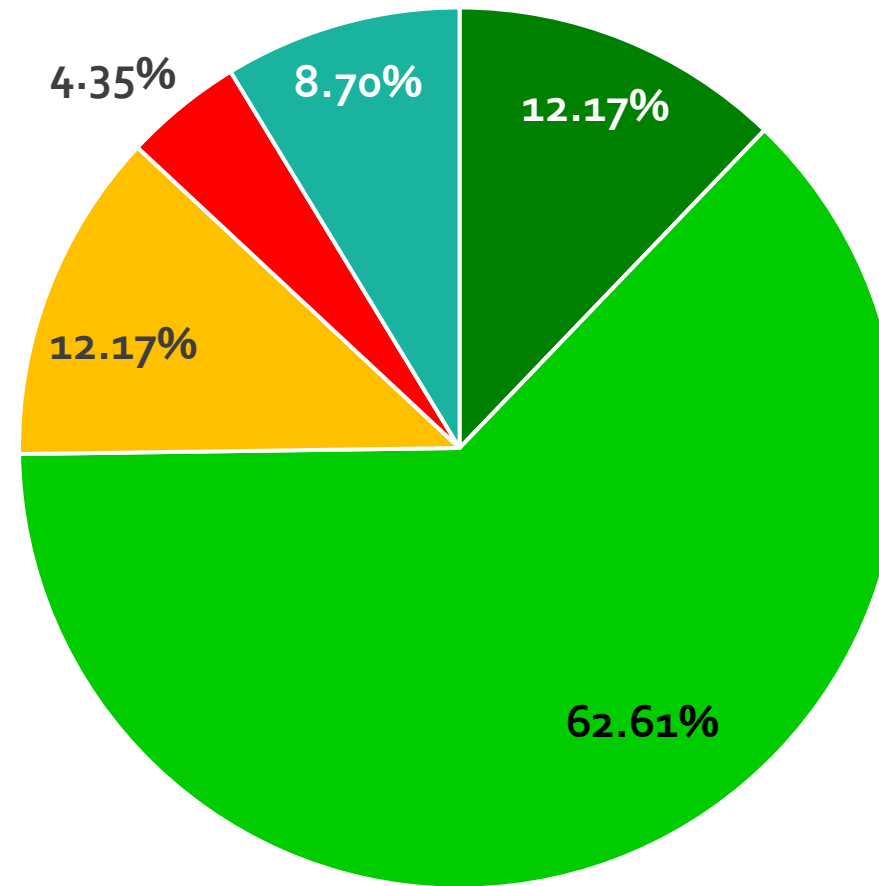
Section 3 – Structure of PB Codes and Major Components

This section is aimed at understanding perspectives and preferences regarding the general structure of a performance-based building code (regulation) and of the major components. The most widely used structure includes most of the following components (note that different terms are sometimes used):

- the 'high-level' policy or societal goals to be achieved through compliance with the building code (regulations), such as occupant health, safety and welfare, environmental sustainability, resilience, etc. (these can sometimes be in enabling legislation);
- objective statements, which provide clear statements / descriptions of the objectives to be achieved in order to meet the policy- / societal-level goals;
- functional statements, which provide qualitative requirements for buildings or specific building elements (features) that describe how the objectives can be met;
- performance requirements, which provide actual requirements in terms of performance criteria or expanded functional descriptions against which compliance with functional statements will be assessed / performance will be verified;
- acceptable solutions, which describe means by which compliance with the code (regulation) can be demonstrated (including documents that lay out requirements that are 'deemed-to-satisfy' the code, and engineering methods which describe an acceptable analysis and design process); and
- methods of verification, which are used in support of the acceptable solutions, such as test standards, test methods, analytical methods , and computational methods.

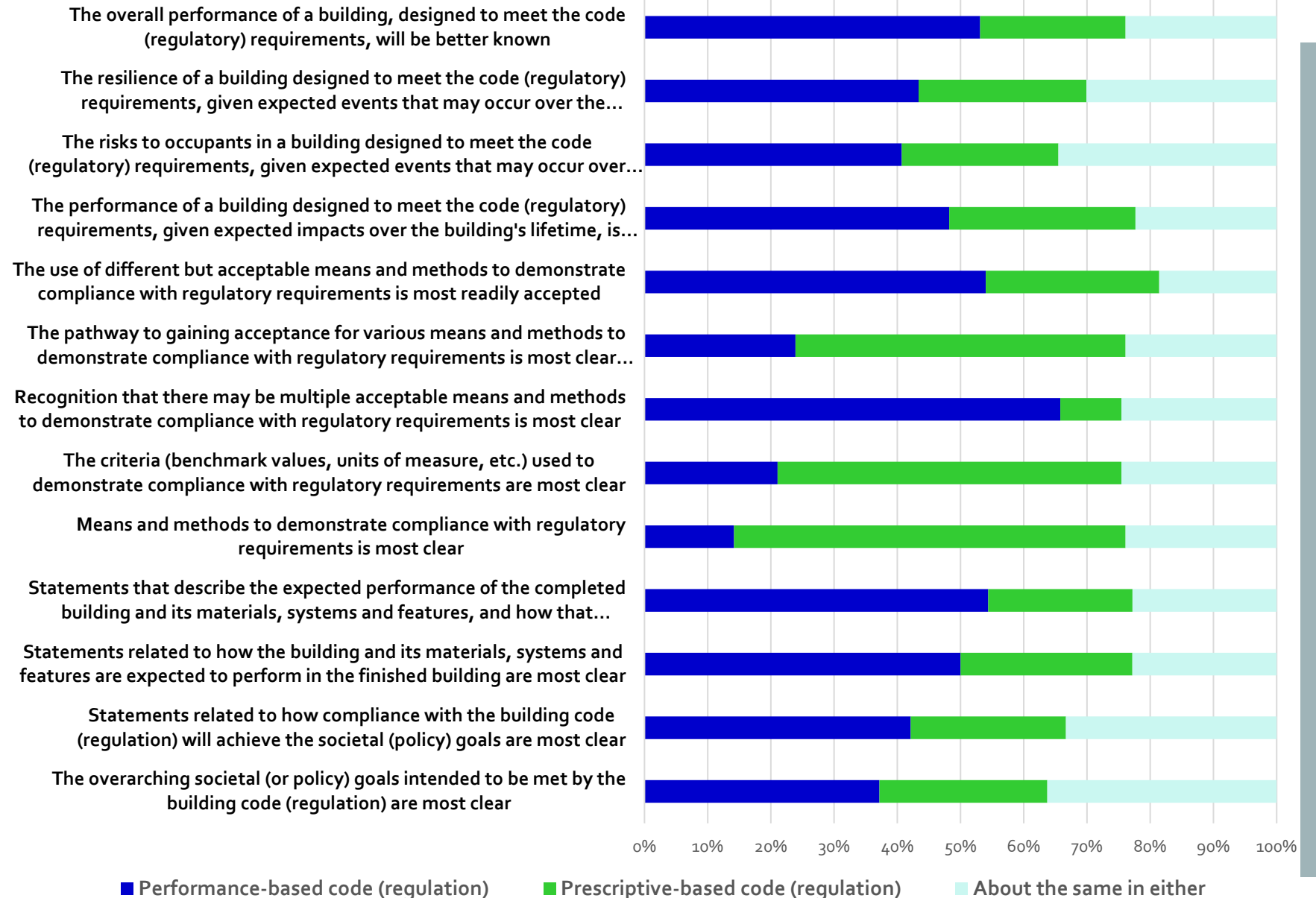
There may also be other components, such as risk or performance groups, risk or performance levels, and design basis loads.

Q15: The framework overviewed in the introduction above remains appropriate, sufficiently comprehensive and robust enough to continue to be used as the basic structure for performance-based building codes (regulation)

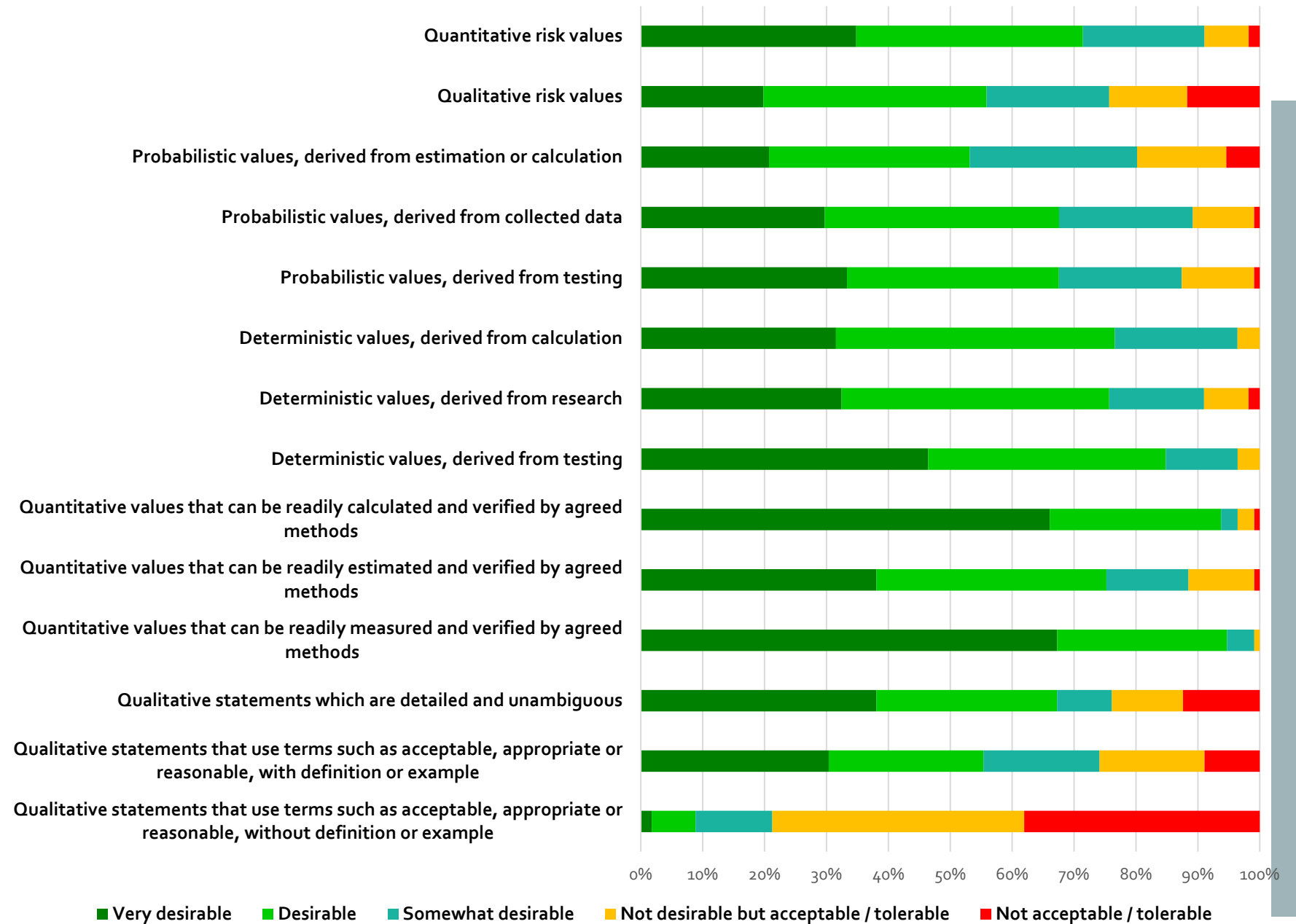


- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Insufficient knowledge or experience with performance-based systems to express opinion

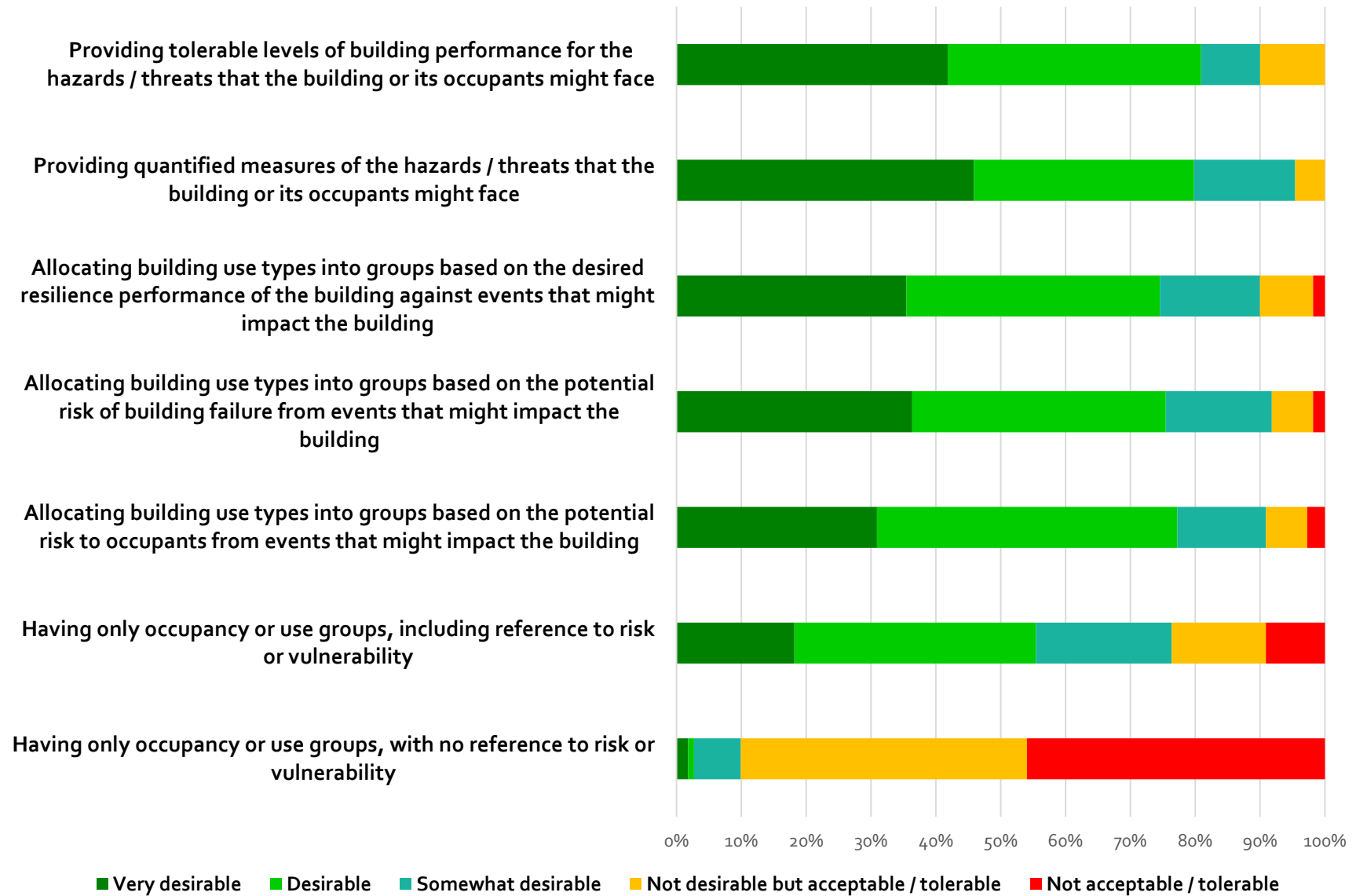
Q18: Please indicate in which regulatory system approach (performance-based or prescriptive) you think the following is, or is most likely, true



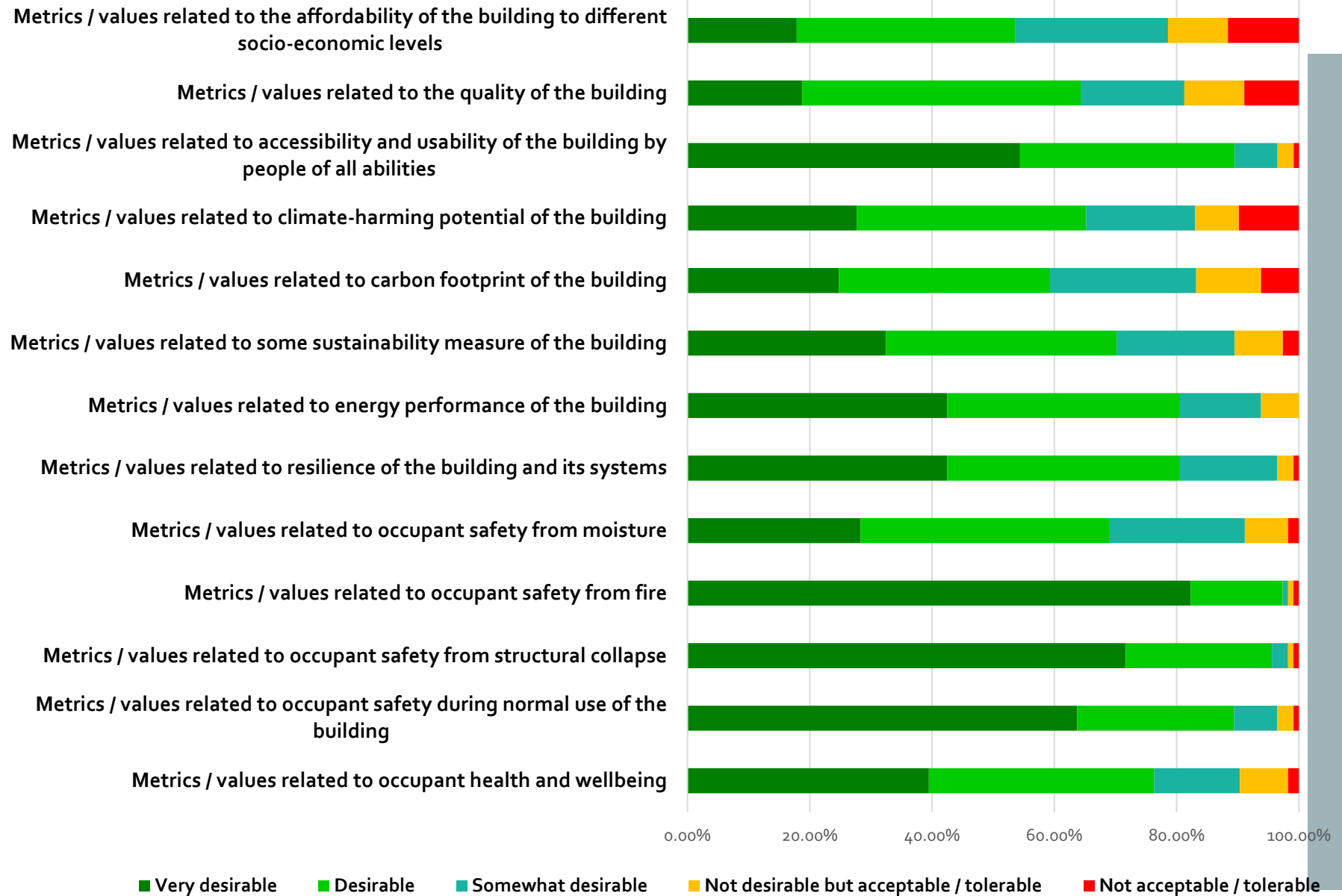
Q19: Please indicate the desirability of different forms of benchmarks to demonstrate compliance / verify performance



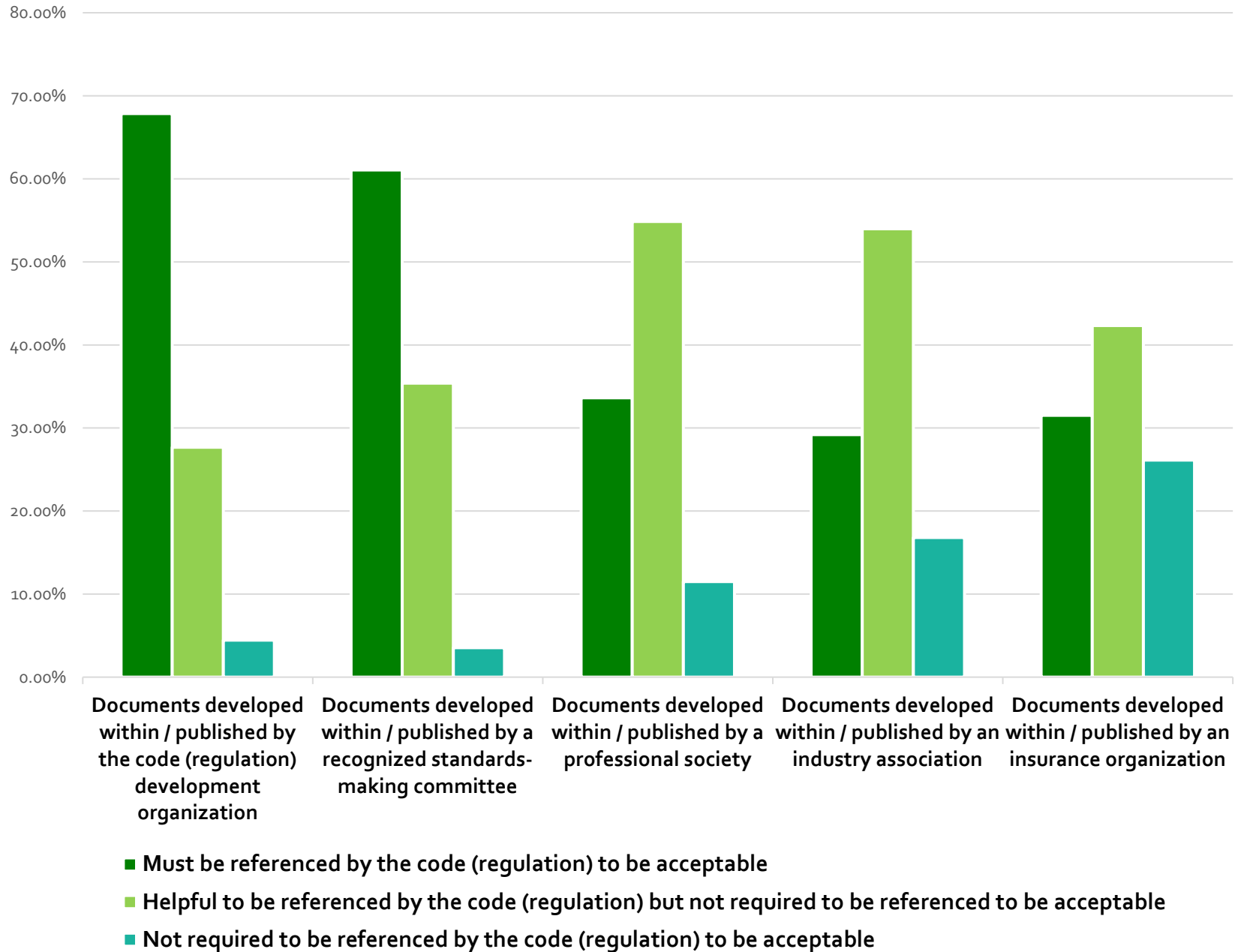
Q20: Please indicate how desirable the following approaches would be for building categorization



Q21: To what extent are the following measures / indicators of building performance desirable?



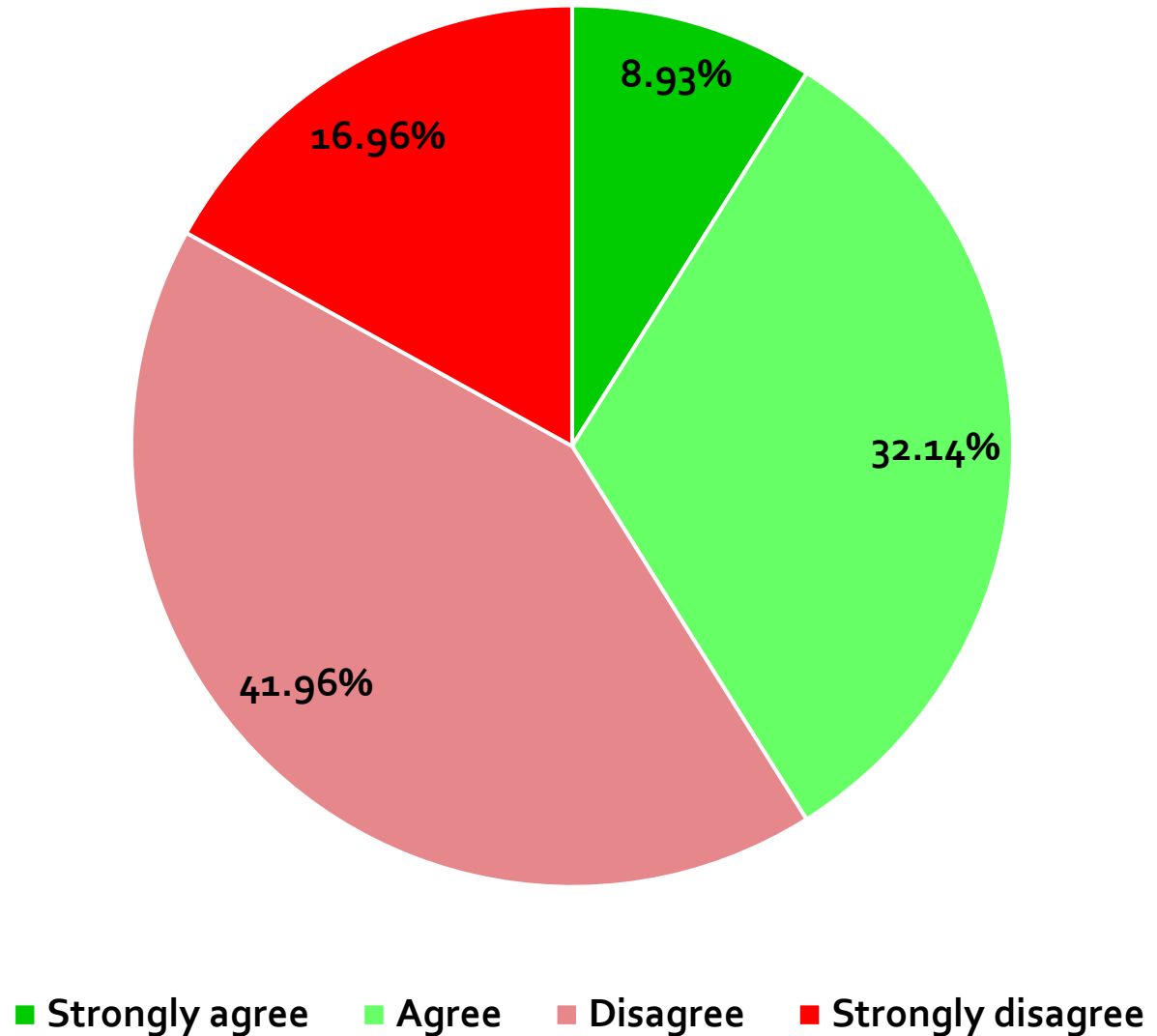
Q22: How important is it that the different types of documents be adopted by reference in the building code (regulation) for their use to be acceptable in demonstrating regulatory compliance and/or verifying that the regulated performance has been achieved?



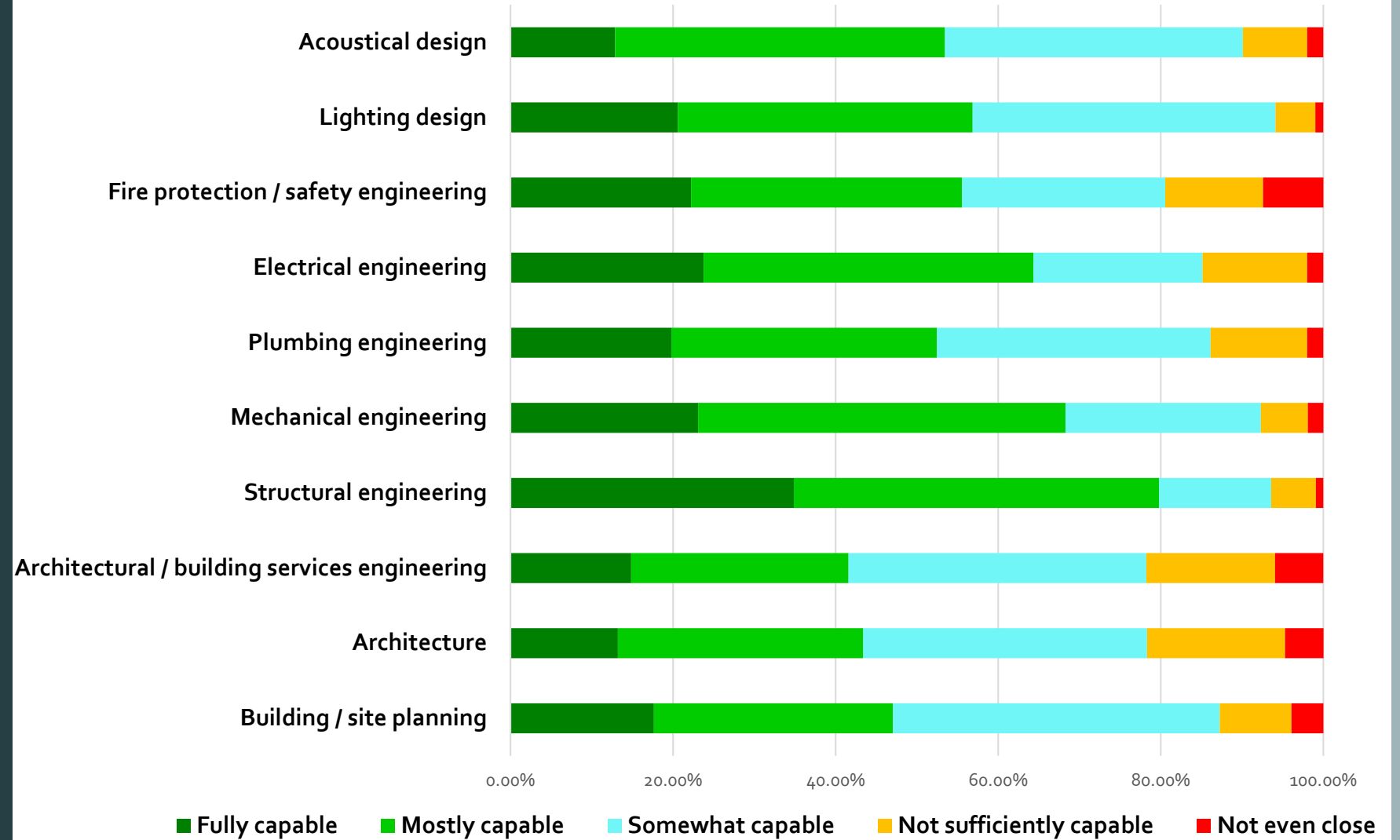
Section 4 – PB Design Approaches

- In this section, respondents were asked several questions about how they perceived the capacity for undertaking and reviewing PBD across disciplines, based on current guidelines, and so forth.

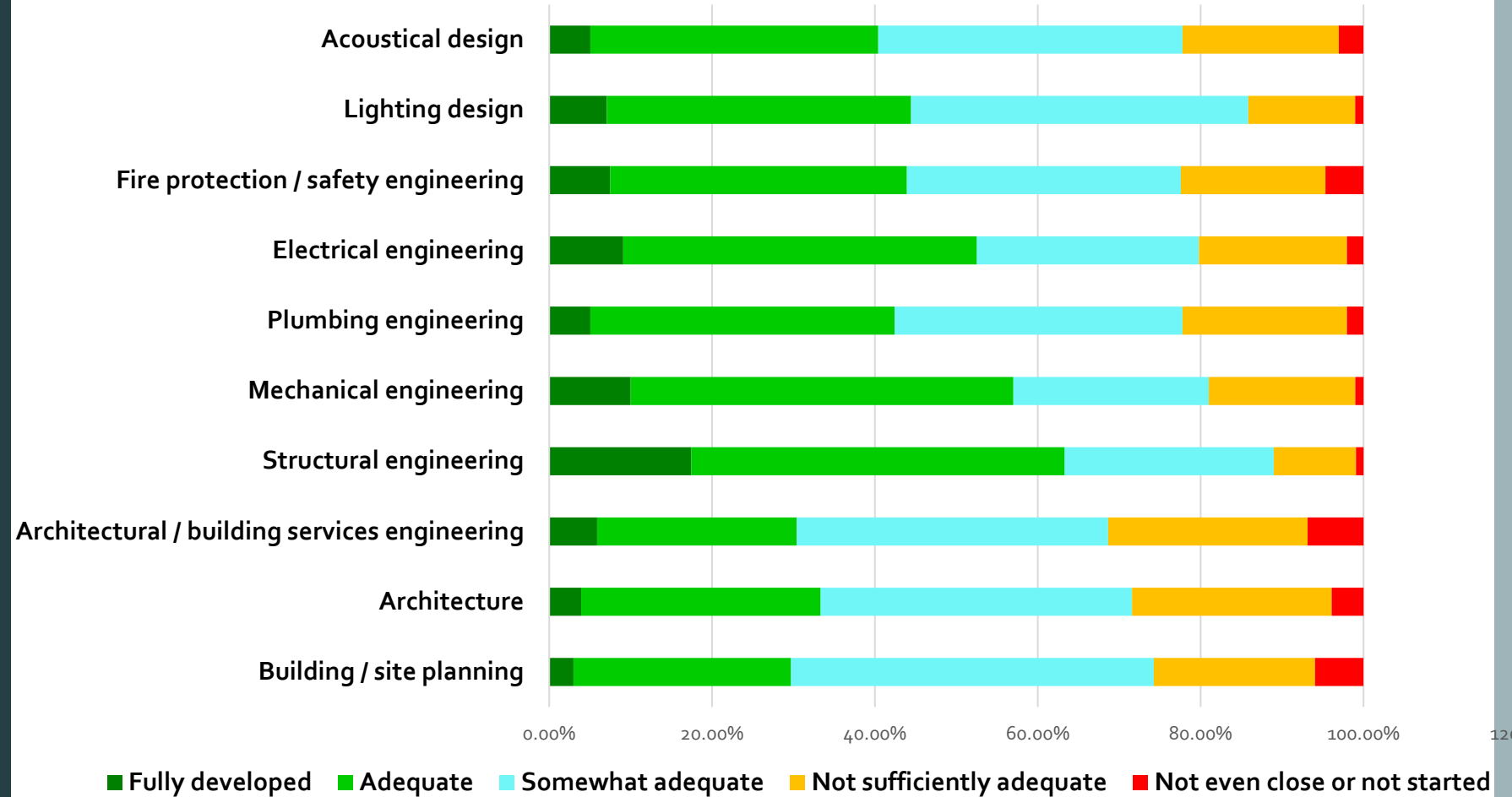
Q23: In general, I think the expertise, capability, data, tools and methods are currently adequate to support robust performance-based designs for most or all aspects of building design.



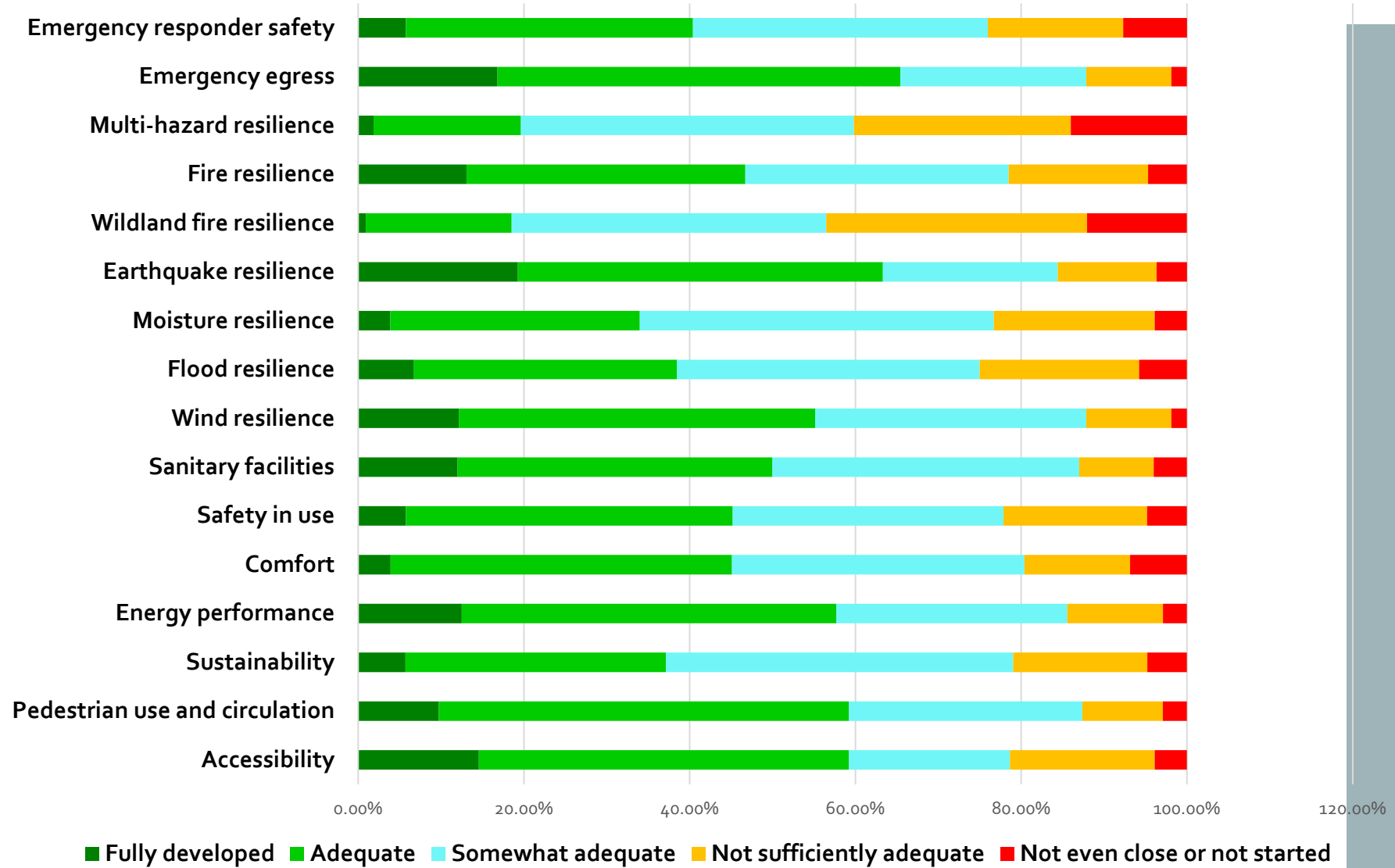
Q24: Please provide your opinion regarding the current capability of the following to produce robust PBDs



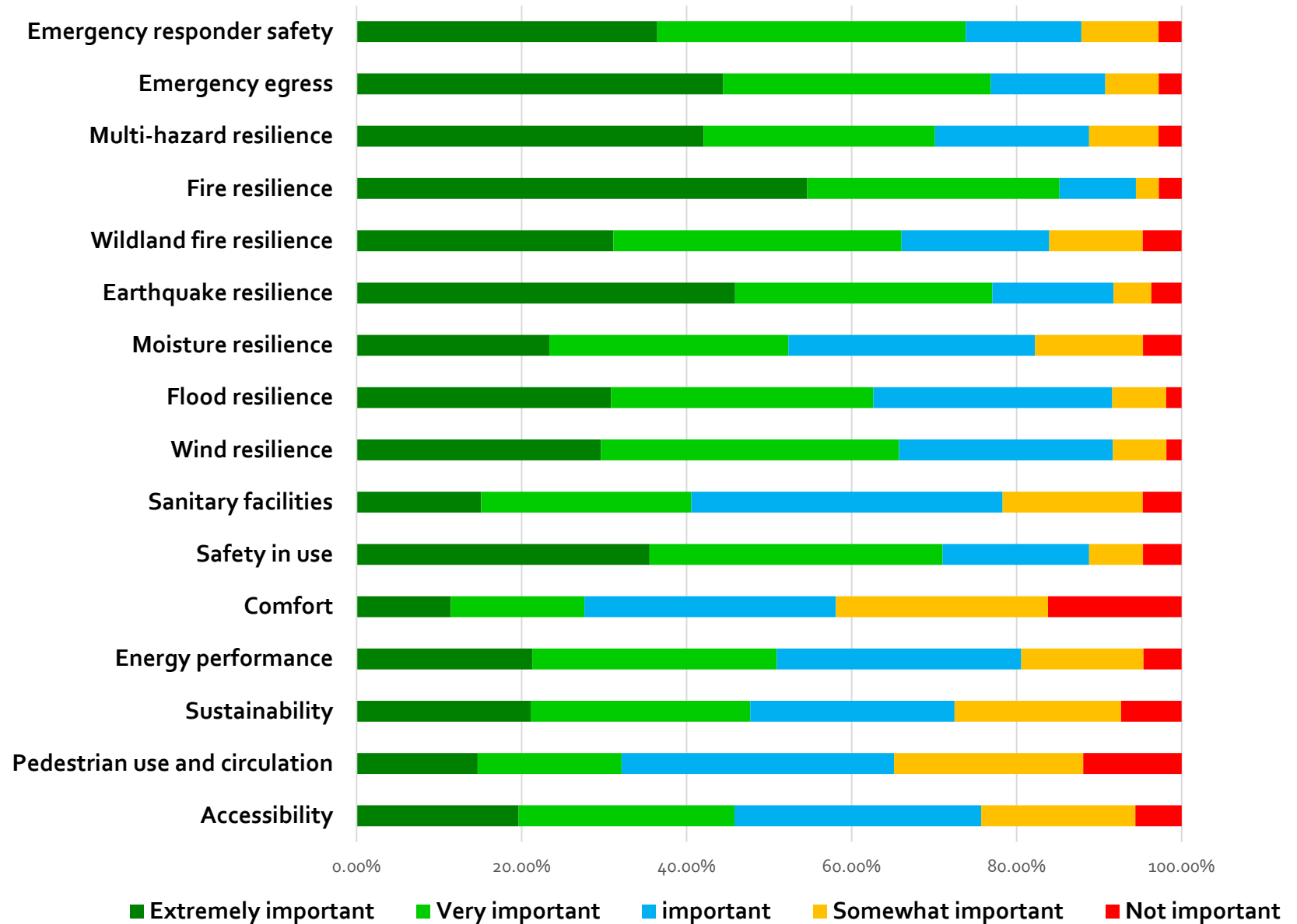
Q25: Please provide your opinion regarding the current adequacy of design standards, guidance and methods of verification for performance-based design within the following disciplines.



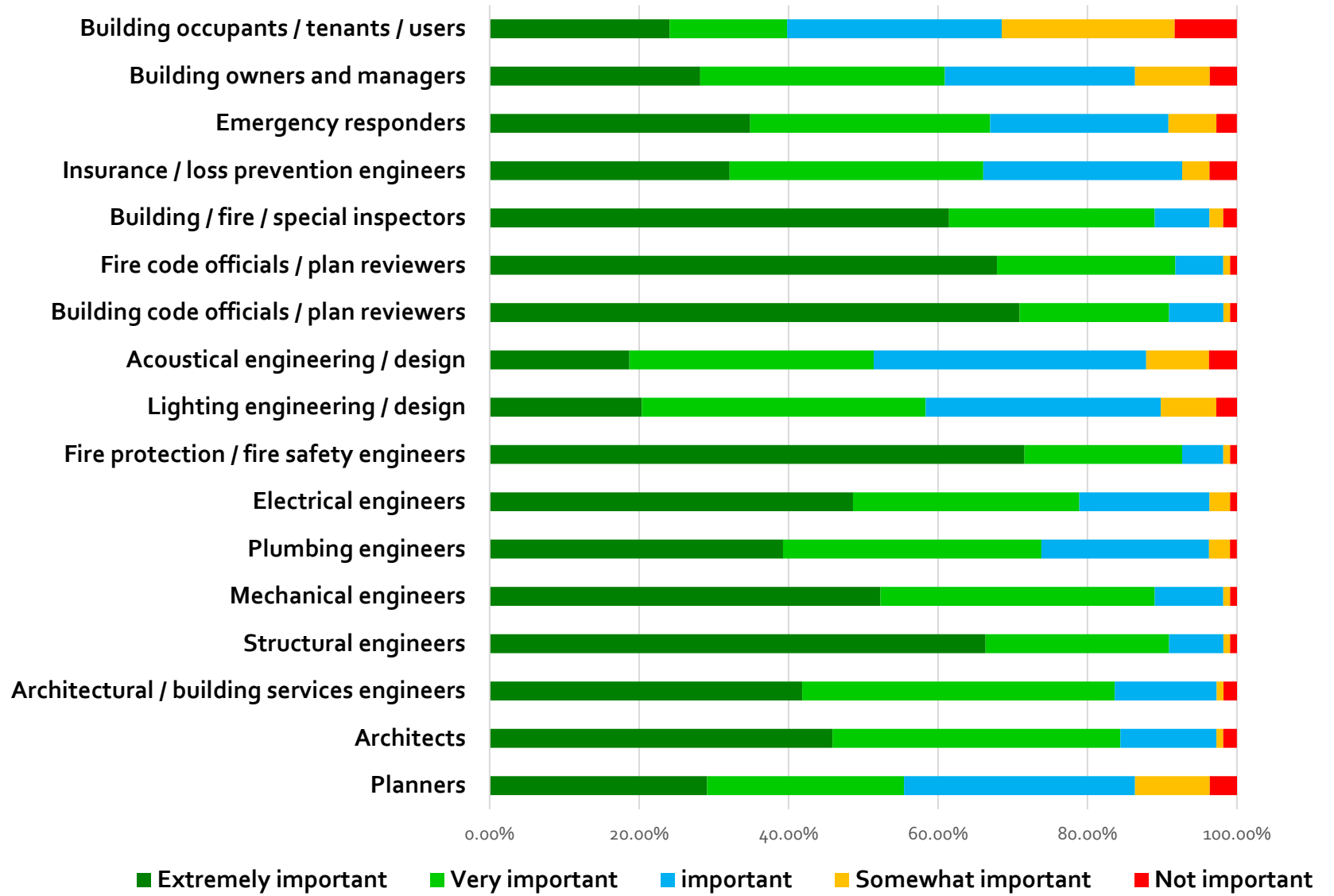
Q26: Please provide your opinion regarding the current capability to develop robust performance-based design for the following building performance objectives.



Q27: Please provide your opinion regarding the importance of third party / peer review of performance-based design for the following building performance objectives.



Q28: Please provide your opinion regarding the importance of investing in education, training, qualifications and competency for the following



Section 5 – Additional Comments

- In this section, respondents were asked to provide any additional input related to what to avoid, or what to include, in PB code.
 - Note – the full set of responses to Questions 29 and 30 is provided in a separate PDF file.

Key *Preliminary* Summary Points

- Distribution of response from different sectors good, but overall, more data would be better.
 - Survey will stay open if more people want to respond.
- Only a little more than half think current system works well or very well (performance or prescriptive)
- More than 80% believe that a robust PB building code system can be developed and implemented.
- Qualifications, competency, ability to innovate, increasing confidence in verification are key issues.
- Quantification of performance, strong linkage to methods of design and verification / compliance are critically-important issues.
- Peer review, investment in training and education, critical.

Thank you!

- I would like to express my sincere appreciation to all who took the time to complete Survey 1 and provide their perceptions of, and comments on, performance-based codes and design. This input will be very helpful in reimagining the ICCPC. For anyone else who would like to add their input, Survey 1 will remain open until September 30. Also, please watch for future surveys, roundtable discussion and workshops. Thank you!