

# Construction Quality Planning (CQP) Consultation Summary

November 2020







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# **Executive summary**

During the summer months, the Construction Innovation Hub offered businesses and clients the opportunity to help shape the first in a new series of tools and processes which are intended to transform the construction industry's approach to quality management.

By observing and learning from leading sectors, the Hub has identified best practice methods and is exploring how to adapt them to construction.

The Construction Quality Planning (CQP) process is intended to provide construction clients and businesses with a quality assurance framework that focuses on the development and introduction of new products.

Particularly relevant for the offsite sector, CQP defines an approach for firms which supply the construction industry with new products and assemblies that form part of tomorrow's offsite manufactured buildings.

The CQP process is modelled on Advanced Product Quality Planning (APQP), an established and recognised methodology used widely across the aerospace, automotive and pharmaceuticals industries.

CQP sits within a wider family of quality management tools and processes being developed as part of the Hub's transformative programme. Together, these will help create the golden thread of information needed to instil trust and confidence across the built environment.

Between 13 May and 31 August 2020, the Hub carried out a consultation on the applicability of the CQP process within the UK construction industry.

Feedback from participants, who were predominately industry professionals (84%), but also included central Government (7%), other public bodies (6%) and academia/research (3%), indicated strong support for the quality management approach proposed in CQP.

Key concerns were also raised, however, about the need for a fundamental culture shift around quality planning within the sector and a greater focus on the skills and competencies needed to ensure successful implementation of CQP at scale.

This report outlines the summary of the consultation findings. The input received will help to shape the next critical phases of the project, including improvement of the CQP guide prior to its release in early 2021. Future steps include the development of proof-of-concept case studies through collaboration with industry partners and the eventual successful deployment of the CQP process and tools.

## **Key findings**

#### The key findings are outlined below:

- Participants recognised that the CQP process has the potential to embed quality in construction products and projects. Participants acknowledge that a cultural shift would be required to achieve this, along with great commitment from both the public and private sector. This is highlighted as the main challenge for the implementation of the CQP process.
- In general, participants consider the CQP process to be aligned with current efforts to transform construction through manufacturing technologies and digital ways of working that are trusted and secure.
- The proposal for a standardised and structured process for the New Production Introduction (NPI) has been well-received. The consideration of on-site activities (i.e. assembly and installation) as well as in-service stages under a similar quality assurance framework was suggested.
- The different phases and gates of the CQP process are well understood, and the significance of advanced planning is acknowledged. In general, roles and responsibilities in the CQP process are also understood, but further discussion on how roles may be assigned in the construction industry is required when considering the different project delivery and procurement models.
- Capturing customer requirements is highlighted as a key activity for the success of CQP and therefore clear methodologies and tools are needed to support capturing the Voice of the Customer during the initial phase of the CQP process.
- The classification of products is seen as important for the implementation of CQP. The proposed risk-based methodology for classification was considered to be appropriate. However, further discussion is needed on the wide range of factors to consider, to ensure classification is robust and accounts for the risk of failures in products as well as in integrated systems and buildings.
- The seamless integration of the CQP process with ongoing efforts around the implementation of BIM and data management was of high importance to respondents. Feedback suggested that a detailed explanation of the relationship between the project level digital requirements and the digital capabilities of a standard product will contribute to better data management.
- A stronger focus is needed on skills and competencies that will be required in the sector to ensure successful implementation of CQP.
- At wider construction industry level, the envisioned approach for procurement and delivery
  of Modern Methods of Construction (MMC) projects was noted as a topic that needs further
  discussion. Traditional models in construction are different from other industries where similar
  advance quality planning frameworks are already implemented (e.g. aerospace and automotive).

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## Project outline

Adapted from advanced quality methodologies already well established in leading manufacturing industries like aerospace and automotive, the CQP process promotes a 'zero-defects' culture while ensuring that parts conform to fit, form and function.

The CQP process provides a quality assurance framework that focuses on the development and introduction of new products and thus is aimed at enterprises that will feed construction with new products for offsite builds.

Adapted from advanced quality methodologies already well established in the manufacturing sector (i.e. APQP), CQP promotes a 'zero-defects' culture while ensuring that parts conform to fit, form and function.

The main benefit from the implementation of CQP is an industry-wide shift from quality control and defect checking to quality assurance and defect prevention.

## **Objectives**

The purpose of this consultation was to seek industry and client feedback on the applicability of the CQP process, and its respective toolset, within the UK construction industry.

#### The consultation was targeted to a wide range of industry stakeholders including:

- Contractors with a focus on MMC;
- · Offsite manufacturers; and
- Public and private sector clients.

#### The objectives of engaging with this defined group of stakeholders were to:

- Benchmark industry perception on the applicability of the CQP process and tools;
- Gather feedback in order to further develop the CQP guidelines;
- Identify needs and expectations from industry stakeholders to shape a well-established quality assurance approach to be adopted by the wider construction industry;
- Document the enablers and challenges perceived by the industry as well as lessons learnt from previous initiatives;
- Understand the training and resource needs based on industry feedback and support the development of training materials; and
- Identify opportunities to develop proof-of-concept case studies to demonstrate the applicability of the CQP process and the supporting tools.

## Methodology

The consultation was delivered through an online consultation and via working group sessions. Details of both methods are discussed in greater depth below, along with the communications and engagement plan and a breakdown of the feedback compilation and analysis process.

#### The documentation prepared for the consultation were as follows:

- · CQP guide;
- CQP summary document; and
- · FAQ document.

The CQP consultation period began on 13 May 2020 and was expected to end on the 31 July 2020. However, due to the unforeseen Covid-19 conditions, the consultation period was extended for an additional month, officially coming to an end on 31 August 2020.

### Online consultation

The online consultation was hosted via the Hub's website and communicated through the Hub's various digital channels and trade media.

A CQP dedicated page was set up on the Hub website to introduce the draft version of the CQP guide. The page also offered a link to the online consultation questionnaire.

The questionnaire was structured so that individuals and organisations could provide clear feedback for each of the five CQP phases, as well as answer specific questions addressing the challenges and the benefits associated with the adoption of CQP.

## Workshops and working sessions

In parallel to the online consultation, structured CQP workshops were held with members of relevant bodies and organisations who promote the use of offsite construction.

Feedback was gathered through pre and post workshop questionnaires, open ended questions using online survey tools during the sessions, and live feedback that was directly received during the workshop Q&A segments. Participants were invited to submit additional comments through the online questionnaire or by making direct contact with members of the CQP Team.

The workshops were structured in two sessions. Day 1 covered an introduction to CQP, the five phases and the gated approval process (i.e. Construction Product Approval Process – CPAP) with roles and responsibilities. Day 2 was a deep dive into the CQP toolset and its applications; exploring both the benefits and potential barriers with adoption in the construction industry. In total, 7 workshop sessions were conducted between 10 July 2020 and 31 August 2020.

Additional working sessions were conducted with stakeholders that reached out to discuss the CQP process in greater detail. These sessions provided the Hub with the opportunity to capture more specific feedback, and address individual topics which were of particular interest to the companies involved. The feedback and discussions which surfaced from these sessions were registered and the key findings are included in this report.

## Communications and engagement plan

The Hub's digital media channels were used to drive awareness, interests and engagement amongst key stakeholders with the CQP consultation. The consultation was launched via a press release on 13 May 2020. A communication and engagement plan was developed to support the dissemination of the consultation of which key elements are outlined below.

#### Articles and press releases

• Over 10 articles on the CQP consultation were published in online magazines, relevant event and industry associations webpages (e.g. PCB today, BIM plus, Building Magazine, FutureBuild, Designing Buildings Wiki, UKRI).

#### Email and newsletter

- A branded email with CQP information and clear call to action was shared through a range of different databases (e.g. Hub Mailchimp list, Hub relevant contacts, platform participants).
   The message was delivered to over 3000 contacts;
- The message was also echoed by other relevant bodies and organisations (i.e. Buildoffsite, Construction Excellence and Construction Scotland Innovation Centre);
- Invites for online workshops were sent to members of selected stakeholder groups and organisations; and
- Information about CQP was included in internal and external newsletters during the months leading up to the consultation.

#### Social media campaign via Hub digital channels

- The consultation was promoted in Twitter and LinkedIn through regular posts;
- Two short introductory videos in interview format were created for YouTube, with members of the Hub CQP team highlighting the CQP goals and ambitions; and
- A blog post written by Gill Kelleher, Hub's Impact Director for Assurance, on the importance of the CQP consultation, was published.

## Feedback compilation and analysis

After the conclusion of the online consultation and workshop sessions, the next phase involved processing the feedback gathered.

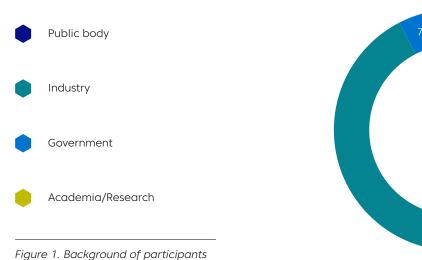
The consultation feedback was collated and compiled in a single repository to facilitate analysis. The information was classified by categories so that specific actions and improvements could be discussed and implemented by the Hub CQP Team.

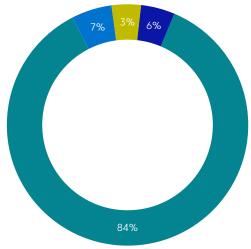
#### Who were the participants?

The consultation targeted a wide range of stakeholders including contractors with an MMC focus, offsite manufacturers and public and private clients. A total of 99 interactions were registered via the online consultation (18 participants), individual meetings with stakeholders (21 participants) and workshop sessions (60 participants).

Figure 1 below shows a breakdown of participants. The majority of responses came from individuals working in industry (84%) followed by those working in Government (7%), public bodies (6%) and academia/research organisations (3%). From the 99 total interactions, specific feedback was provided by individuals from 32 organisations through open ended questions in the online consultation, questions asked on the interactive survey conducted during the workshop sessions and open discussions during the individual meetings.

#### Background of attendees (online and workshops)





broken down in organisational sectors

A further breakdown of the different channels of communication has been summarised below.

#### **Online consultation**

A total of 690 clicks were made to the online consultation questionnaire, as shown in Table 1 below, that provides a conversion rate of 2.6%.

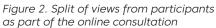
Table 1. Clicks, completed questionnaires and conversion rate associated with the online consultation

	Clicks	Completed Questionnaires	Conversion rate (%)
CQP Questionnaire	690	18	2.6%

The feedback received from the online consultation indicates a split between the views of the individual (10 participants) and the views of the organisation (8 participants). This is illustrated in Figure 2 below.

## Representation of the split of views from the online consultation





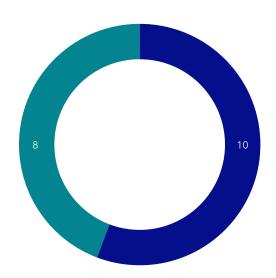
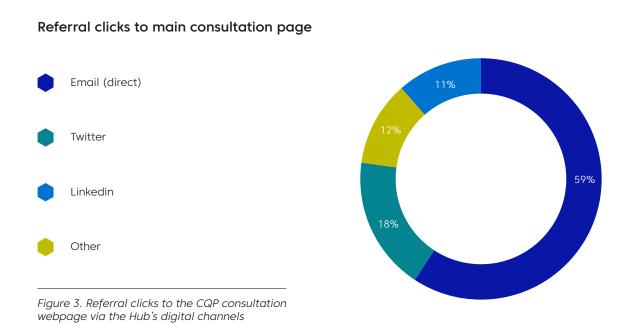
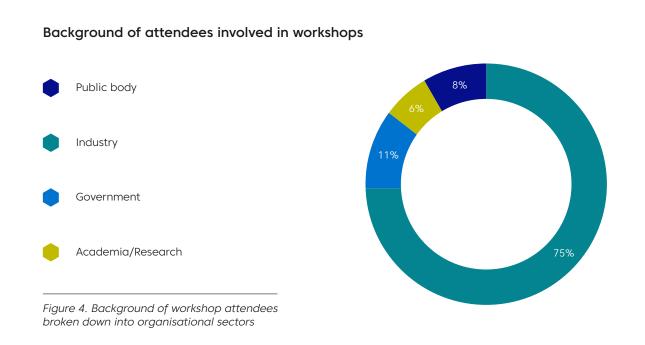


Figure 3 below presents a breakdown of the sources of traffic to the CQP consultation webpage. There was a total of 654 clicks to this page, the majority came from direct traffic and email (385), followed by Twitter (118), LinkedIn (69) and other channels (82).



#### Workshops and working sessions

As part of the structured workshops there was 60 attendees in total for Day 1 and Day 2. Likewise, there was an additional 21 participants in the working sessions organised with interested stakeholders. Figure 4 below shows that the 75% of the audience were from industry, 11% from Government, 8% from public bodies and 6% from academia/research organisations.



In total 99 stakeholders from 53 different organisations participated in the consultation. Figure 5 below indicates sectors in which these organisations are categorised. A total of 44 organisations were from industry, followed by 5 public bodies, 3 academic/research organisations and 1 Government department.

#### Engagement with organisations across different sectors

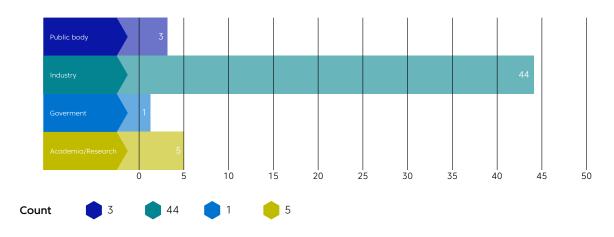


Figure 5. Breakdown of the 53 organisations engaged with categorised in particular sectors

# Summary of consultation feedback

# Summary of consultation feedback

The CQP consultation captured the views of 50+ organisations from manufacturers and contractors, to certification and public bodies.

Participants have signalled their support for a transformed approach to quality planning but recognise this will require a significant cultural change within the construction industry.

The feedback received through the online consultation was collated and categorised along with the data gathered from the structured workshops.

The feedback was classified into the information related directly to the CQP framework (i.e. process fundamental, phases and gates, responsibilities, etc.) and the information that at wider industry level will contribute to the successful implementation of the CQP process (e.g. procurement and delivery models, cultural shift, regulations, etc.).

Feedback on the level of detail and clarity of the CQP guide and the documentation was also gathered.

The analysis presented in this section summarises the key findings and main areas of interest. To integrate the relevant feedback into the CQP process, actions will be defined and implemented by the Hub. Likewise, the feedback addressing topics beyond the current scope of the CQP guide, but relevant for its implementation in transforming the industry, will be fed into the relevant work packages of the Hub programme. Actions will be then discussed at programme level to ensure that the CQP process can be adopted and implemented.

All the participants acknowledge the value and potential of the CQP process to 'build' quality into construction products and projects. They also highlight that a cultural shift would be required to embrace quality driven initiatives, along with great commitment from both the public and private sector. The consultation participants appreciate that the CQP process aligns with the ongoing initiatives to transform construction through advanced manufacturing technologies and digital ways of working that are trusted and secure.

## **CQP** process definition

The CQP process focuses on the New Product Introduction (NPI) process. The idea of having a standardised and structured NPI process has been well-received. Participants from 4 different organisations stated to already be working on implementing advance quality planning methodologies and tools for the introduction of new products, with the goal of ensuring quality assurance within construction projects. In general, these front runners consider that applying established principles of APQP to the offsite construction sector is a sensible approach but also recommended careful consideration to make the process more relatable for the construction industry.

Participants from 8 different organisations also suggested the relevance of adopting similar approaches to address quality assurance during on-site activities (i.e. assembly and installation) and in-service. These points will be considered in the revision of the CQP guide to provide enough clarity in the current scope of the CQP process and how it fits within the implementation plan for a comprehensive lifecycle quality assurance framework.

Based on the feedback collated, the CQP gated approval process is clear and the scope and goals of each of the five phases are well understood. Participants from 9 different organisations stated their familiarity with the advance planning methodology being adopted in the CQP process. Several participants provided specific recommendations to better detail specific CQP elements and the content of deliverables listed at each of the gates. These recommendations will also be integrated in the CQP guide and the supporting documents (i.e. CPAP Handbook and the guidelines for the tools).

There is consensus that the CQP process requires a collaborative approach and team commitment, to ensure that there is not a disconnect between the team and the main stakeholder group throughout the entire product development process. Respondents suggested that greater clarity is required in the description of the key roles (i.e. Customer/Client Representative and Construction Product Approval Coordinator) and their allocation.

The description of the roles will be carefully considered for the CQP guide and are detailed in other supporting documentation, particularly the CPAP Handbook. The integration of the quality process into the roles of existing teams was recommended in the short term to facilitate early adoption. Moreover, relevant feedback was provided by 2 participants regarding the importance of supporting roles for the implementation of CQP. Those recommendations will be considered for the ongoing implementation plan.

Participants of 6 different organisations suggested the need for further details regarding the gate reviews and the team participating in them, as well as in the general approval process. It was highlighted that in traditional construction processes, the involvement of the client/customer in design and development is limited and therefore they are not commonly engaged in product sign-off and approval. It is then worth mentioning that the approval process is certainly a key element for the successful implementation of the CQP process. This is further detailed in the CPAP Handbook that will be released alongside the CQP guide.

Another consideration raised by participants of 4 different organisations was the timeframe and duration of the process. The participants acknowledge that the timeframe depends on the complexity of the product or assembly being developed and its consideration will be relevant in the project planning stages.

In relation to the product classification, 10 participants commented on the need to further discuss the proposed categories (i.e. critical, significant an unclassified) and detail the classification process. The participants highlighted the relevance and suitability of the proposed risk-based methodology as well as the need to consider a wide range of factors (e.g. Mechanical stability, life cycle value, health and safety, security, welfare, etc), so that it provides a robust product classification and accounts for the risk of failures in products as well as in integrated systems and buildings.

Table 2. Feedback summary for the CQP process definition

Participants/Organisations	Feedback
4 participants	Stated to be already working on implementation of APQP process and tools for new products/projects.
8 organisations	Suggested the need to address quality assurance during on-site activities (i.e. assembly and installation) and in-service.
9 organisations	Explicitly stated to be familiar with the advance planning methodology being adopted in the CQP process.
Consensus	On the need for a collaborative approach so that the team is not seen as separate from the main stakeholders of a product development and manufacturing process.
2 participants	Highlighted the importance of supporting roles for the implementation of CQP.
Participants from 6 organisations	Suggested the need of further details on the gate reviews and the team participating in them, as well as on the general approval process.
Participants from 4 organisations	Raised consideration about the timeframe and duration of the CQP process.
10 participants	Commented on the need to further discuss the proposed categories (i.e. critical, significant an unclassified) and detail the classification process.

## **CQP** implementation

Participants agreed on the need to ensure the voice of the customer is clearly shaping project requirements. A total of 11 organisations provided feedback, comments and recommendations on the need for a methodology that successfully captures the views of different stakeholders involved in the process, to ensure greater level of detail at the very start of the process. The participants highlighted the importance of understanding who might input as the voice of the customer. This topic was also linked to the definition of client/customer in the CQP process and the challenges arising from the procurement models.

Participants from 3 organisations also suggested emphasis should be made on the importance of capturing the sustainability, waste reduction and social value needs, which in their view were not given the relevance they require. The toolset developed to support the implementation of the CQP process provides guidance for specific tools to capture the Voice of the Customer such as the Quality Function Deployment (also known as House of Quality). The feedback on the Voice of the Customer and in general the requirement gathering will be considered for the implementation of the CQP and will be also incorporated in the CQP guide and the supporting documents.

Relevant points were raised by participants in relation to procurement models and product demand. The need of project pipelines that guarantee product demand was highlighted as both a key enabler and a significant challenge for the CQP implementation. Participants commented on the need of further discussion around the "Customer Demand Rate" concept and how it translates in the context of the construction industry and pipelines of projects. The discussion of procurement models is in the agenda of the Hub programme as part of the efforts to support the transition towards a manufacturing led construction industry, for which the CQP process is a key enabler.

Based on the feedback gathered, 8 participants in the consultation recommend describing how CQP and more specifically, the CPAP, relate to certifications and accreditation schemes (e.g. CE marking, BBA certification and BOPAS). This topic has been noted so that it can be emphasised in the CQP guide and the supporting documents. CQP is not a certification process and does not supersede or replace current certifications and accreditations. It does, however, foster the enforcement of certifications by providing a framework in which certification and accreditation schemes from different bodies can be integrated during the relevant phases.

A relevant remark was also noted regarding the need for mid and long-term vision for the quality assurance landscape, specifically whether the wide spectrum of requirements need to be harmonised by a single agency to ensure all certification is coherent (e.g. ISO/EU/BS standards, Building Regulations, CDM and HSE, Insurance Warranties, Environmental Design Standards, Passive Haus Certification, London Plan, Statutory Requirements, etc).

Although a large number of the participants are familiar with advance planning methodologies, there was a consensus view that relevant case studies come from industries with a strong manufacturing profile where those methodologies are well adopted. Therefore, the need for further construction related case studies was highlighted. Participants from 10 different organisations stated their interest to participate in pilots and trials for the CQP implementation. Likewise, previous initiatives and references were suggested to be included in the CQP documentation, so that lessons learnt from those projects can be highlighted.

Consideration for initial logistics, shipping plans, handling, transportation activities and general construction logistics was also suggested by 2 participants. When considering products and assemblies the size of entire walls or complete modules, logistics become a huge and crucial part of the design and development process and thus a relevant consideration for the CQP process.

There is consensus on the importance of clear engagement and enforcement strategies to foster the implementation of CQP and other quality assurance initiatives in the construction industry. On the one hand, participants foresee the need for government led schemes to lead the way in adopting this style of approach. On the other hand, they recognise it is vitally important taking this high-level acceptance into the everyday world of design specification, procurement and rollout across the supply chain, which requires a great level of shared commitment across industry.

A key topic raised by the participants was the industry's gap in skills and competencies for the implementation of the CQP process. The requirement for roles that are not traditionally in the construction industry structure (e.g. Continuous Improvement Managers, Process Engineers, Statistical Analysts, etc.) is seen as a potential barrier as well as the subsequent need for a lead period of industry upskilling.

#### Participants identified the need for a roadmap which would:

- In the initial phase, support the gradual adoption and integration of the quality process into existing teams; and
- In the later phases, facilitate CQP becoming a requirement for all MMC projects.

Therefore, there is consensus on the importance of training and guidance for the implementation of CQP and similar quality assurance processes. Two organisations already providing training and supporting MMC initiatives expressed their interest in collaborating to deliver training to facilitate the uptake of CQP and similar processes.

The seamless integration of the CQP process with the ongoing efforts for the implementation of BIM and data management was noted by participants. Participants from 10 different organisations consider this a critical topic for organisations striving for BIM ISO 19650. A more detailed explanation of the relationship between the project level digital requirements and the digital capabilities of a standard product was recommended. This will allow for an early alignment with the Information Exchange Requirements, the Common Data Environment (CDE) and the BIM Execution Plan (BEP). Another recommendation in terms of the digital integration, was to encourage the transition towards 3D models instead of the use of 2D CAD drawings.

Based on the feedback gathered, intellectual property (IP) management in the context of the CQP process is a key issue, as it is perceived by 4 of the participants as a challenge given the currently fragmented construction processes and supply chains. As more complex products and processes are developed, they will likely incorporate firmware and software along with physical components. The recommendations emphasised the need for early freedom to operate confirmation during the planning and design stages and clear collaboration agreements for future IP exploitation.

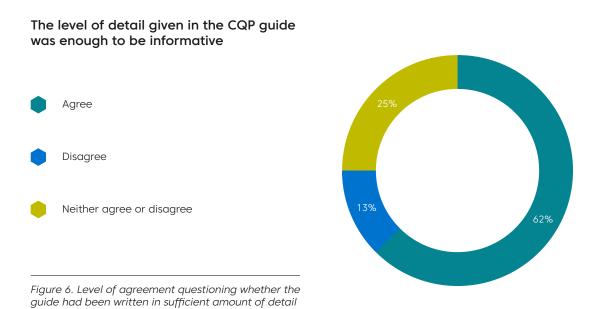
There are several, relevant ongoing initiatives that were highlighted in the consultation as well as in the workshops and working sessions. Participants see clear links and good alignment with the RIBA's Building in Quality Initiative and Tracker, CIOB's Code of Quality Management, and the Get It Right Initiative (GIRI) among others. Similarly, based on the working sessions with relevant stakeholder, CQP is seen as a key element that contributes to the government agenda to tackle building safety.

Table 3 below shows a summary of the feedback received regarding the CQP implementation:

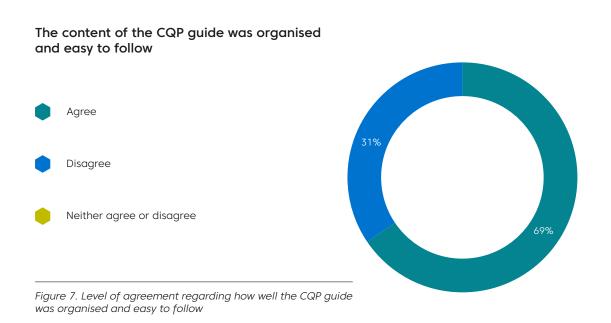
Participants/Organisations	Feedback
11 organisations	Provided feedback, comments and recommendations.
Consensus	On the need of further discussion around "Customer Demand Rate" concept and how it translates in the context of the construction industry and pipelines of projects. The need of project pipelines that guarantee product demand was mentioned as a key enabler but also as one of the biggest challenges for the CQP implementation
8 participants	Consider it would be worth describing how CQP and more specifically the CPAP relate to certifications and accreditation schemes (e.g. CE marking, British Board of Agrément (BBA) certification and Buildoffsite Property Assurance Scheme (BOPAS)).
Participants from 10 organisations	Stated their interest to participate in pilots and trials for the CQP implementation.
2 participants	Suggested to take into consideration also construction logistics aspects.
Consensus	On the importance of clear engagement and enforcement strategies to foster the implementation of CQP and other quality assurance initiatives in construction.
Consensus	On the importance of training and guidance for the implementation of CQP and similar quality assurance processes.
2 organisations	Are already providing training and supporting MMC initiatives expressed their interest in collaborating to deliver training to facilitate the uptake of CQP and similar processes.
Participants from 10 organisations	Consider the integration of the CQP process with BIM and data management as critical.
4 participants	Perceived intellectual property management in context of the CQP process as a challenge give the currently fragmented construction processes.

### **CQP** documentation feedback

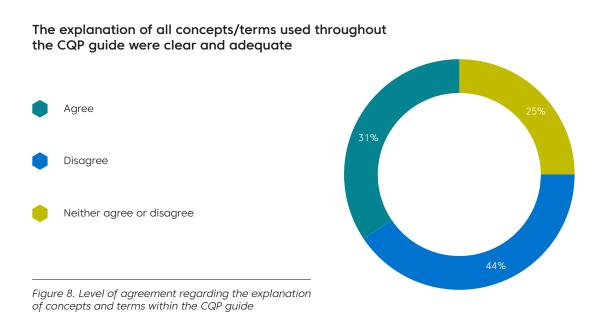
The participants of the consultation were also asked to consider the level of detail and clarity of information included in the CQP guide. The majority of online consultation participants consider that the level of detail provides good illustration of the CQP process, as shown in Figure 6. Two participants considered that the guide missed some elements of the advance quality planning process it is based upon, i.e. APQP. However, they acknowledged the effort to adapt it to the singularities of the construction industry.



There were two participants that considered the guide missed some elements of the advance quality planning process it is based upon (i.e. APQP). However, they acknowledged the effort to adapt it to the singularities of the construction industry.



The need for clarity in some of the concepts and terminology introduced was highlighted by 44% of participants, as outlined in Figure 8. Taking feedback gathered in the workshops into consideration, the participants acknowledged that the CQP guide introduces new terminology and concepts, some of which the construction sector is not completely familiar with. This reinforced the importance of training and guidance to facilitate the learning curve. Moreover, additional efforts will be made within the CQP guide to clarify terminology and acronyms that are relevant for the understanding of the process.



# Next steps

# **Next steps**

The Hub will continue to collaborate and engage with industry to increase the awareness and foster the implementation and adoption of CQP. Interested parties are invited to get in touch and discuss how to take part in the implementation phase.

The final versions of the CQP Guide, CPAP Handbook and the full set of comprehensive toolsets will be launched in early 2021.

#### Following the consultation, the Hub is dedicating efforts to:

- Analysing the information gathered and key findings to identify clear actions for improvement of the CQP guide.
   Likewise, considerations will be made towards challenges and needs raised which are relevant for the industry wide implementation of CQP.
- Releasing a revised CQP guide for industry in 2021. Along with the CQP guide, the CPAP Handbook and the guidelines for 9 CQP tools will also be released.
- Seeking further engagement with stakeholders in the
  construction industry to increase the awareness and foster
  the implementation and adoption of CQP. The CQP process
  is being trialled as part of the Hub's flagship Platform Design
  Programme, with the collaboration of relevant industry
  partners. Likewise, an implementation plan to create relevant
  case studies and showcase the CQP process and supporting
  tools has been developed.
- Developing a Digital Quality Assurance tool to support the adoption and implementation of the CQP process and toolset through an online digital platform that monitors, tracks and measures across a given set of factors. This will ensure that quality is considered throughout the entire product development and introduction cycle.

## **About the Construction Innovation Hub**

The Construction Innovation Hub brings together world-class expertise from the Manufacturing Technology Centre (MTC), BRE and the Centre for Digital Built Britain (CDBB) to transform the UK construction industry.

With £72 million from UK Research and Innovation's Industrial Strategy Challenge Fund, and working around the four core themes of Value, Manufacturing, Assurance and Digital, we are changing the way buildings and infrastructure are designed, manufactured, integrated and connected within our built environment.

We are a catalyst for change. We are driving collaboration to develop, commercialise and promote digital and manufacturing technologies for the construction sector. We are helping build smarter, greener and more efficient buildings much faster and cheaper than we currently do.

Research is helping us understand how the industry needs to change in terms of skills, product standards, capacity and innovation. This is combined with an academic programme to create the security-minded frameworks and rules that will underpin the future digital built environment and grow exports for UK know-how.

We are working closely with other initiatives as part of the Government's Transforming Construction challenge programme. Through collaboration across the sector, we can provide a better-built environment for future generations.

#### **Further information**

For further details about the Construction Innovation Hub, the CQP consultation or implementation phase, please contact:

Construction Innovation Hub info@constructioninnovationhub.org.uk www.constructioninnovationhub.org.uk

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