

# MEETING THE HOUSING NEEDS OF THE CITY OF BRISTOL: PROCURING FOR TRIPLE BOTTOM LINE VALUE

Client: Bristol City Council

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## **Executive Summary**

## **Background and review remit**

In common with many major cities in the UK, Bristol has a housing crisis. Over 2,000 new homes are required each year to address the housing waiting list and provide a permanent home to those living in temporary accommodation. Given the social needs of the city, 40% of new homes will need to be affordable. By increasing the stock and availability of high-quality housing, Bristol can address a key structural barrier to health equality, inclusive growth and environmental sustainability.

A traditional approach to construction has failed to fill the housing gap, but there are challenges in the market for alternative approaches using modern methods of construction (MMC)<sup>1</sup>. As well as the immaturity of the MMC market (and its failure, to date, to align demand and supply), the way in which local authorities and housing associations **procure** housing can also be prohibitive for non-traditional methods.

Procurement processes can be overly conservative and social value is often not given sufficient weight in the appraisal of options. This can significantly, and detrimentally, impact on the case for housing manufactured in a factory, rather than built on site.

Given this, Bristol City Council commissioned Arcadis to review housing procurement arrangements, to identify potential obstructions to new methods and consider how they can be overcome.

The review was undertaken between October 2019 and January 2020. Participants from across the sector contributed to the work (including suppliers, buyers, investors and procurement specialists) through a round table event and a series of one to one interviews. They shared their experiences of the barriers they encountered and how, in some cases, they were able to deliver new homes using MMC, despite the obstacles.

#### **Five Key Challenges**

Through the review, five key, inter-connected challenges were identified. The first is the extent to which stakeholders understand their role within three distinct, but related, processes that need to work together harmoniously and simultaneously to deliver the right procurement outcome- the supply cycle, the strategic commissioning process and operational procurement arrangements. These processes represent three cogs that need to work together but this often fails to happen effectively, at this point in time (challenge 2). The lack of synergy is impacting on the ability of the market to evolve and weakening the governance framework (challenge 3). This contributes to poor procurement documentation (challenge 4) and a perception of insufficient knowledge within procurement teams (challenge 5).

Taking each in turn, the five challenges are explored below.

1) Defining the procurement process and its relationship to the commissioning (strategic procurement) function and the development of the supply chain. The relationship between those working in the supply chain, those supporting market development through commissioning functions (strategic procurement, within the public sector) and those with responsibility for operational procurement

<sup>&</sup>lt;sup>1</sup> MMC is defined according to seven different types of manufacturing, depending on the extent of premanufacturing of the structural system. For more details, please refer to the government definition that can be access through the following link <a href="http://www.cast-consultancy.com/wp-content/uploads/2019/03/MMC-l-Pad-base\_GOVUK-FINAL\_SECURE.pdf">http://www.cast-consultancy.com/wp-content/uploads/2019/03/MMC-l-Pad-base\_GOVUK-FINAL\_SECURE.pdf</a>).

can be weak. This means that players within the system do not always understand their own role (and importance) and the synergy that should be evident, if the market was working effectively.

Exhibit 1 illustrates, within the context of this sector, how the different parts of the market need to work together. By developing understanding of the different processes (procurement, commissioning and the supply chain) and enabling an improved interaction of the different elements, the procurement process will be better able to support the delivery of innovative solutions, through a healthy market of suppliers (predominantly developers and main contractors, in this instance), ready and able to respond to buyer requirements.

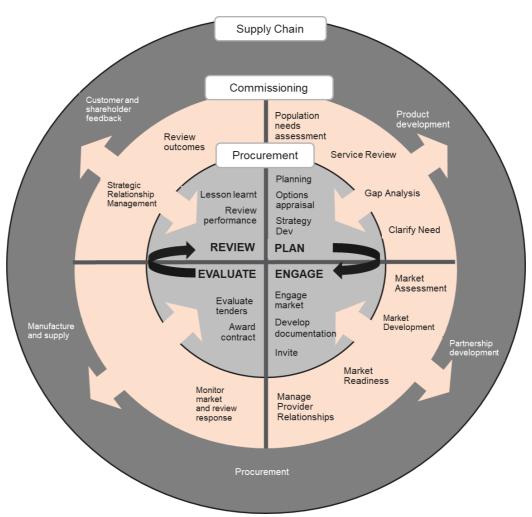


Exhibit 1: PEER- Plan, Engage, Evaluate, Review: The relationship between the procurement, commissioning and supply chain cycles for housing (Arcadis, 2020)

The inter-relationship of the three, distinct processes is ongoing and cyclical, with those from across the sector- suppliers, commissioners (working on behalf of the wider population, within the public sector) and economic buyers- needing to continually engage with, and respond to, each other.

**2)** The maturity of the market. The housing products/service options presented by the market do not always reflect buyer's needs, partly as they are not always well defined or articulated. The significance of this barrier is increased by the changing technology and terms which make a common language harder to find. The market offering is not always understood or familiar to buyers. In addition, the solutions available can be

limited and fail to present a complete solution (a turnkey deliverable, that many are seeking) and many investors are not confident in financing housing that does follow a traditional construction profile.

- **3)** The robustness of governance arrangements. Whilst, strategically, some local authorities are committed to trying new ideas, this ambition does not always follow through to operational teams who have responsibility for implementation. The capacity and skills of leaders (across teams) to drive alternative visions and stretching objectives can be stretched. The risk of the 'unknown unknowns' can undermine plans and a conservative culture can cloud initial aspirations.
- **4)** The quality of key procurement documents. Commercial and procurement strategies, service specifications, contracts and evaluation methodologies can be poorly aligned to the needs of the MMC market. For example, payment terms may need to reflect a different spending profile, with higher upfront payments needed as costs are incurred much earlier in the building process. Current processes do not always allow these nuances to be easily accommodated and can present a barrier to market entry.
- **5)** The understanding and expertise of those carrying out the procurement. Creating and expanding knowledge will be key to the growth of the market and successful procurement arrangements. Findings from this review revealed discomfort and anxiousness emanating from a lack of knowledge which can be an impediment to new solutions. This reflects the findings of the Farmer Review<sup>2</sup>. Driven by gaps in skilled labour, under-performance in productivity, digital disruption and increasing environmental imperatives to address, the construction sector is undergoing a notable transformation. Keeping up with the pace and extent of this is a challenge for those working within construction and an even greater task for those who are, or consider themselves to be, peripheral to it.

## **Opportunities and Recommendations**

In view of these challenges, seven recommendations emerge from this review:

- 1. **Manage procurement exercises using a recognised project management methodology** (for example PRINCE 2, Managing Successful Projects [MSP] or APM, if this does not exist). This will ensure strong leadership, a clear and consistent vision (from the beginning until the end), a robust and well-planned approach, good engagement and management of stakeholders and the evaluation of outcomes and benefits against objectives.
- 2. **Ensure that leaders are in place with the right qualities and available time to drive the whole procurement exercise**, from the outset of the scheme through to completion. Whilst an element of project management (recommendation 1), it is essential that this is in place, to generate the energy, commitment and focus needed for delivering schemes that are innovative.
- 3. **Develop a User Requirement Document (URD) for each procurement exercise,** to bring together the vision, objectives and other key content- to underpin and drive the whole approach. This is critical for the procurement of a housing service/product that has a long life. Used effectively by the MOD for large procurement exercises, the right URD will establish the right framework for decision making- throughout the procurement lifecycle (please see Appendix 4).
- 4. **Introduce a two or three stage procurement approach** to ensure that the market is engaged at the right time and in the most effective way. This will enable a better understanding of all players in terms of what is needed, what is available and strengthen the interface between suppliers, commissioners and buyers (as noted in Exhibit 1). Please see Appendix 3 for more details
- 5. **Ensure time is invested in preparing high quality procurement documents** including the specification, the evaluation methodology and the contract. This will allow them to be adapted and flexible to the needs of different supply chains and the changing marketplace.
- 6. **Establish robust, quality assurance arrangements for the evaluation of tenders.** The evaluation process must be tailored to the shape of the service/product being procured, rather than follow a traditional approach, which will often disadvantage suppliers of MMC housing (for

<sup>&</sup>lt;sup>2</sup> https://www.gov.uk/government/publications/construction-labour-market-in-the-uk-farmer-review

- example, by requiring a long list of credentials and examples of success). An outcomes-based approach and compatible culture may be weighted over and above a demonstrable track record.
- 7. Implement a robust approach to continuous improvement and benefits realisation. In a fast-evolving market, it is important that lessons are learnt to inform future market shaping and procurement activity.

By implementing these actions, the procurement process will be strengthened by bolstering each stage of the procurement cycle- planning, engaging, evaluating and reviewing (please refer to exhibit 1).

• At the planning stage, improving the links to the commissioning function and supply chain (identifying and engaging stakeholders at the very outset) will ensure planning is based on a thorough understanding and appreciation of the market. It must also pull through insights from the review stage of previous projects, to build on knowledge of 'what works' (and what doesn't) within the local context.

Managing procurement exercises using a recognised and structured project management methodology will support linkages across the housing construction sector, as will identifying and ensuring robust leadership- overcoming problems with insufficient time and fragmented oversight.

Documenting the vision, objectives and key outcomes wanted from the project (within a User Requirement Document- a summary tool that captures key thinking and decisions guiding the procurement) will encourage a clear focus and direction from the start.

- At the engagement stage, knowing that traditional terms and contracts fail to align to the needs of MMC suppliers, the implementation of a two or three stage procurement will mean that suppliers needs are better understood and reflected in documents.
- At the evaluation stage- evaluation exercises are often undertaken by those without the understanding of new approaches or familiar with the ambitions and objectives of the scheme. By strengthening the evaluation process and ensuring alignment to the URD, the appraisal framework will be fit for purpose.
- At the review stage- research shows that the last, 'review' stage often fails to happen. It is essential that this is planned for and resourced as part of the critical path to completion so that everyone engaged can learn from the scheme.

#### Conclusion

Whilst acknowledging that many of the recommendations proposed reflect accepted best practice, the findings of this review show that it is not being actively and consistently applied. The barrier this creates is hampering the opportunity for the procurement of new solutions to the housing crisis and, therefore, needs to be overcome to support innovation and transformation.

Although a less rigorous approach can work for a product/service that is familiar (that a procurement team is experienced in buying), feedback for this review indicates that, the failure to follow procurement processes duly can have a significant impact on tendering outcomes, to the detriment of more innovative bids.

As this research reflects a relatively a high-level overview, it is recommended that further work focuses on:

- **Detailed audits of operational procurement processes**. How are procurement teams working together? What is the culture of the team and the organization? Why are new and innovative services/products difficult to introduce? This should explore into the mechanics of team working and draw out local constraints.
- Establishing a learning forum /set for those with an interest in the sector. The use of MMC in housing is evolving rapidly and there is an enthusiasm from those who contributed to this work to stay in touch and share experiences. This will need management and oversight, to capture discussions and ensure that best practice is identified and disseminated.

- A literature review of articles and learning. Nationally and internationally, thought leadership is being regularly published. This should be appraised on an ongoing basis and critiques shared.
- An evaluation of strategic commissioning and the effectiveness of the sector supply chain- whilst this review has focused on the operational procurement process at the centre (please see Exhibit 1), it is accepted that strategic commissioning and the supply chain also need to be tested and better understood, in terms of where they work well, and support innovation within housing, and where there are barriers.

All participants contributing to this work recognised the need and value of deeper and more extensive research, engaging a broader group of stakeholders and developing understanding further, to enable the pace and scale of housing growth required.

## 1. Introduction

## 1.1 The Housing Crisis

Bristol has a housing crisis. A traditional approach to construction is not addressing the issues and there are challenges for the use of modern methods of construction (MMC)<sup>3</sup>, which potentially offers a more efficient solution.

To meet current and future demand, Bristol needs 2000 new homes each year, 800 of which must be affordable. Historic methods of construction are failing to deliver and alternative approaches are being sought to create suitable dwellings for the city's population. By increasing the stock and availability of high-quality housing, Bristol can address a key structural barrier to health equality, inclusive growth and environmental sustainability.

For Bristol Housing Festival (BHF) and Bristol City Council, successfully delivering new and innovative housing which meets social, environmental and economic requirements is a strategic objective and using modern methods of construction (MMC) is at the core of plans to meet this ambition.

MMC presents an opportunity for a more rapid pace of development and homes with the potential to be more sustainable, in the long term. MMC also reflects an opportunity to use land differently (with scope to build on land that could not accommodate homes built using traditional methods) and service properties in a more efficient way.

However, it is recognised that there are many obstacles constraining the growth and development of the use of MMC. Significantly, the market has failed to co-ordinate and align supply and demand. At present, no mechanisms exist to aggregate and provide certainty of demand to manufacturers, which in turn limits the confidence of the sector to invest in and grow its production capacity. In a self-re-enforcing cycle, underinvestment in production then stunts the development of products that buyers want to choose, and the cycle continues. Appendix A provides more details on the challenges before the sector.

## 1.2 The Procurement Challenge

When demand for new housing using MMC does align with supply, the procurement of MMC solutions can be prohibitive. Procurement systems and processes can be conservative in approach and beset with obstacles for those with an innovative offer. In addition, social value is not given sufficient weight and buyer's decisions do not always take account of the potential benefits of MMC, through the whole life-cycle.

Those working in the sector have noted that:

- Current procurement processes can preclude suppliers offering innovative technologies (for example, by expecting detailed case studies and supporting evidence bases before they can qualify to bid).
- Social value is not always a priority within procurement processes nor integral to decision making. This means that the returns on investment can be under-estimated with the true value of new methods, over the whole lifetime, is not recognised.

<sup>&</sup>lt;sup>3 3</sup> MMC is defined according to seven different types of manufacturing, depending on the extent of premanufacturing of the structural system. For more details, please refer to the government definition that can be access through the following link <a href="http://www.cast-consultancy.com/wp-content/uploads/2019/03/MMC-l-Pad-base\_GOVUK-FINAL\_SECURE.pdf">http://www.cast-consultancy.com/wp-content/uploads/2019/03/MMC-l-Pad-base\_GOVUK-FINAL\_SECURE.pdf</a>).

#### 1.3 The Review Focus

# Given these challenges, Arcadis was commissioned to undertake a high-level review of housing procurement

The remit for the work included:

- understanding the obstacles experienced in Bristol and other areas, in the procurement of housing using MMC;
- · exploring how these barriers have been overcome; and
- identifying ways in which the procurement process can be strengthened, practically, to improve the delivery of new housing and the growth of communities.

Whilst undertaken within a short time period (October 2019-January 2020), the approach has engaged a wide number of sector specialists from different organisations though a roundtable event and telephone interviews.

Discussions have covered:

- how the current procurement process supports/hinders innovation in housing;
- how the procurement process needs to evolve to support and enable innovation;
- how social value can become a core and fundamental feature of innovative housing solutions; and
- the challenges before suppliers- why should they invest and take the risk with innovative and new methods?

The resulting data was analysed to identify the emerging themes which form the basis of this paper. Where specific examples are presented, they are included with permission.

This paper brings together the findings and conclusions and sets outs:

- **the challenges** experienced within the sector and how they have been managed/overcome to enable the procurement of pioneering solutions that deliver triple bottom line value (solutions that are effective in delivering social, environmental and economic benefits)
- the opportunities for change; and
- the specific actions that can be taken to enable the achievement of greater social value through the revitalisation of the housing procurement process.

## 2. The Challenges

## 2.1 Five emerging themes

The review identified a number of challenges that can create barriers to the successful procurement of housing using MMC and the delivery of social value.

Five inter-connected constraints were identified. In order of priority, they are:

- 1. The need to clarify and define the operational procurement process, within the wider context
- 2. The maturity of the market
- 3. Governance arrangements
- 4. Ensuring key documents are appropriate and fit for purpose
- 5. Expertise and learning

The first, and core weakness is the extent to which stakeholders understand their role within three distinct, but related processes- the supply cycle, strategic commissioning and operational procurement arrangements (challenge 1). These processes represent three cogs that need to work together harmoniously but this is not happening consistently (challenge 2). The lack of synergy is impacting on the ability of the market to evolve and weakening the governance framework (challenge 3). This contributes to poor procurement documentation (challenge 4) and a perception of insufficient knowledge within procurement teams (challenge 5).

## 2.2 Theme One: Defining Procurement

The first challenge that emerged was the need to clarify what is meant by 'procurement', within this context

Given the complexity of the sector and the differing backgrounds of players that are now entering the space, it is understandable that the importance of an effective interface between procurement, strategic commissioning and the supply chain is not always appreciated. In order to ensure that this review focused on the very specific remit given- the operational, procurement function- it was necessary to develop a model to illustrate the related processes and show how they need to connect.

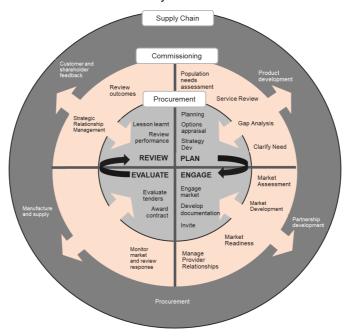


Exhibit 1: PEER- Plan, Engage, Evaluate, Review: The relationship between the procurement, commissioning and supply chain cycles for housing (Arcadis, 2020).

The model shows how the three functions need to work together, at the highest level:

- The supply chain- whilst simplifying accepted supply chain models, the critical points of overlap are
  included; developing products (in response to feedback and learning from service commissioners,
  within the public sector); working in partnership to develop the right routes to market and appropriate
  contracts; and then responding by manufacturing the required units. At the end of the cycle, there is
  the need to work with commissioners to review and evaluate success, to inform ongoing product
  development.
- The commissioning function- sandwiched between the market and the operational procurement process is the role of the service commissioner (or the strategic buyer) within the public sector. Drawing together data on population needs, current delivery, market gaps and future requirements, the commissioning function should support market development (ensuring that manufacturers/suppliers are producing the good or services that the sector wants to buy, in the right quantity and of the right quality) and encouraging market growth, where needed. It is the essential link in the chain and, within the public sector, the means by which Council objectives and values are relayed to suppliers.
- The procurement cycle- at the heart of the model is the operational, procurement process itself. Informed by the outcomes of the commissioning function, the procurement team can *plan* the purchase of the specific goods and services needed. With planning complete, the team then *engage* the market and invite tenders. Following *evaluation*, contracts are awarded and services delivered. As with the other cycles, the procurement process should conclude with a *review of the process* and an appraisal of lessons learnt. This does not mean that lessons learnt should not be sought along the way- both short and longer term learning loops should be incorporated into the process so that the project itself can benefit from interim feedback rather than future projects being the only beneficiary.

It is important that everyone operating within the space is familiar with their own role, the roles of others and the benefits of getting the synergy between the functions and processes right.

Despite the multitude of issues across the sector, the operational procurement cycle, at the heart of the process, is the focus of this review.

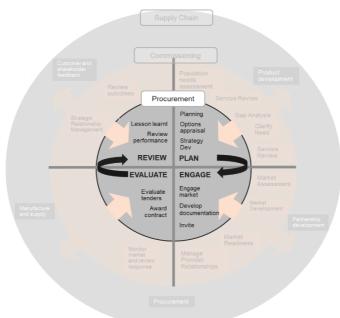


Exhibit 2: The Procurement Process: The Focus of this Review

'We spend too much time in the bottom half of the cycle- engaging with the market and evaluating bids. If this was reversed and we spent more time planning and reviewing, procurement processes would be much more effective'

Head of Procurement, Housing Association

Limiting the scope of review to this particular aspect has allowed discussions to concentrate on the mechanics of procurement- the development of service/product specifications, the evaluation process and contracting arrangements.

The recommendations for change are built around this model and consider the actions needed in each quadrant of the cycle-planning, engaging, evaluating and reviewing.

It is fully acknowledged that investment is also needed to develop commissioning arrangements and supply chains for MMC housing. However, this should form the remit for future work and studies.

## 2.3 Theme Two: Market Maturity

The second challenge is the maturity of the market and the need to improve how the supply chain, commissioning and procurement components work together

The study found four key issues.

1. The need for a complete solution. Arcadis research (2020) shows that, although there are over 30 suppliers of MMC housing in the market, with the potential to deliver over 31,000 units per year, only half say that they offer a turnkey solution. However, this does not necessarily mean the main contractor will be responsible for all the work from manufacture to installation. For instance, once the units have left the factory, installation can be left to an inexperienced sub-contractor. Nonetheless, a complete solution is the ambition and hope of many buyers looking for an MMC solution.

## Case Study: Finding the Preferred Solution

A challenge before one London Borough in procuring an MMC solution was finding a supplier who could deliver all elements needed, on the right framework. Lengthy discussions took place to align the right designer, the right manufacturer and the right main contractor. Although a solution was reached, the difficulty in bringing together the components delayed implementation and increased costs.

2. The interface between the supply chain and the commissioning function and building a sufficient demand pipeline. Although a significant amount of work is taking place to address this issue, major purchasers of housing still need to see the fruits of their recent labour in terms of developing a healthy and sustainable demand profile, collating the needs of commissioners and house-buyers from across the market. Until this is achieved, supplier options will be limited and the full economic and social value of using MMC housing may not be seen. Suppliers need to be confident in the pipeline of future work to justify the investment needed in factories and to create the right workforce.

#### Case Study: Aligning the Market and Buyer Needs

Whilst one Authority had sites that it knew would only be able to accommodate housing using MMC, most suppliers could only offer solutions based on shipping containers. This was not an option that the Authority would consider, aspiring to create a high-quality, permanent community for families and people living in temporary accommodation. This option was available through one provider, but market choice was limited for meeting the criteria set.

3. Investor confidence. As with the second point, this is fast moving area and the ability to attract financing for MMC housing schemes is changing as institutional real estate investors seek to divest from retail. However, in looking back on the obstacles experienced, to date, limited financing options is a common theme, as banks and building societies have been reticent to fund alternative construction methods. For one Housing Association, this barrier was overcome through drawing on their own reserves. However, this is not a sustainable solution as a means of funding homes. Demonstrating and evidencing the longevity of MMC will have a positive impact and establish a more stable platform for growth.

#### Case Study: Circumnavigating Investor Reticence

Within a six-month window, one Housing Association (HA) was able to build over 20 units for young people, aged 16-25.

The mixed community was designed to create an aspirational environment where young people can learn from each other and encourage one another to achieve their goals and positively contribute to their community.

However, when the project was planned, the HA was unable to attract investors to fund the scheme. The land on which the units are situated is leased from the local authority for a ten-year period but investors would only finance the scheme if the lease was thirty years, to meet the criteria for a long term asset.

Given the barrier, the HA drew on their reserves to make the scheme happen. However, this is not replicable and new routes to investment will be needed for other, similar schemes planned.

4. Capacity and capability of suppliers to respond to tenders. As a relatively young sector, with many new, start-up companies, the ability to respond with a high quality and timely bid can be difficult and they may be disadvantaged at the evaluation stage. Many businesses in the sector are described as 'cottage industries' and the expectations of an Official Journal of the European Union (OJEU) competitive procurement exercise can be prohibitive.

#### 2.4 Theme Three: Procurement Governance

The third challenge concerns the quality and robustness of procurement governance

During this review, in respect of the governance arrangements, the following matters were often raised:

• The absence of a single and clear vision- underpinning the procurement process, from the beginning until the end. This can mean that initial aspirations and intentions become detached from the planned schemes, as the procurement process runs its course.

The review found that, as service/product requirements were handed on, through the chain, initial objectives became diluted and elements that were novel or different to that procured previously overlooked or lost. Within organisations that have a central procurement function, rather than a specialist unit, this appears to be a particular risk.

In a conservative culture (and procurement is, traditionally, a sector that favours convention and compliance with well acknowledged norms), maintaining and pursuing a vision that does not follow a traditional approach will require a much stronger grip on the end goal- with time and work needed to ensure all stakeholders are engaged (including procurement teams) and committed to a common ambition.

Within this context, the process is particularly fragmented and project lengths are measured in many years- often longer than employment periods, Suppliers too, will come and go. Preserving the vision, values and principles is essential for securing the intended outcomes.

- The need for clear leadership- following from the importance of a single and agreed vision, consistent and strong leadership is also needed to oversee the whole of the procurement process, to make sure that the vision and objectives remain paramount and drive the exercise. The centralisation of procurement functions in many local authorities, whilst providing a more efficient and effective use of expert resources, can make this difficult. The experience of participants for this review showed that it can be harder to achieve as the capability and capacity needed may not always be available.
- Understanding and managing risk- within the context of MMC housing, there is concern regarding
  the, 'unknown unknowns' and being able to fully appreciate the risks that need to be managed.
   Procurement processes are, by nature, risk averse, as noted above, and focused on compliance.
   This can mean the evaluation process is weighted against innovative offers.

With technology changing so rapidly, and the learning from Grenfell still emerging (Zurich Municipal has warned housing associations and councils of added risks and reduced resilience of MMC solutions), a perceived inability to identify and manage the risks with newer solutions can mean organisations revert to traditional, safer options.

Within the industry, in both traditional and MMC areas, the disaggregation of risks and reallocation through the supply chain compounds the complexity of the risk environment and management framework. Risk is held and managed across a number of stakeholders and it can be difficult to oversee and manage the true quantum within a large scheme.

Capacity and capability- when the request for support is handed to the procurement team, it is
often needed within short timescales. This means that finding the right team (those with experience
and learning in the sector) is difficult and that the time available is commonly insufficient to fully
adhere to best practice.

## 2.5 Theme Four: Quality of Key Documents

Fourthly, the quality of key procurement documents means that service/product specifications, delivery contracts and the evaluation methodologies do not always support new solutions

The review found three areas where this represents an obstacle- the quality and clarity of service specifications, the appropriateness of contract information and the bid evaluation methodology.

#### Service/product specifications

In speaking to participants, it was evident that the significant variety of products and variations in approach, for non-traditional house building, creates a difficulty for those who are responsible for writing tender specifications. There are unfamiliar with the rapidly changing technology (and language) and are not always confident in knowing the right questions to ask. The inclination is to resort to what is known and draw on what has been done before (ie to follow a traditional approach). This can happen even where there is a strong desire and political will to test and use new methods. Urban myths, out of date information and spurious claims by suppliers can add to the fear of the new.

#### **Contracts**

Participants discussed the challenge with traditional contracts, often containing payment terms that do not work for manufacturers of MMC housing. Suppliers incur a higher percentage of their costs early in the manufacturing process, compared to a traditional contractor, which operate on a different cashflow basis with costs accrued at later stages.

In addition, some suppliers of MMC housing are small, new businesses without the support of a corporate balance sheet. They may require payments in advance to be able to deliver the order.

#### **Evaluation methodology**

A study by Trowers Hamlin (not published) found that the evaluation process within housing procurement was particularly risk averse. Even where service/product specifications encourage the use of new technology, as the procurement process progresses, it becomes more conservative and ultimately prioritises the need for regulatory compliance, finding comfort in approaches that are familiar rather than allowing options using newer technology to have a fair appraisal.

This view was also reflected in interviews with participants. Even where there are no legal barriers to entry, culture can prevent the selection of new models through tender review arrangements that favour those with experience, strong credentials and carrying a known brand.

## 2.6 Theme Five: Understanding and Expertise

The fifth and final challenge regards the understanding and expertise of new technology and how it works

The variety of options for MMC housing and the pace of change compounds the complexity of the market and is reflected in the struggle before buyers, seeking to understand and differentiate the services/products available. It can be difficult to evaluate options and understand which is the best solution.

Those procuring housing and wanting to explore and test MMC as a solution, talked of the complexity of the products and feeling concerned about their lack of understanding. Buyers need to feel confident that they are sufficiently educated about the technology to be able to ask the right questions and evaluate the right answers.

"Manufacturers come in and talk to me about their products. One comes in and tells me about their offer and I think, great! That's exactly what we need. Then, the next comes in and that also sounds perfect. I end up confused and don't know enough to be able to compare and discern the best option"

#### Local Authority Housing Lead

Developing knowledge and understanding amongst stakeholders is the key to the growth of the market, effective governance and the development of appropriate service/product specifications and contracts. Homes England are supporting the sector by establishing common definitions, but much work is needed to educate the stakeholders across the whole sector.

## 3. Revitalising the Procurement Process

## 3.1 Opportunities for Improvement

These challenges impact on each of the four stages of the procurement cycle- planning, engaging, evaluating and reviewing. However, if they are all addressed, they represent an opportunity for the evolution and improvement of the whole process. By strengthening arrangements from the beginning to the end, housing options using MMC can be procured more efficiently and effectively.

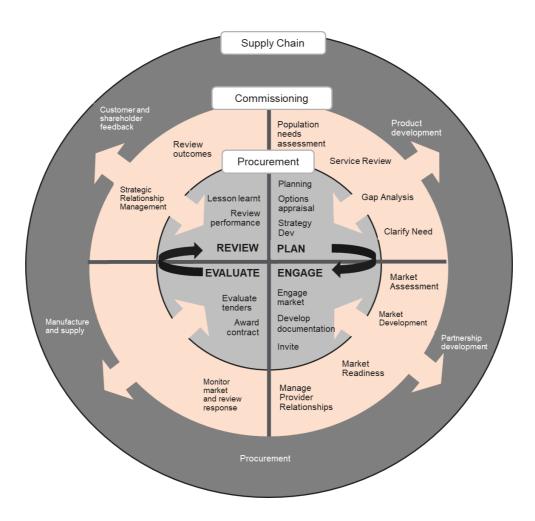


Exhibit 1: PEER- Plan, Engage, Evaluate, Review: The relationship between the procurement, commissioning and supply chain cycles for housing (Arcadis, 2020).

Table 1 summarises the opportunities for improvement at each stage and the recommendations emerging through this review.

Table 1: The challenges, opportunities and recommendations for each stage of the procurement cycle

The Challenges	The Opportunities					
	Planning	Engaging	Evaluation	Reviewing		
Defining procurement	Understanding the relationship between commissioning, the supply chain cycle to ensure the right procurement approach.	Engaging and working with the right people from the market, often including those beyond the main contractor, so that the needs and the right solution can be fully explored.	Embedding evaluation requirements and methods as an integral element of effective procurement, at the outset of the scheme	Recognising the importance of the review phase to support the planning of dynamic procurement approaches, is essential within an immature and rapidly evolving market to build understanding		
Maturity of the market	Through better understanding of the market, those leading the procurement process will be able navigate the complexities and ensure that the right questions are asked, of the right people.	Working with the market, through a staged tendering process, solutions are more likely to emerge that offer a beneficial outcome for both sides.	An appreciation of the reality of the market and the strengths and weaknesses of new entrants should ensure that evaluation methodologies are designed that do not undermine the potential value of new entrants, simply because they do not have historic evidence of delivery.	Effectively reviewing the success of the procurement and the scheme will allow future schemes to benefit from the lessons learnt. In a period of change, it is important for the evolution of the market and the sector.		
Robustness of governance	Ensuring that the right leadership, with the capacity to oversee the procurement process from beginning to end, can provide consistency of focus and keep the over-arching ambitions in sight, at all points.	By engaging with suppliers and the market well, contracts can be developed that align to the terms needed by suppliers.	By developing the evaluation process and moderation arrangements as part of the planning, those leading the procurement can be sure that all tenders are assessed, fairly, against the right criteria.	Designing the evaluation approach and performance measures at the outset means that the final review assesses the scheme against the original objectives and ambitions, to the benefit of the procuring organisation and suppliers.		
Documentation quality	Capturing and locking down core requirements in a user requirement document (URD) means that the original thinking and ambitions of the scheme are recorded and protected. Everything around the procurement process should link back to this.	Suppliers and key players in the market need to contribute to key documents.	Evaluation criteria must reflect the URD and follow through into the assessment methodology.	Gathering feedback from successful and unsuccessful bidders on their perceptions of the effectiveness of procurement documentation and user experience of the procurement process will aid future exercises, for both buyers and suppliers.		
Understanding and expertise	By ensuring that the team has the capacity and capability of the strategic ambitions, the market and the objectives of the particular scheme being procured, the scheme can be set up successfully.					

Recommendations							
	Planning	Engaging	Evaluation	Reviewing			
	1. Run procurement using the organisation's standard project management methodology (or PRINCE 2, if this does not exist)  2. Ensure that a leader is in place to drive the whole procurement exercise, from the outset of the scheme through to completion.  3. Develop user requirement document (URD), to bring together the vision and objectives and other key content- to underpin and drive the whole procurement exercise	4. Introduce a two or three stage procurement approach to ensure that the market is engaged at the right time and in the most effective way  5. Ensure time is invested in preparing high quality (appropriate) procurement documents- including specifications, the evaluation methodology and contracts.	6. Establish robust quality assurance arrangements for the evaluation of tenders.	7. Implement a robust approach to continuous improvement and benefits realisation			

Through the remainder of this section, each quadrant within the procurement cycle will be considered, looking at the opportunities and the seven key recommendations

## 3.2 Planning

#### **Findings summary**

During interviews, the concern was repeatedly raised that the amount of time allowed for planning procurement exercises was rarely enough and that procurement specialists were typically engaged at too late a stage. Therefore, they do not always have access to the scheme history, sufficient comprehension of the wider commercial context or the opportunity to learn about the particular needs and nuances to be addressed.

This issue is compounded by limited time to engage with the right stakeholders (internally and externally) and ensure that the process proceeds with full and complete information.

When solutions were discussed with participants, consistent leadership through the whole of the process and running procurement exercises as projects- using an agreed methodology- were proposed solutions that could make a real difference and enable better outcomes to be achieved- ensuring that the learning from previous procurement exercises inform the approach, rather than repeating previous methodologies which may not be fit for purpose.

#### Recommendation 1: Running procurement as a project

Running the procurement of a specific delivery or service as a project (using a recognised/organisationally agreed methodology, such as PRINCE 2, MSP or APM) will ensure that:

- The work is set up well, with the right people, in the right roles for the right time
- Governance arrangements are clear- leadership and objectives are established and arrangements in place to allow performance and risk management
- The critical path is understood and tasks managed in a timely way.

#### Recommendation 2: Consistent leadership and the right team

Leadership throughout the process is important as it means that the authority, energy and commitment required to drive the delivery of the scheme objectives is constant from the start to through to completion. Our work indicated that internal structures can contribute to a fragmented process, with the team/individual commencing the procurement (and with the ambitions and hopes for the scheme) handing it over to a procurement function that isn't alert to the same vision.

By engaging/assigning leadership to the right person (or people) at the outset, within a programme management approach, they will be cognisant of the objectives and why they matter.

It is not simply the right 'leaders'- it is having members of the procurement team displaying the right leadership qualities at every stage- honesty, integrity, confidence, commitment, passion, effective communication and accountability, in particular.

#### **Recommendation 3: User Requirement Document**

A user requirement document (URD) will clarify the purpose of the procurement, the leadership team, what is needed, quality standards and the approval process (Appendix 4 offers further details on the potential content).

#### **DEVELOPING A URD**

#### WHAT IS THE PURPOSE OF A URD?

The URD articulates the main requirement of the procurement exercise- what needs to be delivered? What is the gap in provision of services that can only be fulfilled by this detailed set of requirements (the capability gap)?

#### WHO SHOULD PREPARE IT/DRIVE THE PREPARATION?

The senior leadership team and key stakeholders

Stakeholders will have conducted a feasibility study and value for money appraisal as part of the URD preparation.

#### WHAT DOES IT LOOK LIKE?

Normally a spreadsheet with a few (approximately 10 or fewer) top level Key User Requirements (KURs), each flowing down into several lower-level User Requirements (URs).

Each KUR will explain the requirement in output terms, i.e. what has to be achieved. It does not articulate what has to be procured (this should be covered in the Commercial and Procurement Strategy).

Each KUR describes the minimum Threshold standard, i.e. the minimum below which the capability gap cannot be achieved. This is the level that determines the funding approval.

Each KUR normally also has an upper level or Objective standard, i.e. the additional benefit that could be achieved which is not funded, but which could add value, such as future-proofing, or greater sustainability.

Some KURs are mandatory, i.e. regulatory or legal requirements and they do not need to show Threshold or Objective levels.

#### WHO SHOULD APPROVE IT?

The URD needs sign off by the Senior Responsible Officer and would normally be circulated to the stakeholder panel well in advance of the procurement competition. The URD forms a precursor to the Commissioning and Procurement Strategy.

Several URDs may have to be listed in order of priority by the approval board in order to determine funding and the go/no-go of each project in the programme.

There are a number of advantages of investing in a URD for housing procurement.

- Detailed thinking and planning is undertaken at the right time, by the right people. All key stakeholders, internal and external (including supply chain partners) need to be engaged in developing and agreeing the URD. This will ensure that the right requirements are stipulated and are well understood.
- Sign off must be by all key stakeholders. Once this is done, requirements are locked down.
   There is no scope for change, save in exceptional changes in circumstances and with clear and robust controls and governance in place for managing change.
- **Longevity.** From its development at the very outset of the procurement process, the URD may last beyond the time that key officers stay in their posts and, therefore, can function as the corporate memory. Having this document is essential to be able to review the success of the procurement, which may only be tested a number of years later.
- The URD permeates and drives all key procurement documents. It ensures cohesion and consistency through flowing directly into:
  - the procurement strategy
  - the service/product specification
  - the contract
  - · the tender evaluation framework
  - delivery performance standards and expected benefits
  - the post procurement review framework
- Social value can be incorporated. During the review, social value was discussed to understand
  how it was factored into the procurement of MMC schemes. In terms of employment and economic
  value, responses suggested that:
  - MMC can present a risk to the achievement of social value within the locality (if using economic metrics alone) as the manufacturers of units are frequently not in the area of the buyer. Thus, they do not readily enable the employment of the local population. Over 50% of suppliers known to Arcadis are based in the north of England (14/27), another is in Malaysia and yet another in Turkey. As a result, local authorities are considering how they can build/create their own manufacturing units to optimise the return on the investment to the local economy through job creation and the benefit of the whole, local, supply chain.
  - Even where there is a social value policy, it does not always filter through to procurement and delivery.

Through the URD, social value can be addressed by:

- Compartmentalising the key phases of construction work and specifying the use of local labour, wherever possible (even if the units are built some distance away from the region).
   This approach is being used in community housing in Leeds, where units are installed and left in a pre-finished state, with the final fit out being undertaken by a local employer.
- Looking at the whole life cycle of the development and stipulating the use of local organisations for the delivery of repairs and maintenance, for instance.

Ensuring the monetisation of social value within the business case/ scheme appraisal. This
is critical in ensuring full recognition of the economic advantage of using MMC, through the
life of the asset

## Case Study- Effective Alignment of the Procurement, Commissioning and the Supply Chain Cycles Manchester Region

Manchester needs 10,000 new homes to be built every year to keep up with the demand for housing in the city. Against this backdrop, 16 housing providers from across the Greater Manchester area have started to work together to develop a new approach and find a new solution. Currently (as at January 2020), this is planned to involve:

- The agreement of a shared vision
- A single and substantive demand pipeline
- A shared outline specification
- A shared business case, covering all providers
- A pilot site, to test the best delivery option (for c200 units)
- A single client team, to avoid resource duplication and present a single voice to the market
- A governance model to co-ordinate the delivery of the vision and strategy and co-ordinate related activity
- The development of a related local industrial strategy, that will support the growth in the skills capacity and capability needed to deliver the homes

## 3.3 Engaging

#### **Findings Summary**

Findings from this review suggest that engaging suppliers through traditional procurement routes and contracts do not always work for housing using MMC.

In respect of procurement routes, whilst there can be advantages to using established frameworks (for example, the due diligence work is undertaken on behalf of users and rates agreed may represent value for money), concerns were raised that they can be costly to use and they do not always allow buyers to piece together the solution 'package' that best suits their needs. They can also preclude new entrants to the market. It is not always possible to find the right framework, with the right product, the right supplier and the right price.

Another mechanism being employed currently includes creative land disposal. Rather than procure housing for a specific area of land, the land is sold to a developer with an agreement to construct housing on the site, according to a stipulated profile. It means that procurement barriers are bypassed and it can encourage trust and effective partnership working. However, it can also reduce the buyers control over the scheme and the benefits of a strong procurement process are lost (including, for example, the engagement of a wider group of stakeholders in contributing to the requirements and specifications of the scheme).

A further option that could be employed is the establishment of a joint venture. A joint venture is a business entity created by two or more parties, generally characterised by shared ownership, returns, risks, and governance. Although it would enable a clear focus on the achievement of a set of outcomes, it would commit the procuring organisation to a long term relationship with one supplier and can be costly and complex to set up

When inviting the market to respond, the outcomes of detailed planning work needs to inform the procurement route and the development of key procurement documents, including specifications and draft contracts.

#### Recommendation 4: Two/three Stage Procurement Process

Participants in the review and the experience of Arcadis suggest that a two-stage approach to procurement may overcome these barriers. An appraisal of the procurement routes currently being taken, in this context, and their relative advantages and disadvantages is included in Appendix 3.

Whilst there are some disadvantages to a two-stage exercise, such as an extended procurement lead time and the potential for price escalation, there are significant advantages for a sector that is rapidly evolving and changing. They include:

- Engaging prospective bidders in the definition of the technical specifications and scope of work.
- Ensuring that the final, preferred bidder has a good understanding of the requirements, reducing the implementation risks.
- · Financial proposals only being submitted after reaching agreement on the technical specifications
- A contract negotiated on the basis of the agreed technical specifications
- More certainty regarding the qualifications of the preferred bidder.

#### Recommendation 5: Invest in the preparation of high quality (appropriate) procurement documents

In a traditional build, the cost profile is very different to an MMC development where costs are incurred at a much earlier stage (70-80% are incurred before any site work). Given this, suppliers need a different payment profile and buyers a different contract.

This needs to be fully understood and flexibility permitted to accommodate the position of the selected contractor and their supply chain. Discussions with MMC providers shows that buyers made need to think about offering a variety of terms, including monthly call off or staged payments. Some may require an upfront percentage payment when the order is placed.

Time needs to be invested early in the process to look at the options for the contract and payment mechanisms. Contracts must refer to the URD and the feedback received from suppliers, during the planning stage.

## 3.4 Evaluating

#### **Findings Summary**

Frequently working to tight timescales, the evaluation of tenders is often undertaken within a compressed period, by teams (including legal representatives) whose primary concern can be compliance and avoiding unnecessary risk, as previously noted.

One participant described the team, at this stage, as simply, 'worn down by the challenges'. Evaluation can be viewed as the final hurdle, rather than a means of achieving a clear set of outcomes that will contribute to the social and economic wellbeing of the area.

#### Recommendation 6: Agree a Tender Evaluation Methodology Aligned to the URD

This challenge can be overcome through the management of the procurement process as a project and ensuring that the evaluation stage allows:

- An approach that reflects the URD- this should include an appraisal of social value, over the life of the housing
- Sufficient time
- Evaluation teams that have the right expertise

 A considered and planned moderation approach, to ensure fairness and consistency with the specification

## 3.5 Reviewing

#### **Findings Summary**

The review stage is often overlooked and lessons are not learnt for future exercises.

#### Recommendation 7: Implement a Robust Post Procurement Review Methodology

In treating the procurement process as a project, plans should be drawn up, at the commencement of the work, for post implementation reviews, at different stages (for example, immediately after the procurement process and then one, five and ten years post completion). Expected benefits from the URD should frame the approach, which must flow from the key user requirements. This may include, for example:

- Specific local employment opportunities (for example, a certain number of jobs over the life of the scheme)
- Skills development schemes
- The achievement of specific sustainability target such as reduced energy consumption (compared to other units).

An evaluation methodology, delivered by a capable and experienced team, may follow the example approach below:

#### 1. Post procurement review

The objective of this stage is to assess how well and effectively the procurement process worked, from the planning stage through to contract delivery and the completion of the construction phase. It should take a 360° view of the process and engage internal and external stakeholders. How did it feel to suppliers? What were their frustrations and what would have made the process better?

#### 2. Evaluation of scheme - one-year post delivery

The objective of this stage is to prepare a report which assesses how effectively the scheme is beginning to achieve the benefits expected for the community. Again, a broad spectrum of stakeholders should be engaged and measures of cost and quality used to test performance against expectations.

#### 3. Evaluation of scheme - five to ten years post delivery

Based on the URD, reviews should use a variety of data sources (for example, interviews with inhabitants, household energy consumption, repairs and maintenance costs) to test whether the initial ambitions for the scheme have been realised. What worked well and should be replicated and what lessons can be learnt to inform future plans?

It is essential that this final, learning stage, does not get overlooked, particularly within the context of trialing and testing new technologies and approaches. Whilst it is accepted that many of the lessons and recommendations coming from this work can be applied to all procurement exercises, it is even more critical in this scenario.

By implementing the recommendations proposed at each stage of the cycle, the procurement process can support and facilitate innovation rather than be a barrier.

## 4. Conclusion

Whilst acknowledging that many of the recommendations proposed reflect accepted best practice, the findings of this review show that it is not being actively and consistently applied. This is hampering the procurement of new solutions to the housing crisis and, therefore, needs to be overcome to support innovation and transformation.

Although a less rigorous approach can work for a product/service that is familiar (that a procurement team is experienced in buying), feedback for this review indicates that, the failure to follow procurement processes duly can have a significant impact on tendering outcomes, to the detriment of more innovative bids, within this context.

As this research reflects a relatively a high-level overview, it is recommended that further work focuses on:

- **Detailed audits of operational procurement processes**. How are procurement teams working together? What is the culture of the team and the organization? Why are new and innovative services/products difficult to introduce? This should explore into the mechanics of team working and draw out local constraints.
- Establishing a learning forum /set for those with an interest in the sector. The use of MMC in housing is evolving rapidly and there is an enthusiasm from those who contributed to this work to stay in touch and share experiences. This will need management and oversight, to capture discussions and ensure that best practice is identified and disseminated.
- A literature review of articles and learning. Nationally and internationally, thought leadership is being regularly published. This should be appraised on an ongoing basis and critiques shared.
- An evaluation of strategic commissioning and the effectiveness of the sector supply chain- whilst
  this review has focused on the operational procurement process at the centre (please see Exhibit 1), it is
  accepted that strategic commissioning and the supply chain also need to be tested and better
  understood, in terms of where they work well, and support innovation within housing, and where there are
  barriers.

All participants contributing to this work recognised the need and value of deeper and more extensive research in this area, engaging a broader group of stakeholders and developing understanding further, to enable the pace and scale of housing growth required.

## **Appendix A: Sector Background**

#### The policy and strategic context

The need for a clear policy and strategic focus to reinforce the value and place of innovative methods and change in the sector should not be bypassed. It is critical that Local Authority Housing Plans endorse and support MMC. They provide an important mandate for transformation and a lever for operational change. By establishing MMC as an option within strategic plans and policies, Development Control teams will be able to pass approval more readily. The monetisation and inclusion of social value in supporting cases will also add weight.

In terms of the planning process, if MMC schemes can be identified at an early stage (eg as an opportunity to unlock an unviable site, if a cost advantage can be realised)- this can help to support a credible MMC pipeline and strengthen the supply chain.

#### The MMC Housing Supply Chain

The supply chain for MMC housing is more intricate than for most products. It needs to include:

- · manufacturers and their material suppliers
- land acquisition and planning
- · site preparation work and groundworks
- · delivery of finished goods
- installation

All of these elements can be problematic when using new technology and approaches. For the supply chain to operate effectively, it needs:

- · an integrated supply chain
- · aggregated demand- to drive investment and the ability to drive efficiencies
- to be based on a design for excellence approach (covering manufacture, assembly, transportation, site installation, commissioning, maintenance/service)
- to design for target unit cost (not replying on production volume alone to reduce manufacturing to costs)

#### Evidence of market failure

The combination of supply chain issues and the need for a robust strategic and policy framework, in many places, is the cause of the main failures in the market. These are reflected in:

- the shrinking workforce (projections project that we will lose 20-25% of the labour workforce in the next decade (2016 Farmer Review)
- the lack of productivity (the construction industry has low levels relative to other sectors)
- poor predictability (due to poor weather or unforeseen ground conditions)
- low industry margins (low profitability in the sector, despite output of over £100 bn pa)
- lack of collaboration and improvement culture (the culture of using sub contractors means that the market is fragmented, and that transformation is slow).

# **Appendix B: MMC Procurement Routes**

Whilst not a comprehensive analysis of available procurement routes, the table summarises the routes discussed during this review along with their merits and weaknesses

Procurement routes	•		Disadvantages	
Framework	A procurement framework is an agreement put in place with a provider or range of providers that enables buyers to place orders for services without running lengthy full tendering exercises.	There are frameworks in place that allow the procurement of MMC housing using a number of different suppliers. Value for money and due diligence checks completed by the framework manager	Options are limited in terms of frameworks that offer the solutions that Councils are looking to buy They can preclude organisations from working together May not contain newer entrants to the marker Can be costly Not always the best value for money (time/quality compromise) Can be challenging for non-standard builds	
Creative land disposal			Loss of local authority control Benefits of a robust procurement process may be lost- including mechanisms to ensure the integration of social value within contracts. Whole life value not recognised	
Joint Venture  A joint venture is a business entity created by two or more parties, generally characterized by shared ownership, shared returns and risks, and shared governance.		Focused on achieving a specific set of outcomes in partnership with key stakeholders.  Onus on/encourages long-term strategic relationships between partner organisations	Can be costly and take time to set up. Governance arrangements can be complex. Commits the procuring organisation to a supplier.	
Two-stage procurement process	The first stage is used for determining responsiveness to the request for offers and for clarifying and reaching agreement on the technical specifications Stage two is for receiving the final offer of the technically highest ranked firm. In this second stage, if an agreement is reached, the technical specifications or terms of reference are finalized and the highest ranked firm is invited to first submit a financial proposal based on the agreed technical solution, and then to contract negotiations.	Flexible approach to awarding contracts because it allows participation of prospective bidders in the definition of the technical specifications and scope of work. The preferred bidder is more likely to have a good understanding of the requirement, which reduces risks in the implementation of the contract.  Prospective bidders are able to make suggestions for improvement of the technical specifications and scope of work of the assignment The technical approach and methodology can be adjusted to suit the agreed technical specifications Risk is minimized given the early involvement of prospective bidders A financial proposal is submitted only after reaching agreement on the technical specifications A contract is negotiated on the basis of the agreed technical specifications More certainty regarding the qualifications of the preferred bidder	Competitive tenders require numerous bidders to prepare tender submissions at risk - reducing profitability of unsuccessful bidders  Extended procurement lead-time due to two stage submission process.  Second stage negotiations with the highest ranked bidder could prove difficult and protracted.  There is risk of price escalation, and negotiations becoming adversarial in the second stage.  Once a firm is selected for negotiations, competition is lost, and this may impact price.	

## **Appendix C: Study Participants**

This review has been overseen and guided by the members of the Bristol Housing Festival Team and Nick James, from Futureground.

Feedback on procurement challenges at an organisational level has been generously provided from:

- United Communities
- Clarion Housing Group
- Peabody
- · Bolton at Home

At a project level, we have gathered reflections on those involved with schemes in

- Barking
- Bromley
- Bristol
- Hackney
- Bolton
- Greater Manchester

From within Arcadis, sector specialists in local government, MMC, procurement and supply chain management have shared their learning and perspectives.

We are very grateful to all participants who contributed to this work.

## **Appendix 4: Example User Requirement Document Content**

A User Requirement Document may include:

- General Description
  - o Single statement of user need- the overall purpose of the procurement
  - Timing and priority
  - o Background
  - Justification
  - o Impact statement- the cost/impact of failing to deliver
  - Constraints
  - Interdependencies
  - Assumptions
- Statutory and local standards and requirements
- User requirements
  - Threshold- minimum
  - Objective- maximum- above which the cost would not justify any additional value

#	Requirement	Justification	Owner	Validation criteria		Priority	Notes
				threshold	objective		
1							
2							
3							

Key supporting documents



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