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Best Practice in Design of Public-Private Partnerships (PPPs) for Social Infrastructure, particularly in Health Care and Education

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1 Executive Summary

1.1 Purpose of this Report

This report has been prepared by Foster Infrastructure for the APEC Business Advisory Council. It presents the findings of a desktop research study of mechanisms used to promote good design outcomes in social infrastructure Public Private Partnerships (PPPs) in economies with well-developed social infrastructure PPP programs. These findings are intended to provide guidance for government officials from APEC economies on best practice in this field so as to deliver successful social infrastructure PPPs, particularly in the healthcare and education sectors.

1.2 The importance of design in PPPs

The design of social infrastructure, particularly in healthcare and education, is of great importance, regardless of whether the infrastructure is delivered through a PPP or by other means. In this context, design considerations can be divided into two broad categories:

- Functional design, which enables the effective and efficient delivery of health and education services.
- Urban design and master planning considerations, which provide an appropriate environment, ensure the facility fits within its surrounds, and allow for potential expansion in the future.

A PPP provides opportunities and incentives for the private sector contractor to innovate in the design of the facility. The PPP also results in the private sector contractor taking much of the design related risk of the project, protecting government against the financial consequences of the design being incapable of delivering the required outputs.

1.3 Mechanisms to promote good design in social infrastructure PPPs

Economies with well-developed PPP Frameworks have, through experience, developed a range of mechanisms to promote good design in social infrastructure PPPs. These mechanisms have been influenced by broader procurement regulations and policy considerations, such as the need for fairness and transparency in government procurement.

Section 4 of this report examines a range of different mechanisms that are used at different stages of the PPP process. The benefits and risks of these mechanisms vary in their significance depending upon a range of factors, including the particular PPP model being used, the applicable legal system, and the relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.

1.4 Recommendations

Based on the analysis in this report of mechanisms used in PPP Frameworks to promote good design outcomes, Foster Infrastructure has identified the following recommendations for governments wishing to promote best practice in design for social infrastructure PPPs:

- 1. Governments should identify an appropriate combination of mechanisms to promote design outcomes through the stages of the PPP lifecycle, taking into account relevant factors such as the particular PPP model being used, the**

- applicable legal system, and the relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.
2. Action taken in the earlier stages of the PPP process will have the greatest impact upon design outcomes. Governments should therefore devote sufficient time and allow sufficient resources for proper consideration of design issues during the project development phase of PPPs.
 3. Governments should develop functional briefs to provide a robust foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.
 4. Governments should involve user groups in PPP project development due to their understanding of how design influences service delivery, but should also ensure that project teams carefully manage these groups.
 5. For projects that involve complex design issues, government should consider conducting market sounding in relation to these issues prior to commencement of the formal tender process. However the market sounding process should be carefully managed.
 6. Government architects can provide expertise that enhances the effectiveness of other design related activities throughout the PPP lifecycle.
 7. Governments should consider establishing community advisory groups as a means of two-way communication between the project team and the community, particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.
 8. Governments should establish mechanisms for interaction between government and bidders during the tender process to ensure that the design solutions developed by bidders meet government's needs. This process should not be structured as a negotiation of government's design requirements, as these requirements should have been fully developed prior to the tender process. The focus of the interaction should be on ensuring the bidders understand these requirements.
 9. Governments should only require bidders to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.
 10. Governments should only mandate the overall design where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.
 11. Provided the risks can be managed by the project team and it is permissible under the relevant procurement rules, governments should use qualitative evaluation of bidders' designs in order to drive good design outcomes.
 12. Governments should ensure that designs are sufficiently developed by bidders during the competitive tender process so that any subsequent design review need only focus on compliance of the detailed design documentation with the PPP

contract. The design review process must be carefully managed to prevent government taking back risk.

2 Methodology

In 2011, APEC ministers and senior officials identified best practice in design of PPPs for social infrastructure as a key area of interest.

“Design of PPPs” can have a number of different meanings. For example, it may refer to designing the commercial structure of PPP projects, or to architectural and engineering design of the facility. Following discussions with the APEC Business Advisory Council, Foster Infrastructure agreed to develop this report with a focus on the architectural and engineering design elements of PPPs.

This report documents the outcomes of a desktop research study of processes used by economies with well-developed PPP programs to drive high quality design outcomes in social infrastructure. The body of the report is structured as an examination of the mechanisms by which design can be influenced at different stages of the PPP procurement process, drawing on best practice from a range of countries. The key risks and benefits of each mechanism have been identified. This has enabled conclusions to be drawn as to the relative merits of the various mechanisms, and the extent to which they are complementary or substitutes for one another.

3 Background – Design in PPPs

The design of social infrastructure, particularly in healthcare and education, is of great importance, regardless of whether the infrastructure is delivered through a PPP or by other means. In this context, design considerations can be divided into two broad categories:

- **Functional design** of the infrastructure is critical to enable the effective and efficient delivery of health and education services.
- **Urban design and master planning** considerations are also important to provide an appropriate environment, ensure the facility fits within its surrounds, and allow for potential expansion in the future.

When healthcare or education infrastructure is delivered as a PPP, a private sector contractor is typically engaged to design, construct, finance and maintain (and in some cases operate) the facility. The PPP contract is generally expressed in terms of the outputs that the contractor must deliver, rather than the inputs or the design that must be delivered. The bundling together of responsibility for design, construction, finance and maintenance and use of an output specification together provide opportunities and incentives for the private sector contractor to innovate in the design of the facility. The PPP also results in the private sector contractor taking much of the design related risk of the project, protecting government against the financial consequences of the design being incapable of delivering the required outputs.

A question arises as to how government can best drive desirable design outcomes, while ensuring that the private sector accepts an appropriate level of design related risk and is given scope to innovate in designing the infrastructure. If government intervenes inappropriately in relation to design issues, it may take back design risk from the private sector (see Box 1) or constrain innovation. It is therefore important for governments to understand and share best practice PPP procurement methodologies that help to drive high quality design outcomes without compromising risk transfer or innovation.

Section 4 of this paper sets out the benefits and risks of the common mechanisms used by economies with well-developed PPP programs to drive high quality design outcomes in social infrastructure.

Box 1: Taking back design risk

When a private sector contractor designs infrastructure under a PPP contract, it takes the risk that the design will not be constructable or will not enable it to meet the performance requirements under the PPP contract.

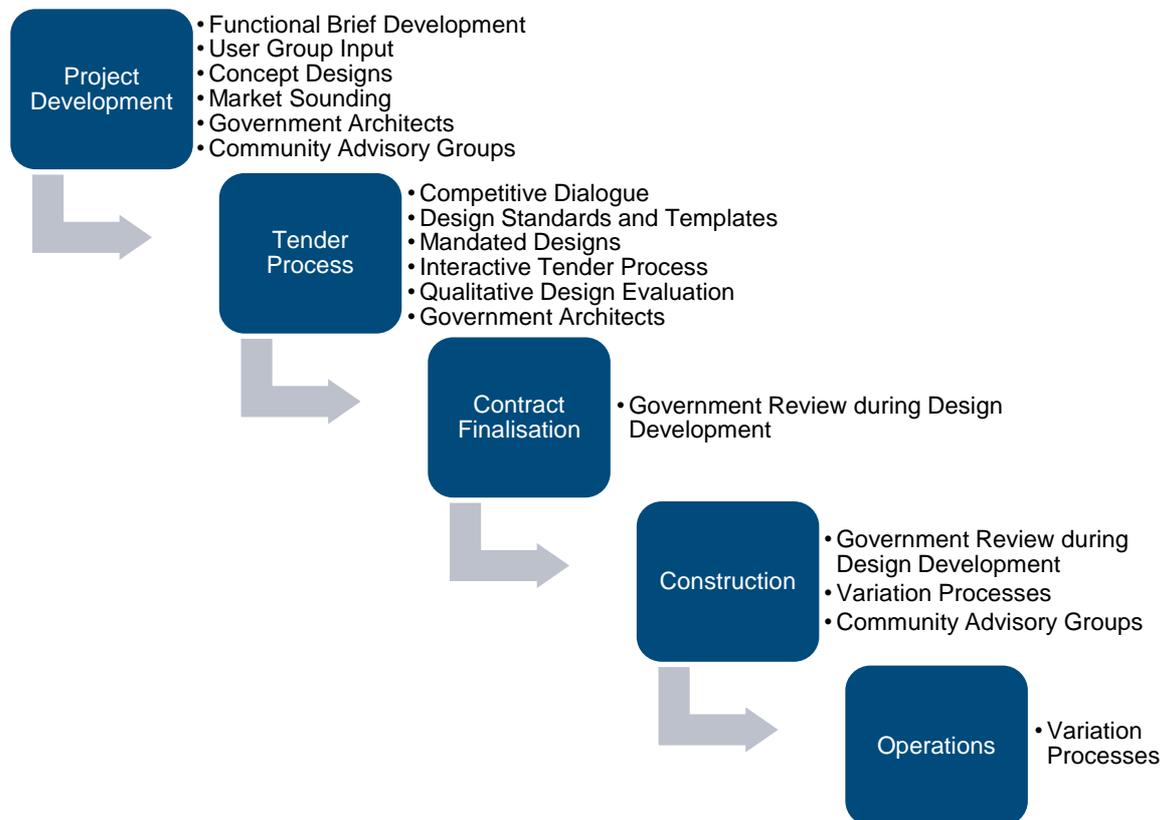
If government inappropriately intervenes in relation to design issues, the private sector contractor may claim that any problems experienced in construction or operation of the infrastructure are a result of government's intervention, not any failure on the part of the private party. The private sector contractor may therefore seek compensation or relief from government in respect of these issues. In effect, government will have "taken back" the design risk that it believed it had transferred to the private sector contractor.

For example, if government engages a private sector contractor to design, build, finance and maintain a PPP school, the contractor would ordinarily take the risk that additional costs are incurred because windows are accidentally broken more often than forecast. However, if government directs the contractor to use a particular window design that is more prone to accidental breakage than the design proposed by the contractor, the contractor may be able to argue that government should bear the additional costs of repairing the windows, as these costs are a result of the government direction.

4 Design-related mechanisms through the PPP lifecycle

Governments with well-developed PPP programs have developed a range of mechanisms that are used at various stages during the PPP lifecycle to drive good design outcomes. The processes examined in this report are set out in Figure 1.

Figure 1: Design-related mechanisms through the PPP lifecycle



The benefits and risks of each of these mechanisms are discussed below.

The government project team for a PPP generally appoints and makes use of technical advisers (such as architects and engineers) at appropriate points through the PPP lifecycle. Engagement of these advisers is not discussed below, as it is common practice and should be a standard part of the process for social infrastructure PPPs.

4.1 Project Development Phase

During the project development phase of a PPP, government assembles the necessary resources for the project and develops the project structure, scope and commercial principles, in readiness for the formal tender process¹. Significant work should be undertaken at this time to develop and document government's design-related requirements.

¹ Infrastructure Australia, "National PPP Guidelines: Volume 2: Practitioners' Guide" (March 2011), page 6. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

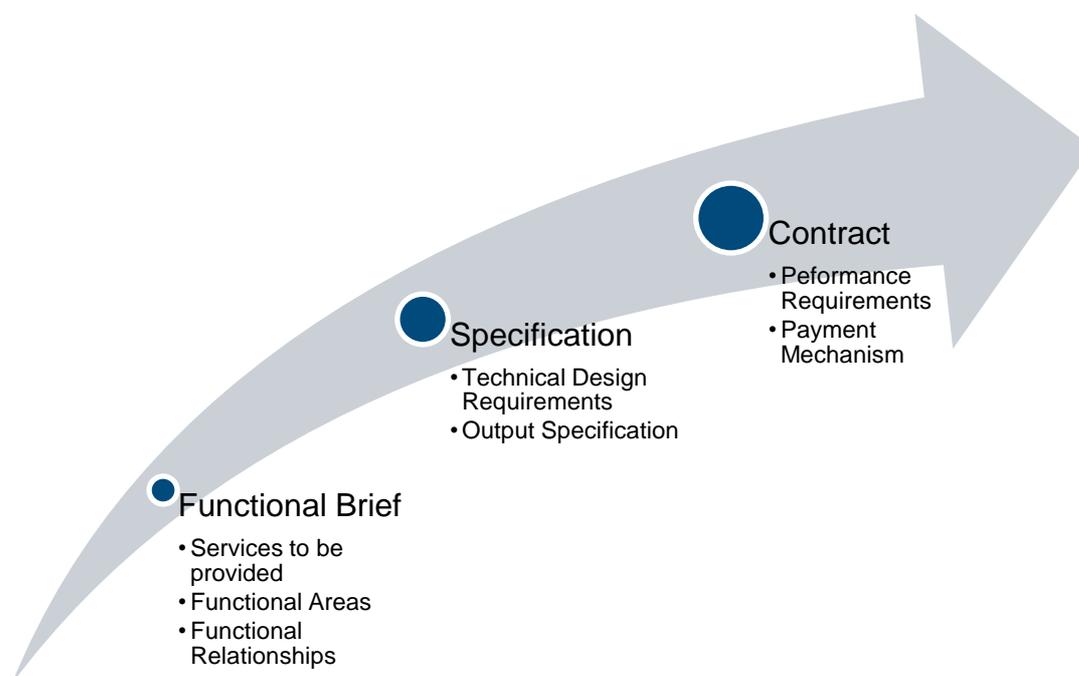
4.1.1 Functional Brief Development

Design activities in the project development phase of a social infrastructure PPP generally commence with the preparation of a functional brief², which typically sets out:

- The services that will be provided within the facility (for example emergency treatment and surgery are two of the services within a hospital)
- The functional areas required to deliver those services (for example, an emergency department for the delivery of emergency treatment; operating theatres for the delivery of surgery)
- The functional relationships between the different elements of the design (for example, the need for connectivity between the emergency department and operating theatres).

The functional brief is an important input into the subsequent development of the technical design requirements and output specification for the project, and then the performance requirements and payment mechanism that are incorporated into the PPP contract.

Figure 2: The Relationship between the Functional Brief, the Specification and the Contract



The technical design requirements set out the minimum architectural and engineering performance specifications that must be incorporated into the design of the facility³. The

² For an example of a functional brief for a complex hospital project, see South Australian Department of Health, “New Royal Adelaide Hospital Project: Schedule 18 – Design Specifications: Functional Brief”. (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/e1466e00479780d68eb9fe2e504170d4/new+RAH+Functional+Brief+1.0.pdf?MOD=AJPERES&CACHEID=e1466e00479780d68eb9fe2e504170d4>.)

output specification defines the service outputs that the contractor will provide. The performance requirements and payment mechanism provide the commercial framework that incentivises the contractor to meet the technical design requirements and deliver the required outputs.

Table 1 sets out the key benefits and risks of functional brief development.

Table 1: Benefits and Risks of Functional Brief Development

Benefits	Risks
<ul style="list-style-type: none"> • A functional brief is a key foundation for ensuring that the specification and the contract will promote desirable design outcomes • A functional brief enables government to “step back” and focus on the functionality that it requires from the design, rather than specific design solutions 	<ul style="list-style-type: none"> • It can be difficult for a project team to develop a functional brief that describes future requirements, rather than reflecting current practices

In summary, the functional brief is an important tool that provides a foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.

4.1.2 User Group Input

For a functional brief to be effective, it must be developed with a strong understanding of the services that will be delivered within the PPP facility. This understanding is best developed through consultation with users of similar facilities, particularly those who will use the new facility once it is built. To secure this input, project teams typically establish user groups and consult with them through workshops and similar processes.

In a hospital PPP, the key user group members are clinical staff, such as doctors and nurses. In a schools PPP, the key user group members are teaching staff.

For example, in a major hospital PPP in Australia:

Staff have been participating in user group workshops to review and update the functional design brief for the hospital, which will include consideration of departmental design, equipment and models of service delivery⁴.

Table 2 sets out the key benefits and risks of user group input.

³ For an example of the technical design requirements for a complex hospital project, see South Australian Department of Health, “New Royal Adelaide Hospital Project: Schedule 18 – Design Specifications: Technical Specification”. (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/beda5080479781bb8ec1fe2e504170d4/new+RAH+Technical+Specification+1.0.pdf?MOD=AJPERES&CACHEID=beda5080479781bb8ec1fe2e504170d4>.)

⁴ Queensland Government, “Sunshine Coast University Hospital FAQs”. (Available at: <http://www.health.qld.gov.au/scuhospital/faqs.asp>.)

Table 2: Benefits and Risks of User Group Input

Benefits	Risks
<ul style="list-style-type: none"> • User groups enable future users of the facility (or users of similar facilities) to provide input to the design requirements, particularly in relation to functional design • User groups can provide future users of the facility with an understanding of the design process and design issues, which contributes to good outcomes in the change management process that occurs when staff transfer into the newly completed PPP facility 	<ul style="list-style-type: none"> • Unless carefully managed, the user group process may be time consuming for the project team, without making a significant contribution to good design outcomes • Giving users access to detail of a concept design (see section 4.1.3) at the project development phase may lead them to expect that this design is what will be delivered, leading to dissatisfaction if the winning bidder proposes a significantly different design

User groups generally provide significant value in PPP project development due to their understanding of how design influences service delivery. However user groups should be carefully managed by the project team to mitigate the risks identified in Table 2.

4.1.3 Concept Designs

Following development of the functional brief, involving user groups as required, government's project team can create a concept design that represents one possible design solution that delivers the functional requirements.

The concept design is intended to further develop the project team's understanding of the design issues associated with the project, but it is not a design that the successful PPP bidder will be required to follow.

The level of detail developed in a concept design can depend upon the needs of the project. The more complex the design issues associated with the project, the more value there is in developing a detailed concept design to understand those issues. For example, a primary school with relatively simple functional requirements to be located on a relatively large site may only require a high level concept design, whereas a major hospital with complex functional relationships and a constrained site may benefit from more detailed concept design work.

Table 3 sets out the key benefits and risks of preparation by government of concept designs. The benefits are significant, and indicate that preparation by government of a concept design can play a key role in validating that government understands what design outcomes are required of the project, ensuring that the project delivers its expected outcomes. However care is needed to ensure that the right level of detail is developed in the concept design, so that the benefits are delivered without unnecessary costs and without raising inappropriate stakeholder expectations of the project by promoting a design that will not be built.

Table 3: Benefits and Risks of Concept Designs

Benefits	Risks
<ul style="list-style-type: none"> • Concept designs enable government to better understand potential design outcomes that will deliver the functional requirements • Concept designs provide government with a better understanding of any specific design challenges associated with the project • Concept designs provide a more informed basis on which government can develop the specification • Concept designs can assist government to refine the scope of the PPP and assist government to identify elements that should be procured separately from the PPP⁵ • Concept designs can assist government in engagement with user groups and the community 	<ul style="list-style-type: none"> • Stakeholders may assume the concept design is what will be built, and may be disappointed if the winning bidder proposes a significantly different design • The cost of preparing a concept design may be viewed as a waste of funds, given the concept design will not be built

4.1.4 Market Sounding

Some PPP Frameworks and audit authorities recommend that government should conduct dialogue with potential bidders about the design of assets before conducting a formal tender process⁶. This dialogue commonly forms part of a market sounding process, which might also be used to gauge and develop market interest in the project.

Market sounding must always be carefully conducted to ensure that government procurement rules are not breached and no participant is given (or perceived by others to have been given) a competitive benefit in the subsequent tender process.

Table 4 sets out the key benefits and risks of using market sounding to conduct dialogue with potential bidders in relation to design issues. For market sounding to be effective, it must be carefully planned. Issues for discussion should be identified prior to the process commencing, and market sounding meetings should be scripted so as to draw out useful comment from participants without raising concerns from participants that they are being asked to disclose confidential or commercially sensitive perspectives. If the process is not carefully managed in this way, the market sounding may only result in general positive responses from potential bidders, as they will not want to appear uninterested in a potential project opportunity.

⁵ See, for example, (in a transport context) Queensland Government, "Gold Coast Rapid Transit Lessons Learned" (2012). (Available at: <http://gcartlessonslearned.com.au/about/>.)

⁶ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 7. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx); See also Infrastructure Australia, "National PPP Guidelines: Volume 2: Practitioners' Guide" (March 2011), page 72. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

Table 4: Benefits and Risks of Market Sounding

Benefits	Risks
<ul style="list-style-type: none"> Market sounding can develop government's understanding of the private sector's design capacity and capability, appetite for taking design risk, and expectation of opportunities to innovate in design Market sounding can inform potential bidders at an early stage of design issues and opportunities in the project, which will assist the potential bidders in forming consortia with appropriate design expertise 	<ul style="list-style-type: none"> Unless government carefully focuses the market sounding and asks relevant questions, potential bidders may not provide useful input Unless carefully managed, a market sounding process may be perceived as giving an advantage to some potential bidders over others

Market sounding in relation to design issues can provide significant value in PPP project development, particularly if the project involves design issues that government does not fully understand but private sector organisations may have previously resolved in other contexts. However the market sounding process should be carefully managed by the project team to mitigate the risks identified in Table 4.

4.1.5 Government architects

A number of governments have appointed government architects to provide strategic advice to government about architecture and urban design. This role can include the provision of advice on how to achieve good design outcomes for PPPs. For example:

- In the State of Victoria, Australia, project teams are required to consider the assistance available from the Victorian Government Architect in relation to design matters in the project development phase of PPP projects⁷.
- In Flanders, Belgium, a government architect employed by the Ministry of the Flemish Community ensures the architectural quality of PPP projects in the schools sector⁸.

During the project development phase of a PPP, a government architect can assist the project team to improve the quality of design-related project documentation, such as the functional brief. The government architect can also share lessons from other projects.

The key benefits and risks of using government architects during the project development phase of a PPP are set out in Table 5.

⁷ Infrastructure Australia, "National PPP Guidelines: Volume 6: Jurisdictional Requirements" (March 2011), page 27. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_6_Jurisdictional_Requirements_Apr_2011.pdf.)

⁸ Organisation for Economic Cooperation and Development (OECD), "Public-Private Partnerships in Flanders" PEB Exchange 2006/6. (Available at: <http://www.oecd.org/dataoecd/63/17/37697444.pdf>.)

Table 5: Benefits and Risks of involving Government Architects in Project Development

Benefits	Risks
<ul style="list-style-type: none"> • Involvement of a government architect can assist in incorporating good design practice into the project • A government architect may bring a “whole of government” approach to design 	<ul style="list-style-type: none"> • Involvement of a government architect may conflict with the principle that bidders take design risk and are responsible for development of their own designs

Involvement of government architects during the project development phase of a PPP is best seen as a means of enhancing the effectiveness of the other design related activities that occur during this stage.

4.1.6 Community Advisory Groups during project development

Public participation is important for social infrastructure projects, and hence governments have devised mechanisms for public participation at the planning and design stage of PPP projects⁹. This participation often occurs through a community advisory group or community reference group established by government.

The Sunshine Coast University Hospital Project, undertaken by the State of Queensland in Australia, illustrates the two-way communication that can occur between a project team and the community, particularly in relation to design issues¹⁰:

In July 2010, Queensland Health held four community forums across the coast seeking input about the hospital design from the community. The feedback was very constructive and will be used in the design brief for the hospital where applicable.

A Community Reference Group was also established by Queensland Health in 2010 comprising 15 local residents, health users and health providers.

The Community Reference Group will assist Queensland Health in informing the broader community of progress on the project as well as provide advice and input into the design of the hospital.

The key benefits and risks of community advisory groups during the project development phase of a PPP are set out in Table 6.

⁹ United Nations Economic and Social Commission for Asia and the Pacific, “A Guidebook on Public-Private Partnership in Infrastructure”, page 28. (Available at http://www.unescap.org/ttdw/common/TPT/PPP/text/ppp_guidebook.pdf.)

¹⁰ Queensland Government, “Sunshine Coast University Hospital FAQs”. (Available at: <http://www.health.qld.gov.au/scuhospital/faqs.asp>.)

Table 6: Benefits and Risks of Community Advisory Groups during Project Development

Benefits	Risks
<ul style="list-style-type: none"> • Community advisory groups enable the community to provide input to the design requirements, particularly in relation to urban design and master planning issues • Community advisory groups provide the community with an understanding of the design process and design issues, reducing the likelihood of community opposition to design outcomes when construction takes place 	<ul style="list-style-type: none"> • Giving the community access to detail of possible designs may lead them to expect that these designs are representative of what will be delivered, leading to opposition if the winning bidder proposes a significantly different design • Management of a community advisory group may be time consuming for the project team, without making a significant contribution to good design outcomes

Community advisory groups are a valuable means of two-way communication between the project team and the community, particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.

4.2 Tender phase

The tender process involves formal engagement with the PPP market, seeking bids from consortia capable of delivering the project. To ensure fair and transparent competition, the tender process is conducted under strict procurement rules. A range of mechanisms have been developed to promote good design outcomes within the framework of these rules.

4.2.1 Competitive dialogue

A competitive dialogue procurement process was introduced by the European Commission in March 2004. The key stages in the process include the following¹¹:

- A pre-qualification process is used to select a number of bidders who are invited to participate in the dialogue process
- Successive stages of dialogue are conducted with the invited bidders
- Following completion of the dialogue, government issues its finalised request for tenders and the bidders submit their final tenders.

Further information on this process is provided in Appendix 1. The key benefits and risks of competitive dialogue are set out in Table 7.

While competitive dialogue can help government to secure good design outcomes, it also entails significant risks. It is an option available under the European Commission's general procurement rules, not a process specifically intended to improve design outcomes for PPPs. As a result, it appears to have somewhat greater risks and weaker benefits than a number of the other mechanisms discussed in this report.

¹¹ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 11. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

Table 7: Benefits and Risks of Competitive Dialogue

Benefits	Risks
<ul style="list-style-type: none"> • Competitive dialogue may enable government to identify potential issues with bidders' designs at an early stage while bidders are still in a competitive process¹² • Competitive dialogue enables government to refine its requirements through dialogue with engaged bidders beyond what can be undertaken through initial market testing¹³ 	<ul style="list-style-type: none"> • Competitive dialogue could result in government and bidders incurring significant additional costs without corresponding improvements in outcomes¹⁴ • Competitive dialogue can require greater government resources than other procurement processes¹⁵ • Care is needed to protect bidders' intellectual property during the competitive dialogue process¹⁶ • Competitive dialogue may result in government's design requirements being partially determined by bidders' preferences rather than functionality, master-planning and urban design needs

4.2.2 Design standards and templates

In some social infrastructure PPPs, government may form the view that a particular aspect of design should conform to requirements that have been pre-determined by government. For example, in a schools PPP project, government may require the classrooms to be designed so that they are consistent with classrooms in other schools for students of the same age. This consistency would provide an equivalent environment for all teachers and students across the school system, regardless of how the schools are delivered.

If there really is only one design solution that is feasible or acceptable to government for a particular element of the project, then government should require bidders to follow this solution by prescribing a design standard or template in the tender documents. However,

¹² National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 21. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx.); Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹³ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁴ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", pages 4-5. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁵ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 4. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

¹⁶ Office of Government Commerce and HM Treasury, "Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure", page 5. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

government should only do this where it is necessary, as the design standard or template will prevent bidders from innovating to offer alternative solutions and it may be difficult for government to transfer the risk that the standard or template compromises the functionality of the facility.

If there is a good reason for government to be prescribe detailed design requirements in a design standard or template, it should express those detailed requirements in output terms as far as possible. Government should avoid expressing requirements in input terms or mentioning any particular choice of technology as far as possible, as this may inhibit the private party choosing the most efficient technology and innovation in design¹⁷. For example, a post-implementation review of a schools PPP in the State of New South Wales, Australia, found that government's minimum facility standards (which appear to have been expressed in input terms and were specified in the tender documents) constrained innovation¹⁸. In a subsequent schools PPP project, the New South Wales Government sought to express its minimum facility standards in output terms¹⁹.

The key benefits and risks of prescribing design standards and templates are set out in Table 8.

Table 8: Benefits and Risks of Design Standards and Templates

Benefits	Risks
<ul style="list-style-type: none"> Requiring bidders to follow design standards and templates can help to ensure that government's expectations are met if the standard or template is the only value for money solution Requiring bidders to follow design standards and templates can reduce costs that would otherwise be incurred by bidders exploring other solutions 	<ul style="list-style-type: none"> Use of design standards and templates where other solutions may meet government's requirements can constrain innovation by bidders and compromise value for money Government may be unable to transfer the risk that a specified design standard or template compromises functionality

In summary, bidders should only be required to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.

4.2.3 Mandated designs

The idea of requiring bidders to follow design templates and standards can be taken one step further by government mandating an overall design (pre-prepared by or on behalf of government) that bidders must adopt. A proposal from the United Kingdom for this approach is summarised in Appendix 2.

¹⁷ United Nations Economic and Social Commission for Asia and the Pacific, "A Guidebook on Public-Private Partnership in Infrastructure", page 53. (Available at http://www.unescap.org/ttdw/common/TPT/PPP/text/ppp_guidebook.pdf.)

¹⁸ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), pages 7, 13 and 51. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

¹⁹ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

Australian experience of standard PPP processes in hospital projects indicates that because each bidder submits its own fully developed and costed design, prepared in an extremely competitive environment in response to an output based brief (which encourages design innovation), government can achieve enhanced design outcomes²⁰. The mandated design approach would remove the identified drivers of these enhanced outcomes.

The key benefits and risks of mandated designs are set out in Table 9.

Table 9: Benefits and Risks of Mandated Designs

Benefits	Risks
<ul style="list-style-type: none"> • A mandated design gives government greater certainty of, and control over, design outcomes • A mandated design avoids the expense of each bidder developing their own design 	<ul style="list-style-type: none"> • A mandated design constrains opportunities for design innovation by bidders • A mandated design may compromise the transfer of design risk, or result in bidders charging a risk premium to compensate for adopting risk on a design that they have not themselves prepared and verified

The risks created by mandated designs reflect the fact that mandating a design conflicts with a core feature and value driver of the PPP model, which is the bundling together of design, construction, finance and maintenance under the responsibility of one party. In view of these risks, mandated designs should only be used where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.

4.2.4 Interactive Tender Process

Australian governments have developed an interactive tender process to improve the quality of bid submissions and ultimately deliver better outcomes for the public, through clear communication of the government's requirements. This process and its risks are described in detail in Appendix 3, and it is now part of standard PPP processes in Australia²¹.

The interactive tender process consists of a series of workshops conducted with each short-listed bidder after government has issued its request for proposals. The workshops provide an opportunity for bidders to seek feedback on their proposals as they are developed, and to clarify the application of government's requirements to their solution. This enables bidders to

²⁰ Tony Lubofsky, "Maximising the Benefits of PPP Procurement", presentation at Design and Health Australasia 2011 (2-4 May 2011). (Available at: http://www.designandhealth.com/uploaded/documents/International-Symposium/Australasia-2010/Australasia-2011/Speaker-Presentations/TonyLubofsky_DHV.pdf)

²¹ New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

better understand government requirements without compromising probity (that is, transparency and fairness)²².

Table 10 sets out the key benefits and risks of the interactive tender process.

Table 10: Benefits and Risks of Interactive Tender Processes

Benefits	Risks
<ul style="list-style-type: none"> The interactive tender process enables bidders to seek feedback on whether their solution meets government's requirements, and to clarify those requirements – this increases the likelihood that the bids submitted will all be acceptable to government 	<ul style="list-style-type: none"> Unless the interactive tender process is carefully managed, transparency and fairness of the tender process may be compromised There is a risk that a bidder's intellectual property may be communicated to other bidders or to the public

The interactive tender process has some similarities to the competitive dialogue process referred to in section 4.2.1 above. However there are two key differences:

- Competitive dialogue occurs prior to government finalising its request for tenders and issuing it to bidders, whereas the interactive tender process occurs after the request for tenders is issued.
- Competitive dialogue potentially leads to changes in government's requirements, whereas the interactive tender process rests on an assumption that government has done sufficient work during the project development phase to have finalised its requirements, with the remaining challenge being to ensure that bidders understand those requirements.

Given the importance of design in social infrastructure PPPs, and the wide scope for bidders to propose alternative design solutions in response to an output specification, the interactive tender process provides an important means to ensure that the design solutions developed by bidders meet government's needs.

4.2.5 Qualitative design evaluation

In some PPP processes, government's technical evaluation of the private sector's bids goes beyond an evaluation of whether the bid complies with the specified technical requirements to include an evaluation of aspects of the quality of the design, such as its functionality and architectural merit. Appendix 4 includes samples of such design-related evaluation criteria from an Australia hospital PPP and schools PPP.

Government's ability to undertake broad qualitative evaluation can depend upon whether this is allowable under the relevant procurement rules.

Table 11 sets out the key benefits and risks of qualitative design evaluation. The benefits are significant. Provided the risks can be managed by the project team and it is permissible

²² New South Wales Treasury, "New Schools Privately Finance Project Post-Implementation Review" (December 2005), page 7. (Available at: http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0012/5403/trp05-3.pdf.)

under the relevant procurement rules, qualitative design evaluation is generally desirable in social infrastructure PPPs in order to drive good design outcomes.

Table 11: Benefits and Risks of Qualitative Design Evaluation

Benefits	Risks
<ul style="list-style-type: none"> A qualitative evaluation of design incentivises bidders to innovate and deliver high quality design outcomes, rather than merely complying with government's technical requirements A qualitative evaluation of design enables government to distinguish bids on the basis of the quality of their functional, urban design and master-planning outcomes, not merely on technical compliance and financial criteria 	<ul style="list-style-type: none"> A qualitative evaluation of design may result in government's tender decision being more open to challenge by unsuccessful bidders A qualitative evaluation of design may make it more difficult for bidders to identify their best design solution and put this forward A qualitative evaluation of design may result in it being more difficult for government decision makers to reach a conclusion

4.2.6 Government Architects

In addition to their role discussed in section 4.1.5 above, government architects can also assist PPP project teams during the tender phase of the project. Their expertise can be particularly valuable in the following circumstances:

- When government is interacting with bidders in relation to design issues, such as in competitive dialogue (see section 4.2.1 above) or an interactive tender process (see section 4.2.4 above)
- When government is conducting qualitative design evaluation (see section 4.2.5 above).

Table 12 sets out the key benefits and risks of involving government architects in these processes.

Table 12: Benefits and Risks of using Government Architects in the Tender Phase

Benefits	Risks
<ul style="list-style-type: none"> A government architect can bring a high level of design expertise and a "whole of government" perspective to the interaction with bidders and evaluation of bids 	<ul style="list-style-type: none"> Interaction with bidders and the bid evaluation process may be too time consuming for a government architect to be fully involved

If a government architect is available to participate in relevant activities during the tender phase, they can make a valuable contribution.

4.3 Contract Finalisation Phase

Once PPP bids have been evaluated and a preferred bidder has been selected by government, there may be a time period in which the contractual documentation and financial arrangements are finalised before the contract is executed and financial close

occurs. Ideally, design issues have been resolved prior to the appointment of the preferred bidder. However, that is not always the case.

4.3.1 Design development during the contract finalisation phase

Prior to the introduction of the competitive dialogue process (see section 4.2.1 above), government project teams in the United Kingdom would often request high level designs during the competitive bidding process, and then request detailed designs following appointment of a preferred bidder but prior to entering into a contract²³. Table 13 sets out the key benefits and risks of further development of the design during this phase.

Table 13: Benefits and Risks of Government Review during Design Development (Contract Finalisation Phase)

Benefits	Risks
<ul style="list-style-type: none"> Design development during the contract finalisation phase avoids the need for unsuccessful bidders to incur the expense of preparing detailed designs²⁴ 	<ul style="list-style-type: none"> Design development during the contract finalisation phase may result in changes to designs, including additions and reductions to project scope, at a time when there is no competitive pressure to protect government's value for money position²⁵

Requesting detailed designs following appointment of a preferred bidder but prior to entering into a contract was found to have adverse outcomes in the United Kingdom. With the introduction of the competitive dialogue process (see section 4.2.1 above), the United Kingdom has moved to a system in which any major design issues should be resolved while bidders remain in a competitive environment. This mitigates the risks and offers better outcomes for government. Australia's interactive tender process (see section 4.2.4 above) achieves a similar result through a slightly different process.

4.4 Construction Phase

Once the PPP contract has been signed, the private party should proceed to construct the facility in accordance with the design requirements that were included in the contract. The opportunities for government to influence design outcomes are limited at this stage. However some design related mechanisms are available.

4.4.1 Government review during construction phase design development

Generally, PPP bidders are not required to submit fully detailed "for construction" design drawings during the PPP tender process, as this would impose an unreasonable burden on unsuccessful bidders. It is therefore common for the private party to undertake further design work in order to develop "for construction" drawings after the contract is executed, working from the design documentation that was included in the bid. The PPP contract should give

²³ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 18. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

²⁴ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), page 18. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

²⁵ National Audit Office, "Improving the PFI Tendering Process" (8 March 2007), pages 18 and 21. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx).

government the right to review whether these further design documents meet the contractual requirements. An example of such a design review process is set out in Appendix 5.

Table 14 sets out the key benefits and risks of further development of the design during this phase.

Table 14: Benefits and Risks of Government Review during Construction Phase Design Development

Benefits	Risks
<ul style="list-style-type: none"> • Government review during design development enables government to ensure compliance of the detailed design documentation with the PPP contract • Government review during design development provides government with improved understanding of design aspects of the facility before it has been built 	<ul style="list-style-type: none"> • Government may take back design risk if it provides inappropriate feedback to the private party as to how to meet the design requirements and, as a result of the private party relying on that feedback, the facility does not meet the performance requirements

Unless the design is fully documented at the time bids are submitted, a design review process is desirable after the contract is executed to ensure compliance of the detailed design documentation with the PPP contract. However, the process must be carefully managed to prevent government taking back risk.

4.4.2 Variation Processes

PPP contracts typically include variation clauses that allow government to request changes to the facility design during the life of the PPP. Foster Infrastructure has prepared a separate paper²⁶ for the APEC Business Advisory Council, comparing these clauses across a range of jurisdictions and PPP sectors. Table 15 sets out the key benefits and risks of using variation processes

Table 15: Benefits and Risks of Variation Processes during the Construction Phase

Benefits	Risks
<ul style="list-style-type: none"> • Variation processes enable government to request changes to the design of the facility in response to changing needs, or to incorporate new technologies and innovations 	<ul style="list-style-type: none"> • It may be difficult to subject a variation requested during the construction phase to a competitive process or an accurate benchmarking of the price, and therefore it may be difficult to secure value for money for the variation • The variation process may be cumbersome and disrupt the overall progress of the project

²⁶ See Foster Infrastructure, "Comparative Study of Contractual Clauses to Provide for the Smooth Adjustment of Physical Infrastructure and Services through the Lifecycle of a Public-Private Partnership (PPP) Project" (August 2012), paper prepared for the APEC Business Advisory Council.

Before embarking on the tender process for a PPP, government should be confident that it will not need to change the design significantly over the term of the PPP contract. During the tender process, government should use the mechanisms described in section 4.2 above to ensure that the design will be suitable for the long-term. Nevertheless, circumstances can arise during the construction phase in which it is appropriate to request a variation to the design.

4.4.3 Community Advisory Groups

The role of community advisory groups during the project development phase was discussed in section 4.1.6 above. Interaction with these groups may also be important during the construction phase to inform them of the urban design and master-planning outcomes of the project. A community advisory group may also have some limited input into government's design review process.

The key benefits and risks of community advisory groups during the construction phase of a PPP are set out in Table 16.

Table 16: Benefits and Risks of Community Advisory Groups during the construction phase

Benefits	Risks
<ul style="list-style-type: none"> • Community advisory groups enable the community to provide input to government's design development review process, particularly in relation to urban design and master planning issues • Community advisory groups provide the community with an understanding of the design process and design issues, reducing the likelihood of community opposition to design outcomes 	<ul style="list-style-type: none"> • Management of a community advisory group may be time consuming for the project team without making a significant contribution to good design outcomes, particularly given the constraints of the design review process

4.5 Operations Phase

The variation processes referred to in section 4.4.2 above are usually also available to government during the operations phase of the PPP. The risks of requesting variations during the operations phase are slightly different to those during the construction phase, and are set out in Table 17 on page 24.

As is the case during the construction phase, circumstances can arise during the operations phase in which it is appropriate to request a variation to the design.

Table 17: Benefits and Risks of Variation Processes during the Construction Phase

Benefits	Risks
<ul style="list-style-type: none">Variation processes enable government to request changes to the design of the facility in response to changing needs, or to incorporate new technologies and innovations	<ul style="list-style-type: none">It may be difficult to subject a variation requested during the operations phase to a competitive process or an accurate benchmarking of the price, and therefore it may be difficult to secure value for money for the variation – however the difficulty is less acute than during constructionThe variation process may be cumbersome and time consumingThe private party may require a relaxation of the contractual performance requirements during the time the variation is being implemented

5 Conclusions and Recommendations

Economies with well-developed PPP Frameworks have, through experience, developed a range of mechanisms to promote good design in social infrastructure PPPs. These mechanisms have been influenced by broader procurement regulations and policy considerations, such as the need for fairness and transparency in government procurement.

The benefits and risks of the various mechanisms identified in this report will vary in their significance depending upon a range of factors including the particular PPP model being used, the applicable legal system, and the relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.

Some of the mechanisms identified in this report are substitutes for one another – for example, Australia’s form of interactive tender process (discussed in section 4.2.4) and the European Union’s competitive dialogue (discussed in section 4.2.1) serve similar purposes, and it would usually be unnecessary to use both of these mechanisms. Other mechanisms identified in this report are complementary and can be used together – for example, user groups (discussed in section 4.1.2) complement functional brief development (discussed in section 4.1.1).

Based on the analysis in this report of mechanisms used in PPP Frameworks to promote good design outcomes, Foster Infrastructure has identified the following recommendations for governments wishing to promote best practice in design for social infrastructure PPPs:

- 1. Governments should identify an appropriate combination of mechanisms to promote design outcomes through the stages of the PPP lifecycle, taking into account relevant factors such as the particular PPP model being used, the applicable legal system, and the relative importance of design in comparison to the other outcomes that will be driven through delivery of the project as a PPP.**
- 2. Action taken in the earlier stages of the PPP process will have the greatest impact upon design outcomes. Governments should therefore devote sufficient time and allow sufficient resources for proper consideration of design issues during the project development phase of PPPs.**
- 3. Governments should develop functional briefs to provide a robust foundation for the broad range of other activities that drive good design outcomes in social infrastructure PPPs.**
- 4. Governments should involve user groups in PPP project development due to their understanding of how design influences service delivery, but should also ensure that project teams carefully manage these groups.**
- 5. For projects that involve complex design issues, government should consider conducting market sounding in relation to these issues prior to commencement of the formal tender process. However the market sounding process should be carefully managed.**
- 6. Government architects can provide expertise that enhances the effectiveness of other design related activities throughout the PPP lifecycle.**
- 7. Governments should consider establishing community advisory groups as a means of two-way communication between the project team and the community,**

particularly in relation to urban design and master planning issues. However community expectations must be appropriately and efficiently managed.

8. Governments should establish mechanisms for interaction between government and bidders during the tender process to ensure that the design solutions developed by bidders meet government's needs. This process should not be structured as a negotiation of government's design requirements, as these requirements should have been fully developed prior to the tender process. The focus of the interaction should be on ensuring the bidders understand these requirements.
9. Governments should only require bidders to follow design templates and standards if there is only one feasible or acceptable solution to the relevant aspect of design. To the extent possible, such templates and standards should be expressed in output terms.
10. Governments should only mandate the overall design where there is compelling reason to give design considerations priority over other aspects of the project. In circumstances where this is the case, government should reconsider whether PPP delivery is the best delivery model for the project, as the scope for innovation and value for money may be compromised by the mandated design.
11. Provided the risks can be managed by the project team and it is permissible under the relevant procurement rules, governments should use qualitative evaluation of bidders' designs in order to drive good design outcomes.
12. Governments should ensure that designs are sufficiently developed by bidders during the competitive tender process so that any subsequent design review need only focus on compliance of the detailed design documentation with the PPP contract. The design review process must be carefully managed to prevent government taking back risk.

Appendix 1 – The European Commission’s Competitive Dialogue Process

In March 2004 the European Commission published Directive 2004/18/EC, which introduced a new Competitive Dialogue procurement process. The key stages in the process include the following²⁷:

- A pre-qualification process is used to select a number of bidders who are invited to participate in the dialogue process
- Successive stages of dialogue are conducted with the invited bidders
- Following completion of the dialogue, government finalises its request for tenders and the bidders submit their final tenders.

The earliest phase of dialogue typically focuses on the bidders’ proposed technical solutions²⁸, which would include design issues.

Government can structure the process so that the number of bidders can be reduced through the dialogue stages by “down selecting” bidders whose solutions are not expected to meet government’s needs²⁹.

During the dialogue process, bidders refine their proposed solutions and government refines its contractual position in respect of each proposed solution. As a result, when government asks the bidders to submit their final tenders, it may ask each bidder to bid on the basis of a different contract³⁰. Government then needs to consider how to evaluate the bids on a consistent basis³¹.

As the European Commission rules give government only limited ability to negotiate with bidders after the dialogue is completed, government needs to substantially agree all aspects of the project, including design matters, during the dialogue stages³².

²⁷ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 11. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

²⁸ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 20. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

²⁹ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 20. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³⁰ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 21. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³¹ Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 21. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

³² National Audit Office, “Improving the PFI Tendering Process” (8 March 2007), page 7. (Available at http://www.nao.org.uk/publications/0607/improving_pfi_tendering.aspx); Office of Government Commerce and HM Treasury, “Competitive Dialogue in 2008: OGC/HMT joint guidance on using the procedure”, page 24. (Available at http://www.hm-treasury.gov.uk/d/competitive_dialogue_procedure.pdf.)

Appendix 2 – RIBA Smart PFI Model³³

In 2005, the Royal Institute of British Architects (RIBA) proposed changes to the United Kingdom's PPP procurement processes. RIBA believed that these changes would rectify problems it claimed existed affecting design quality, and deliver broader benefits in terms of reducing the time and cost of bidding for social infrastructure PPP projects. Following a consultation process, RIBA released details of its preferred "Smart PFI" model in 2006.

Prior to the tender phase

Under the Smart PFI model, prior to the tender phase the public sector client appoints a management and design team, chosen through a competitive process for their creative skills and understanding of the client's area of expertise.

The successful team then works in close collaboration with client representatives and other stakeholders to develop an intimate knowledge of the client's strategic and operational needs and set an appropriate vision for the project supported by research and visits to class-leading facilities.

The design team is required to produce:

- a well-researched and comprehensive design brief
- site analyses and selection
- an outline design for the project, achieving full user-client sign-off on content, layout and quality benchmarks
- an output specification
- an analysis of buildability and construction logistics
- a robust budget for the project based on the outline design solution and taking account of all site specific costs
- a further client sign-off to confirm the affordability of the project
- planning approval (if appropriate).

During the tender phase

Instead of developing an entirely new design, bidders are asked to develop the public sector's design sufficiently to build up a tender.

The consortia are challenged to use their innovation, competing to demonstrate how they could most efficiently deliver the required design solution in terms of building methodologies, value engineering, lean construction, facilities management, financing and the provision of partnering services where appropriate.

³³ Source: Royal Institute of British Architects, "Smart PFI Position Paper" (2006). (Available at: <http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/SmartPFI/SmartPFIPositionPaper.pdf>.)

They are also invited to identify any areas of the design where they feel improvements could be made or any opportunities for additional income generation offered by the site. Each bidder works with its own design team.

The design team that prepared the outline design for the public sector client may be retained to judge consortium proposals.

Appendix 3 – Australia’s Interactive Tender Process³⁴

Governments in Australia usually conduct an interactive tender process for social infrastructure PPPs. This process involves holding a series of individual interactive workshops with shortlisted bidders after government’s request for proposals has been issued.

The interactive tender process provides shortlisted bidders with an opportunity to discuss the development of their concepts and designs and to seek clarification and feedback in the context of the government’s output requirements, before lodging proposals. The workshops also minimise the risk of any misunderstanding of the government’s requirements.

Objective of the process

The objective of the interactive tender process is to improve the quality of bid submissions and ultimately deliver better outcomes for the public, through clear communication of the government’s requirements to ultimately influence the overall quality of proposals received from shortlisted bidders.

Structure of the process

The interactive tender process typically involves a series of presentations and workshops, usually numbering between three and 10 per shortlisted bidder. The workshops are resource intensive. The workshops are held with individual bidders to enable open communication of intellectual property.

Protecting government from the risks associated with the process

The request for proposals specifies the procedures, timetable and protocols for the interactive tender process. Ground rules for the workshops are established and provided to shortlisted bidders before the workshops. Shortlisted bidders notify government in writing of their acceptance of the procedures, protocols and ground rules.

The terms and conditions of tendering require bidders to acknowledge that they will not rely on the representations made by government during the procurement process, nor will they attribute any loss to comments provided. However, a residual risk to government remains, and is managed by:

- providing the project team with a clear understanding of the interactive tender process and its boundaries at the outset of the request for proposals period (including a training session if required);
- providing a clear set of objectives and ground rules for bidders at the start of the process. These include an explanation that government’s feedback must necessarily be qualified by its inability to form a full interpretation of a bidder’s proposal prior to bid submission. Government can address particular parts of a proposal separately, but may not be in a position to provide feedback on the ‘sum of the parts’. Ultimately,

³⁴ Source: Infrastructure Australia, “National PPP Guidelines: Volume 2: Practitioners’ Guide” (March 2011), page 24-5 and Appendix E. (Available at: http://www.infrastructureaustralia.gov.au/public_private/files/Vol_2_Practitioners_Guide_Mar_2011.pdf).

the bidders must take the risk that their proposals as a whole respond adequately to the request for proposals.

Protecting bidders' intellectual property

Particular care is taken by government's project team to protect each bidder's commercial-in-confidence material and intellectual property, as these elements can provide a competitive advantage and often have a commercial value. Ideas from one bidder are not communicated to other bidders.

To the extent that bidders choose to provide information on their proposals to government to seek feedback, the project team is careful about the circulation of this material among team members. Circulation is on an 'as needs' basis only.

Appendix 4 – Examples of qualitative design evaluation criteria

Set out below are examples of the design evaluation criteria for a PPP hospital project and a PPP schools project from Australia. The evaluation criteria for these projects also included examination of matters such as cost, risk, commercial opportunities, service requirements and project management.

Royal Children’s Hospital Project – Design-related evaluation criteria³⁵

Criterion E - Master Plan

The State will evaluate the:

- proposed vision and integration of the master plan;
- Site circulation and provision of appropriate traffic management;
- urban architectural form and fit and relationship to the built and natural environment; and
- the quality and layout of the Site.

Criterion F - Design

The State will evaluate the:

- extent to which the Proposal reflects the Design Principles;
- functionality and operational efficiency of the proposed design;
- contribution of the proposed design towards an efficient whole life cost for the Facility;
- architectural quality of the proposed design;
- process for Equipment selection and appropriateness and quality of the selected Equipment;
- flexibility and expansion capability of the Facility;
- appropriateness and quality of the engineering and building infrastructure services;
- ecological sustainability of the design;
- extent to which the Proposals demonstrate innovation;
- design of any Commercial Opportunities;

³⁵ Department of Human Services and Department of Treasury and Finance (Victoria, Australia), “Partnerships Victoria in Schools Project Summary” (February 2008), page 25. (Available at: www.partnerships.vic.gov.au.)

- extent to which Proposals consider and respond to the planning framework; and
- extent of Departures from the requirements of the Design Brief.

Partnerships Victoria in Schools Project – Design evaluation criteria³⁶

The State will evaluate the designs for each of the Schools. In doing so, the key issues that will be considered include:

- Design solution – the State will evaluate the extent to which the proposal reflects the functionality and operational efficiency of the proposed design and otherwise reflects the design principles;
- Master Planning – the State will evaluate amongst other things:
 - Design documentation – the State will evaluate the extent to which the design documentation and associated information illustrates the proposals in accordance with the requirements of the Output Specification;
 - Flexibility and future expansion capacity – the State will evaluate the flexibility and expansion capability of the Facilities including the extent to which the design facilitates the use of Relocatables;
 - Site access and traffic provisions – the State will evaluate the access and traffic arrangements on and around the sites for pedestrian, bicycle and vehicular interaction;
- Facility architecture – the State will evaluate the architectural quality of the proposed design and will consider as part of this criteria:
 - Whole-of-life design – the State will evaluate the contribution of the proposed design towards an efficient whole life cost for the schools;
- Equipment – the State will evaluate the process for equipment selection and appropriateness and quality of the selected equipment;
- Engineering services – the State will evaluate the appropriateness and quality of the engineering and building infrastructure services;
- Ecological sustainability – the State will evaluate the ecological sustainability of the design;
- Innovation – the State will evaluate the extent to which the proposals demonstrate innovation in each of the above areas; and
- Planning framework – the State will evaluate the extent to which proposals consider and respond to the planning framework.

³⁶ Department of Education and Early Childhood Development and Department of Treasury and Finance (Victoria, Australia), “Partnerships Victoria in Schools Project Summary” (March 2009), page 26. (Available at: www.partnerships.vic.gov.au.)

Appendix 5 – The Design Development Process

In social infrastructure PPPs in Australia, the PPP contract provides for a design development process to occur following financial close. The key features of this process are as follows³⁷:

- The PPP contractor must give government's project director drafts of its detailed design documentation.
- The project director may, but need not, review these drafts and provide comments and recommendations to the PPP contractor. Those comments must only relate to compliance of the draft designs with the PPP contract, and must be provided within 20 days of receiving the drafts.
- The PPP contractor must amend the draft designs to reflect the project director's comments and recommendations, and resubmit the designs.
- The contract protects government against the possibility that, by commenting on the designs, it takes back risk – the PPP contractor remains solely liable for ensuring that its designs comply with the PPP contract.

The design documentation is not reviewed by the project director alone – typically the project director seeks input from a range of experienced “client representatives” within government. For large and complex projects, particularly where the infrastructure will be operated by government, this design review process is, in itself, a major undertaking. For example, in a major hospital PPP in Australia, the process required³⁸:

- Up to 80 individual groups
- Planning group members committing to attend design review meetings, as difficulties were identified with having proxies attend
- Investigation of web based communication to facilitate the flow of design information.

Similarly, another major hospital PPP in Australia involved³⁹:

... input from staff in the design process through the 74 user groups and 15 reference groups... [The builder] met with these groups in excess of 1,500 times to ensure the clinical objectives were met.

³⁷ See, for example, New South Wales Department of Education and Training, “New Schools 2 Public Private Partnership Project – Summary of Contracts” (6 July 2006), page 19. (Available at: https://www.det.nsw.edu.au/detresources/ppp2summary_diWKmKHbAQ.pdf.)

³⁸ Government of South Australia, “The new Royal Adelaide Hospital Project – Next Steps – Design and Development” (May 2011). (Available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/491f380047541cd38724ff2e504170d4/NRAHOverviewPresentation-SSS-MPO-1105v2.pdf?MOD=AJPERES&CACHEID=491f380047541cd38724ff2e504170d4>.)

³⁹ Lend Lease, “Delivering a World Class Facility to Meet Australia's Future Healthcare Needs” (30 April 2012). (Available at: http://www.hospitalhealth.com.au/index.php?option=com_k2&view=item&id=817:delivering-a-world-class-facility-to-meet-australias-future-healthcare-needs&Itemid=238&tmpl=component&print=1.)