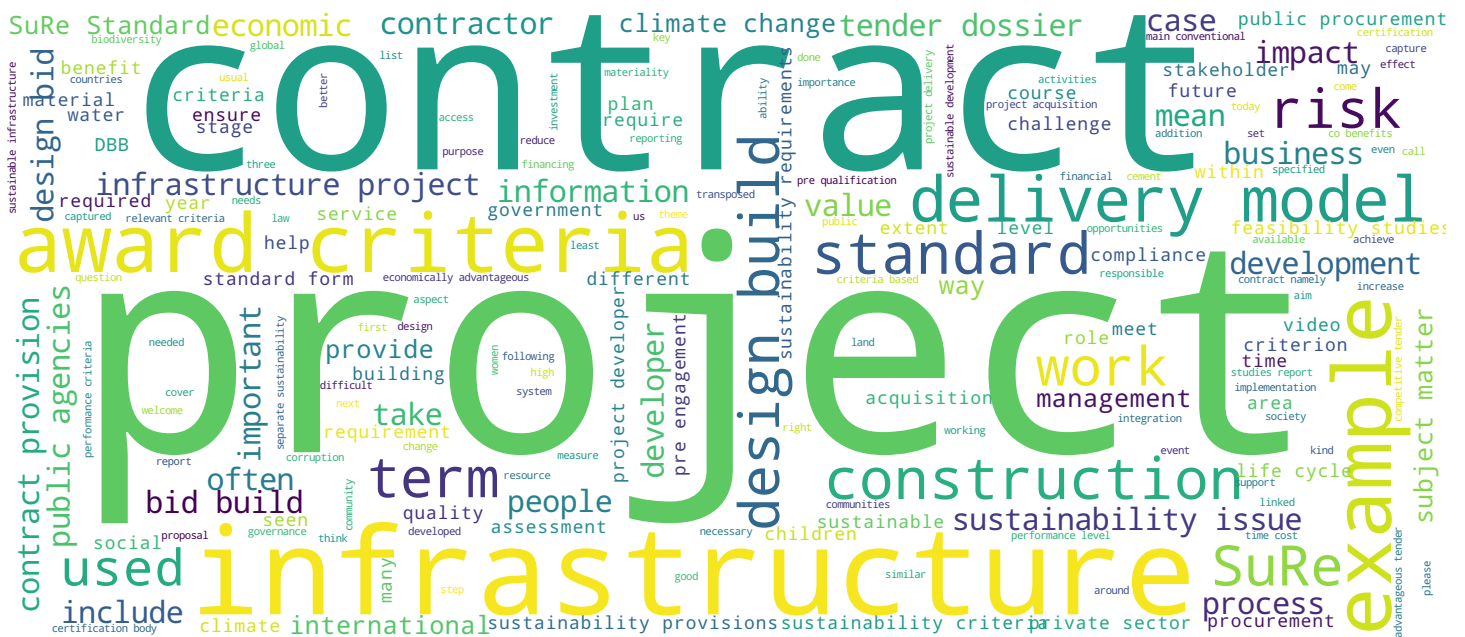


Building expertise on sustainable and resilient infrastructure

Peter Boswell





Delivery Models Define:

- Programming of the involvement of project participants
- Contractual relations
- Contract conditions

Hello and welcome. This is the third section of the sustainable infrastructure procurement module. We shall be talking about selection of the project delivery model, the management structure for acquisition and how to incorporate sustainability criteria into tenders and contracts. Delivery models define the programming of the involvement of project participants, the contractual relations, and the contract conditions.

Notes

Summary



0m 05s

Appropriate delivery models



- An off-the-shelf model will not by itself deliver sustainability
- Best to think in terms of beyond best practice
- What can be incorporated into business-as usual processes to achieve best value

But please have no illusions. An off-the-shelf model will not by itself deliver sustainability. Once again it is best to think in terms of beyond best practice, namely what can be incorporated into business-as usual processes to achieve best value.

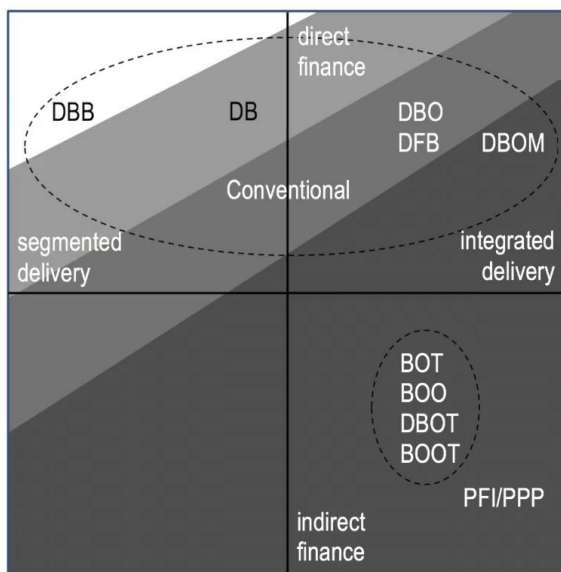
Notes

Summary



0m 28s

Appropriate delivery models



Number of levels of private sector engagement

- | | |
|---|--|
| 1 | Construction |
| 2 | Construction + Design |
| 3 | Construction + Design + Operation / Financing |
| 4 | Construction + Design + Operation + Maintenance
Construction + Design + Operation + Financing |

The figure shows the conventional and the PFI/PPP grouping of delivery models classified by the extent of integration of the design and construction participants, the extent of the developer's financing and the extent of private-sector participation.

Notes

Summary



0m 43s



Primary interests:

- Design-bid-build, or DBB
- Design-build, or DB

PFI are private finance initiative models that are equivalent to public-private partnerships, or PPP. We are primarily interested in the two main conventional models, namely design-bid-build, or DBB, and design-build, or DB.

Notes

Summary



0m 58s



DBB (Design-Bid-Build):

- Design is completed prior to procuring a contractor
- Responsible for construction
- Selected by competitive tender

In DBB, the design is completed prior to procuring a contractor who is responsible for construction and selected by competitive tender.

Notes

Summary





DB (Design-Build):

- Selected contractor is responsible for both design and construction

In DB, the selected contractor is responsible for design and implementation.

Notes

Summary



Appropriate delivery models



- Decision-making frameworks are available
- Help identify the optimum delivery model

Decision-making frameworks are available to help identify the optimum delivery model.

Notes

Summary



1m 31s



Usually based on:

- Selection criteria grouped into categories
- Deals with project parameters

They are usually based on selection criteria grouped into categories dealing with project parameters such as the developer's role.

Notes

Summary



1m 35s



Good approach:

- Analyse the advantages and disadvantages of each model
- Respecting relevant criteria
- Business-as-usual and sustainability issues

A good approach is to analyse the advantages and disadvantages of each model with respect to relevant criteria for both business-as-usual and sustainability issues.

Notes

Summary





Sustainability issues:

- Feasibility studies criteria are used
- Encourage projects to consider a full range of sustainability issues at later stages

For sustainability issues, feasibility studies criteria are used since they encourage projects to consider a full range of sustainability issues at later stages.

Notes

Summary



1m 53s



- A list of upstream criteria has been proposed
- Builds upon established infrastructure rating systems including SuRe

A list of these upstream criteria has been proposed that builds upon all of the established infrastructure rating systems including SuRe.

Notes

Summary



2m 04s



They Cover:

- Economic, financial, environmental, social, and institutional sustainability

They cover economic and financial, environmental, social, and institutional sustainability.

Notes

Summary



Appropriate delivery models



- Design-bid-build and design-build models are mainly determined by the degree of integration of design and construction
- Delivery selection tools based on criteria compare design-related criteria and construction-related criteria

Since design-bid-build and design-build models are mainly determined by the degree of integration of design and construction, most delivery selection tools based on criteria, including the advantages/disadvantages analysis, compare design-related criteria and construction-related criteria.

Notes

Summary



2m 21s



For economic and financial sustainability:

Relevant upstream criterion could be

- “A plan demonstrating how the project maximises co-benefits”

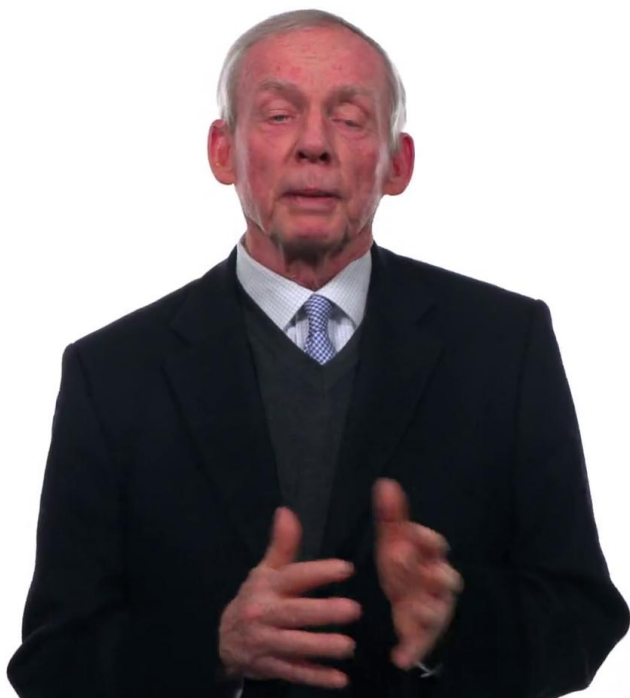
To illustrate the process, for economic and financial sustainability a relevant upstream criterion could be “A plan demonstrating how the project maximises co-benefits”.

Notes

Summary



2m 40s



Design co-benefits:

- DBB advantage is that the project developer can work with designers
- Ensure that opportunities for co-benefits are captured

For design co-benefits for example, the DBB advantage is that the project developer can work with designers to ensure that opportunities for co-benefits are captured.

Notes

Summary



2m 52s

Appropriate delivery models



- Repeated for all DBB and DB design and construction advantages and disadvantages
- For all materially relevant criteria

This analysis is repeated for all DBB and DB design and construction advantages and disadvantages and for all materially relevant criteria. A simple summing usually gives the most appropriate delivery model.

Notes

Summary



3m 04s



- Business-as-usual criteria normally dominate
- Unusual to find that the sustainability criteria shifted the most appropriate delivery
- But this is not impossible

Business-as-usual criteria normally dominate so it would be unusual to find that the sustainability criteria shifted the most appropriate delivery from being say design-build to design-bid-build.

Notes

Summary





Project acquisition:

- Well-established
- Standardised
- Regulated for public procurement

But this is not impossible. Project acquisition for the main conventional delivery models is well-established, standardised and often regulated for public procurement.

Notes

Summary



3m 31s



Public agencies:

- Limit competitive tendering to the open, selective, negotiated, or competitive dialogue procedures

As a minimum, the feasibility studies report will have outlined a preliminary overall programme, giving milestones and the sequence of activities. The management of tendering, mainly the preparation of a tender dossier for the delivery model is a key stage. So the preliminary programme should cover the tendering process involving possible pre-qualification, approval of tender dossiers, the obtaining, opening and evaluation of tenders, and the award of contract. Public agencies usually limit competitive tendering to the open, selective, negotiated, or competitive dialogue procedures. FIDIC recommends that private tenders adopt the same procedures.

Notes

Summary



3m 42s



Sustainable public procurement:

- Innovation and supply chain issues can modify significantly tendering procedures

For sustainable public procurement, innovation and supply chain issues can modify significantly tendering procedures. For example, a negotiated procedure is often only allowed if a tenderer's solution is complex and has a high supply risk with severe legal and financial restrictions.

Notes

Summary





- Some agencies classify delivery models in terms of supply risks
- Tendering therefore includes criteria such as the security of supply

Second, some agencies classify delivery models in terms of supply risks. Tendering therefore includes criteria such as the security of supply.

Notes

Summary





Tender documentation:

- It should be in proportion to the project
- Provide specifications, contract provisions and binding information about prequalification
- Award criteria

Regarding tender documentation: it should be in proportion to the project and provide specifications, contract provisions, and binding information about pre-qualification (if any) and award criteria.

Notes

Summary





Design-bid-build tenders:

- Project developer prepares comprehensive set of final designs, technical and functional specifications
- Detailing works required, quality standards, and methods to be used

For design-bid-build tenders, the project developer prepares or has prepared a comprehensive set of final designs and technical and functional specifications and other documents describing the requirements. They detail exactly the works required, the quality standards, and often the methods to be used.

Notes

Summary



5m 11s



- DB tender dossier is similar to a DBB dossier
- Specifications will be replaced by the developer's requirements

A DB tender dossier is similar to a DBB dossier. However, specifications will be replaced by the developer's requirements containing detailed and comprehensive functional and performance specifications.

Notes

Summary





Drawings will only give:

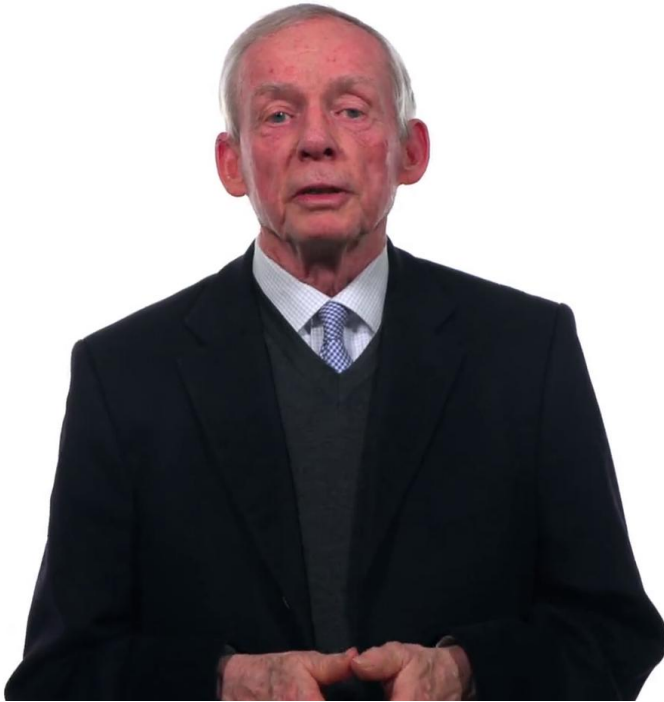
- Concept design
- Location
- Limits of delivery
- Other information the contractor needs

Drawings will only give a concept design together with the location, limits of delivery and other information the contractor needs.

Notes

Summary





- Notice of the project is then given in a DBB call for tenders or a DB request for proposals

Notice of the project is then given in a DBB call for tenders or a DB request for proposals.

Notes

Summary



5m 57s



Pre-qualification may be needed if:

- Work is complex
- High standard
- Specialised competence

Contractors wishing to tender are listed. Pre-qualification may be needed if the work is complex, of a high standard or involves specialised competence requiring an experienced contractor.

Notes

Summary





- Strict rules apply to tendering
- Evaluation by an independent committee is advised

Tender dossiers are then distributed to listed or prequalified contractors with an invitation to submit tenders. Strict rules apply to tendering and to the opening and evaluation based on award criteria of complying tenders. Evaluation by an independent committee is advised and usually mandated by public agencies.

Notes

Summary





- The contractor submitting the 'lowest evaluated competitive tender price' is awarded the contract
- Except in the case of design-build when a second tender stage may be implemented

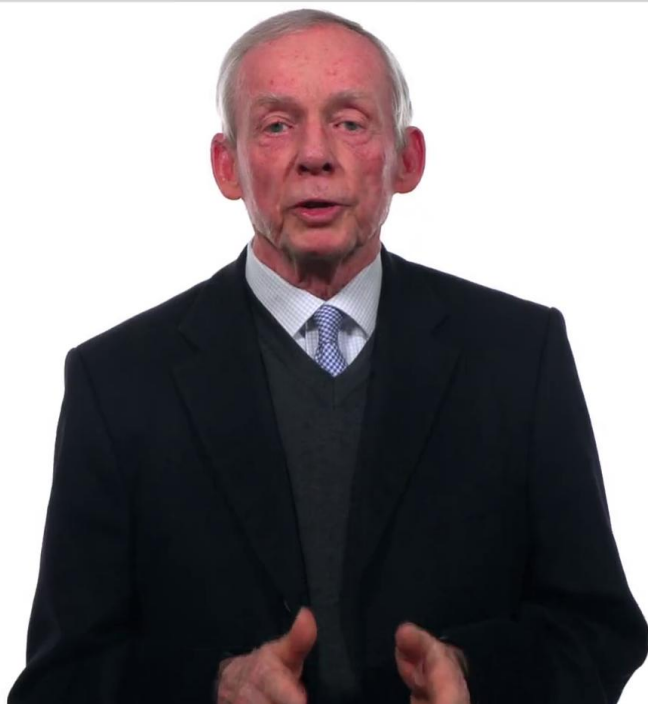
The contractor submitting the 'lowest evaluated competitive tender price' is awarded the contract for the works except in the case of design-build when a second tender stage can be used for large, complex, innovative projects to offer more opportunity for responsive tenders using the contractor's performance specifications.

Notes

Summary



6m 37s



- For DBB to be successful the tender price must be within the construction budget

For DBB to be successful the tender price must be within the construction budget so design involves accurate cost estimates and on-site construction involves re-measurement with payment based on a bill of quantities.

Notes

Summary



6m 57s



- DB payments are often made as lump-sums at 'milestones'

DB payments one the other hand are often made as lump-sums at 'milestones' according to a schedule of payments.

Notes

Summary



7m 11s



Disadvantages of DBB:

- Relatively long procurement and delivery phases
- Single-point responsibility, ways to introduce innovative design/construction alternatives, integrated and overlapping design and construction are lacking

Possible disadvantages of DBB mainly relate to relatively long procurement and delivery phases where single-point responsibility, ways to introduce innovative design/construction alternatives and integrated and overlapping design and construction are lacking. These features are largely overcome using design-build.

Notes

Summary





- DBB remains very popular
- Roles and responsibilities are clearly defined
- Developer manages the overall project
- Developer controls the project scope
- Specifies project features

Nonetheless DBB remains very popular because roles and responsibilities are clearly defined: the developer manages the overall project, controls the project scope and specifies project features to meet the budget.

Notes

Summary





- Opportunities to safeguard sustainability at pre-engagement
- Developer coordinates an integrated design team for internal alignment
- Introduces processes for external alignment

We have seen that there are opportunities to safeguard sustainability at pre-engagement when the developer coordinates an integrated design team for internal alignment and introduces processes for external alignment.

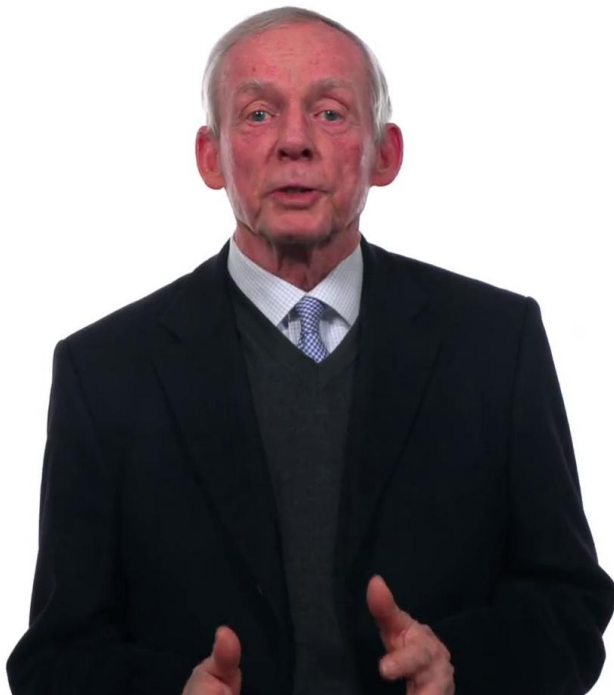
Notes

Summary



7m 56s

Specification & tender award criteria



- Opportunities also arise during acquisition at the specification and design stage

Opportunities also arise during acquisition at the specification and design stage when award criteria for tender selection are transposed into contract provisions.

Notes

Summary



8m 10s



Sustainability award criteria should cover:

- Infrastructure's service life
- Design performance
- Material specifications
- Implementation, such as site waste
- Total life-cycle cost

At the very minimum, sustainability award criteria should cover: -the infrastructure's service life, -design performance, -material specifications, -implementation, such as site waste; and -the total life-cycle cost.

Notes

Summary



8m 20s

Specification & tender award criteria



- How benchmarks are captured is an issue
- Data-driven sustainability performance is difficult to capture
- SuRe captures its management criteria using quantitative performance measures

Unlike design-build award criteria, design-bid-build award criteria are specified in detail with reference made increasingly to performance benchmarks generated by multi-criteria certification schemes and assessment standards such as SuRe. How benchmarks are captured is an issue. In spite of recent advances in the monetisation of the natural and social capitals, data-driven sustainability performance is difficult to capture using quantitative science and engineering based evidence. SuRe for example therefore captures its management criteria using quantitative performance measures.

Notes

Summary



8m 36s



- DB and DBB allowed to specify direct monetary expenses and external environmental costs based on non-pecuniary criteria
- These criteria must be defined precisely in terms of price and quality

For both DB and DBB, it is usually allowed to specify not only direct monetary expenses but also external environmental costs based on non-pecuniary criteria such as carbon emissions.

Notes

Summary



Specification & tender award criteria



- “Most economically advantageous tender” (so-called MEAT) award criteria based on these principles have been established
- Recommended for DBB tenders and for inclusion in DB tender proposals

These criteria must be defined precisely in terms of price and quality, where the quality is specified or the required performance is expressed in terms of outcomes. “most economically advantageous tender” (so-called MEAT) award criteria based on these principles have been established.

Notes

Summary



9m 28s

Specification & tender award criteria



- The non-pecuniary criteria often use a “value for money” price-quality ratio

They are recommended for DBB tenders and for inclusion in DB tender proposals that seek to exceed minimum requirements by encouraging tenderers to propose solutions. The non-pecuniary criteria often use a “value for money” price-quality ratio that assigns values to sub-criteria to allow weighting against each other and against the price to give the most economically advantageous tender. The sub-criteria cover for instance the implementation of a public-oriented approach.

Notes

Summary



9m 48s

Specification & tender award criteria



Whatever the origin of an award criterion and the way performance is captured, basic principles apply

- Proportionality
- Transparency
- Clarity
- Level of compliance
- Meeting requirements stipulated elsewhere

Whatever the origin of an award criterion and the way performance is captured, basic principles apply, namely proportionality, transparency, clarity, level of compliance, and meeting requirements stipulated elsewhere.

Notes

Summary



10m 20s



- New types of scoring schemes are emerging
- Mandatory criteria

Tenders dossiers must therefore document clearly how award criteria are evaluated and tenderers must demonstrate compliance by making available the means of proof. Given the weak legal environment surrounding sustainable procurement discussed earlier, new types of scoring schemes are emerging such as mandatory criteria and the setting of different performance levels for different award criteria.

Notes

Summary

10m 35s



Specification & tender award criteria



- Some public agencies restrict the use of performance criteria in mandatory requirements
- Challenge the use of criteria based on technical standards derived from:
 - Building codes
 - Certification systems
 - Labels

However, procurement practitioners should be aware that some public agencies restrict the use of performance criteria in mandatory requirements. They also challenge the use of criteria based on technical standards derived from building codes, certification systems and labels.

Notes

Summary



11m 02s



- The criterion must address the subject matter of the contract

This is because these standards do not provide objective performance criteria, only suggestions for their use. To use an award criterion derived from a technical standard the criterion must address the subject matter of the contract, namely the cause of the targeted sustainability issue using details given in the tender dossier.

Notes

Summary



Specification & tender award criteria



They relate to:

- Time
- Cost
- Scope
- Features
- Functions
- Risk
- Quality considerations

Compared with DBB award criteria, the less-detailed DB award criteria combining business-as-usual criteria with sustainability criteria are less contentious. They relate to time, cost, scope, features, functions, risk, and quality considerations, to the contractor's qualifications and competence, and to the approach to design-build and the understanding of sustainability issues.

Notes

Summary



11m 41s

Specification & tender award criteria



- DB requests for proposals will call for a proposal in each of these areas
- For sustainability by specifying performance-based sustainability objectives
- Possibly at different levels of importance

DB requests for proposals will call for a proposal in each of these areas, and for sustainability by specifying performance-based sustainability objectives, possibly at different levels of importance such as 'mission critical' and 'highly desirable'.

Notes

Summary



12m 10s

Specification & tender award criteria



- DB tenderer's proposal will have a technical proposal covering anticipated challenges and solutions
- Also, design concept and a sustainability plan

A DB tenderer's proposal will have a technical proposal covering anticipated challenges and their solution together with a design concept and a sustainability plan that is evaluated in terms of a limited number of issues such as energy efficiency and integrated design..

Notes

Summary



12m 25s



- Detailed design will be left to the creativity of the contractor

Detailed design will of course be left to the creativity of the contractor through its use of multi-criteria certification standards such as SuRe.

Notes

Summary





Developer will aim to award the works contract to:

- Contractor best able to carry out the contract
- Whose tender responds to the tender dossier
- Most economically advantageous

The developer will aim to award the works contract to the contractor best able to carry out the contract and whose tender responds to the tender dossier and is the most economically advantageous.

Notes

Summary



12m 53s



- Contract must be suitable for the project and for the selected delivery model

The contract must be suitable for the project and for the selected delivery model.

Notes

Summary





- Substantial contract that deals with a wide variety of matters is the norm for infrastructure projects

Its purpose is not simply to capture the parties' obligations in terms of time, cost, and scope of works, but also to reduce the risk of a dispute. A substantial contract that deals with a wide variety of matters regardless of the project's value or complexity is therefore the norm for infrastructure projects.

Notes

Summary



13m 08s



- Private parties are generally not limited in what to include in private commercial contracts
- This does not mean that any contract provision will be enforceable under law

Private parties unlike public agencies are generally not limited in what to include in private commercial contracts. However, this does not mean that any contract provision will be enforceable under law. Enforceability will depend on the way requirements are connected to the subject matter of the contract.

Notes

Summary



13m 26s



- If a contract's basis for establishing a required outcome is questionable legal proceedings might establish something different to what was anticipated as being legally enforceable

To be enforceable, requirements must specify expressly a precise quantity or a tangible quality, each with target that can be measured objectively. Where there is any failure to achieve the target, a meaningful contractual sanction, if any, must be available within an enforceable legal framework. Even in the case of design-build, where it is known what is wanted but not necessarily how functional requirements are to be satisfied, contractual specification of the requirements provides a legal obligation to perform. If a contract's basis for establishing a required outcome is questionable because of an unclear or ill-defined specification, requirement or obligation, legal proceedings might establish something different to what was anticipated as being legally enforceable. In this case, parties would be unwilling to sign up to the contract provisions.

Notes

Summary



13m 45s



Overriding principle for a successful contract:

- Only when there is certainty that an event is possible can a measurable target serve as a requirement that is legally enforceable and subject to sanctions

So the overriding principle for a successful contract is that only when there is certainty that an event is possible can a measurable target serve as a requirement that is legally enforceable and subject to sanctions, if any.

Notes

Summary



14m 36s



A contract must not therefore:

- Set its own standards
- Disguise suitability requirements
- Disguise selection criteria
- Disguise minimum requirements
- Disguise award criteria

A contract must not therefore set its own standards or disguise suitability requirements, selection criteria, minimum requirements or award criteria. Instead it must pertain to the subject matter of the contract, namely the execution of the contract.

Notes

Summary



14m 50s



- The contract can incorporate incentives such as a bonus or discount that is linked to an increase in sustainability

The contract can however incorporate incentives designed to promote execution such as a bonus or discount that is linked to an increase in sustainability, for example, energy savings during construction.

Notes

Summary





- Many terms and concepts related to sustainability are at present not legally defined
- Sustainability requirements should be expressed explicitly in contract provisions

Given the possible uncertainty of the legal status of sustainability provisions, it is sometimes argued that a contract does not need to make specific references to sustainability since sustainability is an integral, business-as-usual practice in a construction project and not a separate consideration. However, many terms and concepts related to sustainability are at present not legally defined and certainly not generally implied. Sustainability requirements should therefore be expressed explicitly in contract provisions.

Notes

Summary



15m 20s



- Express contract provision is seen as superior to a specification if the provision is a fundamental term as opposed to a warranty
- For a breach it provides a stronger remedy

And as has been discussed, for public procurement, these sustainability provisions should only be included if they are linked to the subject matter of the contract at any point in the life cycle of the works. In law, an express contract provision is seen as superior to a specification if the provision is a fundamental term as opposed to a warranty because this provides for, in the event of a breach, a stronger remedy such as the ability to terminate the contract.

Notes

Summary



15m 54s



- Mix express sustainability provisions for contract management and performance with precise sustainability specifications
- These are expressed using measurable performance indicators.

The trend nevertheless is to mix express sustainability provisions for the management and/or performance of the contract with precise, specific and detailed sustainability specifications or requirements given elsewhere in contract documentation and expressed using measurable performance indicators.

Notes

Summary



16m 25s



- Handling of separate sustainability specifications is open to discussion
- Some agencies set out sustainability requirements in the business-as-usual contract documents
- Some private-sector organisations recommend using a separate 'sustainability requirements' document

Public agencies however tend to limit sustainability provisions to 'supporting' provisions covering the monitoring, reporting and performance review of impacts. Moreover, the situation is evolving, at least for public contracts. For example, for the US Department of Energy, passive solar performance is a 'functional objective' that does not need 'special treatment' in contracts. The way the separate sustainability specifications or requirements are handled is also open to discussion. Some agencies set out sustainability requirements in the business-as-usual contract documents. Some private-sector organisations on the other hand recommend using a separate 'sustainability requirements' document. The choice is more about style than substance.

Notes

Summary





- These forms will increasingly take up sustainability obligations that today are generally documented separately in some way and accompanied in some cases by special provisions

As time passes, in addition to the many sustainability issues already addressed by standard forms of contract, these forms will increasingly take up sustainability obligations that today are generally documented separately in some way and accompanied in some cases by special provisions.

Notes

Summary



17m 31s



- Ensure that sufficient and timely progress is made so that infrastructure developers can benefit from the efficiency and transparency of tried and tested standard form contracts

Issues related to the standard of reasonable skill and care will be questioned, as will: the effect of climate change on latent conditions (conditions that cannot be foreseen by an experienced contractor); the ability to foresee changes to building codes and limitations to fitness for purpose obligations; and the requirements for a contractor's sustainability report and plan. In conclusion, much effort will continue to be spent on establishing credible and measurable sustainability criteria that can be used to procure sustainable projects responding to specified enforceable, legally binding requirements. The challenge is to ensure that sufficient and timely progress is made so that infrastructure developers can benefit from the efficiency and transparency of tried and tested standard form contracts which are robust, yet able to respond to major emerging sustainability needs.

Notes

Summary



17m 49s



We have discussed:

- How to select an appropriate model
- Establish a corresponding tendering process using information that is consolidated in the feasibility studies report

In reviewing project acquisition for the main types of conventional project delivery models we have discussed how to select an appropriate model and establish a corresponding tendering process on the basis of information that is consolidated in the pre-engagement feasibility studies report.

Notes

Summary



18m 21s



The most important issues revolve around:

- The way award criteria are formulated in tenders
- How they are transposed into contracts as enforceable and binding obligations

The most important issues revolve around the way award criteria are formulated in tenders and transposed into contracts as enforceable and binding obligations.

Notes

Summary



18m 35s



- Standard forms of contract are playing an increasingly more necessary and more important role in this regard

Fortunately, we see that standard forms of contract are playing an increasingly more necessary and more important role in this regard.

Notes

Summary



18m 45s