An Assessment of Turn-key Contracts for the Realisation of Capital Works Projects

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Preamble

The traditional approach to capital works building projects in Anglo-Saxon countries, including the Commonwealth Caribbean, is for the owner to have separate contracts for architects, structural & civil engineering consultants, electrical & mechanical engineering consultants, quantity surveyors (except in North America) and construction contractors. Occasionally the design team (architects, structural & civil engineering consultants, electrical & mechanical engineering consultants, quantity surveyors) are consolidated into one contract. Occasionally there is added to the team a project manager, although this coordinating role is traditionally allocated to the architect in buildings for human occupancy. The main construction contractor would usually have several sub-contractors although these sub-contractor services are sometimes contracted separately and directly by the owner.

In recent decades there has been a gradual increase in the use of various forms of package contracts. These various forms include: Build-Operate-Lease-Transfer (BOLT) contracts, Design-Build-Operate-Transfer (DBOT) contracts, Engineering-Procurement-Construction (EPC) contracts, Design-Build (DB) contracts and Private Finance Initiative (PFI) contracts. The term "turn-key contract" encompasses all of the above variations, and several more – eg Build Operate Transfer (BOT), Build Operate Own Transfer (BOOT) and Rehabilitate Operate Transfer (ROT).

The process by which a construction project is comprehensively designed and constructed for an owner would include: project scope definition; organisation of designers, constructors and various consultants; sequencing of design and construction operations; execution of design and construction and close-out and start-up. The procurement of designers, constructors and various specialist consultants would include: the assessment of qualifications and price proposals and the selection of project participants. The form of agreement in a construction project would include obligations and responsibilities, the allocation of project risk and the payment procedures.

Reasons for Using Turn-key Contracts

There are a number of reasons why an owner would select a turn-key contract for a particular project. Many of these reasons are well-founded. Some of the reasons may be due to misconceptions. They include: a faster overall schedule (principally by using a "fast track" approach allowing construction to commence at an earlier stage in the design process); having a single point of responsibility for design and construction (without an implicit warrantee for the adequacy of the design); involving the constructor at an early stage in the development of the

design of complex projects; fostering creativity and innovation; inability of the owner's in-house technical resources to monitor the work of designers and constructors; and "off balance sheet" accounting (allowing the project cost not to be shown in the owner's balance sheet).

Potential Advantages

Some of the advantages of turn-key contracts are already described above. Other advantages are: the project cost could be fixed before detailed design is well advanced; there is a reduction in claims for extras; the owner should be relatively sheltered from liability arising from design errors or omissions; turn-key contracts reduce the possibility of adversarial relationships between the designer and builder; turn-key contracts make it easier to fix the overall project schedule early on; dealing with one entity would reduce the administrative burden; appropriate and effective sharing of risk; long-term maintenance can be incorporated in turnkey contracts; PFI provides government with a vehicle for reversing the legacy of under-investment in public-service infrastructure; PFI helps the public sector by providing a better understanding of the total costs of providing the required facility and service.

Questions to be Answered when Deciding whether to Utilise a Turn-key Contract

If the owner is considering utilising a turn-key contract for a particular project, it is highly desirable that the following questions be discussed and answered before making a final decision: project timing (Can there be significant time savings by carrying out design and construction concurrently and can potential time savings actually be realised?); complexity; value (The owner needs to review whether relinquishing total control of the design would be compensated for by some other value added as a result of the turn-key arrangement.); scope (The owner's team should prepare a formal project scope.); in the PFI model can the owner
define its needs as service outputs that can be adequately contracted for in a way that ensures effective, equitable and accountable delivery of public services in the long term and can the pre-conditions of equity and accountability in public service delivery be met?

It must also be recognised that the advantages to be gained from utilising various forms of turn-key contracts usually require complementary actions on the part of the owner.

Disadvantages

Users and owners occupy a different world from contractors (providers). Providers think that what they do is right, and users tend to accept it because they are led to believe in the expertise of the providers. Users who discover problems when using facilities tend to suffer in silence rather than openly blame the providers. Providers tend to blame owners for not correctly using and maintaining the facilities. Providers often win the silent battle between themselves and the owners.

Turn-key contracts can require the provision of many items and services, including the provision

of land, obtaining planning permissions, designs, long-term finance, construction, equipment, commissioning services, long-term maintenance, and long-term management of the facility for up to (say) 25 years. At a minimum, the turn-key contractor must supply design and construction services. The availability of suitable and willing contractors to bid on a project is inversely proportional to the number of distinct services they are required to provide. Therefore, one of the important disadvantages of turn-key contracts is the narrowing of the field of candidates.

High bid costs and long procurement times represent concerns for both the public and private sectors. These costs are eventually passed on to clients. Thus they impair value for money for the public sector and limit contractors' capacity to bid for projects. Bid costs are higher and procurement time scales are longer than for conventional procurement.

There are projects where the final design must be completed before an accurate estimate of cost can sensibly be made. If the bidders are encouraged to submit tenders which allow for a high degree of uncertainty, the owner would end up probably paying too much for the facility. This is so because the design-builder would have to include a large contingency sum to cover those uncertainties.

The owner may want significant input in the design. Successful turn-key projects necessitates the design-builder to "own" the details of design. There is an assumption of trust between the owner and the contractor. If the owner attempts (or needs) to influence the details of design after the award of the contract, there could be negative cost implications and a breakdown in relationships.

Projects that are too small to attract competent turn-key contractors should utilise the traditional procurement processes. The design-builder is taking on more risk than usual. The project must be large enough for a commensurate reward.

Where specialised equipment is of a class with rapid development and improvement, there may be the need for greater flexibility in the contract terms. This is not what is envisaged in turn-key contracts. Many aspects of high technology equipment procurement do not fit well with the central requirements of PFI, the fast pace of change in the sector make it difficult for the public sector to define effectively the outputs it requires in a long-term contract.

Strategies for Mitigating the Disadvantages

With the gradually increasing use of turn-key contracts for hospitals and other large capital projects in the Caribbean and elsewhere, it is appropriate to provide some guidance towards improving the success of such projects.

Strong procurement skills are required by owners for delivering quality investment on time and in a way that secures value for money for the public sector. PFI requires relevant expertise – long-term options appraisal, significant use of specialist advisers and probably complex contract negotiations reflecting the owner's approach to risk sharing.

User participation in the design of projects is an important ingredient for success. This becomes more difficult in turnkey projects where the owner hands over the responsibility for design to an entity which is not focussed solely, or even principally, on design. To counteract this disadvantage it is necessary to prepare more-detailed performance specifications (but not prescriptions) than would be required in a conventional project. There are different kinds of users – occupants, visitors, owners and tenants. Their views must all be accommodated and this is the role of the owner and advisers.

A "performance criterion" may be defined as "a rule by which the effectiveness of operation or function is judged and its value measured". The project scope must be described by definitive, project-based performance criteria rather than by comprehensive construction plans and specifications. All parties must embrace performance criteria as the definitive project scope due to the risk of costly scope creep as the project proceeds to completion. These performance criteria serve to articulate the scope, quality, cost, schedule and other requirements for a given project and become the foundation for the turn-key contract.

The owner has four main objectives when establishing the performance scope of work in a turn-key contract: Develop a clear project description in functional terms; define operational and quality requirements in performance terms; define all the project's requirements without relying on the post-award process and outline the performance/acceptance tests required that will demonstrate the requisite level of quality for each item of work.

"Quality" may be defined as "the totality of features and characteristics of a product or service that bears on its ability to satisfy given needs". The design-builder is in a position where the details of design and therefore the resulting level of quality are constrained by the budget and the schedule. It is very important to both the owner and the contractor that the requirements for quality be clearly communicated in the bid documents so that the resulting proposals will be responsive to the owner's needs.

It is necessary to understand the functional requirements of the project and its components thoroughly. To do this the persons preparing the technical criteria for the bid documents should answer the following questions: Which requirements are minimum or threshold requirements? What is each threshold? Are there maximum requirements? What design constraints will apply? The public sector should aim at achieving the optimum combination of whole-life cost and quality (fitness for purpose) to meet the user requirements. It should seek to ensure that the evaluation of which procurement option to adopt is undertaken with no inherent preference for one over another; value is not taken to be the least cost and a full evaluation of costs and benefits on a whole-life basis is undertaken, including an assessment of risk.

Oversight/Checking Consultant

The role of the oversight/checking consultant is essential in turn-key contracts. This is to be emphasised in geographic locations (such as the Caribbean) where there are multiple hazards to be accommodated, with the corresponding need for significant care and attention to detail in all aspects of design, construction and maintenance of the built environment.

As in other aspects of the design and construction processes, an independent review of the bid documents is recommended. That review should check that the bid documents are fully responsive to the project's programme; all major features of work are included; all owner's requirements are included and consistent format, order and descriptors are used to facilitate interpretation.