DESIGN-BUILD PRINCIPLES
UNDER THE FIDIC YELLOW BOOK

Techno Engineering & Associates s.r.l.
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- Using Dispute Boards. The Romanian experience of Dispute Boards;
- International Contracting – A Consulting Engineer’s perspective.
The FIDIC Yellow Book enables and regulates the performance of a particular project delivery system based predominantly upon three core concepts: (i) a **performance specification**, (ii) **partnering principles** and (iii) **fast-track approach** to the merged design and construction process.

I have used here three very important concepts:

- Performance specification;
- Partnering principles;
- Fast-track approach.

Now in turn:

**Performance Specification**

An appropriate definition of performance specification would be as follows:

“A performance specification essentially involves a description of the **results** that an Employer is looking for, leaving the means of achieving these results to the **discretion and expertise** of the **Design-Build Contractor**, whereby the Employer’s Requirements set forth the objectives and/or the standard to be achieved requiring the Contractor to exercise its ingenuity and experience in achieving the standard of performance, in selecting the means, and in assuming the corresponding responsibility for that selection by assuming what is called in the Design-Build environment the “**single point of responsibility**” for design and the execution of Works, the latter to be fit for their purpose.

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I have now introduced a fourth concept, of great legal importance, the “single point of responsibility”, which I will also deal in turn.

For those who are accustomed to work with traditional project delivery systems like works governed by the FIDIC Red Book based upon prescriptive specifications, Performance specifications differ from traditional so-called “design” or “prescriptive” specifications, which dictate specific requirements to a Contractor on how to do what needs to be done, on the assumptions that compliance with these requirements will meet the Employer’s needs.

**Partnering**

Partnering is a formal program to improve communications among the people and organizations working on a design and build project. Essentially, key project team members convene for a preconstruction workshop and for regularly scheduled follow-up workshops over the course of the project with the aim to improve relationships and interrelationships. They often work with a facilitator to improve the quality and productivity of their discussions.

**Fast-track approach**

“Fast-Track” is an adopted term and concept to simply describe a proactive approach of the parties within the framework of the Design-Build Contract to act in a time-conscious manner.

However, under Civil law jurisdictions, while it is not an express term of the FIDIC Yellow Book Contract, it is a concept that applies to the Yellow Book, whether amended or not by the Particular Conditions, since it reflects an aspect of the Parties’ obligation under Civil law to perform their contract in good faith, whereby it is generally acknowledged that good faith implies an obligation of cooperation between the contracting parties in order to facilitate inter alia timely performance.
Single Point of Responsibility

The fourth concept:

The single point of responsibility characterizes what is essentially the principal feature of the design/build method of project delivery in which a single entity, i.e. a contractor, provides to an Employer under the legal responsibility of the former all of the services necessary to both design and construct all or a portion of a project.

One of the many advantages of merging design and construction under the Contractor “single point of responsibility” is that it enables, in principle, the works to be started in phases, rather than waiting until the design has been completed. However, it also gives the Design-Build Contractor more control over the project schedule than either an Engineer or a Contractor would have if the project were delivered through the traditional project delivery system like those under the FIDIC Red Book. This control in the hands of the Contractor has the positive attribute of reducing the risk of project delays caused by lack of design and construction coordination. However, the success of the Design-Build delivery system is only assured if the FIDIC Engineer and the Contractor work well together and manage to develop a higher level of trust and “partnering” attitude.

Particular features of the Yellow Book

One of the main features under the FIDIC Yellow Book is the one of the role of the Engineer, as the Employer’s Agent under this form of Contract, in respect of design reviews, which is limited to reviewing Design and Construction Drawings prepared and submitted by the Design-Build Contractor for the sole purpose of ascertaining that the information set forth therein generally conforms with the stated Employer’s Requirements for the Design and the Works.

The underlying rationale is that under no circumstances whatsoever can the Engineer impose his own design preferences onto the Contractor, without taking on the responsibility of the consequences of such imposition. When interpreting the Contract Documents in respect of design reviews, the
Engineer must restrict his comments to the compliance (or not) of the design with the Employer’s Requirements and other Contract Documents as appropriate.

The underlying message that the FIDIC Yellow Book brings to the attention of Engineer and Employer alike is that the Engineer cannot rigidly apply the Employer’s Requirements as if they were traditional descriptive specifications, which they are not, because they are - as I said before - performance specifications, and that the Engineer should look beyond in order to be in a better position to decide the merits of the design-build Contractor’s design innovations and assist the development of solutions that would meet everyone’s interest within the Time for Completion, in order to avoid the risk of hindering the Contractor’s design phase by imposing the Engineer’s own design preferences and interpretations of the Employer’s Requirements onto the Contractor.

The role of the Engineer, under the Yellow Book, is also to encourage and accept Contractor’s innovation and allow for Contractor’s creative ideas regarding the design stage of the Contract, by maintaining open communication channels with the Contractor by way of true partnering. It is common knowledge that for the Design-build process to be effective, the Engineer must understand its role in the overall project, including the underlying fact that under the Yellow Book he has limited input and less review and approval powers than under a FIDIC “Red Book” form of Contract.

The Engineer under the Yellow Book is not expected to be the Contractor’s peer reviewer or part of the Contractor’s design team. The Contractor holds as I said before a “single point of responsibility” under the Design-build Contract, which should allow the Contractor to enjoy a substantial degree of freedom when performing its design task, without unnecessary interference from the Engineer.
Notably, the “Fast-Track” nature of the Design-Build project is facilitated by the adoption of the FIDIC “Yellow Book”. By choosing the “Yellow Book”, the Parties are indeed demonstrating their agreement that, in principle, the Contractor should be free, within the constraints set by the Contract, to design the works as it considers most appropriate, since it has a “single point of responsibility” for such design and construction thereof.

Two, amongst others, are of major importance and they are:

- **Bridging**

Bridging is the most common problem encountered in Design-Build.

The “bridging” theory stems from the supply by the Contracting Authority, at Tender stage, of overly detailed and usually contradictory documentation relevant to detailed design within the Employer’s Requirements together with its performance specification.

Unfortunately, this practice has a dangerous downside in respect of Employer’s liabilities.

First, to a great extent it precludes the Contractor from creatively developing cost-effective design solutions to meet the Employer’s Requirements and indeed its needs, which is one of the primary benefits of adopting the Design-build process. Secondly, it inhibits the principle of “single point of responsibility” or “liability wrap”
which is the basis upon which the Contractor signs on the Design-Build Contract based for instance on the Yellow Book type of Contract.

The danger for the Employer, in this instance, is usually caused by the unwrapping of the Contractor’s otherwise single point of responsibility dictated by the FIDIC Yellow Book, when the Employer’s supplied bidding documents may contain overly detailed documentation relevant to detailed design containing within likely errors and/or ambiguities by virtue of the fact that the complete detailed design is yet, at that stage, to be conceived and performed by the Contractor.

The Engineer’s Design Reviews

A clear principle within the Yellow Book is that any review by the Engineer of the Contractor’s design should only result in comments where the Contractor’s design gives reason to consider that it will be inadequate. In that case the Engineer must specify exactly how the Contractor has failed to comply with the Contract as referred to in Sub-Clause 5.2 paragraph 5, sub paragraph (a) point (i) roman, wherein it is stated: “the Engineer shall give notice to the Contractor that the Contractor’s Document is approved, with or without comments, or that it fails (to the extent stated) to comply with the Contract”.

As the late Mr. Brian Totterdill, a renowned FIDIC Commentator, had correctly noted at page 156 of his „Practical Guide to the 1999 Red and Yellow Books, 2nd Edition:

“The potential problem from the review procedures is that the Engineer has the power to ask for the resubmission of documents and to delay the construction until he is satisfied. Whilst the Engineer can only object that the document fails to comply within the Contract, to the extent stated, most design is a subjective process, subject to the preferences of the particular designer. The Contractor is ultimately responsible for the performance of his design and the Engineer must not try to
impose his own design preferences on to the Contractor's design."

A similar view was expressed in the EIC Guide to the Yellow Book, in 2003, in relation to Section 5.2 wherein it was wisely stated:

"Most contractors would agree that an orderly flow of technical information is critical to the success of a design-build project. The Yellow Book does not specifically address this issue but, under the terms of Sub-Clause 5.2, actually invites a situation where the Engineer can seriously disrupt and delay the design and construction process by repeatedly reviewing documents before giving permission for construction to proceed. To delay the commencement of construction until review of the Contractor’s documents is completed to the satisfaction of the Engineer is, to put it mildly, a recipe for disaster. The provisions for review of documents are overly prescriptive and give the Engineer too much freedom to disrupt the Contractor’s design.

The Contractor has total responsibility for achieving the performance criteria and must therefore have considerable freedom to achieve this objective free of the Engineer's interference."

Advantages of the Design-Build project delivery system when adopted in conjunction with Yellow Book.

The benefits to be gained in establishing a well designed and managed Design-Build process governed by the FIDIC Yellow Book include the following:

- **Singular Responsibility** - With both design and construction in the hands of a single entity, there is a single point of responsibility for quality, cost and schedule adherence. The design-build Contractor is motivated to deliver a successful project by fulfilling multiple parallel objectives, including aesthetic and functional quality, budget, and schedule for timely completion. With design-build, the Employer is able to focus on scope/needs definition and timely decision-making, rather than on coordination between designer and contractor.
Quality

The singularized responsibility inherent in design-build serves as a motivation for quality and proper project performance. The Employer's requirements and expectations are documented in performance terms and it is the design-build Contractor's responsibility to produce results accordingly. The Design-Build Contractor warrants to the Employer that it will produce design documents that are complete and free from error. (By contrast, with "traditional" Project delivery systems also known as design-bid-build, the Employer warrants to the Contractor that its drawings and specifications are complete and free from error. Because it is the Employer's warranty for the design documents under design-bid-build, the traditional approach relies on restrictive contract language, audit and inspection and occasionally, the legal system, to ensure final project quality.)

Cost Savings

Design and construction personnel, working and communicating as a team, evaluate alternative materials and methods efficiently and accurately. Value engineering and constructability are utilized continuously and more effectively when the designers and contractors work as one team during the entire design process.

Time Savings

Because design and construction are overlapped, and because bidding periods and redesign are eliminated, total design and construction time can be significantly reduced. Design-build is ideal for the application of "Fast Track" construction techniques. With design-build, materials/equipment procurement and construction work can begin before the construction documents are fully completed. The resulting time savings translates into lower costs and earlier utilization of the completed facility.

Potential for Reduced Administrative Burden

During procurement, the potential exists for the design-build project delivery system to reduce the Employer's administrative burden; however, preparing RFPs and conducting evaluations can be resource intensive during the early learning curve.
During actual design and construction, the Employer is not required to invest time and money coordinating and arbitrating between separate design and construction contracts, but rather is able to focus on timely decision making.

**Early Knowledge of Firm Costs**
Guaranteed construction costs are known far earlier than in other project delivery systems. The entity responsible for design is simultaneously estimating construction costs and can accurately conceptualize the completed project. Staged contracting for design-build services affords the Employer one or more "go, no-go" decision points during design. The decision to proceed with the project is made before substantial design expenditure and with firm knowledge of the final cost.

**Improved Risk Management**
Performance aspects of cost, schedule/programme and quality are clearly defined and responsibilities/risks are appropriately balanced in the Yellow Book (individual risks are managed by the party best positioned to manage that risk). Variation orders due to "errors and omissions" are virtually eliminated, because the design-build Contractor has responsibility for developing drawings and specifications as well as constructing a fully-functioning facility fit for its purpose.

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