
DESIGN RISK AND RESPONSIBILITY

Presentation to SCL Astra

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Debevoise
& Plimpton

The design

- Encompasses a broad spectrum of products/services
 - Concept design, outline design, FEED, detailed design, AFC dwgs, shop dwgs, construction details, materials selection, temporary works design ...
- Usually a split of responsibility for delivering various aspects of the design
- Design risks are similarly multifaceted
 - Buildability, catastrophic failure, unfit for purpose, performance failures, inconsistencies, cost to construct, compliance with laws codes and standards ...

Procurement methods

- “traditional” – design, bid, build
- Design & build
- EPC/turnkey
- Others: construction management, management contracting, EPCM etc
- The name of the procurement method is only a guide to the split of responsibility and risk

Principles of risk allocation

- Good risk management allocates risks to the party best able to manage them by:
 - Reducing their probability of occurring
 - Reducing their magnitude if they occur
 - Controlling the effect if they occur
 - Bearing the effect once they occur
- In most cases, this means (broadly) allocating the risks arising from an activity to the party responsible for that activity
- Departure from this rule of thumb tends to create a sense that a contract is unfair or unbalanced
- Can have disastrous consequences for the party bearing a risk it cannot manage, and poor outcomes for the project.

FIDIC Red Book

- Clause 4.1:

“[...]

The Contractor shall be responsible of the adequacy, stability and safety of all Site operations and methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor’s documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works

[...]”

FIDIC Yellow Book

- Clause 5.1:

“The Contractor shall carry out, and be responsible for, the design of the Works.

[...]

Upon receiving notice under Sub-Clause 8.1 [Commencement of the Works], the Contractor shall scrutinise the Employer’s Requirements (including design criteria and calculations if any) and the items of reference mentioned in Sub-Clause 4.7 [Setting Out]. Within the period stated in the Appendix to Tender, calculated from the Commencement Date, the Contractor shall give notice to the Engineer of any error, fault or other defect found in the Employer’s Requirements or these items of reference.

After receiving this notice, the Engineer shall determine whether Clause 13 [Variations and Adjustments] shall be applied [...]”

NEC3

- Clause 20.1

“The Contractor Provides the Works in accordance with the Works Information”

- Clause 21.1

“The Contractor designs the parts of the Works which the Works Information states he is to design”

- Clause 60.1

“The following are compensation events.

(1) The Project Manager gives an instruction changing the Works Information except

- *[...]*
- *A change to the Works Information provided by the Contractor for his design which is made either at his request or to comply with other Works Information provided by the Employer.”*

FIDIC Silver Book

- Clause 5.1

“The Contractor shall be deemed to have scrutinised, prior to the Base Date, the Employer's Requirements (including design criteria and calculations, if any). The Contractor shall be responsible for the design of the Works and for the accuracy of such Employer's Requirements (including design criteria and calculations), except as stated below.

The Employer shall not be responsible for any error, inaccuracy or omission of any kind in the Employer's Requirements as originally included in the Contract and shall not be deemed to have given any representation of accuracy or completeness of any data or information, except as stated below. [...]”

FIDIC Silver Book

- Clause 5.1 (cont.)

“However, the Employer shall be responsible for the correctness of the following portions of the Employer's Requirements and of the following data and information provided, by (or on behalf of) the Employer:

[...]

(b) definitions of intended purposes of the Works or any parts thereof,

[...]”

NEC3 revisited

- Scheme of the contract is that the Employer's Works Information (EWI) contains Employer's requirements and Contractor's Works Information (CWI) contains the Contractor's design proposals.
- The Employer is responsible for the EWI and changes to it will be a Compensation Event.
- The Contractor is responsible for the CWI, and changes to it will be Compensation Events only where they arise out of discretionary instructions from the Project Manager.
- But consider:
 - Employer issues tender containing a “reference design”
 - Invites Contractor to submit it with bid as part of CWA
 - Effect is to impose the risk of the design on Contractor

Pricing

- Contractual risk allocation is determined in part by the pricing model.
- A design change which is nominally the Employer's risk may be inadequately compensated by a valuation based on unit prices/changes of quantities.
- D&B/EPC contracts are typically let on fixed price basis
 - Can lead to limited pool of tenders, excessive contingencies, cost cutting/inadequate designs
- But alternative of Cost Plus pricing
 - Transfers (part of) the design risk to Employer, and may lead to “gold plating”
- D&B target cost contracts may be an effective solution for some projects.

Tentative conclusions

- Risk allocation generally most efficient when responsibility and risk march together.
- Occasionally good commercial reasons for departing from this rule: eg non/limited recourse project finance.
- Wholesale attempts to impose a design on a contractor and design risk are likely to be resisted, pricedand then litigated!
- Pricing mechanisms form an integral part of risk allocation.

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