

THE ROLE OF THE ENGINEER - An international construction lawyer's perspective on FIDIC

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This article introduces the Engineer, briefly explaining how the Engineer is appointed in the first place and replaced as necessary. The skills required by an Engineer, its duties and role are then explored. The article focuses on the First editions of the FIDIC 1999 Suite of Contracts, particularly the Conditions of Contract for Construction for Building and Engineering Works designed by the Employer (“CONS”) and some elements of the Conditions of Contract for Plant and Design Build (“P&DB”). Reference is also made to the agreement between the client and Consultant (“White Book”).

APPOINTMENT OF THE ENGINEER

The definition of Engineer¹ pre-supposes that the Engineer has already been appointed and is the person named in the Appendix to Tender. This is sensible as often, an important factor for a contractor when pricing a job is the quality of the Engineer:

- a. How good is the Engineer at maintaining the time schedule for the provision of drawings?
- b. What is the Engineer's attitude towards variations and their valuation?
- c. Does he issue instructions/variations quickly?
- d. How efficiently does he deal with monthly payments?

REPLACEMENT OF THE ENGINEER

If for whatever reason the Engineer has not been appointed at tender stage or subsequently needs replacing, then Sub-Clause 3.1 provides the obligation on the Employer to appoint an Engineer and the definition provides that the replacement Engineer must be appointed in compliance with Sub-Clause 3.4². This important new

¹ Sub-Clause 1.1.2.4 provides: “*Engineer*” means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Appendix to Tender, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer]”

² Sub-Clause 3.4 [Replacement of the Engineer] provides: “If the Employer intends to replace the Engineer, the Employer shall, not less than 42 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended replacement Engineer. The Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by

feature in the 1999 forms (not present in previous FIDIC forms) of the replacement of the Engineer under Sub-Clause 3.4 is not without its difficulties.

If a Contractor raises objection against the replacement Engineer proposed by the Employer, there is no mechanism specified on how such objection should be determined. It is suggested that, in the first instance, it would be for the Employer to determine whether it considered the Contractor had raised reasonable objections and then if there was a dispute, then such dispute could be referred to the DAB, if one was in place (or if not to arbitration). If a DAB or arbitrator ultimately ruled that the Contractor's objections were reasonable and the replacement Engineer appointed by the Employer had made determinations prior to such a ruling then any determinations made by the Engineer would be considered invalid.

In an unreported ICC case, an Employer required a replacement Engineer as the contract with the original Engineer had expired³. The Employer required that replacement Engineer to make a Sub-Clause 3.5 determination on a defects claim. The Employer proposed a different Replacement Engineer to the Engineer in the original contract and gave the relevant 42-day notice under Sub-Clause 3.4. The replacement Engineer's scope of services was restricted to making the 3.5 determination as there was no other duties envisaged for the Engineer to carry out. The Contractor raised objection. A sole Arbitrator ruled that the Engineer was not validly appointed as the Engineer's scope had been constrained under Sub-Clause 3.1. The effect of the ruling that the Engineer was unlawfully constrained was that the Sub-Clause 3.5 determination that the Replacement Engineer had been made was invalid which meant that there was no valid dispute that could be referred to the DAB or arbitral tribunal. This case underlines that a Replacement Engineer should not have its scope constrained⁴.

notice to the Employer, with supporting particulars”

³ The Employer will commonly enter into a separate contract with the Engineer for a fixed term so on the expiry of that term, under the construction contract, the Employer will have to ensure that the Engineer's appointment is either extended or a replacement Engineer appointed. Under the Client/Consultant Model Services Agreement – FIDIC White Book, the duration of the contract is dealt with in Appendix 2 and there are provisions in Clause 4 enabling the Employer to extend the time period of the engagement of the Engineer. Often however, funding may be in issue when looking at extending the Engineer's contract.

⁴ Further, an Employer finding itself in the above position should be wary to ensure that if a dispute has to be referred to arbitration there are many contractual time periods that need to be observed and if the limitation period of the country governing the contract is short, it may be a challenge to navigate through all these steps (such as the 42-day notice period under Sub-Clause 3.4 and several other time periods that need to be observed under Clause 20 – 84 days for the DAB process, 56 days amicable settlement etc.) prior to the expiry of the limitation period.

WHO IS THE ENGINEER?

Sub-Clause 1.1⁵ makes it clear that the “person appointed” as Engineer⁶ can and often does include a corporation, such as a firm of Consulting Engineers as opposed to an individual. Sub-Clause 3.1⁷ makes provision for a Consulting Engineer to delegate necessary functions of the Engineer and recognises that there are different roles and therefore skills required of the Engineer. The Clause enables a lot of flexibility as each project is different and will be organised in a different way. Reference is made to a Resident Engineer who will normally be the project manager or contract administrator of the Works.

THE DUTIES OF THE ENGINEER

The duties of the Engineer⁸ pervade through the contract from the inception of the Project (the Engineer shall give notice of the Commencement Date under Sub-Clause 8.1) until the conclusion of the Contract (the Engineer shall issue the Taking-Over and Performance Certificates) and beyond (there may be a requirement to give Sub-Clause 3.5 determinations on disputes after the conclusion of the Contract).

The Engineer has a multitude of duties including:

⁵ Sub-Clause 1.1 provides that: “Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.”

⁶ Sub-Clause 1.1.2.4 provides the definition of “Engineer” means the person appointed by the Employer ...”

⁷ Sub-Clause 3.1 provides that: “The Engineer may from time to time assign duties and delegate authority to assistants, and may also revoke such assignment or delegation. These assistants may include a resident engineer, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations]. Assistants shall be suitably qualified persons, who are competent to carry out these duties and exercise this authority, and who are fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorised to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer.”

⁸ Sub-Clause 3.1 [Engineer’s Duties and Authority] provides that the Engineer “... shall carry out the duties assigned to him in the Contract ”

Managing Time

- a. Notifying the Contractor of the Commencement Date under Sub-Clause 8.1;
- b. Approving and then managing the time programme under Sub-Clause 8.3;
- c. Determining extensions of time under Sub-Clause 8.4;

Measurement and rate evaluation

- d. Measuring the Works under Sub-Clause 12.1
- e. Determining new rates and prices under Sub-Clause 12.3 (in CONS);

Design

- f. Approving and reviewing design under Sub-Clause 5.2 (in P&DB);

Certifying Payment

- g. Issuing Interim Payment Certificates to the Employer under Sub-Clause 14.6 (CONS, P&DB and EPCT);

Instructions and Variations

- h. Issuing instructions under Sub-Clause 3.3 and Variations under Clause 13 (CONS, P&DB and EPCT);

Inspection and Testing

- i. Inspecting and testing under Clause 7 (CONS and P&DB);

Issuing Certificates

- j. Issuing Taking-Over and Performance Certificates

Making determinations

- k. Making determinations on claims under Sub-Clause 3.5 (CONS and P&DB);

It can be seen from the multitude of duties that are performed by the Engineer, not all of which will be considered in detail below, that the Engineer performs a fundamental role in the construction contract. As the Engineer is not a contractual party to that Construction Contract, the clause imposes on the Employer an obligation to ensure that the Engineer carries out those duties.

THE WHITE BOOK

In both CONS and P&DB, the Employer may enter into a White Book with the Engineer. The White book has been through many revisions. The 1st edition was issued in 1990 and further editions published by FIDIC in 1992, 1995, 1998. The latest edition is the 4th ed. 2006. This form is intended for use on pre-investment and feasibility studies, designs; and administration of construction and project management, both for Employer-led design and Contractor-led design teams (i.e. for use on CONS AND P&DB). It is understood that FIDIC is considering a new White Book specifically for Design Build contracts.

Of fundamental importance in relation to the White Book is the fact that it is intended to cover the minimum requirements of a typical appointment contract. This is made plain under the heading “Completion of Agreement”. The reason that the White Book is not more detailed is simply because each project will be very different and the services required of the Consulting Engineer again will be varied. The detail of any White Book Contract will be found in the Appendices.

The White book is structured as follows:

- a. Agreement
- b. Particular Conditions
 - i. A) References from clauses in GCC⁹
 - ii. B) Additional Clauses¹⁰
- c. Appendices¹¹
 1. Scope of Services;
 2. Personnel Equipment, Facilities and Services of Others to be provided by Client;
 3. Remuneration and Payment;
 4. Time Schedule for Services
- d. GCC arranged in 8 Clauses.

Some of the key clauses in the General Conditions from a legal perspective are as follows:

- a. Sub-Clause 2.1 provides that the Client **shall** within a time give to the Consultant free of cost all information, which may pertain to the Services which the client is able to obtain. This may include design information perhaps provided by experts such as borehole tests. The word “reasonable” may give rise to difficulties.

⁹ This contains essential Contract Data much like the Appendix to Tender in a Construction Contract

¹⁰ This is where the parties set out any variations, omissions and additions to the General Conditions

¹¹ This is where all the detail of the Contract is found

- b. Sub-Clause 3.3 deals with the duty of care of the Consultant and provides no other responsibility of the Consultant other than to exercise reasonable skill, care and diligence in the performance of his obligations under the Agreement. This is standard and aligns with PI insurance. There is no reference to fitness for purpose or obligation of result.
- c. Sub-Clause 4.4 makes provision for when the services are impeded or delayed by the Client or his contractors so as to increase the scope, cost or duration of the Services.
- e. Limitation of liability and net contribution clause.
 - i. The Consultant is only liable if there is a breach of duty of care under 3.3.1;
 - ii. if the Consultant fails to provide sufficient numbers of qualified personnel there is certainly a termination right but query if there are any consequences – 4.6.2
 - iii. sum limited to the sum set out in the PC under 6.3.1.
 - iv. Sub-Clause 6.1.3 (c) is a net contribution clause.
 - v. It should be noted that FIDIC/EFCA policy statement on limitation of liability.

Scope of Services

As set out above, the detail in the White Book Contract is likely to come from the Appendices. The Scope is likely to be very detailed. In the United Kingdom, for example, ACE has published Conditions of Engagement, which may assist the drafting of Appendix 1. It should also be noted that scope is very country specific. For example, the need for a construction permit or special licenses may require a whole section if the Engineer is to assist in these matters.

Dispute Resolution

The dispute resolution provisions are broken down into 3 tiers:

- e. Negotiation
- a. Mediation
- b. Arbitration

The dispute resolution provisions are much less detailed than those set out in the 1999 forms. Negotiation and Mediation have been chosen as the different tiers of dispute resolution as opposed to a dispute board as it is expected that any dispute between the Engineer and Employer will be less commonplace than in a construction contract and ideally should be resolved amicably either through negotiation or with the aid of a mediator.

THE ROLE OF THE ENGINEER

As the Engineer is not empowered to amend the Contract¹², the Engineer must act within the confines of the Contract. Any restriction on the Engineer's authority, conferred by this sub-clause, must be clearly listed in the Particular Conditions or agreed between the Contractor and the Employer¹³.

Whilst it is a necessary clause to include in the Contract, it appears that Employers, particularly government Employers, almost as a matter of course have taken to routinely restricting the role of the Engineer by insisting that an Engineer must obtain the Employer's approval prior to carrying out its principal duties such as awarding the Contractor time or money under the Contract or even prior to issuing a Variation. This is a retrograde step as the Engineer's role is being significantly undermined when an Employer seeks to fetter the Engineer's ability to carry out its role effectively. Indeed, one of the most common reasons for disputes arising is due to the partiality of the Engineer towards the Employer.

In the 4th edition of FIDICⁱ, the Engineer was required to exercise its discretion "impartially"¹⁴ and that discretion could be challenged upon the expiry of certain notices and time-frames in arbitration. There was no intermediary step of a Dispute Adjudication Board in the 4th edition¹⁵.

In the 1999 Forms, the concept of an "impartial" Engineer has been abandoned and replaced by Sub-Clause 3.1, which provides that the Engineer acts for the Employer when carrying out his duties under the Contract¹⁶. It is clear, therefore, that under the 1999 forms the Engineer acts as the Employer's agent. Part of the rationale is to deal head on with the fact that the Engineer is paid by the Employer and should therefore act on behalf of the Employer.

The FIDIC Code of Ethics, however, still includes an express provision conferring a duty on the Engineer to act impartially. However, it is unclear which functions are

¹² Sub-Clause 3.1 [*Engineer's Duties and Authority*] provides that "*The Engineer shall have no authority to amend the Contract*"

¹³ Sub-Clause 3.1 [*Engineer's Duties and Authority*] provides that "*If the Engineer is required to obtain the approval of the Employer before exercising a specified authority, the requirements shall be as stated in the Particular Conditions. The Employer undertakes not to impose further constraints on the Engineer's authority, except as agreed with the Contractor.*"

¹⁴ Sub-Clause 2.6 FIDIC 4th edition

¹⁵ In November 1996 a supplement to the 4th edition was published by FIDIC introducing the DAB

¹⁶ Sub-Clause 3.1 [*Engineer's Duties and Authority*] provides that "*whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Employer*"

subject to the duty of impartiality and how strictly the code of ethics is followed by the Engineers

There are however, two exceptions to the Engineer acting as on behalf of the Employer in CONS and P&DB: both exceptions make reference to the word “fair”¹⁷:

- a. Sub-Clause 3.5 requires the Engineer to make a “fair” determination¹⁸; and
- b. Sub-Clause 14.6 makes reference to the Engineer determining what it “fairly determines” to be due.

THE FAIR DETERMINATION

There are several clauses throughout the FIDIC contract that give the Contractor an entitlement to claim time and money (Contractor’s claims clauses¹⁹) which provide that if the Contractor suffers delay and/or incurs Cost the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 to time and/or money. After receiving the notice, the Engineer has an obligation to proceed in accordance with Sub-Clause 3.5 to agree or determine the matter.

Sub-Clause 3.5 provides an obligation on the Engineer first to consult with the Parties. The extent of that consultation is not set out. Whether the consultation needs to be face to face or via correspondence is left open. Essentially at the consultation stage, the Engineer has a mediation role. His role is to seek to get the Parties to reach an agreement. Plainly, the rationale adopted by FIDIC is that the earlier claims are resolved the better. The difficulty lies when the Engineer fails to carry out this role effectively or is prevented from taking the consultation seriously as the Employer is simply not prepared

¹⁷ Which is essentially a synonym for impartial

¹⁸ Sub-Clause 3.5 [Determinations] provides that: “*Whenever these Conditions provide that the Engineer shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Engineer shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.*”

¹⁹ Sub-Clause 1.9 [Delayed Drawings or instructions]; Sub-clause 2.1 [Right of access to the site]; Sub-Clause 4.7 [Setting Out]; Sub-Clause 4.12 [Unforeseeable Physical Conditions]; Sub-Clause 4.24 [Fossils]; Sub-Clause 7.4 [Testing]; Sub-Clause 8.9 [Consequences of Suspension]; Sub-Clause 10.3 [Interface with Tests on Completion]; Sub-Clause 13.7 [Adjustments for Changes in Legislation]; Sub-Clause 16.1 [Contractor’s Entitlement to Suspend Work]; Sub-Clause 17.4 [Consequences of Employer’s Risks]; Sub-Clause 19.4 [Consequences of Force Majeure]

to accede to the Contractor's claims. In this situation, the Engineer is obliged to move on to make a "fair" determination of the Contractor's claim.

An Engineer striving to make a fair determination should strive to make a determination that a DAB or Arbitrator would make: An impartial and independent decision²⁰.

A fundamental safeguard that is built into the FIDIC 1999 forms is that if the Contractor feels that the Engineer has not made a fair determination and he rejects that determination then when the dispute arises, he has the opportunity to refer that dispute to the DAB.

Under Sub-Clause 3.2, one function the Engineer is not authorised to delegate is the authority to make determinations under Sub-Clause 3.5²¹.

ISSUING INSTRUCTIONS AND VARIATIONS

Every construction contract requires the Engineer to administer the works, issue instructions under Sub-Clause 3.3²² and/or variations under Clause 13²³, evaluate value

²⁰ In the UK there has been much case law on this subject:

- Semco Salvage Marine Pte Ltd v Lancer Navigation Co Ltd [1996] the Court of Appeal held that "fair" meant "fair to both parties"
- In Amec Civil Engineering Limited v Secretary of State for Transport [2004] EWHC 2339 (TCC) Rix LJ summarized the obligations of the Engineer (or the architect) in such circumstances. He said that the Engineer or the architect must:
 - (i) "retain his independence in exercising [his skilled professional] judgment";
 - (ii) "act in a fair and unbiased manner" and "reach his decisions fairly, holding the balance";
 - (iii) if he hears representations from one party, he must give a similar opportunity to the other party to answer what is alleged against him; and
 - (iv) "act fairly and impartially" where fairness is "a broad and even elastic concept" and impartiality "is not meant to be a narrow concept".
 - (v) in reaching decisions, an Engineer is not bound by rules of natural justice.

²¹ Sub-Clause 3.2 [Delegation by the Engineer] provides that: "...*the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations]*"

²² Sub-Clause 3.3 [*Instructions of the Engineer*] provides: "*The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.*"

²³ Sub-Clause 13.1 [*Right to Vary*] provides: "*Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, either*

engineering proposals under Sub-Clause 13.2, or other proposals for variations and evaluate appropriate rates and prices in accordance with Sub-Clause 12.3²⁴. The Engineer’s role in managing this process is pivotal. Efficient management of variations and the subsequent valuation of those variations can often be the key to a successful project that is on time and on budget.

CERTIFICATION ROLE

The payment process in CONS can be summarised as follows:

Step 1	Sub-Clause 14.3	Contractor makes Interim Payment Application – see Sub-Clause 4.21 progress reports
Step 2	Sub-Clause 14.6	Engineer to issue Interim Payment Certificate within 28 days (unless < min. amount and notice is given). No sanction for not issuing within 28 days. If no notice given within 56 days – termination right under Sub-Clause 16.2 (b)
Step 3	Sub-Clause 14.7	Employer shall pay amount in Interim Payment Certificate within 56 days. No sanction for non-payment within 56 days. If the Engineer fails to certify the Contractor may, after giving 21 days’ notice to the Employer suspend work (or reduce the rate of work) If no payment is made within 42 days of the expiry of the 56 days set out in Sub-Clause 14.7 – there is a termination right under Sub-Clause 16.2(c)

A Contractor is entitled to suspend (under Sub-Clause 16.1) and then terminate (under Sub-Clause 16.2(b)) if the Engineer fails to certify under this clause. As mentioned previously, there is express wording that provides that certification must be fair²⁵. There

by an instruction or by a request for the Contractor to submit a proposal...”

²⁴ Sub-Clause 12.3 [Evaluation] provides that: “Until such time as an appropriate rate or price is agreed or determined, the Engineer shall determine a provisional rate or price for the purposes of Interim Payment Certificates.”

²⁵ In England, a professional consultant certifying will usually have an implied duty to act impartially between the employer and the building contractor. In the case of Sutcliffe v Thackrah [1974] AC 727 the duty was implied for an architect and a similar obligation implied for a project manager under an NEC contract in Costain Ltd v Bechtel Ltd [2005] EWHC 1018 (TCC).

is no time frame specified in Sub-Clause 14.6²⁶ for when the Engineer should give notice if it considers that the IPC falls below the minimum level but it is suggested that it would be prudent for the Engineer to give the notice within the 28 day period in which the certification should be given²⁷.

ⁱ For an in depth analysis of the role of the Engineer under the FIDIC 4th Edition, see FIDIC 4th A Practical Legal Guide by EC Corbett.

²⁶ Sub-Clause 14.6 [Issue of Interim Payment Certificates] provides: “...*The Employer shall, within 28 days after receiving a Statement and supporting documents, issue to the Engineer an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due...the Engineer shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated in the Appendix to Tender. In this event the Engineer shall give notice to the Contractor accordingly*”

²⁷ In an unreported ICC case, a sole Arbitrator ruled that there was an implied time limit of 28 days.