

# THE ROLE OF THE ENGINEER IN FIDIC 99 **RED BOOK**

**COULD IT BE  
PERFORMED BY A  
SUPERVISION  
CONSULTANT & A  
CONSTRUCTION  
MANAGER?**

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The ENGINEER'S ROLE is central to the FIDIC approach.

In Projects where a number of Contractors may be awarded portions (packages) of the construction PROJECT, the issues of **SITE POSSESSION, SITE SECURITY and CARE OF THE WORKS** should be approached **DIFFERENTLY**. Consequent **COORDINATION ISSUES** arise.

This may necessitate **SPECIAL EXPERTISE** to undertake administrative and coordination aspects of construction. As such, the **ENGINEER'S ROLE** may be performed by **TWO ENGINEERING CONSULTANTS: TECHNICAL SUPERVISION & CONSTRUCTION MANAGER**.

In such cases, one would venture to say that the **FIDIC approach** may be adopted to encompass such arrangements. The examples in this presentation serve only as a humble attempt in this respect.

# **ASPECTS OF THE ENGINEER'S ROLE**

- 1. DEFINITION ISSUE**
- 2. COMMUNICATIONS ISSUE**
- 3. INTERPRETATION ISSUE**
- 4. INSTRUCTION & DETERMINATION ISSUE**
- 5. SITE POSSESSION & MULTI-CONTRACTOR ISSUE**
- 6. QUALITY CONTROL ISSUE**
- 7. MEASUREMENT OF WORK ISSUE**
- 8. CERTIFICATION OF PAYMENTS ISSUE**

# 1. DEFINITION ISSUE

The Engineer's definition is incorporated in Sub-Clause 1.1.2.4, and also is defined as one of the Employer's Personnel under Sub-Clause 1.1.2.6.

To perform the Engineer's role, the Construction Manager and the Supervision Consultant need also to be defined in a similar fashion in the above Sub-Clauses. For Example:

## 1. DEFINITION ISSUE

1.1.2.4 "Construction Manager or CM" means the person appointed by the Employer to act as the CM 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 CM or the SC]*. "Design & Supervision Consultant or SC" means the person appointed by the Employer to act as the SC 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 CM or the SC]*.

# 1. DEFINITION ISSUE

1.1.2.6 "Employer's Personnel" means the CM, SC, the assistants referred to in Sub-Clause 3.2 [Delegation by the CM and SC] and all other staff, labour and other employees of the CM, SC and of the Employer; and any other personnel notified to the Contractor, by the Employer or the CM, as Employer's Personnel.

## 2. COMMUNICATIONS ISSUE

Almost all communication in Contract is between Engineer and Contractor, with a few exceptions (e.g. insurances, guarantees, suspension, termination, & disputes issues).

To perform the Engineer's role, communication lines with the Construction Manager and the Supervision Consultant need to be clarified in all pertinent Sub-Clauses. For Example, the Communications Sub-Clause 1.3 can be amended as follows:

## 2. COMMUNICATIONS ISSUE

### **1.3 Communications**

Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices and requests, these communications shall be:

(a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Appendix to Tender; and

(b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Appendix to Tender. However:

(i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and

(ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the CM, a copy shall be sent to the CM or the other Party, as the case may be. All communication from the SC to the Contractor or vice versa shall be directed to the CM.



### 3. INTERPRETATION ISSUE

Under Sub-Clause 1.5, the Engineer is entrusted and authorized with clarifying and instructing in cases of discrepancy or ambiguities.

To perform the Engineer's role, the Construction Manager can be authorized to interpret discrepancies and ambiguities except those which relate to technical design or specification issues. As such, Sub-Clause 1.5 can be amended as follows:

## 3. INTERPRETATION ISSUE

### 1.5 *Priority of Documents*

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

the Contract Agreement (if any),  
the Letter of Acceptance,  
the Letter of Tender,  
the Particular Conditions,  
these General Conditions,  
the Specification,  
the Drawings, and  
the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the CM shall issue any necessary clarification or instruction, which clarification or instruction shall be based upon the SC's opinion insofar as the ambiguity or discrepancy relates to technical design issues.

## 4. INSTRUCTION & DETERMINATION ISSUE

The Contractor shall only take instructions from the Engineer....  
(Sub-Clause 3.3).

To perform this role of the Engineer, both the Construction Manager and the Supervision Consultant may instruct (the latter's instructions only relating to technical design and specification aspects), but communication lines as proposed earlier need to still be followed. Examples on this issue are proposed for Sub-Clauses 1.9, 3.2, 3.3, 3.5, 7.6, 20.4, 20.6 as follows:

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **1.9 *Delayed Drawings or Instructions***

The Contractor shall give notice to the CM whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and details of the nature and amount of the delay or disruption likely to be suffered if it is late.

The SC shall issue to the CM such necessary drawing or technical design-related instruction as necessary and the CM shall transmit same and/or issue as necessary such non-design-related instruction to the Contractor. If the Contractor suffers delay and/or incurs Cost as a result of non-issuance of the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the CM and shall be entitled subject to Sub-Clause 20.1 *[Contractor's Claims]* to:

- an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 *[Extension of Time for Completion]*, and
- payment of any such Cost plus reasonable profit, which shall be included in the Contract Price.

After receiving this further notice, the CM shall proceed in accordance with Sub-Clause 3.5 *[Determinations]* to agree or determine these matters.

However, if and to the extent that the non-issuance failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **3.2 Delegation by the CM or the SC**

The CM and the SC 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 CM or Supervision Manager, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the CM 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 CM or the SC as the case may be. However:

- any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the CM or the SC to reject the work, Plant or Materials;
- if the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the CM, who shall promptly confirm, reverse or vary the determination or instruction through full consultation with the SC, adopting the position of the SC on technical design-related issues if the case relates to such issues.

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **3.3 Instructions of the CM and the SC**

At any time, the CM may issue instructions, or if relating to technical design-related issues the SC may issue to the CM who in turn shall transmit to the Contractor 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 CM, or from an assistant thereof to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [*Variations and Adjustments*] shall apply.

The Contractor shall comply with the instructions given by the CM or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the CM or a delegated assistant:

- gives an oral instruction,
- receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
- does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,

then the confirmation shall constitute the written instruction of the CM, SC or delegated assistants thereof (as the case may be).

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **3.5 Determinations**

Whenever these Conditions provide that the CM shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the CM, in consultation with the SC, shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the CM shall, in coordination with the SC and transmitting the SC's position in all technical design-related issues, make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

The CM shall give notice to both Parties, with a copy to the SC, of each agreement or determination, with supporting particulars. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [*Claims, Disputes and Arbitration*].

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **7.6 Remedial Work**

Notwithstanding any previous test or certification, the CM or the SC through the CM may instruct the Contractor to:

- remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
- remove and re-execute any other work which is not in accordance with the Contract, and
- execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [*Employer's Claims*] pay to the Employer all costs arising from this failure.



## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### ***20.4 Obtaining Dispute Adjudication Board's Decision***

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the CM or the SC, either Party may refer the dispute in writing to the DAB for its decision, with copies to the other Party and the CM and the SC. Such reference shall state that it is given under this Sub-Clause.....

## 4. INSTRUCTION & DETERMINATION ISSUE – cont'd

### **20.6 Arbitration**

Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by international arbitration. Unless otherwise agreed by both Parties:

- the dispute shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce,
- the dispute shall be settled by three arbitrators appointed in accordance with these Rules, and
- the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [*Law and Language*].

The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the CM or the SC, and any decision of the DAB, relevant to the dispute. Nothing shall disqualify the CM or the SC from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DAB to obtain its decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DAB shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the CM, the SC and the DAB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

## 5. SITE POSSESSION & MULTI-CONTRACTOR ISSUES

The CM/SC formula is usually required when expertise is required to deal with multi-construction contracts on one Project Site awarded at various phases of construction. Such expertise may be procured through appointment of CM firms.

However, having a number of contractors on Site necessitates a different approach to the concept of Site Possession and Security. The Site needs to be in the Employer's possession (control) throughout, but each Contractor working on any part of the Site should still maintain his duty for the care of the Works and of the work of others adjacent to his Works. Coordination of these issues is entrusted with the CM.

Here are a few proposals to reflect this concept:

## 5. SITE POSSESSION & MULTI-CONTRACTOR ISSUES – cont'd

### **2.1 *Right of Access to the Site***

The Site shall at all times be deemed to be in the possession of the Employer through his CM. The Employer shall give the Contractor right of access to all parts of the Site within the time (or times) stated in the Appendix to Tender. The right may not be exclusive to the Contractor. If, under the Contract, the Employer is required to give (to the Contractor) means of access, the Employer shall do so in the time and manner stated in the Specification. However, the Employer may withhold any such right until the Performance Security has been received.

If no such time is stated in the Appendix to Tender, the Employer shall give the Contractor right of access to the Site within such times as may be required to enable the Contractor to proceed in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Employer to give any such right within such time, the Contractor shall give notice to the CM and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- payment of any such Cost plus reasonable profit, which shall be included in the Contract Price.

After receiving this notice, the **CM** shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Employer's failure was caused by an error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

## 5. SITE POSSESSION & MULTI-CONTRACTOR ISSUES – cont'd

### **4.22 Security of the Site**

Unless otherwise stated in the Particular Conditions:

- the Employer, with the assistance of the CM, shall be responsible for keeping unauthorised persons off the Site, and
- authorised persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor by the Employer or the CM, as authorised personnel of the Employer's other contractors on the Site.

## 5. SITE POSSESSION & MULTI-CONTRACTORS ISSUES – cont'd

### **4.6 Co-operation**

The Contractor shall be deemed to be aware of the fact that other contracts are or will be entered into by the Employer with other contractors relating to the Project that may affect the Works and require coordination and scheduling efforts by the Contractor, due to the fact that the Contractor will be performing Work at the same places and at the same time with such other contractors. The cost of such coordination and scheduling efforts shall be deemed included in the Accepted Contract Amount.

The Contractor shall, as specified in the Contract or as instructed by the CM, allow appropriate opportunities for carrying out work to:

- the Employer's Personnel,
  - other contractors employed by the Employer, and
  - the personnel of any legally constituted public authorities,
- who may be employed in the execution on or near the Site of any work not included in the Contract.

Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

If, under the Contract, the Employer is required to give to the Contractor means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the CM in the time and manner stated in the Specification.

## 5. SITE POSSESSION & MULTI-CONTRACTORS ISSUES – cont'd

### **4.10 Site Data**

The Employer shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Employer shall similarly make available to the Contractor all such data which come into the Employer's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

- a) the form and nature of the Site, including sub-surface conditions,
- b) the hydrological and climatic conditions,
- c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
- d) the Laws, procedures and labour practices of the Country,
- e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services, and
- f) the fact that the Contractor shall coordinate his work with work being carried out in the same place at the same time with other contractors on the Site.

## 6. QUALITY CONTROL ISSUE

Auditing the Contractor's QA system, consent to samples submitted by the Contractor and inspection of the Works are part of the Engineer's role, which need to be maintained with and carried out by the Supervision Consultant.

Here is a proposal for doing this:



## 6. QUALITY CONTROL ISSUE – cont'd

### **4.9 Quality Assurance**

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The SC shall be entitled to audit any aspect of the system and advise the CM accordingly who shall in turn transmit same to the Contractor.

Details of all procedures and compliance documents shall be submitted to the CM with a copy to the SC for information before each design and execution stage is commenced. When any document of a technical nature is issued to the CM, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

## 6. QUALITY CONTROL ISSUE – cont'd

### **7.2 Samples**

The Contractor shall submit the following samples of Materials, and relevant information, to the CM for the SC's consent prior to using the Materials in or for the Works:

- manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
- additional samples instructed by the CM as may be requested by the SC and approved by the Employer as a Variation.

Each sample shall be labelled as to origin and intended use in the Works.

## 6. QUALITY CONTROL ISSUE – cont'd

### ***1. Inspection***

The Employer's Personnel shall at all reasonable times:

- have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
- during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

The Contractor shall give notice to the CM whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The CM shall inform the SC accordingly. The SC shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the CM that the SC does not require to do so, which notice shall be transmitted to the Contractor. If the Contractor fails to give the notice, he shall, if and when required by the CM or SC through the CM, uncover the work and thereafter reinstate and make good, all at the Contractor's cost.

## 7. MEASUREMENT OF WORK ISSUE

The Engineer carries out the measurement of work under Clause 12 of the Conditions of Contract. Either Supervision Consultant or Construction Manager may do this if they are to perform the Engineer's Role.

This is an example where the measurement function is maintained with the Supervision Consultant:

## 7. MEASUREMENT OF WORK ISSUE – cont'd

### **12.1 Works to be Measured**

The Works shall be measured, and valued for payment, in accordance with this Clause.

Whenever the SC requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative by the SC through the CM, who shall:

- promptly either attend or send another qualified representative to assist the SC in making the measurement, and
- supply any particulars requested by the SC or CM.

If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of the SC) shall be accepted as accurate.

Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the SC. The Contractor shall, as and when requested, attend to examine and agree the records with the SC, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall give notice to the CM of the respects in which the records are asserted to be inaccurate. After receiving this notice, the SC shall review the records and either confirm or vary them. If the Contractor does not so give notice to the CM within 14 days after being requested to examine the records, they shall be accepted as accurate.

## 8. CERTIFICATION OF PAYMENTS ISSUE

The Engineer certifies the Contractor's payment as a part of the Engineer's Role under Clause 14 of the Conditions.

This function may be entrusted with both Supervision Consultant and Construction Manager, such that the former would verify the quantities and the extent of compliance of work accounted for in the Contractor's Statement, and the latter would issue the Certificates.

This may be arranged, for example as follows:

## 8. CERTIFICATION OF PAYMENTS ISSUE – cont'd

### **14.6 Issue of Interim Payment Certificates**

No amount will be certified or paid until the Employer has received and approved the Performance Security. Thereafter, the CM, in collaboration with the SC who shall verify the quantities and extent of compliance of works accounted for in the Statement, shall, within 28 days after receiving a Statement and supporting documents, issue to the Employer an Interim Payment Certificate which shall state the amount which the CM fairly determines to be due, with supporting particulars.

However, prior to issuing the Taking-Over Certificate for the Works, the CM 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 CM shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- if any thing supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the CM, the value of this work or obligation may be withheld until the work or obligation has been performed.

The CM may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the CM's or SC's acceptance, approval, consent or satisfaction.

## 8. CERTIFICATION OF PAYMENTS ISSUE – cont'd

### **14.13 Issue of Final Payment Certificate**

Within 28 days after receiving the Final Statement and written discharge in accordance with Sub-Clause 14.11 [*Application for Final Payment Certificate*] and Sub-Clause 14.12 [*Discharge*], the CM, in close collaboration with the SC who shall verify the quantities and compliance of the work accounted for in the final statement, shall issue, to the Employer, the Final Payment Certificate which shall state:

- the amount which is finally due, and
- after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [*Application for Final Payment Certificate*] and Sub-Clause 14.12 [*Discharge*], the CM shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 28 days, the CM shall, after verification of work accounted for therein in terms of quantities and compliance with Contract by the SC, issue the Final Payment Certificate for such amount as he fairly determines to be due.



## IN SUMMARY.....

Though the Engineer's role is central to the FIDIC approach, in Projects where a number of Contractors may be awarded portions (packages) of the construction PROJECT, the issues of **SITE POSSESSION, SITE SECURITY and CARE OF THE WORKS** should be approached **DIFFERENTLY**. Consequent **COORDINATION ISSUES** arise. This may necessitate **SPECIAL EXPERTISE** to undertake administrative and coordination aspects of construction. As such, the **ENGINEER'S ROLE** may be performed by **TWO ENGINEERING CONSULTANTS: TECHNICAL SUPERVISION & CONSTRUCTION MANAGER**. In such cases, the **FIDIC approach** may be adopted to encompass such arrangements.