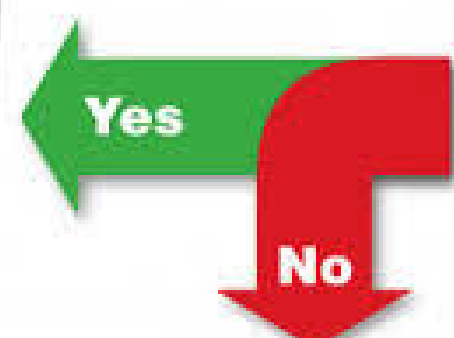
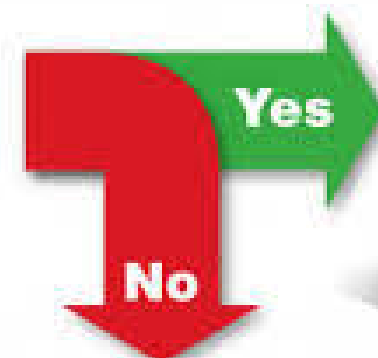




CONSTRUCTION PROJECT



EMPLOYER DESIGN



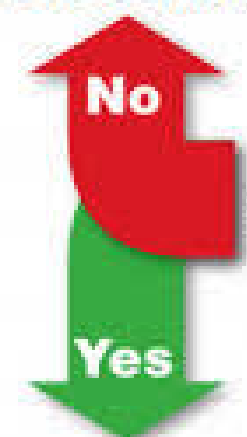
CONTRACTOR DESIGN
Plant and/or high unforeseen risks



Maintenance



DISCUSS IN DETAIL
Employer's requirements with the contractor, and negotiate a modified FIDIC Contract



Fixed price - lump sum
Little employer involvement
No major unforeseen risks





(/).

type here

Which FIDIC Contract should I use?

FIDIC has long been renowned for its standard forms of contract for use between employers and contractors on international construction projects, in particular:

- Conditions of Contract for Works of Civil Engineering Construction: The Red Book (1987)
- Conditions of Contract for Electrical and Mechanical Works including Erection on Site: The Yellow Book (1987)
- Conditions of Contract for Design-Build and Turnkey: The Orange Book (1995)

During its past work in updating the Red and Yellow Books, FIDIC has noted that certain projects have fallen outside the scope of the existing Books. Accordingly FIDIC has not only updated the standard forms but has expanded the range, and has - in September 1999 - published a suite of four new Standard Forms of Contract which are suitable for the great majority of construction and plant installation projects around the world.

This 1999 suite comprises:

- Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer: The Construction Contract
- Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer (MDB Harmonised Edition) - for bank financed projects only: The MDB Construction Contract
- Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant and for Building and Engineering Works Designed by the Contractor: The Plant and Design-Build Contract
- Conditions of Contract for EPC/Turnkey Projects: The EPC/Turnkey Contract
- Short Form of Contract: The Short Form
- Dredgers Contract (based on the Short Form of Contract): Dredgers Contract

The Books in the 1999 suite are all marked "First Edition 1999" (Test Editions were published in 1998, and while these remain valid for contracts, significant changes were made in some cases).

Which FIDIC contract should I use?



Answer the following questions:

A. Relatively small value, short construction time or involving simple or repetitive work

- If the price for the contract is relatively small, say under US\$ 500,000, or the construction time is short, say less than 6 months, or the work involved is relatively simple or repetitive - dredging work might be a good example: then consider using the Short Form of Contract, which is a completely new FIDIC Book specially prepared for such projects.
- It does not matter whether the design is provided by the Employer (or his Engineer/Architect if he has one) or by the Contractor,
- It does not matter whether the project involves construction, electrical, mechanical, or other engineering work.

B. Larger or more complex projects

1. Is the Employer (or the Engineer) going to do most of the design?

As in traditional projects, e.g., infrastructure, buildings, hydropower, etc., the Employer did nearly all the design (perhaps not construction details, reinforcement, etc.) (The Red Book),

- and the Engineer administered the Contract, monitored the construction work and certified payment
- and the Employer was kept fully informed, could make variations, etc.
- and with payment according to bills of quantities or lump sums for approved work done.

If this is what is wanted - choose the Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer (The Construction Contract), which effectively updates and supercedes the existing Red Book from 1987.

In 2005, FIDIC licenced the Multilateral Development Banks (MDB) to use the MDB Harmonised Edition of the Construction Contract for projects funded by the banks. The MDB Construction Contract mainly incorporates Particular Conditions to the Red Book that was used by the World Bank in its Standard Bidding Documents before it and the other MDBs adopted the Harmonised Edition.

2. Is the Contractor going to do most of the design?

As in traditional projects, e.g., electrical and mechanical works, including erection on site (The Yellow Book) the Contractor (or Supplier) did the majority of the design, e.g., the detail design of the plant or equipment, so that the plant met the outline or performance specification prepared by the Employer, and in the relatively more recent design-build and turnkey type projects the Contractor also did the majority of the design, not only of plant projects but also of various infrastructure and other types of projects, and the project was required to fulfil the “Employer’s Requirements”, i.e., an outline or performance specification prepared by the Employer (The Orange Book),

- and the Engineer (Employer’s Representative in the Orange Book) administered the Contract, monitored the manufacture and erection on site or construction work and certified payment,
- and with payment according to achieved milestones generally on a lump sum basis.

If this is what is wanted - choose the Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant and for Building and Engineering Works Designed by the Contractor (Plant and Design-Build Contract) which effectively updates and supercedes both the existing Yellow Book from 1987 and the Orange Book from 1995.

3. Is it a Privately Financed (or Public/Private Financed) Project of BOT or similar type where the Concessionnaire takes total responsibility for the financing, construction and operation of the Project?

Then the Concessionnaire (the “Employer”) probably requires to have a contract with the construction Contractor, i.e., an EPC (Engineer, Procure, Construct) Contract, where the Contractor takes total responsibility for the design and construction of the infrastructure or other facility, and where there is a higher degree of certainty that the agreed contract price and time will not be exceeded,

- and the Employer does not wish to be involved in the day-to-day progress of the work, provided the end result meets the performance criteria he has specified
- and the parties concerned (e.g., sponsors, lenders and the Employer) are willing to see the Contractor paid more for the construction of the Project in return for the Contractor bearing the extra risks associated with enhanced certainty of final price and time.

If this is what is wanted - choose the Conditions of Contract for EPC/Turnkey Projects (EPC/Turnkey Contract) - the FIDIC Book suitable for this purpose.

C. Also for the EPC/Turnkey Contract

1. Is it a Process Plant or a Power Plant (or a factory or similar) where the Employer - who provides the finance - wishes to implement the Project on a Fixed-Price Turnkey Basis?

Then the Employer wishes the Contractor to take total responsibility for the design and construction of the process or power facility and hand it over ready to operate “at the turn of a key”,

- and the Employer wishes a higher degree of certainty that the agreed contract price and time will not be exceeded
- and the Employer wishes - or is used to - the Project being organised on a strictly two party approach, i.e. without an “Engineer” being involved
- and the Employer does not wish to be involved in the day-to-day progress of the construction work, provided the end result meets the performance criteria he has specified

- and the Employer is willing to pay more for the construction of his Project (than would be the case if the Conditions of Contract for Plant and Design-Build were used) in return for the Contractor bearing the extra risks associated with enhanced certainty of final price and time.

If this is what is wanted - choose the Conditions of Contract for EPC/Turnkey Projects (EPC/Turnkey Contract).

2. Is it an Infrastructure Project (e.g., road, rail link, bridge, water or sewage treatment plant, transmission line, even dam or hydropower plant) or similar where the Employer - who provides the finance - wishes to implement the Project on a Fixed-Price Turnkey Basis?

Then the Employer wishes the Contractor to take total responsibility for the design and construction of the infrastructure facility,

- and the Employer wishes a higher degree of certainty that the agreed contract price and time will not be exceeded, except that if underground works in uncertain or difficult ground conditions are likely then the risk of unforeseen ground conditions should be borne by the Employer (and the provisions of the Plant and Design-Build Conditions in this respect - Sub-Clause 4.12 - would be appropriate),
- and the Employer wishes - or is used to - the Project being organised on a strictly two party approach, i.e. without an "Engineer" being involved
- and the Employer does not wish to be involved in the day-to-day progress of the construction work, provided the end result meets the performance criteria he has specified,
- and the Employer is willing to pay more for the construction of his Project (than would be the case if the Conditions of Contract for Plant and Design-Build were used) in return for the Contractor bearing the extra risks associated with enhanced certainty of final price and time.

If this is what is wanted - choose the Conditions of Contract for EPC/Turnkey Projects (EPC/Turnkey Contract).

3. Is it a Building Project where the Employer wishes to have his building(s) constructed on a Fixed-Price Turnkey Basis generally complete with all furniture, fittings and equipment?

As for 2 above

In the case of a building or building development Project, the Employer or his Architect may have done some or most of the design, but - with suitable modification regarding design responsibility - the Conditions of Contract for EPC/Turnkey Projects (EPC/Turnkey Contract) may be chosen.

D. Reconstruction or Refurbishment or another type of Project

Check Questions A1, B1 and B2 above or Questions C1 - C3 if applicable, and make your choice accordingly.

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--international federation of consulting-
engineers).

Introduction to FIDIC suite of contracts



The FIDIC suite of construction contracts is compiled and published by the International Federation of Consulting Engineers. The Federation's French name is Federation Internationale des Ingenieurs-Conseil (FIDIC), the leading body for devising different forms of contract for use in construction markets around the globe.

The most popular and widely used FIDIC contracts are The Red Book (building and engineering works designed by the Employer) and the Yellow Book (M&E, building and engineering works designed by the Contractor). The Red Book was originally published in 1957. Many new contracts which compliment the original suite have been published by the FIDIC in recent years. In 1995 The Orange Book for design, build and turnkey works was published which is the first of the new contracts.

FIDIC revised the suite of contracts in 1999. The Red and Yellow books were updated and a Green book (short form of the contract) and Silver Book for turnkey contracts was also published.

In 2005 FIDIC published a modified version of the Red Book to be used by Multilateral Development Banks. Later, in 2007, the seminar version of the Gold Book for Design, Build and Operate contracts was published. 'Conditions of Subcontract for Construction' in line with Red Book 1999 was published in 2011.

Some less popular FIDIC contracts can also be found. Two such contracts are The Turquoise Book for Dredging and Reclamation Works published in January 2006 and the White Book model services agreement published in October 2006. The FIDIC suite of contracts has gradually become very comprehensive, covering a wide array of projects and procedures of procurement.

Likewise, subcontractors will also come across FIDIC bound agreements while working on a supply chain regulated by a FIDIC main contract. 'Conditions of Subcontract for Construction' for 1999 suit was published first in 2009 as test edition and in 2011 as 1st edition. This is form recommended for use in conjunction with the FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, 1st Edition 1999, and with the Multilateral Development Bank Harmonised Edition of the FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer.

The different forms of contract within the FIDIC suite address different levels of responsibilities that are undertaken by the Employer and the Contractor. The suite is therefore drafted for use with common procurement strategies rather than the nature of the construction works. When the Employer is in charge of designing the work then the Red Book serves as the appropriate form of contract. Whereas when the Contractor is in charge for the most part the Yellow book must be used. The nature of the work (heavy, civil or M&E) is not taken into account.

The Silver Book is applicable for Turnkey projects and the Gold Book is appropriate where the contractor takes on the additional responsibility of operating the asset.

When the prospective bidders are from different countries employers get an advantage by using FIDIC conditions. In such scenarios the use of standard FIDIC conditions appeals to bidders because it adds to the attractiveness of enquiry. This results in lower tenders as the bidders better understand the risks of the contract.

Terms used in the FIDIC are standardized across the full suit. Same words and definitions have same meaning as long as same meanings are possible. Clauses are grouped in logical manner. Therefore, knowledge of one form of FIDIC contract form gives advantage in picking other forms. Similarly the core clauses in the different form of contract are common with little different between. This is a helpful feature across the use of FIDIC suit.

When an alteration is made to a standard published FIDIC contract, it is done through the incorporation of Particular Conditions. To assist the formation, FIDIC publishes the instructions for preparing these Particular Conditions. When these are integrated into the contract, it must be ensured that no ambiguity arises, either between the clauses in the Particular Conditions or with the General Conditions. Care must be taken that all these drafting tasks and the preparation of the contract documents are assigned to personnel with adequate experience of the contractual, technical and procurement aspects of the project.

'Conditions of Subcontract for Construction' for 1999 suit was published first in 2009 as test edition and in 2011 as 1st edition. This is form recommended for use in conjunction with the FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, 1st Edition 1999, and with the Multilateral Development Bank Harmonised Edition of the FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer.

Below are the detailed descriptions of the main contract forms included in the suite.



Green Book 'Short Form of Contract', First Edition 1999

Contents of Contract Book

- Agreement
- General Conditions
- Rules for Adjudication
- Notes for Guidance

The Short Form of Contract is appropriate for rather small engineering and building ventures with somewhat low capital value. As recommended by The Guidance Notes for the Green Book, it should only be used on projects with a contract value less than or equal to US\$ 500,000.

However, in certain circumstances or for some type of work, the Green Book may be useful for contracts that exceed the aforementioned capital value.

All necessary administrative and commercial issues are dealt with in the Green Book. Its provisions are easy to amend and supplement with many different options incorporated via the Appendix.

The Green Book is most likely to be used where the work is rather undemanding or repetitive or spans over a short duration without the need for specialist sub-contracts.

In these typed of Contracts, the Contractor carries out the Works as per the design provided by the Employer. However, these type of contract may be also be used for the contracts which fully or partially comprises contractor's design.

One point of concern for Contractors is the omission of any reference to an impartial Engineer in the contract. According to the contract, the conventional role of the Engineer should be fulfilled by a member of the Employer's personnel.

The contract documents are intended for inclusion in the Appendices to the Agreement. These documents comprise of the Contractor's offer and the Employer's acceptance along with all the correspondence in between.

The standard General Conditions can be applied to the majority of projects on account of their flexibility. But Particular Conditions can be incorporated into the contract to amend the Green Book where circumstances demand it.

The Green Book includes the Notes for Guidance to aid in the preparation of tender and contract documents but they are not a part of the Contract.



Red Book 'Conditions of Contract for Construction for Building and Engineering works designed by the Employer', First Edition 1999

Contents of Contract Book

- General Conditions
- Guidance for the Preparation of the Particular Conditions
- Forms of Tender and Contract Agreement
- Dispute Adjudication Agreement

The Red Book lays down contract conditions for construction works where the Employer is in charge of design. The latest version of Red book has little in common with the earlier versions which provided contract forms primarily for civil engineering projects. The latest edition, however, is not restricted to civil engineering alone. It is applicable to a much wider range of engineering works.

Like the rest of FIDIC suite, the Red Book is more aligned with procurement strategies rather than the nature of works. Therefore, it is suitable for all construction works that are designed by the Employer. Although the Red Book is drafted basically for Employer designed projects, it does allow Contractor intervention in the design to some extent. However, it is not applicable where the design is wholly or for the most part carried out by the Contractor. In such circumstances the Yellow Book is used.

As established by the earlier editions of Red Book, only an Engineer employed by the Employer should administer the project and supervise the works. The engineer's responsibilities include, among other things, issuing instructions, certifying payments and determining completion.

Payments made are usually determined by measurement and application of rates and prices from the bill of quantities. Payment can also be on the basis of a lump sum.

While determining a matter or settle a claim the Engineer should consult with each of the parties involved and try to reach an agreement. In the event of failing to reach an agreement the Engineer must make a fair determination while taking due regards of all the relevant circumstances.

In case a fair determination is not agreed upon by the parties involved, the dispute is taken to a Dispute Adjudication Board for a decision. The DAB consists of one or three people unanimously appointed by the parties. If the parties refuse to accept DAB's decision then as a final resort the dispute is resolved through international arbitration.

The Conditions of Contract consist of The General Conditions and the Particular Conditions. The Red Book provides instructions on drafting the Particular Conditions whenever it's essential to amend the General Conditions. A number of forms of security can be found in The Guidance. These include parent company guarantee, advance payment bond and a retention guarantee. These are chosen from on the basis of suitability to the contract.

The Red Book conclusively contains example forms for the Letter of Tender, the Appendix to tender (a check-list of the sub-clauses which refer to it), the Contract Agreement, and a Dispute Adjudication Agreement.



Red Book (MDB edition), Conditions of Contract for Construction For Building and Engineering works designed by the Employer, MDB Edition 2005

Contents of Contract Book

- General Conditions
- Guidance for the Preparation of the Particular Conditions
- Forms of Tender and Contract Agreement
- Dispute Adjudication Agreement

For many years now the Multilateral Development Banks (MDBs) have, as part of their standard bidding documents, required their borrowers or aid recipients to adopt the FIDIC Conditions of Contract. The FIDIC MDB edition of the Red Book is a simpler version of FIDIC contract for the MDBs, their borrowers and other related parties such as consulting engineers, contractors and contract lawyers. Mentioned below are the MDBs that have participated in compiling this version of the Red Book:

- African Development Bank
- Asian Development Bank
- Black Sea Trade and Development Bank
- Caribbean Development Bank

- European Bank for Reconstruction and Development
- Inter-American Development Bank
- International Bank for Reconstruction and Development (The World Bank)
- Islamic Bank for Development Bank
- Nordic Development Fund

In line with the main Red Book this MDB version also contains sample forms for Contract Data, Securities, Bonds, Guarantees and Dispute Board agreements.

The MDB edition has been produced primarily by making amendments to the main version of Red Book to better suit it to the needs of the MDBs, except for some minor changes of an editorial nature.



Yellow Book, 'Conditions of Contract for Plant and Design-Build For electrical and mechanical plant, and for building works, designed by the Contractor', First edition 1999.

Contents of Contract Book

- General Conditions
- Guidance for the Preparation of the Particular Conditions
- Forms of Tender and Contract Agreement
- Dispute Adjudication Agreement

The Yellow Book comprises of provisions of contract for construction works where the Contractor carries out the design. The current edition of Yellow book is very different from the earlier editions. It is not restricted for use in 'electrical and mechanical works' anymore. In line with the rest of the FIDIC suite the Yellow Book is now aligned with type of procurement rather than nature of works.

Therefore, the Yellow Book is suitable for use in not only electrical or mechanical projects, but also for the design and execution of building or engineering works. Usually, under this type of contract, the Contractor is in charge of design and provides the work as per the Employer's requirements. This work can be any combination of civil, mechanical, electrical and/or construction works.

The Engineer is employed by the Employer. The Engineer carries out supervision and administration of the Works. Some of the Engineer's responsibilities are issuing instructions, certifying payments and determining completion.

As work progresses, Interim payments of the lump sum Contract Price are made. These are usually based on an instalment schedule.

The Conditions of Contract consist of The General Conditions and the Particular Conditions. The Yellow Book provides instructions on drafting the Particular Conditions whenever it's essential to amend the General Conditions. A number of forms of security can be found in The Guidance. These include parent company guarantee, advance payment bond and a retention guarantee. These are chosen from on the basis of suitability to the contract.

The Yellow Book ends with example forms for the Letter of Tender, the Contract Agreement, and a Dispute Adjudication Agreement.



Orange Book, 'Conditions of Contract for Design-Build and Turnkey', First Edition 1995

Contents of Contract Book

- General Conditions
- Guidance for the Preparation of the Particular Conditions
- Forms of Tender and Agreement

The Orange Book was published to provide a design and build option to the FIDIC suite applicable in 1995. The contemporary FIDIC style of drafting was first adopted by the Orange Book. It was therefore a template for the drafting teams who compiled the 1999 suite of contracts.

At the time when Orange Book was published the Red and Yellow Books focused at procurement of civil engineering and plant installation respectively. At that time it was a useful addition to the FIDIC suite. It provided a clear design and build and turnkey option.

The Orange Book is designed for use whenever total liability for design falls on the Contractor. The Employer may benefit from such single-point responsibility. However, this benefit would be countered by the loss of control over the design process and more complexity in imposing varied requirements.

The design build contract typically requires the Contractor to carry out the design and provision of works. The works may be a combination of various forms of engineering (i.e. civil, mechanical, electrical etc) and building works.

The Orange Book is drafted for use on turnkey contracts. The Employer usually requires provision of a fully equipped facility which is ready to use at the turn of a key. The specific Employer requirements would, however, have to be put forward in lengthy detail. They must describe the design, construction, fixtures, fittings and equipment required to be provided by the Contractor's design.

Situation may arise in turnkey projects where it is required of a Contractor to operate the works. This duration may either be a commissioning period of a few months or an operation on a build-operate transfer basis for some years. In this scenario, the Gold Book, which is discussed later, is more suitable for use.

The Orange Book comprises of two parts: Part I- General conditions which FIDIC deems generally suitable and Part II- Conditions of Particular Application which provide flexibility in case the General Conditions need to be amended to suit particular conditions. The Orange Book includes a section which provides guidance about preparing the Particular Conditions. The Part I and Part II conditions taken together govern the rights and obligations of the parties involved.



Silver Book, 'Conditions of Contract for EPC/Turnkey Projects', First Edition 1999

Contents of Contract Book

- General Conditions
- Guidance for the Preparation of the Particular Conditions
- Forms of Tender and Contract Agreement
- Dispute Adjudication Agreement

The Silver Book is drafted to be applied to process, power and private-infrastructure projects. Hereby the Contractor assumes full responsibility for the design and execution of the work. The liability of completion on time, cost and quality fall on the Contractor. Therefore, the Silver Book is appropriate only in cases where the Contractors are experienced and familiar with sophisticated risk management techniques.

The Silver Book is suited to projects of big commercial value because it takes a traditional form of the FIDIC suite and provides a greater level of cost certainty to such projects. In these projects, construction is usually only one part of a bigger and more complex commercial venture. A financial or other failure of the construction project will endanger the whole venture.

If the Contractor wishes to achieve this higher level of cost certainty, the Silver Book requires him

to accept a greater degree of risk than is normal under most other contract forms. The risk of ground conditions is transferred to the Contractor. Likewise, the Contractor is also held responsible, subject to some exceptions, to fulfil the Employers Requirements. This is the main difference between such a contract and other forms of design and build contract.

Since the Contractor is taking a high level of risk, the Employer must give sufficient time in its procurement program for the Contractor to obtain and fully comprehend all available information before he signs the contract.

Under the Silver Book, the whole risk is not transferred to the Contractor. The Employer still shares risks of war, terrorism and Force Majeure. The Employer and Contractor can agree on alternative risk sharing arrangements by using the Particular Conditions before entering into a contract.

After the Contractor is awarded a project under the Silver Book, he is free to accomplish the task in his chosen manner as long as the performance level set by the Employer is being met. Subsequently, the Employer only retains limited control over the Contractor's work.

The Silver Book omits any reference to an Engineer. This is primarily because the Employer's influence on engineering has decreased generally. Engineering is checked more often by focusing on validating the end performance and validating the potential ease of operation, maintenance and spares.

The conditions relevant to 'Tests of Completion' are included in the Silver Book. Once the tests are successfully completed only then can Taking Over occur. Such contract conditions are useful for EPC/Turnkey projects. Here, the contract serves to provide the Employer with a working facility.

Whenever the need arises to amend the general conditions, guidance can be found in the Silver Book on how to prepare the Particular Conditions.

Similar to the other FIDIC contracts, the Silver Book concludes with examples of various forms of security and forms for the Letter of Tender, the Contract Agreement, and a Dispute Adjudication Agreement.



Gold Book 'Conditions of Contract for Design, Build and Operate Projects', First Edition 2008

Contents of Contract Book

- General Conditions
- Particular Conditions
- Sample Forms

Since the publication of Orange Book in 1995 and the Red, Yellow, Red and Green Books in 1999, a rising need was felt for a contract that combined a design-build obligation with a long-term operation commitment.

The DBO contract resembles the Silver Book in its approach and layout more than any other contract within the FIDIC suite. The DBO contract is based on a “green-field” DBO sequence. The operation duration for DBO is 20 years whereby a single contract is awarded to a single Contracting entity (which most certainly is a consortium or joint venture). This is done to optimise the coordination of innovation, quality and performance which would not be achieved if separate contracts were awarded for design-build and for operation.

Under the DBO Contract, the Contractor does not share either any responsibility for the expenditure on the project or any risk associated with its ultimate success. The DBO contract is not applicable to contracts which have a shorter operating duration than the 20 years adopted or which are not based on the typical DBO sequence.

The document is drafted for the purpose of general use particularly where tenders are invited on an international basis. DBO attempts to incorporate all provisions of a general nature. These General Conditions are appropriate for the majority of DBO contracts.

For the reason that local condition and jurisdiction requirement may vary, the DBO provides guidance to those drafters of contract documents who wish to add Special Provisions to replace or supplement the clauses to be found in the General Conditions. It can be found in Particular Conditions Part B – Special Provisions.

If a party wishes to adopt the provisions for use with a different scenario (such as brown field operate, design, build) or with an operation period considerably different to the 20-year period assumed, they can refer to the DBO Contract Guide. This Guide identifies the clauses which will need to be modified by inclusion of Special Provisions. It also provides inclusive guidelines on addressing various problems.