PROJECT MANAGEMENT
EDUCATION AT THE UNIVERSITY OF MARYLAND

Introduction to FIDIC Conditions of contract

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e - Construction Group

- New tendency in contracts worldwide

CONTRACTS

Draft standard international **CONTRACTS** between **EMPLOYER** and **CONTRACTOR**

Draft model **AGREEMENTS** between **CLIENTS** and **CONSULTANTS** or between consultants

BUSINESS PRACTICE

Prepare publications on:
BEST practice
RISK management
LIABILITY
INTEGRITY management
QUALITY management
SUSTAINABLE development

TASK FORCES

Analyse current issues
Liaise with organisations
Help manage FIDIC affairs

CAPACITY BUILDING

Prepare training materials based on the GUIDE TO PRACTICE and organise training events

CLEAR, COHERENT

Essential clauses - detailed definitions - consistent structure

FAIR, EQUITABLE

Risk allocated to party best placed to control it, bear it, and deal with it

THIRD PARTY

Drafted by Consulting Engineers

COMPLETE, FLEXIBLE

Range covers most needs - readily adaptable to fit requirements

RECOGNISED

Positive FIDIC image - world-wide acceptance - tested - established - successful

OUTLINE

1. What is FIDIC?
2. Characteristics of FIDIC Conditions of Contract
3. Application Prospect of FIDIC Conditions of Contract
4. New development of FIDIC Conditions of contract

What is FIDIC?

- Management is a kind of science which needs continuous summarizing, to experience development and innovations through practice.

- In the contract for international engineering projects, the function of Conditions of Contract is of greatest importance providing the rights, obligation and responsibility for the parties concerned in the Contract execution.

- During the past half century, the International Federation of Consulting Engineers (FIDIC) has devoted itself to the compilation of management documents for all kinds of projects, among which the FIDIC Conditions of Contract are of the highest influence and are the most popular application.

- The first edition of FIDIC Conditions of Contract for Works of Civil Engineering Construction (use "Red Book" in the following) was compiled in 1957, and later its second, third, and fourth edition were issued in 1963, 1977, and 1987 respectively.

- But these editions were mostly compiled in the reference of the related documents of the Institution of Civil Engineers (ICE). The FIDIC and European International Contractors (EIC) entrusted the University of Reading in 1966 to summarize the experience and to draw lessons from the application of the former documents.

- With the investigation of the governments, employers, contractors and consulting engineers all over the world about their application of the "Red Book", 204 findings reports were returned. According to the findings, the FIDIC Contract Committee organized a group of experts to compile the new Contract Condition models to be applied in the 21stcentury.

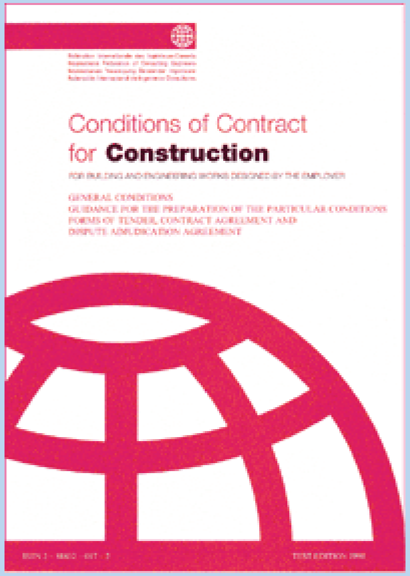
- The test edition of these models was published in 1998, and FIDIC solicited opinions throughout the world for additional time to publish the official texts in 1999.

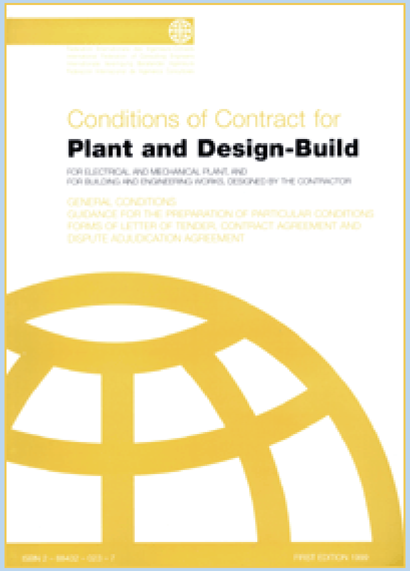
- Now FIDIC condition of contract has been applied worldwide, especially in the projects invested by World Bank, Asia Development Bank, Africa Development Bank etc.

The new models include :

- *FIDIC Conditions of Contract for Construction, the (New Red Book)*
- *FIDIC Conditions of Contract for Plant and Design/Build, the (New Yellow Book)*
- *FIDIC Conditions of Contract for EPC Turnkey Projects, the (Silver Book)*
- *FIDIC Short Form of Contract, the (Green Book)*

FIDIC Conditions of Contract (new edition) raised a higher requirement to the Parties concerned in the area of contract management


Conditions of Contract
for Construction
FOR BUILDING AND ENGINEERING WORKS DESIGNED BY THE EMPLOYER
GENERAL CONDITIONS
GUIDANCE FOR THE PREPARATION OF THE PARTICULAR CONDITIONS
FORMS OF TENDER, CONTRACT AGREEMENT AND
DISPUTE ADJUDICATION AGREEMENT


Conditions of Contract for
Plant and Design-Build
FOR ELECTRICAL AND MECHANICAL PLANT, AND
FOR BUILDING AND ENGINEERING WORKS, DESIGNED BY THE CONTRACTOR
GENERAL CONDITIONS
GUIDANCE FOR THE PREPARATION OF PARTICULAR CONDITIONS
FORMS OF LETTER OF TENDER, CONTRACT AGREEMENT AND
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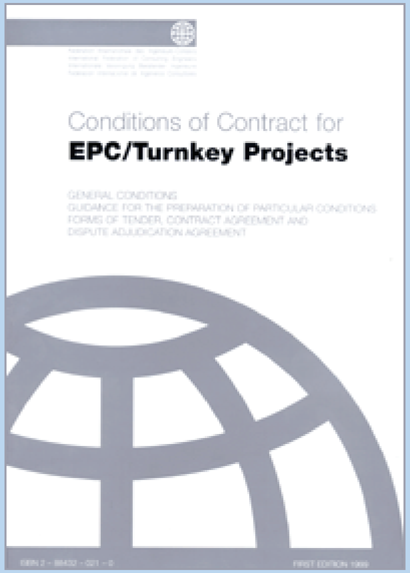
FIRST EDITION 1999


Conditions of Contract for
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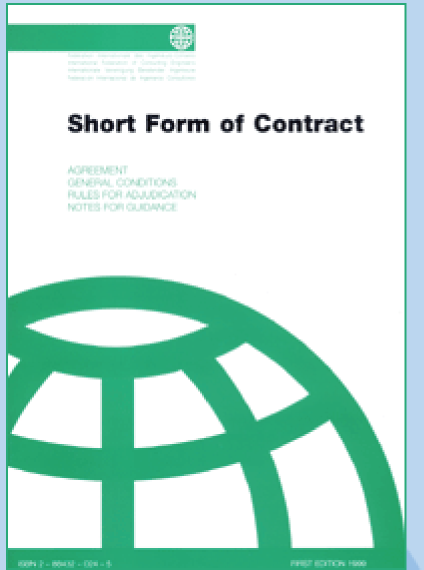

Short Form of Contract
AGREEMENT
GENERAL CONDITIONS
RULES FOR ADJUDICATION
NOTES FOR GUIDANCE
FIRST EDITION 1999

2. Characteristics of FIDIC Conditions of Contract

- Unification of Terms and Clause
  - The new edition was drafted as the "New Red Book", the "New Yellow Book" and the "Silver Book" by a workgroup under the leadership of the FIDIC Contract Committee. The contract form was not influenced by the former ICE framework, which was included in all 20 clauses. So if the clauses content could be unified, it would be under the same titles and expressions. In these three books, more than 80% of the content was consistent, and 85% of the definitions and expressions were the same. It is of great help for the users to understand them completely, saving study time.

- Wider Application

  - When these new Conditions of Contract were drafted, FIDIC tried its best so the Conditions could be applied under not only the Customary Law (i.e. Anglo-American Law System), but also Civil Law. To pursue this, the contract working group had an attorney present to review the clauses, so that they could be applied under the two laws noted above. The new edition also shows more flexibility and adaptability. For example, in the old edition, the conditional performance guarantee was necessary, which the World Bank had different opinions of. While in the new edition, the guarantee forms were set by Particular Conditions which can be applied giving the employers better flexibility.

■ Applicability under Various Project Delivery and Contracting System

1. The "New Red Book" can be used in any kind of Engineering Construction Contract.
2. The "New Yellow Book" applies to the lump sum contract project where the Contractor takes participation in the design work.
3. The "Silver Book" applies to the turnkey projects of infrastructures or large-scale factories, where the Contractor takes on more work and risk while the Employer's participation is small (private financing or government financing), but it is strictly defined upon the investment and construction period.
4. The "Green Book" can be used in all kinds of small-scale projects.
5. Altogether, these four Contract Conditions can be applied to nearly every kind of project, expect for that of managing contracting or simply consulting or designing

- High-quality Provisions and Logical Clause Sequencing
  - Compared with the original "Red Book", the "New Red Book" has 163 clauses, nearly 40% being freshly compiled. An additional 40% were modified and given supplements. Only 20% were kept intact. The old edition adopted ICE's disorderly style bit in the clause sequence, while in the new edition, the related sub-clauses are put into one clause when possible, and convenient to the users.

- More Specific Provisions concerning the Rights and Obligations of the Contract Parties
  - Taking the clause of Employer's default as an example, we can see that in contrast to the "Red Book"," three points are added into the "New Red Book": two of them are concerned with payment. The above shows the strict requirements for the Employer. However, the Contractor shall institute a quality assurance system and submit to the Engineer to audit any aspect of the system before execution. Monthly progress reports shall be prepared by the Contractor to submit to the Engineer every month, otherwise, the payment won't be given. Any kind of bribe can result in Contractor's default. All of the above are high requirements for the Contractor.

- Changes in the Preparing Style
  - General Conditions in the former edition were fairly concise; some recommendable clauses were given Particular Conditions. While in the new edition, there is a way around the regulations being that the General Conditions are relatively comprehensive and detailed. An example would be advanced payment and adjustment formula. The new edition writers believe that it is more convenient for the users to delete the clauses they do not need than to write them in the “Particular Conditions” by themselves.

- Concise Language
  - The language and sentence structures in the new edition are rather easy to understand, and a great help to the people whose native language is not English.

3. Application Prospect of FIDIC Conditions of Contract

- The traditional project management mode, which is universal in the world, has been applied in most of the engineering project management cases in the world.
- The new edition has many advanced ideas and regulations such as standardizing of the Contract words and expressions, clearer and stricter claim procedure, and emphasis on the protection of intellectual property rights

- To Solve the Problem of Back Payment using World Wide Experience for Reference
  - It is reported that the back payment and debt between the engineering units in China have added up to 280 billion (RMB), which is mostly Employer's (government included) default to the Contractor. The problem has greatly influenced the construction corporations that their economic strength were weakened. The market needs a legal system to provide a guarantee for free and fair competition.

- Since the problems of the Employer's financial vacancy or Contractor financing are originating worldwide, the relative clauses and regulations are added into FIDIC Conditions of Contract.

1. Employer's financial arrangement. The Employer shall submit within 28 days after receiving any request from the Contractor reasonable evidence that financial arrangement has been made. If the Employer intends to make any material change to his financial arrangement, he shall give notice to the Contractor with detailed particulars.

1. If the Employer fails to execute in accordance with this clause, the Contractor may, after giving a 21 days' notice to the Employer, suspend the work or reduce production output as a kind of warning; if the Contractor does not receive any reasonable financial arrangement certificate within 42 days after giving the warning, he shall be entitled to terminate the Contract, for it is the Employer's default. Also the Contractor can get all the compensation earned on the condition of Employer's default.

2. It is defined in the clause of payment how to handle the problem when the Employer has the payment delayed. If the Contractor does not receive payment (in accordance with the Interim Payment Certificate) within 56 days after submitting monthly statement to the Engineer at the beginning of the month, the Contractor shall be entitled to receive interest compounded monthly on the amount unpaid during the period of delay. These financing changes shall be calculated at the annual rate of 3 percentage points above the discount rate of central bank in the country of the currency of payment. If the Contractor does not receive payment with in 42 days after the expiry of the above 56 days, he shall be entitled to terminate the Contract.

3. Contractor Financed Project's execution. It is specially set up in the Particular Conditions an Example Provisions for Contractor Finance, which defines that if it is Contractor financing and he has committed to the project, the Employer shall deliver a bank payment guarantee to the Contractor within 28 days after both parties have entered into the Contract Agreement. If the Contractor does not receive the guarantee, the Engineer shall not issue the notice to commence. It is defined in the guarantee that if the Employer fails to make payment in full by the date 14 days after the expiry of the period specified in the contract as that within which such payment should have been made, the Contractor shall been entitled to demand for payment from the bank with a certificate, Contractor's signatures which must be authenticated by his bankers or by a notary public.

- To Carry out the General Contracting Mode of Design/Build and EPC Turnkey Enthusiastically
  - *FIDIC makes out the "New Yellow Book" and "Silver Book" independently in addition to meet the development tendency of international project management mode.*

- According to the statistics and forecast of the American Design/Build Institution, the market share's change tendency of American main engineering construction mode during 1985 to 2015 is shown in the Tab. 1.

Tab. 1 Market share' s change tendency of American main engineering construction mode / %

Years	Traditional mode	Design/ Build	CM
1985	82	5	12
1990	72	15	12
1995	65	25	9
2000	54	35	10
2005	45	45	9
2010	40	50	9
2015	35	55	9

- To Make Clear the Position of the Construction Supervising Engineer, Raise Their Working Responsibility, and Open up New Regions of Work
  - In the “New Red Book”, it needs the Engineer to be timelier, and more explicit in solving the problems than before. It pays more respect to the position and the authority of the Engineer, such as, without the consent of the Contractor, the Employer shall not be entitled to exchange the Engineer or impose further restriction on the Engineer’s authority which has been specified in the contract.

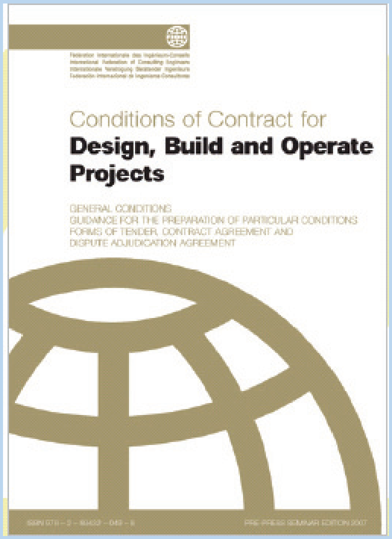
- Engineer's authority includes:
  - Making it clear that the Engineer belongs to "Employer's Personnel", while there is no stress that he is an independent party.
  - When the Engineer makes a decision, there will be no more stress on impartiality, but he is still required to be fair.
  - If the Contractor and Employer have a heated dispute, there will be no need for the Engineer to mediate before either party applies for arbitration. So the Dispute Adjudication Board (DAB) has been set up to solve the problem

- The mode of Engineer's supervising is also applied in the "New Yellow Book", while the responsibilities of Engineer are the same on the whole with what is said in the "New Red Book", that is, the Engineer should manage not only the construction, but in designing, including reviewing and approving the qualification of the designer and sub-designer, Contractor's design documents, participating in the discussion of the design, and instructing the Contractor to prepare further Documents. But any Engineer's review, approval, or consent of the Contractor's documents shall not relieve the Contractor from any obligation or responsibility.

- To Prepare the MODEL of Short Form Contract
  - Many small scale and large scale projects can use simple techniques such as in residential areas, also need a contract. So we shall compile a short form of contract in reference to FIDIC "Green Book". It is necessary to be fairly flexible in the mode and requirements of management.

- To Improve the Mediation Methods for Dispute
  - The new edition takes the experience of USA and World Bank in solving the construction dispute, which results in DAB to mediate the dispute. The most outstanding merit of DAB is that it is composed of three experts who are chosen, approved and paid for by both parties.
  - These experts go to site to solve the dispute occurring between the two parties after commencing construction work. While in the FIDIC “Red Book”, the Engineer is required to mediate the problem which he can not handle. It is hard to be impartial because the Engineer is the Employer’s employee, so very often the contradiction will still be unsolved after a long time.

New development of FIDIC conditions of contract
□□**Design-Build Operate Contract**



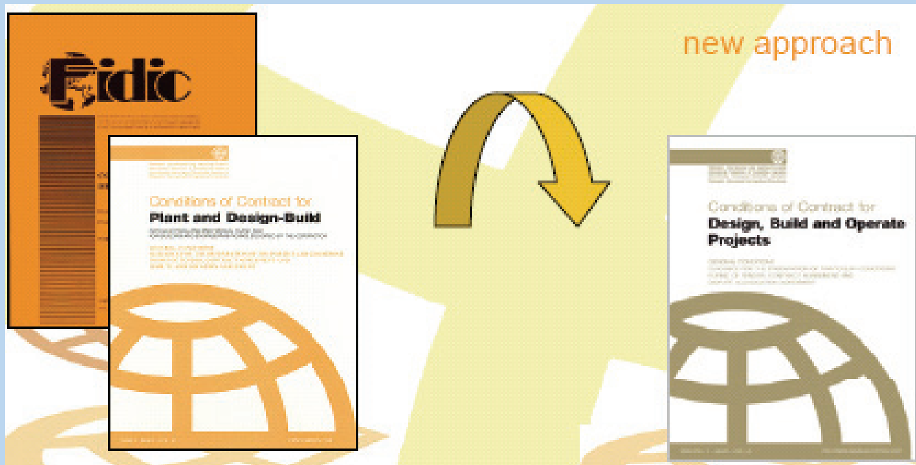
It was published on
September 2007,
Gold Book

- New DBO document for long-term contract
  - Background
    - The DBO approach to contracting combines design, construction, and long-term operation (and maintenance) of a facility into one single contract awarded to a single contractor (who will usually be a joint venture or consortium representing all the disciplines and skills called for in a DBO arrangement. Public private partnerships, PPPs, are this arrangement).

- DBO’s advantages
- Time: With possibilities to overlap some design and build activities it will be possible to minimize delays and optimize the smooth flow of construction activities.
- Financial: With cost restraints and commitments and other risks being carried by the Contractor, there is less risk of price over-runs.
- Quality: With the Contractor responsible for 20 years operation, he has an interest to design and build quality plant with low operation and maintenance costs. Not only will the plant be ‘fit for purpose’ but it will be built to last.

- Basically the success of a true DBO contract depends on the commitment of the Contractor to the complete project - and the best way to do that is to cover the whole design-build and the operation elements in a single contract. That is why FIDIC chose a single long term Performance Security with a substantial reduction in value on completion of the design-build – but with an on-going commitment by the Contract to perform and complete the operation service.

- The format of a DBO arrangement can be based on either a 'green field' scenario (D-B-O), or on a 'brown field' scenario (O-D-B). Either is quite common, however the contractual requirements and procedures are quite different.
- FIDIC has chosen to produce a document based on the DBO green field scenario, with a Guide (which will be published in 2008) containing guidelines on the changes necessary to cover a brown field arrangement, in which FIDIC Yellow Book for the DB is the basement.

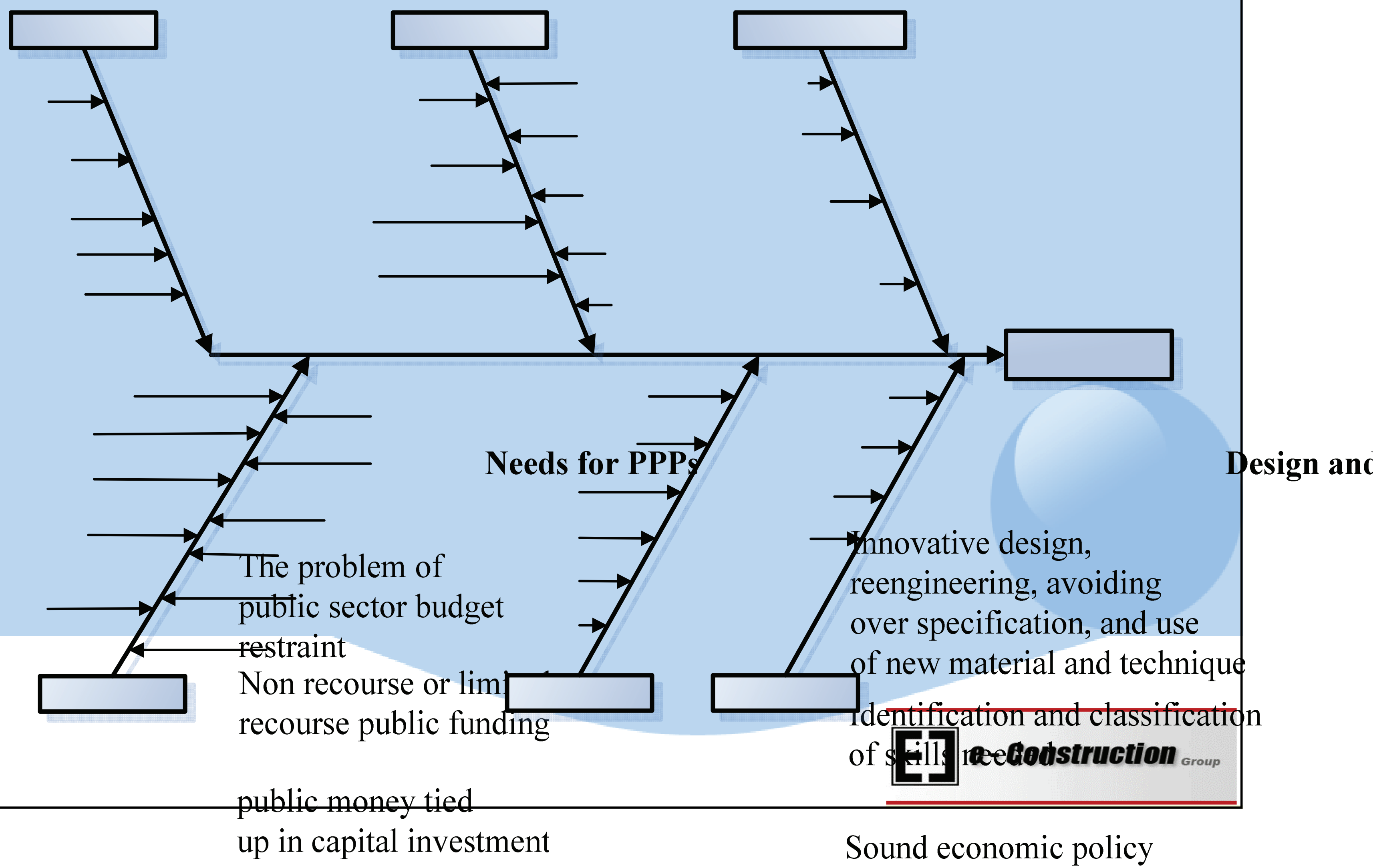


- The other important factor considered in DBO document is the length of the operation period, since the conditions suitable for long-term operation are not necessarily suitable for a short-term operation. From the experience of the DBO members it was decided that the most useful period to consider was 20 years operation – again giving guidelines in the Guide if a shorter period would be required

- Risk control in DBO contract
  - DBO can be viewed as a complete method in PPPs. This method is a long-term process including procurement, construction, operation, and transfer, in which high risk should be pay the most attention to.
  - About PPPs: A wide spectrum of options is available for the delivery of public infrastructure and services, ranging from direct provision by the government to outright privatization, with increasing responsibilities, risks, commitment, and rewards transferred from the government to the private sector.

- For example, supply and service contracts usually have a short duration. In such contracts, the private contractor performs specified tasks (e.g., material/ equipment supplies, works construction and facilities maintenance) whereas it is not directly responsible for providing related services. In a lease-and-operate contract, the private contractor operates and maintains the facilities at its own risk against the payment of a lease fee. In a build-operate-transfer (BOT) project, the private contractor is also responsible for building and financing the project and it has to transfer project facilities in operational conditions and free of costs to the government at the end of the concession term. In divestiture, the ownership of existing assets and the responsibility for future expansion and upkeep are transferred to the private contractor, in addition to financing and carrying out the investments required to meet the obligations specified in the contract and/or a general regulatory framework.

- The whole process of a PPP (DBO) project and key issues are should in following figure.



- Lots of risks have been identified as followed:

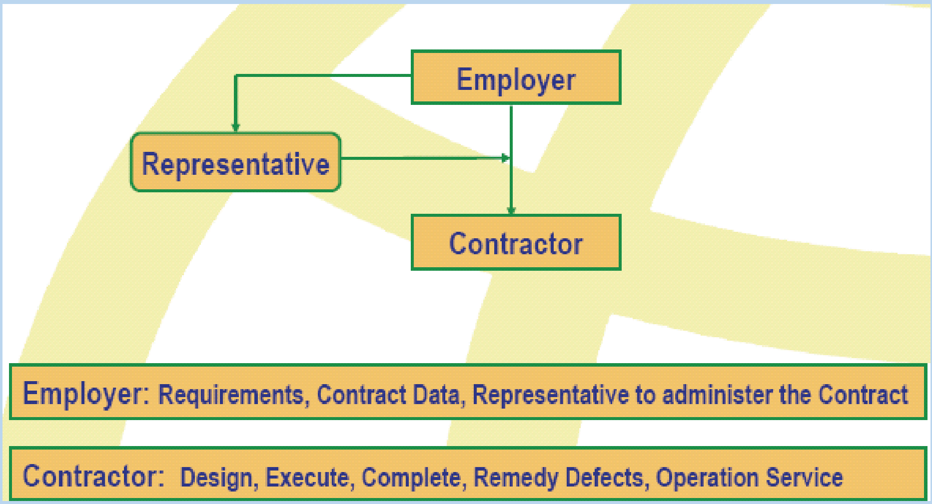
Risk meta-level	Risk factor category group	Risk factor
Macro level risks	Political and government policy	• Unstable government
		• Expropriation or nationalisation of assets
		• Poor public decision-making process
		• Strong political opposition/hostility
	Macroeconomic	• Poor financial market
		• Inflation rate volatility
		• Interest rate volatility
		• Influential economic events
	Legal	• Legislation change
		• Change in tax regulation
		• Industrial regulatory change
	Social	• Lack of tradition of private provision of public services
		• Level of public opposition to project
	Natural	• Force majeure
		• Geotechnical conditions
		• Weather
		• Environment

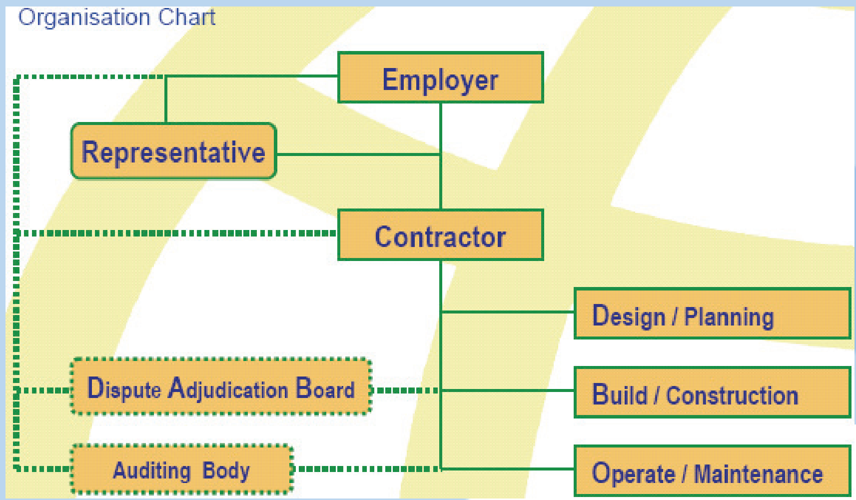
It comes from L. Bing et al. (2005) The allocation of risk in PPP/PFI construction projects in the UK, *International Journal of Project Management*, 23: 25–35.

Meso level risks	Project selection	• Land acquisition (site availability) • Level of demand for project
	Project finance	• Availability of finance • Financial attraction of project to investors • High finance costs
	Residual risk	• Residual risks
	Design	• Delay in project approvals and permits • Design deficiency • Unproven engineering techniques
	Construction	• Construction cost overrun • Construction time delay • Material/labour availability • Late design changes • Poor quality workmanship • Excessive contract variation • Insolvency/default of sub-contractors or suppliers
	Operation	• Operation cost overrun • Operational revenues below expectation • Low operating productivity • Maintenance costs higher than expected • Maintenance more frequent than expected
Micro level risks	Relationship	• Organisation and co-ordination risk • Inadequate experience in PPP/PFI • Inadequate distribution of responsibilities and risks • Inadequate distribution of authority in partnership • Differences in working method and know-how between partners • Lack of commitment from either partner
	Third party	• Third Party Tort Liability • Staff Crises

- Therefore, a new DBO contract should handle these risks to pursue the successful projects. FIDIC has designed new clause to deal the risks in DBO contract:
  - Restructured Clauses 17 – 19 (Clause 17: Risk Allocation, Clause 18: Exceptional Risks, Clause 19: Insurance)
  - Identified the Risks to be carried by each Party
  - Differentiated between Risks during the Design-Build Period and Operation Service Period
  - Classified the Risks into Commercial Risks and Risks of Damage
  - Taken away the term Force Majeure

- The structure of employer and contractor in DBO document





- The new DBO document format
  - The format of the new document follows the traditional format and layout of previous FIDIC documents, with 20 clauses, and, where appropriate, using the same terminology and definitions which are found in the other documents.
  - The document will have General Conditions, Particular Conditions, flow charts and sample forms – just like the other FIDIC documents, and a Guide which will include, amongst other things, guidelines on how to change the clauses if it is required to have a document for a ‘brown field’ situation, or an operation period significantly different to the previous method adopted in other FIDIC contract.