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# DROPLET

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## MUMBAI CENTER

- **Er. Maniessha Palande**  
- Chairperson
- **Er. Pramod Dalvi**  
- Hon. Secretary

## EDITOR

- **Er. Dilip Sonwane**
- **Dr. Ulhas Naik**

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### *from Chairperson Desk*

Hello IWWA Mumbai Centre members,

Greetings on the occasion of release of this Droplet Issue.

Recent news about water supply to few leading towns in Maharashtra State is highly alarming. While many towns are receiving water supply once in 3 or 4 days, at least 8 towns are providing water supply once in 8 days. Especially Aurangabad is critical one. The situation of water supply for this tourism leading town is all time deteriorating. It is a high time for us for paradigm shift in our approach. It now needs more thrust on operations of water supply system besides focusing on water network design model and execution. Also designing should be based on realistic data and analysed with simulation models. All the stakeholders including Government departments, operating agencies, design consultants need to spend required time & efforts to generate realistic data.

Post Execution policies and Efficient long-term management contracts is now the need of the hour and besides EPC contractors, consultants should also be made responsible for successful operations. Lessons learned from the past on the failures of management contracts should be channelised for framing proper tender conditions, specifications, accountabilities etc., securing sustainability interest of all the stakeholders for all-round successful implementation and management of the contract / project. IWWA Mumbai platform is available to all the sections of societies for discussions and guidance.

Stay safe and healthy.

**- Er. Maniessha Palande**



### *Editor Brief*

The agreement in the form of contract between the parties is an important document for the successful implementation of the project with expected outcome. Planning and design of project involves preparation of tender document (RFP – Request for Proposal) to bring competent agencies, contractors for the execution of project. Normally, a RFP includes following ---- a) Project Data b) General Conditions of Contract c) Special Conditions of Contract d) Employers Requirement and Specifications, Bill of Quantities, drawings. Preparing a balanced RFP with clarity on scope, clauses helps in getting good executing agencies for the project and successful implementation of the project.

Many organisations have standard form of General conditions of contract based on past executed works and adopted clauses. The Owner may select General Conditions of Contract based on practices within the organisation or FIDIC conditions of contract. FIDIC is the International Federation of Consulting Engineers. Its members are national associations of consulting engineers. FIDIC publishes international standard forms of contracts for works and for clients, consultants, sub-consultants, joint ventures and representatives, together with related materials such as standard pre-qualification forms. Founded in 1913, FIDIC is charged with promoting and implementing the consulting engineering industry's strategic goals on behalf of its Member Associations.

FIDIC General Conditions (GC's) prepared for use in a wide range of projects and jurisdictions inevitably require



## Discussions on Types of Contracts

### EXPERT'S ARTICLE

**Shri Parag Jog**

*Procurement Expert,*

*Tata Consulting Engineers Ltd*

This article covers various types of Contracts (Works Contracts) Advantages and Disadvantages along with Risk associated with it.

#### What is a Contract

A contract is an agreement between two or more people that is legally binding. A contract can be verbal or written. To make a contract there must be a) An agreement b) The agreement shall be enforceable by law.

All agreements are not enforceable by law and therefore, all agreements are not contracts.

#### Essentials of Valid Contract

The agreement should be between two parties. An agreement is the result of a proposal or offer by one party followed by its acceptance by the other. The agreement should be between the parties who are competent to contract. There should be a lawful consideration and lawful object in respect of that agreement. There should be free consent of the parties, when they enter into the agreement.

#### Various Types of Works Contract

Goods & Services (Works Contracts) consists of following type-

**Item Rate Contract** - An item rate contract is type of contract in which the contractor agrees to carry out the work as per drawings and specifications provided to him by the Employer. Payment is done on the basis of measurements taken and at the unit price tendered by the contractor in the bill of quantities. Some times in a Item rate contract payment is also done on agreed

Lumpsum basis by converting the quantities into a package.

**Engineering Procurement Construction (EPC) Contract / Turnkey Contract** - In this type, the Contractor takes entire responsibility of Design, Engineering, Procurement and Construction providing a fully equipped facility ready for Operation. In this type of contract, the involvement of the Employer is very minimum to the extend typically to "turn the key" and start using the new facility. Payment is on Lumpsum basis but as per milestones and payment schedule.

**Design Build Contract** - In this type, Employer provides substantial Design, Detailing, guidance to the Contractor and with this inputs Contractor proceeds further for Detailed Designing, Engineering in order to meet with the desired performance parameters required by the Employer. In this type payment is generally on Lumpsum basis as per milestones, however Hybrid mode is also adopted for payment i.e Combination of Unit rate and Lumpsum basis.

**Design Build and Operate (DBO) Contract** - This type of Contract is similar to Design Build, however Contractor also operates and maintains the facility during operation and maintenance period for which he is paid by the employer only after meeting the desired service level parameters as a part of his obligations. Generally Contractor quotes for each year of O & M period and is paid on quarterly basis.

**Public Private Partnership (PPP)**

**Contracts** - PPP arrangements are characterized by the identification of risks and their allocation among the parties along with Project Finance. On the basis of the risk allocation, the various PPP models are designed. Many variants of PPP models are implemented across different projects essentially differentiated on the basis of the risk allocation framework employed within these projects. The basic PPP models that are prevalent in project development includes a) Management Contracts, b) Build Operate and Transfer - DBFOT, Hybrid Annuity, c) Swiss Challenge

#### Advantages and Disadvantages of various forms of Contract

**Item Rate Contract** - This type of contract is generally preferred for the works which are less complex in nature. All the designing, drawings, detailing is provided by the employer and accordingly contractor executes the work. In this type of contract entire responsibility of timely completion of project lies with employer and contractor's expertise in design and seamless coordination particularly for large civil and MEP works is not utilized.

**Engineering Procurement Construction (EPC) Contract / Turnkey Contract** - This type of contract is preferred where a higher degree of certainty of final price and time is required, and the Contractor takes total responsibility for the design and execution of the project, with little involvement of the Employer.

**Design Build Contract (DB)** - This

## Imparting On Site Education- Field Visits for Engineering College Students

### Visit to Museum of Jalwardhini Pratisthan and Jal Bodh Kendra, Karjat

The site visit was Conducted By I.W.W.A Student Chapter of Saraswati College of Engineering & Datta Meghe College of Engineering on Wednesday, 09th March 2022. Students were taken to site where 9 Ferrocement Tanks of different capacities were constructed with 4 different methods. While observing and understanding the construction practices of tanks Mr. Ulhas Paranjpe explained the idea behind the constructions of Ferrocement Tanks. Students were allowed to observe the capacity and functioning of each Ferrocement tank constructed. After the visit all were taken to Mauli

Hall, Karjat for the lecture by Mr. Ulhas Paranjpe on Ferrocement Technology, Rainwater Harvesting and Mr. Kulkarni on the topic of Cluster Development. Students from

DMCE and SCOE College along with two Faculty members namely Dr Smita Patil, Dr Pooja Somani and IWWA Mumbai Centre & MJP officials visited the site.



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### Editor Brief

supplementing with Particular Conditions that address the particular requirements of the Site location, the unique features of the specific project and (usually) the Employer's preferences. While drafting Particular Condition Five Golden Principles to be followed are:

- The duties, rights, obligations, roles and responsibilities of all the Contract. Participants must be generally as implied in the General Conditions, and appropriate to the requirements of the project.
- The Conditions must be drafted clearly and unambiguously
- The Conditions must not change the balance of

risk/reward allocation provided for in the General Conditions

- All time periods specified in the Contract for Contract Participants to perform their obligations must be of reasonable duration
- Unless there is a conflict with the governing law of the Contract, all formal disputes must be referred to a Dispute Avoidance/Adjudication Board (or a Dispute Adjudication Board, if applicable) for a provisionally binding decision as a condition precedent to arbitration
- The readers may refer various books (red book, yellow book, silver book, gold book etc) published by FIDIC suitable to a particular type of contract.

- **Er. Dilip Sonwane**

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## Types of Contracts

type is generally used where basic concepts are finalized, basic designing and drawing is done and cost estimates are finalized by the Employer. This type is preferred for all civil works including electrical and mechanical works. In this type there is early involvement of contractor in design as well as constructability, planning of various works and construction sequence. Contractor is single point of responsibility for design & cost risks. Contractor is responsible for project completion in timely manner.

**Design Build and Operate (DBO)** - This type of contract is used where long-term operation and maintenance is required generally for treatment plants so that performance of the plant can be assessed for its optimum capacity

## Risk Matrix for various type of contract

Risk Category	Item Rate	EPC / Design Build / Design Build and Operate(DBO)
Employer (E) ; Contractor (C)		
Design Period Risk		
Regulatory, Environmental, Social, etc.	E	E
Approvals from Government	E	E
Availability of Project Site and Right of Way	E	E
Site Condition	E	C
Design Risk	E	C
Technology	E	C
Construction Period Risk		
Construction Risk	E	C
Timely completion of works	E	C
Cost Escalation	E	C
Quality of work	C	C
Meeting Performance Criteria	E	C

and for desired service level parameters during Operation and maintenance period.

**PPP Contracts** - This encourages the Private Sector Participation including funding arrangements to implement the identified project. Normally, a

Special Purpose Vehicle (SPV) is formed to handle such contracts and interested parties are part of SPV. The funding, risks are shared between Project Proponent, investor and executing agencies.



## NEWS ROOM

1. The 6th Managing Committee Meeting of IWWA Mumbai Centre was held on Tuesday, March 29th, 2022 at 5.15 pm at IWWA (HQ) Office, MCGM Compound, Pipe line Road, Vakola, Santacruz (East), Mumbai..

2. To mark the coming out of Covid-19 imposed restrictions, IWWA Mumbai centre celebrated the World Water Day ( 22 March 2022) on 29th March 2022 at IWWA HQ Seminar Hall. In the event organized, Managing Committee felicitated IWWA 54th convention award winners from Mumbai Centre.

