



# DRBF *Forum*

Volume 23 Issue 1 May 2020

## DRBF Publishes Updated Practices & Procedures Manual

The DRBF *Practices & Procedures Manual* has been the standard reference guide for the implementation and use of Dispute Boards (DB) since it was first published in 1996. The DB process has changed over the past 10 years with a worldwide increase in the use of DBs, including in several developing countries, and the expansion of the use of the DB process to major projects in the areas of IT, telecommunications and defense. Importantly, the DB process has embraced a proactive “dispute avoidance” role, and DB members now frequently have a closer and more hands-

on involvement with the contracting parties and the management of projects.

The DRBF recognized the need to address this evolution in the DB process and set out to prepare a revised and updated Manual to provide a comprehensive guide to the latest developments in the Dispute Board process worldwide. A team of experts within the DRBF has collaborated to produce the latest *Dispute Board Manual: A Guide to Best Practices and Procedures*, published in November 2019.

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This Guide updates the DRBF's previous Manual and explains new practices and procedures that have evolved in the application of DBs. Special attention is given to recommended best practices, as well as cautions about modifications to the process which may be acceptable only in certain circumstances, or which are not recommended.

Some new sections of note for DRBF members include a chapter on the Business Case for Dispute Boards, aimed at potential new users considering adding DBs to their contracts. There is expanded detail on the Use of DBs in FIDIC Contracts and for Public-Private Partnership (PPP) Projects.

The DRBF's updated Code of Ethical Conduct for DB members is included, as well as new and detailed content to guide users on the selection of DB Members for different types of projects.

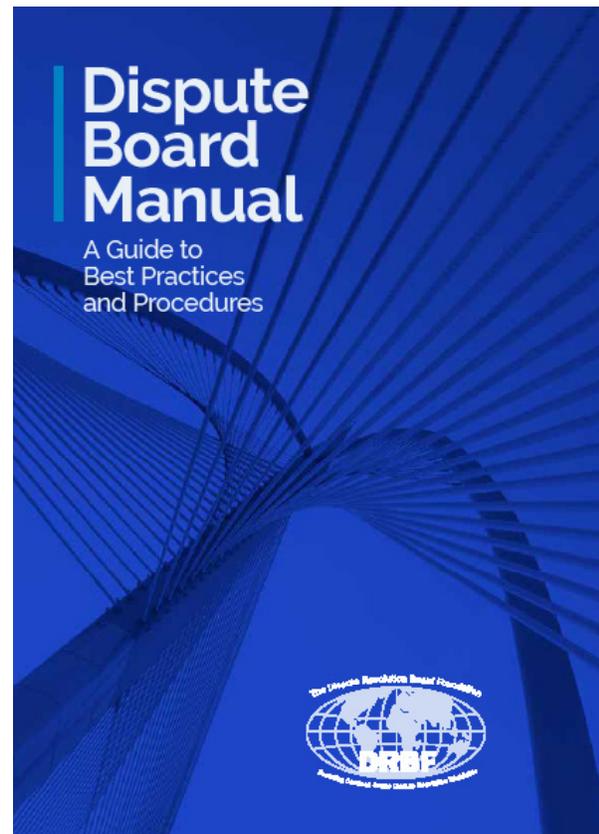
There is also a new section on DB Costs and Fees, providing users and members with benchmarks from various countries worldwide.

The *Dispute Board Manual: A Guide to Best Practices and Procedures* is available for free download using the

link available on the DRBF website ([www.drb.org/concept/manual](http://www.drb.org/concept/manual)). It is also available in hard copy via print on-demand at your favorite online bookseller (such as Amazon, Angus & Robertson, Indigo or others). An electronic (e.g. Kindle) version is also available for purchase.

Local bookstores and libraries may also be able to order the book utilizing the ISBN number (ISBN 978-1-943070-68-8).

Contact the DRBF Staff at [info@drb.org](mailto:info@drb.org) for more information.



## What's New in the DRBF Library?

The DRBF gathers a wide variety of papers, journals, conference presentations, articles, and **now videos**, all prepared by Dispute Board professionals who hold industry ethics and topics in the highest regards. All material submitted is in support of the education and professional development of the DB community. From lessons learned on recent projects, developments in DB procedures, legislative developments, and more, the DRBF has created a robust toolbox of resources for you.

### New Library Additions:

#### Dispute Board Manual: A Guide to Best Practices and Procedures

**FIDIC Conditions of Contract New Edition 2017 and Dispute Boards** by Dr. Donald Charrett

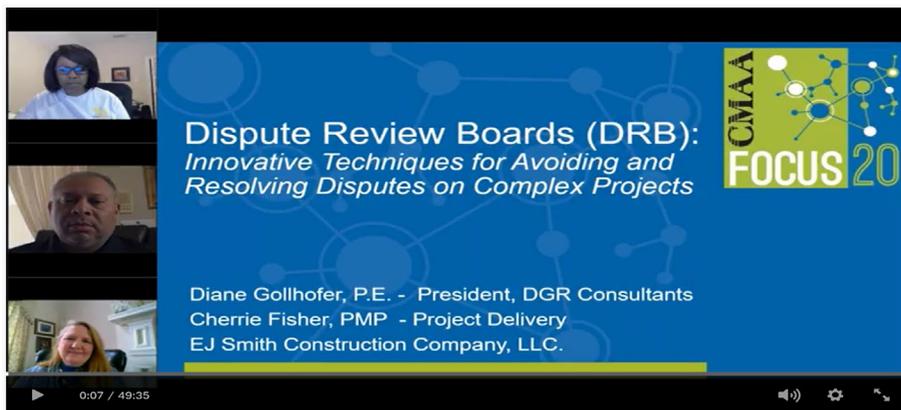
**Dispute Boards - the New FIDIC Second Edition 2017 DB Provisions** by Anton van Langelaar, Pr Eng. Published in January/February 2018 Civil Engineering

**Dispute Boards - Pertinent Aspects of Operation (Parts 1 & 2)** by Anton van Lagelaar, Pr Eng. Published in November 2017 Civil Engineering

**Dispute Review Boards and Other Standing Neutrals - Achieving “Real Time” Resolution and Prevention of Disputes** by Randy Hafer & CPR Construction Advisory Committee Dispute Resolution Board Subcommittee

**Construction Manager’s Association of America Focus20** presentation by Diane Gollhofer, P.E. and Cherrie Fisher, PMP

**Papers and Presentationes from DRBF conferences in Germany, USA, Sweden, Indonesia, Georgia, and more!**



Do you have an article or presentation to submit to the DRBF Library?  
Email us at [info@drb.org](mailto:info@drb.org).

Forum Editor:  
Ann Russo

Contact:  
Dispute Resolution  
Board Foundation  
3440 Toringdon Way  
Suite 205  
Charlotte, NC 28277 USA  
Phone: +1-980-265-2367  
[arusso@drb.org](mailto:arusso@drb.org)  
[www.drb.org](http://www.drb.org)

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The Forum welcomes articles on all aspects of Dispute Resolution Boards, and members are encouraged to submit articles or topics to the DRBF, attn: Editor.

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## President's Page



James Perry  
President  
DRBF Executive  
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Welcome back to the Forum! After a hiatus we are pleased to be publishing a bumper edition of the DRBF's flagship journal. The first volume (this issue) is a retrospective of activities in 2019 and the second volume focuses on 2020 and future activities.

First and foremost, on behalf of the Executive Board of Directors and our permanent staff members, we know that the current health crisis has caused our membership a great deal of professional disruption and economic hardship and in too many cases even personal loss. Our deepest condolences to those who have suffered a loss.

The professional challenge for our members will be daunting as the impact of the disruption to our projects ripples through the industry over the next months and even years. We know that carrying on with Dispute Board business as usual is largely impossible, yet helping the parties manage the challenge from the delays that the current situation is generating is precisely the reason why Dispute Boards exist.

The DRBF is keen to see that DBs continue to provide the service the parties need, and our Executive Director, Ann Russo, has been working hard to provide members with information on managing remote site visits and hearings using the best available applications. While we will never want to replace in-person site visits, our members are sending us reports of successful project updates by online platforms such as Adobe Connect, Zoom, and WebEx, and virtual site tours by drone and on site cameras. Of course the success of these tools depends on user familiarity and the local internet infrastructure, but the DRBF team is ready to assist individuals with questions on how to go digital for those who are interested and would like assistance.

Likewise, our 2020 and even 2021 conference schedule is having to be reorganized, and we will be communicating those changes to you as we finalize our new plans. However, we anticipate being able to offer more web-based programs in order to fill the void of the reduced in-person conferences on our 2020 calendar. So far, we have conducted remote workshops in Florida and Texas which have been well received. Our conference team for Tbilisi, Georgia did an admirable job of using distance meeting technology to rescue our conference, which was scheduled exactly as Europe and the US were moving into lockdown. We also held a well attended conference in Jakarta in January 2020 before the crisis hit.

All the turmoil has not stopped the DRBF's Regional Boards and committees from making remarkable progress on a number of strategic fronts.

In Region 1, training has been a primary focus, with custom programs for Texas Department of Transportation and Chicago Transit Authority, both embarking on new Dispute Board programs, as well as an annual workshop in Florida. Outreach efforts in the beginning of the year were focused on Healthcare and Public Private Partnership sectors as well as the Construction Manager's Association of America. The Region 1 Board also met to align regional strategies with the DRBF's overall Strategic Plan (see page 5).

In Region 2, we have been working for over a year with the World Bank and FIDIC to draft a new program and rules, which will help prevent sexual exploitation and abuse on vulnerable sites and guarantee the World Bank’s insistence on the timely appointment of DBs on their projects. This initiative is expected to create a significant jump in the number of DBs internationally, and other development banks may follow suit. The DRBF has also signed an agreement with the Millennium Challenge Account – Mongolia (MCA-M) to provide panelists to hear bid appeals for the next five years. More such agreements are expected with other MCA’s going forward.

In Region 3, we have been focusing on outreach activities particularly in Victoria, Queensland and New South Wales. These activities have been assisted by the publication of the new DRBF Manual which is proving to be a highly effective and informative promotional tool. As construction sites have remained open, existing Dispute Boards have continued to fulfil their function, despite these difficult times.

Since the creation of the DRBF’s system of regional boards of directors in 2008, our goal has always been to continue the decentralization process by creating further regions as our growth allowed. Thanks to the efforts of our membership, we are pleased to report that we have seen a sustained surge in growth in interest in DBs in Latin America, which we believe has reached the critical mass needed to create a new Region 4 for Latin America. Not only has there been a surge in membership, but DRBF volunteers have made a concerted effort across the region to introduce DB-enabling legislation in a number of countries which has in turn created local markets for DBs. The official launch of Region 4 is scheduled for 2022.

These are just some of the highlights of our recent initiatives, and you will see in the following pages that we have many more initiatives and breakthroughs to report. It is an exciting time for DBs and we hope this edition of the Forum will give you food for thought on how you may be able to help us grow. The DRBF stands on a solid financial foundation thanks to the sound financial management of my predecessors, and we have the resources to withstand the impact of COVID-19; however the impact on our conference schedule will result in an operational loss in 2020. Should any member have the means in these difficult times and an interest in helping us continue the work of the Foundation at the professional level we all have come to expect, we would be grateful if you would consider an exceptional fee contribution or sponsorship in the coming months. For those interested in contributing, please contact Ann Russo (arusso@drb.org) for details.

Stay well,



Jim Perry  
President, DRBF Executive Board of Directors

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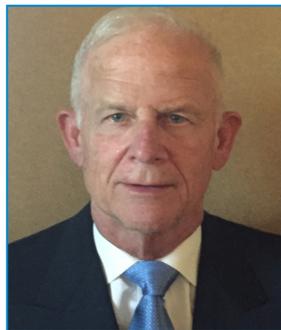
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## AI Mathews Award for Dispute Board Excellence

This award, given annually, is the DRBF's highest recognition of champions of our dispute resolution community worldwide and honors those who have given exemplary service to advance the use of Dispute Board concepts and the DRBF as an organization. It is named for AI Mathews, considered the developer of the process. He served on the first DRB in 1975, and founded the Dispute Resolution Board Foundation (DRBF) in 1996 with colleagues Robert Matyas, Robert Smith and Joe Sperry.

The DRBF is pleased to honor here the 2018 and 2019 recipients. The 2020 award will be given at the AI Mathews Award dinner to be held October 8 in Boston as part of the DRBF International Conference and Annual Meeting.

### 2018 Recipient: Daniel F. Meyer



Dan's construction career began in 1962 as a labor foreman on various highway projects in the Midwest and has included stints as laborer, carpenter, estimator, contract/claim analyst, cost engineer, project engineer, project manager, and operations manager overseeing multiple profit center divisions, Vice President Group Operations, General Vice President and President of consulting firm. In 1968, Dan graduated cum laude from Ohio University with a BSCE degree. In 1979, Dan attended the Harvard Graduate School of Business and became a graduate of the Program for Management Development 38. He is a 40-year member of the Moles. Prior to launching his consulting firm, he worked for Morrison-Knudsen Co., Inc., Perini Corp. and Paschen Contractors. Dan is a charter member and Past President (1998-99) of the DRBF and has served on several of its committees and boards. Dan's project experience encompasses underground works (tunnels, shafts and pump stations); foundation works including piling, caissons and slurry walls; infrastructure repair; rail and mass transit; heavy cut & cover structures; bridges (steel, concrete and precast segmental); highways; marine construction (river and ocean); cleanroom facilities for high technology manufacturing; commercial and governmental buildings; hotels; wastewater and fresh water treatment plants; powerhouses (gas-fired turbine, nuclear, wood fired, hydroelectric, fossil fuel and other); movie theaters; convention centers and hospital modifications. Dan has worked with various types of contract forms including negotiated, fixed price, guaranteed maximum, performance based compensation, design-build and variations thereto. He is currently President of Meyer Construction Consulting, Inc. His firm focuses on claim and dispute resolution services and deals with projects that are design-build and design-bid-build in nature. He has sat on approximately 135 DRBs concerning projects ranging in size up to US \$1.8B; total value of associated projects is in excess of approximately US \$18B. The projects have been in New York, Boston, Atlanta, Miami, Los Angeles, Seattle, Dallas, Washington, D.C., Las Vegas, San Francisco, Ottawa, Toronto, and others. In 1999 and again in 2006, Dan authored 100-page chapters on Delay, Disruption and Damage Calculation for the Illinois Institute for Continuing Legal Education. In 2003, he also authored a chapter addressing delay and disruption in Aspen Publishers' Illinois Construction Law.

**2019 Recipient: Andrew Griffiths**

Andy has over 40 years of post-graduate experience, the majority of which involved dams, tunnels and large diameter water pipelines. He has particular experience in construction management, contract law, claims adjudication and large-scale engineering projects in the water sector. He has been involved in numerous disputes, either as a DB member or as the engineer; as well as adjudicator, mediator or arbitrator. He is President-elect of the DRBF Executive Board of Directors, and previously served as President of the Region 2 Board. He is a Registered Professional Engineer (RSA), a Chartered Engineer (UK), a Fellow of the South African Institute of Civil Engineers, a Fellow of the Institution of Civil Engineers (UK), and a Fellow of the Association of Arbitrators. He is on the FIDIC President's list of approved dispute adjudicators, the CIDB list of dispute adjudicators, the ICE-SA NEC list of adjudicators, as well as the SAICE and CESA Presidents' lists of mediators, arbitrators and adjudicators. Andy has been intimately involved in some of southern Africa's most prestigious projects. He was chairman of the consulting joint venture for the Mokolo-Crocodile Water Augmentation Project, the Thune Dam in Botswana, and the Berg River Dam Project. Other major projects in which he played leading roles are the VRESAP pipeline and the Durban Harbour Tunnel. He was project director on the Lesotho Highlands Project (voted SAICE's Project of the Century). He was the FIDIC Engineer for the Mohale Tunnel and Matsoku Weir and Tunnel of Phase 1B, as well as Deputy Project Manager (and later Project Manager and FIDIC Engineer) for the design and construction supervision of the Katse Dam and Transfer Tunnel.

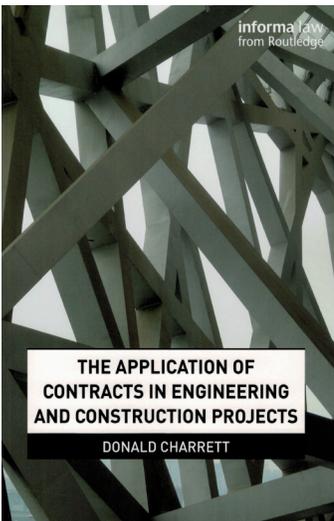


**2019 Recipient: Alan McLennan**

Alan heads a consultancy focusing on all stages of infrastructure projects, including project initiation, planning and delivery. He is a civil engineer who practiced mainly in the roads and transport arena, and has held positions such as chief engineer and general manager in the Queensland Department of Transport and Main Roads. A significant part of Alan's career has involved contract administration and dispute resolution. He has extensive hands-on experience in collaborative and relationship contracting. In recognition for his engineering work in roads and bridges, Alan was awarded Australia's Public Service Medal, and in 2008 was named Queensland Engineer of the Year by Engineers Australia. Alan is a Fellow in the Institution of Engineers and a past Chair of a number of its committees, including National Chairman of the Construction Panel. A founding member of Dispute Resolution Board Australasia (now DRBF Region 3), he now serves as vice president of the DRBF Region 3 Board of Directors, is chair of the DRBF Region 3 Training Committee, and is the DRBF Representative for Queensland.

**CONTINUED**

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# The Application of Contracts in Engineering and Construction Projects

## A Book Review by Steve Goldstein

One of the challenges faced in the early years of a young engineer's career is to understand that the successful construction of a project not only requires the work to be constructed in accordance with the plans and specifications, but also that the construction of the project is regulated between the parties by the terms and conditions of a document that is often highly complex and legalistic.

Little, if any, training is normally given to engineers about the laws of contract, with the young engineer normally having to find out 'the hard way' the rights and obligations that a contract imposes on the parties.

However, this book has been written with a far wider audience in mind as it not only seeks to improve the knowledge and understanding of the laws of contract for young engineers, it also seeks to significantly, and comprehensively, enhance the knowledge and understanding of those with much greater experience in the building and construction industry. In particular, lawyers who practice in the area will benefit significantly from many of the insights and consideration of the technical and legal issues that commonly arise in engineering and construction contracts.

Donald Charrett is a practicing barrister who previously practised as a consulting engineer for over 25 years. As a result of his extensive experience both as an engineer and in the law, his book brings together all of the significant technical and legal issues that commonly arise in engineering and construction projects.

The book breaks the topic down into five essential parts:

- The engineer and the contract
- The project and the contract
- Avoidance and resolution of disputes
- Forensic engineers & expert witnesses
- International Construction Contracts

In the opening part, Donald Charrett describes the engineer's 'eternal challenge', of time, cost and quality as these are the fundamental drivers behind all construction contracts. This leads into a discussion about the fundamental issue of 'risk' which is the chance that these fundamental contractual drivers will not be fulfilled. It then engages in a thought provoking discussion about the identification and allocation of risk and deals with the various ways in which that risk may be managed, particularly from a design perspective.

Contracts for engineering design normally include the obligation that services will be performed within the reasonable skill, care and diligence that would be applied by a normally skilled member of the profession in similar circumstances. The engineer normally seeks to meet that standard by applying Codes of Practice or "Standards" to its design. This book answers many of the questions as to whether the engineer can discharge that duty by simply applying the current applicable standards but sounds a note of caution about which many engineers and lawyers may be unaware.

In the second part, Donald Charrett moves into a discussion about the relationship between the project and the contract by giving a number of interest-

ing and informative case studies about a number of significant construction projects that have been undertaken both in Australia and overseas. This includes the Sydney Harbour Bridge, Australian Parliament House, the new Scottish Parliament House, Kings Bridge in Melbourne, Quebec Bridge in Canada, West Gate Bridge in Melbourne and the Milford Haven Bridge in Wales and many others. Some of these projects involved failures in which persons tragically lost their lives. Engineers in particular, learn as much, if not more, from things that go wrong, as they do from things that go right. These case studies serve as reminders of both such situations, as do the chapters which are devoted to the lessons learned from the tragic Canterbury Earthquakes in 2010 and 2011.

These days almost all construction contracts make provision for the resolution of disputes that may arise between the parties and in the third part of this book, Donald Charrett focuses on various methods of avoidance and resolution of disputes. In particular, the book discusses the use of Dispute Boards and their successful operation both in Australia and overseas, particularly under the FIDIC contracts and firmly advocates their adoption more widely in engineering and construction contracts for the reason that they provide an impartial, informed and rational mechanism for resolving issues quickly. Of particular interest is a number of case studies which involved the construction of the FIDIC Dispute Board provisions by the Singapore courts.

However, when disputes are unable to be resolved between the parties and there is no Dispute Board, and the dispute proceeds to litigation or arbitration, a forensic engineer and/or an expert witness may need to be appointed by either or both of the parties in support of their respec-

tive positions. In the fourth part, Donald Charrett has undertaken an examination of the roles and responsibilities of the forensic engineer and expert witness by discussing, amongst other things, on the guidelines and rules for expert evidence in Australia.

Although the book has a distinctly Australian perspective, many parts of the book, including the final part, give focus to a wider international audience, in a discussion about International Construction Contracts. In these final chapters, the book focusses on the differences between the common law and the civil law in construction contracts and also discusses the Unidroit Principles of International Commercial Contracts. The latter is a set of 'anational' principles that apply to the formation, validity, interpretation, performance and termination of commercial contracts. These principles are intended to embody contractual principles which are or can be recognised by the laws of any country, whether those laws are based on the common law or the civil law.

This is a book that is not only informative but is also well sourced, comprehensive and consistently easy to read. The case studies are particularly interesting and provide a useful insight into the rights and wrongs on engineering and construction contracts. The book no doubt contains many thought provoking aspects which will undoubtedly benefit any person practising in engineering and construction.

*Book review submitted by Steve Goldstein [goldstein@ebc44.com](mailto:goldstein@ebc44.com).*

## The Use of Audits in Dispute Avoidance

By ROGER  
RIBEIRO, MSc,  
MCiarb

Associate Director  
at Currie and  
Brown (France)

Civil Engineer,  
Contract  
Manager, FIDIC  
expert, Auditor,  
Adjudicator

### INTRODUCTION

In a *Forum* article in 2013 (vol. 17 issue 3), I wrote on the benefits of performing audits during the tender stage in the public sector. From my experience, when a preferred tender procedure for a construction project has been selected, a contract evaluation is needed to determine how the contract can be implemented. Unfortunately, many clients are in a rush to start project(s) even if basic conditions are not met.

Recently, I conducted audits for employers in Africa and Eastern Europe during contract implementation which have been of benefit for each project.

Obviously, there are different types of audits: contractual and/or technical and/or financial and/or legal. In the field of construction, most employers/project owners want to know if their project goes according to the contract, relying most of the time on the Engineer/Project Manager who is responsible for the contract administration.

### The aim of this article is two-fold:

- to analyze how the topic of audits has been incorporated in different books since FIDIC form of contracts are well spread all around the world.
- to provide valuable insights on the appropriate use of audits as a tool for dispute avoidance during the project implementation.

Conducting contractual audits all along the project life cycle is a good contractual practice for the benefit of all parties. The following reflects my own experience on project sites.

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Note: Contracts referenced in this article are available at [www.fidic.org](http://www.fidic.org)

### AUDITS IN FIDIC FORMS OF CONTRACT

In the different FIDIC Forms of Contract, the notion of ‘auditing body’ is introduced with different attributes. To review:

The FIDIC Gold book – 2008 edition describes an “auditing body” appointed to conduct an independent compliance audit, and the auditing body should be “independent and impartial.”

The FIDIC Pink book – Multilateral Development Bank 2010 edition specifies:

“The Contractor shall permit the Bank and/or persons appointed by the Bank to inspect the Site and/or the Contractor’s accounts and records relating to the performance of the Contract and to have such accounts and records audited by auditors appointed by the Bank if required by the Bank.”

According to the author’s experience, such audits conducted by the International Funding Institutions (IFIs) are not frequent on infrastructure projects.

The FIDIC books include the following sub clauses (Quality Assurance):

- FIDIC Red, Yellow book 1999 edition: “The system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.”
- FIDIC Silver book 1999 edition: “The Employer shall be entitled to audit any aspect of the system”.

The new FIDIC 2017 edition suite of contracts includes the sub clause 4.9.1 (Quality Management System) related to audits.

FIDIC Red, Yellow, Silver books 2017 edition: The Contractor has the obligation to carry out internal audits of the QM system.

In light of the above, it appears that different interesting audits could be done by different players.

The author believes constructive audits for the project could be launched by the Engineer, the Dispute Board or someone appointed by the bank, and they should be made in a fairly neutral manner in order to avoid claims and disputes.

### QUALIFICATION OF AUDITOR(S)

It may happen that the auditor(s) are seen on site as police officers, but their role is not to decide who is right and who is wrong regarding the issues on site. The auditor's primary task is to identify the actual situation on site and propose an action plan of improvement.

During the course of the audits, the auditor(s) can help the parties in any dispute to resolve their problem. The auditor should be impartial and should not take sides. The parties in dispute are responsible for deciding how to resolve the dispute, not the auditor(s), unless otherwise agreed.

Audits should have the following elements in common:

1. It is voluntary. The parties choose to answer the auditor's questions or not.
2. It is private and confidential.
3. The parties are free to agree to the action plan proposed by the auditor(s) or not.

The Auditor(s) appointed by The Employer and/ or The Contractor should have the following qualities:

#### • **Experience:**

The auditor(s) should be experienced and have professional technical, managerial or legal qualifications. A minimum of 20 years of experience is usually required in a senior position level to consider the auditor(s) as experienced.

It is important that the auditor(s) has experience in the field in which the audit will be performed in order to have a better understanding of the solutions that have to be implemented if necessary.

The auditor(s) should have good communication skills. This cannot be learnt from the books and/or obtained through academic degrees, but it can be obtained by experience.

#### • **Knowledge of the reference:**

The auditor(s) should have understanding and access to the contract, norm or law considered as the reference.

In a case of legal matters, auditor(s) with legal and construction background may be appointed for a specific situation.

#### • **Availability:**

The auditor (s) might have to be available for any scheduled site visits. One of the functions of an auditor is to provide a pragmatic action plan if required to do so.

The site visit may have to be done sometimes in difficult conditions. To be in a two to three day trip to reach a site in the desert or jungle, for example, might not be an easy task for an auditor.

#### • **Neutral:**

A new concept of "neutrality" has been introduced in the FIDIC contracts issued in 2017. The 2017 Red and Yellow Books state that the Engineer must act "neutrally when exercising its duties



under this Sub-Clause.” The meaning of neutrality is not expressly specified. The Guidance to the 2017 Yellow Book suggests that “...when acting under this Sub-Clause the Engineer treats both Parties even-handedly, in a fair-minded and unbiased manner.” Furthermore, to reinforce the whole concept, it is expressly stated that the Engineer is not required to obtain the employer’s consent before it exercises its authority under Sub-Clause 3.7 (Agreement or Determination).

This concept of neutrality can also be applied for auditor(s).

### PREPARATION OF “CONSTRUCTIVE AUDITS”

First, the framework of the audit(s) should be well defined by the originator, which could be one of the parties (the Employer or the Contractor) or both jointly in order to avoid grey areas and misunderstanding regarding the results of the audits and role/responsibilities of the auditor or panel of auditors.

In a recent project in Central Asia, the author audited a project ordered by the Employer concerning the delays on site and to audit different contractual documents (addendums to the contracts, IPC, Variations, works progress report, etc.). Before my intervention, a letter to the Contractor was sent informing him of my presence on site. It is worth noting that the Engineer was nominated by the Employer, but no DAB had been appointed by the parties at that time.

In order to clearly understand the originator’s demand, it is recommended to have preliminary meeting(s) and to define a reference.

Is this reference the construction Contract, a norm, a law or another

documents? The auditor has to compare the reality of the construction project with what reference?

It is understood that every construction project is unique and therefore, every audit has a peculiar character.

The auditor(s) has to prepare an audit plan which is a guide for the conduct of the audit. It is a tool to acquaint relevant information for the events and avoid misunderstandings with the originator.

The first questions coming up from the audit plan are:

- Why do the auditor(s) have to perform an audit?
- What are the purposes of it?
- Who are the participants on these audits?
- Which form and contents should have the audit reports and action plan?

The first meeting has the purpose to present the scope of the audit, to listen to and question the parties, and define the content of the report. Then, the auditor(s) may return to the site with the parties. Those visits might help the auditor to appreciate the progress of work, the critical construction events, the equipment, the staff, the physical conditions, etc.

A few steps that the auditor might also have to do include:

- To prepare one agenda for the auditing sessions
- To request a list of participants in advance
- To make sure that insurances are in place/what happens in case of an accident?
- To lead and chair the meetings
- To not express any opinion, rather ask questions
- To not give advice on technical issues

unless otherwise agreed

- To ask for additional documents if needed
- To ask for additional clarifications if needed
- To not record or take pictures, videos on site without prior permission of the parties

## AUDIT REPORT

After the questions and answers sessions, the auditor(s) has to produce and submit a report to the originator of the audit(s). Depending on the project and the demand, the report may be quite long. The language of the report is mainly the language of the contract. Translation of these reports may be needed and could take time.

During the course of the audit, a questionnaire could be used with straight forward comments. Every event / answer submitted to the auditor should be categorized in three sections:

- Conformity
- Improvement needed
- Non-conformity.

It is important to mention that the format and content of the audit report should be agreed to with the originator.

The topics included in my report were as follows:

1. Audit organization
2. The project
3. List of documents provided to the auditor before the audit
4. Questions from the auditor(s) to the parties
5. Site visit
6. Conclusion

The purpose of the audit report is to highlight the objective and global appreciation of events previously defined and proposals of improvement

for the project.

It is recommended to present the conclusions to the originator before submission of the report. It may happen that the originator may not feel comfortable with the report and content. Usually, the most discussable points are the non-conformities. The report could be revised unless otherwise agreed.

## ACTION PLAN: AN IMPORTANT MILESTONE

The action plan is an important milestone of the audit. This is where the auditor will define the steps/tasks that must be performed for the benefit of the project. It is the view of the author that an audit without a clear action plan is totally pointless.

A basic and pragmatic action plan has four major elements:

1. Events/questions
2. Is it a conformity? Is it a non-conformity?
3. What has to be done and by whom?
4. Action date

Obviously, the auditor should provide clear and robust explanations in order to help the parties to correct any ‘non-conformities.’

## BENEFITS IN DISPUTE AVOIDANCE: “IF THE PARTIES SO AGREE”

It is my view that constructive audits can be performed by an auditor, the Engineer or the DAB (Dispute Adjudication Board)/DAAB (Dispute Avoidance/Adjudication Board). There is nothing wrong with performing audits on site unless otherwise agreed by the parties. This will help the party or parties to treat any non-conformity that could lead to potential claims and disputes at later stage.

It is obvious that it is important that the parties (Contractor and Employer) have aligned objectives and are committed to avoid disputes and minimize wasting their efforts. A common framework for each project plan may be developed early in order to define the orientations and start to establish a positive relationship between the parties.

The new 2017 edition suite of contracts includes a prevention sub-clause; but, nowadays, most of the time, having the right attitude in advance of problems is generally missing. The key of the collaborative approach for dispute resolution is within the sentence, "...if the parties so agree." Dispute avoidance is better than dispute resolution for both parties. Prevention is an attitude that the parties should have from the early beginning of the project.

As a matter of fact, the Engineer is often missing a good understanding of contractual issues in order to deal with construction project commercial issue. With proper training and follow up training, the Engineer's representative could deal with contractual issues and dispute prevention.

In the real world, the DAB is not systematically appointed by the parties and so totally fails at having the option of dispute avoidance.

To conclude, auditor(s) appointed by one or both parties should not substitute the Engineer or the DAB/DAAB. However, they can contribute to an action plan by raising potential claims and giving solutions to avoid them.

## CONCLUSION

First, it is important that IFI's increase audits during the tender stage, construction stage and finalization of the

project. Experts appointed by the IFIs should open folders, drawings, reports, documents in order to have a clear picture of the project. Ceremonial meetings with ministers and VIPs visiting completed works have reduced benefits.

Constructive audits performed by one independent auditor can be useful helping the parties to take decisions with the help of an action plan.

It is my view that the Engineer or the DAB /DAAB could take the initiative to perform audits whenever it is necessary unless otherwise agreed.

The 2017 edition suite of contracts includes great improvements compared with the 1999 edition. However, regarding Sub-Clause 4.1.9, it is worth noting that the Employer or the Engineer have not the obligations to perform audits of their management system. This could have consequences and interesting discussions on site.

Roger Ribeiro can be reached at [roger.ribeiro@curriebrown.com](mailto:roger.ribeiro@curriebrown.com)



## DRBF Representative for Bulgaria

**Boyana Milcheva**



Boyana Milcheva possesses in-depth expertise in construction and urban law and provides a complete range of legal solutions to the construction sector. In Bulgaria, she says, the major task is to convince professionals that a dispute will lose them money rather than gain, and it is the Dispute Board (DB) that can increase the value of the projects. So, a change of attitude will be the main challenge, together with suitable amendments of the legislation to facilitate the use of the DB.

Boyana's ambition is to adapt the Bulgarian regulations to the specifics of the multi-tier dispute resolution mechanisms. The most effective practice, as she says, is "to analyze constructively and to avoid disputes". She's a regional influencer and a proven expert who represents and consults with companies in major transport infrastructure projects – road, railway, highway and airport construction and rehabilitation.

Boyana has been a practicing member of the DRBF for several years, a contributor to projects mostly implemented in Europe and a speaker at international conferences. She has been part of the organizing committees of the DRBF Regional Conference held in Sofia 2016 and the ICC DRBF Regional Conference held at the end of September 2018, again in Sofia. She recently participated as a speaker at the DRBF Central & Eastern European Conference in Tbilisi, Georgia in March 2020.

Boyana is a convinced believer in Dispute Boards, mainly because they offer what no other method does: dispute avoidance. She considers them a useful solution for saving time and money by avoiding court proceedings and helping the contracting parties to preserve good business relationship as, after all, the whole meaning of construction is to create and not to dispute.

In her spare time, whenever she can find some, Boyana relaxes by reading her favorite books, exploring new cultures while travelling abroad, and enjoying the beauty of Bulgarian nature and historic sites. She is a passionate skier, and you can meet her in the mountains when the snow starts to fall.

*Boyana Milcheva can be reached at [Boyana.Milcheva@dpc.bg](mailto:Boyana.Milcheva@dpc.bg).*

## Dispute Boards - Pertinent Aspects of Operation

### Part I: The DB Decision

*This article is Part 1 of a summary of an article published in the journal Civil Engineering. For the full article, including references, visit the DRBF online library. Part 2 will be published in the next issue of the Forum.*

#### INTRODUCTION

This is the first of a series of articles on DBs aimed at specifics, and addresses the matter of DB decisions in depth – its purpose and why it is important, important requirements and considerations, basis for the decision, use of the DB inquisitorial powers, reasoning in the decision, concluding with a recap of the elements of a decision.

It is not an article on award writing – rather it is an article on the (final) resolution of disputes by way of a DB decision.

#### PURPOSE OF A DISPUTE BOARD AND OBJECTIVES OF THE DB DECISION

In discussing DB decisions, it would be prudent to consider the purpose and objectives of DBs and the role of the DB decision in achieving the DB purpose and objectives.

##### What it is not

In the context of statutory adjudication, it is evident from the quotations below that the objective of an adjudicator's decision is to be of an interim nature, to later be tested in arbitration (or another process) should the parties be dissatisfied with the decision.

As part of the deliberations regarding the UK Housing Grants Construction and Regeneration Bill, Professor John Uff QC said that the objective of an adjudicator's

decision should be to ensure “decisions of temporary finality only” [emphasis added]. Commenting on this statement, Nick Raynsford remarked that it was “an elegant way of expressing what we all want to achieve,” and “His phrase captures the essence of what we want from adjudication”.

Buxton LJ referred to the purpose of the adjudication procedure as enabling “a quick and interim, but enforceable, award to be made in advance of the final resolution of what are likely to be complex and expensive disputes.”

Coulson states that, “... even though the adjudicator's decision is not finally determinative, it will regulate the parties' rights and obligations for the short term ...”

The author is of the view that the interim nature of an adjudicator's decision, to be tested later in arbitration (should the parties be dissatisfied), is not the objective of the decision of a DB, in particular a standing DB. Rather, it is submitted that the objective of a DB decision is to (finally) resolve/settle the matter between the parties.

##### What it is

In a previous article in the series on DBs in Civil Engineering, it is stated that, in the process of seeking solutions, construction project stakeholders identified a gap between traditional ADR processes and arbitration/litigation. DBs are recognised as a cost-effective and expedient solution operating in this space.

It is also recognised that the (standing) DB has a dual role under the contract,



Anton van Langelaar,  
Pr Eng.  
FAArb, MCI Arb, PMP  
Dispute Avoidance  
and Resolution  
Practitioner, DRBF  
Representative for  
South Africa

adjudication. In its avoidance role it seeks to avoid disputes between the parties and in its adjudication role it adjudicates a dispute between the parties and gives an (interim) binding decision.

In both these roles the DB's primary objective is to (finally) resolve and settle a matter. Thus, if the DB fails to have the matter settled wearing its avoidance hat, it must seek to resolve/settle the matter wearing its dispute adjudicator hat. Acceptance by the parties of the DB's (adjudication) decision is fundamental to achieving this objective.

How?

The reader may well ask how this objective is achieved in the context of DB decisions.

It is submitted that this is achieved by the DB convincing the parties that they would not achieve a different outcome at the next level of the dispute resolution (generally arbitration).

Opinions of Pruitt and Carnevale and findings of Tyler suggest that people place a great value on process control and the capacity to regulate the events in a conflict resolution procedure because it produces a sense of procedural justice. It was found that the sense of procedural justice is equal to, and in some instances more important than, gain to self as a determinant of satisfaction with decisions by authorities.

Tyler concluded from interviews with clients that the order of client satisfaction regarding dispute resolution, in descending order of satisfaction, is as follows:

- They care most strongly about the procedure by which their dispute is resolved. They place great weight on having the dispute settled in a way that they view as fair.

- A fair and equitable settlement is the next most important issue.
- The least important factor is the number or value of the assets which they end up winning (or losing).

Voice is most effective in producing a sense of procedural justice, if it is believed that one's views have been considered in the decision. It was thus concluded that voice and a sense of procedural justice are most important for the success of dispute resolution procedures.

Thus, for a DB decision to be successful in achieving the DB's primary objective as submitted above, the DB must not only be, but also perceived to be, fair and unbiased in managing the DB process, and in reaching its decision.

The DB achieves this, in essence by:

- Adhering to the rules of natural justice (at least materially).
- Being seen to be adhering to the rules of natural justice (at least materially).
- Providing a fully reasoned decision.
- Providing a decision compliant with the provisions of the contract for DB decisions.

Thus, the author submits that DB decisions are to be viewed in a different light to those of an adjudicator in a statutory adjudication environment.

## DB DECISION CONSIDERATIONS

In reaching its decision, the DB needs to consider a number of matters, which include:

- Its primary objective, i.e. to (finally) resolve matters
- Its obligations under the Dispute Adjudication Agreement (DAA), i.e. ultimately to give an enforceable decision
- The process in reaching its decision
- The use of its inquisitorial powers



the contract provisions

- The reasoning of its decision
- The fact that the DB process is not a mediation or arbitration.

Pertinent aspects of these considerations are dealt with in the sections that follow.

### AN ENFORCEABLE DECISION

A primary obligation of a DB under the DAA in its role as adjudicator is to give an enforceable decision.

It is accepted that an adjudicator's decision will usually be enforced by the courts, even in the face of errors in law, fact or procedure.

However, for the decision to be enforceable, it has to be valid. In short, the adjudicator must have the necessary jurisdiction (e.g. properly appointed, decision is given within time, etc.) to decide, and there must be no (material) breach of natural justice. There must also be no significant deficiency in the decision – e.g. the DB answered the correct question (relates to jurisdiction). (The issue of the jurisdiction of the DB will be dealt with in a future article.)

As to natural justice, there is debate (in particular in South Africa) around whether or not an adjudicator is bound by the rules of natural justice. For a DB decision to achieve its objectives, it is submitted that a DB needs to comply (at least materially) with these rules in making its decision, whether or not it is a requirement in law.

Compliance (and also perception of compliance) is one of the necessary requirements to meet the primary objective, i.e. to convince the parties that they will not achieve a different outcome at the next level of the dispute resolution (generally arbitration). If a party considers

that it has been prejudiced by a breach of natural justice, the risk of not succeeding in this objective is high.

### USE OF INQUISITORIAL POWERS

In connection with inquisitorial powers, the parties generally empower the DB to:

- Adopt an inquisitorial procedure.
- Take the initiative in ascertaining the facts and matters required for a decision.
- Make use of its own specialist knowledge.

It is often provided that the DB shall have discretion to decide whether and to what extent this power may be exercised. Such power needs to be exercised with circumspection. For example:

- The inquisitorial power is of course for it to get to the truth and not a way of seeking to motivate any preconceived notion.
- It is not for a DB to make a case on behalf of a party.
- The DB needs to bring to the attention of the parties a point or issue which they ought to be given the opportunity to comment upon, if it is one which is either decisive or of considerable potential importance to the outcome of the resolution of the dispute.
- It is not to go “off on a frolic of his own, that it is wishing to decide a case upon a factual or legal basis which has not been argued or put forward by either side, without giving the parties an opportunity to comment or, where relevant, put in further evidence.”

Sir Peter Coulson cautions adjudicators when exercising their inquisitorial powers as follows:

“[4.74] But although it might seem that an adjudicator has wide powers to adopt an inquisitorial approach to the dispute, a number of factors mean that, in reality, those powers have to be exercised

with some care. ...the rules of natural justice mean that any new information unearthed or different approach adopted by the adjudicator has to be shared with the parties prior to the production of the decision itself.”

“[4.75] Another relevant consideration is that, whilst the adjudicator must take the initiative, and can use his own experience and expertise in so doing, he has to be very careful not to overstep the mark, and reach a decision based on important reasoning which cannot be derived from the parties’ submissions and in respect of which they have had no opportunity to comment. There have been a number of cases, particularly in Scotland, where such a situation has led to the refusal by the courts to enforce the adjudicator’s decision.”

In not exercising its inquisitorial powers with circumspection, the DB creates a high risk of one or both parties not accepting its decision, it then failing in its primary objective.

### BASIS FOR THE DB DECISION – WHAT IS IT?

When the basis of the DB decision is considered, a number of adages come to mind, notably:

- “within the four corners of the contract”
- “rough justice”
- “approximate justice”
- “palm tree justice”

Consider also that in DB proceedings there are:

- No rules of evidence
- No cross examination
- No discovery
- Limited time frames

However, as stated above, the DB can act inquisitorially and use its own knowledge, having due regard for the words of caution.

Unless the parties have agreed otherwise, they have not empowered the DB to disregard any provision of the contract and make a decision on principles of fairness and equity alone. On the contrary, they have agreed to give effect to the DB’s decision complying with the terms of the contract.

Rules of interpretation are provided, in most systems, by the national law applicable to the contract. In multinational contracts the *trunc commun doctrine* is often incorporated. For example, in the Channel Tunnel the order of priority of rules of interpretation were given as:

- The agreement
- Common principles of English law and French law, and
- In the absence of such common principles, the principles of international trade law.

In the context of the absence of necessary mechanisms for precise determination of entitlement and disputes concerning “non-absolute” matters, Chapman expresses the view that, “Practical and acceptable solutions are often possible whilst remaining faithful to the contractual and legal obligations.”

The DB adjudication process is regulated in the contract and, although it is considered to be inquisitorial rather than adversarial, it results in an (interim) binding decision. The maxim, “He who alleges must prove” applies, notwithstanding its inquisitorial nature. The claimant has the burden of proof.

The standard of such proof in common law jurisdictions is on the balance of probabilities (i.e. more probable than not).

In civil law jurisdictions the standard of proof is generally high (often equated to that of the standard in criminal cases) and



said to be that the trier of fact must be certain. If the claimant does not discharge the burden of proof, its claim must fail. When deciding the dispute in its capacity of adjudicator, the DB must follow these rules.

#### Prominent authors

Prominent authors have the following to say with regard to the basis of the decision, and the burden and standard of proof:

- Owen & Totterdill: “The DB decision is not just a matter of personal preference, or even of deciding what is ‘fair’, but of deciding what is correct under the contract and the applicable law.”
- Dr Cyril Chern: “Where the weight of evidence is evenly divided – that is, simply that one party alleges one thing and the other party denies it and there is no further evidence – the alleging party must lose, not because what is said has been proved to be wrong, but because he has not discharged the burden of proof.”
- Owen & Totterdill (common law jurisdictions): “In reaching a decision the DB will do so ‘on the balance of probability’; that is, when faced by conflicting evidence, the DB will compare the conflicting evidence, test the weight which it attaches to each piece of evidence and decide which evidence it prefers.”

#### Provisions of the contract

As to the basis for the DB decision, the FIDIC Guide under “Procedural Rules” states:

“The reference to the DAB must therefore be construed as a request by the claimant ... for the DAB to apply the provisions of the Contract and the governing law to the matters in dispute. Unless the Parties agree otherwise, they have not

empowered the DAB to disregard any provision of the Contract and make a decision on principles of fairness and equity alone ...” “... they have agreed (in the Contract) to give effect to the DAB’s decision, indicating that it must comply with the Contract.”

As this requires interpretation, for the avoidance of doubt, the text in bold below could be considered for inclusion in FIDIC Sub-Clause 20.4:

“Within 84 days after receiving such reference, or within such other period as may be proposed by the DAB and approved by both Parties, the DAB shall give its decision, which shall be reasoned **and in accordance with the Contract** and shall state that it is given under this Sub-Clause.”

#### REASONING

Other than a reasoned decision generally being a DB obligation in terms of the DAA, the reasoning is a critical factor in the parties’ deciding whether or not to accept the DB decision.

Thus, whereas statutory adjudications such as in the United Kingdom only require reasons for the adjudicator’s decision when requested by the parties, it is fundamental for the DB decision to be reasoned.

One of the recommendations from research undertaken, where employers, contractors, consultants and DB members were polled, is that DRB recommendations must clearly set out the reasons for the recommendations and show that the recommendations are in keeping with the DRB authority and terms of reference.

Commentators suggest that the decision should take the reader through the dispute and the DB’s considerations, and reasons

for its conclusion. It should not leave the parties in doubt. Motivation for reasoned decisions would include:

Resolution

- Properly written, they may persuade both parties that the DB has fully studied all relevant matters and reached a similar conclusion as that which might be expected of arbitrator(s).

- The process cannot properly move forward if the parties to the dispute do not know the reasons for the DB’s decision. In the absence of the reasoning, a party cannot properly decide whether it wishes to proceed to arbitration and is likely to do so by default.

- It shows that the contentions and allegations put forward have been properly considered (i.e. the parties have been heard and given a voice).

- If the parties understand the reasons behind the decision, they are more likely to accept.

- A losing party who understands why it lost, regardless of whether it agrees with the decision, is more likely to accept the decision.

- It creates a possible platform for settlement rather than proceeding to arbitration.

- Understanding the DB logic will assist in avoiding similar disputes in future.

Faith in the DB (and thus in its decision)

- The fairness and effectiveness of adjudication are promoted.

- Demonstrates that the DB understands the key issues on which the matter turns.

- Demonstrates that the DB members have applied their minds.

- Confidence in the DB would disappear if its interpretation of contractual provisions appeared bizarre or unsubstantiated.

- Unreasoned decisions raise suspicion that the thought processes are inadequate and that such inadequacies are hidden in the wall of silence.

- Parties lose faith in a dispute resolution process where the adjudicator’s decisions seem predetermined.

Faith in the process (and thus considered a fair decision)

- Gives the parties comfort that they have been heard (given a voice).

- The making of a decision should be a rational process; recording the reasons accentuate the decision’s rationality.

- Acts as a safeguard against arbitrariness, private notions of what the law/contract should be, or the irrational splitting of the difference between the parties.

- Preparation of written reasons will itself improve and focus the process by which the DB comes to its decision.

Thus, other than being in breach of the DAA and running the risk of the decision not being enforceable, it is poor practice not to provide reasons for the decision and is not in the interest of the DB objective of (finally) resolving the matter.

Further support is found in the observations from prominent authors and publications in connection with reasoning in DB decisions, which include the following:

- Dr Cyril Chern: “The Board’s decision(s) shall be fully reasoned, citing the findings of fact found by and

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CONTRIBUTORS

**Platinum**

Salini Impregilo

PowerChina

Fenwick Elliot

**Gold**

Kiewit Construction

Leach Consultancy Group

Sense Studio

Pinheiro Neto Avogados

**Silver**

Boskalis

Techno Engineering

the conclusions derived therefrom by the Board using its combined expertise and experience and stating the provisions of the Contracts and other principles and where appropriate any precedent on which its recommendations are based ....”

• Sir Peter Coulson: “The reasons should be sufficient to show that the adjudicator has dealt with the issues remitted to him and what his conclusions are on those issues. They must be comprehensible, but they do not need to provide an answer to every issue raised. They need to explain in short terms how the decision has been reached, with an explanation for each significant step in the reasoning process.”

• Construction Dispute Review Board Manual: “The recommendation shall be based on the pertinent provisions of the Contract, applicable laws and regulations, and the facts and circumstances involved in the dispute. It is important for the Board to express, clearly and completely, the logic and reasoning leading to the recommendation so that both parties fully understand it.”

• TCCP of UTRC: “An explanation of the Board’s reasoning is given, so that the parties may understand how and why the Board arrived at its recommendation. The immediate objective is to convince both parties that the Board recommendation is reasonable. The explanation is also provided for the benefit of possible later reviewers. This is particularly helpful if the recommendation must be approved by the Owner’s funding agencies. This is also valuable in case the dispute goes on to another dispute resolution proceeding.”

• FIDIC Guide: “The DAB’s reasons should set out the matter in dispute, the DAB’s opinions on the principles and the basis for the decision.”

• However, Owen & Totterdill cautions against reasons which are too long: “The length of the reasons will depend on the number of separate issues which have to be decided and which require separate sections and separate reasons. Reasons which are too long are generally too complicated, confuse the reader and obscure the essential points. ... It is preferable to explain the logic ...”

**ELEMENTS OF A DECISION**

It would serve the DB well if it considered the appropriate structure of the decision, and plan accordingly. The decision should be clear and courteous, should expressly state the relevant clause of the contract in terms of which it is given, and should not leave the parties in doubt as to what the decision is. For the elements that a DB decision should contain, the reader is referred to the article that appeared in *Civil Engineering*, November 2014.

**IN SUMMARY**

It is submitted that the primary objective of a DB decision is to (finally) resolve/settle a dispute. In order to do so, the DB needs to convince the parties that they would not achieve a different outcome at the next level of the dispute resolution (generally arbitration). This is primarily accomplished by adhering to (and seen to be adhering to) the rules of natural justice (at least materially) and providing a fully reasoned decision.

The issue of the jurisdiction of the DB is featured in the next issue.

*Anton van Langelaar Pr Eng, FAARB, MC-IArb, PMP®. Dispute Avoidance and Resolution Practitioner; Dispute Board Member; Mediator, Adjudicator, Engineer and Project Manager; FIDIC President’s List of Approved Dispute Adjudicators; DRBF Representative for South Africa and a reviewer of the Emerald Book for FIDIC-ITA. He can be reached at antonvl@mcwap.co.za.*

## A Breath of Fresh Air for Dispute Boards in Brazil

On 7 August, 2018, the State Court of São Paulo issued a formidable decision in favor of Dispute Boards. The State Tribunal unanimously dismissed a preliminary injunction that sought to eliminate the effects of a decision rendered by the Board on controversies related to the construction of the Metro in São Paulo. This is a real relief for the perpetuation of Dispute Boards, as they are finally getting to be acknowledged by the Brazilian Law, and most importantly, by the public administration.

While the Metro's inhouse Council argued that the Board composed of two engineers and one lawyer lacked the specific technical skills required to rule on the subject at stake, the attorneys from Toledo Marchetti Advogados were precise in their oral statements, which seemed to have played a positive effect on the State Court, as the Tribunal has gone deep on its studies and got a perfect grasp of what Dispute Boards are really all about.

On 30 July, 2018, the Court understood the fantastic blow to the legal uncertainty that seemed to affect the applicability of Dispute Boards in Brazil, and it comes right on very turbulent times, when the boards' legitimacy is getting questioned by the Brazilian Federal Department Agencies, perhaps by lack of knowledge of the prosecutors and public attorneys with regards to such mechanism.

Luckily, however, other initiatives have also come in support of Dispute Boards. The governor of the State of São Paulo has filed a petition on a lawsuit moved by a state owned company, that among other goals, intends to discredit a DAB decision that favored a private contractor. The governor's initiative shows how public authorities are getting more and more acquainted with and fond of the Dispute Boards, despite some parties' reluctance in accepting the mechanism and managing it properly.

In fact, although some relevant works have been financed by the BID/BIRD, which required the implantation of Dispute Boards, some public held companies chose not to install them as the Contract demanded them to, leading to unfinishable and extremely expensive arbitrations. This seems to be part of the old way of doing business in Brazil.

The recognition of the Dispute Boards in the recent Brazilian legislation and case law, however, tends to incorporate the efforts made by the authorities and market players towards the end of the economic turmoil.

Renata Faria Silva Lima can be reached by email at [renatafaria@gilbertovazassociados.com.br](mailto:renatafaria@gilbertovazassociados.com.br).

### DRBF 2019 CONTRIBUTORS

#### Sustaining

Romano Allione

Altana

Dick Appuhn

JayDee Contractors

Jim Donaldson

Driver Trett

Graham Easton

Ronald Finlay

Watt Tieder Hoffar  
& Fitzgerald

Volker Jurowich

Frank McDonough

Harold McKittrick

Probyn Miers

Navigant

Gwyn Owen

Tom Peterson

Pinsent Masons

Robert Smith

Paul Taggart

Barry Tozer

Hatch Mott MacDonald

Stacy and Witbeck

## Summary: FIDIC 2019 Conditions of Contract for Underground Works - Emerald Book

In May 2019, the new *International Federation of Consulting Engineers (FIDIC) Conditions of Contract for Underground Works*, or the so-called Emerald Book, was launched at the International Tunneling and Underground Space Association - Association Internationale Des Tunnels et de L'Espace Souterrain (ITA-AITES) World Tunnel Congress held in Naples.

A fundamental difference between underground works and most other work is that the latter primarily involves creating space in the ground. However, often only limited knowledge regarding the underground conditions is known with any certainty in advance.

Recognising the unique characteristics of underground construction projects which necessitate special contractual provisions, FIDIC and ITA-AITES formed a joint Task Group (TG 10) to propose a new form of contract specifically for Underground Works.

### AT A GLANCE

The EB is based on the FIDIC 2017 Conditions of Contract for Plant and Design-Build for Electrical & Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor, commonly referred to as the Yellow Book, with some 15 new definitions, eight amended definitions, 15 new Sub-Clauses (SC) and 25 amended SC as well as substantial Guidance for the Preparation of Tender Documents.

Due to the pre-construction uncertainty of the ground conditions, the extent of the underground works (primarily excavation and lining/support) changes subject to ground conditions encountered during construction. There is thus a need for a

clear risk allocation and provision for the adjustment of the Time for Completion and Contract Price, commensurate with the actual conditions encountered.

### GUIDING PRINCIPLES

TG 10 took from ITA REPORT N°006 / APRIL 2011 seven essential principles that the new standard form should address to promote a fair risk allocation and to effectively deal with changed conditions. These include the following<sup>1</sup>:

- Allocation of risk
- Inclusion of a contractual geotechnical baseline
- Inclusion of a tailored “Unforeseeable Physical Conditions” clause
- Implementation of a ground classification system and of supporting particular conditions that properly reflect the effort of excavation and stabilisation
- Time for completion is largely influenced by ground conditions
- Provision of a flexible mechanism for remuneration according to ground conditions

The view is that the risk of the subsurface conditions not corresponding to expectations should be allocated to the Employer because it had the opportunity to assess those risks prior to issue of the tender documents. However, the risk of the production rates and relevant cost not corresponding to the expectations within defined subsurface conditions should be allocated to the Contractor because it has the experience of detail design and construction for such conditions.

### Provision would be made for adjustment

<sup>1</sup> Walker, A 2019. FIDIC launches major new contract for tunnelling and underground works, Infrastructure Intelligence. <http://www.infrastructure-intelligence.com/article/may-2019/fidic-launches-major-new-contract-tunnelling-and-underground-works>

By Anton van Langelaar,  
Pr Eng.  
FAArb, MCI Arb, PMP  
Dispute Avoidance  
and Resolution Practitioner,  
DRBF Representative for South  
Africa

This is a summary of the primary characteristics and provisions of the Emerald Book. A more detailed article is available in the DRBF electronic library at [www.drbf.org](http://www.drbf.org).

to time and money based on the difference between the expected subsurface conditions and the subsurface conditions encountered. The time available to the Contractor for the underground works would be measured and adjusted, which may also lead to a reduction in the Time for Completion. The Contract Price would be adjusted according to the time adjustments, using time-related charge items provided for in the Bill of Quantities (BoQ).

## BASIS FOR THE EMERALD BOOK

### *Why the Yellow Book?*

The decision was to use an existing form of contract as basis for the EB, because the conditions would be familiar to the industry. The YB was chosen as there was a perceived demand from employers and funding agencies for a “design-build” form, and it allows more flexibility for the Employer to decide how much design and preparation work it wants to undertake and how much freedom it wants to give the Contractor to design the works.

Accordingly, it is likely to find a wider application for underground construction projects.

### *What is Different from the Yellow Book and Unique to the Emerald Book?*

Primary additions and amendments to the YB include the introduction of:

- A risk sharing mechanism which relies on a geotechnical baseline
- A contractual interpretive (GBR) and a factual (GDR) geotechnical report
- An Employer’s reference design
- Schedules which capture the baseline quantities and production rates for each excavation and lining activity
- A BoQ which includes quantities for the excavation and lining works, including provision also for time-related items
- A tendered contractual Completion

Schedule which is the basis for the SC 8.3 Programme

- The obligation to take measures appropriate to the subsurface conditions encountered, and agreeing these measures as being necessary, as far as possible
- Mechanisms which rely on the various Baseline Schedules and measurement of the Excavation and Lining Works to adjust the Contract Price and the Time for Completion
- Other schedules, registers and plans
- Limitation to the application of SC 4.12

For reasons stated earlier, the provisions concentrate on Excavation and Lining Works, in particular:

- Risk allocation for subsurface conditions
- The role of the Engineer
- Adjustment of time and remuneration

The view is that if the Employer assumes a substantial portion of the risk for subsurface conditions, it should also be entitled to the advantages should the subsurface conditions encountered be better than expected. Thus, it may mean that time may also be reduced.

Because the YB is a lump sum contract, provisions for remeasurement of Excavation and Lining Works were also introduced, to allow for adjustment of remuneration. Everything which is not related to Excavation and Lining Works are to be included in the lump sum.

The measurement provisions allow for separate time-related items in addition to fixed-rate, quantity-related and value-related items.

The role and responsibilities of the Engineer are extended to allow for:

- Monitoring and recording of measures taken pertaining to Excavation and Lining Works



- Inspecting and investigating the physical conditions
- Agreeing or determining the Contractor’s measurements
- Adjusting the Time for Completion and Contract Price based on the Excavation and Lining Works measures

### THE GENERAL CONDITIONS

The primary enabling clause is SC 13.8 [Measurement of Excavation and Lining Works and Adjustment of Time for Completion and Contract Price], providing the essential machinery for operation. It consists of four Sub-Clauses as follows:

- 13.8.1 Responsibility for Measurement
- 13.8.2 Bill of Quantities for Excavation and Lining Works
- 13.8.3 Adjustment of Time for Completion
- 13.8.4 Adjustment of the Contract Price

Other enabling clauses include:

- 4.10.2 Use of the Geotechnical Baseline Report
- 4.10.3 Use of the Geotechnical Data Report
- 8.2.1 The Completion Schedule
- 8.2.2 The Schedule of Baselines

SC 13.8 provides that only the Excavation and Lining Works are subject to measurement.

SC 13.8.1 contains the provisions for the measurement of Excavation and Lining Works.

SC 13.8.2 defines four payment terms, states what is to be provided for in each and provides that the unit rates and prices will not vary with changes in measured quantities.

SC 13.8.3 allows for the adjustment of the Time for Completion, by applying the production rates (in the Contract) to the measured quantity of each relevant item of work.

SC 13.8.4 provides for adjustment of the Contract Price by applying:

- the relevant rate from the BoQ to the quantity measured
- applying the rates for time-related rate items in the BoQ to the adjusted Time for Completion.

The new SC 3.2.2 [Engineer’s Specific Duties and Authority for Excavation and Lining Works] and the amendments to SC 4.12 [Unforeseeable Physical Conditions], SC 8.5 [Extension of Time for Completion] and SC 14.4 [Schedule of Payments] are fundamental to the operation of SC 13.8. The amendment to SC 20.2.4 [Fully detailed Claim] is worth noting.

SC 4.24 supports SC 13.8 in that the Contractor and the Engineer are to seek to agree “necessary measures” for execution of the Excavation and Lining Works.

The SC 4.12 amendment provides that the impact on progress and/or Cost of “any conditions that are described in the Geotechnical Baseline Report” would be assessed under SC 13.8 rather than SC 4.12.

The SC 8.5 amendment provides that any adjustment to the Time for Completion arising out of the measurement of Excavation and Lining Works can only be determined pursuant to SC 13.8.

The SC 14.4 amendment contains provisions regarding the Schedule of Payments.

The SC 20.2.4 amendment provides that Costs claimed which relate to Excavation and Lining Works are calculated by reference to the rates and prices in the BoQ.

### PRIMARY BASELINE DOCUMENTS

The primary baseline documents of the EB include the:

- Geotechnical Baseline Report
- Schedule of Baselines
- Completion Schedule
- Bill of Quantities

**Geotechnical Baseline Report (GBR)**

The GBR is an interpretive report which describes the subsurface physical conditions and sets out the allocation of the risk between the Parties for such conditions. The Geotechnical Data Report (GDR) is a factual report which contains the geological, geotechnical and hydrogeological data in the Employer’s possession at the Base Date.

The GBR is the basis for the Employer’s reference design and for establishing construction methods and related equipment, quantities and production rates. It is the basis for the Baseline Schedules which in turn provide input to the Completion Schedule and Bill of Quantities.

The definition of “Unforeseeable” (SC 1.1.101) was amended to “all subsurface physical conditions described in the GBR are deemed to be foreseeable, and all subsurface physical conditions outside the scope of conditions defined in the GBR are deemed to be Unforeseeable.”

**The Schedule of Baselines**

The Schedule of Baselines sets out the Excavation and Lining Works activities or items and their corresponding quantities based on the subsurface physical conditions described in the GBR, and their corresponding production rates as provided by the Contractor.

The Employer prepares the Baseline Schedules, and the tenderer inserts production rates specific to particular ground conditions and resulting times for construction, all consistent with the GBR. It also includes analyses of the production cycles in the Contractor’s Proposal.

**The Completion Schedule**

The Completion Schedule states the Time for Completion for each of the Works, any Sections and any Milestones and sets out the logical sequential links between each Time for Completion.

The subsequent SC 8.3 Programme submitted by the Contractor must be consistent with the Completion Schedule, which in turn must be consistent with the Schedule of Baselines.

**The Bill of Quantities**

The BoQ is part of the Schedule of Rates and Prices, and sets out the quantities, units of measurement and applicable unit rates and prices for all Excavation and Lining Works.

**GUIDANCE FOR THE PREPARATION OF PARTICULAR CONDITIONS**

Other than the Notes on the Preparation of Tender Documents, which is now a separate section, it includes the same main sections as the FIDIC Second Edition 2017 books.

Particular Conditions Part A - Contract Data provides for data to be entered, also against new Sub-Clauses 1.1.8, 1.1.84 and 13.8.1

Particular Conditions Part B - Special Provisions states that FIDIC and ITA strongly recommend that the drafter should refrain from modifying any Sub-Clause specifically referring to Underground Works and those adapted for Underground Works and references a substantial list of Sub-Clauses which should not be modified.

**GUIDANCE FOR PREPARATION OF TENDER DOCUMENTS AND ANNEXES**

The EB includes a substantially more comprehensive section on guidance for



the preparation of tender documents than do the other FIDIC forms. This is considered necessary given the novel mechanisms introduced in the EB to deal with risk allocation.

The Notes deal with risk and risk allocation, the GBR and Schedules of Baselines, adjustment to the Time for Completion, Contractor's Key Equipment and measurement of underground works, pre-tender site investigations, the Employer's reference design, disposal of excavated and waste materials, materials testing, Completion Schedule, information to be included in the Special Provisions, definitions added to/amended from the Yellow and Red Books, information to be included in the Employer's Requirements and other Schedules, the Contractor's Proposal (including alternative proposals), JV Undertaking and other documents forming part of the Contract.

The Guidance includes an Annex devoted to example forms of Schedule of Baselines (for each of Excavation and Lining), Completion Schedule and Schedule of Contractor's Key Equipment.

#### APPENDIX A THE GEOTECHNICAL BASELINE REPORT

The appendix describes the contractual purpose of the GBR, administration and reference for measurement during construction, GBR content recommendations and purpose of the GDR.

Included in the descriptions are the items a Contractor, making a claim for Unforeseeable subsurface physical conditions, must be able to demonstrate.

#### DISPUTE AVOIDANCE AND RESOLUTION PROVISIONS

The EB has left the FIDIC Second Edition 2017 dispute avoidance and resolution provisions untouched.

#### SUMMARY AND OBSERVATIONS

It is stated that the GCC for Underground Works are based on the principles of fairness and thus a balanced risk allocation between the Contractor and the Employer. It is argued that transparent and equitable allocation of ground related risks leads to more competitive tenders and lower cost of the Works.

The EB approach significantly improves certainty in the contract and thus enhances the dispute avoidance nature and character of the FIDIC Conditions of Contract.

#### REFERENCES

Comprehensive references are provided in the detailed article: Van Langelaar, A 2019. The New FIDIC 2019 Emerald Book – Conditions of Contract for Underground Works, Civil Engineering, 27(5): 47–53, which can be downloaded from the DRBF online library.

*Anton van Langelaar Pr Eng, FAarb, MC-Iarb, PMP®. Dispute Avoidance and Resolution Practitioner, Dispute Board Member, Mediator, Adjudicator, Engineer and Project Manager; FIDIC President's List of Approved Dispute Adjudicators; DRBF Representative for South Africa and a reviewer of the Emerald Book for FIDIC-ITA. He can be reached at antonvl@mcwap.co.za.*

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