

CONSTRUCTION LAW INTERNATIONAL

FROM THE IBA INTERNATIONAL CONSTRUCTION PROJECTS COMMITTEE OF THE ENERGY ENVIRONMENT, NATURAL RESOURCES AND INFRASTRUCTURE LAW SECTION (SEERIL)

Vol 17 ISSUE 1

ISSN 1819-1371

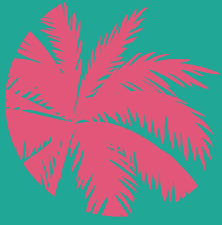
MARCH 2022



Building resilient infrastructure: ensuring assets from Australia's infrastructure boom will endure

The future looks bright for collaboration: contracting for 100 per cent renewable electricity

Procedural creativity in international arbitrations: comparative analysis of US, Singapore and France



ANNUAL CONFERENCE OF THE INTERNATIONAL BAR ASSOCIATION

IBA 2022

MIAMI
30 OCT-4 NOV



MIAMI BEACH CONVENTION CENTER

The IBA 2022 Annual Conference will be held in Miami, a major US centre and leading city for finance, commerce, culture, entertainment and international trade.

Miami is also known as the 'capital of Latin America' and houses the headquarters of Latin American operations for more than 1,400 multinational corporations, including: AIG, American Airlines, Cisco, Disney, Exxon, Kraft Foods, Microsoft, Yahoo, Oracle, Sony and Walmart.

Miami is well known as a premier vacation destination, with beautiful beaches, great weather, multicultural neighbourhoods, art deco delights, sports and a lively arts and nightlife scene.

With an abundance of business and networking opportunities on offer, this modern metropolis will be a fantastic location for the largest, most prestigious event for international lawyers.



WHAT WILL IBA 2022 OFFER YOU?

- Listen to industry thought leaders and experts sharing their advice to enable you to re-engineer your approach to business
- Build strategies for success by sharing your experiences and issues with lawyers from all practice areas from across the globe, with lawyers from around 120 jurisdictions represented
- Generate more work and referrals by making connections networking with around 6,000 international lawyers from more than 2,500 law firms, corporations and regulators
- Save time and money by meeting all of your legal contacts under one roof



TO REGISTER YOUR INTEREST:

Visit: www.ibanet.org/conference-details/CONF2137

To receive details of all advertising, exhibiting and sponsorship opportunities for the IBA Annual Conference in Miami, email andrew.webster-dunn@int-bar.org

OFFICIAL CORPORATE SUPPORTER



CONTENTS

CONSTRUCTION LAW
INTERNATIONAL

Vol 17 ISSUE 1 March 2022

A Committee publication from the IBA Energy, Environment, Natural Resources and Infrastructure Law Section tinyurl.com/IBA-SEERIL

REGULARS

2 FROM THE EDITORS

3 FROM THE CO-CHAIRS

4 UPDATE ON SEERIL BIENNIAL CONFERENCE 2022

5 FIDIC AROUND THE WORLD

Australia

7 COUNTRY UPDATES

Spain: Recent Supreme Court judgment on liability of a signatory of the final work certificate

UAE: Changes to Dubai's legislation on arbitration centres

FEATURE ARTICLES

10

Building resilient infrastructure: ensuring assets delivered in Australia's infrastructure boom will endure

Nick Thomas, Lina Fischer, and Jason Hooper

15

The future looks bright for collaboration: contracting for 100 per cent renewable electricity generation

Katrina Van Houtte and Ariana Stuart

24

Procedural creativity in international construction arbitrations: a comparative analysis of institutional innovations in the US, Singapore and France

Eoin Moynihan

35

Themes in design/build disputes, from a technical expert witness perspective

Ezra Jampole, Samuel Amoroso, Troy Morgan, and Brian McDonald

International Bar Association

5 Chancery Lane,
London WC2A 1LG, United Kingdom

Tel: +44 (0)20 7842 0090

Fax: +44 (0)20 7842 0091

www.ibanet.org

Editorial:

editor@int-bar.org

Advertising:

andrew.webster-dunn@int-bar.org

© International Bar Association 2022

All rights reserved. No part of this publication may be reproduced or transmitted in any form or any means, or stored in any retrieval system of any nature without the prior written permission of the copyright holder.

Application for permission should be made to the Director of Content at the IBA address.

Cover image: Interior of Cloud Forest, Gardens by the Bay, Singapore.
Credit: fahrulazmi/Shutterstock.com

FROM THE EDITORS

Dear readers,

It is with great pleasure that we introduce to you the March 2022 issue of *Construction Law International*.

Before we turn to the articles that comprise this issue of *CLInt*, we would like to welcome our new editors to the editorial board:

- Donald Charrett, Expert Determination Chambers, Melbourne, Australia (senior editor)
- Phillip Greenham, Melbourne, Australia (senior editor)
- Thaís Fernandes Chebatt, Pinheiro Neto, São Paulo, Brazil
- Ngo-Martins Okonmah, Aluko & Oyebode, Lagos, Nigeria
- Katherine Bell, Schellenberg Wittmer, Zurich, Switzerland

We would also like to congratulate Thayanathan Baskaran on taking on the ICP Deputy Committee Editor role. Thaya has been involved with *CLInt* for a number of years and will be a steady hand managing the publication with ICP Committee Editor China Irwin.

We start this edition with the final Co-Chairs' column in which Shona Frame and Ricardo Barreiro hand over reigns to Jean-Pierre van Eijck and Joe Moore. We wish Jean-Pierre and Joe all the best for their term as Co-Chairs of the International Construction Projects Committee.

Following the Co-Chairs' column, we also include a short update from the SEERIL Committee on the Biennial Conference to be held in Milan, on 16–18 May 2022.

In this issue, we kick off with a FIDIC Around the World update from Australia, in which Clive Luck provides his insights on the FIDIC forms and their use in Australia.

For our country updates, Javier González Guimaraes-da Silva considers a recent judgment of the Spanish Supreme Court on the liability of a signatory of the final work certificate. Aarta Alkarimi, Member, IBA Diversity and Inclusion Council, takes a look at the recent changes to Dubai's legislation on arbitration centres, noting a recent decree from the Government of Dubai that the DIFC-LCIA Arbitration Centre and the Emirates Maritime Arbitration Centre be merged with the Dubai International Arbitration Centre.

Moving to our feature articles, Nick Thomas, Lina Fischer and Jason Hooper look at how Australia's infrastructure sector can ensure that assets are resilient during the current infrastructure boom. Katrina van Houtte and Ariana Stuart provide their insights into the best contracting model to deliver renewable energy projects in New Zealand. Eoin Moynihan considers procedural creativity in international construction arbitration and provides a comparative analysis of institutional innovations in the United States, Singapore and France. Lastly, we welcome a contribution from Ezra Jampole, Samuel Amoroso, Troy Morgan and Brian McDonald concerning themes in design/build disputes, from the perspective of a technical expert witness.

We thank our contributors for their insightful articles and we hope you will enjoy reading this edition.

From our diversity and inclusion series, FIDIC around the world, or country updates and feature articles, we invite you all to contribute your thoughts and insights to *CLInt* by submitting your articles to CLInt.submissions@int-bar.org.

Thomas Denehy
Chair of Editorial Board, IBA International Construction Projects Committee
Corrs Chambers Westgarth, Sydney
thomas.denehy@corrs.com.au

China Irwin
Committee Editor, IBA International Construction Projects Committee
LALIVE, Geneva
cirwin@lalive.law

Thayanathan Baskaran
Deputy Committee Editor, IBA International Construction Projects Committee
Basakran, Kuala Lumpur
thaya@baskaranlaw.com

FROM THE CO-CHAIRS

Dear ICP members,

Our term in office ended on 31 December 2021. At the International Construction Projects Committee Business Meeting in December we were delighted to report on activities of the past year, and undertake a virtual handover of the ICP hard hats to new Co-Chairs Jean-Pierre van Eijck of SPANT Advocaten BV in the Netherlands and Joe Moore of Hanson Bridgett in San Francisco, US, as well as announcing the new team of officers for 2022–2023.

When preparing to take up office in 2019, we mapped out what we would need to do with our roles as Co-Chairs being focussed around the traditional in-person conferences. We were looking forward to IBA Annual Conferences in Miami (2020) and Paris (2021), our ICP Working Weekend in Vevey, Switzerland, the SEERIL Biennial in Marrakesh and the ICP Biennial in Berlin.

Unfortunately, none of our travel plans were able to come to fruition. We quickly had to re-plan and, over the two years have, as a team, delivered a series of 12 webinars, four masterclass events, three social events on Remo and two business meetings. There have also been a number of Sub-Committee and Diversity and Inclusion projects as well as our joint project with the European Court of Arbitration to present for the first time a unique online Construction Arbitration Course covering a diverse set of topics through 25 weekly lectures for which over 700 people registered.

Our fantastic *CLInt* team worked hard to deliver quarterly editions of the journal, packed with great content from around the world.

We were delighted that the IBA offered the ICP the opportunity to participate in a LinkedIn trial. The ICP LinkedIn group was launched in August 2021 and we are excited at the opportunities it provides for its members to connect, communicate and exchange ideas. Please do join the group, submit posts and participate in discussions via this link: www.linkedin.com/groups/12550671. With any return to being able to meet up in person likely to be gradual, the group is particularly important to us.

All of these events and projects have allowed us to connect regularly with Committee members and have given many members the opportunity to engage with ICP and participate in events. It has been great to be in contact with so many members and to have had such extensive participation.

Of course, none of this would have been possible without the commitment and work of our team of officers, the IBA team and the many members who participated. Our officers and the *CLInt* team have met via Teams calls on a monthly basis over the last two years – no mean feat for many, particularly with the challenge of time zones ranging from Melbourne to Seattle. We are grateful to everyone for their contributions allowing us to pass ICP into the capable hands of the new team in good heart.

We are very much looking forward to having the opportunity to meet up in person and attending our long-awaited Working Weekend in Vevey and the SEERIL Biennial in May 2022 and other events which we hope can take place this year.

We are privileged to have had the opportunity to lead ICP over the last two years. Going forward, we know that Jean-Pierre, Joe and their team of officers will do a fantastic job in looking after ICP. We wish them the very best for their terms in office.

Shona Frame and Ricardo Barreiro-Deymonnaz

ICP Co-Chairs

shona.frame@cms-cmno.com

rbarreiro@bodlegal.com

SEERIL BIENNIAL CONFERENCE 2022

Biennial Conference of the Section on Energy, Environment, Natural Resources and Infrastructure Law (SEERIL) 2022

The IBA Section on Energy, Environment, Natural Resources and Infrastructure Law (SEERIL) is pleased to announce that it will be holding its in-person 2022 Biennial Conference at Bocconi University in Milan on 16–18 May 2022. The theme of the conference is Resource Development at a Crossroads.

Renowned experts will be speaking at the conference, with cutting-edge sessions addressing, among other topics, how environmental, social and governance (ESG) criteria and climate change commitments will affect current and future investment in, and the development of, infrastructure and resources.

‘After more than two years of Zoom calls, the Milan Biennial will be a wonderful in-person opportunity to learn about the latest significant trends in resource development, meet new colleagues and network with old friends,’ stated SEERIL Chair Shane Freitag, National Leader for the Electricity Markets Group for Borden Ladner Gervais, Toronto. ‘Please save the date and we look forward to seeing you in Milan in May.’



Credit: Shutterstock.com

FIDIC AROUND THE WORLD



AUSTRALIA

Clive Luck

Clayton Utz, Perth, Australia

In this questionnaire, references to FIDIC clauses are references to clauses in the 1999 Red Book.

1. What is your jurisdiction?

Australia

2. Are the FIDIC forms of contract used for projects constructed in your jurisdiction? If yes, which of the FIDIC forms are used, and for what types of projects?

FIDIC forms are rarely used for domestic projects in Australia. Parties most often use a version of an Australian Standards Contract due to the local construction industry's familiarity with these forms. For complex projects, bespoke contracts are often used instead, particularly where alternative means of project financing are utilised. Where FIDIC forms are used by Australian companies this is often for offshore projects, particularly in Africa or Asia, where one or more of the contracting entities are not domiciled in Australia.

3. Do FIDIC produce their forms of contract in the language of your jurisdiction? If no, what language do you use?

Yes. The English versions are used.

4. Are any amendments required in order for the FIDIC Conditions of Contract to be operative in

your jurisdiction? If yes, what amendments are required?

FIDIC forms are, for the most part, operative in Australia without requiring major amendments. However, regard should be had to the Security of Payment legislation (SOP Legislation) across Australian states and territories, as they may imply terms into construction contracts where the agreed drafting is silent or limited on the particular issue.

These implied terms may include, with specific respect to FIDIC forms: a requisite notice period of at least five business days before a party can have recourse to performance security (see FIDIC Sub-Clause 4.2); accounting requirements and prohibitions against setting-off with respect to retention moneys (FIDIC Sub-Clauses 14.3 and 14.9); notice-based time bars having no effect if declared unfair (FIDIC Sub-Clause 20.1); and progress payments becoming payable, at most, 20 business days after the payment claim is made in case of a head contractor and 25 business days in case of a sub-contractor (FIDIC Sub-Clause 14.7). FIDIC contracts should therefore be amended for compliance with applicable SOP Legislation.

Note that not all construction contracts are covered by the SOP Legislation. Contracts relating to certain types of construction work including (with limitations) home building work, mining activities and relating to work on a watercraft are excluded.

5. Are any amendments common in your jurisdiction, albeit not required in order for the FIDIC Conditions of Contract to be operative in your jurisdiction? If yes, what (non-essential) amendments are common in your jurisdiction?

It is difficult to identify common amendments because FIDIC Conditions of Contract are rarely used in Australia. However, academic consideration highlights some

potential areas of amendments.¹ For example, FIDIC Sub-Clause 17.6 (Limitation of Liability) includes an indirect and consequential loss exclusion, with the meaning of 'indirect and consequential loss' not otherwise defined. As the meaning of indirect or consequential loss is relatively unsettled in Australia, it would be desirable for parties using the FIDIC contracts in Australia to include an expanded and clear definition of what the parties consider to be indirect and consequential losses.

6. Does your jurisdiction treat Sub-Clause 2.5 of the 1999 suite of FIDIC contracts as a precondition to Employer claims (save for those expressly mentioned in the sub-clause)?

There are no decisions from Australian courts specifically addressing Sub-Clause 2.5 of the FIDIC contracts. However, the prima facie position is that courts or arbitral tribunals in Australia would give effect to the parties' agreement on a notice provision like Sub-Clause 2.5 which sets out a condition precedent in express mandatory terms. This is subject to the court or arbitral tribunal examining the specific circumstances of the case. It may be held that such a clause is inoperative if, for example, there exists evidence of a waiver or estoppel, or the clause is declared unfair pursuant to the SOP Legislation (see question 4).

7. Does your jurisdiction treat Sub-Clause 20.1 of the 1999 suite of FIDIC contracts as a condition precedent to Contractor claims for additional time and/or money (not including Variations)?

There are no decisions from Australian courts specifically addressing Sub-Clause 20.1 of the FIDIC contracts. Similar clauses in the more frequently used Australian Standards Contract require notice to be given, but also state that the

failure to give notice will neither bar nor invalidate any claim. Where this position is amended to dictate a condition precedent which favours the Employer, refer to question 6 of this questionnaire as to how courts in our jurisdiction would treat it.

8. Does your jurisdiction treat Sub-Clause 20.1 of the 1999 suite of FIDIC contracts as a condition precedent to Contractor claims for additional time and/or money arising from Variations?

Refer to questions 6 and 7.

9. Are dispute boards used as an interim dispute resolution mechanism in your jurisdiction? If yes, how are dispute board decisions enforced in your jurisdiction?

While sometimes used, unless provided for in a bespoke contract, dispute boards are not a typical interim dispute resolution mechanism in Australia. A rapid statutory adjudication process is instead available to parties to qualifying construction contracts pursuant to the relevant SOP Legislation.

10. Is arbitration used as the final stage for dispute resolution for construction projects in your jurisdiction? If yes, what types of arbitration (ICC, LCIA, AAA, UNCITRAL, bespoke, etc) are used for construction projects? And what seats?

The Australian Standards Contract typically include an arbitration agreement as the final stage for resolution of disputes under construction contracts. Where an arbitration is specified, it may take place under a variety of rules including UNCITRAL, Australian Centre for International Commercial Arbitration (ACICA), Resolution Institute and, in international contracts, ICC, LCIA, SIAC, and HKIAC.

11. Are there any notable local

court decisions interpreting FIDIC contracts? If so, please provide a short summary.

There is only one notable court decision in the Supreme Court of Queensland that has dealt with the interpretation of FIDIC contracts: *Sedgman South Africa (Pty) Ltd v Discovery Copper Botswana (Pty) Ltd* [2013] QSC 105.

The relevant FIDIC contract was 'EPC/Turnkey Projects, 1st Edition 1999'. The parties agreed that the contract would be governed by the laws of Queensland. The primary issue for consideration was the operation of the interim payment regime in the contract. The contractor claimed that they were entitled to an interim payment under the contract as the employer failed to respond to a notice for payments claimed within the contractually stipulated time.

The court held, on proper construction, that the contractor was not entitled to payment of the sum claimed simply due to the employer's failure to respond to its claim within the period of seven days provided in clause 14.6 of the contract as (on the facts) there was a genuine dispute of the contractor's claim which required determination under the dispute resolution provisions in the contract. This is because clause 14.6 did not state that amounts became due by the operation of that clause, but instead operates in respect of payments which are due by other terms of the contract, by providing that they are not to be withheld except in the circumstances which it defines.

Further, the court held that the evident purpose of the employer's notice provision in clause 14.6 is to provide information to the contractor of any amount likely to be paid in response to the contractor's claim and the basis for any difference.

The employer also made a cross-application for a stay of the court proceedings which the court

rejected – citing the principles discussed by Lord Mustill in the UK House of Lords decision in *Channel Tunnel Group Ltd v Balfour Beatty Construction Ltd* [1993] AC 334 – that the dispute resolution provisions in the contract first required the dispute to be adjudicated by a dispute board prior to it being referred to arbitration.

12. Is there anything else specific to your jurisdiction and relevant to the use of FIDIC on projects being constructed in your jurisdiction that you would like to share?

A research report published by the University of Melbourne in June 2014 titled 'Standard Forms of Contract in the Australian Construction Industry'² found that FIDIC contracts were only used in two per cent of projects across Australia, and observed that those projects were relatively high value (greater than AUD100m), in private sector infrastructure (both mining and non-mining) and process engineering projects. Little subsequent empirical analysis of the use of FIDIC contracts in Australia appears to have been undertaken.

Notes

- 1 Reece Allen, 'Internationalisation of the Australian Construction Market: Case for Using FIDIC Contracts' (Conference Paper, Society of Construction Law Australia National Conference 2015); Toby Shnookal, 'Standard Form Contracting – the Role for FIDIC Contracts Domestically and Internationally' (Conference Paper, Society of Construction Law Conference 2010).
- 2 Prof John Sharkey AM, Matthew Bell, Wayne Jovic, Remi Marginean.

Clive Luck is a partner in the Major Projects & Construction Group at Clayton Utz, based in Perth, Western Australia and can be contacted at cluck@claytonutz.com.



SPAIN

Recent Supreme Court judgment on liability of a signatory of the final work certificate

Javier González Guimaraes-da Silva
Madrid, Spain

Spanish Building Regulations Act

In Spain, the execution of any construction project (eg, dwelling, large facility, other buildings) is governed by the legal provisions of the Law 38/1999 of 5 November on building regulations (*Ley de Ordenación de la Edificación*) (LOE). The LOE establishes, among other matters, a unified legal framework of the main functions, duties and liabilities of the building agents participating in any construction project.

The main criteria used by Spanish lawmakers to determine the roles of each participant in the building process is, in general, the professional qualifications and licences required to perform the relevant activities in connection with the execution of the works. Regardless of any agreement between the parties, the LOE establishes the legal requirements in order to be appointed and, therefore to be able to act as a designer (*proyectista*), head of management of works or head of works (*director de obra*), head of execution of works (*director de ejecución*), among others.

To act as a designer in a construction project in Spain, the LOE requires that the person must hold either a graduate degree in

architecture or civil engineering (depending on the nature of the building, whether housing or other purposes such as factory, harbour, etc), as well as being registered in the relevant Official College of Architects or Engineers (eg, *Colegio Oficial de Arquitectos de Madrid*). The same applies for being appointed as the Head of Execution of Works, which includes functions such as quantity surveying and supervising the quality of works. To be eligible to act as the Head of Execution of Works, the person must hold either a higher or technical degree in architecture or a degree in civil or building engineering, and be a member of their respective Official College.

The LOE also establishes a common set of rules protecting owners and prospective buyers in connection with material damage caused to buildings, even if there is no contract signed with the designer, or head of execution of works. For this purpose, the LOE provides various warranty periods in favour of owners and purchasers running from the date of the certificate of acceptance to enable the owner or purchasers to take action against agents for repair or compensation for material damage – depending on the building element affected, it may cover between one and ten years.

The framework under the LOE is independent from the contractual obligations and liabilities of each agent in their agreement with the employer or owner. Under Spanish law, a claim can be filed seeking repair or damages for specific defects and flaws based on the rights and warranties under the LOE (legal liability) as well as the contractual framework agreed between the parties (contractual liability). This is set out in current Spanish case law (judgment of the Civil Chamber of the Spanish Supreme Court 529/2020 dated 15 October 2020).

Final work certificates and the signatories

As is common in most countries, construction works end when a building has been properly built and complies with all the conditions, standards and features required in the licensed project prepared by the designer, the building licences and permits, and any other instructions from the public authorities.

In Spain, the completion of any building works is usually formalised by a ‘certificate of acceptance’ (*acta de recepción de las obras*) that the owner and/or employer signs with the general contractor. Through this certificate, the general contractor delivers the works and the owner accepts their receipt, either as a result of the building having been totally and properly finalised, or because only minor defects or flaws remain. That certificate of acceptance may also be signed by the head of works or the head of execution of works. The head of works or the head of execution of work’s participation and, therefore their signatures (although common in practice), are not mandatory under article 6.2 LOE.

The reason is that both the head of works and head of execution of works must, pursuant to articles 12.3(e) and 13.2(e) LOE, issue a specific legal document called a ‘final work certificate’ (*certificado final de obra*) (CFO).

According to the Spanish Technical Code for Building Construction, the CFO may only be issued if: the head of works considers that the building has been carried out under their supervision in accordance with the licensed project and the rest of technical requirements and, thus, is ready for proper use; and the head of execution of works understands that they have supervised the material execution of the works and have, among others, controlled the quality of what has been built in accordance with the technical documentation and the

applicable rules for ensuring proper construction.

This CFO will be attached to the certificate of acceptance under article 6.4 LOE.

Lastly, pursuant to article 17.7 LOE, the head of works and the head of execution of works are responsible for the veracity and accuracy of any CFO they sign. Their liability cannot be limited or excluded even if the works were initially managed, supervised and controlled by other architects and engineers. To the extent that both have signed and certified the works pursuant to article 17.7, they will be responsible in relation to the owners and/or employers for any defects resulting from a lack of veracity or accuracy.

Supreme Court judgment of 15 April 2021

The judgment of the Supreme Court arose from a claim brought by an owners' community (buyers and current owners) against the various agents (among others, the head of execution of works) involved in the works. The plaintiff sought the repair of various defects, pathologies and flaws in connection with the building.

The issue submitted to the Supreme Court focused exclusively on interpreting the functions and liabilities of the head of execution of works, when he signed the CFO under article 17.7 LOE.

Here, two technical architects were appointed as the head of execution of works during the building process. The first carried out 94.97 per cent of the units of the works but died before finalising them and signing the CFO. The second (the defendant), who replaced the former and only carried out 5.03 per cent of the works, consisting of the execution of finishings and final touches of the building.

However, the defendant signed the CFO for all the works of the

building, and therefore undertook the responsibility in connection with the veracity and accuracy of the same under the LOE.

The first instance court that initially heard the case held that the defendant was fully liable for any defects, pathologies or flaws in connection with the execution of the works under article 17.7 LOE. This decision was based on the principle that the defendant was required to verify that there were no defects, pathologies or flaws in the works when he signed the CFO.

The Court of Appeal overturned the first instance court in its judgment handed down on 12 January 2018. The Court of Appeal decided that the fact that the head of execution of works had signed the CFO should not automatically trigger liability regarding such defects, pathologies and flaws.

The Supreme Court rejected the cassation appeal and confirmed the second instance decision. It held that the head of execution of works is responsible for the veracity and accuracy of the CFO. The Supreme Court nevertheless stated that the liability of the head of execution of works is limited to the scope of the functions and duties of that agent pursuant to the LOE. Consequently, if they detect any defect or deviation in connection with the fulfilment of their instructions by the general contractor and, despite that defect or deviation, the head of execution signs the CFO, they will be liable for its lack of veracity and accuracy.

The Supreme Court upheld the Court of Appeal's decision and held that, although the technical architect had signed the CFO, he had only supervised and controlled the execution of the 5.03 per cent of the works, and therefore his involvement was limited. Likewise, the Supreme Court found that there was no evidence regarding the participation of the head of execution of works in the supervision and control of the units with defects and pathologies, having

limited his supervision to the finishings and final touches of the building. Furthermore, the defects were neither detectable nor patent defects when the CFO was signed. For all these reasons, the Supreme Court rejected the cassation appeal filed by the owners' community.

Javier González Guimaraes-da Silva is counsel at Uría Menéndez in Madrid. He may be contacted at javier.guimaraes-dasilva@uria.com.



UNITED ARAB EMIRATES

Changes to Dubai's legislation on arbitration centres

Aarta Alkarimi
*Member, IBA Diversity and Inclusion Council
Dubai, UAE*

Background

On 14 September 2021, the Government of Dubai issued Decree No 34 of 2021 ('the Decree'). The Decree, which came into effect on 20 September 2021, mandates that the Dubai International Financial Centre Arbitration Institute (DIFC Arbitration Institute) which includes the DIFC-LCIA Arbitration Centre and the Emirates Maritime Arbitration Centre (MIAC) shall be merged with the Dubai International Arbitration Centre (DIAC) and their assets transferred to DIAC. As a result, DIFC-LCIA and MIAC will cease to exist. DIAC has been in operation onshore in Dubai for the past two decades with a substantial caseload.

In line with other significant legal and regulatory reforms recently implemented in Dubai, the merging of Dubai's alternative dispute resolution centres aims to make Dubai one of the most favourable cities for ease of conducting international business and commerce and ultimately placing DIAC among the top five most user-friendly, effective and efficient global dispute resolution centres.

Impact of the Decree on DIAC

The Decree provides that DIAC will have six months, from 20 September 2021 to implement the provisions of the Decree applicable to it and restructure its operations as an independent, non-governmental ADR centre.

This includes DIAC updating its rules, an initiative that was undertaken swiftly and recently completed. The new rules will come into effect on 21 March 2022. Some major updates to the new DIAC rules include provisions on consolidation of arbitrations and joinder of additional parties, expedited and emergency arbitration, alternative processes for appointing arbitrators, third party funding and inclusion of attorney fees as arbitration cost.

DIAC will have jurisdiction to consider and determine future disputes agreed by the parties to be referred to the MIAC or the DIFC-LCIA, unless the parties agree otherwise. Regarding ongoing MIAC and DIFC-LCIA arbitrations, DIAC will take on a supervisory role and administer these cases under the rules of MIAC or DIFC-LCIA, as applicable.

The DIFC-LCIA and MIAC are currently no longer able to register new cases. DIAC is exercising its supervisory role in ongoing DIFC-LCIA and MIAC arbitrations and exercising its jurisdiction by registering new cases arising out of

contracts that refer to MIAC or DIFC-LCIA as the selected dispute resolution centres. In order to minimise disruption to ongoing arbitrations, DIAC and DIFC-LCIA have explored options with respect to pending cases through regular meetings and dialogue. Potential options such as secondment of case managers from DIFC-LCIA to DIAC, to directly administer all ongoing arbitrations until such proceedings are concluded have been considered.

Impact of the Decree on the parties

In the short term, practical difficulties may arise as a result of the dissolution of the DIFC-LCIA and MIAC. Such difficulties include the potential frustration of existing arbitration agreements where parties have selected MIAC or DIFC-LCIA and now are unwilling to agree to DIAC's jurisdiction as mandated by the Decree. There is also the potential risk of guerrilla tactics by parties to disrupt and delay the start of an arbitration. Moreover, there is a potential increase in the number of cases before the Dubai and DIFC courts on objections to the jurisdiction of the arbitral tribunal. For example, where a party initially proceeds with an arbitration but later delays and disrupts the matter by filing an application before the courts and challenging the arbitral tribunal's jurisdiction.

In the long term, however, the consolidation is expected to create a single centre that is transparent, efficient and in line with the country's long-standing vision of turning Dubai into a true global ADR hub.

Impact of the Decree on the seat of arbitration

The Decree expressly provides that DIFC will be the default seat for any DIAC arbitration where the parties have not agreed to the seat of the arbitration.

This is a welcome development for some members of the international business community because the DIFC courts are based on the common law principles of England and operate in the English language.

Furthermore, the DIFC courts apply the DIFC Arbitration Law No 1 of 2008 as the law of the seat rather than the onshore UAE Arbitration Law No 6 of 2018.

Moving forward

As a result of these new developments, parties selecting an arbitration forum in the Middle East should no longer include DIFC-LCIA or MIAC in their arbitration agreements.

It is imperative that parties seek legal advice and amend existing contracts that refer to DIFC-LCIA or MIAC to reflect a new centre of choice and rules prior to disputes arising, where possible.

Developments arising from the merger of these centres are evolving. As we go to press, more clarity may have come to light on the merger.

Aarta Alkarimi is the managing partner of Chrysalis, an international commercial arbitrator, and an accredited mediator. She may be contacted at alkarimi@chrysalis-llp.com.



Construction activity near Riverside Expressway, Brisbane, Australia. Credit: Shutterstock/my_ photos

Building resilient infrastructure: ensuring assets delivered in Australia's infrastructure boom will endure

Nick Thomas

Clayton Utz, Sydney, Australia

Lina Fischer

Clayton Utz, Sydney, Australia

Jason Hooper

Clayton Utz, Sydney, Australia

As Australia grapples with the threats of climate change, pandemics and cyber attacks, greater emphasis must be placed on achieving resilience during the planning phase of infrastructure projects, and using available tools to deliver resilience in infrastructure.

Australia is in the midst of one of the greatest infrastructure booms in its history, which reflects a global trend. The nation's infrastructure boom covers a wide range of sectors, such as transport, energy generation and distribution, water capture, purification and distribution, telecoms, social sectors (eg, health, education, social housing, aged care, social and justice) and waste management.

Nevertheless, the events of the last three years have highlighted Australia's vulnerability to natural and non-natural threats, including a global pandemic, catastrophic bushfires nationwide, crippling droughts (including in

major cities), widespread floods and a variety of cyber threats.

These events not only threaten the safe and effective continuation of communities and the Australian economy, but also have an enormous financial cost. By 2060, the annual cost of natural disasters in Australia is expected to more than double – from AUD38bn per year to more than AUD73bn.

Inevitably, these and other threats will continue to occur. To address this, Australia's infrastructure bodies are advocating greater resilience in its infrastructure. Their key messages include that Australia needs more

‘systems’ thinking to deliver resilience for infrastructure, and it is critical that thorough planning occurs to ensure that new infrastructure assets are both resilient themselves and support more resilient communities.

On 3 December 2021, Clayton Utz convened a panel of experts to address the importance of infrastructure resilience. Lina Fischer, a partner in our Major Projects and Construction team, chaired a discussion with Romilly Madew AO (CEO of Infrastructure Australia), Rory Butler (Associate Director Sustainability and Resilience, Infrastructure Australia), Simon Draper (CEO of Infrastructure NSW) and Nick Thomas (partner in our Environment and Planning team).

The discussion followed the release, in August 2021, of the joint report from Infrastructure Australia and Infrastructure NSW titled *A Pathway to Infrastructure Resilience* (Pathway Report).¹

In this article, we highlight some key points from the Pathway Report and the discussion.

Prioritising resilience during the planning phase of an infrastructure asset offers the greatest opportunity to achieve resilience

A pathway to infrastructure resilience

While, over the past decade, there has been increasing focus on sustainability in both the delivery and operation of infrastructure, discussions around the resilience of assets have only more recently taken hold. The interest in resilient infrastructure is becoming increasingly urgent.

Infrastructure Australia’s and Infrastructure NSW’s research project reflected contributions from over 600 participants in government, industry, non-government organisations, academia and civil society organisations. Its aim was to ‘build expertise, momentum for change and set a strategic direction for how we plan infrastructure to respond to natural and non-natural threats’.²

Infrastructure Australia’s and Infrastructure NSW’s vision is that future Australian communities will ‘be able to anticipate, resist, absorb, recover, transform and thrive in response to shocks and stresses, to realise positive economic, social and environmental outcomes’.³

Importantly, the Pathway Report emphasises that achieving resilience is not limited to the

resilience of the asset itself, but also the ability of the asset to contribute to the overall resilience of the system in which it is placed. In effect, this approach requires an emphasis not only on the strength of the asset, its network and its sector, but also the place, community, precinct, city or region in which it operates.

The planning phase is key

Prioritising resilience during the planning phase of an infrastructure asset offers the greatest opportunity to achieve resilience. The planning phase establishes the trajectory for the remaining phases of an infrastructure asset’s lifespan and is critical in determining fundamental decisions such as the location, design and management of the asset, its integration into the community which it serves, and interdependencies of the asset with existing or other soon to be constructed assets.

The Pathway Report outlines ten directions for systemic change in infrastructure planning:

1. *Improving strategic alignment of resilience governance*
Systemic change is only possible if there is alignment and coordination across various levels of government, relevant industry sectors, specific government agencies and the governments in participating or affected jurisdictions. Fragmentation is a serious barrier to achieving resilience.
2. *Managing uncertainty through scenario planning*
Consistent, fit for purpose scenario planning would result in more collaborative planning and improved identification of potential impacts on infrastructure assets.
3. *Improving data collection and sharing for informed planning, action and decision-making*
Data that is good quality, standardised and accessible can be effective in coordinating responses to, and recovery from, inevitable crises. This includes data which are relevant to the circumstances driving the proposal for the infrastructure asset, and data relating to statements which are being used to support the case for the infrastructure asset.
4. *Adopting place-based approaches for resilience*
In the planning phase, consideration should be given to the benefits, place-level interdependencies and vulnerabilities of the place in which an infrastructure asset is proposed to be located.

5. *Embedding resilience into land use planning and development decisions*

Typically, planning systems across Australia do not establish resilience as a key policy objective. Explicit and coherent policy is required to achieve resilience in land use planning which is applicable at all levels.

6. *Improving infrastructure investment decision-making*

Examples of infrastructure failure highlight the need for better practice in infrastructure investment decision-making. Valuing resilience of assets would enable governments and agencies to leverage private capital more effectively by pursuing good-quality infrastructure investments and demonstrating their value to the market.

7. *Collecting and sharing information on asset and network vulnerability*

Due to the interdependent nature of infrastructure systems, being able to share information on real-time service disruption is essential in improving cross-sectoral planning and collaboration, allowing infrastructure networks to respond in a crisis and identify different service deliveries.

8. *Valuing blue and green infrastructure*

The ability to leverage blue and green infrastructure (such as waterways and green spaces) can reduce risk and result in resilience benefits in response to crises.⁴

9. *Building trust with communities through more inclusive decision-making*

Communities have lived experiences on the impacts that natural and non-natural threats have had on their place, and will also have views and comments on infrastructure proposals based on their experiences. These are critical in ensuring effective decision-making in planning for, and delivering, infrastructure assets.

10. *Embedding traditional ecological knowledge in decision-making*

Ineffective land and resource management has the potential to have a detrimental impact on infrastructure assets and communities. The use of Aboriginal and Torres Strait Islander land management processes can enhance the resilience of infrastructure assets in the Australian environment.

What tools are available to help deliver resilient infrastructure?

Place or systems level

Planning system reforms such as the following in the State of New South Wales (NSW) provide a platform for the integration of resilience in strategic planning:

- the establishment of the Greater Sydney Commission and the introduction of statutory requirements for strategic land use plans in 2018;
- the planning minister’s release of nine key planning principles (one of which is resilience) in December 2021, to inform strategic planning and local and State planning controls; and
- the current process of reforming the State’s infrastructure contributions scheme for development projects.

In addition, the collaborative response from the NSW Government, together with industry and other stakeholders, to Covid-19 in a rapid review of planning law constraints to allow more effective operation of infrastructure during the pandemic, demonstrated that there is capacity to adapt thinking and practices when necessary to improve resilience.

Embedding sustainability, and resilience as a core component of sustainability, are fundamental for resilient assets

Asset level

Embedding sustainability, and resilience as a core component of sustainability, are fundamental for resilient assets. This currently occurs in various ways, as illustrated by the following examples:

- The adoption, across many infrastructure classes, of sustainability rating schemes such as the Infrastructure Sustainability (IS) rating scheme, and Green Star rating system for some social infrastructure, is becoming increasingly common. These rating schemes specifically incorporate evaluation categories such as climate change adaptation, which is a key indicator of an asset’s resilience.
- There is increasing sophistication in the incorporation of sustainability and resilience in procurement and infrastructure delivery

contracts. Contract terms are moving beyond vague references to sustainability plans and 'set and forget' requirements, to specifications which deal with specific resilience issues, the inclusion of sustainability in procurement evaluation criteria, and incentive schemes for specified design and environmental outcomes.

- Technological advances such as digital twins are allowing more interconnected modelling and analysis of data and systems to produce more resilient asset outcomes. Governments in the states of NSW and Victoria are investing heavily in this technology. While still relatively early in its development, the technology has the potential to transform the planning and delivery of infrastructure, and the governments are focused on ways of ensuring the environment is data rich and accessible to those engaged in the industry.
- Many delivery agencies and private infrastructure owners are focusing on risk planning for potential threats and measures to ensure resilience is built into assets from the start. There may be more opportunities in the future to harness the experience of the private sector in long-term public-private partnership (PPP) or design, build, operate, maintain (DBOM) arrangements, to ensure better alignment between procuring and delivering bodies for whole-of-life resilience outcomes.
- There is growing awareness of the potential for savings in operation and maintenance costs for more resilient assets, and growing recognition of this in project contracts. An example is the inclusion of 'risk and reward' sharing provisions for demonstrable reductions in maintenance costs.
- Resilience is driving approaches to the evaluation and pricing of insurance risk. This is affecting the availability of insurance, and the variability of its terms and premiums, according to factors such as the location and environmental circumstances of the asset to be insured.
- Regulatory agencies are applying stricter and more focused assessments and approval conditions in areas which promote resilience. Examples include their approaches to community engagement and social impact. This, in turn, can assist in developing a stronger social licence for projects. Project proponents are increasingly recognising this and, as a result, some are adopting practices which go beyond regulatory requirements.

- Asset owners and operators are becoming more conscious of the ever-increasing risk of cyber attacks. The Federal Government's recent reforms to the Security of Critical Infrastructure Act 2018 (Cth) highlight the threat of foreign interference in our national critical infrastructure, which includes significantly expanding the categories of infrastructure assets governed by the legislation and giving the government broad powers to intervene in response to incidents. Managers of critical assets need to ensure they have the technological capacity to guard themselves against, and manage, the risks associated with such attacks.

However, infrastructure development often suffers from silos, across disciplines and between sectors, and between the physical and digital environments. To truly maximise an asset's resilience, holistic system-wide thinking will be necessary to conduct an integrated analysis of possible threats and develop solutions to minimise and manage risks. This needs to occur not only at the planning stage of a project but regularly throughout the asset life-cycle.

Organisational level

The rise of ESG (environmental, social and governance) concerns globally means that senior executives and boards are more focused on addressing issues such as sustainability and resilience in their policies, their assets and activities. Governments are also increasingly attuned to the reputational risks of not focusing on ESG concerns, as well as the long-term costs and risk of not building in resilience thinking from an early stage of asset development.

The environmental, social and governance consequences of public and private sector organisational decisions now have much greater significance. Consequently, there is more attention on the basis for those decisions, and factors which are not traditionally recognised as 'financial' in nature are becoming much more important, such as climate change mitigation and adaptation (or resilience).

Interestingly, this can have a hard financial edge to it. For example, as indicated earlier in this article, a more resilient asset can have lower operating costs, so there can be a financial incentive for decision-makers to adopt more resilient concepts, designs, construction and operation in their infrastructure assets.

Some judicial incentive

The extent of litigation on the subject of climate change in Australia, and, indeed, worldwide, is an indicator of the willingness of a variety of stakeholders to pursue concerns about climate change through the courts.

In two of the most highly publicised examples in Australia: the Federal Court of Australia decided, in May 2021, that the federal minister for the environment has a legal duty to consider the risk of climate change on Australia's children in deciding whether to grant approval for a project;⁵ and in August 2021, the NSW Land and Environment Court ordered the NSW Environment Protection Authority to develop environmental quality objectives, guidelines and policies to ensure the protection of the environment in NSW from climate change.⁶

There is a very real prospect that the courts will, in time, extend similar principles to resilience. In the meantime, the decisions outlined above may well drive regulatory agencies to focus more on concepts such as infrastructure resilience as part of a response to climate change related concerns.

Moving forward

It is clear that resilience is already highly important for infrastructure, and will only become more so. It is also clear that achieving resilience is a shared responsibility that requires a collaborative effort across government, industry and the community. We already have many of the tools required to deliver resilient infrastructure. We now need to find out the most effective ways to use them.

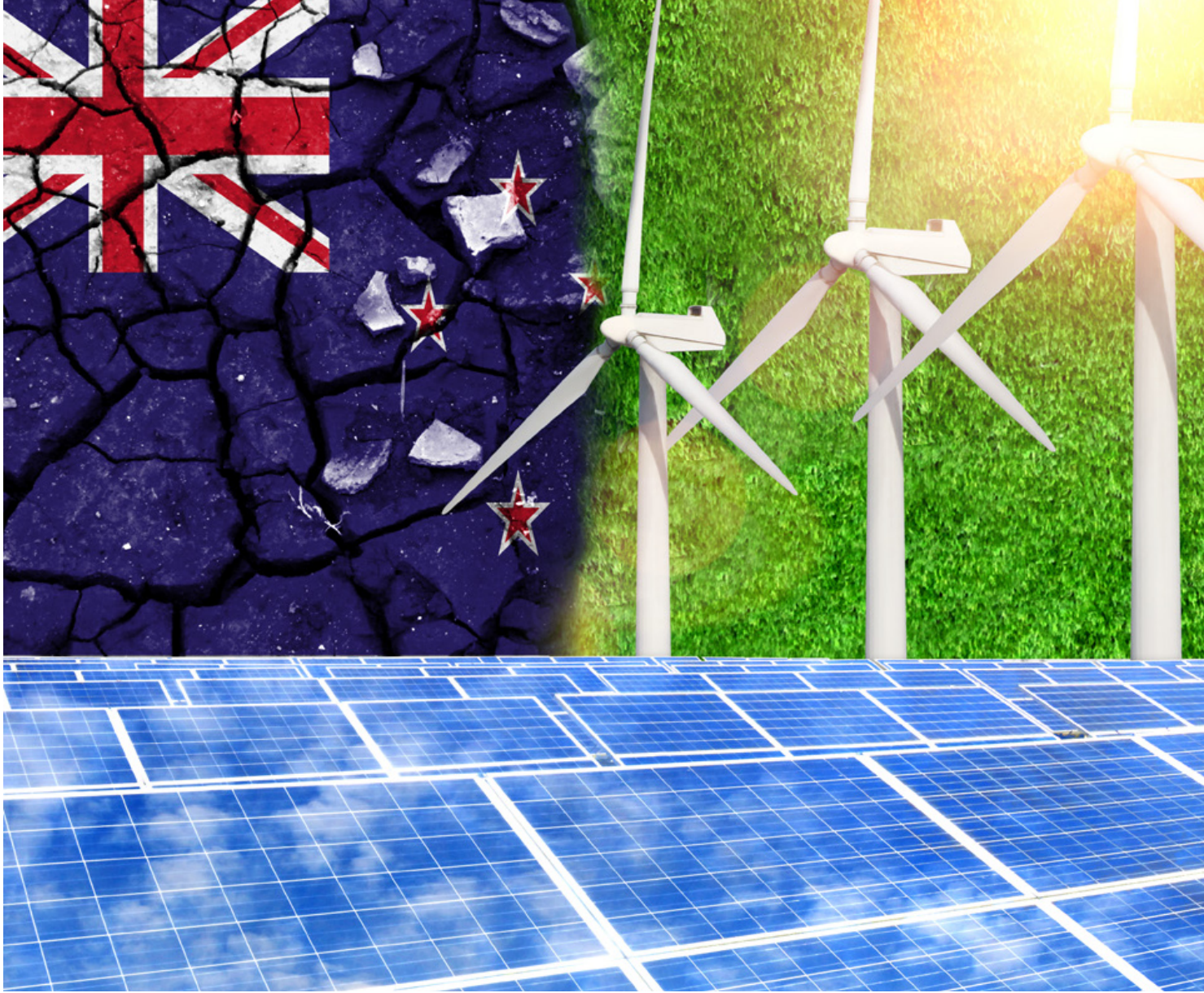
Notes

- 1 Infrastructure Australia and Infrastructure NSW, 'A Pathway to Infrastructure Resilience', August 2021, see www.infrastructureaustralia.gov.au/publications/pathway-infrastructure-resilience-0, accessed 15 February 2022. The publication is in two parts 'Advisory Paper 1: Opportunities for systemic change' and 'Advisory Paper 2: Guidance for asset owners and operators in the short term'. This article draws primarily from Advisory Paper 1.
- 2 *Ibid*, p i.
- 3 *Ibid*, p ii.
- 4 The Pathway report states: 'Blue and green infrastructure (that is, waterways and greenspace) is often overlooked and undervalued as infrastructure. However, the ecosystem services it delivers such as water purification, air quality, soil formation, food production, space for recreation, and climate mitigation and adaptation are vital for resilience.' (p 42).
- 5 *Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment* [2021] FCA 560. The Federal Government has appealed the Court's decision. The appeal is yet to be heard.
- 6 *Bushfire Survivors for Climate Action Incorporated v Environment Protection Authority* [2021] NSWLEC 92.

Nick Thomas is a partner at Clayton Utz in Sydney and can be contacted on nthomas@claytonutz.com.

Lina Fischer is a partner at Clayton Utz in Sydney and can be contacted on lfischer@claytonutz.com.

Jason Hooper is a lawyer at Clayton Utz in Sydney and can be contacted on jahooper@claytonutz.com.



Credit: Shutterstock/Millenius

Katrina Van Houtte

*Auckland,
New Zealand*

Ariana Stuart

*Auckland,
New Zealand*

The future looks bright for collaboration: contracting for 100 per cent renewable electricity generation

In this article, we consider what the best contracting model may be in order to deliver New Zealand's significant renewable construction projects in an expedient and effective way, and to minimise the likelihood of disputes arising. To do so, we examine the more traditional international approach using an EPC form of contract and whether New Zealand's approach to being more collaborative may be suitable.

Introduction

New Zealand's government is required to set five-yearly emissions budgets to decarbonise its economy and reduce greenhouse gas emissions (excluding biogenic methane) to zero by 2050.¹ Electricity will play a major role in achieving this obligation. The current government's aim is to move away from generating electricity from fossil-fuel based energy sources and towards having it produced solely from renewable energy by 2030.²

New Zealand already has one of the lowest emission electricity systems in the world, and it is highly dependent on renewable generation which has been dominated by hydrogeneration.³ The issue with this is that in dry years (where there is less rainfall than average) other sources are required to supplement generation, and this is currently provided by fossil fuels, including gas and coal.⁴ To make the emissions target a reality, a number of obstacles need to be addressed including:

- investigating other potential energy generation and storage solutions such as pumped hydro,⁵ biomass, biogas and green hydrogen;
- overbuilding renewable generation capacity and investing in additional wind, geothermal and solar plants; and
- expanding existing infrastructure for generation, transmission and distribution of electricity.

International approach: EPC

Traditionally, electricity projects have been procured internationally employing an EPC structure either through a conventional approach using a standard-form contract such as the FIDIC Silver Book (1999 or 2017 update) or on a bespoke basis. This has been driven by the demands of project financiers who prefer a single contractor under a fixed lump sum contract to deliver a turnkey solution.⁶

The FIDIC Silver Book approach to the pre-allocation of responsibilities for risks which might occur during the project delivery phase between the Principal and Contractor is different than what is seen for risk allocation under other standard-forms such as FIDIC's Red and Yellow books.⁷ Indeed, on its introduction in 1999 the FIDIC Silver Book was seen as being most controversial as, rather than balancing risk

between the parties, it instead imposed a risk profile heavily weighted in favour of the principal.⁸ The explanation for doing so was that mixing together design, construction and operation demanded a fixed, lump sum contract with little or no risk of an increase in cost if and when unexpected events took place.⁹ Of note, the update to FIDIC Silver Book in 2017 was seen as being less flexible, more complex and less user friendly being 50 per cent longer than the 1999 Book.¹⁰

Advantages of EPC?

For electricity projects, which are often large in scale and complex, the perceived key advantage of an EPC contract is that the contractor is solely responsible for the main project risks being time, cost and output performance.¹¹ By way of example, and within the original 1999 FIDIC Silver Book, risks transferred to the contractor include errors in set-out data (sub-clause 4.7), site-data (sub-clause 4.10), unforeseeable difficulties or

An EPC form of contract (whether FIDIC Silver or bespoke) may not be the best fit for delivery of these renewable projects given the inevitable complexities of these difficult and large projects and the decreased risk appetite of contractors both globally, and in New Zealand

costs (sub-clause 4.12), responsibility for all design (sub-clause 5.1) and any errors arising from that design (sub-clause 5.8), limitations on recovery of extensions of time (clause 8.4), and consequences flowing from use or occupation of the principal¹² (sub-clause 17.3) and any operation of the forces of nature which is unforeseeable (sub-clause 17.3). It was expected that a contractor would either price these risks and/or carry out extensive due diligence to mitigate the risks.

Another advantage of EPC is that the principal can choose both how much control it wants to retain or be involved in over the design; and time for delivery of the project, including whether it should be executed on a normal sequential or a fast-track schedule, or with early contractor involvement.

But is risk transfer complete?

It has been suggested that risk transfer to the contractor is not as complete as may be indicated by the use of 'turnkey' to describe the FIDIC Silver Book. For example,¹³ the risk of adverse ground conditions is allocated to the contractor, with it being deemed to have obtained all necessary information such that it accepts 'total responsibility' and with no addition to the contract price payable.¹⁴ The only caveat to this normally is that the principal is responsible for certain data provided to the contractor so that an extension of time can be claimed for error in certain circumstances, although without additional payment.¹⁵ However, and usually with negotiation this is amended to revert to a more traditional test of foreseeability, and the risk remains with the principal.¹⁶

With the FIDIC Silver Book 2017 update came the strong recommendation that the five 'Golden Principles' be strictly adhered to.¹⁷ These Golden Principles change the overall position of risk transfer under the 2017 FIDIC Silver Book (as compared to the previous version) in favour of the contractor, which has measurable consequences in relation to principal risk/cost and bankability as:¹⁸ one of these Golden Principles is a requirement that the duties, rights, roles and responsibilities of contracting parties be as implied in the General Conditions and as appropriate to the requirement of the particular project; and another requires that the Particular Conditions must not change the balance of risk and reward allocation provided for in the General Conditions.¹⁹

Is EPC fit for purpose?

An EPC form of contract (whether FIDIC Silver or bespoke) may not be the best fit for delivery of these renewable projects given the inevitable complexities of these difficult and large projects and the decreased risk appetite of contractors both globally, and in New Zealand.²⁰ Unless extensive negotiations take place prior to the award of the contract and parties understand where the risks have been shifted and why, and accept an increase in price to compensate, this form may not be as attractive.

Many commentators have speculated that the FIDIC Silver Book 2017 missed an opportunity to be tailored to renewable

energy projects, particularly at a time when principals were moving away from a turnkey model in order to improve returns.²¹ However, it may be possible to find other solutions with comprehensive and well-structured risk mitigation packages. What would work?

A move towards greater collaboration in contracting in New Zealand

The increase in high profile struggles and failures of experienced New Zealand contractors over the past decade drew attention to the practice of contractors increasing their competitiveness at tender by under-pricing contracts, with major project risks often ignored, misunderstood or underestimated. Competition post the global financial crisis had pushed contractors into the 'race to the bottom' to take on projects with all risk transferred in order to 'win' revenue rather than obtain profit. These under-priced contracts essentially bankrolled construction for the principal while risking the contractor's ability to operate and complete projects. Contractors could only restore profitability during delivery of the contract through claims and variations. This approach led to delayed completion, cost overruns, wasted resources, an increase in disputes and some high profile insolvencies.²²

Under previous governments, a common procurement approach in New Zealand to deliver significant vertical and road projects was to use the public private partnership (PPP) model.²³ However, PPPs have come under increasing scrutiny and criticism in New Zealand. Concerns have been raised with pricing, transparency and poor risk management, and the perception that there are poor outcomes for the public due to projects being delayed.²⁴ PPPs are now also viewed with scepticism by the contracting market due to significant increases in scope and cost leading to large losses being suffered by contractors. This mode of delivery is now considered to be out of favour with the current Labour Government, and there is a drive to having more collaborative contracting.

Given the large number of project failures using traditional procurement models, there is some scepticism in the New Zealand market about the effectiveness of traditional procurement approaches to drive successful outcomes for projects. The New Zealand Government has taken positive steps to ensure that projects are procured on the

basis that the risk sits with the party best placed to control, manage and mitigate it – to try and improve outcomes across government projects and influence change across the private sector.

In October 2019, the New Zealand Government published its Construction Procurement Guidelines which included advice on risk management as an attempt to change the focus away from lowest cost, to instead achieving optimum value across the whole of life for the asset, of which cost is only one factor. It was a conscious attempt by the government to avoid the ‘race to the bottom’, which it saw as being critical for successful project delivery and delivering public value.²⁵

Another example was the development of the Construction Sector Accord (‘the Accord’) in April 2019. The Accord is a commitment between government (ministers and agency chief executives) and senior construction industry leaders to transform New Zealand’s construction sector to address the culture of shifting risk.²⁶

The Accord set out a primary challenge to transform the sector into a high performing and more productive industry. In order to achieve this objective, four principles were set out to effect the culture change needed, these being to: ‘build trusting relationships’, ‘value our people’, ‘be bold’ and ‘act with collective responsibility’.²⁷ Notably, the Accord is accompanied by the Construction Sector Accord Network (CSAN),²⁸ through which organisations can register openly to signal their commitment to the Accord by taking the Accord Pledge and committing to provide a high standard of behaviour based on the Accord principles. Since its inception most businesses, agencies and industry organisations within New Zealand’s infrastructure sector have joined.²⁹ To attract wider commitment CSAN has instigated a reward/incentivisation scheme, which includes the use of an accredited member’s scheme, which provides concrete benefits (such as preferred supplier status) to exemplary performing organisations.³⁰

While the introduction of the Accord has not, to date, resulted in a universal sea-change in the way risk allocation is adopted by the public sector, it has resulted in more constructive discussions about appropriate risk allocation and brought about some change to the way in which certain government procurement agencies approach

construction contracts. The general trend is positive, and the principles centred on communication and relationships proved particularly valuable during Covid-19 lockdowns in 2020. The Accord was able to release guidance quickly on how the New Zealand Standard form contracts should address relief during the lockdown (which was a hard lockdown that stopped construction projects), largely avoiding disputes over Covid-19 variations and extensions of time in both the public and private sector.³¹

Given the large number of project failures using traditional procurement models, there is some scepticism in the New Zealand market about the effectiveness of traditional procurement approaches to drive successful outcomes for projects

As a result, achieving a fair allocation of risk has become a critical consideration in New Zealand when procuring large and complex projects. This has led to a shift towards using more collaborative contracting, shown by the uptake in use of alliance contracting on large infrastructure projects, and the upcoming review of New Zealand’s standard-form construction contract NZS3910:2013.³²

Use of the Alliance model

The rise in the use of alliancing can be attributed to the attitude of the New Zealand Government and its agencies (eg, the NZ Transport Agency, Auckland Transport)³³ to use it for highly complex or large infrastructure projects where it would otherwise be difficult to scope effectively, price and deliver the project under a more traditional model.³⁴

An alliance is a collaborative commercial and legal framework between a principal/owner and one or more parties delivering the services for the project. The benefits of an alliance include:

- A project can go out to market early, before the scope and details of the project are finalised. This can lead to innovation and improved efficiency particularly where the project is highly challenging from a technical perspective.

- Flexibility across all aspects of delivery can enable fast-tracking to meet any time constraints in scheduling and programming. Instead of strict time obligations with liquidated damages and few relief/EOT events, there are soft time obligations (a 'best endeavours' to complete on time with general damages for breach) and other incentives for timely completion like early completion bonuses.
- Parties develop a detailed understanding of scope, pricing and cost due to the open-book and transparent processes and joint development of a target out-turn cost agreed between the participants.
- The 'no-sue' mechanism except for wilful default or insolvency drives the alignment of commercial interests and project culture allows people to be free to innovate and work together.
- Employees remain employed by their home organisation but leave this 'hat' at the door and operate under a shared project umbrella with common branding, email addresses and the like. This means that there is a fully integrated team working on a 'best for project' basis.
- Parties are incentivised to work together to achieve time and cost targets with pain/gain share arrangements where costs below and above the target out-turn cost are shared between the parties based on a pre-agreed percentage split.

The Alliance model is very different from the traditional EPC model, as they are effectively at opposite ends of the risk spectrum.

However, there are concerns that alliances are expensive as they are effectively a cost-plus contract, with margin at risk. While this may simply reflect what projects actually cost, it is becoming increasingly common for procurement processes to require alliances to be tendered on a competitive basis, to introduce price tension into the setting of the target out-turn cost. If alliances are to become accepted for renewable energy projects, consideration may need to be given to introducing other ways to manage the build cost within the target out-turn cost.

Moreover, an alliance is not necessarily suitable if an owner wants to use project finance on a limited recourse basis. Financiers looking to the cashflow and assets of the

project to secure repayment, and not to the balance sheet of the owner may not be comfortable with using anything other than a traditional fixed price and time contract with transferred risks.³⁵ It would not be impossible to use alliances, if:

- the alliance agreement had a well-structured gain/pain share regime, a prescriptive subcontracting regime, and reserve power and deadlock breaking mechanisms in favour of the owner;³⁶ and
- extensive due diligence was carried out in relation to technical issues, project risks and the capabilities of the participants; and
- tailored insurance policies were obtained.³⁷

Internationally, the use of alliances has been seen as potentially problematic in technically complex engineering and industrial engineering project contexts as its liability clauses, conflict resolution practices, and incentivisation schemes may not be sophisticated enough to deal with the complex issues that may arise, and there may be a reduction in the principal/owner involvement.³⁸

Admittedly, alliance projects in New Zealand have largely been in road and rail infrastructure. A redevelopment of Auckland Airport's domestic terminal was procured on an alliance, and was the first vertical project to be procured on this basis in New Zealand, but this project was deferred due to Covid-19. Auckland Airport has advised that the first stage of the project is expected to get underway in early 2022.³⁹

Other successful examples of alliances used in New Zealand include the Northern Canterbury Transport Infrastructure Recovery (NCTIR) and Auckland's City Rail Link (CRL).

NCTIR was set up to rebuild road and rail networks in the South Island, as a result of substantial damage caused by the Kaikoura earthquake on 14 November 2016.⁴⁰ The project was unique as it posed specific geospatial issues.⁴¹ It was located in a remote area, which made resourcing constrained and data collection difficult. Notwithstanding the large scope of work, the alliance exceeded expectations from a timing point of view, demonstrating what can be achieved in a collaborative contract.

CRL is being delivered through the Link Alliance⁴². It was formed to transform the manner in which public transport operates in Auckland, which has been encumbered with overcapacity. The project encompasses construction on two new inner-city underground stations, upgrading the existing Mount Eden station, and completing tunnel

construction. The project was procured on an alliance model after the initial failure of the procurement process under a traditional D&C model due to unacceptable levels of risk for the contracting market.⁴³

The Alliance model is very different from the traditional EPC model, as they are effectively at opposite ends of the risk spectrum. Alliances have shown to be successful when there is uncertainty of scope and risk and the project benefits from the collaboration between the design team and the contractor. If it is accompanied by a mechanism for managing costs that gives the owner confidence it is still receiving value for money, the Alliance model may also assist parties in managing technological risk associated with renewable energy projects, particularly if the project is of a kind where it is being attempted for the first time in New Zealand. This might lead to more successful projects outcomes than those experienced in New Zealand in recent years.

NZS3910:2013 under review

NZS3910:2013 is New Zealand's most commonly used standard form construction contract. It has not been updated since 2013⁴⁴ and in recent years its use has been characterised by a proliferation of special conditions.

Its two key issues are: the increased complexity and bespoke nature of each contract means the benefit of having a universally understood standard form is reduced; and the effect of the special conditions is almost always to increase the risk transfer to the contractor and in many cases, the contractor has not appreciated the effect of the amendments and the extent of the risk transfer leading to poor understanding of risks assumed (and risks not priced).

The review is being commissioned by the Construction Sector Accord and the New Zealand Infrastructure Commission, *Te Waihanga*. The purpose of the review is to revise the standard form so that it is widely accepted and fit for purpose without the need for substantive amendment and allocates risk fairly. It is not a 'patch and update' but remaking it root and branch to make it properly fit for purpose.

It remains to be seen whether the revisions to NZS3910 will be innovative and introduce any principles from collaborative contracting.

The detail on the proposed amendments has yet to be considered, although submissions have been sought from industry participants, with nominations for the committee who will carry out the review only closing at the end of November 2021.⁴⁵

Innovation

Internationally, there have been two developments which may be of assistance in selecting the appropriate contracting model for New Zealand's upcoming renewable electricity projects.

The first is that there may be an attractive alternative to EPC in the adoption of 'EpCM' (engineer, procure, and construction management) for waste to energy projects as it allows a more granular approach to risk.⁴⁶ The EpCM contractor is not directly involved in construction, making this more akin to a professional services contract, but the contractor retains responsibility for the

If we are to successfully decarbonise New Zealand's electricity system in a short time we need contract models that produce best for project outcomes while avoiding parties being locked into disputes over time, cost and the like

detailed design and overall management of the project on behalf of the principal. It is much more collaborative in nature. The principal has the opportunity to be involved in decisions, but as part of the construction management role, the EpCM contractor supervises, manages and coordinates construction interfaces in accordance with a detailed schedule, and establishes contractual arrangements with other contractors, original equipment manufacturers and subcontractors.⁴⁷ Cost, time and performance risks are therefore reduced as the party most familiar with the plant/project has the most significant stake.⁴⁸ This type of model would work well between experienced parties with established relationships.

The second is that new standard-form collaborative contracts are being introduced.

In June 2018, NEC released its Alliance Contract as part of its NEC4 tranche of agreements to inspire and enable better project collaboration.⁴⁹ The NEC Alliance

Contract has an integrated risk and reward model, with all parties engaged under single contract, and as a result the success of a project becomes each parties' prerogative.⁵⁰ The principal plays a central role and an active part in the alliance. The alliance board is made up of a representative from each party and it is this Board which is responsible for setting strategy, decision-making and resolving disputes.⁵¹ As risks are shared equally, claims are barred except for limited events such as wilful default.⁵²

FIDIC is also creating a collaborative form of contract. FIDIC's board agreed to the setting up of a working group by the FIDIC contracts committee in May 2021 to develop this contract.⁵³ The working group would research the current collaborative contracts in the market to put together a framework of the approaches taken and allow consideration of the preferred FIDIC collaborative contract solution.⁵⁴ This development is encouraging particularly as it may be more acceptable to the multilateral development banks and multinational private sector clients who have tended to adopt FIDIC contracts as their preferred standards.

Conclusion

It is well accepted that the equitable distribution of risk 'is the essential ingredient to increasing the effective, timely and efficient design and construction of projects'⁵⁵ as it leads to 'a reasonable price, qualitative performance and the minimization of disputes'.⁵⁶ These outcomes are imperative for the large and complex renewable energy projects to come – if we are to successfully decarbonise New Zealand's electricity system in a short time we need contract models that produce best for project outcomes while avoiding parties being locked into disputes over time, cost and the like.

We are of the view that a pure EPC model is outdated and not the most appropriate model to be used for the renewable energy projects we need to develop in New Zealand. This is even more so given the current Covid-19 climate, uncertainty around global supply chains and the New Zealand Government's aim to create jobs quickly and stimulate the economy through infrastructure, while meeting its target of electricity being generated through 100 per cent renewable energy. The future for collaborative contracting looks bright.

Notes

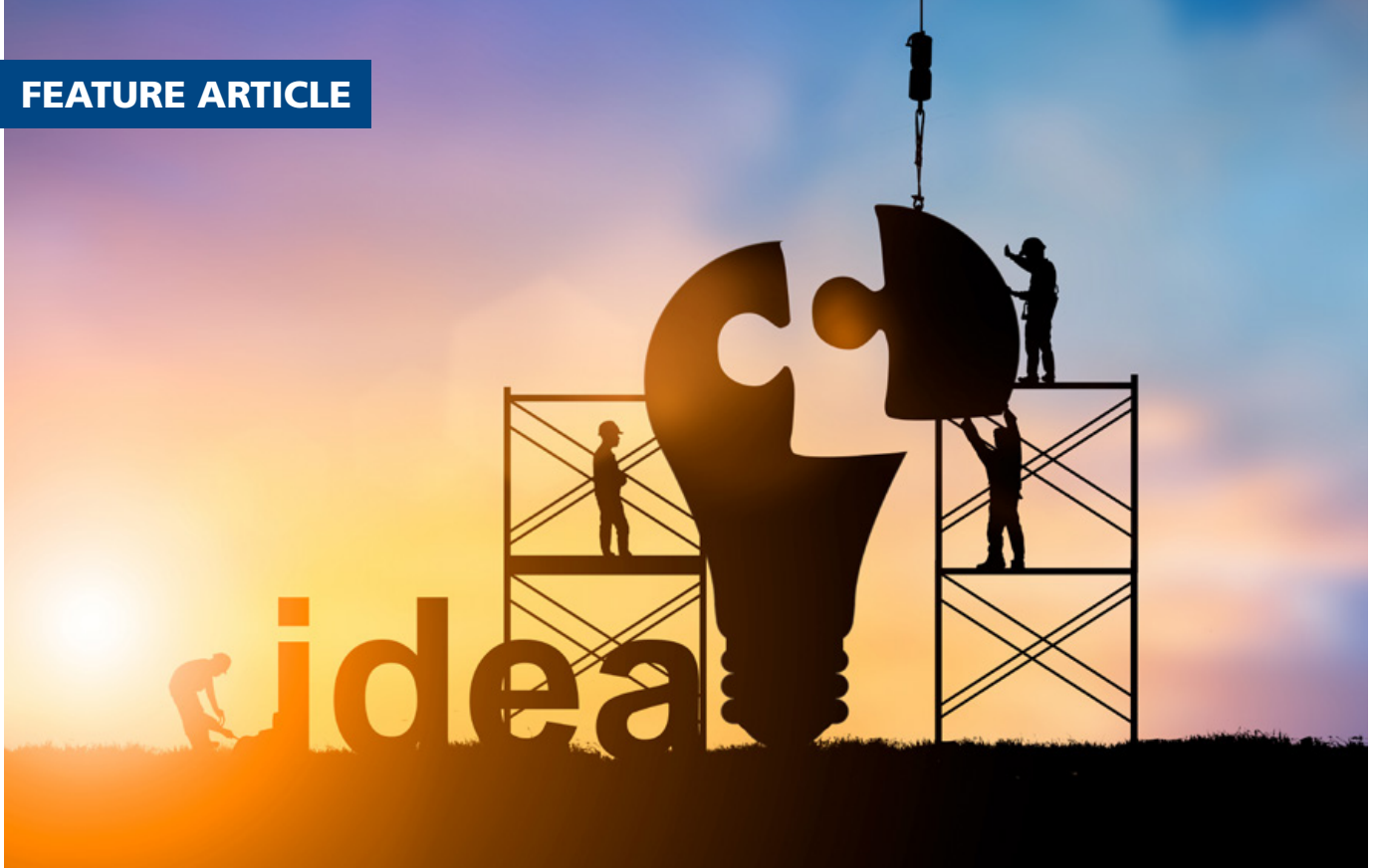
- 1 Sections 5Q and 5X of the Climate Change Response (Zero Carbon) Amendment Act 2019.
- 2 Jacinda Ardern, '100% renewable electricity generation by 2030' (Labour's clean energy policy), *New Zealand Labour Party*, 10 September 2020, see www.labour.org.nz/release-renewable-electricity-generation-2030 accessed 16 February 2022.
- 3 Ministry of Business, Innovation and Employment's Discussion Paper, 'Energy in New Zealand 2021' see www.mbie.govt.nz/dmsdocument/16820-energy-in-new-zealand-2021, p 23 accessed 16 February 2022.
- 4 *Ibid.*
- 5 On 14 October 2021 Cabinet approved funding of approximately NZD11.5m to Te Rōpū Matatau (a consortium led by Mott MacDonald New Zealand, with GHD and Boffa Miskell) to investigate the feasibility of a pumped hydro storage scheme at Lake Onslow. See Hon Dr Megan Woods 'Major contract awarded to power NZ Battery investigation' NZ Government website, 14 October 2021 available at www.beehive.govt.nz/release/major-contract-awarded-power-nz-battery-investigation; and NZ Ministry of Business, Innovation and Employment, 'NZ Battery Project' available at www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/low-emissions-economy/nz-battery accessed 16 February 2022. Pumped hydro involves transferring water between two reservoirs at different heights, with water in the upper reservoir acting as a 'battery' to generate electricity when needed.
- 6 In essence, the contractor is expected to engineer, procure and construct the required works, and then once tested and ready for operations, hand over the keys to the principal for it to operate the facility. See N G Bunni, *The FIDIC Forms of Contract* (3rd edn) Blackwell (2005), p 581.
- 7 *Ibid.*
- 8 J Bailey, *Construction Law* (2nd edn) (2016) at 3.19, fn 14 referring to Sandberg, 'A Contractor's View on FIDIC Conditions of Contract for EPC Turnkey Projects' [1999] ICLR 47 (cf Duncan Wallace, 'Letter to the Editor' [1999] ICLR 312); Kus, Markus and Steding, 'FIDIC's New "Silver Book" Under the German Standard Form Contracts Act' [1999] ICLR 533; Huse, 'Use of the FIDIC Silver Book in the Context of a BOT Project' [2000] ICLR 384; Gaede, 'The Silver Book: An Unfortunate Shift From FIDIC's Tradition of Being Evenhanded and of Focusing on the Best Interests of the Project' [2000] ICLR 477; Kennedy, 'ETC Contractor's Guide to the FIDIC Conditions of Contract for EPC Turnkey Projects (the Silver Book)' [2000] ICLR 504; Henchie, 'FIDIC Conditions of Contract for EPC Turnkey Projects – the Silver Book Problems in Store?' [2001] ICLR 41; Delmon and Scriven, 'A Contractor's View of BOT Projects and the FIDIC Silver Book' ICLR 240; Wade, 'The Silver Book:

- The Reality' [2001] ICLR 497; Jansen, 'Political and Economic Risks in the Construction of Independent Power Projects and their Consequences' [2002] ICLR 360; Bell, 'Will the Silver Book Become the World Bank's New Gold Standard? The Interrelationship Between the World Bank's Infrastructure Procurement Policies and FIDIC's Construction Contracts' [2004] ICLR 164.
- 9 Refer Bunni, *The FIDIC Forms of Contract* (3rd edn), p 582.
 - 10 Clyde & Co, *FIDIC Book Guide*, p 2, see www.clydeco.com/clyde/media/blogslibrary/brexit/FIDIC_guide_final_050218.pdf; and Clifford Chance, *New 2017 FIDIC Silver Book – A Step away from Project Finance Norms* (May 2018) see www.cliffordchance.com/content/dam/cliffordchance/briefings/2018/05/fidic-silver-book-2017-a-step-away-from-project-finance-norms.pdf accessed 16 February 2022.
 - 11 J Gosling, *Procurement and Contracting for Major Infrastructure Projects*, March 2018 www.researchgate.net/publication/339659460_Procurement_and_Contracting_for_Major_Infrastructure_Projects accessed 16 February 2022; J Hosie and S Natoli, *Procurement Issues for Energy Projects in the Downturn* (2009) https://www.mayerbrown.com/-/media/files/perspectives-events/publications/2009/01/procurement-issues-for-energy-projects-in-the-downturn/files/0164con_energy_projects_article/fileattachment/0164con_energy_projects_article.pdf accessed 16 February 2022; P Loots and N Henchie, *Worlds Apart: EPC and EPCM Contracts: Risk issues and allocation* (November 2007) https://fidic.org/sites/default/files/epcm_loots_2007.pdf accessed 16 February 2022.
 - 12 Please note we have used the term 'principal' throughout this article as it is the term used in New Zealand and for the article to retain consistency. 'Principal' can be used interchangeably with 'employer' or 'owner'.
 - 13 Jonathan Hosie, *Turnkey contracting under the FIDIC Silber Book: What do owners want? What do they get?* November 2007, p 1 www.fidic.org/sites/default/files/hosie07.pdf accessed 16 February 2022.
 - 14 FIDIC *Silver Book* 1999 and 2017, cl 4.12.
 - 15 E Baker, R Hill and I Hakim, *Allocation of Risk in Construction Contracts*, White & Case (January 2020), p 8 <https://news.whitecase.com/336/14645/downloads/allocation-of-risk-in-construction-contracts.pdf> accessed 16 February 2022.
 - 16 J Hosie and S Natoli, *Procurement Issues for Energy Projects in the Downturn* (2009), p 6.
 - 17 Reed Smith LLP, 'FIDIC urges the Industry to stick to its Golden Principles – will that happen?' www.lexology.com/library/detail.aspx?g=1572445f5cdc-4933-8db1-8dad563abaa9 accessed 16 February 2022.
 - 18 Clifford Chance, *New 2017 FIDIC Silver Book – A Step away from Project Finance Norms* (May 2018).
 - 19 *Ibid*, p 2.
 - 20 Clifford Chance, *Infrastructure: 21st Century Challenges – A Legal Perspective* (January 2019), p 39 www.cliffordchance.com/content/dam/cliffordchance/briefings/2018/10/infrastructure-21st-century-challenges-a-legal-perspective.pdf accessed 16 February 2022.
 - 21 Clifford Chance, *Infrastructure: 21st Century Challenges – A Legal Perspective* (January 2019), p 6. Cl 12 'Tests after Completion' mechanism is too light – standard practice in renewables contracts for critical performance tests (eg, 12-24 month output tests on solar plants) to be carried out after the works have been constructed and taken over.
 - 22 Gyles Beckford, 'Ebert Construction's collapse unexpected but no surprise', *RNZ*, 1 August 2018, www.rnz.co.nz/news/on-the-inside/363137/ebert-construction-s-collapse-unexpected-but-no-surprise accessed 16 February 2022; 'Collapsed Tower Cranes owes Bank of New Zealand \$13.3m', *NZ Herald*, 4 November 2019, www.nzherald.co.nz/business/collapsed-tower-cranes-owes-bank-of-new-zealand-133m/PNHXUBVX6LU6HCB2NGT64NZGBI accessed 10 December 2021; Rebecca Stevenson 'Construction companies Tallwood, Stanley Group in liquidation', *Stuff*, 5 September 2019 <https://www.stuff.co.nz/business/115579344/auckland-construction-firm-liquidated> accessed 16 February 2022; Marta Steeman 'Three Rilean Construction companies have been placed in liquidation', *Stuff*, 28 October 2020, <https://www.stuff.co.nz/business/123212122/three-rilean-construction-companies-have-been-placed-in-liquidation> accessed 16 February 2022.
 - 23 Projects such as: schools (Hobsonville Schools PPP (primary and secondary schools at Hobsonville Point), Schools 2 PPP (to build four schools in Canterbury, Auckland & Queenstown), Schools 3 (to build three primary schools in Auckland and Hamilton, and two co-located secondary schools in Christchurch)); prisons (Auckland Prison (new maximum security facility and refurbishment of existing facility at Paremoremo Prison), Auckland South Correctional Facility (Wiri Prison), and Waikeria Prison; and highways (Transmission Gully, and Puhoi to Warkworth (P2W)).
 - 24 Report prepared for the New Zealand Infrastructure Commission/Te Waihangā, 'Report – Interim Project Review of Transmission Gully PPP Project', 3 February 2021, www.tewaihangā.govt.nz/assets/Uploads/Transmission-Gully-Interim-Review-2021.pdf accessed 16 February 2022.
 - 25 NZ Government Procurement 'Risk Management Construction Procurement Guidelines', v2.0 October 2019 New Zealand Government, *Risk Management – Construction Procurement Guidelines*

- October 2019 www.procurement.govt.nz/assets/procurement-property/documents/guide-risk-and-value-management-construction-procurement.pdf accessed 16 February 2022.
- 26 NZ Construction Sector Accord www.constructionaccord.nz/the-accord accessed 16 February 2022.
- 27 Construction Sector Accord, ‘Transformation Plan’ January 2020 www.constructionaccord.nz/assets/Construction-Accord/files/construction-accord-transformation-plan.pdf accessed 16 February 2022.
- 28 The Construction Accord Network www.constructionaccord.nz/get-involved/accord-network accessed 16 February 2022.
- 29 *Ibid.*
- 30 *Ibid.*
- 31 New Zealand Construction Industry Council, Covid-19 Toolbox Talk and Advisory (26 August 2021) (<https://nzcic.co.nz/resources/stay-up-to-date-with-covid-19/>), accessed 16 February 2022.
- 32 Standards New Zealand, *Revision of NZS3910 Project* <https://www.standards.govt.nz/develop-standards/standards-nz-work-programme/revision-of-nzs-3910-project> accessed 10 December 2021.
- 33 Waka Kotahi (the New Zealand Transport Agency) is the government’s land transport delivery agency. Waka Kotahi is tasked with establishing a safe and efficient land transport system, which includes the oversight of driver and vehicle licensing, and administering the New Zealand state highway network; Auckland Transport is the council-controlled organisation of Auckland Council responsible for transport projects and services.
- 34 NZ Government Procurement, *Construction Procurement Guidelines*, October 2019, Alliance Delivery Model www.procurement.govt.nz/assets/procurement-property/documents/alliance-delivery-model-construction-procurement.pdf accessed 16 February 2022.
- 35 O Hayford *Collaborative Contracting*, PwC, March 2018 www.pwc.com.au/legal/assets/collaborative-contracting-mar18.pdf accessed 16 February 2022.
- 36 *Ibid.*
- 37 *Ibid.*
- 38 T Pauna et al, ‘Challenges for implementing collaborative practices in industrial engineering projects’, *Project Leadership and Society* (2), December 2021 www.sciencedirect.com/science/article/pii/S2666721521000235 accessed 16 February 2022.
- 39 ‘Auckland Airport resets precinct-wide infrastructure plan’, *Auckland Airport Media Release* 9 August 2021 <https://corporate.aucklandairport.co.nz/news/latest-media/2021/auckland-airport-resets-precinct-wide-infrastructure-plan> accessed 16 February 2022.
- 40 The alliance included NZ Transport Agency, KiwiRail, Downer, Fulton Hogan, HEB Construction and Higgins.
- 41 T Revell and A Hills, ‘An analysis of sacrificial anchor tests and geological conditions across the NCTIR project’ March 2021 www.nzgs.org/library/an-analysis-of-sacrificial-anchor-tests-and-geological-conditions-across-the-nectir-project accessed 16 February 2022.
- 42 The Link Alliance is made up of City Rail Link Ltd (a joint venture between Auckland Transport and the NZ Government), Vinci Construction Grands Projets SAS, Downer, Soletanche Bachy, AECOM, Tonkin & Taylor, and WSP.
- 43 WSP Innovative Pathways Deliver Vital Infrastructure (www.wsp.com/en-NZ/insights/innovative-pathways-deliver-vital-infrastructure), accessed 16 February 2022.
- 44 This was not a comprehensive review.
- 45 See editor’s note at n 32.
- 46 P Harmer ‘Why EPCM is becoming an attractive alternative to EPC for Waste to Energy Projects’, *Black & Veatch*, 28 April 2021, www.bv.com/perspectives/why-epcm-becoming-attractive-alternative-epc-waste-energy-projects accessed 16 February 2022.
- 47 *Ibid.*
- 48 Clifford Chance, ‘EPC and EPCM Procurement Issues for Owners’ 2009 www.cliffordchance.com/content/dam/cliffordchance/PDF/Construction_Workshop_EPC_and_EPCM_Procurement_Issues_for_Owners.pdf accessed 16 February 2022.
- 49 Ian Heaphy, ‘How the NEC4 Alliance aims to foster collaboration’, *Construction Manager*, 29 August 2018.
- 50 *Ibid.*
- 51 Cls 20–22, NEC 4 Alliance Agreement.
- 52 Cl 94, NEC 4 Alliance Agreement.
- 53 FIDIC, ‘Work to deliver new FIDIC Collaborative Contract gets underway’ 21 July 2021 <https://fidic.org/node/33011> accessed 16 February 2022.
- 54 *Ibid.*
- 55 Bryan Shapiro QC, ‘Transferring Risks in Construction Contracts’ (2010) p17.
- 56 Patrick Lane SC, ‘The Apportionment of Risk in Construction Contracts’, International Conference on Arbitration and ADR in the Construction Industry, Dubai (2005).

Katrina Van Houtte is a partner at Dentons Kensington Swan and can be contacted at katrina.vanhoutte@dentons.com.

Ariana Stuart is a senior associate at Dentons Kensington Swan and can be contacted at [ariana.stuart@dentons.com](mailto:stuart@dentons.com).



Credit: Shutterstock/yuttana Contributor Studio

Procedural creativity in international construction arbitrations: a comparative analysis of institutional innovations in the US, Singapore and France

Eoin Moynihan

*New York,
United States*

Arbitration is widely accepted as an effective dispute resolution mechanism for international construction disputes. This article will explore the extent to which various institutional rules have developed in a way that addresses the peculiar needs of disputants in the construction industry. The article shall briefly examine three of those specific needs and show how each has (or has not) been addressed by certain institutions. First, it will consider issues related to the cost and duration of construction arbitrations, specifically, procedural expedience including expedited procedures, procedures for securing interim relief and the correlation between high quantum claims and high arbitration costs. This article will then explore the suitability of existing discovery procedures for construction disputes. Finally, it will address issues that arise when, as is often the case, multiple parties or agreements are involved in a construction dispute.

For each one of these needs, this article will seek to draw some tentative conclusions as to the extent to which certain institutional rules may arguably provide some tactical advantage to employers or contractors/subcontractors on construction projects, should they encounter a dispute that must be resolved by arbitration.

Time is money: cost-related considerations and the importance of being expeditious

Large construction projects are unusual in that there are few other commercial endeavours in which an entity is required to invest so much for so long before being able to generate a single cent of revenue. Between the execution of the contract and the ribbon-cutting of the finished product lies a daunting gauntlet of risks that threaten to undermine the profitability of the entire project.¹ Any delay by any participant can cause exponential delay to the completion of the overall project and potentially derail it entirely by disrupting the delicate interplay of each party's cashflow and credit arrangements.²

When a dispute does arise, it is therefore imperative that the process to resolve it bears the following features: swiftness; the ability to grant interim relief so that the status quo can be maintained pending final resolution of the dispute; and suitability for resolving very high-value disputes at a competitive cost.

Fortunately, in recent years many arbitral institutions have introduced expedited procedures with the aim of shortening the time required to produce a final arbitral award

Swiftness

An unfortunate by-product of the fact that construction disputes typically involve huge technical documentation and extensive expert evidence, is that they can often take a long time to conclude in an award,³ regardless of the institutional rules being applied.

Typically, before a construction arbitration can even commence, the claimant must comply with a lengthy multi-tiered pre-dispute protocol, mandated by the complex dispute resolution clauses contained in the industry's standard-form construction contracts.⁴ These clauses typically require:

1. the claimant to submit the dispute to a DAAB⁵ for resolution first;
2. in the event of an adverse decision by the DAAB, to file a notice of dissatisfaction with the decision;
3. to then enter into discussions with the counterparty to attempt to resolve the dispute amicably; and

4. if all this fails, then and only then, to commence arbitration.

The objective⁶ of this complicated layered approach to dispute resolution is to allow disputes to be resolved quickly and at a low cost with minimal disruption to the project.⁷ However, the unintended but inevitable consequence of such a sequential process to disputes that are unresolved by it, is ironically, to ultimately delay their resolution, thereby causing disruption and increasing costs. The cumulative timelines for all these steps can potentially prevent a claimant from commencing an arbitration for up to almost five months from the time the whole process is first triggered.⁸

This criticism should not be taken to suggest that this popular dispute resolution process for construction disputes is not fit for purpose. It may well be that it is the least inefficient approach to resolving construction disputes generally.⁹ The point is that the risk of disputes becoming protracted is particularly high in the construction industry. The effects of that risk will inevitably be most keenly felt by the least resourced players in the industry, the subcontractors and suppliers with the most precarious cashflows and the most vulnerable credit lines. For them, a work interruption caused by an inability to procure a quick remedy is an existential threat and they have the most to gain from any reforms to dispute resolution procedures that facilitate such a remedy.

Fortunately, in recent years many arbitral institutions have introduced expedited procedures with the aim of shortening the time required to produce a final arbitral award. Figure 1 summarises the main features of the expedited procedure of the three institutions' rules being considered in this article: the International Chamber of Commerce Arbitration Rules 2017 (ICC Rules); the American Arbitration Association Construction Industry Rules 2015 (AAA Construction Rules); and the Singapore International Arbitration Centre Rules 2016 (SIAC Rules).

While the time limits set out by each of these rules are ambitious and helpful to parties that can avail of them, their utility to many disputants in the construction industry may be limited given the frequency and magnitude of those disputes¹² and the relatively low claim caps applicable to each of these procedures.

	ICC Rules	AAA Construction Rules	SIAC Rules
Time limit to render final award	Six months from first CMC ⁹	14 days after close of hearing, hearing to close within 45 days of first CMC	Six months from constitution of tribunal
Quantum limit for claims eligible for expedited procedure absent parties' agreement	US\$3m ¹⁰	US\$100,000	SGD6m (approximately US\$4.43m)

Figure 1: the main features of the expedited procedure of the ICC Rules, the AAA Construction Rules, and the SIAC Rules.

The limit of US\$100,000 under the AAA Construction Rules' fast track procedure (Rule F-1) in particular is so low that it is only likely to be of assistance to the smallest of subcontractor disputes. If this limit were increased, it could provide other small disputants facing larger claims with access to a more prompt and cost-effective resolution of its dispute.

These procedures are therefore unlikely to be significant factors in the decision-making of parties in the construction industry when selecting arbitral rules except perhaps when engaging subcontractors or suppliers for small contracts. Subcontractors and suppliers are, on average, more likely than contractors or employers to benefit from the selection of any of these rules for dispute resolution, particularly in the case of the AAA Construction Rules, as they are more likely to have low-value disputes that can benefit from these expedited procedures.

The ability to grant interim relief so that the status quo can be maintained pending final resolution of the dispute

As explained above, the need for quick effective interim relief is particularly acute for contractors with limited capital reserves. A common example of this need would be when a contractor seeks to block the employer from drawing on a performance bond or letter of credit. In the absence of such relief, the contractor would have to wait for a final award to be issued before trying to recoup the loss by enforcing against what could by then well be an insolvent employer. In the meantime, the damage to the contractor's credit rating may be irreparable.¹³

All three institutions' rules empower arbitrators to make orders for interim relief including injunctions and conservatory measures. They all allow the arbitrator to require that the party requesting the relief provide security if the relief is granted. They all permit parties to seek interim relief from

a court of competent authority without being in breach of their arbitration agreement.

All three institutions' rules also provide for the appointment of emergency arbitrators at short notice to consider requests for such interim relief before a tribunal has been appointed. Figure 2 shows the applicable time limits for the three institutions' respective emergency arbitrator procedures.

	ICC Rules	AAA Construction Rules	SIAC Rules
Appointment of emergency arbitrator	as soon as possible (usually within two days)	one day	one day
Challenges to appointment	three days	one day	two days
Making of order/award	15 days	no deadline	14 days

Figure 2: applicable time limits for the appointment of emergency arbitrators under the ICC Rules, the AAA Construction Rules, and the SIAC Rules.

The AAA Construction Rules are the only one of the three that impose no deadline on the making of an emergency interim award. In theory, disputants can agree on a deadline for the making of such an award. However, the absence of this mandatory deadline under the AAA Construction Rules significantly undermines their usefulness to contentious disputants with urgent needs as respondents can often be understandably uncooperative in facilitating the prompt making of interim awards against them.

Furthermore, there are difficulties in some jurisdictions with enforcing partial arbitral awards¹⁴ that may make these emergency procedures less useful than parties would like.¹⁵ The AAA Construction Rules and SIAC Rules both allow an emergency arbitrator to give interim relief by way of an award or an order. The ICC Rules only allow an order. A mere order of an emergency arbitrator may be even more difficult to enforce in some jurisdictions than an award.¹⁶

Accordingly, while access to interim relief is extremely important in construction disputes and widely available across most major institutions,¹⁷ the usefulness (and therefore importance) of emergency interim relief should not be overstated in assessing the suitability of any institutional arbitral rules for construction disputes.

Suitability for resolving very high-value disputes at a competitive cost

Given the cashflow challenges facing all players in the construction industry and the thin profit margins which are common among contractors in competitive markets,¹⁸ the cost-competitiveness of various arbitral institutions

High cost may give large well-resourced employers and contractors an advantage over smaller subcontractors and suppliers that are less likely to be able to withstand a sustained war of attrition

for resolving high value disputes is a crucial factor when selecting arbitral rules.

Furthermore, the quantum of construction claims can be very large. With huge sums at stake, parties typically feel more comfortable spreading the risk of an unfavourable arbitral outcome by providing for a three-member tribunal in their arbitration agreement rather than a sole arbitrator. Naturally, this increases costs.

Figure 3 sets out the possible costs of arbitration under each institution’s rules.¹⁹

	ICC Rules	AAA Construction Rules ²⁰	SIAC Rules
Filing fee	US\$5,000	US\$6,900	SGD2,000 (approximately US\$1,475)
Other institutional fees	US\$72,515	US\$127,600	SGD68,250 (approximately US\$50,375)
Maximum arbitrators’ fees (3 arbitrators)	US\$706,800	No fee schedule – set by tribunal	SGD764,700 (approximately US\$564,450)
Total	US\$784,315	∞	SGD834,950 (approximately US\$616,000)

Figure 3: possible costs of arbitration under the ICC Rules, the AAA Construction Rules, and the SIAC Rules.

For the most cost-conscious parties, the SIAC obviously offers the best value for money and the AAA the most cost uncertainty. Given the market for legal fees in the US, an AAA tribunal’s fees are likely to exceed the fee schedules of the ICC or SIAC. However, if the sum in dispute is very large, then it may be more cost-effective to arbitrate at the AAA, even at a high hourly rate, as arbitration costs are delinked from the value of the dispute. The alternative at SIAC or ICC of paying a percentage of the total sum in dispute may be undesirable in high value arbitrations.

High cost may give large well-resourced employers and contractors an advantage over smaller subcontractors and suppliers that are less likely to be able to withstand a sustained war of attrition.²¹ The requirement to pay advances on costs in order for an arbitration to proceed and the ability of respondents simply to refuse to do so also puts poorly-resourced claimants at a disadvantage. Subcontractors or claimants for whom cost is a significant factor in selecting arbitral rules, and for whom geographic considerations are not, would arguably be well-advised to consider the SIAC and consider avoiding the AAA, except in very high-value disputes.

Discovery

One relatively consistent feature of construction arbitrations is that they tend to involve the disclosure of a large amount of technical documentation.²² Disputants in the construction industry therefore, in choosing arbitral rules, ought to consider the extent to which they facilitate efficient and effective document disclosure.

However, there is a diversity of views as to what efficient and effective document disclosure looks like.²³ US parties often tend to favour very expansive discovery that discloses any document with any relevance at all to the dispute,²⁴ which typically tends to include the entire universe of documentation for a given project.²⁵ Civil law parties usually favour extremely limited requests for specific necessary documents.²⁶ The rest of the common law world falls somewhere between these two extremes,²⁷ favouring the disclosure of relevant documents falling within specifically articulated categories.²⁸

In the construction industry, claimant and respondent both often have access to much

of the same project documentation, so the bulk of the documentary evidence relied upon typically does not result from requests to produce. For this reason, smaller subcontractors or suppliers with limited resources may prefer a more restrictive and specific disclosure exercise that avoids paying the significant costs necessitated by an exhaustive discovery. Conversely, well-resourced employers or contractors may prefer US-style discovery if they think their opponent lacks sufficient funding to carry out such an onerous and expensive exercise and might consequently accept a sub-optimal settlement offer in order to cut its losses and end the dispute. For such employers, efficiency is not their objective at all – quite the reverse.²⁹

These factors are usually more likely to shape the parameters of discovery in a construction arbitration than the arbitral rules being used. Typically, most institutional rules defer to the parties' agreement as to the procedure to be adopted for any document production, failing which the tribunal is endowed with broad discretion to set such procedure. Exceptions are the 2012 Swiss Rules of International Arbitration (Articles 18(3) and 19(2)) and the 2010 UNCITRAL Rules (Articles 20(4) and 21(4)), each of which broadly follows the restrictive civil law approach to disclosure, mandating the upfront provision by each party of the documents on which it relies in its memorials with very limited document exchange thereafter.

Conversely, the ICC Rules (Article 22), AAA Construction Rules and SIAC Rules (Rule 19) do not prescribe any specific discovery parameters and provide complete flexibility to the parties in agreeing the scope of discovery, and to the tribunal in deciding this in the absence of such agreement.

Of these rules, the AAA Construction Rules are the only ones that deal explicitly with the issue of discovery in any detail. This specificity is perhaps unsurprising given the specialised nature of these rules and the typical centrality of documentary evidence in construction arbitrations. The rules provide helpful guidance to arbitrators and parties regarding the basis on which the document production exercise should be curated.³⁰

Specifically, the process should advance the efficient and economical resolution of the dispute and promote equality and fairness as between the parties.³¹ Documents on which the parties intend to rely must be

disclosed.³² Document requests must be reasonable and for documents which are relevant and material to the outcome of disputed issues.³³ Documents must be in the most convenient and economical form and the arbitrator may determine reasonable search parameters to balance the need for production of relevant and material documents against the cost of locating and producing them.³⁴

This guidance is helpful in setting parties' expectations of how discovery should be scoped, particularly in the US context, where discovery might otherwise be expansive and onerous. However, when any claim exceeds US\$1m, the Procedures for Large, Complex Construction Disputes (LCC Procedures) are triggered and potentially override the Regular Track Rules whenever it can be successfully argued that they are in conflict with each other.³⁵ Given that the majority of international construction arbitrations are likely to exceed US\$1m,³⁶ the LCC Procedures warrant careful consideration by parties considering the selection of the AAA Construction Rules.

The process should advance the efficient and economical resolution of the dispute and promote equality and fairness as between the parties

With respect to discovery, these procedures require only that:

'Parties shall cooperate in the exchange of documents, exhibits and information within such party's control if the arbitrator considers such production to be consistent with the goal of achieving a just, efficient and cost-effective resolution of a large, complex construction case.'³⁷

While the goals of efficiency and cost-effectiveness are laudable, the requirement to 'cooperate' appears aspirational and vague. This could be used by a disingenuous party to argue that the significance of the more specific goals set out in the Regular Track Rules, in particular relevance and materiality, is diminished in a Large, Complex Construction Case, where clarity and focus in scoping the parameters of discovery are arguably even more important.

The omission of similarly specific rules pertaining to discovery in the ICC and SIAC Rules is typically addressed by the parties'

voluntary adoption of the IBA Rules,³⁸ or more recently and to a lesser extent, the Rules on the Efficient Conduct of Proceedings in International Arbitration 2018 (Prague Rules), which are significantly more detailed than the discovery rules set out in the AAA Construction Rules. It is suggested that the integration of a loose discovery framework within the AAA Construction Rules themselves represent a pragmatic approach to reducing the cost and procedural inefficiency of the expansive US-style discovery that might otherwise prevail in an AAA arbitration. This is because an AAA arbitration is more likely than other arbitrations to involve a US party who may be unwilling to agree to the adoption of the IBA or Prague rules at the expense of departing from the expansive discovery regime of the legal tradition with which it is most familiar.³⁹

The loose discovery framework required by the AAA Construction Rules is better than no framework at all. It is suggested that any party entering into an arbitration agreement with a US counterparty and for whom the cost and procedural efficiency of discovery are dominant concerns should consider adopting the AAA Construction Rules. For parties arbitrating with non-US adverse parties, the governing institutional rules are unlikely to have a significant impact on the scope of the discovery process as sensible general limiting principles for the scope of that exercise usually ought to be possible to agree.

Ultimately, the institutional arbitral rules governing an arbitration are less likely to dominate parties' discovery experience in most international arbitrations than other factors such as the legal traditions from which the parties come, the rules of evidence adopted by the tribunal and the amount of documentary evidence already available to the parties.

Joinder of third parties and consolidation of multiple arbitrations

In construction disputes, the need to join third parties to an action is not uncommon.⁴⁰ This is by virtue of the fact that cost overruns on a project can arise from a number of causes for which several participants in the project can be jointly responsible. It is therefore sometimes in the best interest of the parties to achieve a universal resolution of the dispute.⁴¹

This can sometimes be more difficult to achieve with arbitration than litigation given the issues of privity that can arise with a dispute resolution mechanism that relies for its jurisdiction on the consent of the parties.⁴² The governing law of the agreement can sometimes provide various creative legal doctrines to overcome some of these difficulties, usually by essentially implying the consent of the non-party to be bound.⁴³ However, the applicability of such doctrines to a construction contract is doubtful.⁴⁴

Preferably, this difficulty is anticipated and avoided entirely at the contracting stage⁴⁵ by inserting a cascading obligation in the master agreement to include identical dispute resolution clauses in all subcontracts which explicitly provide for multi-party arbitration.⁴⁶ The question being considered here is, when parties choose to coordinate their dispute resolution arrangements in advance in this manner, which institution's rules, if any, are best equipped to allow a party to a separate arbitration agreement to be joined to an arbitration arising out of a different but related agreement.

On the question of when an application for joinder may be made, the SIAC Rules provide the most explicit flexibility allowing this before and after a tribunal is constituted (Rules 7.1, 7.8). The ICC Rules allow joinder only before the constitution of a tribunal absent the consent of all parties (Article 7.1). The AAA Construction Rules normally only allow joinder either before the constitution of a tribunal or within 90 days of commencement of the arbitration, whichever is later (Rule R-7(a)).

The SIAC Rules also provide the most procedural stages of scrutiny to the question of joinder. To even be considered, an application for joinder must first show that the party to be joined is *prima facie* bound by the arbitration agreement (Rule 7.1 a). This may sometimes be difficult where the applicant is relying on some novel legal doctrine to join the third party. If the application meets this *prima facie* threshold it can then go on to be fully considered by SIAC's Court of Arbitration (if the application is made prior to the constitution of a tribunal). Its decision can then potentially be reviewed by the tribunal, once constituted (Rule 7.4).

This potentially lengthy procedure of multi-level scrutiny arguably sacrifices expedition in exchange for increased due process.

Ultimately, such a sequential procedure is likely to result in delay, and in the author's experience does so result. For any SIAC arbitration with aggregate claims of less than SGD6m where it is necessary to apply for joinder, the benefits of the application of SIAC's expedited procedure are likely to be significantly diminished, if not completely lost, as a result of the potential delay caused by waiting for the determination of the preliminary issue of joinder. Given that parties in the construction industry are often motivated to agree to arbitration by considerations of procedural expedience and do so knowing that they are substantially waiving their right to appeal, such a procedure may not align with the parties' expectations.

The ICC Rules also require a party being joined to be *prima facie* bound by the arbitration agreement before the application for its joinder can be considered by the International Court of Arbitration (Article 6.4(i)). However, its decision is not reviewable by a tribunal, once constituted, providing some degree of certainty and mitigating the risk of delay somewhat.

The AAA Construction Rules provide for the decision regarding whether a party should be joined to be made by a specially appointed 'R-7 arbitrator' whose sole purpose is to decide that single threshold issue and who has no involvement in the rest of the arbitration. These rules also set down a deadline of 14 days for parties to give their responses to the application for joinder, providing some welcome predictability as to the length of the delay to the arbitration likely to be caused by such an application (Rule R-7(c)). However, no guidance is provided as to the basis on which the decision to allow or deny an application for joinder is made, creating some unpredictability as to the likely outcome of such applications.

All three institutions' rules also provide similar procedures for the consolidation of multiple arbitrations. The SIAC Rules, as with joinder, allow applications for consolidation to be made before and after the constitution of a tribunal. They also provide the widest bases on which to consolidate (Rule 8.1). As with joinder, the decision of SIAC's Court of Arbitration (if the application is made prior to the constitution of a tribunal) is reviewable by the tribunal, once constituted (Rule 8.4).

The ICC Rules (Article 10) provide similar but slightly narrower bases for consolidating

arbitrations⁴⁷ and applications for consolidation⁴⁷ can also be made before and after the constitution of a tribunal. They also helpfully and explicitly provide that claims arising out of more than one contract may be commenced as a single arbitration, irrespective of whether the claims are made under a single arbitration agreement (Article 9).⁴⁸

The AAA Construction Rules provide the same procedure for joinder and consolidation but give no guidance as to the basis on which consolidation may be allowed. This uncertainty should trouble potential disputants in the construction industry.

In summary, the SIAC Rules seem to provide the greatest potential for successful joinder and consolidation, although with the potential for delay in doing so. Ultimately, all three institutions permit joinder and consolidation. However, at the time of drafting the arbitration clause, parties will not know whether it will be in their future interests to advance or avoid joinder or consolidation. Therefore, the ease of doing so may not be a decisive factor. It is sufficient and essential that any rules governing a construction arbitration provide for some mechanism to join third parties and consolidate proceedings. The exact workings of those mechanisms will not greatly concern most parties in the construction industry when a dispute has yet to materialise.

Parties would be well advised to take a little more time to consider which regime is best suited to their specific needs, before rushing to sign on the dotted line.

Concluding observations

Clearly the rules of all three institutions adequately facilitate the resolution of construction disputes. Some institutions address certain challenges more comprehensively than others, but ultimately, factors other than the chosen rules are likely to dominate the outcome of the arbitration. The factors explored above are just some of those which ought to be carefully considered by parties in the construction industry when selecting arbitral rules. Their selection when entering into a construction contract is an

exercise which is too often made to feel like a hurried and uncomfortable formality, which parties would rather avoid exploring fully. No one wants to discuss divorce before the wedding. In a commercial relationship, failing to do so would be a mistake.⁴⁹

To the extent that parties take any interest in the selection of arbitral rules, the dominant consideration tends to be cost, and consequently, the potential to obtain a quick remedy. These considerations in particular are likely to weigh most heavily on the subcontractors at the bottom of the construction value chain who typically have limited cash reserves, and whose very existence is contingent upon access to vulnerable credit lines and the maintenance of a delicate interdependent ecosystem of harmoniously coordinated cashflows.⁵⁰ Disruption of this fragile ecosystem presents a constant existential threat and, if it materialises, parties need to be able to rely on a responsive and affordable arbitral regime. Accordingly, parties would be well advised to take a little more time to consider which regime is best suited to their specific needs, before rushing to sign on the dotted line.

Notes

- 1 'It is indeed very rare that a major construction project is completed without a dispute arising between the parties.' Nael G Bunni, 'Case Study: Splitting the Cake by Submitting Partial Issues to Expert Determination/ Conciliation' (Manz Verlag 2008).
- 2 'Delay and disruption are commonplace in construction projects, significantly increasing overall costs and giving rise to numerous arbitrations [...] Time for completion is of great importance both for the employer, as late delivery of the asset may entail loss of profit, and for the contractor, since an extended construction period usually entails additional costs and lower margins.' Jean-François Djanett and Jean-Luc Guitera, 'Delay and Quantum: the Role of Delay Analysis Programmes and Financial Methods for the Computation of Costs and Damages in Construction Arbitration' in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 114.
- 3 "[...] parties cannot always wait the years it will take for an eventual final award to have an exigent issue addressed [...]". David Kiefer and Adrian Cole, 'Suitability of Arbitration Rules for Construction Disputes' in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 176.
- 4 The Fédération Internationale des Ingénieurs-Conseils (FIDIC) publishes standard construction contracts which have become widely used in international construction projects. They have developed the multi-tiered dispute resolution mechanisms discussed here. For a detailed overview of these contracts, see Ellis Baker, Anthony Lavers and Rebecca Major, 'Introduction to the FIDIC Suite of Contracts' in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 54.
- 5 Dispute Avoidance/Adjudication Board. For a detailed overview of various kinds of dispute boards, see Lindy Patterson QC and Nicholas Higgs, 'Dispute Boards' in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 155.
- 6 'Given the frequency of these types of claims, the contractual claims procedures are set up to try to resolve them expediently, in the hope that formal dispute resolution processes, such as litigation in national courts or arbitration, are avoided. Claims procedures are not intended to be adversarial (though in reality this is how they are viewed), but are aimed at resolving claims efficiently.' Philip Norman and Leanie van de Merwe, 'Claims Resolution Procedures in Construction Contracts' in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 146.
- 7 'A key philosophy that underpins the use of prearbitral mechanisms such as Dispute Boards is the enhanced possibility of early issue identification and dispute avoidance [...] Another reason parties turn to DABs or DRBs during the performance of a contract is time and expense. Using DBs as a means of avoiding and/or resolving a disagreement or a dispute is less time consuming and less expensive than arbitration.' ICC Commission, *Construction Industry Arbitrations: Recommended Tools and Techniques for Effective Management* (ICC Commission Report, 2019) 9.
- 8 See, eg, Cl 21, FIDIC Conditions of Contract for EPC/ Turnkey Projects.
- 9 For an in-depth examination of the pros and cons of this multi-tiered dispute resolution model, see Ellis Baker, 'Is it All Necessary? Who Benefits? Provision for Multi-tier Dispute Resolution in International Construction Contracts' (January 2009) *Society of Construction Law* 154.
- 10 Case management conference. This time limit may be extended by the ICC court.
- 11 Or US\$2m pursuant to the old 2017 ICC Rules if the arbitration was concluded between 1 March 2018 and 1 January 2021.
- 12 In 2019, the average claim in a SIAC arbitration was just under US\$31m and in an ICC arbitration was US\$52m.

SIAC accepted only 32 requests for its expedited procedure in 2019, less than seven per cent of its caseload and the ICC had only 65 cases below its former US\$2m threshold qualify for its expedited procedure, or 7.5 per cent of its caseload. See SIAC Annual Report 2019 and ICC Dispute Resolution 2019 Statistics.

- 13 Kiefer & Cole (n 3) 177.
- 14 ‘In those countries where the UNCITRAL Model Law has only inspired the local arbitration law, then the position as to enforceability of EA decisions varies widely, even when the arbitration law expressly authorises arbitral tribunals to grant interim measures [...] countries such as India, Macedonia, Malaysia, Serbia and Thailand are reported to have a restrictive interpretation of EAs’ powers [...] In other countries, arbitral tribunals do not have general powers to grant provisional and conservatory measures either by express provision of the law (eg, in Italy), or because the silence of the law is interpreted as a prohibition (eg, in Pakistan). Consequently, in those countries, the direct enforceability of EA decisions is uncertain.’ ICC Commission, *Emergency Arbitrator Proceedings* (ICC Commission Report, 2019) 30, 31. Note that Singapore addressed this problem by amending its International Arbitration Act (Cap 143A) in 2012 to explicitly confer upon emergency arbitrators all the powers of an arbitral tribunal. See s 2(1).
- 15 Kiefer & Cole (n 3) 177.
- 16 ‘The characterisation of the EA’s decision as an “order” or an “award” may be of some concern in some jurisdictions when it comes to enforceability, such as Australia, Lebanon, the UAE, Thailand and Russia.’ ICC Commission, *Emergency Arbitrator Proceedings* (ICC Commission Report, 2019) 31.
- 17 Early statistics gathered by institutions seem to suggest a modest growth in the popularity of these fledgling emergency arbitrator procedures in recent years. However, in spite of the efforts of institutions, most notably the ICC, to analyse their data in order to identify trends, the procedure is very young and the sample sets too small to be able to derive any reliable conclusions about the extent to which parties find it useful and why. AAA introduced emergency arbitration in 2006 (they have had only 116 international cases since then as of 2020), SIAC in 2010 (they have had only 94 cases since then as of 2019) and ICC in 2012 (they have had only 120 cases since then as of 2019). For more information, see SIAC’s Annual Report 2019, ICC Dispute Resolution 2019 Statistics and ICC Commission, *Emergency Arbitrator Proceedings* (ICC Commission Report, 2019).
- 18 ‘Employers with scarcer resources are awarding projects on tight budgets and employer friendly contractual terms, often to contractors who undervalue their bids in order to win the project, resulting in cash flow issues, delays and substandard works. In recent years, this increasingly common recipe has led to a very contentious international construction market and numerous construction arbitrations. Contractors are required to complete projects on time, at the required quality and at the agreed cost. Their ability to do that can be affected by a number of factors outside of their control [...]’, James Bremen and Leith Ben Ammar, ‘Contractors’ Claims, Remedies and Reliefs’ in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 94.
- 19 Calculations based on a US\$30m claim, which is slightly below SIAC’s average claim size for 2019.
- 20 AAA-ICDR Flexible Fee Schedule.
- 21 The increased availability of third-party funding in recent years has somewhat helped to ameliorate this problem for poorly-resourced claimants but does nothing to assist poorly-resourced respondents who do not have large counterclaims. Furthermore, the construction claims that get as far as the arbitration stage often turn on very specific technical issues, the outcome of which is difficult for a potential funder to reliably predict. This can make construction claims of this nature an unattractive investment for some of the more conservative funders and, accordingly, poorly-resourced claimants may continue to struggle to prosecute such claims. For more information on recent trends in this area, see International Council for Commercial Arbitration, *Report Of The ICCA-Queen Mary Task Force On Third-Party Funding In International Arbitration* (2018).
- 22 ‘[...] the number of documents required to support the parties’ cases in construction arbitration usually amounts to thousands.’ Bartosz Kruz’ewski and Robert Moj ‘Documents in Construction Disputes’ in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 246; and ‘Large construction and infrastructure projects generate large amounts of data, in the form of design drawings, daily activity logs, transport records, invoices, photos and videos of the project site, and all other sorts of planning, supply and building records. These projects also tend to entail voluminous records of contemporaneous correspondence at all levels, namely, between the employer and the contractor, with sub-contractors and suppliers, and internally within the employer’s and contractor’s teams. The large volume of contemporaneous data that is often available in relation to a construction project means that document disclosure requests are an important procedural step in construction arbitrations and can be extensive.’ Pierre-Yves Gunter and Anya Marinkovich, ‘Organisation of the Proceedings in Construction Arbitrations: General Considerations and Special Issues’ in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 217, 218.

- 23 'Perhaps no other arbitration topic is more controversial than discovery. Arbitration purists view discovery with a jaundiced eye. In their estimation, allowing the wide-open discovery found in the civil courts transmogrifies the arbitral process into "arbitigation" and deprives the parties of the speed and economy that are hallmarks of arbitration. On the other hand, discovery proponents argue that limitations on discovery represent the last vestiges of the "sporting theory of justice," where the outcome of the proceeding depends more on the skill of counsel and the possession of evidence than the merits of the matters in dispute.' Richard J Tyler, 'Discovery in Arbitration' (2015) 35 Constr Law 5; and '[...] parties (and their lawyers) may have differing expectations of the scope of permissible discovery, depending on whether they come from a common law or civil law jurisdiction, as document production is a practice that has its roots traditionally in the US and the UK and is therefore used more extensively by those with common law backgrounds, while parties and counsel coming from civil law jurisdictions tend to have a more restrictive view.' Gunter & Marinkovich (n 22) 218.
- 24 'First, discovery is broad, encompassing any document which may lead to admissible evidence, even if it does not constitute evidence in and of itself. Second, there is a general duty of each party to the action to produce any relevant document, including internal documents and documents which are contrary to that party's interests.' Gabrielle Kaufmann-Kohler, 'Globalization of Arbitral Procedure', *Vanderbilt Journal of Transnational Law* (2003) vol 36, 1325; See also the Federal Rules of Civil Procedure 26(b)(1).
- 25 'Modern instruments of discovery serve a useful purpose [...] They, together with pretrial procedures, make a trial less a game of blind man's bluff and more a fair contest with the basic issues and facts disclosed to the fullest practicable extent.' *US v Procter & Gamble Co*, 78 S. Ct. 983, 986–87 (1958).
- 26 '[Civil law systems are] less ambitious in search for truth than the common law approach [...]' Pierre D Tercier and Tetiana Bersheda, 'Document Production in Arbitration: A Civil Law Viewpoint' in *The Search for 'Truth' in Arbitration*, ASA Special Series No. 35, (JurisNet 2011) 83.
- 27 'English law limits discovery that is now known as document disclosure and is narrower than the discovery was. The scope of document disclosure nowadays depends upon the tests of reasonableness and proportionality.' Kruz'ewski and Moj (n 22) 250.
- 28 The procedure set out in Art 3.3 of the IBA Rules on the Taking of Evidence in International Arbitration 2010 is the gold standard for this approach in international arbitration: 'A Request to Produce shall contain:
- (a) (i) a description of each requested Document sufficient to identify it, or (ii) a description in sufficient detail (including subject matter) of a narrow and specific requested category of Documents that are reasonably believed to exist[...]
- 29 Typically, the tactical benefits to each party of expansive or restrictive disclosure regimes, respectively, are unlikely to become apparent until the dispute itself has crystallised. Therefore, it may not be helpful to set the parameters of such a regime in advance in the contract from which that dispute subsequently arises. Usually, the decision as to whether to select evidence rules to guide the disclosure process, such as the IBA Rules or Prague Rules, is best made after a tribunal has been constituted, around the time of the arbitration's first procedural conference. By then, parties should know sufficient basic details about the dispute to have some understanding of the role that discovery is likely to play in its resolution.
- 30 'Under the Regular Track Procedures, the "discovery" permitted by the rules is quite limited, and the question of whether other discovery will be permitted is committed to the discretion of the arbitrator.' Tyler (n 23) 11.
- 31 AAA Construction Rules R-24 (a).
- 32 AAA Construction Rules R-24 (b) (i) and (ii).
- 33 AAA Construction Rules R-24(b) (iii).
- 34 AAA Construction Rules R-24(b) (iv).
- 35 AAA Construction Rules Rule L-1 'The LCC Procedures are designed to complement the Regular Track of these Rules. To the extent there is any conflict between the Regular Track and the LCC procedures, the LCC Procedures shall control.' For the avoidance of doubt, the author is not of the view that these provisions regarding discovery are actually in conflict with each other. However, the potential for disingenuous parties to try to exploit this remains.
- 36 In 2019, the average claim in a SIAC arbitration was just under US\$31m and in an ICC arbitration was US\$52m. Less than 25 per cent of ICC arbitrations in 2019 were under US\$1m. See SIAC Annual Report 2019 and ICC Dispute Resolution 2019 Statistics.
- 37 AAA Construction Rules L-4(e). L-4(f) also explicitly authorises the tribunal to allow depositions in exceptional circumstances.
- 38 The IBA Rules on the Taking of Evidence in International Arbitration 2010: '[...] it is a good idea to agree on the use of guidelines specifically tailored to international arbitration, such as the IBA Rules, at the outset of the proceedings. Indeed, Article 3 of the IBA Rules, which contains the guidelines concerning document production, was specifically drafted to reflect the accepted document production practice in international arbitration that strikes a balance between US-style discovery and the more restrictive civil law approach.' Gunter & Marinkovich (n 22) 218.
- 39 See the Federal Rules of Civil Procedure 26(b)(1).
- 40 'The completion of a construction project may involve several parties and interrelated agreements and any dispute between the employer and the contractor,

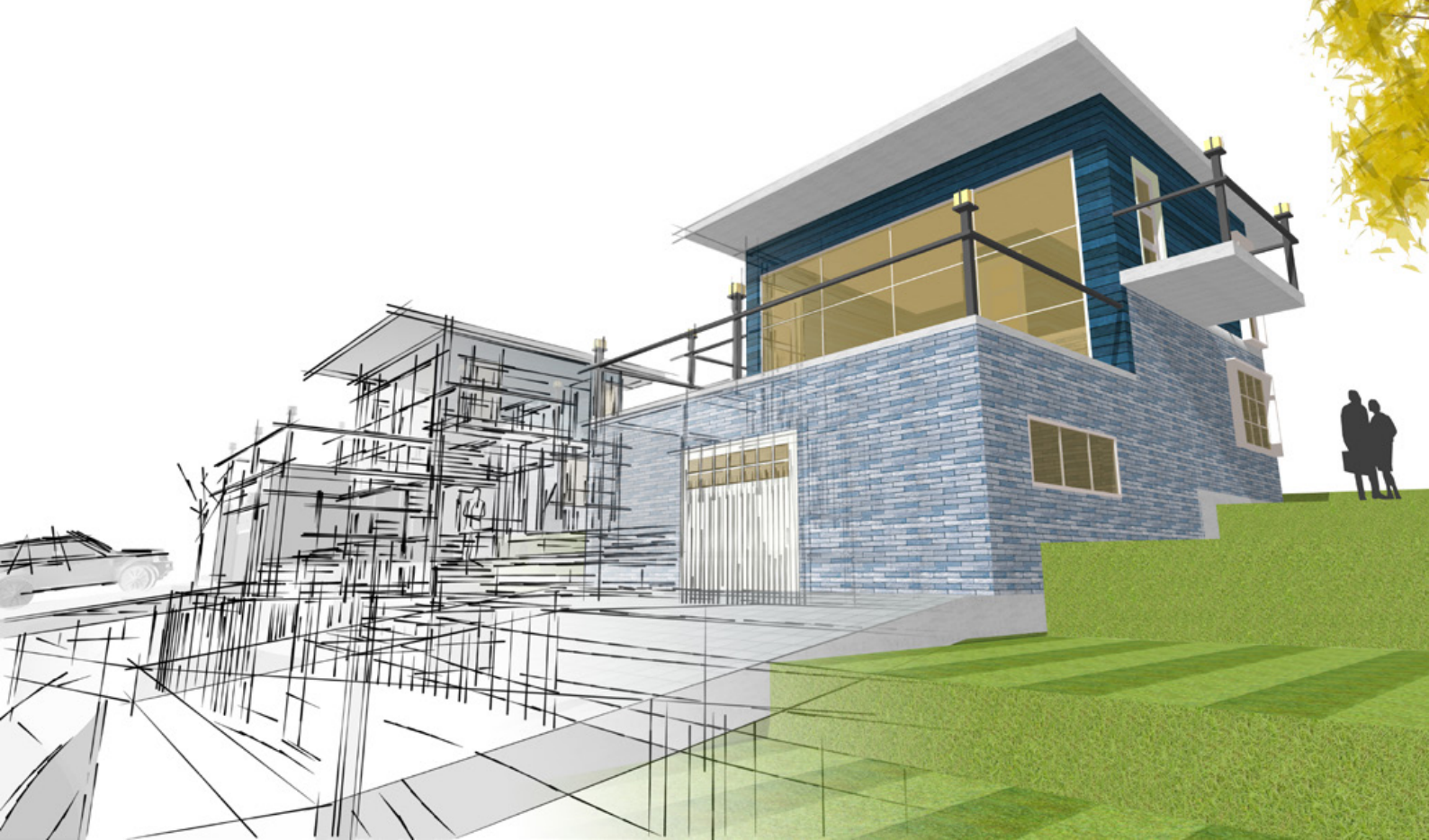
for example, may often be based on the same facts and may raise similar legal issues in a dispute between the contractor and the subcontractor in the same project.’ Stavros Brekoulakis and Ahmed El Far, ‘Subcontracts and Multiparty Arbitration in Construction Disputes’ in Stavros Brekoulakis and David Brynmor Thomas (eds), *Global Arbitration Review – The Guide to Construction Arbitration* (3rd edn, Law Business Research 2019) 194.

- 41 Kiefer & Cole (n 3) 173.
- 42 ‘While multiparty arbitration proceedings involving an employer, a contractor and a subcontractor may be difficult to have because of the distinct and, typically, bilateral nature of the main construction contract and the subcontract, it may be (under certain circumstances) in the contractor’s interest to make sure that one single tribunal decides all disputes that it has against the employer and the subcontractor. This is because it is the contractor who has the risk, for example, to recover in a subsequent arbitration from the subcontractor any amount of liquidated damages it may have been awarded in favour of the employer in a previous arbitration.’ Brekoulakis & El Far (n 40) 194.
- 43 For example, for a discussion of some of the doctrines typically available under the laws of US states, see *Arthur Andersen LLP v Carlisle* [2009] 556 US 624 and more recently, *GE Energy v Outokumpu* [2020] 140 S Ct 1637. They include assumption, piercing the corporate veil, alter ego, incorporation by reference, third party beneficiary theories, waiver, and estoppel.
- 44 ‘In non-construction arbitrations, tribunals under certain circumstances may ascertain implied consent for multiparty arbitration on the basis of different legal doctrines such as agency, assignment, third-party beneficiary, incorporation by reference, alter ego or equitable or arbitral estoppel. Under these doctrines, an arbitration agreement between two parties can be “extended” to bind a non-signatory party. However, under typical construction contracts and subcontracts, it is unlikely that an arbitration agreement in the main construction contract between the employer and the contractor can be ‘extended’ to bind the non-signatory subcontractor under any of the above legal doctrines. Unless exceptional factual circumstances exist, arbitral tribunals will not usually find a subcontractor to be, for example, the principal of the main contractor, or the assignee or the third party beneficiary of the main contractor, or the alter ego for the main contractor.’ Brekoulakis & El Far (n 40) 195.
- 45 ‘[...] multiparty arbitration will only be possible if all parties consent to it, either before the dispute arises or

after it has arisen. Consent for multiparty arbitration before the dispute arises may be established if the arbitration clauses in the main construction contract and the subcontract expressly allow for multiparty arbitration, or if the applicable arbitration rules provide for multiparty arbitration.’ *Ibid* 195.

- 46 ‘First, each of the separate agreements must provide for an arbitration before the same arbitral body. If not, the parties will have to negotiate and agree to a separate dispute resolution agreement that provides for arbitration before the same body [...], Kiefer & Cole (n 3) 173.
- 47 ICC Article 10: ‘[...] a) the parties have agreed to consolidation; or b) all of the claims in the arbitrations are made under the same arbitration agreement; or c) where the claims in the arbitrations are made under more than one arbitration agreement, the arbitrations are between the same parties, the disputes in the arbitrations arise in connection with the same legal relationship, and the Court finds the arbitration agreements to be compatible [...].’ (emphasis added). Note more stringent criteria here.
- 48 Note however, that if this is challenged, certain claims may be struck out unless the ICC Court of Arbitration is satisfied, on a *prima facie* basis that all parties may have agreed that the claims could be heard in a single arbitration. See ICC Art 6.4(ii).
- 49 ‘[...] Often, attorneys address the need for a dispute resolution clause only when memorializing the final terms of the deal in a contract. Because the dispute resolution clause can sometimes be an afterthought when the major points of negotiation have been addressed and the deal is considered done, it is frequently referred to as a “midnight” or “champagne” clause. But the ADR clause should not be an afterthought. It should be carefully thought out and well-drafted.’ Nancy Holtz, ‘Beware the Midnight Clause: Hold the Champagne?’ (*Inside Counsel*, 19 Feb 2016) see <https://www.jamsadr.com/files/uploads/documents/articles/holtz-insidecounsel.com-beware-the-midnight-clause.pdf> accessed 16 February 2022.
- 50 Giles Lambertson, ‘Subcontractors Struggle in Fight for Survival’ (*Construction Equipment Guide*, 20 May 2010) <<https://www.constructionequipmentguide.com/subcontractors-struggle-in-fight-for-survival/14448>> accessed 16 October 2020.

Eoin Moynihan is a managing associate at Global Legal Solutions in New York and can be contacted at eoin@glsl.global.



Credit: Svjatoslav Andreichyn/Shutterstock

Ezra Jampole

*Exponent, New York,
United States*

**Samuel
Amoroso**

*Exponent, Houston,
United States*

Troy Morgan

*Exponent, New York,
United States*

Brian McDonald

*Exponent, Menlo
Park, United States*

Themes in design/build disputes, from a technical expert witness perspective

Design-build infrastructure projects are increasingly the subject of large, complex disputes. These disputes often centre on the evolving nature of the designs as projects progress from tender through to for-construction drawings. The three main stakeholders – owner, contractor, and design subcontractor (designer) – frequently disagree on the allocation of responsibility for incorporating changes and the associated cost overruns. This article discusses the types of disputes that arise between contractor and designer from the technical expert witness perspective and suggests ways in which disputes can be avoided. The article is divided into two fundamental types of disputes: (1) tender-phase disputes, where the contractor claims that errors or omissions in the designer's tender phase design have led to an unachievably low bid price; and (2) detailed design-phase disputes, where the designer and contractor disagree on whether design changes after tender are normal and expected design development or should have been anticipated at time of tender. This article does not address disputes over delay and quantum, which we recognise are an important part of any design/build dispute and require careful coordination with technical experts.

Tender-phase disputes

Tender-phase designs prepared under design-build contracts are ripe for disputes because low pre-award budgets and paucity of information require the designer to make gross simplifications and assumptions, which will be tested during design development. Should those assumptions and simplifications be found either incorrect or inappropriate, the effects on the ultimate success of the project can be considerable (eg, the contractor not providing adequate provisions for materials, not anticipating complicated construction procedures required to execute the ultimate design, etc).

Scope of design during the tender phase

Because tender phase designs are high level (typically 15 to 30 per cent completion) and designers will be reluctant to perform additional scope beyond their contractual obligations, the scope of tender designs should be explicitly defined in the contract. In one recent dispute, the precise scope was unclear because several line items in the designer's scope of services did not have a cost assigned to them while others did. Was this to imply that the item was out-of-scope or a zero-cost task within the contract scope? Either assigning costs to all line items or using a lump-sum approach would have avoided this question and the associated disputes.

Scope creep during the tender phase can originate from the contractor requesting additional refinement of the designs to relax conservative assumptions and allow a more competitive bid. In addition, the owner's design criteria could change during tender for a variety of reasons. Given the low budgets and tight schedules that typically characterise tender phase designs, the designer should make it clear to the contractor precisely which requirements were or were not considered given the budgetary and time constraints.

Use of prototype designs

For civil infrastructure projects with repetitive major design elements (eg, bridges, metro/underground stations, and tunnels), contractors may be motivated to price the works based on a prototypical tender design of each element type. However, actual costs

for each design element can vary significantly if site-specific conditions are not properly recognised and addressed. In our experience, responsibility for considering and accounting for variations to the prototype during the tender phase can fall on the designer, contractor, and in some cases, both.

These can include alternative structural forms based on local differences in geometric site constraints, differences in soil and groundwater conditions, temporary traffic management, temporary and permanent roadway modifications, and utility diversions. It is critical to establish who will account for these variations at tender. For example, the designer may be best suited to anticipate the structural implications of a varying water table, but the contractor is better suited to estimate the implications of associated traffic and utility diversions.

How differences between prototypes and site adaptations are documented is critical. For example, the designer could simply list the aspects of a design that differ (at a high level). Alternatively, we have seen where designers have been asked to provide 'uplift factors' related to perceived complexity of construction. These factors can be the subject of criticism in disputes if the bid price falls short of what is ultimately required, and untangling the accuracy of the factors in conjunction with the numerous additional changes that typically occur during the detailed design phase is complicated and fraught with challenges.

Pricing the differences between prototype and site adapted elements will typically be in the domain of the contractor, since designers deal in engineering quantities associated with particular design elements, and not the cost expenditures necessary to build those elements given a set of site constraints. Designers should be wary of providing factors related to pricing the works, and if they do they should make clear what has been considered and distinguish between aspects of the factors that are driven by design versus construction.

Pricing responsibility

While ultimate responsibility for pricing lies with the contractor, the associated quantities are derived from tender designs, and contractors may pursue claims against the designer for alleged design flaws that informed the pricing. Designers should be especially

wary of participating in the preparation of bills of quantity (BoQs) in the tender phase, in lieu of the contractor developing BoQs based (in part) on the tender drawings. The tender design information is necessarily incomplete, and the contractor is likely to base its BoQ on experience constructing similar facilities. Notably, it is easy for a designer (or contractor) to omit an element from a BoQ in the tender phase that is outside the tender design scope (eg, secondary steel or rebar wastage). To avoid confusion and later disputes, designers should identify items included or excluded in their BoQ as precisely as possible.

Recently, the authors encountered a contract in which the designer was required to provide BoQs for 'major cost items', which was not explicitly defined. Structural engineers typically distinguish between primary member and secondary members based on their function, not on cost. Beams, columns, slabs, foundations, and walls are examples of primary structural elements, while hangers for façade elements and piping supports are examples of secondary elements, which in some cases are never designed by the structural engineer, even in the detailed design phase. The designer may not be aware of the items that are 'major cost' because they are not pricing the works. In this case, the contractor argued that elements of secondary steel should have been included in the designer's BoQ because they were 'major cost items', a determination that only the contractor could make.

Appropriate level of detail

In design-bid-build projects, contractors prepare bids based on fully developed contract documents at the end of the detailed design phase. Disputes can arise in design-build projects around what is the appropriate level of detail for a tender-phase design. The level of detail should be compatible with the definition of 'major cost items', discussed above. For example, should electrical conduits in bridge barrier rails be included in tender-phase BoQs? The level of detail included in the tender phase design should be commensurate with what is required to reasonably price a job. A contractor can assume that conduit is required in bridge barriers, so a designer may not need to include this detail in tender-phase drawings or in BoQs to enable accurate pricing. Because the designer adds details, but the contractor prices

them, they may speak different languages in terms of the level of detail required to price the works, which can lead to inconsistencies, omissions, and disputes.

Value engineering

Value engineering (VE) will typically occur during the detailed design phase to reduce construction cost. It can, however, also be implemented during the tender phase to help reduce the bid and increase the chances of being awarded the project. Importantly, this is a corporate risk decision to be made by the contractor in its preparation of a final bid. Due to its high-level nature and the short time frame in which tender-phase designs are typically developed, VE will often occur after the tender design has already been completed and the design team has demobilised, leaving limited resources available to either verify the likelihood that VE proposals can be achieved or to understand cascading consequences should they be implemented. Disputes can arise when well-intentioned VE proposals cannot ultimately be realised, which can occur for a myriad of reasons, for example, changes to the owner's requirements, unforeseen site conditions, or subsequent detailed calculations show that the VE savings could simply not be achieved. We have seen several instances in which the contractor has pursued the financial value that was VE'ed out of the bid price in consultation with the designer but never actually realised. In such cases, one must wonder whether the bid would have been successful without the VE price reduction having been offered. Designers and contractors should realise that VE proposals based on limited information at tender cannot guarantee that a design change will result in reduced project cost.

Compliance with the owner's requirements

Invitations to bid for large infrastructure projects will typically include detailed requirements for the design, including exemplar plans and performance specifications, which are sometimes referred to as bridging documents. To the extent an element of the design is shown on the tender drawings, it should comply with the owner's requirements, or the deviation should be noted and requested to be approved in the bid. Otherwise, the contractor may

claim that the designer failed to warn it of non-compliance of the tender design if ultimately complying with the owner's requirements is more costly than was accounted for in the bid price.

Contractors and designers can also find themselves in disagreement as to whether the tender phase design complied with the owner's requirements when the design element in question was not included in the tender phase design. Omitting a major element of work in the tender design could be problematic, but in some cases, the design simply had not progressed far enough during the tender phase to demonstrate compliance with all the owner's requirements, which apply to the finished work. For example, an owner may require that concrete reinforcing comply with certain industry standards, but such compliance cannot be demonstrated on a tender phase design if the details of concrete reinforcement are only developed later during the detailed design phase. The appearance or non-appearance of details in the tender design can simply reflect the level of design development rather than signify a failure by the designer to (ultimately) comply with the owner's requirements.

Addressing a lack of data during the tender phase

The lack of detailed design data, such as flood elevations, topographical data, and geotechnical reports, during the tender phase is often an unpleasant (but unavoidable) challenge that results in significant uncertainty. During the tender phase, the owner will typically provide some site data, but it is unusual for a designer or contractor to acquire precise field data prior to detailed design development. Imagine the chaos of ten bidders in the field measuring road widths at the same intersection, before any contracts have been awarded. Disputes can arise when updated site data is only available after the award of the contract, and, as a result, changes to the design are required. For example, a contractor may claim that the designer should have anticipated that flooding would need to be considered as part of the tender design (which would have led to a higher bid price), while the designer might argue that no information available at the time would have alerted it to that fact or enabled it to design for floods with sufficient detail to affect pricing.

Standard of care

Standards for designers (reasonableness) and contractors (fitness for use) can become muddled in the design-build context where contractor and designer work as a team. It is also important to avoid conflating the standards for tender design with for-construction design in terms of the completeness of drawings and the precision of the analysis. Clear definition of the designer's standard of care and what is expected to be shown on the bid documents is critical to avoid future disputes.

Detailed design-phase disputes

Design development versus design scope changes

Since design-build projects are awarded based on preliminary designs that may only be developed to 15 to 30 per cent, many aspects of the project obviously have yet to be firmly established, and even some conceptual design criteria may be subject to change. Neither the contractor nor the designer can reasonably expect that the post-award detailed design effort will consist of a linear process of simply committing fully formed ideas onto a set of construction documents. The authors have seen contract language that reflects this mutual expectation, such as the requirement of the designer to host *frequent review meetings* and perform *iterative design development incorporating interfacing party requirements to secure approval/acceptance as necessary*. Understandably, disputes arise between contractors and designers over where the boundary lies between normal design iteration and a change to the designer's scope of services.

It is also generally understood that a designer's tolerance for 'iteration' will generally decrease as design development progresses, as the amount of associated abortive work will likewise increase. Furthermore, revisiting or modifying designs that have already been subjected to interim reviews by the contractor or the owner at established milestones produces sudden decreases in the designer's willingness to accommodate a change. The authors have seen contracts which define 'design freezes' after contractor and/or owner reviews are complete, and the explicit requirement that

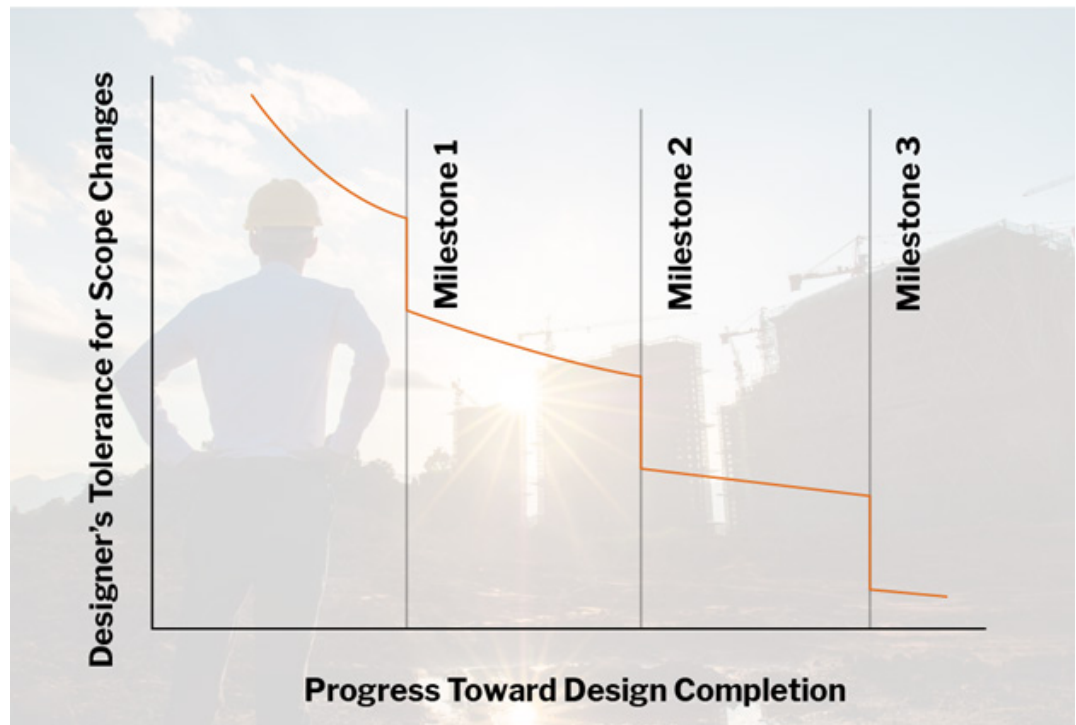


Figure 1: designer's tolerance for scope changes during the design phase

the designer be compensated for instructed changes that come after design freezes.

The appetite of a designer to accommodate (uncompensated) changes in direction from the owner, contractor, third-party stakeholders, or other interfacing design disciplines is illustrated conceptually in Figure 1. The figure shows that the designer's tolerance decreases precipitously as design milestones (freezes) are crossed. The design at each milestone provides the baseline against which future changes and subsequent effort are measured.

Engineering design is famously non-linear and recursive, requiring numerous iterations and interfaces across various disciplines to develop an acceptable solution. However, this does not entitle design-build contractors to demand infinite re-work from their consultants. While it is impossible to establish in the abstract all of the activities that should always be included or excluded from normal iterative design development on a hypothetical infrastructure project, we hope that the following examples are helpful for contractors and designers in efforts to anticipate problematic scenarios and avoid conflicts.

Alignment or base geometry changes

The geometric framework for many civil engineering projects is formed by horizontal and vertical alignments. This is the case for linear features such as roads, bridges, railways, tunnels, levees, dams, and improved channels. Similarly, the column grid and the floor elevations establish the geometric baseline for buildings. These geometric design elements must be established early in the design process, as any changes to them can cascade throughout the project both in space and across all the affected disciplines.

For example, raising the profile of a bridge can affect the abutment locations since they may be limited in height. In this scenario, the bridge must lengthen, and the impacts of the increase in length could include increasing the number of spans, relocating the interior piers, or changing the superstructure type (eg, using steel girders to accommodate spans longer than those practical with precast concrete girders). The adequacy of foundations would have to be assessed, depending on the variability in the soils or the changes in the loads. Apart from these basic structural impacts, the drawings will all be certainly affected. At the very least, referenced views will have to be updated and annotations modified. The number of

drawing sheets required to depict the bridge may also change, and new matchlines would have to be established. From a plan production perspective, it could be tantamount to starting again.

While there are some design functions that can occur in parallel with establishment of base geometry (eg, the development of some typical details or the establishment of generic calculation worksheets), progress towards the next design milestone does depend on the establishment of base geometry. And there is the possibility that major changes to base geometry could also render some of the work product from parallel activities obsolete. Contractors risk setting a trap for themselves if they agree a fixed price and are willing to accommodate externally-driven alignment changes after the execution of the contract with the owner.

Consequences of design contract fragmentation

The authors have seen instances in which some design activities on large projects are contracted separately, even though there are significant interfaces between the various scopes of work. An example is separating contracts for the design of railway stations from that of the track itself. In addition to the obvious, overall challenge of coordinating technical work across separate contracts, another potential pitfall is in introducing incompatible milestone dates across the contracts. The milestone dates in each of the contracts should reflect how designs actually progress, that is, the milestones in each contract should not be out of phase with each other. A change to an interfacing design can act like a change to base geometry and cascade through space, across disciplines, and across contract scopes.

Coordination with third parties

Complex infrastructure projects interface with wide constellations of third parties. Examples include utility providers, property owners, and owners of other intersecting infrastructure. For example, contractors building a new motorway that crosses a railway line can expect complications. The contracts between the contractor and the owner and the contractor and the designer must be clear regarding who

has the authority to identify the interfacing parties and coordinate and negotiate with them. It is sensible that the owner would retain this responsibility, since neither the contractor nor designer is a principal that can require the owner to coordinate with other entities. Nevertheless, the authors have seen instances in which contractors have criticised their design subcontractors for failing to perform this function. Designers would normally be expected to coordinate their designs with third-party requirements and doing so is within the realm of usual design development. However, this depends on timely communication of such requirements to them from the contractor. It is the contractor's or owner's responsibility to ensure that proper coordination has occurred at the appropriate milestones. If the design has progressed significantly by the time that a third party's requirements are communicated to the designer, a change in the designer's scope and corresponding adjustment to their schedule or compensation may be warranted. If the delayed coordination was caused by the owner, then the contractor would be reasonable in pursuing this claim with the owner. Responding to late arriving third-party requirements is not typical design development. The issues described here also apply when the design subcontracts are fragmented and interfacing designers are third parties to one another.

Owner-driven changes

Large design-build projects are complex and multi-faceted, and it is not unusual for the owner's expectations to evolve as the project develops and as implications of the design become better understood. When owners ask for changes to the design after the execution of the contract, contractors would be expected to submit a change order to the owner to cover the difference in time, labour, equipment, and materials that is represented in the change. Similarly, to the extent that the owner-driven change affects the work of the designer, the designer would be reasonable in submitting a request to the contractor for an adjustment to its schedule or compensation. The authors have seen instances in which contractors claimed that an owner-driven change entitled them to more compensation but then rejected a designer's claim that the associated design work was a change in the design scope. Modifying a design to comply

with owner-driven changes is clearly outside anticipated design development.

Value engineering

Carefully evaluating the design to reduce costs while still meeting the owner's requirements has the potential to yield tremendous financial value to the project, so it is enticing to conduct VE exercises during detailed design. If, as a result of a VE exercise, the contractor determines that changes should be made to the design, implementing the changes would not constitute normal (iterative) design development as long as the original design was reasonable. The authors have seen design subcontracts that require the designer to provide an economically efficient design where the criteria for what constitutes an efficient design is not included. In this scenario, the design subcontractor may be at risk of being required by the contractor to rework its otherwise correct design, without compensation, simply because it did not represent the solution with the lowest cost. A designer's responsibility to provide an efficient design does not saddle it with the burden of providing the optimal design. Discovering and providing the optimal design, which may vary by stakeholder or perspective, is not within a designer's normal standard of care. A design which is considered an optimal design in the view of all stakeholders is unlikely to be provided in the normal course of design development.

Claim substantiation

The authors have seen circumstances in which a designer's claims for adjustment to their compensation have been subjected to rounds of rejection on the basis that the claims were not properly substantiated, as required by the design subcontract. What constituted proper substantiation was not defined in the contract, however, and the degree to which documentation, narrative descriptions, and work breakdowns were to be developed to support a claim was in the eye of the beholder. As one might imagine, the designer was not inclined to provide the volume and level of detail in their supporting documentation that the contractor deemed necessary. Clearly defining in the contract documents how design scope changes are to be substantiated at the outset could help avoid such disputes.

Designer descope

One of the more complex types of disputes can occur when a designer is descope (ie, dismissed or terminated) prior to completion of the detailed design. Notwithstanding contractual provisions regarding whether the descope is legal, there can be disagreements regarding how far along the design had progressed at the time of the descope, and the appropriate compensation for the partially completed design.

Disagreements can be minimised if the contract clearly defines what work is to be completed at each milestone that triggers payment. The expected deliverables can be identified based on the milestone descriptions, which can be checked against the design in existence at the time of descope. One must also consider the extent to which change orders have been incorporated into the design, and the interaction between the change orders and the original design scope. For example, if a change order is issued that states that a tunnel should be designed instead of a bridge, and the next day the entire design is descope, the progress towards any milestone would be nought per cent. However, the designer should be compensated for their work prior to the change order. The work that was aborted and additional work that otherwise would not have been required prior to the change order must be carefully considered. When assessing the level of development of terminated work, consideration should also be given to whether calculations or numerical models sufficiently support the design that has been documented in drawings or building information modelling (BIM), and if proper coordination has occurred between disciplines for the current status/milestone.

A final complication appears when one considers the effort required by the new designer (post-descope) as part of calculating the payment due to the original designer for their work that was completed prior to descope. The new designer must repeat certain works already undertaken by the original designer, and it can be substantial if they use different computer software or simply have different internal standards or templates for the engineering and drafting.

Level of effort for changes to design scope

In the event that a designer and a contractor agree in principle that the designer is entitled to adjustment to its compensation due to a change in its scope, there is still the delicate matter of determining the appropriate level of effort that executing the change will require. Substantiating an estimate of level of effort could involve demonstrating the status of the design at the time of the change, estimating how far the design had progressed from the previous milestone toward the next at the time of the change, determining how much of the already-completed design was altered by the change or how much additional (rather than altered) design work was added by the change, estimating the time required to carry out the change (broken out by labour category), or reporting how much time was actually expended carrying out the change.

Approaches to tackling this problem depend in part on whether the work has already been performed when the claim is being substantiated. Designers may estimate level of effort as a proposal to the contractor for changes that are still being contemplated, or they may substantiate level of effort to claim compensation for work that they have already conducted. Level of effort estimates are further complicated if there are concurrent design changes happening on the same area of work.

Regardless of the method of substantiation, as soon as the designer suspects that it will be required to perform work that is not within its scope, the designer is advised to establish internal cost codes to track any time spent executing the change and be diligent in correctly allocating time to the appropriate codes and including descriptive comments with each timesheet entry. This data can provide useful documentation of the effort that was actually required to carry out the change in the event that compensation is not agreed prior to the execution of the change. Also, the designer should archive the status of the design at the time of the change so that the baseline of what work had already been accomplished is clear.

Estimating the level of effort in anticipation of a change is no different from estimating the budget for any other project. The designer should break the work down into as many component tasks as possible and estimate how many hours from each applicable labour category will be required

to carry out each of the tasks. A rule of thumb for the proper breakdown of component tasks is that each task should represent between eight and 80 hours. Smaller breakdowns are not generally useful, and tasks requiring more time than 80 hours can probably be broken down into smaller components for which the effort can be more accurately estimated.

If the work is already underway or has already been completed and the cost codes were not established and the design status was not archived, the designer will often need to build up an estimate of the work that was actually performed. This can be done in a manner similar to the estimating process described above.

For engineering designs, the number of design drawings is a useful denomination of effort. At the outset of the project, there is usually some understanding on the part of the designer of the number of drawing sheets that will be required to communicate the design. At that time there is also an agreed fee for the work. If this fee was built up from a breakdown of the hours required to complete the work, then the total number of hours is readily available, and the hours per sheet can be calculated. If the fee was not developed on the basis of a breakdown of tasks and hours, the total number of hours required to carry out the project can be estimated by dividing the fee by an appropriately blended labour rate. Then this number of hours can be divided by the anticipated number of sheets to determine the hours associated with producing each drawing sheet. In the authors' experience, hours per sheet is a useful heuristic commonly employed by designers to estimate or validate design fees. This metric can also be used to estimate the level of effort required to carry out a design change by applying the quantity to the number of affected drawings and considering the degree to which the drawings was affected. This method of estimating the level of effort to carry out a design change is especially useful when scope changes are subject to lump sum pricing.

Summary

Design-build projects carry inherent risks since contracts are often awarded for a fixed price based on preliminary designs. Disputes can arise between contractors and their design

subcontractors when projects become more costly or complicated than anticipated at the time of bid. The contractor may question the quality of the tender design and could pursue claims against the designer that hinge upon issues including the definition of the designer's pre-award scope, the use of prototype designs, how responsibility for estimating quantities is distributed, how much detail can be expected to appear in the tender design, whether the tender design complied with the owner's requirements, or whether the impacts of post-award site data should have been anticipated by the designer.

Once detailed design is underway, it is not surprising to see the scope of the designer's work diverge from pre-award expectations since the original scope was based on a preliminary design and necessarily incomplete site information. The authors have seen disputes between contractors and their design subcontractors over what constitutes a change to design services, what responsibilities designers have in coordinating with third parties, and how designers should properly substantiate their claims regarding scope changes. Anticipating these pre-award and post-award pitfalls can

provide an effective strategy towards preventing them. Carefully considering these in negotiations, contractual agreements, and other project communications can alleviate their impacts. When they do occur, disputes on design-build projects often have a technical basis, and experts in the appropriate technical fields can help sort out the differences between the parties.

Ezra Jampole is a managing engineer in the buildings and structures practice at Exponent in New York City, and can be contacted at ejampole@exponent.com.

Samuel Amoroso is a managing engineer in the buildings and structures practice at Exponent in Houston, Texas, and can be contacted at samoroso@exponent.com.

Troy Morgan is practice director and principal engineer in the buildings and structures practice at Exponent in New York City, and can be contacted at tmorgan@exponent.com.

Brian McDonald is a corporate vice-president and principal engineer in the buildings and structures practice at Exponent in Menlo Park, California, and can be contacted at mcdonald@exponent.com.

Construction Law International

Guidelines for submission of articles and updates from around the world

Articles should be submitted to dint.submissions@int-bar.org.

Articles/features should normally fall in the range of 3,000 and 4,000 words. The author's name will appear with title but without post-nominal letters etc. Please provide a very short description (<20 words), which should include the author's name, firm or organisation, city and email. For example: '[name] is a [role] at [firm] in [city] and can be contacted at [email].'

As this publication is aimed at busy lawyers, please provide a 50- to 100-word summary, which would serve as the 'standfirst' (or introductory paragraph). This summary could be written in the form of a question or could state a problem that the article then deals with, or could take the form of some bullet points. Article titles should be 5–10 words long.

Endnotes are to be used for citations only. Footnotes are not used in this publication.

We welcome any graphs or other visual illustrations, including photographs that enhance the article.

The Editorial Board cannot guarantee publication. All contributions may be subject to evaluation by the Editorial Board prior to publication.

Updates can be up to 1,500 words, and should address a recent (from the past six months) court decision or change in local law of relevance to construction projects.

Terms and conditions

The article must be the original work of the author, must not have been previously published, and must not currently be under consideration by another publication. If it contains material that is someone else's copyright, the unrestricted permission of the copyright owner must be obtained and evidence of this submitted with the article and the material should be clearly identified and acknowledged within the text. The article shall not, to the best of the author's knowledge, contain anything that is libellous, illegal or infringes anyone's copyright or other rights.

Copyright shall be assigned to the International Bar Association (IBA) and the IBA will have the exclusive right to first publication, both to reproduce and/or distribute an article (including the abstract) throughout the world in printed, electronic or any other medium, and to authorise others (including reproduction rights organisations such as the Copyright Licensing Agency and the Copyright Clearance Center) to do the same. Following first publication, such publishing rights shall be non-exclusive, except that publication elsewhere will require permission from and acknowledgment of the IBA. Such permission may be obtained from the IBA Director of Content at editor@int-bar.org. The rights of the author will be respected and the name of the author will always be clearly associated with the article.

Construction Law International is intended to provide commentary and general information. It should not be relied upon as legal advice. Formal legal advice should be sought in particular transactions or on matters of interest arising from this publication.

International Bar Association

Mark Ellis Executive Director

James Lewis Director of Content

Zahrah Haider Content Editor

Will Fox Typesetter/Artworker

Ronnie Hayward Divisions Director

Andrew Webster-Dunn Head of Sponsorship and Advertising

For details of advertisement and insertion rates please contact the International Bar Association at andrew.webster-dunn@int-bar.org.

Change of address

Please inform the International Bar Association of any change of address by emailing: member@int-bar.org.

Construction Law International

The publication of the IBA International Construction Projects Committee of the Energy, Environment, Natural Resources and Infrastructure Law Section (SEERIL)

MARCH 2022 Vol 17 Issue 1

ISSN 1819-1371

Citation (2022) 17(1) *CLInt*

The views expressed in this magazine are those of the contributors, and not necessarily those of the International Bar Association or the Editorial Board.

IBA Officers 2022

President

Sternford Moyo *Scanlen & Holderness, Zimbabwe*

Vice President

Almudena Arpón de Mendivil *Gomez Acebo & Pombo, Madrid*

Secretary-Generals

Claudio Visco *Macchi di Cellere Gangemi, Rome*

Jaime Carey *Carey, Santiago*

Legal Practice Division

Chair

Peter Bartlett *MinterEllison, Melbourne*

Construction Law International Editorial Board

Thomas Denehy (Chair of the Editorial Board) *Corrs Chambers Westgarth, Sydney*

China Irwin (ICP Committee Editor) *Lalive, Geneva*

Thayananthan Baskaran (ICP Deputy Committee Editor) *Baskaran, Kuala Lumpur*

Dr Donald Charrett (senior editor) *Expert Determination Chambers, Melbourne*

Phillip Greenham (senior editor) *Melbourne*

Gordon Jaynes (senior editor) *Surrey*

Katherine Bell *Schellenberg Wittmer, Zurich*

Thaís Fernandes Chebatt *Pinheiro Neto Advogados, São Paulo*

Nnenna Eze *FHN 26, Lagos*

Jacob Henriquez *Ploum Law Firm, Rotterdam*

Sung Hyun Hwang *GS Engineering & Construction, Seoul*

Jinlin Nan *Zhong Lun, Shanghai*

Ngo-Martins Okonmah *Aluko & Oyebode, Lagos*

International Bar Association EVENTS



CONFERENCES

10th IBA European Corporate and Private M&A Conference

11–12 April, The Westin Paris Vendôme Hotel, Paris, France

31st Annual IBA Communications and Competition Law Conference

25–26 April, Madrid, Spain

Climate Change Litigation – Taking the temperature of fast developments, the role of lawyers and tribunals

27–29 April, London

31st Annual IBA Communications and Competition Conference

25–26 April, Madrid, Spain

Mergers and acquisitions in Latin America: trends, challenges and opportunities in a new-normal world

2–4 May, Unique Hotel, São Paulo, Brazil

Pre-International Competition Network Forum,

3 May, Berlin, Germany

The Law Firm of the Future

4–5 May, Stockholm, Sweden

37th International Financial Law Conference

11–13 May, Hilton Molino Stucky, Venice

4th IBA French Spanish Day,

12 May, Maison du Barreau, Paris, France

6th IBA Global Entrepreneurship Conference

16–17 May, Felix Meritis, Amsterdam, the Netherlands

Biennial Conference of the Section on Energy, Environment, Natural Resources and Infrastructure Law (SEERIL),

16–18 May, Milan, Italy

By invitation only: IBA Mid-Year Leadership Meetings,

18–21 May, Radisson Blu, Vilnius, Lithuania

15th Annual Bar Leaders' Conference

18–19 May, Radisson Blu Hotel Lietuva, Vilnius, Lithuania

24th Annual IBA Transnational Crime Conference

18–20 May, Budapest

31st Annual Conference on the Globalisation of Investment Funds

22–24 May, Conrad Downtown, New York, USA

16th Annual IBA Competition Mid-Year Conference

2–3 June, Grand Hotel Stockholm, Stockholm, Sweden

8th Annual World Life Sciences Conference

3–4 June, Marchriott Champs Elysees Hotel, Paris, France

IBA Marchitime and Transport Law Committee Mid-Year Conference: The new world of shipping post-Covid

6–8 June, Singapore

27th Annual International Private Client

13–14 June, Claridge's, London, England

18th Annual IBA Anti-Corruption Conference

14–15 June, Paris, France

19th International Mergers & Acquisitions Conference

14–15 June, The Plaza, New York, USA

12th Annual Real Estate Investments Conference

15–17 June, Sofitel Legend The Grand, Amsterdam, the Netherlands

ANNUAL CONFERENCE OF THE IBA



IBA 2022
MIAMI
30 OCT–4 NOV



WEBINARS

The secrets of women rainmakers – how to become one and how to create a culture that develops them

19 April, 1400 – 1500, Online

The Russian invasion of Ukraine: How can the legal profession provide support to Ukraine? (Part 2 of 2)

6 April, 1300 – 1430 BST, Online

How to become the partner of the future

20 April, 2100 – 2200 BST, Online

Remote working: implications for immigration, employment and tax law

21 April, 1600 – 1745 BST, Online

Current restructuring and bankruptcy regimes: case studies from Canada, the Cayman Islands and Poland

22 April, 1300 – 1400 BST, Online

Implementing the principles on effective interviewing for investigations and information gathering: the role of the legal profession

26 April, 1300 – 1415 BST, Online

Setting up data centres and logistics projects: a real estate and regulatory view

27 April, 1300 – 1400 BST, Online



Full and further information on upcoming IBA events for, can be found at:

bit.ly/IBAevents



@IBAevents