CONSTRUCTION LAW INTERNATIONAL

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

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Managing risk in nuclear construction projects

Project financing and risk allocation for construction projects in Nigeria

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* Source: www.imf.org

Mexico City has seven hundred years of history from pre-hispanic remains through to the modern city around Reforma. The Zócalo, the colonial era main square, is a fantastic mixture of the architectural styles from that period. Just outside the city is the amazing Teotihuacan. The Pyramid of the Sun is the largest building in Teotihuacan, and one of the largest in Mesoamerica dating back to c. 200 AD.

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A Committee publication from the IBA Energy, Environment, Natural Resources and Infrastructure Law Section

REGULARS

FEATURES

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FROM THE CO-CHAIRS

Dear ICP Committee Members,

As Co-Chairs of the IBA International Construction Projects (ICP) Committee, we are excited to share some updates and upcoming opportunities for our members. The past year has presented unique challenges and significant transformations in the global construction industry, and we are proud of the resilience and innovation displayed by our members.

Some of these challenges were discussed during the ICP Working Weekend, which was held this year in Oxford (UK) in April 2024. The Oxford Working Weekend was organised by Tony Dymond, Roberta Downey and their colleagues. The participants were provided with an excellent opportunity to engage with each other in smaller groups to encourage an exchange of views and opinions on various legal issues. Tony and Roberta are to be praised for their work and the multiple tour visits in London and Oxford. It was beautiful to learn punting while enjoying the view of the lovely parks of Oxford. At dinner, we had the pleasure of listening a presentation by Tony's brother, Jonny Dymond, who shared insight about his career as a journalist.

Our next ICP Working Weekend will take place in the first quarter of 2025. We have received several proposals for possible locations. A decision will be made in the coming weeks, which will be communicated in advance to ensure that all ICP members can have sufficient time to express their intention to participate. The ICP Working Weekend is conceived only for a limited number of participants, which traditionally is not supposed to exceed 60 members. The list of participants is defined on a '*first ask first serve*' basis following the ICP Business Meeting held at the IBA Annual Conference of each year.

We invite all members to actively participate in our Committee's activities. Your insights, experiences, and contributions are what make our Committee a dynamic and resourceful body. Whether through attending events, contributing to publications, or joining our working groups, your involvement is crucial to our collective success. We are therefore reminding the ICP members of the upcoming events and conferences, which represent an opportunity to get to know other members and establish collaborations and friendships.

The **IBA Annual Conference** will take place in Mexico City on 15–20 September 2024. The ICP Committee will host five panels at the conference. The speakers for these panels have been finalised and communicated to the IBA. As in past years, a considerable number of speakers have been selected on the basis of expressions of interest we received from ICP members following the ICP call for interest to speak, which was published by the IBA on 22 May 2024. If you are able to attend the coming IBA Annual Conference, please make sure you register to our ICP dinner and excursion.

Our ICP members are also working on the publication of a construction law book. If you are interested in drafting a chapter of the book, please feel free to contact directly the editors: Professor Mauro Rubino Sammartano (mauro.rubino.brsa@lawfed.com) or Professor Troy Harris (troy.harris@harrisarbitration.com).

Our Committee is also organising an **ICP Conference**, which will take place in Milan on 27–29 March 2025. The programme will be published in July 2024. We look forward to seeing you all there.

For shorter articles, we encourage you to submit your drafts to the editors of Construction Law International (CLInt). Sharing your knowledge and experience helps to enrich our community and advance our field. Submission of draft articles may be done following the indications provided in the following link: https://www.ibanet.org/clint-april-2024.

Our Committee has created a Whatsapp Group to keep in touch and share relevant information. If you want to be part of it, please send us a message and your cellular phone number. We will make sure you will be included in the group. We also have a LinkedIn page dedicated to the ICP Committee. You are welcome to join it as well.

Thank you for your ongoing support and engagement.

Best wishes,

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Projects Committee

FROM THE EDITORS

Dear readers,

We are delighted to introduce the June issue of *Construction Law International* (CLInt). This issue comes shortly after the hugely successful ICP working weekend in Oxford at the end of April. We hope to include reports on the sessions during this working weekend in the next issue of CLInt.

As a prelude, we would like to mention Oscar Aitken's highly memorable and graphic comparison of a construction contract and a gorilla in a cage. Like the cage the contract should not be so strict or small that the gorilla does not have space to move. On the other hand, the cage should not be so large or the contract so lax that the gorilla has too much freedom. The bars of the cage, like the terms of the contract should be strong. And, of course, one must be weary of letting the gorilla out of the cage, or the contractor out of the bounds of the contract.

This issue continues our FIDIC around the world series with contributions from Nigeria and Rwanda. We also have updates from England and India. Our feature articles in this issue cover a wide range of topics, including project financing and risk allocation in Nigeria, a look at Saudi Arabia's new Civil Transactions Law and the provocatively entitled 'Junk science: the fallacy of retrospective time impact analysis'. Apart from this, we have an interesting article on managing risks in nuclear construction projects.

We hope you enjoy reading the June issue and look forward to seeing you at the IBA Annual Conference in Mexico City in September!

We thank our contributors for sharing their experience and insights. As always, we encourage all International Construction Projects Committee members to contribute to CLInt by submitting articles to Thayananthan Baskaran at thaya@baskaranlaw.com.

¡Hasta luego!

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FIDIC AROUND THE WORLD

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1. What is your jurisdiction?
Nigeria.

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?
The FIDIC form of contract is one of the standard forms of contract in use for projects constructed in Nigeria. The specific FIDIC form used depends on the nature and type of project. For the construction of buildings, the Conditions of Contract for Building and Engineering Works Designed by the Employer (Red Book) are used. In large-scale infrastructure projects, it is not unusual to find contracts based on the Conditions of Contract for Plant and Design-Build (Yellow Book). The Conditions of Contract for EPC/Turnkey Projects (Silver Book) are used in projects with a heavy engineering component, such as process or power plants. The Silver Book is also used for funder-led projects, where the project's bankability depends on the contractor assuming a single point of responsibility. In Nigeria, the 1999 editions of the FIDIC forms are more commonly used than newer editions.

3. Do FIDIC produce their forms of contract in the language of your jurisdiction? If no, what language do you use?
The FIDIC forms of contract are produced in English, which is Nigeria's official language.

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?
It does not appear that there are any clauses or sub-clauses of FIDIC Conditions of Contract that contravene mandatory provisions of Nigerian law, such that they would require amendments for them to become operative in Nigeria.

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?
Although contracts based on the FIDIC forms are enforceable under Nigerian law, modifications are sometimes made to some provisions to meet the requirements of the specific project. These amendments are based more on commercial considerations than for legal purposes. For example, provisions on access to and possession of the site (Sub-Clause 2.1) are sometimes modified to take care of interruptions that may be experienced due to protests and disruptions caused by local communities. The contractor will want to ensure that it is the responsibility of the employer to ensure uninterrupted possession and access is maintained. The employer, on the other hand, will usually want to limit its responsibility to providing access and possession at the beginning of the project only, with the risk of any future impediments by the local community borne by the contractor. It is not unusual for such clauses to impose the responsibility on the contractor to facilitate community engagement to achieve the project outcome.

Also, sub-clauses 20.2–20.4 dealing with the appointment and decision of a dispute adjudication board (DAB) are usually excluded in the FIDIC forms, except for contracts that are being financed by development finance institutions (DFIs) or where the DAB is intended to operate as a standing DAB. This is because there is not much familiarity with the DAB procedure in Nigeria, and parties sometimes view adjudication as duplicating and elongating the dispute resolution mechanism when, ultimately, the decision of the DAB would be reviewed on its merits in arbitral proceedings or the courts.

If the FIDIC forms are used in the oil and gas sector, the parties would include clauses that incorporate specific local content requirements that operators are required by law to incorporate into procurement and services contracts.

6. Does your jurisdiction treat Sub-Clause 20.2.1 of the 2017 suite of FIDIC contracts as a condition precedent to Employer and Contractor claims?
There is no reported case law dealing with Sub-Clause 20.2.1 of the 2017 suite of FIDIC contracts as a condition precedent to employer and contractor claims. However, it is reasonably certain that Nigerian courts will treat Sub-Clause 20.2.1 of the 2017 suite of FIDIC contracts as a condition precedent to claims, given the express exclusion of claims in the event of non-compliance with the condition precedent. In addition, the sub-clause uses the word 'shall' in the exclusion of claims, which under Nigerian law

has an obligatory connotation and not merely directional. Nigerian courts may also be persuaded by the policy consideration underpinning the interpretation of time bar provisions in construction contracts as the condition precedent given the early notification of claims by the contractor affords the employer the opportunity to investigate such a claim early and avoid or mitigate the events giving rise to such claims.

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

There is no regulatory framework governing the use of dispute boards as an interim dispute resolution mechanism in Nigeria. As a result, the use of dispute boards is essentially contractual, based on the parties' agreement. Therefore, it is not unusual for parties to adopt the dispute board as a form of interim dispute resolution mechanism in a multi-tiered dispute resolution clause to avoid the piling up of claims and achieve the real-time resolution of claims.

As there is no statutory framework regulating the use of dispute boards in Nigeria, the decision of a dispute board is not enforceable in its own right. Therefore, the successful party, depending on the terms of the contract, may commence arbitration on the decision of the dispute board for the purpose of procuring an award that will be enforced by the court. Alternatively, the successful party may institute an action for the enforcement of the parties' agreement to comply with the decision of the dispute board.

While Sub-Clause 21.7 of the 2017 suite of FIDIC contracts expressly empowers the successful party to refer the failure to comply with a dispute avoidance and adjudication board's (DAAB) decision that has become final and binding directly to arbitration without any need to first refer the failure itself to the DAAB, the 1999 suite of FIDIC contracts is not explicit on the right of a party to refer the failure by the other party to comply with the decision of the DAB directly to arbitration. This lacuna in the 1999 suite of FIDIC contracts has giving rise to arguments in a jurisdiction (*PT Perusahaan Gas Negara (Persero) TBK v CRW Joint Operation* (2015) SGCA 30) that the failure to comply with the DAB decision must first be referred to the DAB before commencing arbitration. There has been no decision by Nigerian courts that have decided a similar question. However, it is likely that Nigerian courts would adopt a pragmatic and practical approach, allowing the failure to comply with the DAB's decision to be referred directly to arbitration for the purpose of enforcing compliance.

8. 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?

In Nigeria, it is common for parties to adopt arbitration as the final stage in the resolution of a construction dispute. Whether the arbitration is ad hoc or institutional depends on the nature of the project. If it is a domestic project, it is likely that the arbitration would be ad hoc or administered by the Lagos Court of Arbitration (LCA), Lagos Chamber of Commerce International Arbitration Centre (LACIAC) or any of the multi-door courthouses. However, for large infrastructure projects or projects with significant value, it is not unusual for parties to adopt a foreign arbitration institution as the administering authority, despite the project being wholly domestic. If it is a cross-border transaction, it is likely that the arbitration would be institutional and the arbitral institution that features prominently in construction projects is the International Chamber of Commerce (ICC), the international court of arbitration. The other arbitral institution that is used is the London Court of International Arbitration (LCIA).

9. Are there any notable local court decisions interpreting FIDIC contracts? If so, please provide a short summary.

There is no reported court decision that has interpreted FIDIC contracts in Nigeria.

10. 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 disincentive to the adoption of a multi-tiered dispute resolution clause, like the dispute resolution clause in the FIDIC forms requiring DAB as a mandatory pre-arbitration step, is the limitation period for the enforcement of arbitral awards. The Nigerian Supreme Court in the case of *City Engineering v FHA* (1997) All NLR 1 determined that the cause of action in an application to enforce an arbitral award is the same as the cause of action to the underlying dispute that gave rise to the arbitration. As a result, for the purpose of enforcing an award, time begins to run not when the award was issued but when the cause of action accrued under the underlying contract. The effect of this decision is that parties in arbitration are in a race against time to arbitrate and enforce any ensuing award before the expiry of the limitation period for the claims.

Even though DABs are designed as a straightforward process enabling disputes to be resolved quickly, in practice, the process could be protracted due to difficulties in constituting the DAB or dilatory tactics by parties to the DAB proceedings. The result is that parties run the risk that, by the time the decision of the DAB is referred to arbitration and

arbitration culminates in an award, the limitation period for the enforcement of the award may have elapsed.

However, Nigeria recently enacted the Arbitration and Mediation Act 2023, which eliminates this problem by excluding the period between the commencement of arbitration and the date of the award for the purpose of computing time in the enforcement of an arbitral award, thereby encouraging the use of pre-arbitration techniques, such as dispute boards.

Another point of note is the requirement under Section 5 of the repealed Arbitration and Conciliation Act for an applicant seeking to enforce an arbitration agreement to demonstrate readiness and willingness 'to do all things necessary to the proper conduct of the arbitration'. The Nigerian Supreme Court in *UBA Plc v Trident Consulting Limited* (2013) 14 NWLR (Pt 1903) 95 construed the provision to mean that the party applying for a stay of proceedings pending arbitration must demonstrate unequivocally by documentary evidence that it is willing to arbitrate. In other words, the party must have commenced arbitration.

This posed a challenge for the multi-tiered dispute resolution clause like that found in the FIDIC forms. First, the party seeking to enforce the arbitration agreement is not the party that has a claim, so requiring such a party to commence arbitration is counterintuitive. Second, and particularly more important for the FIDIC forms, in requiring a party to commence arbitration as a prerequisite to enforce an arbitration agreement, there is a risk that such a party would be waiving its right to insist on compliance with mandatory pre-arbitration steps contained in the dispute resolution clause and possibly acting against its commercial self-interest. However, this requirement has been removed from the new Arbitration and Mediation Act as all an applicant has to show to enforce an arbitration agreement is that the arbitration agreement is not void, inoperative or incapable of being performed.

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Rwanda

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1. What is your jurisdiction?
The Republic of Rwanda.

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?
Yes. FIDIC forms of contract are used in Rwanda. The most widely used forms tend to be the Yellow Book, that is, design-build, and Silver Book, that is, EPC/turnkey for government works in the energy and transport sectors when a given project has a high level of complexity, there is a well-defined scope of work and the procuring entity does not have the means or capability to handle the project management services, but needs the works completed on time under a fixed budget.

The Red Book, that is, design-bid-build, is also used in the private sector for large-scale works, such as commercial buildings/complexes, public–private partnership (PPP) projects with the government and concession projects.

3. Do FIDIC produce their forms of contract in the language of your jurisdiction? If they do not, what language do you use?
The national language is Ikinyarwanda, and FIDIC does not produce their forms in this language. However, the Constitution of the Republic of Rwanda provides that in addition to Ikinyarwanda, the official languages shall be English and French. Therefore, FIDIC does produce contract forms in other languages used in Rwanda.

In Rwanda, FIDIC forms are mostly used in English.

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?
In the private sector, generally no amendments are required. However in government projects typically obtained after a public procurement process, some amendments are required in order for the FIDIC Conditions of Contract to be operative in Rwanda. See a few examples below.

The requirement to limit the subcontracting value in government projects to a maximum of 20 per cent

This amendment is in relation to Sub-Clause 5.1 of the 2017 Red Book,

which prohibits the subcontracting value to a total accumulated value greater than the percentage of the accepted contract amount stated in the contract data. Under Rwandan laws, Law No 031/2022 of 21 November 2022 governing public procurement goes further and limits the subcontract value in public procurement contracts to a maximum of 20 per cent of the procurement contract value.

The limitation on price adjustment

Sub-Clause 13.7 of the 2017 Red Book allows the adjustment of the amounts payable to the contractor for rises or falls in the cost of labour, goods and other inputs to the works by the addition or deduction of the amounts calculated in accordance with the schedule(s) of cost indexation.

In Rwanda, and particularly in public procurement, the above sub-clause must be adjusted according to the approving authority. Article 58 of the public procurement law provides that: 'Any contract that is planned to be executed within a period of eighteen (18) months is awarded as a fixed-price contract. However, in case a circumstance arises that leads to the exceptional rise in the prices quoted at the time of the bid, the Minister authorises the adjustment of prices.' Therefore, there is a required amendment in any given FIDIC contract to include a clause addressing the above legal provision to indicate that price adjustment must be done with the approval of the minister in charge of public procurement in Rwanda for government contracts.

The change in the modalities and timelines for the return of performance security

Sub-Clause 4.2.3 of the 2017 Red Book provides that the employer shall return the performance security to the contractor within 21 days after the issue of the performance certificate and the contractor has complied with the clearance of site; or promptly after the date of termination if the contract is terminated at the employer's convenience; by the contractor, under the optional termination sub-clause; or under the sub-clause for release from performance under the law.

In public procurement, the return of the performance security is done in two instalments. The first instalment consists of the return of half the security within 30 days of the date of provisional acceptance of the works, whereas the remaining instalment is returned within 15 days of the date of final acceptance of the works in accordance with Article 61 of the Public Procurement Law.

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?

In Rwanda, like many other countries, parties may amend the FIDIC Conditions of Contract to adapt it to the local reality.

Typically, parties consider using the court routes/litigation to leverage the multi-tier instances (up to two appellate levels in Rwanda) instead of non-appealable arbitral awards. In this case, the parties scratch the use of the dispute adjudication board (DAB) and arbitration in exchange for amicable settlement, failing which, parties can go directly to court.

Additionally, some employers make amendments in relation to the performance and/or bid securities to indicate that only securities issued by the authorised financial institutions in Rwanda shall be accepted.

Lastly, parties include clauses that give fair and reasonable opportunity for companies from Rwanda to be appointed as subcontractors. This trend is also seen where parties are encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within Rwanda. All of this is to promote and develop local businesses and skill sets.

6. Does your jurisdiction treat Sub-Clause 20.2.1 of the 2017 suite of FIDIC contracts as a condition precedent to Employer and Contractor claims?

Under Sub-Clause 20.2.1, any claiming party has the right to give a notice of claim to the engineer, describing the event or circumstance giving rise to the cost, loss, delay or extension of time for which the claim is made as soon as practicable, and no later than 28 days after the claiming party became aware, or of the event or circumstance, failing which, the claiming party shall not be entitled to any additional payment, contract price reduction or extension, and the other party shall be discharged from any liability in connection with the event or circumstance giving rise to the claim.

In addition, the answer is yes; the Rwandan laws treat this sub-clause as a condition precedent for the admission of either employer and contractor claims if it is stated in the contract. Therefore, Sub-Clause 20.2.1 will be binding on the parties in accordance with Article 64 of Law No 45/2011 of 25 November 2011 governing contracts provides the following: 'Contracts made in accordance with the law shall be binding between parties. They may only be revoked at the consent of the parties or for reasons based on law. They shall be performed in good faith.'

Additionally, under Rwandan procedural laws, a claim filed beyond the legal and/or contractual time limits may be subject to a plea of inadmissibility

from the respondent seeking to have such a claim declared inadmissible without being heard on the merits in accordance with Article 83 paragraph 4 of Law No 22/2018 of 29 April 2018 relating to the civil, commercial, labour and administrative procedure, which provides the following:

> 'The plea of inadmissibility of a claim is any plea seeking to have the other party's claim declared inadmissible without being heard on the merits considering such other party as having no right to act such as lack of standing, capacity and interest to sue, prescription of the claim, expiry of the prescribed period for filing a claim, the effect of *res judicata* or failure to pay court fee deposits, case of amicable settlement agreement or that of formalities provided for by law which have not been complied with.'

The above procedural article is mostly used in litigation, that is, courts but it may also be used mutatis mutandi in arbitration in the case in which the rules governing the latter are silent on such an issue.

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

Yes, if a contract provides for dispute boards, then such boards are used as an interim dispute resolution mechanism on matters pertaining to and within the limits of the contract. Notably, Rwanda has been implementing a policy of encouraging and facilitating alternative dispute resolution mechanisms. Therefore, even in circumstances where a contract does not provide for dispute boards, the parties may opt to use such dispute boards following the rise of a dispute.

As for the enforcement of dispute board decisions, two routes may apply. The first and easier one is that the liable/losing party can voluntarily enforce the decision, either directly or through the assistance of a court bailiff.

The second and, understandably, tougher one is forced execution in the case in which the liable/losing party has neither voluntarily enforced the dispute board decision nor submitted a Notice of Dissatisfaction (NOD) in accordance with the contract. In this case, the interested party may refer the matter to arbitration and request an order in accordance with Sub-Clause 21.7 of the 2017 Red Book.

8. 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?

Yes, if the contract provides arbitration as the dispute resolution mechanism agreed by the parties, then it will be the final stage of dispute resolution for construction projects in accordance with Article 50 of Law No 005/2008 of 14 February 2008 on arbitration and conciliation in commercial matters, which provides the following: 'An arbitral award, irrespective of the country in which it was made, shall be recognized as binding'. Therefore, the arbitral award is final and binding, unless challenged through a set-aside application (on procedural irregularities without going into the merits) before the Commercial High Court.

The most widely used arbitration type/centre in Rwanda is institutional arbitration under the Kigali International Arbitration Centre (KIAC). However, on construction projects involving foreign parties, the international arbitration types (International Chamber of Commerce (ICC) and United Nations Commission on International Trade Law (UNCITRAL)) are predominantly used.

As for the seat, Rwanda is the most used seat in arbitration involving parties affiliated with Rwanda, that is, Rwandan companies, government entities and projects executed in Rwanda. This is common both in arbitration handled by KIAC, as well as other international centres of arbitration, such as the ICC, London Court of International Arbitration (LCIA), American Arbitration Association (AAA) and UNCITRAL for ad hoc arbitration.

9. Are there any notable local court decisions interpreting FIDIC contracts? If so, please provide a short summary.

None to the best of my knowledge.

10. 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 notable point is the use and trust of FIDIC contracts, but a deviation from the golden principles governing them. In Rwanda, the utilisation of FIDIC contracts has become increasingly prevalent, providing a structured framework for medium and large construction and engineering projects. Both employers and contractors/subcontractors in Rwanda trust their ability to establish clear responsibilities, mitigate risks and foster cooperation among stakeholders.

However, a notable challenge continues to be seen where parties, especially in superior positions, such as the government and large investors, deviate from the golden principles governing these agreements. In some instances, they may seek to insert clauses that favour their interests disproportionately, undermining the equitable distribution of risks and rewards.

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COUNTRY UPDATES: ENGLAND

The application of limitation periods when passing defects liability down the contractual chain

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In *Lendlease Construction (Europe) Limited v AECOM Limited* [2023] EWHC 2620 (TCC) the judge, Mr Justice Eyre, rejected Lendlease's claims in respect of the provision of an allegedly defective design by Aecom, holding that the claims were statute barred as they were not brought within the applicable limitation period. The judgment demonstrates the difficulties that contractors that assume design responsibility may face in bringing claims against their design consultants when defects arise years after the completion of the works. As explained in this article, under English law, the limitation period in which a contractor must bring claims for defective design against its design consultant will expire earlier than the limitation period in which its employer must bring defects claims against the contractor. Careful drafting of the contracts' terms is required in order to avoid a contractor becoming barred from passing on defects claims to its design consultants.

The facts of the dispute

Lendlease had been engaged to design and construct an oncology centre at a hospital in Leeds and achieved practical completion in December 2007. Aecom had provided mechanical and electrical consultancy services to Lendlease under a Consultancy Agreement and its designs were incorporated into the oncology centre. Concerns about possible defects in 'Plant Room 2' and elsewhere in the hospital were raised in November 2017 and proceedings were issued against Lendlease by the employer and maintenance contractor in respect of 25 defects in its works, some of which arose from mechanical, electrical and plumbing (MEP) design, including the fire safety strategy, and others that arose from poor workmanship. Following the judgment in those proceedings, and a settlement agreement that was reached in respect of some of the defects, Lendlease paid amounts to the employer and maintenance contractor in respect of the defects. Lendlease sought to recover the amounts paid in respect of the defects from Aecom. However, the Limitation Act 1980 requires that, under English law, claims be brought within six years of the accrual of a cause of action or 12 years of the accrual of a cause of action if the contract was executed as a deed.

As Lendelease's court proceedings against Aecom were commenced on 30 May 2019, Aecom contended that the claims were brought outside the statutory limitation period.

Ensuring claims for defective design can be passed down the contractual chain

Under English law, limitation periods run from the date of accrual of a cause of action. The date of accrual of the cause of action will vary depending on the nature of the claim pursued (ie, whether it is a claim for breach of contract or a claim in negligence) and on the specific obligations assumed under a contract's terms.

Where a consultant is engaged to carry out design work, the date on which the cause of action accrues for a breach of contract claim in respect of the defective design is the date on which the consultant completes its services by providing its design. However, for a contractor (in this case, Lendlease) the date on which the employer's cause of action against it for defective design work accrues is likely to be the date of practical completion of the works, which may occur years after the consultant's design was provided. As a result, when defects arise at the end of the limitation period under the contract with the employer (ie, six or 12 years after practical completion), the contractor may find itself out of time for bringing a breach of contract claim against its design consultant, as Lendlease did in this case.

In order to preserve the ability to pass claims on to their consultants, parties often include wording in their appointments providing for the consultants' limitation period to match their own. The decision in *Lendlease* demonstrates that any attempt to extend a limitation period must be made with extreme care. Clause 14.06 of the Consultancy Agreement purported to extend the limitation period for Lendlease to bring a claim against Aecom to 12 years from the date of practical completion so as to match Lendlease's own exposure to claims from its employer. It stated: 'No action or proceedings under or in respect of this Agreement in contract or for breach of statutory duty shall be commenced against the Consultant after the expiry of 12 years after the Completion Date for the Works'.

This wording was not sufficient to displace the usual statutory limitation period. The judge's

analysis was that Clause 14.06 was simply an agreement that claims would not be brought outside a particular period of time, noting that disapplying the statutory limitation period would be a 'significant departure from the norm' and therefore presumed unlikely to have been the parties' intention. In light of this conclusion, it is clear that it is not sufficient for parties seeking to extend the limitation period to state a longer period for bringing claims; they must also expressly state that the Limitation Act shall not apply. While this is not new law, the judge followed *Oxford Architects Partnership v Cheltenham Ladies College* [2006] EWHC 3156 (TCC), [2007] BLR 293. Such a decision provides a reminder of the care needed to disapply the Limitation Act, even in light of Supreme Court decisions on contractual interpretation since *Oxford Architects* (eg, *Wood v Capita Insurance Services Ltd* [2017] UKSC 24, [2017] AC 1173), which the judge took into account.

The limited options for claimants facing limitation issues

The consequences of not extending the period for bringing claims are serious. When defects claims are brought against the contractor at the end of its limitation period, it may be left without a route to recover its losses from its design consultant. Contractors bringing claims for defective design against their consultants and facing potential limitation issues commonly look to extend their consultants' limitation period by bringing claims in negligence (rather than for breach of contract) and/or claims that their designer was subject to an ongoing duty to review its design. In each case, the cause of action accrues slightly later than in the case of a breach of contract claim. The judge's guidance in *Lendlease* highlights the limited utility of such claims.

The cause of action for a claim in negligence accrues on the date the contractor builds following the defective design issued to it, as this is considered the date the damage is caused. This will be a later date than the date a cause of action for breach of contract accrues (ie, the date the design is provided), such that the period in which a claim must be brought is extended. However, as was the case in *Lendlease*, the limitation period for a claim in negligence against a design consultant will still expire before the limitation period for a claim by the employer against the contractor as practical completion (the date on which a cause of action for a claim against the contractor accrues) could still be months or years after the design was built.

Claims for a breach of an ongoing duty to review a design and warn of any issues with the design rely on a fresh breach of contract, and a new accrual of a cause of action, on the date that the review should have been made. However, an ongoing duty to review a design is unlikely to extend beyond the date that the design is constructed. As there can be no accrual of a cause of action for such a claim after the design is constructed, basing a claim on a breach of a duty to warn will not extend the limitation period beyond the expiry of the period for claims in negligence.

The judge also stressed the limited value of a claim for breach of duty to warn. Claimants often overlook that only losses arising from the loss of opportunity to correct the defects in the design are recoverable and that losses arising from the original failure to provide an adequate design are not recoverable. This is because the fact that a designer may be under an ongoing duty to review its design does not change the date of accrual of a breach of contract claim, which remains the date the defective design was provided. Claims for breach of a duty to warn are only likely to lead to a recovery in limited circumstances; for example, if a failure to correct the inadequacy in a design caused the contractor to incur liabilities that could have been avoided if the contractor had been warned that the design required changing. Frequently, a contractor's only loss is the cost of remediating defects in the original inadequate design; these costs cannot be recovered through a claim for a breach of the duty to review and warn.

The judge also noted the limited circumstances in which an obligation to review and warn of any issue with a design will arise. Absent an express contract obligation, a duty to review and/or warn will only arise when the contract imposes duties that extend beyond the provision of the design and will require a 'trigger event' so as to make the review necessary or put the designer on notice that a review is required. In *Lendlease*, Aecom's Consultancy Agreement included review and coordination obligations. The judge concluded these obligations did not require Aecom to review the work of others, such that there was no 'trigger event' requiring Aecom to review its own design after it had been provided.

Concluding remarks

Contracts frequently appear to impose liabilities on parties far into the future, for example, assets are often said to have a 25-year, 50-year or even longer design life. However, unless the Limitation Act has been expressly disapplied and replaced with a longer period, it is highly likely that any claims must be brought within six years of the accrual of a cause of action (or 12 years for agreements executed as a deed). *Lendlease* is a reminder that parties must take real care when looking to disapply the usual statutory limitation period.

It is of course vital that parties looking to pass liabilities down the contractual chain understand whether the Limitation Act applies, when their possible causes of action accrue and that they closely monitor potential claims as limitation periods approach expiry. If necessary, parties should look to agree a stay to the limitation period well in advance of the limitation period expiring.

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INDIA

Construction, climate change mitigation and the right to be free from the adverse effects of climate change

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> 'We know we are not on track to limit global warming to 1.5 degrees Celsius. The window for meaningful change is closing, and the time to act is now.'[1]

In December 2023, in their meeting at the 28th United Nations Conference of Parties (COP28), over 198 signatory countries to the Paris Agreement, 2015 (the 'Agreement'), resolved to undertake a 'global stocktake' and discuss the need for an enhancement to climate financing to attain net-zero carbon emissions in the long term. This event was followed by the Supreme Court judgment on 21 March 2024 in the case of *MK Ranjitsinh & Ors v Union of India & Ors*,[2] where the 'right to be free from adverse effects of climate change' was considered to be a fundamental right emanating from articles 14 and 21 of the Constitution of India. With such great advancements in the field of climate change and an unending need to enhance climate change mitigation efforts worldwide, it became necessary for developing countries like India to promote the adaptation of climate preservation measures in economy-enhancing sectors (EES) like construction. One of the essential reasons for such a dire need for adoption in EES was the need for unabridged continuity in the sectors, along with the current percentage occupied by them in causing climate change.

India's ambitions under the Agreement and the associated complications

In 2015, India, being part of a group of countries, signed the momentous Agreement at the UN Climate Change Conference (COP21) in Paris, France, organised by the UN Framework Convention on Climate Change (UNFCCC). By way of this almighty Agreement, India resolved to direct a portion of its resources towards the attainment of two targets: (1) causing a substantial reduction in the nation's carbon footprint; and (2) working towards 'limiting the increase of the Earth's temperature to not more than 1.5 degrees Celsius'.[3]

Subsequently, at the 26th edition of the UN Conference of Parties (COP26), the country's administration undertook an additional resolution to achieve net-zero carbon emissions by 2070 and further reduce the use of fossil fuels by at least 50 per cent before 2030.[4]

While the aforementioned ambitions held considerable value in India's continuing work towards climate adaptation, a major complexity associated with attaining such targets was raised by the country at COP28, which included a limitation with respect to the funds that would facilitate the adaptation of climate-friendly measures in the various sectors of the economy.

Under Article 9 of the Agreement, developed country parties (DCPs) have been directed to provide financial resources to assist developing country parties (DeCPs) in mitigation and adaptation.[5] At COP28, India raised a valid, yet complex issue of needing climate financing amounting to trillions of dollars in order for it to be able to attain the goals set under the COP26 resolution.[6]

While the desire for such substantial funds was critical, it gave rise to the issue of whether it was feasible for the DCPs to direct the amount towards India and its ambitions, while simultaneously meeting the needs of the other DeCPs, which, in turn, had also undergone the process of setting similar climate goals.

Another snag, which was due to be faced by the country in the years to come, was a projected increase in the population along with an enhanced rate of inflation, both of which were to further have the effect of increasing the fund requirements, thus posing another threat to the long-term goals of the country. In fact, as per India's Long-Term Low-Carbon Development Strategy curated by the Ministry of Environment, Forest and Climate Change (MoEFCC) for the UNFCCC, with the projected increase in the population by 2050, urban India is expected to build 700–900 million square metres of residential and commercial spaces.[7]

Needless to mention that the projected pace of construction may affect the green targets set by India and pose a threat to the climate mitigation targets set by the country.

Understanding the role of construction and infrastructure in climate change mitigation

'Emissions of carbon dioxide worldwide, need to be seen holistically, as emissions from each nation ultimately disperse (sic) into the atmosphere.'[8]

The aforementioned observation was made by the Supreme Court on 18 April 2024 in the case of *The State of Telangana & Ors v Mohd Abdul Qasim (Dead) Per LRs*,[9] where the issues in question pertained to the protection of forests. In its detailed judgment, the court also took note of a harrowing report published by the Reserve Bank of India (RBI), the Indian central bank and banking sector regulator, specifying that: 'Climate change manifested through rising temperature and changing patterns of monsoon rainfall in India could cost the economy 2.8 per cent of its GDP and depress the living standards of nearly half of its population by 2050'.[10] The report further specified that: 'A successful transition to a net-zero economy would require a strategy of "deep decarbonisation" encompassing all carbon emitting sectors, ranging from power generation and transportation to industrial production processes, *construction activity*, agriculture, and above all, nudging the citizens to change their lifestyle habits and consumption preferences'[11] [emphasis author's own].

A reasonable perusal of the aforementioned observations made within the report, with the projections laid down in the report submitted by the MoEFCC to the UNFCCC, may provide an inference into the tangent drawn between 2050 and the projected future in the case in which industries like construction fail to mitigate climate change. In light of this, while the relevance held by the other sectors, as specified in the aforementioned report, may be undeniable, additional importance may be assigned to the construction sector, which presently accounts for more than 39 per cent of energy-related carbon emissions in its present form.[12]

By incorporating climate change mitigation and adaptation measures within the core of the construction sector, developing countries like India may continue to depend on the sector for their economies without the environment being at stake. However, it may also be manifest to acknowledge that, for such a desired future, the methods of adoption of such sustainable measures within the industry must be thoroughly planned and cautiously adopted.

The role of climate financing in sustainable construction

For developing countries like India, climate finance and the construction sector have a close-knit nexus, where the desired impact of the former is substantially dependent on the value adoption by the latter. By directing a considerable amount of such financing towards the infrastructure and construction industry, India may be able to undertake a range of measures, including the substitution of materials and methods for construction, thereby paving the way for the efficient realisation of its sustainability targets.

However, considering the complications posed by the traditional method promoted under the Agreement, vis-à-vis the funding requirements proposed by India from the DCPs, the nation may need to adopt alternative measures in order for it to be able to meet its climate financing needs and further facilitate risk mitigation in adopting sustainable construction methods. A few such alternative measures may include private participation through public–private partnership projects (PPP) and the issuance of green bonds, which will focus on the financing of environment-positive projects. Methods like these may provide India with the required ammunition for attaining cost efficiency while actively promoting climate mitigation and furthering an increase in the pace of sustainable adoption in the construction industry.

The added benefits of the methods, such as that of undertaking projects through PPP mode, may be a *quid pro quo* relationship in which the authorities will have the benefit of shifting responsibilities to private parties, while the latter may have the benefit of recovering their costs by operating projects for the agreed duration of time (build–operate–transfer). For India, particularly, given that the promoted focus of the

government to undertake large-scale infrastructure projects in PPP mode is visible through the vast number of PPP projects it has undertaken,[13] the inclusion of sustainable values may not require substantial changes to policies and practices. In fact, by including such values within the projects undertaken in the future, India may be able to attain the desired sustainability targets in the projected course of time. One such method of inclusion may be through certain amendments in the various PPP schemes of India, including the India Infrastructure Project Development Fund Scheme, which will ensure that a portion of funding provided to the project sponsoring authorities is conditional in terms of its utilisation towards sustainable methods of construction.

By incorporating the values of sustainability within the construction sector, through the promotion of PPP projects, the requirement for a substantial amount of funds may be reduced, to a certain degree, thus bringing about a balance in climate financing under the Agreement and the adaptation of sustainable measures in the Indian economy.

On the other hand, the issuance of sovereign green bonds, as undertaken by the Department of Economic Affairs and the RBI, may further the intentions of the country, not only to work towards climate change mitigation but also to make the Indian market lucrative for foreign participants. The latter has already been announced by the RBI in the announcement dated 8 April 2024.[14]

The answer to the question

The year 2050 may seem far into the future, however, in terms of climate change, it is fast approaching. With continuing reports of the increase in temperature of the Indian Ocean, and the projected increase in droughts, floods and other natural disasters, it has become essential for nations all over the globe to undertake stringent measures to work towards climate mitigation in order to effectively realise the targets set under the Agreement.

For India, the world's largest democracy and the most populated country, it is essential that these measures be fortified in all sectors, including that of construction and infrastructure, where such adoption will facilitate the expedited attainment of the country's net-zero carbon emission goals and actually aid in the upholding of the people of the country's 'right to be free from adverse effects of climate change'.

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FEATURE ARTICLE

Early morning looking across the fields of Somerset towards the Bristol Channel and Hinkley Point Power Station. Credit: Sue/Adobe Stock

Managing risk in nuclear construction projects

In light of the recent resurgence of nuclear energy, significant opportunities exist for construction companies operating in, or looking to expand into, the nuclear construction business. These opportunities, however, also carry risks. This article discusses some of the risks that arise at the stage of design and planning, and during project execution, as well as ways in which such risks can be mitigated.

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The resurgence of nuclear energy

Amid increasing energy costs and a worsening climate crisis, demand for low-carbon energy sources like nuclear power is on the rise.

This growing demand for nuclear energy has triggered a surge in construction projects for newbuild nuclear power plants across the globe. Approximately 60 nuclear reactors are currently being constructed in 15 countries.[1] A further 110 nuclear reactors are planned, with mainland China and India expected to lead global nuclear power development in the coming years.[2] European countries are also driving the nuclear energy renaissance. Among several new-build projects in Europe, Westinghouse and Bechtel have formed a consortium to design and build Poland's first nuclear power plant.[3] The United Kingdom

is also planning to quadruple its generation of nuclear energy and has held early-stage discussions with South Korea's state-owned nuclear developer, KEPCO, to develop the Wylfa Newydd site in Wales.[4] Emerging economies on the African continent, such as Ghana, Burkina Faso and Uganda, are also working towards their first nuclear power plants.[5]

All of this is in addition to the approximately 440 currently operational nuclear reactors in 32 countries,[6] many of which are aging and require modernisation to extend their operating lifetimes. After more than a decade offline, and despite plans to phase out nuclear power in Japan following the Fukushima disaster, Japan is now aiming to restart its Kashiwazaki Kariwa nuclear facility in late 2024.[7]

At the same time, rapid technological advances in the field, including the development of small modular reactors and fusion technology, are likely to lead to even further growth. In March 2024, Germany announced a new funding programme for fusion research aimed at paving the way for the construction of the first fusion power plant in Germany by 2040.[8]

It is often said that nuclear projects have to be built twice, first on paper and then again on the ground

Against this background, the recent resurgence of nuclear energy presents significant opportunities for businesses operating in, or seeking to enter, the nuclear construction industry. These businesses should, however, be mindful of the risks involved in construction projects in the nuclear sector and seek to mitigate these risks from the outset and during the life of such projects.

Overview of key risks

Construction projects in the nuclear sector have unique characteristics. Given the radiation risk inherent in nuclear energy generation, safety is critical. Nuclear construction projects are thus subject to rigorous regulatory scrutiny and extensive approval processes, both at the design and planning stages, as well as during construction. These regulatory requirements add a layer of complexity that cannot be underestimated. Indeed, it is often said that nuclear projects have to be built twice, first on paper and then again on the ground.

Design and planning risks

Nuclear construction projects are characterised by an extensive design and planning stage, during which the planned delivery's compliance with contractual specifications and regulatory requirements must be demonstrated.

To satisfy regulatory obligations, nuclear projects also have more stringent documentation requirements than non-nuclear projects. For example, in some countries, applicants for a construction licence must submit extensive safety analysis reports, environmental impact reports, quality management programmes for the planning and construction phase, emergency preparedness concepts and decommissioning plans. Preparing such documentation requires the regulator, licence holder and suppliers to collaborate closely, with suppliers generally submitting the documentation to the regulator and licence holder for review and approval. This process must therefore be carefully built into the project schedule.

A further challenge is that regulatory regimes can vary significantly in different jurisdictions, with each country having its own regulatory authority overseeing nuclear projects. Businesses supplying to or operating in markets with which they are not already familiar must thus ensure that they are sufficiently familiar with the relevant regulatory requirements, in particular where they expressly warrant the compliance of their goods and services with those requirements, as is often the case in relevant sales or works contracts. Because regulatory requirements can also change over the duration of a project, businesses must also stay abreast of changes that may impact their delivery.

Moreover, while some regulators have been established only relatively recently, others have decades of experience. Countries may have: (1) mature and privately funded nuclear programmes and projects, such as in the United States and UK; (2) state-funded nuclear programmes, as is the

case in China and India; or (3) emerging nuclear programmes, as in Bangladesh, Egypt and Turkey. The experience of regulators and lessons learned from past projects may thus inform the approaches taken within the regulatory framework. As a result, suppliers working internationally may face difficulties in understanding the relevant regulatory requirements applicable to new projects, particularly in situations where they are working in a particular jurisdiction for the first time.

Delay risks in project execution

Nuclear construction projects are also more prone to suffering delays during project execution. Recent publicly known examples include Hinkley Point C nuclear power station in the UK; although the project was initially planned to be completed by 2027, it is expected to be delayed until 2029 at the earliest, reportedly due to complex technical issues, such as the installation of electromechanical systems and intricate piping.[9] Similarly, the Vogtle nuclear power station in the US was delayed by several years, in part due to supply chain delays and design changes after the start of construction.[10]

Regulatory oversight is a frequent cause of delays. For instance, regulations often require that working procedures be pre-approved by the nuclear power plant owner or regulator. The time required to apply for and obtain these approvals must be factored into any project schedule. In addition, site changes implemented during project execution may require additional inspections and approvals from the regulator. As such changes are not always foreseeable at the outset, contractors would be well advised to build sufficient float into the project schedule.

Like many construction projects, nuclear projects also have long lead times that must be anticipated well in advance. These include the procurement, manufacturing and installation of certain complex components and systems, such as steam generators, heat exchangers or instrumentation and control platforms. In addition, however, given regulatory requirements, long-lead items frequently also include complex training programmes and management systems. These long lead items must be contemplated and thoroughly planned at an early stage of a project to avoid negatively affecting the project schedule.

Finally, the evolution of nuclear technologies is accompanied by unique challenges that risk having an impact on project schedules. Equipment with no or only limited prior operating experience may require additional testing and validation, which, if not properly anticipated, also risks delay.

Risk management

The risks outlined above apply to all aspects of a nuclear construction project, involving contractors and suppliers that operate internationally to manufacture and deliver equipment and components. Businesses involved in such projects, especially contractors or suppliers that are unfamiliar with the nuclear industry, should be mindful of the risks involved in nuclear construction and modernisation, replacement and retrofitting projects. While the management of such risks must be considered on a case-by-case basis, there are overarching principles that may help to mitigate them.

Nuclear construction projects are also more prone to suffering delays during project execution

Awareness of risks

A thorough understanding of the applicable regulatory regime, from the early stages of a project, is essential. Particularly where a contractor or supplier is operating in a new or less familiar jurisdiction, or has little or no experience with nuclear applications, it is critical to be mindful of the applicable nuclear regulations. To enhance knowledge of the regulatory regime and applicable requirements, businesses should consider engaging nuclear consultants with experience in the relevant jurisdiction to assess regulatory and other risks, as early as possible in the project, and already at the stage of contracting. Understanding the applicable regulatory requirements can be essential in setting a realistic project schedule, as well as the selection and supervision of vendors in the supply chain.

Contractual allocation of risks

Once the risks involved in a project have been identified, parties must allocate them contractually and assess the impact of that allocation. Parties should thus carefully consider how their respective roles, responsibilities and obligations are defined; who bears the risks of compliance with regulatory requirements and/or any changes in such requirements during the course of the project; how the risk of unforeseen circumstances is to be allocated, including suitable change management provisions; and how to define appropriate limitations on liability. Improper risk allocation can result in delays, cost overruns and an increased likelihood of disputes.

Factors to consider in deciding how to allocate risk include determining:

- Which party is best placed to control the risk and its associated consequences?
- Which party can best foresee the risk?
- Which party can best bear the risk?
- Which party most benefits or suffers when the risk materialises?[11]

While it may not always be possible for contractors to achieve a desired risk allocation during the negotiation phase – and indeed, contractors frequently do assume the risk of ensuring regulatory compliance in the relevant contracts – understanding the risks involved and how they have (or have not) been contractually allocated is critical in assessing the overall commercial transaction.

Mechanisms for dispute management

Stakeholders in nuclear construction projects should put in place appropriate mechanisms to resolve disputes and minimise disruptions to ongoing projects. As with other construction projects, there are a variety of procedures available to resolve disputes that arise during the life of a project, ranging from the involvement of senior management, the creation of standing dispute boards or the referral of disputes for expert determination. Selecting the most appropriate procedure for the particular project at hand, and defining its key features at the outset, can greatly assist in avoiding delays and the escalation of disputes during project execution.

Robust claims management procedures, such as clearly defined notification requirements with realistic timeframes, can facilitate the early detection, mitigation and resolution of potential disputes.

It is also important for all aspects of the project to be properly recorded in the event that a potential dispute should arise. In addition to maintaining a well-organised project file and safeguarding written project correspondence, it is also critical that meetings and calls be carefully documented through minutes or notes. It is not uncommon to find, at the dispute stage, that key information discussed in meetings or on calls has not been adequately captured in the available documentation, thus leaving gaps in the evidentiary record and making a reconstruction of the relevant facts more difficult.

Conclusion

Although opportunities abound for companies seeking new projects in the nuclear construction industry, investing time and effort in preparing for and carefully assessing risks at the outset is critical for avoiding potentially significant consequences and disputes at a later stage.

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Aerial view of marina commercial business district, Lagos, Nigeria. Credit: Terver/Adobe

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Project financing and risk allocation for construction projects in Nigeria: legal aspects and mitigation strategies

Introduction

In countries across the world, construction projects are vital for infrastructure development, which in turn drives economic growth. Nigeria is no exception, with its infrastructure sector covering key amenities such as electricity, roads, railways, ports, airports, and oil and gas pipelines. These projects are typically large-scale and require significant funding, often sourced through debt, equity or a combination of both, along with alternative financing mechanisms. Project financing involves securing the necessary capital for these large-scale projects.

Given the scale of these projects, effective risk allocation is crucial. This involves assigning responsibilities for identified risks among project stakeholders, including contractors, sponsors and the government. Securing funding and executing these projects involves complexities, uncertainties and inherent risks. Therefore, understanding and managing these risks are essential for project success.

This article will explore the importance of effective project financing and risk allocation strategies in Nigerian construction projects. It will also provide recommendations for enhancing project financing and risk management practices to improve project success and stakeholder satisfaction.

Legal framework for the financing of construction projects in Nigeria

The financing of construction projects in Nigeria operates within an intricate network of regulations and oversight by numerous regulatory bodies, with the goal of promoting effective project development within the infrastructure sector. We shall examine some of these important regulations and regulators.

Infrastructure Concession Regulatory Commission (Establishment) Act 2005

The Infrastructure Concession Regulatory Commission (Establishment) Act established its commission, the Infrastructure Concession Regulatory Commission (ICRC), which plays an important role in regulating project financing in Nigeria, particularly in the context of infrastructure concessions, which involves a contractual agreement between a public authority and private company. As the agency responsible for overseeing public–private partnership (PPP) projects and concessions, the ICRC's role in regulating project financing involves several key aspects, which includes the approval and regulation of PPP projects; developing and issuing guidelines, standards and best practices that PPP projects should adapt to; and conducting the financial viability assessment of PPP projects to evaluate their feasibility and sustainability. Furthermore, the ICRC plays a role in facilitating risk allocation and minimising these risks in PPP projects. The commission ensures that these risks are appropriately allocated among the project stakeholders, including government agencies, private investors and lenders.

National Policy on Public–Private Partnership

The National Policy on Public–Private Partnership provides a framework for regulating project financing in Nigeria by outlining guidelines and principles for engaging private sector participation in infrastructure development. This policy aims to ensure transparency, efficiency and accountability in PPP projects, while promoting sustainable financing arrangements. The policy outlines procedures for identifying, screening and approving PPP projects based on their feasibility, strategic importance and alignment with national development priorities. This is pursuant to the fact that projects must undergo rigorous assessment to determine their suitability for private sector involvement and financing. It sets out the steps that the government will take to ensure that private investment is used, where appropriate, to address the infrastructure deficit and improve public services in a sustainable way.[1] By so doing, the policy provides guidelines for structuring PPP projects to attract private sector investment and financing.

National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2018

The NESREA Act indirectly regulates construction and project financing in Nigeria by establishing environmental standards and requirements that construction projects must adhere to. While the NESREA Act primarily focuses on environmental protection and sustainability, its provisions can impact project financing as it provides for environmental compliance requirements, which mandates that construction projects comply with environmental standards and regulations in order to mitigate the impacts of these projects on the environment.

The financing of construction projects in Nigeria operates within an intricate network of regulations and oversight by numerous regulatory bodies

The enforcement agency undertakes this objective by conducting environmental impact assessment (EIA) tests to assess the potential effects the construction projects can cause to the environment and develop measures to mitigate them. The agency also grants approvals and permits, and the cost of obtaining these permits are factored into the project's financing plan. It is pertinent to state that environmental safety standards are important and, as such, compliance is non-negotiable. As a result of this, the NESREA Act imposes sanctions for non-compliance with environmental regulations. This implies that construction projects found to be in violation of environmental standards may face fines, remediation costs or legal liabilities, which can impact project budgets and financing arrangements.

Public Procurement Act (PPA)

Enacted in 2007, the PPA serves as the cornerstone for transparent and accountable public procurement in Nigeria. It applies to the procurement of goods, works and services by all federal government ministries, departments and agencies. The PPA plays a significant role in setting the framework for how public funds are used in construction projects financed through project financing. Here's how:

- ensures a fair and transparent process:
  - the PPA establishes a fair and open bidding process for selecting contractors, which reduces the risk of favouritism or corruption in awarding contracts for project financing; and
  - publicly funded projects often rely on private investment alongside public funds and the PPA's transparency helps build trust with private investors;
- defines requirements and standards:
  - the PPA outlines specific requirements for project documentation, qualifications for bidders and contract terms, which ensures a baseline quality standard for construction and protects public funds; and
  - project financing lenders rely on the predictability of the procurement process and the PPA helps to mitigate risks associated with the project by establishing clear guidelines.

Overall, the PPA helps to ensure that public funds used in project financing are spent efficiently and effectively, while promoting fair competition in the construction sector.

Bureau of Public Enterprises (BPE) Act

Established in 1999, the BPE Act typically focuses on the privatisation and commercialisation of state-owned enterprises (SOEs). The BPE Act is primarily concerned with ensuring a smooth and transparent process for private sector involvement in SOEs.

In some cases, the BPE Act might play a role if privatisation involves the construction of new assets or infrastructure as part of the deal. The BPE Act would ensure proper procedures are followed for selecting a private partner and structuring the transaction.

While the BPE Act might not directly govern construction project finance, it can play a supporting role in specific cases involving privatisation and create a more open environment for private investment, which can benefit project finance in general.

Overview of the various financing options for construction projects in Nigeria

Large-scale infrastructure projects play a crucial role in driving economic development, improving living standards and enhancing competitiveness in countries like Nigeria. However, the complexities of these projects often demand substantial financial resources, necessitating innovative finance sourcing and strategic partnerships to ensure their successful implementation. The financing of these large-scale infrastructure projects poses significant challenges due to their long gestation periods, high costs and inherent risks. In this context, understanding the diverse financing options available for large-scale infrastructure projects becomes paramount. Some of these project financing options will be discussed below.

- Traditional bank loans: Debt is a common project financing option for large-scale construction projects, providing access to capital from commercial banks and financial institutions through loans. These loans provide project developers with the required capital to fund these projects from its initial stage to completion. These loans typically involve fixed or variable interest rates and may often require collateral or security, as well as a provision for its repayment terms.
- Equity financing: Equity financing involves raising capital by selling ownership stakes or shares in the construction project to potential investors. Equity investors, such as individuals, private equity firms and institutional investors, provide capital in exchange for ownership equity. In return, they receive dividends or a share of the project's profits on completion and within a specific duration.
- Government funding: Government agencies at the federal, state or local levels may provide funding or grants for construction projects, particularly those deemed to be of public interest or strategic importance. Government funding can include budget allocations, subsidies or concessional loans to support infrastructure development initiatives.

- Government guarantees: The government acts as a guarantor, assuring lenders of loan repayment in the case of project failure. This attracts private lenders and increases access to capital.
- Initial public offerings (IPOs): SOEs involved in the project can raise funds by issuing shares to the public through an IPO, attracting investment from the stock market.
- PPPs: PPPs involve collaboration between public and private sector entities to finance, develop and operate infrastructure projects. In PPPs, the private sector partner typically provides funding, expertise and resources for the project development, while the public sector contributes land, regulatory support and revenue guarantees.
- Sovereign wealth funds (SWFs): Governments with SWFs can utilise these funds to directly invest in state-owned projects.
- Development banks: National or multilateral development banks can provide project-specific loans or grants that align with their development goals.
- Alternative financing mechanisms: Construction projects may explore alternative financing mechanisms, such as lease financing, mezzanine financing, crowdfunding or peer-to-peer lending platforms, to raise capital from individual or institutional investors. These alternative financing mechanisms are innovative financing options that offer flexibility and access to capital, as opposed to the conventional banking systems.

Raising finance for large-scale construction projects can be complex as it involves navigating various financial, legal and regulatory challenges. The complexity of raising finance stems from several factors. First, the scale of construction projects is large and often requires substantial capital investment, which may exceed the investors' capacity to handle projects independently. Second, projects may encounter uncertainties and risks, ranging from regulatory changes and price fluctuations to environmental challenges, making investors sceptical about committing funds to these projects.

In this challenging landscape, legal agreements play an important role in facilitating project financing by providing a structured framework for defining rights and obligations, and ensuring the enforceability of every financial arrangement. These legal agreements serve as binding contracts that prescribe the terms and conditions of financing, establish security interests, allocate risks among project stakeholders and provide mechanisms for dispute resolution. They help to enhance the clarity and certainty of project financing arrangements, thereby bolstering confidence among lenders, investors and other stakeholders.

Risk allocation strategies in Nigerian construction projects

Construction projects in Nigeria face a variety of risks that can impact their success. Effective project financing hinges on a clear understanding and allocation of these risks among project stakeholders. This process helps to:

Effective project financing hinges on a clear understanding and allocation of these risks among project stakeholders

- attract investors: by demonstrating a well-defined risk management plan, a project becomes more attractive to lenders and investors, and a clear allocation of risks shows that they understand potential challenges and have strategies in place to address them;
- secure favourable loan terms: the allocation of risks can influence the terms of a loan and shifting certain risks to parties better equipped to handle them can lead to lower interest rates or more favourable repayment structures; and
- enhance project success: when each stakeholder understands the risks they are responsible for, they are more likely to proactively manage and mitigate them, which can lead to smoother project execution and less chance of unforeseen issues derailing the project.

Risk evaluation: the heart of project finance

Project financing relies heavily on a thorough evaluation of these risks. Lenders need to understand the potential financial impact of various risks before they commit funds. This evaluation considers factors like:

- Likelihood of the risk occurring: how probable is it that a specific risk will materialise?

- Impact on project costs: if the risk occurs, how much will it potentially cost the project?
- Risk mitigation strategies: what measures are in place to reduce the likelihood or impact of the risk?

Allocating risks in project finance

Based on the evaluation, risks are then allocated in project financing agreements. Here's a possible breakdown for common Nigerian construction project risks:

- Financial risks (funding shortages and price fluctuations): these might be shared between the borrower (construction company) and the lender (bank); the lender may require certain financial instruments to mitigate these risks, such as performance bonds or guarantees.
- Project delays (regulatory approvals): the allocation depends on the reason for the delay; if it's due to unforeseen bureaucratic hurdles, the risk may fall on the government entity responsible for approvals; however, if delays stem from poor planning by the contractor, this party may bear the financial burden.
- Environmental risks: the contractor typically holds most of the responsibility for managing and mitigating environmental risks associated with construction activities.
- Legal and regulatory risks: both the borrower and lender may share these risks, depending on the specific nature of the legal issue; strong, well-drafted contracts can help minimise these risks.
- Political and socio-economic risks: these can be difficult to allocate as they are often external factors; however, some risk transfer mechanisms, like political risk insurance, can be explored to protect against unforeseen government actions.

Proactive risk identification: don't wait for problems to arise. Conduct comprehensive risk assessments at the project planning stage, considering PESTEL factors specific to Nigeria

By carefully evaluating and allocating risks, project financing in Nigeria can be placed on a more solid footing. This leads to a more predictable project environment, increased investor confidence and ultimately, a higher chance of project success.

Recommendations for enhancing project financing and risk management practices in Nigeria

Our recommendations for enhancing project financing and risk management practices to achieve better project outcomes and stakeholder satisfaction in Nigeria are:

Project financing

- Diversification of funding sources: relying solely on traditional bank loans can be limiting; thus, explore options like PPPs, infrastructure bonds and development finance institutions to spread risk and access wider funding pools.
- Project viability assessments: before securing financing, conduct thorough feasibility studies that consider not just financial viability but also social and environmental impact. This builds confidence with lenders and stakeholders.
- Local content requirements: integrate local participation in project financing. This can entail involving local banks, fostering domestic investment and creating employment opportunities, leading to increased stakeholder buy-in.

Risk management

- Proactive risk identification: don't wait for problems to arise. Conduct comprehensive risk assessments at the project planning stage, considering political, economic, social, technical, environmental and legal (PESTEL) factors specific to Nigeria.
- Contingency planning: develop clear and actionable contingency plans for identified risks. These plans should outline mitigation strategies, resource allocation and communication protocols in the case of disruptions.
- Stakeholder engagement: actively engage stakeholders throughout the project lifecycle. Keep them informed of potential risks, mitigation efforts and project progress. This fosters trust and reduces surprises that can lead to dissatisfaction.
- Focus on sustainability: integrate environmental and social considerations into project planning and execution. This reduces long-term risks and improves stakeholder perception.

By implementing these recommendations, project financing in Nigeria can become more secure and risk management practices can be more proactive. This will lead to a higher chance of project success and increased satisfaction among all stakeholders involved.

Conclusion

In conclusion, the success of construction projects in Nigeria relies heavily on effective project financing as, most times, individual investors or the government cannot finance large-scale projects independently. However, these projects have inherent risks and identifying these risks, as well as allocating them to project participants, makes all the difference. This implies that effective project financing and risk allocation are essential for the development of construction projects in Nigeria. To enhance project outcomes, stakeholders must prioritise risk management, leverage legal frameworks and adopt best practices in financing and risk allocation.

Note

1 The World Bank, Nigeria National Policy on Public–Private Partnerships https://ppp.worldbank.org/public-private-partnership/library/nigeria-national-policy-public-private-partnerships accessed 11 June 2024.

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Jeddah, Saudi Arabia. Credit: leo morgen/Adobe Stock

Saudi Arabia's Civil Transactions Law

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The Kingdom of Saudi Arabia's first Civil Transactions Law (the 'KSA Civil Code' or the 'Code')[1] came into force on 16 December 2023.

The new Code contains 721 articles, covering matters including: (1) contract formation, execution and termination; (2) tort claims; and (3) specific contracts, such as those for sale, leases, agency and construction contracts (known as '*muqawala*' contracts).

It is expected that these new provisions will provide more certainty on the rights and obligations of contracting parties in the Kingdom of Saudi Arabia, whose civil transactions have, until now, been governed by Islamic Sharia. Commenting on the KSA Civil Code, HH Crown Prince of the Kingdom of Saudi Arabia Mohammed bin Salman said the Code will 'enhance transparency and increase the ability to predict judgements in the field of civil transactions reducing discrepancies in judicial reasoning to reach prompt justice'.

It is important to note that Sharia law has not been displaced. Article 1 of the Code provides that, if there is no applicable text in the Code, the general rules (or maxims) set out under Article 720 are to apply. These rules, 41 in total, codify Sharia law principles. Article 1 further provides that, if there is no applicable maxim, then 'the provisions derived from the Islamic Shari'ah most appropriate to this law shall be applied'.[2]

In this section, we provide an overview of this landmark piece of legislation, with reference to the key points that will be relevant to contracts that are governed by Saudi law.

A retrospective effect

The KSA Civil Code has retrospective effect, meaning it applies to events that occurred and contracts that were signed before 16 December 2023, except where:

- a contracting party can prove that such application would contradict an existing 'statutory provision' or 'judicial principle';[3] or
- the limitation period in respect of a given right had begun to run prior to 16 December 2023.

Formation of contracts

As per Article 31 of the Code, a contract is made by offer and acceptance.

Article 37 of the Code makes it clear that silence cannot be deemed acceptance unless 'there is an agreement to that effect; there is other evidence indicating acceptance';[4] or if it is related to a previous transaction between the parties. Regarding the latter, another provision to note is Rule 13 under Article 720. It provides that silence will be considered to be a statement, if a statement is necessary. This is unlikely to apply to the formation of a contract, but it could be relevant to variations or amendments to existing agreements.

The incorporation of terms from other documents (eg, standard form contract terms in construction contracts) is permitted by Article 46, which states: 'if the contracting parties expressly or implicitly refer in the contract to the provisions of a model document, specific rules, or any other document, it is considered to be part of the contract'.[5]

Good faith

The KSA Civil Code has codified the Sharia requirement for contracting parties to act in good faith.

Article 95 provides that 'the contract shall be executed in accordance with its terms and in a manner consistent with the requirements of good faith'.[6]

Interestingly, Article 41 of the KSA Civil Code extends the obligation of good faith to the negotiation phase of a contract, making it incumbent on parties to conduct contract negotiations in good faith. A party found to be acting in bad faith during negotiations may be liable to pay damages. Article 41 of the Code also indicates that the law will consider a party to be acting in bad faith if it knowingly withholds key information or if a party negotiated without the genuine intent of reaching an agreement. This means that, during the negotiation stage, parties should be transparent about relevant facts and circumstances.

The KSA Civil Code has retrospective effect, meaning it applies to events that occurred and contracts that were signed before 16 December 2023 [with some exceptions]

The application of the good faith principle to parties' conducted during the life of the contract will also extend to a party's exercise of contractual discretion or a right that might otherwise appear to be absolute. The Code provides a list of circumstances that amount to the abuse of a right, including: (1) exercising a contractual right solely to cause harm; (2) where the benefit of exercising a contractual right is absolutely disproportionate to the harm suffered by others; and (3) exercising a contractual right for an unlawful purpose.

Article 720, Rule 40 provides that 'no person may resile from what he has (conclusively) performed'.[7] This may have an effect analogous to the doctrine of estoppel in certain circumstances as it prevents a person from taking an action contrary to the individual's previous actions.

Unjust contracts

Article 68 of the Code deals with 'unjust contracts' and provides the court with the discretion to reduce or increase the extent of the obligations under the contract, or even invalidate the contract if one of the contracting parties takes advantage (or, in other words 'exploits an apparent weakness'[8]) of the other.

Any action on the basis of Article 68 of the Code must be instituted within 180 days from the date of the contract, otherwise it will be dismissed.

This is likely to be helpful in cases in which there is differing commercial strength between the parties and the resulting contract could be unjust.

Interpretation of contracts

The KSA Civil Code follows the objective doctrine of contract interpretation whereby a contract is only susceptible to judicial interpretation if the wording is not clear.

Article 104 sets out the rules for the interpretation of a contract and is similar to Civil Codes in other Gulf Cooperation Council (GCC) jurisdictions. Article 104 provides:

- if the words of the contract are clear, its meaning is not to be changed and the words will be used to interpret the will of the contracting parties;
- if the words of the contract are unclear and there is a need to interpret the contract, then the court/arbitrator must have regard to the common will of the contracting parties and take into account the customary practice, the circumstances of the contract, the nature of the transaction and the dealings between the parties to determine the intentions of the parties;
- if there is any doubt about the interpretation of a contractual provision, that doubt is to be interpreted in the interests of the party who bears the burden of an obligation, which reflects the basic burden of proof principle; and
- it is not permissible to rely on any terms of a contract in isolation; rather the terms are to be interpreted in light of one another by giving each term a meaning that does not conflict with the other terms. Moreover, a contract clause must be interpreted in the context of the entire agreement.

The KSA Civil Code follows the objective doctrine of contract interpretation whereby a contract is only susceptible to judicial interpretation if the wording is not clear

Termination of contracts

Article 94 of the Code provides that 'if the contract is valid, it may not be revoked or amended except by agreement or by virtue of a statutory provision'.[9]

Article 107 deals with rescission for non-performance, and provides that where one of the parties has failed to fulfil an obligation, the other party can ask the court/arbitrator to order that the contract is either performed or rescinded.

Under Article 108, in the event that one of the parties does not perform an obligation, the parties can agree that the contract is to be rescinded without the need for a court ruling. Notice is required, unless the parties expressly agree otherwise.

Article 111(1) provides that, where the contract is rescinded, the parties are to be returned to the condition in which they were before the contract, and if that is not possible, the court/arbitrator may award compensation. Article 111(1) of the Code is unlikely to be applicable in instances where a contract has been partially performed as it will not be possible to restore the parties to their pre-contract positions. Instead, it is likely that there will be an award of compensation.

Under the Code (specifically Article 476) each party to a *muqawala* contract has the right to request the termination of the contract if performance has become impossible due to factors outside the parties' control. If this occurs, the party asking for the termination is obliged to compensate the other party for any resulting damage.

Tort claims

Article 120 of the KSA Civil Code provides that 'any fault that causes damage to others shall be compensated by the person who committed it'.[10] This sets out the basic rule for tort claims under the Code, namely that all damages, specifically acts causing harm, must be compensated.

Article 125 of the Code limits the scope of this rule and provides that a person will not be liable for the damage caused if the damage arose from a cause beyond the individual's control, 'such as force majeure, the fault of a third party or the fault of the injured party, unless otherwise agreed'.[11]

If more than one person is responsible for an act that causes harm, then under Article 127 of the Code, all those responsible will be jointly liable to pay compensation for the damage and the court/arbitrator shall determine the share of the damage each individual is liable for. If it is not possible for the court/arbitrator to determine to what extent each person is liable for the harm caused, liability will be shared equally.

It is worth noting the KSA Civil Code also codifies the concept of contributory negligence in Article 128, which provides that 'if the injured party participates in or increases the damage by his fault, his right

or some of his right to compensation shall be forfeited in proportion to his contribution'.[12]

Damages

As is dealt with by Articles 161 and 164 of the Code, the primary remedy under the KSA Civil Code for non-performance of an obligation is performance. However, if performance would be overly burdensome, the court/arbitrator may order an award in damages instead.

The aim, with an award in damages, is to cover the harm caused in full, thus returning the injured party to the previous position before the harm had occurred.[13]

Article 172 of the Code permits apportionment and provides that 'if the creditor participates by his mistake in causing the damage arising from non-performance or delay, or increases such damage, the provisions of Article 128 of this law shall apply'.[14] Article 128 of the Code, which is detailed above, has the effect of reducing entitlement to damages in proportion with the fault of the claimant.

Damages need to be determined (either in the contract or will be done so by the relevant court/arbitrator[15]) and can include loss of profits.[16] This is a major development as the courts in the Kingdom of Saudi Arabia have previously been reluctant to award loss of profits as it has been argued that this conflicts with the Sharia prohibition of *gharar* (speculation and gambling).

Liquidated damages

The KSA Civil Code has also clarified the framework for liquidated damages.

Parties are free to agree on liquidated damages according to Article 178 of the Code, which provides that 'the contracting parties may determine in advance the amount of compensation by stating it in the contract or in a subsequent agreement, unless the object of the obligation is a monetary amount, and no notice is required for the entitlement to compensation'.[17]

The court or tribunal may, however, vary such an agreement, if:

- the claimant did not suffer any actual damage, in which case, the pre-agreed contractual compensation will not be due at all;
- the level of contractual compensation is exaggerated compared with the actual loss incurred by the claimant, or if the obligation was completed in part, the amount of damages may be revised accordingly; and
- the respondent committed fraud or a gross error that causes the claimant a loss greater than that stipulated by the liquidated damages clause, in which case the amount of damages may be revised upwards to correspond with the actual loss.

Non-performance/exceptional circumstances

Article 94 provides that a contract can only be revoked or amended by mutual consent of the parties, or in accordance with a statutory provision. Therefore – unless otherwise allowed by a statutory provision or mutually agreed by the parties – each of the contracting parties must fulfil its obligations under the contract and has no right to terminate or amend the contract unilaterally.

Articles 110 and 294 deal with impossibility of the performance of obligations. They provide that, if performance of the contract becomes impossible due to reasons that are outside the control of the debtor, then the contract will be automatically rescinded and the obligor will be released from its obligation. However, Article 110 also stipulates that 'if the impossibility is partial, the obligation shall be extinguished only in respect of the impossible part'.[18]

Further to this, if the performance of a contract is possible, but is rendered onerous, then Article 97 of the Code applies, enabling the aggrieved party to request a renegotiation. The article stipulates that 'if general exceptional circumstances arise that could not have been anticipated at the time of contracting and their occurrence results in the performance of the contractual obligation becoming burdensome for the debtor such that it threatens him with a heavy loss, he may, without undue delay, invite the other party to negotiate'.[19] This by no means gives a party the right to stop performing its obligations. If the renegotiation, as provided for under Article 97, fails and an agreement is not reached between the parties within a reasonable time, the court/arbitrator may reduce the obligation to an 'adequate level'.[20] However, it is worth highlighting that the exceptional

circumstances required to trigger Article 97 must be 'general', meaning that they must affect the wider population and not the debtor only.

Article 471(3) of the Code, which falls within the *muqawala* provisions, provides wide ranging powers for the court/arbitrator to adjust the terms of the contract in order to restore the balance between the parties when exceptional circumstances of a general nature have radically changed the equilibrium between the parties. For example, the court can extend the performance period for a contractor, adjust the remuneration or, in some cases, terminate the contract.

According to Article 173(1) of the Code, contractual liability can be limited or excluded by agreement between the parties

Exclusion/liability

According to Article 173(1) of the Code, contractual liability can be limited or excluded by agreement between the parties. However, such a provision can be set aside where the relevant breach is fraudulent or constitutes gross negligence/serious default.

Moreover, Article 173(2) of the Code prevents exclusion of liability in respect of tortious claims.

Prescription period/time bars

One of the most significant changes introduced by the Code is a limitation on the period within which claims may be brought, as, under the 'old law', there was no prescription (or limitation) period. These particular provisions do not have retrospective effect.

According to Article 299 of the Code, the limitation periods listed below begin to run from the day on which the relevant right arose. Moreover, it is not permissible for parties to agree on making a limitation period shorter or longer (Article 305(1)).

In relation to tort claims, Article 143(1) provides that claims must be brought within three years of 'the date on which the injured party became aware of the occurrence of the damage and of the person responsible for it'.[21] Further to this, in all cases, a lawsuit shall not be heard after a period of ten years from the date of the damage.

In relation to claims in contract, Articles 295 to 297 of the KSA Civil Code set out the relevant limitation periods:

- Article 295 provides a general limitation period, that no legal action will be heard after ten years;
- Article 296 imposes a five-year limitation period for claims for professional fees and periodic renewable rights; and
- Article 297 provides a one-year limitation period for certain consumer and employment contracts.

As provided in Article 2 of the Code, the periods and dates mentioned in the Code are to be calculated according to the Islamic Hijri calendar, which consists of between 354 and 355 days per annum.

It is worth noting that these limitation periods can be interrupted in the following cases:

- the debtor's acknowledgment of the right, expressly or implicitly (Article 302(a));
- a judicial claim, even when made before a court that lacks jurisdiction (Article 302(b));
- any other judicial action taken by the creditor to invoke his right (Article 302(c)); and
- whenever there is a lawful excuse that makes it impossible to claim the right (Article 300(1)), including the 'bona fide negotiations between the parties that are ongoing upon completion of the prescription period'(Article 300(2)).

Notably, once the prescription period is interrupted, a new prescription period 'similar' to the first will commence 'as of the cessation of the effect resulting from the cause of the interruption'. (Article 304(1)). This stands in contrast with the legal position in other jurisdictions, where the original prescription period resumes once the interrupting event has ceased to have effect.

Conclusion

While it remains to be seen exactly how the KSA Civil Code will be applied in practice, and interpreted by the courts and arbitrators, there is no doubt that it is a welcomed legal development in the Kingdom of Saudi Arabia.

In particular, as discussed in this article, the KSA Civil Code offers clarity in relation to key principles relevant to contracts with

Saudi law as the governing law. It has codified the Sharia requirement for contracting parties to act in good faith[22] and has brought clarity to an array of contractual principles, ranging from contract formation to compensation and exclusion of liability. Finally, the Code has introduced limitation periods[23] into the law of the Kingdom of Saudi Arabia and so recognises that relations and rights are better protected when individuals and companies are obliged to bring their claims within a certain period.

1 Saudi Arabia Cabinet Decision No 820/1444 Civil Transactions Law promulgated by Saudi Arabia Royal Decree No M191/1444 (the 'KSA Civil Code').
2 Art 1 of the KSA Civil Code.
3 Preamble, Fifth Decision of the KSA Civil Code.
4 Art 37(1) of the KSA Civil Code.
5 Art 46 of the KSA Civil Code.
6 Art 95(1) of the KSA Civil Code.
7 Art 720, Rule 40 of the KSA Civil Code.
8 Art 68 of the KSA Civil Code.
9 Art 94(1) of the KSA Civil Code.
10 Art 120 of the KSA Civil Code.
11 Art 125 of the KSA Civil Code.
12 Art 128 of the KSA Civil Code.
13 Art 136 of the KSA Civil Code, which provides: '[c]ompensation shall be in full compensation for the damage; by returning the damaged to the situation in which he was or would have been without the damage'.
14 Art 172 of the KSA Civil Code.
15 Art 180 of the KSA Civil Code, which provides: '[i]f the compensation is not determined in the contract or under a statutory provision, the court shall assess it in accordance with the provisions of Articles (136), (137), (138) and (139) of this Law'.
16 Art 137 of the KSA Civil Code, which provides: '[t]he damage for which the liable party shall compensate shall be determined by the extent of the loss and loss of profits suffered by the injured party...'
17 Art 178 of the KSA Civil Code.
18 Art 110(2) of the KSA Civil Code.
19 Art 97(1) of the KSA Civil Code.
20 Art 97(3) of the KSA Civil Code.
21 Art 143(1) of the KSA Civil Code.
22 Art 95(1) of the KSA Civil Code.
23 Arts 295 to 297 of the KSA Civil Code.

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Junk science: the fallacy of retrospective time impact analysis

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Mathematical models are commonly used to predict the future. We have models to forecast the weather, models to predict price changes, and models to estimate risks and opportunities. We use these models to support our decision-making when planning events, trading stocks or making sports substitutions.

We use models to help us predict what will happen in the future, but we do not use models to predict the past, only to help us understand it. We do not look to a mathematical model to tell us yesterday's temperature, last week's stock prices, or whether our favourite team won or lost. We do not need to predict what happened yesterday. For that, we look to the record of actual events. If our model does not align with actual events, then the model is imperfect, at best.

Somehow, we have lost sight of this common sense understanding when analysing delays to complex construction contracts. Retrospective time impact analysis (TIA), one of the most popular techniques of forensic delay analysis, relies on building mathematical models of the past. Discrepancies between those models and actual events are commonly explained away or ignored. For both theoretical and practical reasons, the approach is wrongheaded, and courts have started to recognise it as junk science. Meanwhile, general confusion among the techniques available for delay analysis still makes it difficult to separate outdated retrospective TIA from more scientific approaches.

Introduction

Best practices in both science and law counsel us to observe the past and model the future. In Francis Bacon's inductive approach to the scientific method, observation precedes prediction, which helps to eliminate bias.[1] By contrast, Karl Popper found that most science begins with inspiration rather than observation, but through a deductive approach, the good scientist focuses on trying to falsify a theory rather than verify it.[2] Both approaches recognise the need to eliminate the bias inherent in our assumptions and to focus on the observable facts. Like the scientific method, rules of evidence are designed to help us to ascertain the truth.[3] Consistent with that intent, expert analysis and testimony should help triers of fact to determine what happened and avoid obscuring what happened by adopting flawed models.

Modern retrospective TIA techniques rarely align with good scientific and evidentiary principles. To understand why that is, it is helpful to recall that there was never any scientific theory behind TIA when it was first developed.[4] Jon Wickwire, who first introduced the legal community to the elements of the TIA technique in 1974, bluntly called it an 'exercise in salesmanship'.[5] So, what is being sold to triers of fact? And how many of them are still buying it?

AACE International notes that 'time impact analysis (TIA) has a bewildering array of regional variations'.[6] The term is maddeningly vague, to the point that the United States Patent and Trademark Office concluded that 'time impact analysis' and 'TIA' are no more than generic terms for any schedule analysis services for construction projects.[7] An expert that describes an analysis as a TIA without further definition is akin to a doctor saying that a patient has received heart surgery without clarifying whether the surgery involved an arthroscopic stent, a bypass operation or a full transplant.

Still, notwithstanding fringe uses of the term, modern TIA techniques have come to include a few key elements. These include the creation of one or more fragnets to model delay events and inserting those fragnets into a contemporaneous project schedule, normally the project schedule published most recently before each event occurred.[8] The delay analyst validates the project schedules, reviews actual events, creates fragnets to model the delays, inserts the fragnets into the contemporaneous schedules and observes the resultant impact on one or more contract milestones. That is the essence of the approach accepted in many tribunals. However, triers of fact have begun to recognise that the retrospective application of the TIA technique is unscientific and flawed.

The rise and fall of retrospective TIA

The TIA technique was developed in the US and was well-established by the 1980s.The application of the technique accelerated globally after its endorsement in the first version of the Society of Construction Law (SCL) Delay and Disruption Protocol in 2002.[9] More recently, some surveys have noted a collapse in the use of TIA, which observational analysis techniques have replaced.[10] Recent polls of practitioners by AACE International have shown a trend towards observational methods rather than after-the-fact modelling,[11] and US court cases show a decline in the use of modelled approaches to delay analysis in the past decade.[12]

Modern retrospective TIA techniques rarely align with good scientific and evidentiary principles

One reason for the trend away from TIA is the increase in computing power available since the 1980s. Modern computers allow observational techniques that recalculate the entire schedule network for every day of the project based on progress reported each day.[13] While TIA may require a significant effort by the analyst to create the fragnets for insertion, the computing power required to process the analysis is effectively no more than to calculate contemporaneous critical path method (CPM) schedules.[14] The ability to quickly recalculate the schedule based on the interim status of activities every day makes detailed observational techniques more practical and accessible than they were at the time TIA arose.

The recognition of the technical limitations of TIA provides another reason for the decline in its use. SCL notes that TIA 'does not capture the eventual actual delay caused by the delay events as subsequent project progress is not considered'.[15] SCL contrasts the TIA approach with the two approaches it describes as windows analysis—time slice

analysis, in which the analyst must determine 'the extent of actual critical delay during each window' and 'reflect the actual progress of the works' and as-planned v as-built windows, in which the analyst 'determines the contemporaneous or actual critical path in each window by a common-sense and practical analysis of available facts'.[16] Unlike prospective analysis, retrospective analysis should align with the facts of what occurred, as described in the windows techniques. Like a model of yesterday's weather, the TIA approach has little value for understanding the past if it does not align with the details of what happened.

In *Costain Ltd v Charles Haswell & Partners Ltd* (2009), the court provided specific and general criticisms of the TIAs submitted.[17] In *Costain*, each of the delay experts was criticised for choosing to analyse the delay events that were beneficial to their respective clients. The analysts controlled what to include or exclude in their analyses. As noted by Vernon, those critical decisions in TIA are 'often part of the appendices to expert reports and masked to seem like facts'.[18]

In characterising TIA as a 'cause & effect' approach, SCL highlights the unscientific nature of its application to retrospective analysis. In such an analysis, the ultimate effects of all events, taken as a whole, are already known. That evidence must be reviewed in detail and analysed to identify and isolate the *causes* of the net effect. In other words, the analyst already knows when a milestone was completed, and the delay to the milestone is the ultimate effect. That is an input to the analysis. The analyst must work to determine the causes of the delay, which are the outputs of the analysis. SCL calls this an 'effect & cause' approach, which aligns more closely with the principles of the scientific method.

By contrast, the TIA approach involves proposing causes and modelling effects. Once that is done, discrepancies between the model and reality are either resolved or simply ignored. To the extent they are resolved, the resolution is not in disproving the original assumptions (compare to Popper) but in the interest of reinforcing those assumptions by explaining any discrepancies between the model and the reality of what occurred. The counterparty is left to attempt to falsify the model. That approach may comport with an adversarial legal process, but it does not comport with good science.

Technical reliability should be the foundation for the selection of a particular method of analysis

US federal courts may bar expert testimony that is not based on 'reliable principles and methods'.[19] However, few complex construction cases are tried before a jury, and judges have less reason to fear that an expert witness may unduly persuade them. Thus, in complex construction cases tried at the bench, testimony based on methods of questionable reliability is more likely to be admitted than excluded. The court will weigh the reliability of the technique and the credibility of the expert, and any case may turn on the facts more than the delay analysis methodology selected. Likewise, arbitrators are more likely to admit expert testimony and judge for themselves whether or not it is persuasive.

Even in the case of a jury trial in the US, 'the trial court enjoys vast discretion in deciding whether to admit expert testimony under Rules 702 and 403'.[20] Judges do not appear likely to bar delay analysis methods. In *Second World War Theatre, Inc v Desimone Consulting Engineering Group, LLC* (2021), a party sought to exclude expert testimony regarding schedule delay analysis because the testimony failed to use a CPM of analysis, ignored projected completion dates, and failed to assess delays separately and in chronological order.[21] The court admitted the testimony, noting that determining which delay analysis methodology was convincing would be the jury's province. The court further stated that industry sources describing the 'legal acceptance' of methodologies were based on whether the analyses had been given greater weight by the factfinder in a particular case. Those reviews would not determine whether a particular method was admissible.

Similarly, concerning the SCL Protocol, the court in *Adyard Abu Dhabi v SD Marine Services* (2011) found that testimony on delay analysis is not necessarily guided nor constrained by whether a particular technique appears in the protocol.[22] In *Alstom Limited v Yokogawa Australia Pty Ltd* (2012), the court acknowledged the techniques listed in the protocol, concurred with both testifying experts in agreeing that the 'as-planned impacted' and 'as-built collapsed' techniques would not be appropriate for the case, and accepted the

experts' analyses termed 'as-planned v as-built analysis' and 'time impacted/windows analysis'.[23] The court followed the experts instead of guiding them on what technique to use.

Notably, these cases mark both a continued casualness in the naming of the delay analysis techniques cited in court opinions and the courts' willingness to admit a variety of methods. Thankfully, there is no trend of facial rejection of techniques based on casually applied names. Instead, courts have looked to the facts and the credibility of the experts in each case. That is a reasonable approach for the courts to take.

Court acceptance alone has never been a valid basis for the reliability of technical analysis. Instead, the supposed experts must themselves examine the reliability of their techniques. This is the better approach. Science and technical practice should be characterised first by relevant technical considerations, not acceptance by non-practitioners, even though they may be judges. Courts will assess the relevance of expert testimony, its reliability and its helpfulness against the potential for time wasting, confusion and prejudice.[24]

The inherent conceptual flaw of retrospective TIA

Expert practitioners must assess the reliability of TIA techniques with a cold eye. The reliability of a technique can be characterised by achieving similar results based on similar inputs. The TIA technique requires modelling delay events with fragnets created by the analyst. How likely is it that ten analysts, independently reviewing the same complex project, would model events similarly? If ten or 100 activities were in progress at the time of a delay event, would the analysts model the same impacts, the same relationships and the same durations? Would they report the same causes of delay? Given the number of variables involved, it is unlikely that they would. In a complex case, they could not reliably report the same result, given the same project documents as inputs.

The fragnet models used in the TIA approach are developed only after the analyst has reviewed other evidence to identify the delays to be modelled. During modelling, the analyst determines how the activities are related. These determinations are inputs to the analysis, not outputs from it. Not every day is analysed, not every delay is modelled and many critical variances are unexplained. This is a flawed and unscientific approach. It always has been.

Expert judgement in the creation of input assumptions is reduced and moved towards interpreting the analysis results

The critical path is the longest path of activities through the project schedule.[25] In evaluating delays to any project milestone, the analyst analyses the activities on the critical path and asks whether they progressed as planned. The analyst can do this for each day of the project. Determine the critical path, assess progress, calculate any impact on the completion date, assess any changes to the path and proceed to the next day. The net cumulative impact of all calculations will explain the net change to the project completion date from the original plan to the final as-built schedule. Based on these objective calculations, causes and responsibilities for critical delays can then be determined. This is a consistent and objective approach to schedule delay analysis, supported by the scientific method.

This approach is consistent with the 'effect & cause' category of SCL's Protocol and the observational approaches of AACE International. The inputs to the analysis come from the contemporaneous project schedules and as-built data. The outputs are objective and reproducible. Given the same input data and analytical process, ten analysts can produce the same results. This is not true of the TIA process, which requires the analyst to make hundreds or even thousands of decisions concerning what events to model, how to model them and how to tie those models to the contemporaneous project schedules. In short, observational approaches are more reliable from a scientific standpoint. Expert judgement in the creation of input assumptions is reduced and moved towards interpreting the analysis results. This fact-based and common-sense approach compares the contemporaneous plan to what occurred on the project, not some after-the-fact model.

Prospective TIAs

TIA remains useful in evaluating the impact of changes to project scope and assessing impacts to the contemporaneous schedule. Many contracts still specify prospective TIA, particularly for time extension requests associated with added scope.[26, 27] However, the use of prospective TIA in contracts does not imply that its retrospective application is valid, and some contracts now specifically exclude TIA for retrospective application and require an observational approach.[28]

Lawyers and analysts should not mistake prospective TIA in contracts as a recommendation for its retrospective use. Prospective TIAs can be useful in negotiating change orders and time extension requests. Still, once a project is completed and all impacts are in the past, better analysis approaches are available. Unresolved change orders may become claims, but once that happens, contemporaneous schedules and prospective TIAs should be analysed in comparison to actual events using an observational approach, ideally, contemporaneous period analysis.

Lawyers and analysts should not mistake prospective TIA in contracts as a recommendation for its retrospective use

Conclusion

We do not need a meteorologist to predict yesterday's weather or a financial analyst to predict last week's stock prices. We do not ask bookmakers to recalculate odds for games that are finished. Why do we build new schedule models of past delays, creating variances between the after-the-fact model and the as-built data?

Retrospective TIA techniques that spread during the 1980s lack a valid theoretical foundation and do not align with the scientific method. The techniques require extensive expert judgement to model analysis inputs and then focus on aligning those models to reality rather than falsifying the original assumptions. Analysis techniques should use the best available evidence, not after-the-fact models. Expert judgement should be applied after applying reliable analysis techniques, not to create inputs for those techniques.

AACE and SCL have made strides in clarifying and differentiating observational from modelled techniques, but there is more work to be done in this area. The industry should continue to work to highlight the principal elements of each technique so that one can be differentiated from another. The differentiation of techniques based on their principal characteristics will help the industry and courts to separate reliable approaches from junk science.

Notes

1 Francis Bacon, Novum Organum (John Bill 1620). For further discussion of application of Bacon's approach to the scientific method to construction schedule delay analysis, see Mark Sanders, The Theory of Delay, 2020 AACE International Transactions, CDR-3415.

2 Karl Popper, The Logic of Scientific Discovery [Logik der Forschung] (Julius Springer, Hutchinson & Co 1934). Popper was critical of Bacon's 'myth of a scientific method that starts from observation and experiment and then proceeds to theories', p 279, however, Popper's emphasis on falsification of theories as opposed to validation was consistent with that aspect of Bacon's approach. Bacon said, '[I]t is the peculiar and perpetual error of the human understanding to be more moved and excited by affirmatives than negatives, whereas it ought duly and regularly to be impartial; nay, in establishing any true axiom the negative instance is the most powerful'. (Bacon, 1620) p 13.

3 Fed R Evid 102 (US), eg, 'Purpose. These rules should be construed so as to administer every proceeding fairly, eliminate unjustifiable expense and delay, and promote the development of evidence law, to the end of ascertaining the truth and securing a just determination'.

4 Mark Sanders, 'Time Impact Analysis: Past, Present, and Future' (2024) AACE International Transactions, CDR-4398.

5 Jon Wickwire and Richard Smith, 'The Use of Critical Path Method Techniques in Contract Claims' (1974) 71 Pub Cont LJ 1.

6 AACE International, Recommended Practice No 29R-03, Forensic Schedule Analysis, Morgantown, WV, AACE International, 2011, s 1.4.

7 Capital Project Management, Inc v IMDISI, Inc, No 91121819 (US TTAB, 2003), 'The term "Time Impact Analysis" clearly is generic for the category of services listed in applicant's recitation [...] relevant public, including sophisticated attorneys, contractors and engineers in the construction field, would perceive the term as generic'.

8 AACE International, Recommended Practice No

29R-03, Forensic Schedule Analysis, Morgantown, WV, AACE International, 2011, s 3.7.E.

9 The Society of Construction Law, Delay and Disruption Protocol (2002). The original 2002 protocol stated that TIA was the preferred technique for retrospective analysis when appropriate information was available, but a 2015 rider and 2017 revision of the document abandoned the preference for TIA.

10 François Michaud, A Statistical Review of Delay Analysis Techniques Used Over the Last Decade www.hka.com/a-statistical-review-of-delay-analysis-techniques-used-over-the-last-decade/#_ftnref6 accessed 3 April 2024. Analysed cases from 2010 to 2021, where more than $5m was at issue and the delay analysis technique was not specifically prescribed by contract: in the Americas (32 per cent), Europe (28 per cent), Asia (14 per cent), Middle East (14 per cent), Oceania (ten per cent), and Africa (two per cent). The review found that the use of observational techniques far exceeded the use of modelled techniques, including TIA: as-planned v as-built (52 per cent), criticism of claimant's analysis without separate analysis presented (13 per cent), time slice analysis (12 per cent), TIA (seven per cent), retrospective longest path (five per cent), impacted as-planned (five per cent), collapsed as-built (three per cent) and other methods (two per cent). Based on the SCL categorisation, TIA, collapsed as-built and impacted as-planned are categorised as 'cause & effect' methods (AACE calls these 'modelled methods'). As-planned v as-built, time slice analysis and retrospective longest path are categorised as 'effect & cause' methods (AACE calls these 'observational methods'). Summarising, the effect & cause (observational) methods were used 69 per cent of the time; and the cause & effect (modelled) methods were used 15 per cent of the time. Criticism without an affirmative method was submitted 13 per cent of the time, a method not explicitly definable within SCL's classification was submitted two per cent of the time and one per cent is left as a rounding error.

11 Two polls of delay analysis practitioners conducted by AACE International in 2023 suggest a downward trend in TIA. First, in a survey of 498 webinar attendees in July 2023, AACE International found 77 per cent of attendees were using observational methods (30 per cent as-planned v as-built and 47 per cent contemporaneous period analysis) and 23 per cent were using modelled methods (20 per cent TIA and three per cent collapsed as-built). Another survey of 545 attendees at a presentation on TIA in September 2023 found that only 55 per cent of attendees were using TIA retrospectively, as opposed to prospectively.

12 W Stephen Dale and Robert D'Onofrio (eds), Construction Schedule Delays (Thomson Reuters, 2023). Figure 12-6 provides a table of 184 US cases from 1968 to 2023. The table finds observational techniques applied about twice as often as modelled techniques from 2013 to 2023. While the techniques tabulated are noted as 'accepted' or 'not accepted', they were all admitted as evidence, and questions on expert testimony regarding each application would properly apply to the 'credibility of the testimony, not the admissibility', *Hose v Chicago Northwestern Transp Co*, 70 F3d 968, 974 (8th Cir, 1995). In summary, all of the techniques were accepted as evidence, but individual applications were found more compelling than others in some cases. Comparing the results of this review to either the AACE or SCL categories of delay analysis is challenged by the unique categories used in Dale and D'Onofrio's approach, which combines windows analysis as a subset of TIA, calling it the 'Unadjusted TIA (Windows) Method' and noting 'The Windows method is a type of TIA that uses "windows" to look at the slices of time'. By contrast, both AACE and SCL separate windows methods from TIA. AACE notes that the term is used for observational methods, which align with SCL's 'effect & cause' methods, whereas TIA is a 'cause & effect' method. See also Richard D'Onofrio, 33 WTR Construction Law 6, acknowledging that 'a lack of standardised terminology has led to confusion'. Still, the recommended method of analysis in Table 12-6, 'adjusted TIA', appears in only five of the 34 cases reviewed since 2013. In those five cases, it is described as 'accepted' four times and 'not accepted' once, but in three of the four 'accepted' cases, the opposing party presented no rebuttal analysis. In the fourth, the analysis utilised schedules from a request for equitable adjustment prepared during the project using a prospective, not retrospective, TIA method. The opinions in these cases spent far more time on the project-specific facts and made no determination as to the acceptability of any schedule delay analysis technique. No firm conclusions as to the validity of any technique should be drawn from cases in which that technique was presented without opposition and the actual analysis is not available for review. This contrasts with the assertion that 'looking at acceptance rates in totality can paint a persuasive picture', as noted in the text that introduces Figure 12-6. A better takeaway from this review is that 'the scheduling experts largely talk past one another. Each expert says his approach to quantifying delay is correct and the other expert's approach is wrong', *CTA I, LLC v Dep't of Veterans Affairs* CBCA5826 et al 22-1 BCA (CCH) 38083, 2022 WL884710 (Civilian BCA, 2022)

13 Contemporaneous period analysis or as-planned v as-built techniques using the daily delay measure (DDM) technique may recalculate the entire CPM network daily or even hourly. See AACE Recommended Practice No 29R-03, s 3.1.F.1. The technique has been applied on a static/global basis or a dynamic/periodic basis, tracking the progress of every activity

in the schedule network for every day of the project. Commercially available software can now support application of these techniques. With respect to as-planned v as-built methods, there are significant differences between a DDM implementation and a 'total time' implementation. As with any method, the details of the implementation must be understood to determine whether the method has a valid scientific basis. Among these details, it is important to understand how criticality is determined and whether that determination is made objectively or subjectively.

14 Each iteration of TIA requires a standard CPM calculation done on one data date, whereas DDM techniques may be performed by updating and recalculating the entire schedule for every day of the update period to dynamically identify and measure delays, recoveries and changes to the critical path.

15 See n 9 above, p 36.

16 Ibid.

17 *Costain Ltd v Charles Haswell & Partners Ltd* [2009] EWHC 3140 (TCC). In addition to criticising the analysts for making limited investigations of the facts for some of the delays reviewed, the court makes several statements in its opinion that give pause with respect to the schedule analyses presented and their understanding. The court equates 'time impact analysis' with 'windows slice analysis', stating that both function by 'impacting the effect of that delaying event on the Contract Programme in order to establish the time effect of that event' (para 176). SCL later differentiated these as two separate techniques. The court also indicates that some of the analysis was made applying 'progress override' calculations, which may well have had a significant impact on the result of any analysis (para 177). The court indicates a preference for time impact analysis over time slice windows analysis ('windows slice analysis'), despite having equated the two (para 179). The court then states, 'It is not clear to me what difference to the actual results these alternative approaches lead to [...]' (para 179). Finally, the court states that the TIA model prepared for litigation 'eliminates any subjective distortion or manipulation' in the contemporaneous project schedules (para 180). In fact, a TIA must begin with a contemporaneous project schedule and does not necessarily align with actual project events, as noted by SCL. Considering that TIAs are normally prepared by parties seeking time extensions and any associated costs, they are not likely to be less biased than the underlying schedules from which they begin. TIAs normally show more delay than contemporaneous project updates, although perhaps that was not the case in Costain. In the end, the case highlights continued confusion over the basic elements of a TIA. It appears that the experts may have agreed to use either a TIA or a time slice windows analysis, which was interpreted as meaning that they had both agreed to perform a TIA.

18 L Vernon, 'Which methods of delay analysis have been used in disputes based on English and Commonwealth case law during the last 25 years? Does a practical approach to delay analysis selection . . .', Robert Gordon University Aberdeen, LLM/MSc Dissertation, Construction Law (2023).

19 Fed R Evid 702 (US).

20 *United States v Montas*, 41 F3d 775, 784 (1st Cir, 1994).

21 *Second World War Theatre, Inc v Desimone Consulting Engineering Group, LLC, et al*, No CV 19-11187, 2021 WL 1313408 (ED La, 2021).

22 *Adyard Abu Dhabi v SD Marine Services* [2011] EWHC 848 (Comm) (High Court Of Justice, QB Division, Commercial Court).

23 *Alstom Limited v Yokogawa Australia Pty Ltd* (No 7) [2012] SASC 49 (Supreme Court Of South Australia). The court here does not use the same names that the SCL Protocol uses for the four techniques it lists. In the case of the first two analyses, the court merely transposes words. More interestingly, the word 'windows' used by the court (and apparently, the experts) to refer to the third technique appeared nowhere in the 2002 SCL Protocol (the case was tried in 2012), and the word is used for two methods that are explicitly differentiated from TIA in the 2017 version of the protocol. Thus, the court here adopted the industry's general conflation of the terms TIA and windows, without regard for the particular language of the protocol. For a history of the conflation and differentiation of the terms TIA and windows, as the terms came into use during the 1980s and 1990s, see n 4 above.

24 Calvin Sharpe, Reliability Under Rule 702: A Specialized Application of 403, 34 Seton Hall L Rev 289.

25 AACE Recommended Practice 10S-90, Cost Engineering Terminology, 2024.

26 Federal Acquisition Regulation (US), eg, 'FAR 52.211-13, Time Extensions, is supplemented as follows: [...] the Contractor shall base its request on an analysis of time impact using the project schedule as its baseline'.

27 NAVFAC Specification (US), Unified Facilities Guide Specifications, eg, Section 01 32 17.05 20, Network Analysis Schedules (NAS) For Design-Build, 11/07, 1.7 Contract Modification, 'Submit a Time Impact Analysis with each cost and time proposal for a proposed change. Time Impact Analysis (TIA) shall illustrate the influence of each change or delay on the Contract Completion Date or milestones. Each TIA shall include a Fragmentary Network (fragnet) demonstrating how the Contractor proposes to incorporate the impact into the contract schedule.'

28 Department of Veterans Affairs Specifications (US), eg, s 01 32 16.13, Network Analysis Schedules – Major Construction Project, Design-Bid-Build (TIA appropriate for prospective analysis of added scope but not for retrospective delay analysis): 'Retroactive

TIA long after (generally over 3 months) the initiation of impact with "as-built" logic / duration will not be accepted as a normal practice. The contractor is required to perform TIA [...] within a month of VA issued Change or other directives to proceed with additional work.' Contrast with: 'All delays due to non-work activities/events such as RFIs, STRIKES, and similar non-work activities/events shall be analysed on a month by month basis and must be supported with a justification, CPM data and supporting evidence as the Contracting Officer may deem necessary for determination as to whether the Contractor is entitled to an extension of time'.

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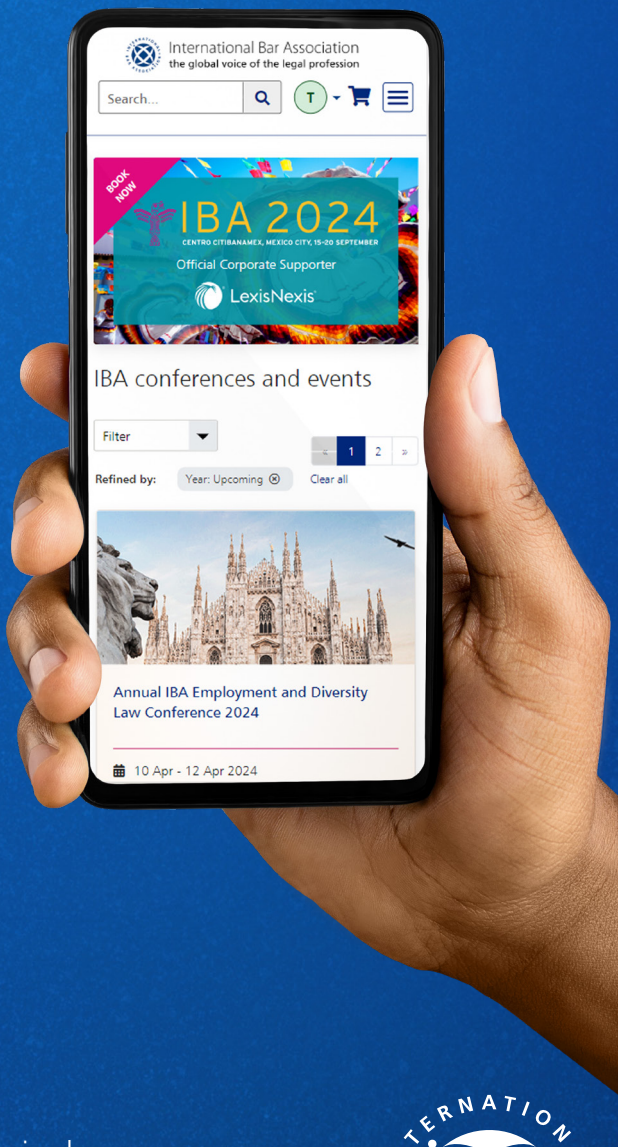

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