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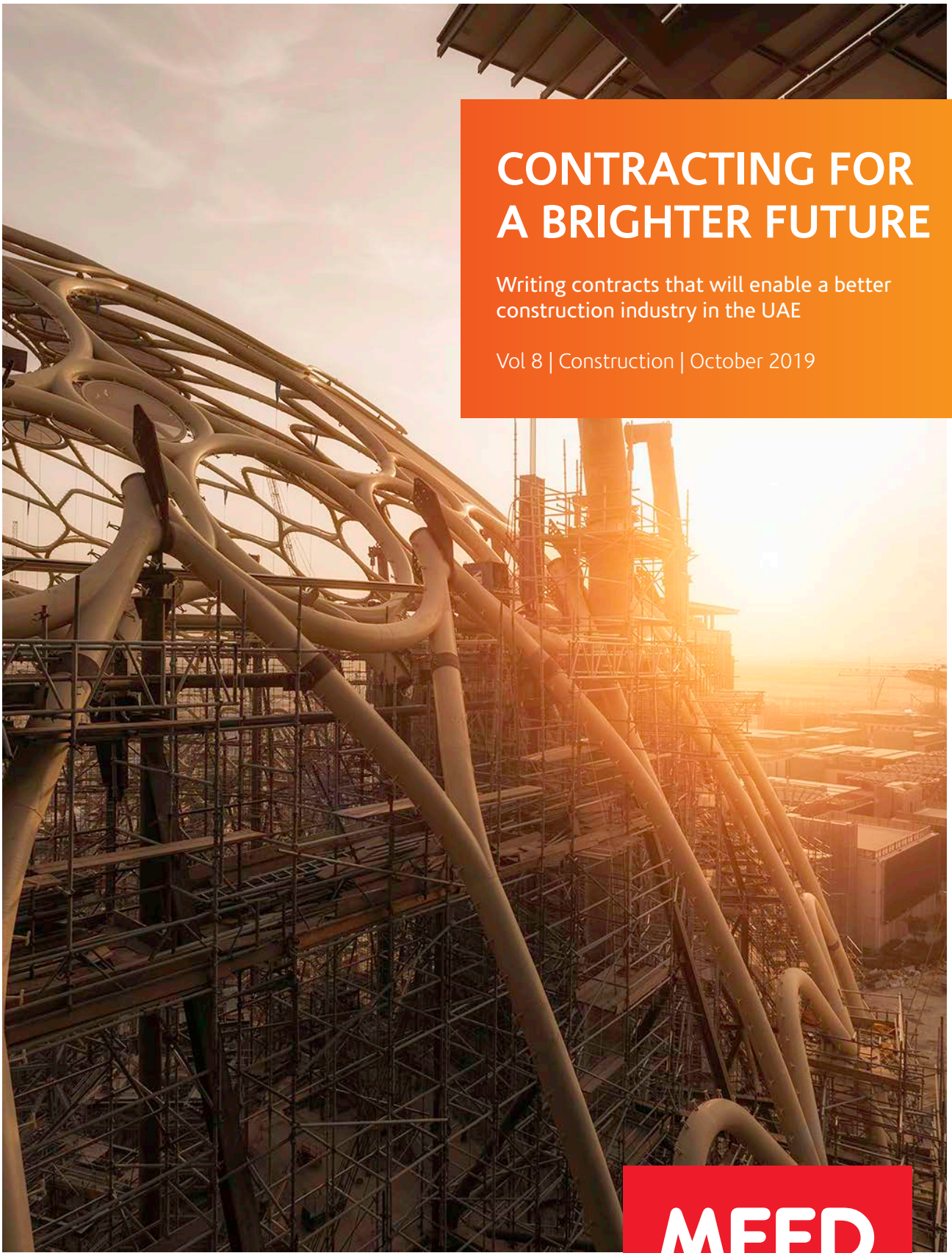

CONTRACTING FOR A BRIGHTER FUTURE

Writing contracts that will enable a better construction industry in the UAE

Vol 8 | Construction | October 2019

MEED
Middle East business intelligence

SHARING THE RISK

Traditional methods of procuring construction services are not working. It is time to rethink the contract

Any investigation into the challenges facing the construction industry tends very quickly to come down to a discussion about the types, the terms and the fairness of contracts.

A contract sets out the responsibilities and duties of the contracted parties. It defines the rules of engagement between the client and its contractors should any disagreement arise. A well-written, easy-to-use contract with fairly balanced ownership of risk can be a key success factor on a difficult project. A bad contract can turn a small on-site disagreement into a major dispute that can impact the delivery of a project and even the future of a company.

The construction phase of a project is typically the period that carries most risk. It is when the greatest uncertainties exist, such as technical challenges arising from unforeseen ground conditions, or late changes to the design by a client. Overlapping trade packages or international supply lines can add logistical complexities that are vulnerable to a multitude of events beyond the control of project personnel.

A well-written contract will allow for such problems and define clearly how the risk from these unexpected circumstances is shared between the client and its contractor, and how any disputes over cost overruns might be resolved.

There are three common criticisms of construction contracts in the region. The first is that they are often badly written and ambiguous. In addition, some construction clients demand arbitrary changes to a design without any formal documentation.

A second common complaint is the exclusion of the contractors from the early design phase of a project, which can lock construction problems into the design that could have been avoided with greater collaboration.

But the most commonly voiced concern is the unfair balance of risk. Contractors often carry almost all of the construction risk, with only limited ability to control some of these risks. This extends to the open-ended, on-demand performance bonds held by a project client that can be cashed in without agreement. Refusing such terms can translate into a struggle to win work for the contractors.

At the same time, new risks are emerging from the increasing adoption of advanced digital data technologies such as building information modelling (BIM) and smart contracts. These technologies are introducing new processes and relationships that are not covered by traditional contracts.

Responding to these developments provides an ideal opportunity to rethink the way construction contracts are written in the UAE. Better written, fairer contracts will support a more sustainable industry that can drive innovation, skills and growth in the UAE.

EXECUTIVE SUMMARY

- Construction contracts are key project documents that define the responsibilities and duties of the contractor and the client

- An effective construction contract clearly defines the duties of each party and should seek to provide a fair balance of risks between parties. It will be clearly written and easy to use and will support efficient management of time, cost, quality and safety, encourage dispute avoidance and promote fair allocation of risk

- The suite of contracts provided by the Fédération Internationale Des Ingénieurs-Conseils (Fidic) are the most common form of contracts used by the construction industry in the Middle East. However, these are often amended unfairly, transferring risk to contractors

- Extensive amendments to Fidic contracts can result in an agreement that no longer resembles the standard Fidic form and is more akin to a bespoke contract. While some amendments may be necessary, changes concerning risk allocation or untested, bespoke provisions are detrimental to Fidic's reliability

- Unfair risk allocation skewed in the favour of the project paymaster increases the likelihood of delays, payment troubles and disputes. This problem is further exacerbated by favouring contract models that support the 'lowest-price-wins' culture

- The growing adoption of digitalisation across construction projects introduces a new set of risks and protocols that need to be accounted for within construction contracts

- Building information modelling (BIM)-enabled projects must have BIM documentation, including employer information requirements and the execution plan, incorporated within contracts. Further supplementary terms covering copyright and risk allocation should also be included to ensure clarity for all parties

- Blockchain-powered smart contracts can serve as a single, objective truth for construction projects, but also present a new set of risks around definitions, variation orders and jurisdictional compliance. Fresh laws and codes need to be introduced as the current common law may not suffice in addressing disputes stemming from smart contracts

- In 2017, Dubai International Financial Centre (DIFC) Courts introduced a technology and construction division, a first of its kind in the region. Complicated engineering disputes, technology-related cases involving disputes over the ownership and use of data, and issues relating to emerging technologies are some of the claims that will be heard by this division

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BUILDING BETTER CONTRACTS

UAE construction must rework many of its traditional approaches to contracts to create a more productive and sustainable industry

Construction is an inherently risky business. A multitude of challenges ranging from unpredictable ground conditions to complex engineering and changing client demands midway through a project create unforeseeable project risks that can trigger disputes over fault.

In addition to the technical risk, the traditional mode of lowest-price-wins tendering squeezes contractor profit margins and encourages an adversarial culture of claims and payment delays between parties, thereby adding contractual risk to any enterprise.

A common criticism of construction clients in the UAE is that striving to obtain the lowest bid price from a contractor is no guarantee that you will secure the best value.

"The UAE market is too often driven by price, to the detriment of quality," says Andrew Mackenzie, partner and head of international arbitration at law firm Baker & McKenzie Habib al-Mulla. "The market is overcrowded and there is not as much work around as there used to be five or 10 years ago. Contractors and subcontractors are under huge price pressure, but are still expected to bear the lion's share of the risk on projects.

"On top of which," he says, "they are often expected to self-fund the project, after the initial advance, for large periods of time due to a customary slow payment process. This can and often does result in a breakdown in the relationship, which ultimately leads to disputes and value leakage on the project."

A frequent criticism of construction contracts used in the region is that they are inappropriate for the project on which they are being deployed.

"We see a lot of contracts that are not fit for purpose, such as construct-only templates being used for complex design and build or engineering, procurement and

construction (EPC) projects," says Bill Smith, partner at international law firm Ashurst. "The ambiguity and conflict that this creates in the allocation of design responsibility is undeniable."

And it is often not just the directly contracted parties affected by disputes. Commonly used 'pay-when-paid' clauses mean that when the main contractor is not paid, its entire supply chain is affected. This causes significant distress in the construction industry supply chain, and can have a knock-on effect on the economy at large.

In some cases, employers may pay on time, but the main contractor fails to pass such payments, including advance payments, to its suppliers on account of 'external' payment commitments that are unrelated to the works in question, thus depriving the project of liquidity.

"In this situation, the employer may need to take action to ensure that the supply chain is in funds to complete the works, particularly if lack of payment from the main contractor has resulted in the suspension of major subcontract works packages," says Euan Lloyd, partner at Al-Tamimi & Company.

"This action may be in the form of making direct payments to subcontractors, but this can be a perilous endeavour unless this issue is not expressly addressed by the drafting of the relevant contracts," he says.

In situations where owners hold up to 10 per cent of the contract price in cash (as retention), a power imbalance is created in favour of the paying parties. The purpose of retention is to mitigate risks on the project, but this can limit cash flow for contractors as the money is withheld during the project.

"It does not require a mathematician to deduce what happens (in the aforementioned situation) in a competitive market such as the UAE," says Ashurst's Bill Smith. "Once the advance payment (which the contractor secures with another on-demand bond) has been exhausted, the contractor will have little prospect of breaking even, let alone making a profit, until well after their work has been delivered."

Barriers to change

A cultural attitude centred around 'lowest price wins' and transferring risk to the contractor is wreaking havoc in the industry.

In the *UAE Construction Think Tank* whitepaper published in September 2019 industry experts highlighted the problem of contracts being unfairly skewed in favour of the project paymaster.

"[There is a need to recognise that] all participants ought to be entitled to make a reasonable profit from their efforts on a project," says Smith. "Nobody ought to be asked to accept a risk that they cannot manage, or which is not commensurate with the remuneration that they will receive from the project."

An additional barrier to change, particularly pertinent to the UAE, is the continued arrival of new entrants into the market, who bring with them both enthusiasm and a willingness to agree to difficult commercial terms.

"While there are construction companies in the market willing to accept the status quo, it is difficult to effect change," says Smith. "Turning this around, the biggest facilitator of a change in attitude (absent government intervention) would be the success of a number of projects that were procured along different lines. To be effective, that success would need to be experienced by not only the project owners, but also their supply chain and other stakeholders."

The transient nature of the workers in the UAE projects industry can mean that the lessons learned and the knowledge gained from both problematic and successful projects alike are frequently lost.

"In other parts of the world, that knowledge and experience would be retained and funnelled back into the industry so mistakes are not repeated," says Andrew Mackenzie. "This allows large disputes to be avoided as the problems are recognised earlier on and addressed properly with the benefit of experience."

A further issue facing the industry is poor contract administration on many projects.

"Failing to certify payments as required by the contract or ignoring claims for variations until the end of a project destroys the working relationship between the parties and creates cash-flow issues which, in turn, generate further delay and dispute," says Euan Lloyd.

Reworking the model

The increasing use of provisional sums on projects presents risks related to cost uncertainty, scope control and schedules. Pricing models should be selected as per the project's requirements.

Owners can consider more flexible pricing models, such as target price contracts, or even cost-plus contracts (within limits) where the scope is uncertain, or where (as

"Contractors and subcontractors are under huge price pressure, but are still expected to bear the lion's share of the risk on projects"

is common) the owner is inclined to change its requirements after the contract is signed.

"I have seen very large projects (>AED1bn) where over 50 per cent of the price was allocated to provisional sums, as the design had not been finalised," says Smith. "This is almost certainly asking for trouble."

Improving cash flow is another area where significant relief can be offered. Lloyd advises that at the tender stage, careful financial diligence should be undertaken by all parties to ensure that the employer, contractor and key subcontractors are financially able to deliver the project.

Meanwhile, different procurement structures (such as construction management) can be considered if there are concerns regarding the capacity of a single contractor to deliver a particularly sizable project. Proactive contract management may not resolve all disputes, but it would alleviate some of the cash-flow issues faced in the industry.

"Developers and larger contractors must have one eye on the future of the industry and ensuring a sustainable supply chain in order to make a positive change in relation to cash-flow issues in the industry as a whole," says Lloyd.

There is a notable rise in the adoption of construction-specific technologies such as building information modelling (BIM), drones and common data environment (CDE). Moreover, relatively newer technologies such as blockchain and artificial intelligence are also finding use in the construction process.

As construction players increase investments in technology, contracts need to evolve to ensure best practices are followed when it comes to using these solutions. Several questions must be addressed right at the beginning of the project including: Who owns the data within BIM models? Who is responsible for maintaining equipment in the case of drones and autonomous machinery? Who is liable for any damages incurred? What is the confidentiality protocol for data collected?

Clarity on data ownership and control, allocation of liability, security risks and intellectual property rights are just a few of the aspects that need to be considered by the parties in order to avoid expensive technology-related disputes later in the project.

Resolution mechanism

There is no construction-specific dispute resolution mechanism in the UAE, as is the case in other jurisdictions. Although Dubai International Financial Centre (DIFC) Courts has recently introduced a construction-specific court for disputes within the DIFC.

All standard form contracts, such as those produced by the Fédération Internationale Des Ingénieurs-Conseils (Fidic) or the New Engineering Contract (NEC), contain default dispute resolution mechanisms. As with bespoke contracts, these can be amended by the project parties.

"A good dispute resolution mechanism should only seek to contain the key essential details," says Mackenzie. "Overcomplicating the mechanism by adding multiple stages and/or options can, more often than not, only increase the parties' uncertainty and ultimately prolong both the time and cost of a dispute."

Allowing any degree of uncertainty in the drafting of the mechanism can leave one party open to exploitation further down the road. Parties need to ensure the

timeframe and procedure for these various stages are clearly set out.

It is time for change in UAE construction. Faced with ever higher technical demands, increasingly constrained budgets and new technologies, traditional practices are no longer adequate.

"We need a change of mindset," says Mackenzie. "All parties need to accept that the market has moved on and developed in the past 10 years. Margins are tighter than ever and the risk pendulum has swung too far towards the contractor, which needs to be redressed.

"Sticking religiously to the old system of doing things, including the current approach to the use of performance bonds and guarantees that are not properly administered, is not working and forcing good players out of the UAE market completely."

OPPORTUNITIES FOR CHANGE

CHALLENGE	SOLUTION
Fixed-price contracts or 'lowest-price-wins' model	Flexible pricing models such as target price contracts or cost-plus contracts, where the focus is on value rather than price alone
Unfair risk allocation, with the majority of pressure resting on the contractor	Proper negotiation of contracts, with fair assignment of risk and responsibilities for both the client and the contractor
Cash flow problems	Statutory adjudication procedure, similar to the UK and Australia, where a temporarily binding decision can be enforced to assist with cash flow even if the same issues are being re-litigated in the courts or in slower arbitral proceedings
Improper administration of a contract by all parties once it is signed	The contract should be treated like an instruction manual and abided by. Parties should not be afraid or reluctant to exercise their rights or indeed fulfil their obligations under the contract in order to protect themselves
Cultural attitudes and mindsets	Construction parties need to move away from a 'master and servant' model and adopt a fair distribution of responsibilities and risks
Contract terms such as "pay-when-paid" and the power held by the main contractor to suspend the dispute resolution process with its subcontractor affect the entire supply chain	Make such clauses invalid. The main contractor must be expected to bear the risk of non-payment by the employer rather than pass this on to its subcontractors
On-demand performance bonds	Instead of being on-demand, performance bonds should only be available if a judicial or arbitral decision confirms the contractor's liability for a specific amount
Lack of uniform arbitration system in the UAE, with arbitrators from different legal systems and with varying approaches to how arbitration should be conducted	Include DIFC-litigation clauses in the contract to direct arbitration to the technology and construction division of DIFC courts. A DIFC construction law would build the community's trust in seeking DIFC litigation

SETTING THE BENCHMARK

Fair and balanced risk allocation is key to a successful construction contract, which in turn will promote healthier relationships in the industry

The characteristics of a successful construction contract are not universally accepted, but will usually include the following as a minimum: clarity of expression; ease of use; strong management of time, cost, quality and safety; encouragement of dispute avoidance; and fair and balanced apportionment of risk.

A successful construction contract requires a careful balance of these competing characteristics. Ease of use, by way of illustration, has been sacrificed in the newest edition of the Fidic Conditions (2017) in pursuit of stronger project management and dispute resolution provisions. The resulting conditions have doubled in length.

An emphasis on proactive programme time and cost management has become a key measure of a successful form of construction contract. The NEC4: Engineering and Construction Contract, which is widely used on public projects in the UK, places this characteristic ahead of the traditional function of a contract, describing itself as a contract that 'facilitates the implementation of sound project management principles and practices as well as defining legal relationships'.

The Fidic Conditions have started to adopt this philosophy, albeit belatedly, in the latest edition. The new obligation on the engineer to conduct a consultation process and a provision permitting either the engineer or the contractor to require the other to attend management meetings fall short of the approach adopted by the NEC4, or by contracts focussed on collaboration, but nevertheless, mark a step in the right direction.

Reducing disputes

Dispute avoidance provisions are a fashionable area for updates to standard form construction contracts and have proved an effective way to reduce the number of formal disputes. The provisions encourage an amicable resolution of claims during the currency of a project and police the parties' conduct using a genuinely neutral third party.

A dispute avoidance and adjudication board (DAAB) features prominently in the latest edition of the Fidic Conditions (2017). More significantly perhaps, the DAAB provisions cannot easily be eliminated simply by deleting a small number of sub-clauses. Instead, the drafters have purposefully made this difficult by distributing the DAAB references throughout the conditions.

Policing the parties' conduct and resolving disputes on an ongoing basis was, however, the purpose of introducing a dispute adjudication board into the previous edition of the Fidic Conditions (1999), the uptake of which has been patchy. In particular, dispute adjudication boards have not proved popular with owners and developers in the Middle East.

The most controversial aspect of construction contracts is almost certainly the unfair allocation of risk.

"Although onerous contracts increase the risk of disputes and reduce productivity, the temptation to skew the risk profile has proved difficult to resist"

It is no secret that many contracts are awarded on terms that cannot realistically be described as either fair or balanced. That such contracts may cause damage to the contracting industry in the medium to long term by reducing investment, innovation and productivity rarely influences the conduct of individual project participants.

On the contrary, a contract that imposes a high level of risk on, for example, a contractor is likely to be viewed as a success by an employer, especially if the risk is not adequately priced.

Unfair contracts

The immediate and present danger of onerous contracts lies, however, in the increased likelihood of claims and disputes which consume time and costs, distract the project participants from more productive activities and reduce the scope for collaboration and team work.

An unfair allocation of risk increases the likelihood of claims or disputes with an accompanying loss of productivity, not least because a party facing loss or damage in the absence of blame or control has a strong self-justification for seeking ways to avoid such loss or damage.

Deviating from a standard industry approach to risk allocation increases the likelihood that a court or a tribunal will apply the contract in a manner that adjusts the position to something closer to the norm, opening a gap in each party's respective expectations of the likely outcome of a dispute (one party steadfastly relying on the wording of the contract; the other equally steadfastly believing that the outcome will be adjusted to a fair result).

Although onerous contracts increase the risk of disputes and reduce productivity, the temptation to skew the risk profile has proved difficult to resist.

Recognising the broader benefits to the industry of a balanced risk profile is a job for regulators and industry bodies. Fidic, through the Golden Principles, has signalled an intention to take a tougher approach to significant departures from the risk balance achieved by the Fidic Conditions.

In many jurisdictions, governments have outlawed the most serious contractual abuses.

In conclusion, a successful construction contract is one that has, as a minimum, the characteristics outlined above, including a fair and balanced risk allocation. For these characteristics to be consistently adopted on the region's projects, intervention from governments and industry bodies is required.

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REDUCING THE ODDS OF CONFLICT

Good leadership with an agreed common vision and goals lower the risk of contract disputes in the construction sector

In considering how to avoid disputes, it is easy to dive into the mechanics of dispute resolution and arbitration, but how often do we consider risk during the bid process, or when setting out to procure the services of a consultant or contractor? No right-minded person enters into a contract with the intent of disrupting or creating confusion. And yet time and again, projects suffer from contracts that are not clear or balanced.

A large proportion of responsibility lies with those who craft the documents that are issued as requests for proposals (RFPs) or invitations to tender, but blame also lies with those who make the decisions about the level of risk that is to be managed in-house.

Problems can be caused by service providers that seek to win tenders at the lowest cost, then recover profit through claims and variations. But passing on risk and artificially lowering the bid price lead to contracts that often unravel during the course of a project that changes in scope or deliverables before completion.

So, whether deliberate or inadvertent, if parties fail to get to grips with risk management at the outset of a project, then conflict and arbitration arises.

Appropriately managing the changing risks throughout the programme and ensuring that contracts are clear about the mechanics of dispute resolution are undoubtedly key to avoiding such fall-outs.

Use of early warnings is a classic way of getting the contracted parties to review and discuss issues before they become serious, but too often matters are deferred or just ignored.

Adversarial approach

Allocating risk so the parties that are best placed to address and mitigate risk are made responsible, allows

contracting for services to become a cleaner, clearer prospect. Many such standard contracts have existed for some time– for example the Institution of Civil Engineers' NEC4 suite of contracts.

Yet many standard contracts are amended to either pass on all known risks to the other party or to make them water-tight against risk of claim, often engaging the legal profession for such purposes.

Risk dumping either leads to more expensive bids or creates disputes. Any changes implemented are then exploited by the other party, far more than if interests are aligned and risks correctly apportioned. In many of the more complex projects in the region, there are a large number of unknowns at the time of contracting, including dependencies on adjacent works or interfaces with third parties. Such dependencies should be clear in the RFP, whether known or not.

Similarly, and most importantly, any gate or milestone that is linked to a penalty should be very clearly defined and the underlying objectives known to both parties.

Unfair penalisation due to a lack of understanding of the root cause often creates cases for disputes and should be avoided.

> "… Many standard contracts are amended to either pass on all known risks to the other party or to make them water-tight against risk of claim, often engaging the legal profession for such purposes"

Collaborative effort

In a world where competitiveness is defined only by the lowest price, there is a risk that the outturn costs may in fact end up higher, and yet this region has fine examples of partnering that demonstrate how a collective and collaborative approach results in better outcomes – with no disputes!

Partnering and alliances have been around in the industry for at least 20 years and some would argue far longer; such approaches to contracts are intended to create a fair outcome – though not necessarily one without faults or rectifications/compensations. It is an approach that helps all parties in a project to deliver effectively and better understand the challenges facing others.

One such example was from a project in the UK for a naval base where a contractor's requests for information were transferred between four parties before responses were given a week later. At an alliance seminar, the final responders were outraged by the suggestion that they had taken more than 24 hours to reply.

However, once it was explained how the problem had arisen, without accusing any party, a new way of addressing the issue was instigated and key design staff were seconded to site with the authority to resolve queries.

Judicious use of the right contract type that encourages collaboration and aligns parties' interests – time, profit, quality and risk apportionment – make a huge difference, but it is also up to the professionals involved to demonstrate the right behaviours.

The contract should set the template for the project team to follow and be clear on how parties should behave, but ultimately it comes down to the leadership of each contracted party to agree the common vision and goals, then engage their teams accordingly.

ABOUT THE AUTHOR

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BALANCING RISK IN THE MARKET

Major amendments to widely-used, standard Fidic contracts risk damaging the reputation of their fair and reliable principles

Construction is one of the most specialised, detailed, complicated and risk-oriented sectors.

Contract terms and conditions play an important role in distributing risks between the construction parties. At an early stage of the project, while preparing the tender documents, the employers decide on the risk allocation. In the Middle East, the majority of employers will elect to transfer most of the risks to the contractor without recognising the effect of such decisions on the project's execution and completion.

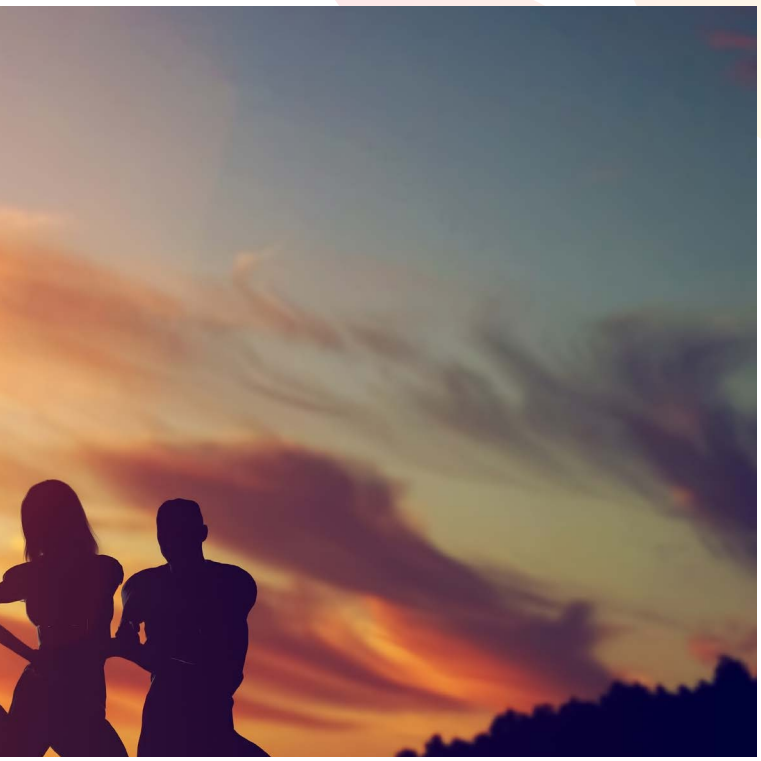
The successful handing over of the project should be the main target of the contract parties. In order to achieve this, the parties must first select the right procurement methodology based on the project's nature and utilisation.

Upon selecting the procurement strategy, the design criteria and intended purpose should be fixed at the outset of the project. A comprehensive, detailed and fully coordinated design for each element and phase should be produced before the start of construction for that phase. Minimising design changes and variations, taking a balanced approach to risk allocation and ensuring proper contract administration are also crucial to the successful completion of the project – as is securing the finances to pay the contract price before work starts.

Most importantly, a cash positive project should be maintained throughout by adhering to the following:

Payment terms should not be prolonged. Contractors must receive payments on time. Given today's market challenges, I do not believe the employer should stick to a 56-day period to release payments, as this leaves contractors with a minimum of two to three months of work in progress, which is not sustainable given the one-digit gross profit margin being priced by contractors these days.

Advance payment is a must in any construction contract, along with allowance for payment against major material and equipment shipment and delivery to the



site. In addition, it is essential that the bill of quantities is balanced and not in any way front-loaded, which could lead to the contractor losing interest in completing the project after receiving its profit.

Bank guarantees that are unconditional, on first demand and automatically renewed should be prohibited. Over the past two years, we have noticed a phenomenon in which bank guarantees are prematurely called on. A third-party report from a pre-nominated list should be a prerequisite to any bond calling.

The risk of price escalation for crucial commodities, changes in legislation or design (in construction contracts), concurrent delays, unforeseeable physical conditions and payment delays should remain the employer's risk. It is irrational to shift such risks to the contractor.

A strict and swift time period for the determination of variations and claims should be implemented with a mechanism to allow for an on-account payment of any recognised variations or claims.

An on-the-spot, fast and effective dispute resolution mechanism should be applied. Alternative dispute resolution solutions exist in the market for parties to implement. Adjudication should be part of the dispute resolution legal system (regardless of whether it is mentioned in the contract or not) with an effective time bar. The adjudicator's decision is then binding, and both parties

"The successful handing over of the project should be the main target of the contract parties"

FIDIC'S FIVE GOLDEN PRINCIPLES

In 2019, Fidic published "The Fidic Golden Principles" at a conceptual level to encapsulate the essence of its contracts.

The Fidic brand represents fair, balanced and well-recognised forms of construction and engineering contracts and agreement forms. Fidic general conditions are based on fair and balanced risk/reward allocation between the employer and contractor and are widely recognised as striking an appropriate balance between the reasonable expectations of these contracting parties.

The problem that has arisen is that Fidic contracts are increasingly being adapted with significant edits to the general conditions and the omission of parts of the wording. Lately, these replacements and changes have been found to be substantial, to the extent that the final contract no longer represents Fidic's principles.

To protect its brand, Fidic published its Golden Principles (GPs) as follows:

GP1: The duties, rights, obligations, roles and responsibilities of all the contract participants must be generally as implied in the general conditions, and appropriate to the requirements of the project.

GP2: The particular conditions must be drafted clearly and unambiguously.

GP3: The particular conditions must not change the balance of risk/reward allocation provided for in the general conditions.

GP4: All time periods specified in the contract for contract participants to perform their obligations must be of reasonable duration.

GP5: Unless there is a conflict with the governing law of the contract, all formal disputes must be referred to a Dispute Avoidance/Adjudication Board (or a Dispute Adjudication Board, if applicable) for a provisionally binding decision as a condition precedent to arbitration.

> **"Transferring the risk could also mean the contract is awarded to a tenderer who fails or was incapable of estimating the risks properly"**

must give effect to it immediately. The decision must also be recognised and enforced by the courts.

An effective procedure to deal with any defaults should be part of the contract document. Delays in inspection and approvals, releasing payment, certification, nomination and the like should be addressed with clear steps.

It is very important to observe the changes in the construction market and update the above criteria accordingly. For example, if the contractor is making a one-digit profit margin, then having 10 per cent retention, 10 per cent performance security and 56-day payment terms is excessive and will leave the project cash negative at all times. Based on the project size and nature, the conditions of the contract should be amended accordingly.

Fidic contracts

The Middle East market heavily uses Fidic contracts (either Fidic books or Fidic wording). In its wide range of books, Fidic maintains a balanced risk allocation between parties and addresses all the above issues effectively.

This includes keeping many provisions open to the parties to decide on based on the project's size, complexity and the construction market situation in that region.

Provisions such as performance bonds, retention, advance payments and allowing for a payment against a material on site or when shipped are optional for the parties to agree on.

Fidic has evolved its terms and conditions over the years to address construction market demand. A standing Dispute Avoidance/Adjudication Board (DAAB) has been implemented to resolve disputes in a simultaneous manner during the project execution.

The experienced, independent, impartial and neutral board is available at the beginning of a project to help prevent disputes before work starts by providing an informal, non-binding opinion on any conflicts.

If a dispute does arise, the DAAB gives a binding decision within 84 days.

In its second edition of The Rainbow 2017 suite, Fidic has provided a strict time bar for the engineer's agreement and determination, which is binding but can be revised by the adjudicators' decision or the arbitral award.

Employers should always avoid the heavy amendment and transfer of risks to contractors. Doing so reflects negatively on the tender and construction period, and can lead to the submission of a higher contract bid if the contractors assess the risk properly, tender failure, disruption to the project's implementation, and non-participation of reliable and capable contractors.

Transferring the risk could also mean the contract is awarded to a tenderer who fails or was incapable of estimating the risks properly.

Furthermore, there is the likelihood of poor construction quality, delays due to lack of risk contingency, undermining of trust, repeated groundless claims from the contractor, frequent disputes, and, in extreme cases, the eventual termination of the contract.

It is evident that a balanced contract will benefit the project's completion and ultimately the contract parties. It is time for the Middle East construction sector to adopt that approach and minimise heavy amendments to Fidic contracts, and realise that keeping construction work profitable will benefit both the project and the employer.

ABOUT THE AUTHOR

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SUB-SURFACE TENSIONS

Specialised forms of construction require a unique approach to contracting, but is the Middle East ready to embrace new processes for resolving disputes?

Fidic forms of contract have been in use since 1957. The Middle East quickly embraced the early forms, but heavily amended them for their own use. Revised forms were released in 1999, however there has been reluctance to use them in the Middle East and the Dispute Adjudication Board (DAB) provisions are struck out when they are used in favour of arbitration.

In 2017, Fidic released new Red, Yellow and Silver book forms of contracts which included a new form of dispute board, the Dispute Adjudication/Avoidance Board, commonly known as DAAB. The DAAB is supposed to be a standing board that is appointed from the project outset.

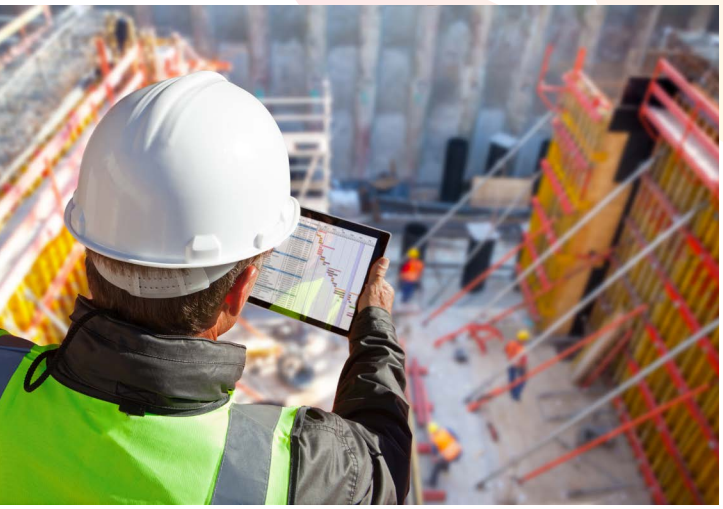
Under sub-clause 21.3 ("avoidance of disputes"), the DAAB may be jointly requested by the contracting parties to aid and/or informally discuss and attempt to resolve any issue or disagreement that may have arisen between them. Moreover, the DAAB may invite the parties to request assistance in dispute avoidance. This task cannot be carried out during the period assigned to the engineer to make an agreement or a determination on any claim.

The proactive focus on the avoidance of disputes before they are allowed to materialise or crystallise should encourage timely issue-spotting and overall a more co-operative approach, to the benefit of all parties.

Specialised construction

In 1890, the first electric railway, deep beneath the surface, began operating in London. Since then, cities around the world have recognised the benefit of building their transport deep underground. The Middle East, with the rapid expansion of its cities, is also embracing this method of construction. The Dubai Metro has built some 13km of its lines and nine stations underground.

Construction contractors, employers and other industry parties have long recognised that contracting practices for tunnels and other sub-surface works should be dealt with differently to other types of construction. The very nature of contracts for works below ground level means that risks are less likely to be identified at the tendering and risk allocation stage and therefore less easily managed or priced.



> **"The very nature of contracts for works below ground level means that risks are less likely to be identified at the tendering and risk allocation stage and therefore less easily managed or priced"**

As new forms of technology are embraced and implemented, new forms of contracts and processes for resolving disputes should also be implemented. After many years of work, Fidic and the International Tunnelling and Underground Space Association launched the First Edition of the Conditions of Contract for Underground Works (Emerald Book) in 2019 which includes the use of a DAAB.

Reformed guidance

The principal aim of the Emerald Book has been to provide a framework and much-needed guidance on underground projects, responding directly to the complexity and unpredictability of tunnelling and other such construction works.

The Emerald Book has not been used in the Middle East yet but it could help project delivery, preventing time and cost disputes. There are no conditions of contract prescribed for use by all Dubai Government departments. However, many government entities, including the Roads and Transport Authority and the Dubai Municipality, have their own conditions of contract based on the 1987 Fidic Red Book, with amendments to impose additional risks and obligations on the contractor. Several others use heavily amended 1999 Yellow Books.

The Emerald Book differs from the Yellow Book. One example is the risk linked to uncertain ground or site conditions which, as previously outlined, is not often possible to assess with sufficient precision in advance of the contract and which cannot therefore be assigned entirely to the contractor.

The Emerald Book again guides parties towards the early exchange of geotechnical information, such as the reaction of the ground to excavation and support.

The mechanism for achieving this is through a single centralised contractual source called the Geotechnical Baseline Report (GBR), which categorises risks as foreseeable or unforeseeable.

The foreseen risks arising from the physical ground or geological conditions, obstacles and adverse reactions to excavation and ground support processes are assigned to the contractor. This is in addition to the production rates and cost of performing the works under those same conditions.

Conversely, those same risks, if identified as unforeseen, are allocated to the employer, warranting the granting of an extension of time and/or reimbursement of cost to the contractor.

All sub-surface physical and geological conditions not addressed in the GBR are to be considered unforeseeable. These defined contractual interpretations of foreseeable risks and allocation between the parties are an important development in the Emerald Book and should improve certainty and clarity in these areas.

Alongside this valuable contractual certainty there is still some scope in the GBR for flexibility. An example of this are the varying sub-surface physical conditions encountered during excavation periods.

As the risk related to these conditions is allocated to the employer, time for completion should be adjusted by the variation of the relevant conditions within the limits defined by the GBR, as this variation affects the critical path of the works, of a section or any milestone of those works. This time for completion should be extended in the event of more onerous conditions than described in the GBR and reduced if less onerous.

If you want to use modern technology, shouldn't you use modern forms of contract and dispute resolution as they go hand in hand?

ABOUT THE AUTHOR

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TECHNOLOGY SHAPES CONTRACTS

As construction undergoes massive digital disruption, clauses may need to be re-defined to account for inevitable changes in process

Digital technologies continue to transform the construction industry, and innovations are impacting both on-site work, and the management of documentation on the operations side.

Construction-specific technologies and systems, including building information modelling (BIM), common data environment (CDE), blockchain, artificial intelligence (AI), predictive analytics and the Internet of Things are impacting contracts in the industry in two ways.

Firstly, there is contract administration, which involves deciding how contracts are set up, distributed and managed. The second impact is on the evolution of contractual terms and definitions.

The owner or general contractor (GC) is now mandating the technology systems that are to be used on the entire project to ensure that there is one version of the truth as opposed to disparate project management systems.

Contractual key performance indicators are being redefined based on historical performance data and stipulations are often made in the contract to enable data capture for ongoing use.

One growing area of interest is blockchain-enabled smart contracts. The benefits of blockchain include transparency, traceability, security and efficiency, which provide the opportunity for unalterable record keeping and data aligned to each participant. All of these attributes are key to the successful execution of contracts.

Essentially, blockchain is a shared or distributed ledger that records all transactions. It automates payment management, creates decentralised access to information across the supply chain and, in general, promotes more "relational equity", which satisfies many requirements from a contractual standpoint.

A smart contract is computer code that manages the process, executes the agreement and enforces it, ensuring that each action of every party involved happens as it should. The other important aspect is independence; the contractual process does not belong to one person or organisation but is automatically managed and verified by

> **"Contracts have now started specifying the use of methodologies such as BIM as part of their standard mandate. This raises a host of issues around risks, liabilities, ownership and responsibilities when it comes to data associated with the models"**

the computer network connected to the blockchain. This is similar to neutrality, which has become so important to the collection of information across a project and the evolution of BIM models.

But the success of smart contracts will rely on every stakeholder adopting the same technology, be it blockchain or something else. If not, then the process will fall down due to a missing link in the chain.

Data is the new gold

Whether smart contracts are adopted or technology is used in another way to manage the contractual process, the key ingredient is data – particularly the resulting collection, capture and use of information from a single or multiple projects.

Using stored data, AI and predictive analytics, organisations can understand what happened on past projects, helping to predict and control future developments.

Historical data and access to smart contracts can drive key decisions in supply chain partner selection, setting up contractual performance terms, payment obligations and risk management.

However, complete transparency may lead organisations to feel that they are losing a competitive edge. When data is opaque, it creates information asymmetry where some players (usually owners and GCs) have more data to make decisions than others. It is a common belief that subjectivity is required when dealing with construction contracts.

Contract terms and definitions

The increased collection and use of data also places greater importance upon governance and the standardisation of project delivery to ensure that the right information is captured by all parties on a project. Content to determine this is increasingly being seen in contracts prescribing the data that has to be collected, by whom, when and in what format. Often this is determined by an employee information requirement, which has been in use in the industry for some time.

Contracts have now started specifying the use of methodologies such as BIM as part of their standard mandate. This raises a host of issues around risks, liabilities, ownership and responsibilities when it comes to data associated with the models.

All of this information feeding into a BIM model working within a true CDE establishes greater certainty around the process, helping to reduce errors and duplication on a project and facilitating handover between the design, build, and operational phases. The data can also be used to resolve any disputes arising between stakeholders.

The future of contracts

Construction contracts have evolved more in the last decade than ever before. Many of the present-day scope documents, construction schedules, general conditions, cost estimates and construction insurance clauses now include phrases and terms that would not have appeared previously.

We are seeing an increase in the use of terms around BIM, CDE and clauses specifying the shared technologies to be used on a project. As construction technology evolves, so will contracts. This creates a virtuous cycle whereby new technology is specified in contracts, driving innovation and adoption, which then influences the way that contracts are written in the future – and the cycle continues.

ABOUT THE AUTHOR

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FINDING A SOLUTION

With the rise in digital technology, courts are set to play a vital role in resolving the growing complexity of construction disputes

The past decade has seen the UAE's construction market experience a series of dramatic highs and lows, with market volatility impacting on stakeholder supply chains, resulting in an increase in project delays, cancellations and late payments. The number of projects falling into dispute has increased, leading to an active claims market.

An international affair

The nature of major construction projects undertaken in the UAE typically results in international contractors and designers collaborating by way of consortia and joint venture arrangements to execute a project.

As a result, the claims market in the UAE has a high percentage of English-speaking practitioners, including claims consultants, quantity surveyors, engineers and lawyers, often resulting in English being the preferred language for dispute resolution.

As claims made to the onshore Dubai Courts are heard in Arabic, it has been common practice for parties to elect to have construction disputes resolved by arbitration. This allows the involved parties to choose the language of the dispute, as well as nominate arbitrators with the specialist expertise required to resolve the particular issue.

In this respect, the Fidic Conditions of Contract, which are commonly incorporated into major construction contracts in the region, contain a default dispute resolution clause in favour of International Chamber of Commerce (ICC) arbitration.

However, it is common for parties to amend this default provision to elect for Dubai International Arbitration Centre (DIAC) or Dubai International Financial Centre – London Court of International Arbitration (DIFC-LCIA), or Abu Dhabi Commercial Conciliation & Arbitration Centre (ADCCAC) where there is a connection to Abu Dhabi.

Whilst arbitration continues to remain a popular choice for dispute resolution in this sector, it can be perceived as a drawn-out process, resulting in an award, which still thereafter requires steps to be taken before the courts prior to execution.

There is equally a concern that, although parties have the right to nominate their own arbitrators, many appointed panels still lack the requisite expertise to deal with increasingly sophisticated construction disputes in a region where projects are becoming leaner, greener and more technologically advanced.

While the 2018 arbitration law has gone a long way to alleviating many concerns, with specific parameters to ensure efficiency, there remains real scope for a viable alternative for regional construction dispute resolution.

DIFC litigation

For parties who wish to elect for court litigation as opposed to arbitration but still wish for disputes to be heard in English, the DIFC Courts exist as an alternative to the onshore Dubai Courts.

DIFC Court rules borrow heavily from the English Court rules and disputes are heard in English. DIFC is an "opt-in" jurisdiction, open to disputes from all over the world. While the DIFC Courts will hear disputes under any law the parties have agreed, parties also have the option to elect for DIFC law, which is based on English common law and, in the absence of DIFC authority, the Court will look to the law of England & Wales. All of this makes the DIFC Courts an attractive option for cases with international parties.

In 2017, leveraging its standing as an international court and furthering its reputation for innovation, the DIFC Courts established a Technology and Construction Division (TCD) to hear complex technology and construction disputes, providing greater certainty for businesses in the construction sector seeking to make claims in an English-speaking court.

Justice Sir Richard Field, a specialist in construction claims, sits as the head of the TCD. TCD rules promise a more expedited court process with a tighter case management regime, intended to see complex cases resolved within 12 months from date of service of the claim form. The TCD provides a forum for both post construction disputes and disputes arising during the course of the project, which require determination with some urgency to ensure the relevant works were not further delayed by reason of the dispute.

The introduction of the TCD has the potential to significantly impact how construction disputes are heard in the region. TCD rules are in line with, and largely based on, the structure of the Technology and Construction Court in England and Wales which is highly regarded for dealing with specialised construction disputes efficiently with the requisite level of expertise.

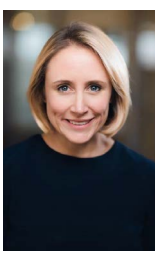
To date, the DIFC Courts are yet to publish any records of cases being heard by the TCD. Although a number of cases have been referred to the TCD, those claims have thus far been reallocated to the DIFC Court of First Instance as a result of not meeting the complexities warranting TCD adjudication.

The TCD is intended to adjudicate claims genuinely meriting specialist construction expertise, as opposed to being matters which can be properly understood in ordinary terms as a commercial dispute.

By way of guidance, the DIFC Court has outlined that construction cases entailing complicated engineering disputes, and technology-related cases involving disputes over the ownership and use of data, and issues relating to emerging technologies, can be expected to meet applicable criteria.

Through the introduction of the TCD, the DIFC Courts have addressed the growing need for sector-specific expertise in dispute resolution, strengthening the UAE's construction dispute resolution capabilities by providing a real alternative to arbitration for construction dispute resolution in the English language.

ABOUT THE AUTHOR



Joanne Strain
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THE BIM CONTRACT MINEFIELD

A lag in the development of BIM standards and protocols for construction contracts is a growing concern for lawyers

The evolution of building information modelling (BIM) can be traced back decades. Despite its long history, BIM remains the most significant disruptor of traditional construction practices in recent years. Part 1 of the new international standard on BIM, ISO19650-1, defines BIM as "use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions".

US-based technology giant Autodesk defines BIM as "an intelligent 3D model-based process that gives architecture, engineering and construction professionals the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure".

"It is important to emphasise that BIM is a process, not a software," says BIM legal specialist, May Winfield.

"There remains no uniform and accepted legal definition of BIM. While it is accepted that BIM can be measured by levels of maturity, there also remains a lack of formal or agreed legal or specific definition for these levels of maturity."

While the BIM process has obvious and proven benefits at the planning and construction phases, it also allows developers to capture the data they create during the delivery stages to be used to save time and costs, improving quality in post-construction operations and maintenance activities.

More broadly, BIM data can potentially be utilised at a city or even national level. It is this potential that is seeing the rapid proliferation of BIM mandates on projects around the world. And few places are adopting the system as rapidly as Dubai.

Circulars issued by Dubai Municipality in 2013 and 2015, mandating the use of BIM in certain categories of construction, reflect the global recognition of the efficiency, cost and planning benefits of 3D modelling platforms.

Other key government agencies in Dubai such as the Roads & Transport Authority (RTA) are rolling out the use of BIM in all of their construction contracts. The RTA also recently launched the region's first BIM centre.

Protocols required

As with any new technology, however, there is a lag in the development of standards and protocols for BIM contracts and legal principles.

As BIM is established as standard on large-scale projects, it is important to ensure clarity of the contractual and legal position to avoid disputes, including potential contractual risks that might arise through the use of shared data.

In 2017, the UK saw its first major construction dispute centred around BIM. The case between local entities Trant Engineering and Mott Macdonald is reported to have arisen due to a lack of clarity on contractual terms regarding access to the common data environment where the BIM and other electronic data was stored.

When the parties fell into dispute over the scope of work and payments, Mott Macdonald retracted the services it was providing as BIM coordinator and revoked access provided to Trant for the design data held on the ProjectWise platform.

As BIM is becoming more widely accepted, the dispute provides a cautionary warning that there is the potential for costly, drawn-out legal disputes, unless contracts set out BIM processes, obligations and risk allocation clearly, in order to deal with the changing and complex legal issues surrounding BIM processes and data.

While BIM is widely understood to refer to the process of creating digital models of a project, it is crucially important to be aware that, in legal terms, there is no standard definition.

Typical models include three dimensional (3D) representations of a structure, but increasingly advanced versions are being used that include 4D (time), 5D (cost) and even 6D (as-built operation). These can be used for document management, project coordination and modelling throughout the lifecycle of a project, from initial concept plan through to operation and maintenance.

However, most developments in the region are yet to exploit the full potential of this process and the stipulated BIM level is often limited to a managed computer-aided design (CAD), with some requiring a 3D element to the design.

Things are slowly changing and the Middle East is moving towards BIM working levels equivalent to leading-edge markets such as the UK, but it is essential for the development of BIM within the region that the ideas of collaboration and data exchange are fully understood so that effective contracts can be written.

> **"... there is the potential for costly, drawn-out legal disputes, unless contracts set out BIM processes, obligations and risk allocation clearly, in order to deal with the changing and complex legal issues surrounding BIM processes and data"**

Copyright

The BIM models comprise objects, data and other contents, all of which may have separate copyright or ownership. If contracts do not specify the correct or adequate copyright or rights of use, this could cause problems for the project and avoidable disputes; for example where a client did not obtain the rights of use or copyright that they had understood was being provided.

The BIM documentation generally consists of a suite of documents, in particular employer's information requirements (EIR) or exchange information requirements, using the international BIM standards, ISO19650, terminology and a BIM execution plan (BEP) stating how BIM data will be required, BIM deliverables and other BIM processes such as software requirements and file naming conventions.

The problem is that these documents are not always incorporated properly in the contract of a BIM-enabled project and therefore are not binding.

The EIR and BEP are also insufficient and require further supplementary terms within the contract, either in a 'protocol' schedule or in the body of the contract, that deal with the more legal aspects, such as copyright and risk allocation.

These documents ensure that parties know who is responsible for what, and avoids gaps and uncertainty in the event of an issue arising during the project.

Confusing terminology

Various commentators have asserted that the BIM process is plagued by confusing technical jargon. It is possible that contracts are being written by lawyers who may not fully understand the terms or the issues involved. The client may also not be sufficiently aware of BIM to give clear instructions and thus assess the risk allocation.

A solution to many of these problems lies in the inclusion of clear and sufficiently comprehensive BIM terms in standard contracts.

The Fidic Rainbow Suite of contracts is the predominant standard form of contracts used for construction in the region, but despite recent updates to these documents, they have not yet specifically addressed BIM.

"It is important to emphasise that BIM is a process, not a software"

However, Fidic has stated that it is currently working on two documents for BIM-enabled projects – a 'Technology Guideline' and a 'Definition of Scope Guideline Specific to BIM', which are to be released shortly. In the meantime, guidance can be obtained from other jurisdictions, such as the UK, which has successfully incorporated BIM into contracts for some years now.

It is clear that in the coming years, BIM will become increasingly commonplace throughout the projects industry. It is also clear that the BIM process will change and develop over time.

A vital step to enable construction industry lawyers to write adequate contracts that are able to cope with BIM is to provide resources such as guidance and training that will enable them to get up to speed on BIM from a legal and contractual perspective.

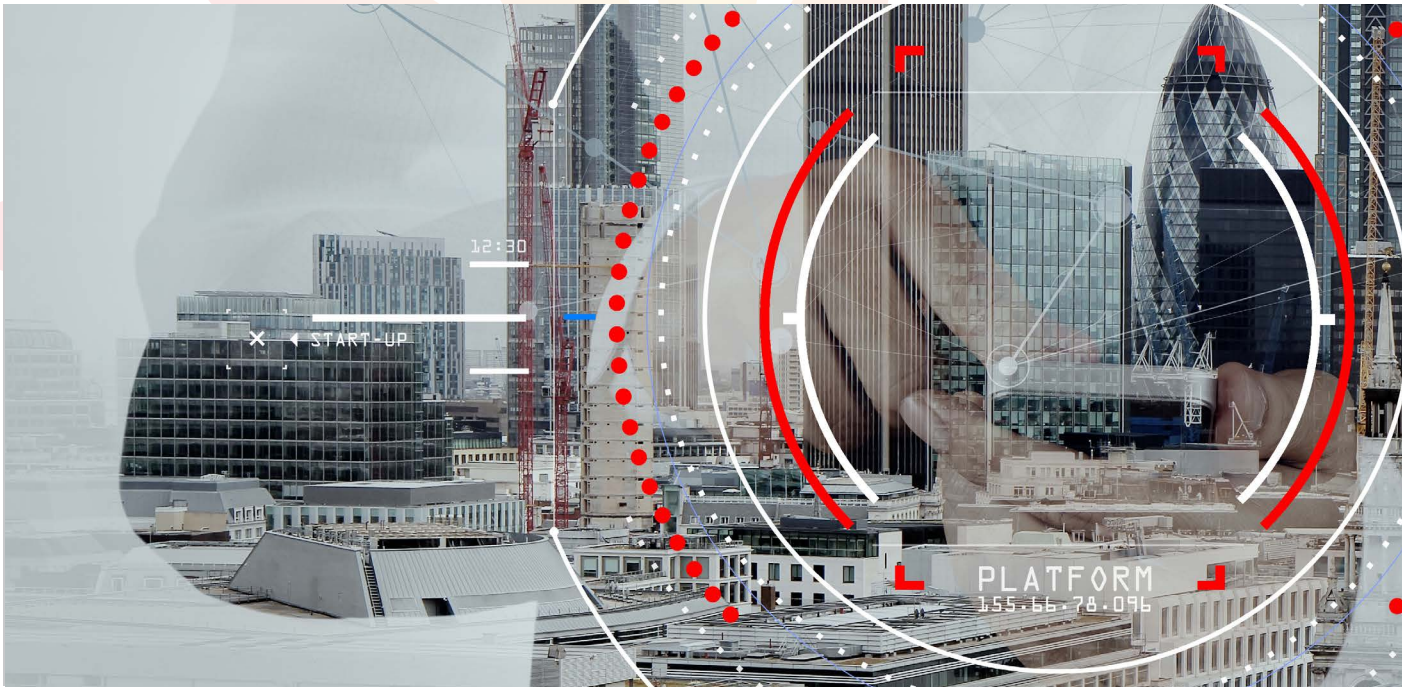
By **Danelle Wyper** and **May Winfield** *(@buildlaw_arttea)*

KEY RECOMMENDATIONS FOR WRITING CONTRACTS FOR BIM PROJECTS

- Clarify the client's expectations from the beginning of the process
- Use the employer information requirements (EIR) to raise tender queries
- Specify ownership at each stage, with the uses clearly defined
- Ensure early clarification of responsibility
- Integrate systems, while ensuring that all platforms and software are compatible
- Extend insurance cover for the client, contractor and supply chain
- Consider insurance cover for cyber risk and big data
- Be aware that there are no obligations for providers to maintain software updates that may render the model unusable in the long term

Further reading:

- *Winfield Rock Report*, available for free on the UK BIM Alliance website
- BS EN ISO19650 Transition Guidance



CONSIDERING BIM'S RISKS

Standard form contracts have not yet delivered clarity on BIM protocols, so consideration should be given to key risk areas

The adoption of digital systems is having an unprecedented impact on the construction sector. While BIM's potential to unlock and exploit construction data is continuing to gain traction globally, its adoption in the Middle East over the past decade has been relatively slow compared to the UK and similar jurisdictions.

However, the Dubai government is a long-standing promoter of the use of technology, and BIM is no exception. The first official guidance was issued in 2013 ('Circular No. 196 on the use of BIM on certain categories of buildings'), followed by an update in 2015 (Circular No. 207), in order to encourage and "expand the usage of BIM" on large and complex construction projects.

The popular standard forms of contracts produced by the Joint Contract Tribunal (JCT) and NEC have addressed the use of BIM by including specific provisions, namely a protocol document and an execution plan, covering the contractual issues integral to the application of BIM. Surprisingly, the Fidic Rainbow Suite contracts, the commonly used standard form of construction contract in the UAE and the wider region, is yet to address the use of BIM in their general conditions.

In the recent launch of the second editions of the Red, Yellow and Silver Books, we saw significant changes to these standard forms. Yet BIM was only referenced through a special advisory notice within the special provisions.

However, the Fidic advisory notice announced the preparation of two specific guideline documents; a 'Technology Guideline' and a 'Definition of Scope Guideline Specific to BIM', both of which are yet to be released.

While other standard forms of contract have been criticised for failing to provide sufficient, detailed BIM protocols, it is hoped that the pending Fidic documents will provide some clarity.

In-house counsels are currently dealing with issues surrounding BIM, such as new equipment, data-led planning, cyber risk, liability and funding along with local regulations and commercial implications. To deal with some of these issues, the conditions provided in the popular standard

form of contracts can be modified by attaching BIM-specific contract annexes. Fidic has released a list of some of the key risk areas which it considers to be applicable to any BIM-enabled project:

- Misunderstanding the scope of services
- Use of data for an inappropriate purpose and reliance on inappropriate data
- Ineffective information, document, or data management
- Cyber security and responsibility for 'holding' the models or data
- Definition of deliverables, approval and delivery

In our view it is important to manage these risks at an early stage of any BIM project in order to minimise business risks.

BIM's collaborative approach implies the real-time sharing and processing of data, so the structure of the teams, and the involvement of pure IT and IT security specialists should be carefully considered as part of the project management process. Particular care should be taken with the following aspects:

> **"BIM technology is the door to new possibilities which the industry cannot ignore"**

Data ownership and licensing

One of the first issues to determine is ownership of the BIM data and how to protect it through copyright and other laws. Contracts should clarify ownership, but not hinder the overriding goal of encouraging participants to fully realise the model's potential in the lifecycle of the project. When project team members contribute data that is integrated into BIM, licensing issues can arise.

Data entry

Consideration is required as to who will control the entry of data into the model and who will be responsible for any inaccuracies. Both entail a great deal of risk.

Consequently, requests for complicated indemnities by BIM users and the offer of limited warranties and disclaimers of liability by designers will be essential negotiating points that need to be resolved before BIM technology is utilised. Time spent imputing and reviewing BIM data for accuracy is a new cost to be factored into the design and project administration process.

Technical interface

As the dimensions and schedule are layered onto a BIM model, it is important to ensure that somebody is appointed to take responsibility for the technological interface that is used by the various programmes, including the accuracy and coordination of project costs and scheduling data.

It is recommended that some definition of the design of the project and a protocol for sending binding communications is included in the contractual documents, as the project participants may not have a meeting of minds concerning what has been offered and what has been accepted. BIM technology is the door to new possibilities which the industry cannot ignore.

Without dampening enthusiasm for the new technology, it is prudent to be aware of the risks involved at the outset of any project. In this context, involving your external legal advisers at an early stage to ensure that the appropriate contract language is included should ensure a successful project.

ABOUT THE AUTHORS

Abdulla Galadari (top) is a partner, dispute resolution, and **Peter Bowring** (bottom) is a partner, construction and infrastructure, at Galadari Advocates & Legal Consultants

LEGALITIES OF BLOCKCHAIN

Blockchain represents an opportunity to reduce the disputes that define the construction industry – provided the legal issues are managed

The region has suffered during straitened times with slow and, in some instances, non-payment of certified sums. This has contributed to cashflow problems in supply chains and high rates of insolvency.

A possible solution lies in blockchain-powered smart contracts, which could automatically trigger the transfer of funds from the client to the contractor upon certification for payment by the engineer.

Implementing automated payment mechanisms triggered by the issue of certificates would ease cashflow problems significantly.

Unfortunately, automated payment schemes alone would not alleviate the problematic trend across the UAE for employers to pay the contract sum, but not recognise variations. Given the immutable nature of smart contracts, it would not be possible to make variations to the original scope of work.

However, there could be alternative ways to record variations, such as updating the original smart contract with an intermediary smart contract, which holds the same address as the active contract but executes the updated code. Once updated, payment would flow automatically (or credit given) for the varied works. If there has been no

update to reflect a variation, no payment would be made. There may be arguments on whether a given circumstance should give rise to a variation, but such arguments could take place earlier, avoiding claims further down the line.

The process of updating smart contracts to reflect variations has the potential to introduce a new discipline around formal variation orders, and could see contractors refusing to proceed with 'changed' works in the absence of an official code update.

This could not only improve cashflow but would also reduce the number of disputes over entitlement for variations based on alleged verbal instructions, drawings and site instructions.

As the automatic triggered payment mechanism is likely to rely on certification of the works or, as a minimum, the input of progress data by a third party, there may still be complaints about the lack of impartiality of engineers and inspectors. Perhaps the genesis of smart contracts is the impetus the region needs for codified laws regulating the impartiality of those with such responsibilities.

Coding for delays

Delay-related disputes may be problematic as the allocation of a period of delay could be a challenge for the immutable coded parameters of the smart contract. However, it should be possible for specific categories of delay events, such as variations, force majeure and local authority approvals to be programmed into the smart contract's code along with the allocated relief; an extension of time and/or additional payment.

Should a delay occur, liability would be automatically assigned on the allocation of the event to a category. Stakeholders could connect to a BIM 4D model to identify the time impact (and BIM 5D in time to quantify prolongation cost). This would require the pre-definition of the consequences of concurrent delay, which is already becoming more common in paper contracts.

The deliverables of the entire project could be individually tracked, allowing all stakeholders to manage workflow, monitor the progress of all subcontractors and the project as a whole and act upon any issues identified with increased speed and efficiency.

"The courts or tribunals will need to gain an understanding of the legal and contractual nuances of the technology"

This in itself should reduce the incidence of disputes. Where disputes do arise, the blockchain provides a single record accessible by all stakeholders, operating as a single objective truth for the entire term of a project.

Provided a mechanism is in place to ensure trust in the input behind this single truth, the record could result in enormous efficiencies to the evidential aspect of any dispute.

New disputes

Unfortunately, getting any of this wrong has the potential to introduce a new breed of disputes based on inaccurate or incomplete data at the outset or in the record as the project unfolds.

Interpretation of smart contracts could be a challenge. Evidencing the parties' intentions or explaining how the agreement is accurately reflected in a smart contract's code must be considered at the outset.

In the event of disagreement about technical aspects of the single truth, parties may need to produce evidence of the smart contract's code compliance with contractual obligations. The courts or tribunals will need to gain an understanding of the legal and contractual nuances of the technology to provide effective resolution.

Legal principles will take time to evolve and become enshrined in law before their application can be predicted. It will be crucial for parties to clearly define the governing law and jurisdiction clause of a smart contract.

The decentralised environment means that the smart contract can have a host (or node) in several different countries: imagine, for example, a main contract headquartered in Europe (1st node) entering into a smart contract with a UAE client (2nd node); or international contractors and sub-contractors, representing nodes scattered across the globe.

This has the potential to create complex jurisdictional issues unless the contract defines the governing law and jurisdiction should manage this risk.

In the wake of a drive to protect personal data in the Middle East, stakeholders will need to ensure data protection requirements are complied with, which may be accomplished by encrypting blockchain data. Legal challenges of this emerging technology present a significant barrier to the construction industry. But with the potential to reduce disputes, these are challenges that can and must be overcome.

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Samantha Martin (top) is an associate, and **Suzannah Newboult (bottom)** is a partner at DLA Piper

THE WAY AHEAD

Do existing and emerging risks present the opportunity to create better construction contracts that lessen the likelihood of disputes?

The delivery of a construction project requires careful planning and clearly defined contractual requirements from the beginning to ensure that the project is completed on time and within the budget.

As long as a project runs smoothly, any contract signed between project parties is merely a legal document. But in the event of a dispute, the contract becomes a vital element, which, if badly written, can turn into a noose. If the contract is well-drafted, on the other hand, it will ensure a swift and equitable resolution.

A good construction contract should be fair to all signing parties. A contract that is oppressive and heavily in favour of one party can create bad blood and has the potential to turn even the smallest disagreement into a toxic confrontation.

From the client's perspective, a good contract sets out performance expectations from the contractor, tools to measure its performance as well as the power to enforce remedies in case the performance is not up to the mark.

For the contractor, the contract works like an instruction manual, enabling it to perform in a timely and cost-conscious manner with interests aligned as closely as possible to those of the client.

Disputes are common in the construction industry and project parties should not shy away from addressing any issues that could lead to a dispute early. Contingency plans should be defined in the contract, including clarification of the appropriate dispute resolution mechanism. Considerations must include choice of law, choice of venue, choice of language (for international contracts), whether the dispute will be subject to litigation or arbitration, and which party gets to choose the forum.

Off-the-shelf Fidic contracts, by definition, require amendment to meet the specific needs of a particular project. But Fidic's 2019 Golden Principles discourage heavy modifications because this can weaken their effectiveness. The tendency in the region to make substantial amendments must therefore be addressed.

It has become increasingly important to account for technology solutions within contractual agreements. This is to support the adoption of innovation in construction, which is also being encouraged by new regulations.

Project parties need to understand the definitions of a technology in order to avoid ambiguity in contracts. Aspects such as data ownership and inheritance, copyright and usage must be clearly defined. This can be aided by specialist lawyers, competent in technology nuances.

Finding a way to remove the traditional adversarial approach to contracting is vital if we are to create a more productive and efficient construction industry.

And the most important step in achieving this is to write better contracts.

ABOUT MEED

MEED has been integral to delivering business information, news, intelligence and analysis on the Middle East economies and activities for over 60 years. Attracting a key senior management audience through its content and activities, MEED is a media brand, publication and data business that covers a spectrum of services which inform, engage, connect and ultimately support our subscribers and partners in their business development and strategic growth.

Recently acquired by GlobalData Plc, MEED is now part of one of the largest data and insights solution providers in the world with the capacity to build global communities for our clients.

Our purpose is to support the region's companies make better and more timely decisions through our innovative data solutions and grow through our comprehensive and world-class marketing solutions.

To find out more email: info@meed.com

ABOUT MASHREQ

Established in 1967, Mashreq is the oldest bank in the UAE, with award-winning financial solutions and services. Throughout its 50 years' history, Mashreq has differentiated itself through innovative financial solutions, making it possible for its customers to achieve their aspirations.

Today, Mashreq has a significant presence in 11 countries outside the UAE, with 21 overseas branches and offices across Europe, the US, Asia and Africa.

Mashreq launched its new Vision and Mission recently, outlining its commitment towards its clients, colleagues and the community. In line with its vision to be the region's most progressive bank, Mashreq leverages its leadership position in the banking industry to enable innovative possibilities and solutions for its customers across corporate, retail, international, treasury and Islamic banking.

Mashreq is proud to be the first financial institution in the UAE to be awarded the Gallup Great Workplace Award for four consecutive years from 2014-17. Mashreq also continues to invest in recruiting, training and developing future generations of UAE national bankers.

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