RECENT DEVELOPMENT OF VIETNAMESE LEGISLATION TO ADDRESS NEEDS OF NATIONAL AND INTERNATIONAL CONSTRUCTION PRACTICE

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ABSTRACT

This article endeavours to provide a high-level analysis of the noteworthy advancements of the Vietnamese laws and policies in recent years. Firstly, the analysis delves into the legal implications arising from the endorsement by Vietnamese state competent authorities of the utilization of internationally recognized standard forms of contracts, notably exemplified by the application of contract templates provided by the FIDIC. Secondly, the analysis will explore the evolution of legal framework facilitating the ADR regimes in construction sector in Viet Nam. This scrutiny will focus on the Dispute Adjudication Board mechanism and the practical application of multi-tiered dispute resolution agreement in the construction. This assessment aims to illuminate the dynamic landscape of resolving disputes within the construction realm, shedding light on the efficacy, challenges, and legal underpinnings of these evolving ADR methods. Finally, within the pervasive context of the Fourth Industrial Revolution that permeates all sectors, this paper will delve into the practical and legal implications stemming from recent government directives mandating the obligatory integration of Building Information Modelling (BIM) technology in construction practices.

Keywords: FIDIC Forms of Contract, Dispute Adjudication Board, Liquidated Damages clauses, Pre-arbitration Procedures, Building Information Modelling

1. INTRODUCTION

In recent decades, Viet Nam has risen to prominence as the most recent East Asian growth engine, attracting the attention of international investors¹. It is in the midst of a profound transformation. The country's economic landscape has been reshaped by the government's forward-looking reforms, propelling it into the ranks of the world's fastest-growing economies. As a result, construction market of Viet Nam is poised to experience heightened foreign participation in the forthcoming years. This trend is underpinned by two pivotal factors, namely the gradual opening up of the Vietnamese economy to foreign investors and the government's resolute focus on bolstering its infrastructure. This projection finds solid grounding in past statistical trends. For instance, in the realm of construction, the investment capital surged to approximately 156,710 billion VND (6,576,164,500 USD)² in which, foreign direct investment is accounted for about 263906 billion VND (10,996 million USD)³ including 36 licensed projects in the construction sector with registered capital of 743.6 billion VND (311.4 million USD)⁴. More specifically, there are 15,955⁵ newly established enterprises in the construction industry in 2022. The number of active enterprises is 125,812⁶, of which there are 102,103 enterprises⁷ with revenue and the total number of employees in construction enterprises is 1,367,778 people⁸.

The evolution of construction activities brings about a host of legal considerations, necessitating a corresponding enhancement of the country's legislation. As construction practices advance, it becomes imperative for the legal framework to keep pace, addressing emerging challenges and ensuring that regulations remain effective and relevant.

To effectively address the evolving needs of the construction sector, the Vietnamese government has demonstrated a focused commitment to fortify the legal framework governing construction activities. Notably, Viet Nam has undertaken comprehensive revisions of the Law on Construction,

¹ (2023). *Vietnam Construction Market - Growth, Trends, and Forecasts* (2023 - 2028). Mordor Intelligence. https://www.giiresearch.com/report/moi1205369-vietnam-construction-market-growth-trends-covid.html.

² General Statistic Office of Viet Nam. (2022). *Statistical Yearbook of Viet Nam* 2022. Viet Nam: Statistical Publishing House. p. 373.

³ Ibid, p. 348.

⁴ Ibid, p. 354.

⁵ Ibid, p. 395

⁶ Ibid, p. 398.

⁷ Ibid, p.406

⁸ Ibid, p. 415.

with pivotal updates introduced through the enactment of the Law on Construction of 2014⁹ and its subsequent revision in 2020¹⁰. These revisions exemplify the government's dedication to aligning the legal structure with the practical demands of the industry. In addition to these significant legislative changes, the infrastructure construction domain has witnessed a significant stride forward. In the field of infrastructure construction, Viet Nam has recently promulgated the Law No. 64/2020/QH14 on June 18, 2020, on Investment under the mode of public-private partnership (PPP Law) which provides the rules for implementation of PPP projects. Notably, the PPP Law integrates provisions designed to attract foreign investors, establishing mechanisms that foster a symbiotic sharing of risks between the state and investors throughout the execution of PPP projects ¹¹.

This multifaceted approach underscores Vietnamesse recognition of the importance of cultivating an environment that not only facilitates domestic growth but also draws international expertise and resources. By nurturing a legal landscape that balances regulatory clarity with the dynamic demands of construction and infrastructure development, Viet Nam endeavours to lay a robust foundation for sustained progress in these critical sectors. This proactive strategy reflects the nation's readiness to engage with global trends and encourage foreign participation, ultimately fostering mutual prosperity and advancement.

This article endeavours to provide a high-level analysis of the noteworthy advancements of the Vietnamese laws and policies in recent years. Firstly, the analysis delves into the legal implications arising from the endorsement by Vietnamese state competent authorities of the utilization of internationally recognized standard forms of contracts, notably exemplified by the application of contract templates provided by the FIDIC. The endorsement of internationally recognized standard contract forms signifies a strategic alignment with established industry practices and principles, aimed at fostering consistency, transparency, and efficiency in construction projects. This

⁹ Law No. 50/2014/QH13 on Construction dated June 18, 2014.

¹⁰ Law No. 62/2020/QH14 on Amendments to Construction Law, dated June 17, 2020.

¹¹ Article 82 of PPP Law provides that "1. When the actual revenue reaches more than 125% of the revenue in the financial plan in the PPP project contract, the investor and the PPP project enterprise shall share with the State 50% of the difference between the actual revenue and 125% of revenue in the financial plan. The share of revenue increase is applied after adjusting prices and fees for public products and services, adjusting the duration of PPP project contracts according to the provisions of Articles 50, 51 and 65 of this Law and be audited by the State Audit for this revenue increase; 2. When the actual revenue is lower than 75% of the revenue in the financial plan in the PPP project contract, the State shares with the investor and the PPP project enterprise 50% of the difference between the 75% level of revenue in the financial plan and actual revenue."

inclusion sets the stage for a comprehensive examination of legal intricacies arising from the application of FIDIC forms of contract, grounded in common law traditions, within the context of Vietnamese legislation. Notable legal quandaries encompass aspects such as the implementation of liquidated damages clauses and the delineation of the engineer's role. Secondly, the analysis will delve into the evolution of legal framework facilitating the ADR regimes in construction sector in Viet Nam. This scrutiny will focus on the Dispute Adjudication Board (DAB) mechanism and the practical application of multi-tiered dispute resolution agreement in the construction. This assessment aims to illuminate the dynamic landscape of resolving disputes within the construction realm, shedding light on the efficacy, challenges, and legal underpinnings of these evolving ADR methods. Finally, within the pervasive context of the Fourth Industrial Revolution that permeates all sectors, this paper will delve into the practical and legal implications stemming from recent government directives mandating the obligatory integration of Building Information Modelling (BIM) technology in construction practices.

2. RECOGNITION AND APPLICATION OF INTERNATIONAL FIDIC FORMS OF CONTRACT

Construction activities inherently exhibit a distinctly technical and intricate nature, necessitating the involvement of multiple parties. This intricate interplay of factors significantly escalates the potential for disputes to emerge. Recognizing the imperative to mitigate such disputes that could arise during the execution of contracts within the construction sector, Vietnamese competent authorities have displayed proactive diligence. This proactive approach has materialized through the formulation and release of an array of standardized contract forms. These standardized templates are designed to furnish a comprehensive and standardized structure for contractual arrangements. By establishing clear and predefined terms, it is expected that the model contracts proactively work towards minimizing uncertainties, fostering transparency, and bolstering legal clarity within the realm of construction projects.

Regarding the efficiency of utilization of standard forms of contract, Nael G. Bunni stated that "In the commercial activities of today's highly complex society, standard forms of contract have become an essential part of the day-to-day transactions of most agreements. The majority of standard forms have been developed by commercial organizations for the purpose of efficiency, to build on the experience gained from the repeated use of these forms, but most of all for the optimum

protection of one or both parties' interests. Standard forms of contract developed for construction activities, however, have mostly been drawn up by independent professional organisations, rather than by one or other of the parties to the contract, to establish or to consolidate a fair and just contract. Knowledge accumulated through experience and recurrent use over a long period of time has brought about revisions and modifications in construction standard forms with the aim either of achieving greater certainty in the intention of the wording or of providing a response to the needs of the parties and/or society" 12.

The above mentioned point of view is also supported by Tolga Ayoğlu, for whom "Standard forms of contracts & clauses are also prepared by highly reputed international institutions that are experts on international trade for certain branches of commerce, and they constitute well-balanced, fair, impartial texts based on expertise, that reflect the common understanding and intentions of international trade community"¹³. Justin Sweet asserted that "construction could not function efficiently without the use of standardized construction constract"¹⁴.

Recognizing the significance of template contracts within the construction sector, the Ministry of Construction (MOC) has been introducing various construction contract forms since 2005 as well as committing to periodically update, revise these forms to ensure that the terms and conditions of these template contracts remain in accordance with the prevailing laws and regulations. It's important to highlight that in Viet Nam, only template contracts introduced by state authorities are recognized and accepted within the society. Unlike some other jurisdictions, there is no professional organization with the capability to publish construction contract forms in the country.

Vietnamese government encourages entities in construction sector to apply international forms of contract. This has been provided in a normative text, namely, the Decree No. 48/2010/NĐ-CP of the Vietnamese Government regulating contracts in construction activities at Article 53 paragraph 3 that "Organizations and individuals are encouraged to apply the set of contract conditions of the International Association of Consulting Engineers (FIDIC) and model construction contracts to the establishment and performance of construction contracts." This is subsequently repeated in

¹² Bunni, N. G. (2005). *The FIDIC forms of contract: the fourth edition of the Red Book, 1992, the 1996 Supplement, the 1999 Red Book, the 1999 Yellow Book, the 1999 Silver Book.* Carlton, V: Blackwell.

¹³ Ayoglu, T. (2014). Some Reflections on the Sources of Lex Mercatoria. *International Commercial Arbitration and The New Lex mercatoria*, 27-36.

¹⁴ Sweet, J. (2011). Standard construction contracts: Academic orphan. *Constr. Law.*, 31, 38.

paragraph 3 of Article 54 of the Decree No. 37/2015/NĐ-CP of the Vietnamese Government detailling construction contracts that read as follows: "Organizations and individuals are encouraged to apply the model set of contract conditions of the International Federation of Consulting Engineers (FIDIC) and models of construction contract in the establishment and the performance of construction contracts. When applying models of construction contracts, the parties must consider and adjust the contract content to be consistent with the provisions of Vietnamese law."

Vietnamese government has been encouraging entities engaging in construction sector to apply contracts that is designed and structured similarly to international standard contract templates, particularly that of FIDIC. It is believed that FIDIC forms of contract, which have been developed by international experts in the field of consulting engineering and construction law, provide a globally recognized and standardized framework for construction projects, which consequently facilitates smoother interactions among project stakeholders, regardless of their geographic location.

In 2022, Ministry of Construction has issued Circular 02/2023/TT-BXD ("Circular 02"), which provides amongst others three important construction contract templates (forms), namely (i) Construction Consulting Contract form¹⁵, (ii) Construction Execution Contract form¹⁶, and (iii) EPC contract form¹⁷. Circular 02 also emphasizes that these contract templates are meant for reference purposes only and are not mandatory for application. Unlike previous contract templates, the ones issued alongside Circular 02 are structured with both General Conditions and Specific Conditions. Constructing contracts based on this structure facilitates drafting and contract management, aligning with the prevailing trend of some international standard contract templates, particularly resembling those issued by FIDIC.

It is observed that thanks to the above-mentioned policies by the Government the FIDIC Forms of Contract have been applied in Viet Nam in many construction projects, especially construction projects with foreign elements, projects in which Viet Nam borrows capital from the budget of

¹⁵ Published in Appendix II of the Circular No. 02/2023/TT-BXD of the Ministry of Construction guiding a number of contents on construction contracts which is a legislative text.

¹⁶ Published in Appendix III of the Circular No. 02/2023/TT-BXD of the Ministry of Construction guiding a number of contents on construction contracts which is a legislative text.

¹⁷ Published in Appendix IV of the Circular No. 02/2023/TT-BXD of the Ministry of Construction guiding a number of contents on construction contracts which is a legislative text.

International Cooperation Agency of Japan (JICA), World Bank (WB) and other international organizations. The parties use the FIDIC forms of contract as a basic manual in drafting contracts and making adjustments in accordance with the specific characteristics of each project to come up with the final contract¹⁸.

When adapting FIDIC forms of Contract, which is generally influenced by the common law traditions, the key issues is to ensure that the relevant terms and conditions of the contract shall be compatible with Vietnamese legal principles and regulations. In fact, in practice of application of FIDIC forms of contract in Viet Nam, a number of clauses contain the concept which is strange to Vietnamese law and create a lot of difficulties in the application. For example, under FIDIC Red Book at Clause 3.7.5, the engineer is vested the power to give a determination and "if no dissatisfaction of determination of engineer given by either party within period 28 days [...] determination of the engineer shall be deemed to have been accepted by both parties and shall be final and binding on them". Under Vietnamese law, such a clause is valid, but it would be difficult to be enforceable in case there is a recalcitrant party. Apart from that clause, liquidated damage mechanism under FIDIC forms of contract would be also unable to be recognized in Viet Nam because under Vietnamese legislation, only two monetary legal methods to remedy damages are penalty¹⁹ and compensation for damages²⁰. Therefore, in Viet Name, there is still no consensus on the nature of this liquidated damages mechanism. As a result, at times, the court considers it a penalty and sometimes the court considers it a compensation for damages ²¹. An affair below can justify this assertion.

Precisely, the affair is found in the Decision No. 10/2020/KDTM-GĐT on August 14, 2020 of the Vietnamese Supreme People's Court, the dispute relating to a contract in which parties stipulate that "during the execution of the contract, either party breaching the contract must be responsible for compensating the other party the amount of 10,000,000,000 VND". When dispute arose, the aggrieved party claimed this amount of compensation and this claim was resolved very differently

¹⁸ Linh, N. M. (2019). Phương thức giải quyết tranh chấp trong mẫu điều kiện hợp đồng FIDIC và thực tiễn áp dụng tại Việt Nam [Dispute settlement method in FIDIC forms of contract and its application in practice in Viet Nam]. *Journal of Legislative Studies*, 22 (398).

¹⁹ Civil Code 2015, article 418.

²⁰ Ibid, article 13 and 360.

²¹ Quang, T. N. (2021). Hiệu lực của thoả thuận bồi thường ấn định trước [Validity of liquidated damages clause]. *Journal of legislative studies*, 05(429).

by the courts at the first instance, appellate and cassation levels. This is stated in the reasonning of the Vietnamese Supreme People Court as follow: "According to Articles 300, 301, 302, 303, 304 of the 2005 Commercial Law, the penalty clause for violation is the agreement between the parties that the violating party must pay a predetermined fine, but not exceeding 8% of the value of the violated contractual obligations; damage compensation clause is the agreement between the parties that the violating party compensates for the losses caused by the breach of contract to the violated party, but these losses have not been determined at the time of agreement. The parties agree that the violating party must be responsible for compensating the violated party 10,000,000,000 VND, meaning the parties agree on a penalty for breach of contract. However, this agreement violates the provisions of Article 301 of the 2005 Commercial Law regarding the maximum of penalty. The fact that The Court of First Instance and the Judges Committee of the High People's Court in Ho Chi Minh City found that [the parties'] agreement are on compensation for damages was incorrect. If it is determined that the parties have an agreement on compensation for damages, the Court must clarify the rationals for arising liability for damages, including all elements: there is a breach of contract, there is actual damages, and the breach of contract is the direct cause of the damages and the party claiming damages must prove the loss, the extent of the loss caused by the breach and the direct profits that the aggrieved party deserves perhaps entitled if there is no violation. While the above contents have not yet been clarified, the fact that the Court of First Instance forced [the breaching party] to pay compensation of 4,000,000,000 VND, while the Judges Committee of the High People's Court in Ho Chi Minh City forced it to pay compensation of 10.000.000,000 VND is unfounded and does not comply with the provisions of Articles 302, 303, 304 of the 2005 Commercial Law".

Apart from the above issue, regarding the application of FIDIC forms of contract in Viet Nam, the research conducted by Nguyen Nam Trung, Le The Hung, and Nguyen Thi Hoa²² highlights the necessity of modifying numerous clauses within FIDIC forms of contract to ensure their alignment with Vietnamese law, especially when applied to state-funded projects. Some of the key areas that require modification or adjustment for efficient application, include:

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²² Nguyen Nam Trung, Hung, L. T., & Hoa, N. T. (2022). Applying FIDIC contracts in Vietnam. In D. Charrett, & D. Charrett (Ed.), *FIDIC contracts in Asia Pacific - Apractical guide to application* (pp. 521-550). New York, US: Taylor & Francis.

- (a) Performance certificate: In Viet Nam, the concept of performance security is not recognized, as it can lead to confusion when applying the final payment statement concept. Modifications are necessary to harmonize this aspect with local legal frameworks.
- (b) Taking Over Certificate: Differences exist between Vietnamese law and FIDIC forms of contract regarding the role and procedures for issuing a taking over certificate. Alignment is crucial to ensure accurate implementation in compliance with local regulations.
- (c) Contract Liquidation Timeframe: The stipulated timeframe for parties to settle and close a contract also presents variations between Vietnamese law and FIDIC forms of contract. Adapting this timeframe is essential to ensure synchronization with local practices.

Apart from these substantial matters above of the construction contract, the clause on dispute resolution also merite to attention that will be analyzed in the development below.

3. DISPUTE RESOLUTION PROCEDURES

To facilitate the integration process and ensure a favorable business environment, Viet Nam has undertaken judicial reforms, notably also developing a legal framework tailored to support the development of Alternative Dispute Resolution (ADR) mechanisms. In the construction sector, the advancement of diverse ADR mechanisms holds significant importance as it would bring to parties with a more rapid, efficient and amicable solution to disputes which allows to maintain good relationship between the parties²³.

A. The Alternative Dispute Resolution (ADR) Procedures in Viet Nam

In international practice, Alternative Dispute Resolution (ADR) methods can be categorized into two distinct groups: (i) Non-Binding ADR Methods: In this category, disputing parties do not delegate authority to a neutral party to issue a decision that is legally binding on them; (ii) Binding ADR Mechanisms: This category encompasses ADR mechanisms where a neutral party has the

²³ Hoa, N. T. (2018). Les procédures de règlement des litiges en matière de construction appliquant les contrats-types FIDIC. Doctoral dissertation, Pantheon-Assas Paris 2 University; see also Dung, T. V., & Hoa, N. T. (2023). Multilayer Dispute Resolution Agreement: Legal Issues And Settlement Practices [Thỏa thuận giải quyết tranh chấp đa tầng: những vấn đề pháp lý và thực tiễn giải quyết trường hợp vi phạm]. In T. V. Dung, & N. Q. Chien, Trọng tài thương mại quốc tế: Các vấn đề đương đại và thực tiễn Việt Nam [International Commercial Arbitration: Contemporary Issue and Practice in Viet Nam (pp. 31-59). VNU HCMC Publication House.

authority to intervene and deliver a decision that carries legal enforceability over the parties involved.

Viet Nam encourages application of progressive ADR forms for settlement of construction disputes. Article 146 of the Law on Construction of 2014 provides that "contracting parties are responsible for negotiating and settling disputes themselves. If they cannot negotiate on their own, the dispute shall be resolved through mediation, commercial arbitration or court in accordance with laws." According to this provision, the most common ADR procedures of the world can be legally used in Viet Nam.

Viet Nam also allows dispute adjudication board (DAB) for purpose of settlement of construction disputes but, the DAB is considered as a mediation procedure. Article 45 of Decree No. 37/2015/ND-CP of the Government regulating the Construction Contracts provides that if the dispute adjudication board renders a decision without objection of any party within the 28-day period, this will permit understanding that the parties had agreed to this decision. This provision can be read that the latter constitutes a mediated settlement agreement (MSA) and under Article 419 of the Vietnamese Civil Procedure Code of 2015, this MSA can be homologated by the court to enforce the obligator to abide by it throughout a judgement.

The questions here is whether DAB under the FIDIC forms of contract is equivalent to mediation panel under Decree No. 37/2015/NĐ-CP. It is unable to have an answer to this question in practice because the obligator often objects the decision of DAB under FIDIC forms of contract in Viet Nam within the 28-day period and thus the parties are not under obligation to respect it, which is different from the validity of DAB's decision under the FIDIC forms of contract under which the DAB's decision, either final or nonfinal, must be implemented despite of having the objections of one party. Therefore, there is point of view that, due to this difference in legal culture of Viet Nam, DAB is often forgotten by the Vietnamese parties when they apply FIDIC forms of contract²⁴.

²⁴ Linh, N. M. (2019). Phương thức giải quyết tranh chấp trong mẫu điều kiện hợp đồng FIDIC và thực tiễn áp dụng tại Việt Nam [Dispute settlement method in FIDIC forms of contract and its application in practice in Viet Nam]. *Journal of legislative studies*, 22(398).

B. The Characteristics of ADR Application in Viet Nam

In the international construction sector, regarding the ADR application, one of notable point relies on the multi-tiered dispute resolution clause which "comprises different steps which begin with various [...] ADR techniques. In these clauses, arbitration is designed as the last step if the dispute cannot be resolved by preliminary ADR efforts"²⁵. As analyzed above, in Viet Nam, ADR methods are encouraged and the procedure which empowers the neutral third party to give a final solution binding upon parties to dispute like arbitration is often applied in extreme cases. Therefore, it is comprehensible that the multitiered dispute resolution clause is also legally valid and appreciated under Vietnamese law. When apply this clause, two legal issues often arising: (i) whether or not the compliance of pre-arbitration procedure is a prerequisite for arbitration; (ii) whether or not the arbitral tribunal has the power to give an partial award to enforce the parties to implement a solution – result of pre-arbitration procedure.

First, the first question arises because in construction sector, the multi-tiered dispute resolution clause often designed with an amiable procedure which is a prerequisite to arbitration. Such as, the FIDIC Red Book 2017, at Sub-Clause 21.4.4 stipulate that "Except as stated in the last paragraph of Sub-Clause 3.7.5 [Dissatisfaction with Engineer's determination], in Sub-Clause 21.7 [Failure to Comply with DAAB's Decision] and in Sub-Clause 21.8 [No DAAB In Place], neither Party shall be entitled to commence arbitration of a Dispute unless a NOD [notice of dissatisfaction] in respect of that Dispute has been given in accordance with this subclause 21.4.4." Therefore, the question is whether or not the arbitral tribunal is competent to resolve dispute if the prerequisite procedure has not been taken place. At that point, there is a conflict in the point of view of Vietnamese judges in responding to this question. Precisely, some judges had set aside the arbitral award which is issued from an arbitral proceedings bypassing the prerequisite procedure due to violation of arbitral procedural rules²⁶ and others refuse to do so in judging that this question pertains to content of arbitral award that the state court can not intervene²⁷. This conflict situation

²⁵ Oetiker, C., & Walz, C. (2017). Non-compliance with multi-tier dispute resolution clauses in Switzerland. *ASA Bull.*, 35, 872; see also Dung, T. V., & Hoa, N. T. (2023). Multilayer Dispute Resolution Agreement: Legal Issues And Settlement Practices [Thỏa thuận giải quyết tranh chấp đa tầng: những vấn đề pháp lý và thực tiễn giải quyết trường hợp vi phạm]. In T. V. Dung, & N. Q. Chien, *Trọng tài thương mại quốc tế: Các vấn đề đương đại và thực tiễn Việt Nam [International Commercial Arbitration: Contemporary Issue and Practice in Viet Nam* (pp. 31-59). VNU HCMC Publication House.

²⁶ Decision No. 10/2014/QĐ-PQTT on October 28, 2014, the People's Court of Hanoi.

²⁷ Decision No. 795/2017/QĐ-PQTT on June 27, 2017, the People's Court of Ho Chi Minh City.

exists in Viet Nam because paragraph 10 of Article 71 of Vietnamese Law on commercial Arbitration of 2010 (VLCA) does not permit parties to object a decision of the national court resolving an application to set aside an arbitral award.

Second, for the question of whether or not the arbitral tribunal has the power to give an arbitral award to enforce parties to execute the solution issued from a pre-arbitration procedure. The answer to this question must be negative because under the VLCA, there is not an partial or provisional award. Therefore, when one party objecting a solution issued from the pre-arbitration procedure, the only way for the co-contractor is to refer dispute to arbitral tribunal and the latter has to resolve it from scratch by issuing a final award.

4. VIETNAMESE LEGISLATIVE EVOLUTION FACING WITH BUILDING INFORMATION MODELING (BIM)

A. Current Status of BIM Application in Viet Nam

Growing interest in BIM on the part of business executives, building managers, design professionals, policy-makers, researchers, and the like has extended BIM's presence in the global AEC industry. Various governments around the world, including Vietnamese government, see it as a strategic development and seek to mandate its use in public projects. Precisely, the history of BIM in Viet Nam is marked by Decree No. 32/2015/ND-CP²⁸ of the Government dated March 25, 2015 on the management of construction investment costs for state-funded projects which allows to reserve an amount of project management expenses (at Article 23 paragraph 2) and of construction investment consultancy expenses (at paragraph 2, Article 25) for science and technology application. This provision is important because, in Viet Nam, it would be difficult for the parties to apply BIM if BIM application items are not used as the basis on which the project cost is calculated particularly in a state-funded project.

Following the above, on December 22, 2016, the Prime Minister adopted the Decision²⁹ No. 2500/QĐ-TTg on approving the project for application of building information models (BIM) in construction activities and work operation management under which from 2018 to 2020 "pilot application of BIM at several projects will be initiated and include the following tasks: a) the

²⁸ This Decree is a legislative text.

²⁹ This Decision is an administrative text and not a legislative text.

application of BIM in design, construction and project management for at least 20 new construction works of different types from grade I or higher for state-funded construction investment projects and that funded by other sources voluntarily; b) Apply BIM in operation management for at least 10 important projects with complex technical requirements using the state capital; c) Organize a detailed assessment of the BIM application on the basic of the above pilot application and complete the work steps to widely apply BIM in construction and operation management from 2021 onwards" (Section II). In order to have human resources in service of BIM application in practice, on October 11, 2017, the Ministry of Construction issued the Decision No. 1506/QD-BXD³⁰ announcing the framework program for training and fostering the application of BIM in the pilot phase and the Decision No. 1507/QĐ-BXD announcing temporary instructions for application of construction information model (BIM) in the pilot period. On April 02, 2018, the Ministry of Construction adopted Decision No. 326/QĐ-BXD³¹ in which there is a list of 20 pilot projects applying BIM in construction investment and operation management. Among those projects, there are that only applies BIM for the management and operation stage; and there are projects in which BIM was applied for all stages such as surveying, project planning, design, construction, completion and operation management. This list was added by Decision No. 01/QD-BXD³² dated January 03, 2019 announcing the additional list of pilot projects to implement Building Information Modelling in construction activities and operation management of construction works.

The result of the implementation of Decision No.2500/QD-TTg³³ shows that BIM contributes to shortening time and improving the quality of design, construction and construction investment project management, saving project costs by 12%, shortening construction time from 12 to 15 % of the approved progress³⁴. Furthermore, in 2021, a study³⁵ was made on the basis of interviewing BIM professionals who have worked in eight BIM-enabled pilot projects representing the majority of BIM-enabled construction projects in Viet Nam to find out the benefits, barriers and challenges

³⁰ This Decision is an administrative text.

³¹ This Decision is an administrative text.

³² This Decision is an administrative text.

³³ This Decision is an administrative text.

³⁴ Published on the website of the Ministry of Construction: https://moc.gov.vn/vn/tin-tuc/1238/75630/hoi-thao-ap-dung-mo-hinh-thong-tin-cong-trinh-trong-hoat-dong-xay-dung--hien-trang-lo-trinh-va-giai-phap.aspx, accessed on 25 August 2023.

³⁵ Quynh, T. T., Eric, C. W., & Nam, L. H. (2021). Enhancing BIM Diffusion through Pilot Projects in Vietnam. *Engineering Journal*, 25(7), 167-176.

that BIM delivered through various lifecycle phases of BIM-enabled projects. According to this research, "improving design quality", "enhancing transparency and performance of Project Management" and "improving coordination between project stakeholders" were the most recognizable effectiveness of BIM implementation. The other benefits demonstrated less impact, especially "optimizing construction duration" and "enhancing construction maintenance productivity and performance".

Apart from the benefits mentioned above, this research of Quynh To Thi Huong, Eric.C.W. Lou, and Nam Le Hoai also found out the barriers against the flourishing of BIM application in Viet Nam relating to awareness and knowledge on BIM, investment costs, and regulations, standards or guidance related to the AEC industry. Precisely, lack of BIM awareness and knowledge, inadequate investment in IT, scarce human resources and incorrect processes, shortage of national and regional regulations as well as inadequate international and national standards or guidance on BIM were the most significant obstacles. In addition, these BIM models enabled construction contractors to control the project progress and construction quality proactively. However, the development cost and time were significant, and as major barriers to small and medium projects and stakeholders. The high investment expenses required for BIM infrastructure (hardware and software) and BIM skills (modelling and collaborating) but uncertain return on investments (ROI) is a significant disadvantage of BIM implementation.

The accuracy of these pieces of information about the current status of BIM application in Viet Nam can be supported by the research of the researcher group - Ngo Thanh Thuy, Nguyen Quoc Chuong, Do Minh Truyen, Bui Hoang Dat and Huynh Xuan Tin – on the BIM application for technical infrastructure works in Viet Nam under which "it can be seen that BIM technology is mainly used for large-scale technical infrastructure or important national projects. Many investors have not actively applied BIM for infrastructure projects because this technology is still quite new. The application of new technology involves many factors, as well as challenges such as: 1) Process: difficulty in changing the management process, as well as shifting the workflow. BIM planning can destroy existing workflow, increase workload in the short term, unclear liability, time-consuming training and technology transfer; 2) Human resources: due to lack of experience with projects applying BIM technology, leading to a shortage of skilled and qualified personnel to apply this technology; 3) Cost: Due to the high initial investment cost, the software is not

compatible, so it is difficult to implement in practice; 4) Difficulties and disadvantages in sharing information between stakeholders, updating information in the BIM model needs to clearly define the ownership of the building information model at different stages of implementation of the project; 5) About data: the data compatibility between companies applying BIM is limited, the way of handling data is different for each unit, leading to inconsistent information in the model between design and engineering teams, between design, construction, exploitation and operation of works; 6) The number of experts in BIM application is modest and weak"³⁶.

In addition, there is also a study focusing on the contractor's perspective to understand difficulties in the BIM application in Viet Nam and under which, the financial and management issues creates also the barriers. Namely, the extra costs that the contractors had to pay a premium salary to attract new members of staff who are capable at BIM are considered especially high for small and medium-sized enterprises. Thus, the potentially high cost of BIM adoption and implementation is considered as barrier to apply BIM. Apart from financial issues, this research also indicates other barriers relating to the lack of government support and the lack of commitment of the senior managers of the firm. For example, in 2018 and 2019, the Government accepted proposals for BIM pilot projects from both the public and private sectors, however, due to the limit in resources, training to project management units could be only provided for experts of the projects financed by public funds. All of the experts of the contractor-respondents of this research claimed that they were not the beneficiaries of the Government campaigns. Regarding the organizational level, as the BIM market in Viet Nam is only in the early stages, so applying BIM is a challenge; the process will take a lot of time and effort of the pioneers. Therefore, if the managers of the firms do not provide strong support, the firm and also the BIM team cannot go a long journey to fully adopt BIM. The respondents also emphasised that if only the owners, their contractors, and consultants use BIM but the governmental agencies in charge of construction do not need to use BIM, the governmental procedures for appraising project documents and construction designs will be more complicated and more costs may incur. Regarding the first versions of BIM guidance, the

³⁶ Thuỷ, N. T., Chương, N. Q., Truyền, Đ. M., Đạt, B. H., & Tín, H. X. (2021, April 20). Ứng dụng BIM cho công trình hạ tầng kỹ thuật tại Việt Nam [BIM application for technical infrastructure projects in Vietnam]. *Journal of Science and Technology of Viet Nam*. https://vjst.vn/vn/tin-tuc/4495/ung-dung-bim-cho-cong-trinh-ha-tang-ky-thuat-tai-viet-nam.aspx.

respondents argued that it is still very general and not much useful. Thus, for them, the BIM-enabled regulations are in demand, at least for public construction projects.

Facing with this situation, in 2021, the Ministry of Construction of Viet Nam published two new versions of BIM guidance – Decision No. 347/QĐ-BXD on April 02, 2021 on the announcement of detailed instructions for the application of the construction information model (BIM) to civil works and urban technical infrastructure works and Decision No. 348/QĐ-BXD on April 02, 2021 on the announcement of general guidance for the application of construction information model (BIM) to replace Decision No. 1507/QĐ-BXD of 2017. Furthermore, recently, on March 17, 2023, the Vietnamese Government adopted Decision No. 258/QD-TTg on approving the roadmap for the application of Building Information Modelling (BIM) in the construction sector. According to this Decision, there are two progressive points in favor of the BIM application as follows. Firstly, under point b of paragraph 2 of Article 1 of this Decision, for state management agencies, the use of the BIM model is considered "as a tool to support in the process of performing state management tasks (appraisal of feasibility study reports, construction design deployed after basic design; construction license; construction management; check the acceptance...). Secondly, under points a and b of paragraph 2 of the same Article, from 2023, BIM is compulsory applied from the beginning for new construction investment projects using public capital, non-public state capital categorized into grade I and special grade works and public-private partnership project; from 2025, BIM will be compulsory applied for the works of these project types but which are categorized into grade II or higher.

So, the development above described the current status of BIM application in Viet Nam and the following development will focus on presenting an overview of new guidance of the Vietnamese Ministry of Construction.

B. Current Status of the Legal Environment for BIM Application in Viet Nam

Regarding the legal environment for BIM application in Viet Nam, it is necessary to present two new versions of BIM guidance published by the Ministry of Construction.

Firstly, regarding Decision No. 347/QĐ-BXD on April 02, 2021 on the announcement of detailed guidance for the application of the construction information model (BIM) to civil works and urban technical infrastructure works, there are only two principal parts. The first Part titled "some

contents of BIM implementation in civil works" provides (1) the data exchange format; (2) the level of information development; (3) the color assignment table; (4) the guidelines for coordination and conflict handling; (5) information exchange requirements for architecture department; (6) information exchange requirements for the structural department; and (7) information exchange requirements for mechanical and electrical department. The second part dedicates to "some contents of BIM implementation in urban technical infrastructure" and mentions five principal contents: (1) data exchange format; (2) level of information development; (3) System color coding board; (4) some requirements for surface modelling; and (5) information exchange requirements for traffic works (bridges, roads). According to Section 1 of this Decision, "in this Guidance, some specific contents related to BIM Model creation for civil works (houses, offices, headquarters, ...) and urban technical infrastructures (related to traffic, water supply and drainage). The contents on the application of the overall Building Information Model (BIM) in construction investment projects are guided in the general Guidance for the application of Building Information Modelling (BIM)" which is provided in the Decision No. 348/QD-BXD on April 02, 2021 on the announcement of general guidelines for the application of construction information model (BIM).

Relating to Decision No. 348/QĐ-BXD above, Section 1 indicates "the purpose of this Decision is to update and clarify some contents related to the BIM implementing in construction investment projects and is a guide to the selection of BIM application content, and common data environment (CDE), to requirements in the process of modelling and file forms of exchange information requirements (EIR) and BIM implementation plan (BEP)". This text has three principal parts. The first Part provides general instructions in which there are provisions on (1.1.) the application of BIM in the construction investment process; (1.2.) the general process of BIM application; (1.3.) parties involved in the project BIM application process; (1.4.) selection of contents to apply BIM. The second Part gives guidance as to preparation to apply BIM in which there are stipulations on (2.1.) BIM preparation process; (2.2.) documentation of bidding/ requirements; (2.3.) Building BIM performance plan (BEP). The third Part concerns the implementation of BIM in which there are guidances on: (3.1) process of application; (3.2.) general data environment; (3.3) preparation for the project team; (3.4) creation construction information model (BIM); (3.5.) inspection and testing of investor's model; (3.6) record BIM model and result assessment. Apart from these three principal parts, this Decision No. 348/QĐ-BXD adds four appendices as to "BIM application

content", "some additional contents in the tender dossier", "BIM implementation plan" and "Level of information development". According to Section 2 of this Decision, this Guidance is a referential source for relevant agencies, organizations and individuals when they apply BIM in construction investment projects. The content of this Decision provides the most basic principles and content to apply BIM in construction investment projects." Although this text indicates that it is for reference only, the possibility that the project using state capital will apply this source is considerable.

The analysis above present effort of Vietnamese State in creating environment favorable to BIM application in practice. However, the BIM implementation in Viet Nam is at the early stage and there are not any dispute arising from the BIM application which has been tested before the courts to assess the adequacy of regulations in practice.

5. CONCLUSION

From this analysis above, it is comprehensible that, in the context of globalization, the issues arising from in international construction sector also exist in Vietnamese construction market. Fortunately, Vietnamese State has also been aware of these issues and reform legislation to facilitate construction activities. Notably, promoting application of international forms of contract such as FIDIC forms of contract is without doubt a way to create conditions favorable to foreign investor engaging Vietnamese market. Although there still exists some conflicts between the Vietnamese law and international forms of contract in regulating contractual issues, at least, the latter can be resolved by agreement of the parties to modify the form of contract suitable to their specific project. Apart from resolving the traditional issues, Vietnamese legislators also has preoccupation for the new issues arising on construction section in context of industry revolution 4.0 particularly the BIM application. However, this remains a new domain of Viet Nam and thus, there have not been many construction projects having BIM application and no disputes have been brought to court to have the opportunity to assess the appropriateness of the law. Nonetheless, at least, the guidance of Vietnamese authority on BIM application can lead practitioner's attention in construction sector to BIM application for the projects of the coming years.

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