ANALYSIS OF CHANGES IN THE ENGINEER CLAUSE IN THE FIDIC SECOND EDITION REPRINTED 2022 CONTRACT

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Abstract

The Engineer represents the Employer in construction contracts with the Contractor. At the end of 2022, FIDIC released the second edition reprinted of their standard contract documents, including the FIDIC Conditions of Contract for Construction, the FIDIC Conditions of Contract for Plant & Design-Build, and the FIDIC EPC Turnkey Projects. The role of the Engineer is crucial in construction services. Through an analysis of Sub- Clause 3 in the FIDIC Yellow Book Reprinted 2022 and Red Book Reprinted 2022, significant changes were found in the qualifications and authorities of the Engineer. Additionally, new procedures were introduced for Engineers in carrying out their duties. The addition of sub-clauses to the Engineer Clause—such as the Engineer's Representative, Agreement or Determination, and Meetings—represents the development of procedural frameworks that Engineers must implement in a construction project. As the construction services sector becomes increasingly complex, FIDIC contracts continue to play a critical role in providing a framework for international standard contracts, with Engineers at the forefront of this progress.

Keywords: *FIDIC 2017 Reprinted 2022, FIDIC Rainbow Suite 1999 Edition, Engineer*

Abstrak

Insinyur mewakili Pemberi Kerja dalam kontrak konstruksi dengan Kontraktor. Pada akhir tahun 2022, FIDIC merilis cetak ulang edisi kedua dari dokumen kontrak standar mereka, termasuk FIDIC Conditions of Contract for Construction, FIDIC Conditions of Contract for Plant & Design-Build, dan FIDIC EPC Turnkey Projects. Peran Insinyur sangat penting dalam layanan konstruksi. Melalui analisis Sub-Klausul 3 dalam FIDIC Yellow Book Reprinted 2022 dan Red Book Reprinted 2022, ditemukan perubahan signifikan dalam kualifikasi dan wewenang Insinyur. Selain itu, prosedur baru diperkenalkan untuk Insinyur dalam melaksanakan tugas mereka. Penambahan sub-klausul pada Klausul Insinyur—seperti Perwakilan Insinyur, Persetujuan atau Penentuan, dan Rapat—mewakili perkembangan kerangka prosedural yang harus diterapkan oleh Insinyur dalam proyek konstruksi. Seiring dengan semakin kompleksnya sektor layanan konstruksi, kontrak FIDIC terus memainkan peran penting dalam menyediakan kerangka kerja untuk kontrak standar internasional, dengan Insinyur berada di garis depan kemajuan ini.

Kata kunci: *FIDIC 2017 Reprinted 2022, FIDIC Rainbow Suite 1999 Edition, Insinyur*

INTRODUCTION

The construction services sector is a complex network of interdependent processes involving multiple parties, including architects, Engineers, contractors, Employers, and various other stakeholders, such as inspectors. In this high level of complexity, the need for effective collaboration and seamless communication is

paramount. FIDIC, an international federation of national consulting associations established in 1913, publishes guides on business practices, international service agreements, and construction contracts. FIDIC offers various types of construction contracts, each tailored to specific uses and identified by unique colors. The four most commonly used contracts in the construction world are:

1. FIDIC Conditions of Contract for Construction (Red Book) - for projects with Employer-provided designs.
2. FIDIC Conditions of Contract for Plant and Design-Build (Yellow Book) - where the Contractor is responsible for both design and construction.
3. FIDIC Conditions of Contract for EPC Turnkey Projects (Silver Book) - where the Contractor assumes greater responsibility for project completion.
4. FIDIC MDB Harmonised Edition (Pink Book) - a version of red book but with bank clauses.

FIDIC's Plant and Design-Build contracts were introduced to address deficiencies in traditional procurement methods, offering a comprehensive framework for managing projects that combine design and construction responsibilities.

In FIDIC contracts, the Engineer holds a key position in managing and supervising construction projects. They serve as neutral and independent professionals responsible for managing the contract between the parties involved in the project. Their primary duties include acting as a neutral party to facilitate communication between the Employer and the Contractor. The Engineer interprets and manages the contract, issues instructions, and resolves disputes that may arise during the project. The Engineer plays a critical role in ensuring that construction projects comply with the terms and conditions of the contract. They are also involved in documenting the project, including verifying interim and final payment requests from the Contractor. The Engineer is responsible for assessing work quality, ensuring conformity to specifications, and monitoring project progress. This role demands a high level of technical expertise, as Engineers must evaluate complex technical issues and make informed decisions.

The Engineer in Constructions Contracts

In FIDIC contracts, the Engineer plays an essential role in contract management. The responsibilities of the Engineer include issuing instructions, instructing

variations, assessing claims, and certifying payments. The Engineer acts as an impartial party and is expected to act fairly and neutrally for both the Employer and the Contractor. The role of the Engineer in FIDIC contracts can be categorized as follows:

1. **Impartiality**

   FIDIC contracts prioritize the impartiality of the Engineer. This is crucial to ensure fair treatment of both the Employer and the Contractor. The Engineer is expected to act independently, without favouring one party over the other.

2. **Decision-Making**

   The Engineer is tasked with making certain decisions on issues arising during the construction contract, such as determining variations, assessing work, and certifying payments.

3. **Communication**

   The Engineer is required to communicate instructions, decisions, and other relevant information promptly and clearly to the Employer and the Contractor.

4. **Dispute Resolution**

   The Engineer also plays a role in resolving disputes and claims. This involves fair and transparent assessments of facts and circumstances leading to decisions aligned with the contract's provisions.

5. **Contract Administration**

   The Engineer is responsible for overall contract administration, including maintaining accurate records, documenting changes, and ensuring both parties comply with the contract's provisions.

To fulfill the role of an Engineer under FIDIC contracts, an individual usually has a strong educational background in engineering or a related field relevant to the project. Certification as an engineer or membership in a consulting organization is often a prerequisite. Additionally, experience in project management and contract administration is critical for effectively addressing the challenges encountered in construction projects. FIDIC Engineers must have a comprehensive understanding of the FIDIC contract being used for the project. This knowledge enables them to interpret and apply contract provisions accurately, ensuring fairness and equality in dealings with the Employer and the Contractor. Communication and interpersonal skills are equally important for Engineers. The ability to articulate complex technical concepts clearly

and concisely is vital, as Engineers also serve as mediators between parties with differing technical backgrounds and interests. The presence of an Engineer in a construction project contributes to the overall success and efficiency of the work. Their role as a neutral and impartial party helps prevent and resolve disputes while fostering collaborative relationships between the parties. This not only reduces the likelihood of costly disputes or conflicts but also ensures that the project runs smoothly and is completed on time and within the allocated budget. The involvement of Engineers also enhances the credibility and thoroughness of project documentation and correspondence processes.

The Engineer Clause in FIDIC First Edition 1999 Rainbow Suite

The 1999 Rainbow Suite consists of the Red, Yellow, Silver, and Green Books, which are a series of standard contract forms widely used in the global construction services sector. Developed by FIDIC (the International Federation of Consulting Engineers), these contracts aim to provide fair and balanced agreements for parties involved in construction projects. One of the key advantages of the FIDIC 1999 Rainbow Suite is its adaptability to various types of construction projects, regardless of size or complexity. Its standard contracts allocate risks and responsibilities equitably between the Employer and the Contractor, promoting transparency in contractual relationships.

1. The Red Book ("Conditions of Contract for Construction") is the most well-known document in the 1999 Rainbow Suite. It is designed for use when the Employer provides the design.
2. The Yellow Book ("Conditions of Contract for Plant and Design-Build") applies when the Contractor is responsible for both design and construction.
3. The Silver Book ("Conditions of Contract for EPC/Turnkey Projects") is intended for engineering, procurement, and construction (EPC) contracts, where the Contractor assumes greater responsibility for project completion.
4. The Green Book ("Short Form of Contract") is a simplified version suitable for smaller projects with lower levels of risk.

The parties typically involved in the above standard contracts include:

1. The Employer, as the project owner.
2. The Contractor, responsible for executing the work.

3. The Engineer, representing the Employer and ensuring the project is conducted in accordance with the contract's terms.

An exception is the Silver Book (EPC/Turnkey contracts), where the Engineer's role is replaced by the Employer's Representative.

Clause 3 of the 1999 Rainbow Suite

Clause 3 in the FIDIC 1999 Rainbow Suite specifically governs the duties and authorities of the Engineer. It comprises five sub-clauses:

1. Sub-Clause 3.1: Engineer's Duties and Authority

   Sub-Clause 3.1 outlines the fundamental duties of the Engineer and establishes a framework for their role in contract management. These duties include interpreting and applying the contract, making fair determinations on contract matters, and issuing instructions and reports. The Engineer is also responsible for reviewing and approving the contractor's designs and work plans, ensuring compliance with project specifications. Additionally, the Engineer plays a crucial role in managing variations and changes, assessing claims, and facilitating dispute resolution processes. This Sub-Clause also defines the authority granted to the Engineer to perform their duties effectively. The Engineer is authorized to issue instructions to the contractor, clarify ambiguities or discrepancies in the contract documents, and make decisions regarding variations, extensions of time, and payment certificates. Similar to the authority of the Employer, the instructions issued by the Engineer are considered to have been approved by the Employer beforehand. However, the Engineer's authority is not absolute, as their decisions can be reviewed and contested through the contract's dispute resolution mechanisms if either party disagrees with the Engineer's determination.

2. Sub-Clause 3.2: Delegation by the Engineer

   Delegation by the Engineer is an essential aspect of project management under the FIDIC contract, enabling the Engineer to assign certain functions to others while maintaining overall control and responsibility. This delegation can take various forms, such as appointing assistants or engaging specialized sub-consultants. The main principle emphasized in Sub-Clause 3.2 is that delegation does not absolve the Engineer of their overall responsibility. Although the Engineer may delegate specific tasks or functions, they remain accountable for the proper

execution of these duties. Even when certain tasks are assigned to assistants, the Engineer retains full responsibility. This provision serves as a safeguard to prevent Sub-Clause 3.2 from being used as a mechanism to simply shift responsibility.

3. Sub-Clause 3.3: Instructions by the Engineer

   The Engineer has the authority to issue instructions to the contractor regarding various aspects of the project. These instructions may pertain to matters such as variations, changes in the sequence of work, and other issues that may impact the scope, schedule, and cost of the contract. The Engineer's instructions are binding unless there is a dispute.

4. Sub-Clause 3.4: Replacement of the Engineer

   This Sub-Clause outlines the procedure for resolving disputes between the parties to the contract. Its purpose is to provide a mechanism for addressing issues that arise during the contract period. The Engineer plays a crucial role in this process and is expected to act impartially and deliver fair determinations within the specified timeframe, with the possibility of referring unresolved matters to arbitration or other dispute resolution mechanisms. Clause 3.3 also specifies the requirements for issuing instructions, which must be provided in writing, either in the form of a letter or an official document, and delivered promptly. This is essential to avoid misunderstandings and disputes. The contractor is obligated to comply with these instructions, and failure to do so may result in consequences as stipulated in the contract provisions.

5. Sub-Clause 3.5: Determinations by the Engineer

   Sub-Clause 3.4 governs the process of replacing the Engineer. This involves the Employer notifying the contractor, providing the name, address, and relevant experience of the proposed replacement Engineer. The replacement process must be carried out promptly to minimize disruptions to the project. This Sub-Clause also highlights the importance of the contractor's opinion in this matter, stating that the Employer should not replace the Engineer if the contractor reasonably objects and provides supporting data for their objection.

RESEARCH METHODOLOGY

This study employs an analytical method to compare the Engineer Clause in the

FIDIC 2017 Reprinted 2022 edition, the latest version of the FIDIC Rainbow Suite. Using the five sub-clauses of the Engineer Clause in the FIDIC 1999 Rainbow Suite as a reference, the study examines changes to these five sub-clauses and analyzes the addition of two new sub-clauses.

In 2017, FIDIC updated its Rainbow Suite contracts by releasing a second edition with the same color scheme but significant revisions, referred to as the FIDIC Rainbow Suite 2017 Second Edition. These contracts underwent further modifications, culminating in the release of the FIDIC Rainbow Suite 2017 Reprinted 2022 edition in November 2022. One of FIDIC's primary objectives in releasing the 2017 edition was to modernize provisions, enhance transparency, and ensure certainty—aligned with FIDIC's motto of providing fair and balanced contracts. The 2017 edition introduced significant changes to the General Conditions of the contract. Among these changes was a redefinition of the Engineer's role, notably the introduction of the Dispute Avoidance/Adjudication Board (DAAB), aimed at providing a more structured and efficient dispute resolution process. The Engineer's role evolved to adopt a more collaborative approach, emphasizing dispute prevention through informal opinions offered by the DAAB. The FIDIC 2017 Reprinted 2022 edition builds on the foundation of the 2017 edition while focusing on further refinements to address challenges encountered by users during its implementation. Notable improvements include enhancements to the provisions governing the Engineer's role in dispute resolution, increased transparency, and the simplification of decision-making processes.

RESULTS AND DISCUSSIONS

The Engineer Clause in the FIDIC 2017 Reprinted 2022 Edition Rainbow Suite

In the FIDIC 2017 Reprinted 2022 Edition, the Engineer still operates under Clause 3 in the Red and Yellow Books, with the Employer's Representative replacing the Engineer in the Silver Book (EPC/Turnkey contract). This Engineer Clause was restructured with the introduction of new sub-clauses, namely Sub-Clause 3.1 (Engineer), Sub-Clause 3.3 (Engineer’s Representative), and Sub-Clause 3.5 (which underwent significant changes), as well as Sub-Clause 3.7 (Agreement or Determination). The analysis of changes in Clause 3 of the Red and Yellow Books, based on these sub-clauses, is as follows:

1. **Sub-Clause 3.1: Engineer**

The Sub-Clause 3.1 in the FIDIC 2017 Reprinted 2022 edition is a new addition compared to the FIDIC 1999 edition. This article defines the qualifications and criteria that must be met by the Engineer in order to be appointed by the Employer. The selection of a qualified Engineer is vital to the success of the project, as they are responsible for managing the contract and interpreting its provisions. The Engineer must possess professional competence in engineering and have technical knowledge of the project at hand. Additionally, the Engineer must be proficient in the language used according to the contract's provisions. One significant change in this edition is that if the Engineer is a legal entity, the Engineer must inform the parties involved about the individual designated to act on behalf of the entity. This provision was not present in the 1999 edition.

2. **Sub-Clause 3.2: Engineer's Duties and Authority**

This sub-clause is similar to Sub-Clause 3.1 in the FIDIC 1999 edition, with a key change introduced in the 2017 Reprinted 2022 edition. It now clearly states that the Engineer "shall be deemed to act for the Employer." This modification strikes a balance between granting the Engineer decision-making authority while ensuring fairness for all parties involved. While the Engineer has significant decision-making power within the contract, there is now a mechanism for the parties to challenge the Engineer's decisions if necessary. This balance aligns with the construction sector's ongoing effort to create fair and balanced contracts for all stakeholders.

3. **Sub-Clause 3.3: Engineer's Representative**

This sub-clause represents a new addition to the FIDIC contract, which was not found in the FIDIC 1999 edition. It outlines the duties and authority of the Engineer's Representative, a key party in ensuring the success of the construction project. The Engineer's Representative acts on behalf of the appointed Engineer by the Employer and functions as an intermediary between the Employer and the Contractor. Their primary role is similar to that of the Engineer, managing the contract impartially and ensuring both parties fulfil their rights and obligations according to the contract. The Representative interprets contract documents, issues instructions, and resolves disputes fairly and impartially. The Representative is also

responsible for protecting the interests of the Employer while ensuring the Contractor is treated fairly.

Sub-Clause 3.3 grants the Engineer's Representative the authority to make decisions during the project. These decisions can significantly impact the contract and affect project aspects such as time, cost, and quality. The Representative must act swiftly and diligently in carrying out their duties, ensuring timely decision-making to maintain project progress and prevent unnecessary delays or disputes.

4. **Sub-Clause 3.4: Delegation by the Engineer**

The delegation provisions in this sub-clause aim to strike a balance between maintaining the Engineer's authority and addressing the practical need for effective project management. The Engineer can delegate tasks but must ensure this is done appropriately, without undermining the overall effectiveness of the contract. The delegation does not absolve the Engineer of responsibility, ensuring accountability remains intact. While certain functions can be delegated, there are limits in place to prevent abuse of delegation and ensure the integrity of the contract process.

5. **Sub-Clause 3.5: Instructions by the Engineer**

This sub-clause governs the issuance of instructions by the Engineer, a mechanism that allows the Engineer to provide guidance to the Contractor during the construction process. This is crucial to ensuring flexibility in the contract while maintaining the necessary control for project completion. Sub-Clause 3.5 is similar to Sub-Clause 3.3 in previous FIDIC editions. The key difference in the 2017 Reprinted 2022 edition is that if the Engineer issues an instruction that the Contractor believes constitutes a variation, violates applicable laws, or reduces safety standards, the Contractor can submit a Notice to the Engineer. If the Engineer does not respond within seven days, the instruction is considered withdrawn.

6. **Sub-Clause 3.6: Replacement of the Engineer**

This sub-clause outlines the conditions under which the Employer can replace the Engineer. If the Employer deems it necessary to replace the Engineer—due to reasons such as communication issues, professional incapacity, or a conflict of interest—the Employer can refer to this sub-clause. Although the reasons for

replacing the Engineer are not explicitly detailed in this sub-clause, the provision is essential for the Employer to exercise if needed. The replacement process must be handled quickly to minimize disruption to the project. The sub-clause also highlights the Contractor's ability to express objections regarding the replacement if there are reasonable grounds supported by evidence.

The provisions of Sub-Clause 3.6 in the FIDIC 2017 Reprinted 2022 edition are largely similar to Sub-Clause 3.4 in the 1999 edition, with two key differences:

a. The second paragraph now includes a provision that, if the Employer fails to respond within 14 days of notifying the Contractor of the Engineer's replacement, the Contractor is deemed to have accepted the new Engineer.
b. If the Engineer is unable to perform their duties due to death, illness, disability, or resignation, the Employer can appoint a replacement immediately, notifying the Contractor. The appointment is considered temporary until the replacement is accepted by the Contractor.

7. Sub-Clause 3.7: Agreement or Determination

Sub-Clause 3.7 represents the most significant change from Sub-Clause 3.5 in the FIDIC 1999 edition. This sub-clause emphasizes FIDIC's commitment to fair and prompt dispute resolution. It establishes a structured process for resolving disputes that arise during the construction project. In contrast to the previous edition, where parties could directly refer their disputes to the Engineer for a determination, Sub- Clause 3.7 introduces two main routes for resolving disputes: Agreement and Determination. In the previous 1999 edition of FIDIC, where, in the case of a disagreement between the parties, they could directly refer the matter to the Engineer, who would then issue their Determination as explained in Figure 1 below, quoted from the Journal of Legal Affairs and Dispute Resolution in Engineering and Construction; American Society of Civil Engineers [Hardjomuljadi 2020; Use of Dispute Avoidance and Adjudication Boards].

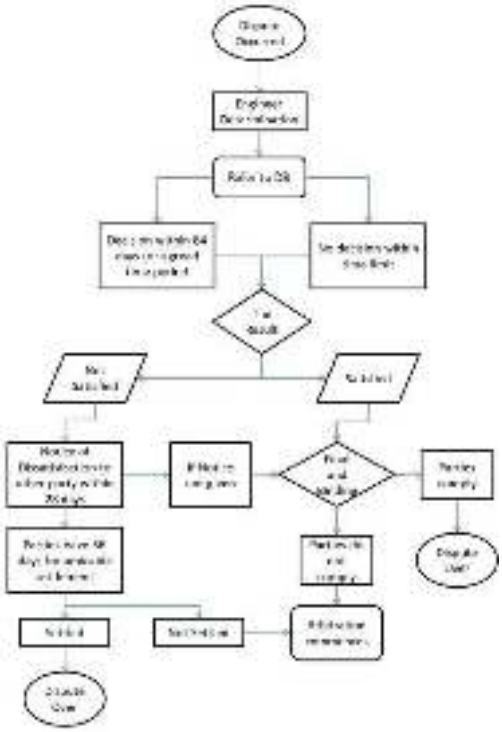

Figure 1: Engineer's Workflow in Disputes
Use of Dispute Avoidance and Adjudication Board; Hardjomuljadi 2020

Sub-Clause 3.7 introduces a different procedure. Agreement involves consultation between the parties to reach a mutually agreeable solution, while Determination is a formal decision made by the Engineer if an agreement cannot be reached. The key difference between the 1999 edition and the 2017 Reprinted 2022 edition is the introduction of "Matters to be Agreed," which are issues that do not fall under the category of claims. These matters are already addressed in Sub-Clause 3.7(a) and include several clauses such as errors in the Employer's provisions, variation instructions, work delays, and cost adjustments. When the contract requires the Engineer to carry out a task based on Sub-Clause 3.7, the Engineer must follow a defined procedure:

a. Consultation with the parties to achieve agreement. This consultation can be held jointly or individually with the parties.
b. If the consultation fails, the Engineer must issue a Determination that is fair and impartial.

The Engineer has a 42-day timeframe to complete either the consultation or the determination process. Both the consultation outcome and the determination are binding on both parties, except when appealed or revised under Sub-Clause

21 (Disputes and Arbitration). An important new feature in the determination process is the Notice of Dissatisfaction (NOD), which one party may issue if they disagree with the Engineer's determination. The NOD must be submitted within 28 days of receiving the Engineer's determination. If no NOD is submitted within the specified time, the Engineer's determination becomes final and binding for both parties.

8. Sub-Clause 3.8: Meetings

Sub-Clause 3.8 introduces a new provision in the FIDIC Engineer Clause and is an important aspect of ensuring clear communication and efficient project management. It governs the coordination and execution of meetings during the project.

This sub-clause specifies the types of meetings to be held, the responsibilities related to organizing them, and the procedures for documenting the discussions. Key components of Sub-Clause 3.8 include:

a. **Types and Frequency of Meetings**

Sub-Clause 3.8 emphasizes the importance of holding various types of meetings, such as regular progress meetings, special meetings, and meetings specifically with the Engineer. These meetings are essential for proactive collaboration and timely problem resolution.

b. **Notification and Agenda**

The sub-clause outlines the requirements for providing notifications and preparing meeting agendas. This ensures all involved parties have adequate information and preparation to make the meetings efficient and effective.

c. **Attendance and Representation**

It stresses who must attend the meetings and the importance of having authorized representatives from each party. This helps foster a collaborative environment and ensures decisions are made by those with the proper authority.

d. **Minutes of Meetings**

A significant addition to Sub-Clause 3.8 is the requirement for creating accurate and comprehensive minutes of meetings. These minutes serve as an important record of discussions, actions, and decisions made during the

meetings. They contribute to transparency and accountability and can be referenced in case of disputes.

e. **Key Points and Responsibilities**

The sub-clause also emphasizes the need to identify and document key action items that arise during meetings. Establishing responsibilities and tracking the implementation of decisions is crucial for the project's success.

CONCLUSIONS

Based on the analysis above, the author concludes that the changes to the Engineer clause in the FIDIC 2017 Reprinted 2022 edition provide a clearer framework for the Engineer to carry out their duties and offer better clarity for all parties involved, especially the Employer, regarding the Engineer's expanded authority. The evolution of the Engineer's role in FIDIC contracts reflects an ongoing effort to improve contract administration and prevent disputes within the construction services sector. The transition from the 1999 edition to the 2017 Reprinted 2022 edition marks a shift towards a more collaborative and efficient approach, addressing previous short comings and adapting to the evolving needs of the construction sector.

The FIDIC 2017 Reprinted 2022 edition seems to aim at providing greater transparency and certainty in contract arrangements, thereby reducing ambiguities for its users. The development of the Engineer clause in this edition serves as a foundation for fostering communication, collaboration, and effective project management in construction contracts. By adopting a more structured approach in the Engineer's role, this revised clause is expected to enhance transparency, reduce risks, and contribute to the overall success of construction projects. Project stakeholders are encouraged to work together and remain open to optimizing the benefits offered by the Engineer in terms of communication and efficient dispute resolution. By establishing a structured framework for meetings, the parties are encouraged to engage in effective communication and foster a shared understanding of the project's goals, challenges, and expectations. The systematic documentation of discussions and decisions through meeting minutes will serve as a reference if disagreements arise. Additionally, the provision of a clause allowing parties to challenge the Engineer's determinations and refer disputes to the DAAB (Dispute Avoidance/Adjudication Board) ensures that

conflicts can be resolved alongside the project's completion.

REFERENCE

FIDIC (Fédération Internationale Des Ingénieurs-Conseils). (1999). *Conditions of Contract for Construction* (1st ed.). Geneva: FIDIC.

FIDIC (Fédération Internationale Des Ingénieurs-Conseils). (1999). *Conditions of Contract for Plant and Design-Build* (1st ed.). Geneva: FIDIC.

FIDIC (Fédération Internationale Des Ingénieurs-Conseils). (2017 reprinted 2022). *Conditions of Contract for Construction* (2nd ed.). Geneva: FIDIC.

FIDIC (Fédération Internationale Des Ingénieurs-Conseils). (2017 reprinted 2022). *Conditions of Contract for Plant and Design-Build* (2nd ed.). Geneva: FIDIC.

Hardjomuljadi, S. (2020). Use of Dispute Avoidance and Adjudication Board. *Int. J. Legal Affairs and Dispute Resolution in Engineering and Construction, 12*(4).