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**Works within or outside the Scope of Variation Clause
Under the 2017 FIDIC Red Book**

الأعمال ضمن أو خارج نطاق البند المتعلق بالأعمال التغييرية في عقد
الفيديك الأحمر لسنة 2017

by

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ABSTRACT

Variations are inevitable in most construction contracts and occur when one party to a contract, often an employer, alter the content of the contract. In most construction contracts the employer has the right to unilaterally alter the content of the contract according to a variation clause in the contract. The arrangement that allows one party to give the right to the other to unilaterally change the content of the contract, arises from the principle of freedom of contract; where parties can agree to such a variation clause.

The 2017 FIDIC Red Book, like most standard forms of contract, provides the employer with considerable authority to vary, add, or omit work. The question is that to what extent can the scope of work be varied with no change in the underlying contract.

Being a source of many disputes between contracting parties, variations need to be considered in view of the scope of contracted work. This requires a comparison between what it is being instructed to do as a variation and of what the contractor's original work scope is under the terms of the relevant construction contract.

This dissertation examines the scope of variation clause under the 2017 FIDIC Red Book, through exploring the origin and reason for variation clauses and through comparing such variation clause with other previous versions of the FIDIC Red Book to highlight the development in the drafting of the variation clause from 1977 to 2017. The dissertation also discusses whether some variations fall under the scope of a variation clause, being variations under the contract, or, exceed the scope of a variation clause to vary the basis of contract, and become variations to the contract. Finally, the dissertation seeks to draw a line between these two types of variations; namely 'variations under a contract' and 'variations to a contract'.

نبذة مختصرة

إن التغيير على محتويات العقد أمر لا مفر منه في معظم عقود الإنشاءات، وتحدث هذه التغييرات عادة عندما يقوم أحد أطراف العقد - والذي يكون صاحب العمل في معظم الأحيان - بتغيير مضمون العقد. وغالبا ما تمنح معظم عقود الإنشاءات صاحب العمل حق التغيير على محتوى العقد من جانب واحد وفقا لشروط وأحكام محددة تنظم هذا التغيير في العقد. وتندرج الترتيبات والشروط المتبعة للسماح لطرف واحد في إجراء تغييرات على مضمون العقد من جانب واحد تحت مبدأ (العقد شريعة المتعاقدين) إستنادا على حرية الاطراف بالتعاقد ؛ والذي يمنح الأطراف حق الموافقة على مثل هذه الشروط المرتبطة بالتعديلات.

وشأن معظم نماذج العقود النظامية، يمنح عقد الفيديك الكتاب الأحمر 2017 FIDIC صاحب العمل سلطة كبيرة لاجراء تغييرات أو إضافات أو حذفات على نطاق العمل. وهو ما يطرح سؤالاً هاماً هو : ماهي حدود التغييرات التي يمكن إجراؤها على نطاق العمل دون أي تغيير في العقد الأساسي؟

ولما كانت التغييرات على نطاق العمل مصدراً للعديد من النزاعات بين الأطراف المتعاقدة ، فإنه من الضروري أخذ نطاق العمل المتعاقد عليه أصلاً بعين الاعتبار عند إجراء تغيير ما. مما يتطلب إجراء مقارنة بين التغييرات المزمع القيام بها من ناحية، وبين نطاق العمل الأصلي للمقاول بموجب شروط عقد المقاوله المتعلق بهذا الأمر من ناحية ثانية.

ويحتوي هذا البحث على دراسة مقارنة بين الإصدارات المختلفة السابقة من عقد الفيديك الأحمر فيما يتعلق بشرط أو شروط التغيير من حيث البحث في أسباب و مصادر التغيير والمواد التي تنظمها في هذا النموذج من العقود، وما صاحبها من تطورات لهذه الشروط عبر الاصدارات المختلفة منذ عام 1977 وحتى عام 2017. ويناقش هذا البحث أيضا ما إذا كانت بعض هذه التغييرات تنطبق عليها الشروط المحددة للتغيير في العقد وبالتالي فإنها تعتبر تغييرات بموجب العقد ذاته، أما أنها تتخطى الشروط المحددة للتغيير ضمن شروط العقد مما يجعلها تغييرا على العقد ذاته، وبالمحصلة يسعى هذا البحث لتحديد الفوارق الدقيقة بين هذين النوعين من التغييرات وهما تحديدا (التغيير بموجب العقد) أو (التغيير على العقد ذاته)

DEDICATION

I dedicate this dissertation to my wife Naheel, without her encouragement nothing would have been achieved.

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Figure 3.2 – 1 : Comparison of the variation clause in several standard forms of contracts (Annex – 1).

ABBREVIATIONS

FIDIC	:	International Federation of Consulting Engineers
ICE	:	Institution of Civil Engineers
employer	:	The party for whom the construction works are performed
contractor	:	The party who is performing the construction works for the Employer
engineer	:	The person in the contract given the role of administering the contract and acting as the employer's agent when instructing variations under the contract
JCT	:	Joint Contract Tribunal
UAE	:	United Arab Emirates

1. Introduction

1.1. Variations – An Overview

Although months of efforts could be spent on the design of construction work, it is one of the common features of construction contracts that modifications to the design of the contracted work are invariably sought as the work proceeds, even in the best-planned contracts, as it is almost impossible for employers and design engineers to foresee every eventuality associated with construction work.

The word ‘variation’ or ‘change’¹ is used to describe any difference between work carried out under a contract compared with the contracted work as intended to have been carried out under the same contract. It is also used to describe agreed alteration or modification by parties to the previously described work to be provided by the contractor under the terms of a contract between an employer and a contractor, which are not contemplated by the parties at the time they entered into the contract². Some of these alterations or modifications may be necessitated by items that were inadvertently not considered in the design of the work. Others may arise as a result of modification or alteration in the design by the employer. Such alteration or modification could also include reduced or omitted work.

¹ I Wallace, *Hudson’s Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 877. In the United States contracts, the term variation is usually described as “changes”. Wallace states: “...in the United States contracts there is also a tendency to use a “change” clause for many other matters which also involve a modification of the contract price of obligations, such as extension of time decisions or unfavorable or changed physical conditions clauses, or fluctuations “rise and fall” financial provisions, none of which usually involve any change in the permanent work.”

² *Barter v Mayor of Melbourne* (1876) 1 ALJR 160, referred at Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013), <<https://docplayer.net/4082750-Construction-australia-variations-a-comprehensive-overview.html>> accessed 5 March 2019. In this case, Chief Justice Stawell defined variations as: “works which are not contemplated by the parties at the time of the execution of the contract...”.

Typically, variations tend to involve the following³:

- (a) additions to the quantities of contracted work,
- (b) omissions from the quantities of contracted work,
- (c) changes to correct discrepancies between contract documents,
- (d) modification in the kind, quality or timing of contracted work,
- (e) modifications and alterations resulting from unexpected natural events,
- (f) change to the sequence in which contracted work are to be performed, or
- (g) changes to the timing of execution of contracted work

It is important to note that an employer, who is a party to a construction contract with a contractor, does not have an inherent right to make unilateral alteration or modification to the contract. The right of the employer to make alteration or modification to the contracted work, must be obtained contractually and is considered to be an essential element of the construction contracts. Without such contractual right, the employer and the contractor would be required to reach an agreement in respect of any alteration or modification to the contracted works. As reaching agreement between contracting parties is not always achievable, therefore, it is common for construction contracts, particularly standard forms of contracts, to include an express right to the employer to vary the works along with procedure for determining the effect of carried works in terms of payment and/or extension to the time for completing the work including the varied works.

In construction contracts, variations are a source of many disputes between employers and contractors⁴, due to numerous issues in respect of the scope of work under a contract,

³ K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 309.

⁴ P Booen, *The FIDIC Contracts Guide* (1st edn, International Federation of Consulting Engineers, FIDIC, 2000) 217.

the scope and extent of the variation clause under a contract, the power to order variations, and the valuation of variations. These issues are addressed hereunder⁵.

1.2. FIDIC Red Book 2017 – An Overview

FIDIC⁶ publishes the most commonly used standard conditions of contract. The first edition of the FIDIC conditions of contract was published in 1957⁷, which was mainly based on the ICE⁸ form for civil engineering construction works. Nael Bunni wrote: *“Perhaps because of its long title, in a very short time it became popularly known as the ‘Red Book’ (its cover was printed in red).”*⁹

The second and third editions of the red book were published in 1969 and 1977, respectively. The fourth edition of the red book was published in 1987 with major revisions to the third edition, but with maintaining some of the same concepts of the previous editions, which are:

- (a) It is based on the appointment of a consulting engineer to perform the design and supervision referred to as the ‘Engineer’,
- (b) It is based on the concept of sharing the responsibilities and liabilities between the employer and the contractor,¹⁰
- (c) Its user-friendliness and flexibility, and

⁵ The issues related to the scope of work under a contract are discussed under Chapters 2 and 4 of this dissertation. The issues related to the extent of the variation clause under a contract are discussed under Chapter 3 of this dissertation. The power to order variations and the valuation of variations are discussed under Chapter 5 of this dissertation.

⁶ FIDIC: Fédération Internationale des Ingénieurs-Conseils, the French name of the International Federation of Consulting Engineers.

⁷ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 6.

⁸ ICE is the Institution of Civil Engineers.

⁹ Bunni (n 7) 6.

¹⁰ Ibid 15.

(d) Its compatibility with civil and common law.¹¹

In 1999, FIDIC published another set of standard forms of conditions of contract, including ‘The Conditions of Contract for Building and Engineering Works designed by the Employer’.¹² The 1999 FIDIC Red Book is arranged into three sections; (a) general conditions, (b) guidance for the preparation of particular conditions, and (c) forms. The general conditions include 20 main clauses with 163 sub-clauses.¹³

The 1999 FIDIC Red Book, despite its common law origins¹⁴, has been in use in the Middle East since its issuance, and has demonstrated a level of flexibility beyond any other form of contract.¹⁵

In December 2017, FIDIC has introduced significant changes to the 1999 FIDIC Red Book and published the second edition of the Red Book, under the name of ‘Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, Second Edition 2017’¹⁶. The 2017 FIDIC Red Book is also arranged into three sections; (a) general conditions, (b) guidance for the preparation of particular conditions and annexes, and (c) forms. The general conditions include 21 main clauses with 168 sub-clauses.

¹¹ M Grose, ‘Compatibility of FIDIC Drafting Principles with Contracting Practices in the Gulf: A Perfect Match of Marriage for Convenience?’ [2017], *The International Construction Law Review* 2017, 376.

¹² *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (1st edn, International Federation of Consulting Engineers, FIDIC, 1999). Referred to in this dissertation as ‘The 1999 FIDIC Red Book’.

¹³ B Totterdill, *FIDIC users’ guide a practical guide to the 1999 red book*, (1st edn, Thomas Telford, 2001) 14.

¹⁴ A Jaeger and G Hök, *FIDIC a Guide for Practitioners*, (1st edn, Springer, 2010) 128.

¹⁵ E Sunna, ‘*FIDIC in the Middle East*’ (2007), *Law Update* 2007, 193, 20, <<http://www.westlaw.co.uk>> accessed 7 March 2019.

¹⁶ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017). Referred to in this dissertation as ‘The 2017 FIDIC Red Book’

1.3. Issues explored in this dissertation

In construction contract, variations arise when one party to a contract change the content of the contract. Variation clause under a construction contract gives the employer the right to unilaterally alter the content of the contract. Contracting parties are usually able to agree such a variation clause under the principle of freedom of contract. The variation clause allows one party to a contract to give the right to the other to unilaterally vary the content of the contract.

The 2017 FIDIC Red Book, like most standard forms of construction contracts, provides the employer with considerable authority to add, vary, or omit work, but to what extent can the scope of work be varied with no change in the underlying contract? Also, could a contractor be in a position to avoid performing variations?

Would the engineer's instruction to change the contractor's method of work, either directly or through approving a contractor's proposal, be considered a variation?

What are the contractual limitations of the employer's power to vary the work? Can an employer omit work to give to another contractor? Can an employer instruct a contractor to accelerate the work under a variation clause?

The researcher carries out a discussion and analysis to identify some of the broader parameters relevant to variations, in order to make sure that the dissertation's aims and objectives are achieved, as follows:

- (a) identification and description of nature and types of variations in construction contracts,
- (b) discussion of the outcome of analyzing the variation clause under the 2017 FIDIC Red Book,

- (c) exploring and differentiating between variations under contracts and variations to contracts, along with the mechanism to deal with each type, and
- (d) identification of the contractual and legal limitations in respect of power to vary contracted work.

1.4. Aims and objectives

The main aim of this dissertation is to investigate the factors affecting the variations in construction contracts to identify the types, the associated limitations, and to recommend a guideline for construction practitioners that will help to provide the required balance between the need to maintain a mechanism for implementation of variations and reducing the dispute between contracting parties.

The objectives of this dissertation are to establish:

- (a) whether the contractor can refuse or avoid performing a variation?
- (b) to what extent variations to the scope of work could be instructed without changing the underlying contract.
- (c) if the instruction to change the contractor's method of working is considered a variation under the 2017 FIDIC Red Book.
- (d) if the instruction to remedy defective work is considered a variation under the 2017 FIDIC Red Book.
- (e) if there are ambiguities or gaps in the variation clause under the 2017 FIDIC Red Book, along with comparison with other standard forms of contract.
- (f) the difference between variations under the contract and its scope, and variations that exceed the contract and vary the contents of the contract, in respect of the variation clause under the 2017 FIDIC Red Book.

(g) whether the employer under the 2017 FIDIC Red Book can omit work to give to another contractor?

(h) Whether the employer can instruct the contractor to accelerate the work under the variation clause of the 2017 FIDIC Red Book?

In this dissertation, referral is made to case law under common law jurisdiction and to articles and court decisions under UAE law, in order to examine the approaches adopted by courts under both jurisdictions in respect of variations and the related issues discussed in this dissertation.

1.5. Research methodology

The research introduces the variations and the 2017 FIDIC Red Book along with a brief of its development. The research also examines the variation clause under the 2017 FIDIC Red Book, through exploring the scope of the variation clause, the origin and reasons for variation clause. It extends to explore whether an instructed variation falls under the scope of variation clause under a contract or exceeds the scope of variation clause where the parties vary the basis of their obligations under the contract.

The dissertation seeks to draw a line between variations of the work under a contract and variations to a contract in respect of the variation clause under the 2017 FIDIC Red Book.

This research will adopt a doctrinal approach to examine, discuss, and carry out detailed analysis of the issues raised in Section 1.3 with the aim of addressing and answering the questions raised in Section 1.4.

1.6. Outline of dissertation

This dissertation is divided into six chapters. Sections 1.1 and 1.2 of Chapter 1 provide an overview of the variations and the 2017 FIDIC Red Book. Sections 1.3 through 1.6 introduce the issues explored in this dissertation, set out the aims and objectives of the dissertation, summarise the research methodology, and summarise the outline of dissertation.

Chapter 2 examines the nature of variations in construction contracts through providing detailed analysis of the variations in view of the understanding of the scope of work under a contract.

Chapter 3 provides an overview of the variation clause along with comparative analysis of variation clauses under multiple standard forms of contract. This Chapter also discusses the importance of a variation clause, the consequences of its absence, and the abuse of variation clause by one of the contracting parties.

Chapter 4 provides a detailed analysis of variations that fall under the scope of variation clause and accordingly considered variations under the contract, as well as of variations that exceed the scope of variation clause and considered variations to the contract and draws a line between the two types. This Chapter also deals with the unintended variations and the mechanism to deal with variations outside the contract.

Chapter 5 discusses the limits on power to instruct variations, from the timing point of view and the contractual limits of what constitutes a variation. It will also examine the cumulative effect of several variations and the variations instructed for the purpose of remedying defects. This Chapter will examine the limits on power to omit work to give to another contractor as well as employer's instruction to contractor to accelerate the

work. The effect of law governing a construction contract in respect of providing limitation of reasonableness or acting as an external factor limiting the rights to instruct variations is explored in this Chapter.

Chapter 6 provides the conclusions and recommendations of the dissertation.

2. Nature of variations in construction contracts

2.1. Scope of works under the contract

Construction contracts are different from other types of contracts due to numerous factors. These factors include complexity, size, and duration required to carry out the work. For construction contracts, one of the basic terms is the scope of work. The scope of work is usually defined by reference to certain documents. In most construction contracts, the description of the contracted work will be found in the drawings, specifications, bills of quantities, schedules, and other documents forming part of a contract. The definition of scope of work depends on the intention of the contracting parties at the time of entering into a contract. The definition also extends to cover other work that is not expressly included in contract documents, nonetheless, necessarily required for the proper completion of the work under the contract. The contractor's obligation in a priced contract may include ancillary work which, although not expressly described in the contract documents, is unavoidably necessary for the proper completion of the contracted work under that contract.¹⁷

FIDIC Red Book 2017, as most of the standard forms of contract, includes provisions that aim to provide details of the scope of work to be performed by the contractor, and take into consideration that the contractor's obligation includes all things, although not expressly included, necessary for the proper execution and completion of the work under a contract.¹⁸

¹⁷ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 877. According to Wallace, the scope of work is: "...as shown on the drawings and described in the specification, or to be implied as the indispensably or contingently necessary work included in the contractor's obligation to complete such expressly described work under the (inclusive price principle)"

¹⁸ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 32, cl 4.11 states: "Unless

Sub-Clause 4.11 of the FIDIC Red Book 2017 is almost identical with the same Sub-Clause of the FIDIC Red Book 1999 and provides that a contractor should have raised any errors discovered in the scope of work and should have allowed for any work associated with such error or omission, if unavoidably necessary for the proper execution of the contracted work, before entering into a contract with an employer.¹⁹

Therefore, the scope of work under a construction contract should be clearly identified. It is said that it will be more difficult for a contractor to contend that any work is a variation when the description of the contracted work is short and simple.²⁰

Considering that a variation is a change to the scope of work, the clarity of the scope of work would be a key factor in determining if any proposed work or service is part of the scope, and accordingly cannot be considered a variation, or if the work or service is a change to the scope.

Sections 2.2, 2.3 of this Chapter discuss and identify the circumstances associated with the scope of work and when the instructed varied work is part of the scope, or when the instructed varied work is not expressly included. Thereafter, sections 2.4 and 2.5 of this Chapter deal with the inconsistencies in the scope of work and when instructed varied work could be considered as variation.

otherwise stated in the Contract, the Accepted Contract Amount shall be deemed to cover all the Contractor's obligations under the Contract and all things necessary for the proper execution of the Works in accordance with the Contract."

¹⁹ B Totterdill, *FIDIC users' guide a practical guide to the 1999 red book*, (1st edn, Thomas Telford, 2001) 110.

²⁰ J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013) 280.

2.2. Works or services that are part of the scope

Following any instructed work, the first question to be answered is whether or not the instructed work differs from the work which the contractor is obliged to carry out under the contract, and therefore is in fact a variation. The answer to the question will require examination to the instructed work in view of the contracted scope of work, as identified by the contract. Such examination should take into consideration any ancillary work that is not expressly described but unavoidably necessary for the completion of the contracted work.

In some cases, the engineer may issue instruction, on behalf of the employer, which involves varied or additional work, nonetheless, if this instruction is issued to only insist that the contractor discharge his contractual obligations under the contract, such instruction should not, as a matter of interpretation, fall under the variation clause and accordingly does not constitute a variation.²¹

In other cases, and without any instruction from the engineer to vary the contracted work, the contractor may encounter difficulties while carrying out the contracted work. These difficulties may cause the performance of the contracted work to become impractical or even impossible, which may be discovered by the contractor after incurring costs, for which the contractor will attempt to recover under a variation claim²². These incurred

²¹ Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013) <<https://docplayer.net/4082750-Construction-australia-variations-a-comprehensive-overview.html>> accessed 5 March 2019.

²² O Al Saadoon, 'Controlling Construction Costs' (2008) *Law Update* 2008, 208, 30, <<http://www.westlaw.co.uk>> accessed 7 March 2019.

costs are not recoverable under the variation clause, as the risk that the executed work proves more difficult than expected is borne by the contractor.²³

In addition to the risk of difficulties, the risk of encountered unforeseen conditions, which may arise without any change to the contracted work, is also borne by the contractor.²⁴

2.3. Works or services that are not expressly included

As discussed in section 2.1, instructed work that is unavoidably necessary for the proper completion of the contracted work, although not expressly included in the scope of contracted work, does not constitute a variation.

This rule, that is derived from the inclusive price principle, is demonstrated under both UAE civil code and common law, as follows:

- (a) In the common law case of *Williams v Fitzmaurice*²⁵, where the contractor claimed a variation for flooring work which was omitted from the specification of the contract, but the court held that the flooring, although not expressly included, must be included as the work (a house in this case) is inhabitable without the flooring.

²³ Abu Dhabi Cassation No. 573/2 dated 18 December 2008, referred at M Grose, *Construction Law in the United Arab Emirates and the Gulf*, (1st edn, Wiley-Blackwell, 2016) 152.

²⁴ Wood and Fitzalan (n 21) 38.

²⁵ (1858) 3 H. & N. 844, referred at J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013). In *Williams v Fitzmaurice*, Pollock C.B. said:

“It is clearly to be inferred from the language of the specification that the plaintiff was to do the flooring, for he was to provide the whole of the material necessary for the completion of the work; and unless it can be supposed that a house is habitable without any flooring, it must be inferred that the flooring was to be supplied by him. In my opinion the flooring of a house cannot be considered an extra any more than the doors or windows.”

- (b) Also, in *Sharp v San Paulo Railway Co.*²⁶, where it was agreed that the contractor will build a railway between fixed stations. The contractor claimed compensation as a result of re-design, which was necessitated for the completion of work due to encountered conditions. The court held that the contractor is not entitled to additional payment as there was no extra work to the contract.
- (c) In *Walker v Council of the Municipality of Randwick*, Rogers J stated: “The contract is not to perform the work set out in any plan; all work necessary required for the construction must be done whether set out in the plan or not.”²⁷
- (d) Article 887(1) of the UAE civil code²⁸ has similar provisions to the inclusive price principle under common law, whereby it is implied that the contracted lump sum amount includes all elements of work necessary to complete the contracted work, even if not expressly included.²⁹

²⁶ (1873) L.R. 8 Ch. App. 597, referred at J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013). In *Sharp v San Paulo Railway Co.*, James L.J. said: “The (plaintiff) says that the original specification was not sufficient to make a complete railway and that it became obvious that something more would be required to be done in order to make the line. But their business, and what they had contracted to do for a lump sum, was to make the line from terminus to terminus complete, and both these items seem to me to be on the face of them entirely included in the contract. They are not in any sense of the word extra works.”

²⁷ (1929) 30 SR (NSW) 84 at page 87, referred at Wood and Fitzalan (n 21) 6.

²⁸ UAE Civil Transaction Code, Law No. 5 of 1985, Article 887 states:

“(1) If a muqawala contract is made on the basis of an agreed plan in consideration of a lump sum payment, the contractor may not demand any increase over the lump sum as may arise out of the execution of such plan.

(2) If any variation or addition is made to the plan with the consent of the employer, the existing agreement with the contractor must be observed in connection with such variation or addition.”

²⁹ M Grose, *Construction Law in the United Arab Emirates and the Gulf*, (1st edn, Wiley-Blackwell, 2016) 153.

Therefore, it is suggested³⁰ that any reasonably inferred undescribed work, that is necessary to achieve completion of contracted work, would be included in the contract price and should not constitute a variation.

The 2017 FIDIC Red Book, as many standard forms of contracts, seeks to enforce this principle by including provisions to the same extent, as in sub-clauses 4.10³¹, 4.11³² and 3.5³³.

2.4. Inconsistencies in scope of works or services

Inconsistencies and discrepancies are expected in construction contracts due to the fact that construction contracts usually contain complicated documents of various disciplines, which are often prepared at different times. These inconsistencies or discrepancies can be in the technical documents, either within one particular document or between two documents. They may also be in the contractual responsibilities of contracting parties.

The inconsistencies in the scope of contracted work can cause disputes between contracting parties in respect of variation claims. However, usually these inconsistencies

³⁰ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 509.

³¹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 31, cl 4.10 states:

“...the Contractor shall be deemed to have inspected and examined the Site, access to the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all matters relevant to the execution of the Works, including: (c) the extent and nature of the work and Goods necessary for the execution of the Works;”

³² *Ibid* 31.

³³ *ibid* 18, cl 3.5 states:

“The Engineer may issue to the Contractor (at any time) instruction which may be necessary for the execution of the Works, all in accordance with the Contract... If an instruction states that it constitutes a Variation, Sub-Clause 13.3.1 [Variation by Instruction] shall apply. If not so stated, and the Contractor considers that the instruction: (a) constitutes a Variation (or involves work that is already part of an existing Variation...the Contractor shall immediately and before commencing any work related to the instruction, give a Notice to the Engineer with reasons. If the Engineer does not respond within 7 days after receiving this Notice, by giving a Notice confirming the, reversing or varying the instruction, the Engineer shall be deemed to have revoked the instruction. Otherwise the Contractor shall comply with and be bound by the terms of the Engineer 's response”

are resolved through interpreting contracts, including provisions for priority of documents.

The 2017 FIDIC Red Book contains provisions for resolving inconsistencies in documents forming part of a contract³⁴. The approach to any discovered inconsistency is that the contractor should refer it to the engineer, who will issue necessary clarifications or instructions so as to resolve the inconsistency. In clarifying inconsistency, the engineer may issue an instruction to the contractor to follow a requirement of a lower priority document. Any such instruction would constitute a variation.

Such provisions, which are similar in other standard forms of contracts, are however criticised by Wallace³⁵ for being “ineptly drafted” as they confer power to the engineer to give instruction in clarifying inconsistency and a possible consequential entitlement to compensation without giving any indication of the principles to be applied by the engineer in the clarification. In addition, there is no requirement that the engineer should rationalise the instruction issued to resolve discrepancy³⁶.

³⁴ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 9, cl 1.5 states:

“The documents forming the Contract are to be taken as mutually explanatory of one another. If there is any conflict, ambiguity or discrepancy, the priority of the documents shall be on accordance with the following sequence.... If a Party finds an ambiguity or discrepancy in the documents, that Party shall promptly give a Notice to the Engineer, describing the ambiguity or discrepancy. After receiving such Notice, or if the Engineer finds an ambiguity or discrepancy in the documents, the Engineer shall issue the necessary clarification or instruction.”

³⁵ I Wallace, *Hudson’s Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 123.

³⁶ K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 326.

2.5. Works or services that could be considered as variation to the scope

In summary to sections 2.1 through 2.4 of Chapter 2, for a work or service to be considered as a variation to the scope of contracted work, any of the following principles should apply:

- (a) The instructed work, to be considered as a variation, it should be outside the contracted work, that is outside the express or implied obligations of a contractor in respect of contracted works,
- (b) The varied work has not been carried out voluntarily by the contractor,
- (c) The varied works should not have become necessary due to the fault of the contractor,
- (d) The instructed work should have been instructed by or on behalf of the employer,

Under the 2017 FIDIC Red Book, the circumstances in which variations might arise could be summarized as follows:

- (a) Instructions from the engineer, on behalf of the employer, that constitute a variation to the scope of contracted work,
- (b) Changes to drawings to accommodate employer's requests or requirements,
- (c) Instructions to expend provisional sums³⁷,
- (d) Changes in the requirements of statutory authorities, following the formation of a contract, which will cause modification or alteration to the contracted work,

³⁷ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 6, cl 1.1.67 defines the "Provisional Sum" as: "means a sum (if any) which is specified in the Contract by the Employer as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.4 [Provisional Sums]."

- (e) Resolving discrepancies or inconsistencies between contract documents through instruction from the engineer that cause changes to the contracted work, and
- (f) Agreed tender assumption that were proven incorrect.

Generally, the critical question as to whether instructed work or work carried out can properly be considered as a variation to a contract, will ordinarily be a matter of interpretation of such contract.³⁸

In cases where variation instruction is required due to some default or breach of contract by a contractor, the additional costs attributable to such variation is the liability of the contractor.³⁹

It is submitted that a contractor who has been requested to carry out a variation is unlikely to be in difficulty to advance a variation claim and will be able to recover payment for such variation. Variation claims are inevitable as it is almost impossible to foresee each and every event which might occur during performance of contracted work. In view of that concept, it is necessary that each construction contract includes a mechanism for implementing variations that will be deemed necessary during performance of the contracted work.

The nature of variation clauses, the analysis and mechanism of the variation clause under the 2017 FIDIC Red Book, the need for a variation clause, and the consequence of its absence are discussed in Chapter 3.

³⁸ K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 309.

³⁹ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 301.

3. Variation clause in construction contract

3.1. Variation clause – an overview

As discussed in Chapters 1 and 2, that due to their nature, variations in construction contracts are inevitable. It is established that a contract is legally binding on the contracting parties⁴⁰ and if alterations or modifications to the contracted scope of work had to be made during the course of the work, this would necessitate the parties to enter into a new contract to incorporate such alterations or modifications to the work. Therefore, it is necessary that each construction contract contains a provision for varying the contracted work to implement changes that are necessary or desirable during the performance of contracted work. Such provision will be referred to as ‘variation clause’. If there were no provision to that extent, any attempt to vary the contracted work would require the agreement of the parties⁴¹, the contractor will not be bound to carry out the varied work, and the employer’s attempt to omit part of the contracted work will be considered a breach of the contract⁴². By having a variation clause in a contract, the employer, through the engineer, can vary the contracted work by alteration, addition, or omission as and when necessary, and the contractor will be bound to carry out the varied work.

It is common that a variation clause would include the following elements⁴³:

⁴⁰ A Jaeger and G Hök, *FIDIC a Guide for Practitioners*, (1st edn, Springer, 2010) 262.

⁴¹ J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008) 211.

⁴² J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013) 279.

⁴³ J Hinze, *Construction Contracts*, (2nd edn, McGraw Hill, 2001) 181.

- (a) The employer has the right, through the engineer with minimal input from the employer⁴⁴, to make unilateral alteration, addition, or omission within the scope of the variation clause under the contract,
- (b) The contractor is bound to carry out the varied works when properly instructed by the engineer pursuant to the variation clause under the contract,
- (c) The parties must comply with the procedural mechanism set out at the contract, in respect of the form of instruction, necessary notification, and other requirements, and
- (d) Setting out a mechanism for the assessment of cost and time implications associated with the varied work.

According to Wallace⁴⁵, variation clauses are inserted into almost all construction contracts for three reasons, which are:

- (a) To give the employer the power to unilaterally require varied work to be carried out. This power will be a right to the employer under the contract, and the employer will not need to rely on the contractor's agreement to perform the varied work,
- (b) To give the engineer the authority to instruct varied work on behalf of the employer, as an agent of the employer⁴⁶, otherwise, the contractor might not be able to recover payment in view of the absence of any authority of the engineer to contract on behalf of the employer and would be exposed to a denial by the employer to the engineer's authority to instruct the varied work, and

⁴⁴ M Robinson, *An Employer's and Engineer's Guide to the FIDIC Conditions of Contract*, (1st edn, Wiley-Blackwell, 2013) 44.

⁴⁵ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 880.

⁴⁶ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 299.

- (c) To enable the employer and the contractor to regulate their rights and obligations in the event of a variation and to agree in advance on a mechanism for valuing varied work.

The question arises as to what extent the variation clause under a contract can be used. The limitations of scope of variation clause are discussed in Chapter 5.

3.2. Comparative analysis of variation clauses under multiple standard forms of contract

To examine the development in the drafting of the variation clause under FIDIC red book, a tabulated comparison of the variation clause in the following standard forms of contract has been made along with comparison with the JCT form of contract. The comparison is illustrated at Figure 3.2– 1. (Annex-1)

- (a) FIDIC Red Book 1977 (Third Edition)⁴⁷,
- (b) FIDIC Red Book 1987 (Fourth Edition)⁴⁸,
- (c) FIDIC Red Book 1999 (First Edition),
- (d) FIDIC Red Book 2017 (Second Edition), and
- (e) JCT Standard Building Contract with Quantities 2005⁴⁹

⁴⁷ *Conditions of Contract (International) for Works of Civil Engineering Construction*, (3rd edn, International Federation of Consulting Engineers, FIDIC, 1977).

⁴⁸ *Conditions of Contract for Works of Civil Engineering Construction*, (4th edn, International Federation of Consulting Engineers, FIDIC, 1987).

⁴⁹ *Standard Building Contract with Quantities (SBC/Q)*, (1st edn, The Joint Contract Tribunal Limited, JCT, 2005)

3.3. Detailed analysis of variation clause under the 2017 FIDIC Red Book

The 2017 FIDIC Red Book defines the term ‘variation’ as: “means any change to the Works⁵⁰, which is instructed as a variation under Clause 13 [Variations and Adjustment]”⁵¹.

Clause 13⁵² of the 2017 FIDIC Red Book includes a mechanism for implementation of variations under a contract.

⁵⁰ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 7, cl 1.1.87 defines the term “Works” as: “means the Permanent Works and the Temporary Works, or either of them as appropriate.”; cl 1.1.80 defines the “Temporary Works” as: “means all temporary works of every kind (other than Contractor’s Equipment) required on Site for the execution the Works.”

⁵¹ *Ibid* 6, cl 1.1.86

⁵² *Ibid* 63, cl 13.1 states:

“Variations may be initiated by the Engineer under Sub-Clause 13.3 [Variation Procedure] at any time before the issue of the Taking-Over Certificate for the Works.

Other than as stated under Sub-Clause 11.4 [Failure to Remedy Defects], a Variation shall not comprise the omission of any work which is to be carried out by the Employer or by others unless otherwise agreed by the Parties.

The Contractor shall be bound by each Variation instructed under Sub-Clause 13.3.1 [Variation by Instruction], and shall execute the Variation with due expedition and without delay, unless the Contractor promptly gives a Notice to the Engineer stating (with detailed supporting particulars) that:

- (a) the varied work was Unforeseeable having regard to the scope and nature of the Works described in the Specification;
- (b) the Contractor cannot readily obtain the Goods required for the Variation; or
- (c) it will adversely affect the Contractor’s ability to comply with Sub-Clause 4.8 [Health and Safety Obligations] and/or Sub-Clause 4.18 [Protection of the Environment].

Promptly after receiving this Notice, the Engineer shall respond by giving a Notice to the Contractor cancelling, confirming or varying the instruction. Any instruction so confirmed or varied shall be taken as an instruction under Sub-Clause 13.3.1 [Variation by instruction].

Each Variation may include:

- (i) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation);
- (ii) changes to the quality and other characteristics of any item of work;
- (iii) changes to the levels, positions and/or dimensions of any part of the Works;
- (iv) the omission of any work, unless it is to be carried out by others without the agreement of the Parties;
- (v) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work; or
- (vi) changes to the sequence or timing of the execution of the Works.

As a commentary, Clause 13 is almost identical with the same Clause of the 1999 FIDIC Red Book, with slight changes, and provides the following⁵³:

- (a) It sets out the right to the employer to unilaterally vary the contracted work without the agreement of the contractor.
- (b) The fifth paragraph of sub-clause 13.1 sets out the list of the matters representing variations. It is suggested⁵⁴ that the list should be considered as non-exhaustive, due to the use of the word ‘may’ in the first sentence of this paragraph; “each variation *may* include”.
- (c) The engineer, not the employer, and as an agent of the employer, has the power to issue instructions to change a wide range of matters related to the permanent works⁵⁵, being part of the contracted scope under a contract. Variations may be initiated in two ways: either by issuing an instruction, under sub-clause 13.3.1 or by a request to the contractor to submit a proposal, under sub-clause 13.3.2, at any time before issuing the taking-over certificate⁵⁶ for the contracted work.
- (d) Unless the engineer has instructed the variation in writing, the contractor cannot alter the permanent works, even if the employer issues a direct instruction to the contractor.

The Contractor shall not make any alteration to and/or modification of the Permanent Works, unless and until the Engineer instructs a Variation under Sub-Clause 13.3.1 [Variation by Instruction]”

⁵³ B Totterdill, *FIDIC users’ guide a practical guide to the 1999 red book*, (1st edn, Thomas Telford, 2001)

⁵⁴ E Baker, B Mellors, S Chalmers, and A Leavers, *FIDIC Contracts: Law and Practice*, (5th edn, Routledge, 2009) 122. The suggestion is made to sub-clause 13.1 of the 1999 FIDIC Red Book and used due to the similarity with the list in sub-clause 13.1 of the 2017 FIDIC Red Book.

⁵⁵ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 64, cl 1.1.64 defines the “Permanent Works” as: “means the works of permanent nature which are to be executed by the Contractor under the Contract”.

⁵⁶ *Ibid* 7, cl 1.1.79 defines the “Taking-Over Certificate” as: “means a certificate issued (or deemed to be issued) by the Engineer in accordance with Clause 10 [Employer’s Taking Over].”

- (e) The engineer's authority to instruct additional work is restricted that any proposed additional work is proven to be necessary for the proper completion of the contracted work, in the case of clause 13 under the 2017 FIDIC Red Book, the contracted work will mean the 'permanent works'.
- (f) The engineer's authority to omit any work is subject to one qualification, that is: "unless it is to be carried out by others without the agreement of the Parties". This matter is discussed further under section 5.5 of Chapter 5.
- (g) Contractor's entitlement to additional payment does not arise automatically when a variation is instructed, nonetheless, if a variation is validly given, the contractor is obliged to carry out the varied work, unless the contractor considers that he has a valid ground to object. The grounds which a contractor must establish, through detailed supporting particulars, are listed at the second paragraph of clause 13.1.
- (h) The engineer, under the variation clause, has the power to change the sequence or timing of the execution of the contracted work, nonetheless, the engineer cannot direct the contractor to accelerate the contracted work.
- (i) The engineer has the authority to cancel, confirm, or change the variation instruction where the contractor promptly notifies the engineer, with detailed particulars, that: (a) the contractor cannot readily obtain the goods⁵⁷ required for the instructed varied work, (b) the contractor will not be able to comply with its contractual obligations under sub-clauses 4.8 and 4.18, in respect of health and safety, and protection of the environment, respectively, or (c) the instructed varied work was unforeseeable having regard to the scope and nature of the contracted work. Amongst the three grounds, item (c) appears for the first time in the 2017

⁵⁷ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 4, cl 1.1.44 defines the "Goods" as: "means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate."

FIDIC Red Book, and it provides clarity in correlating between the instructed varied works and its foreseeability taking into consideration the contracted work, which was not addressed in the previous editions of the FIDIC standard forms of contract.

- (j) Clause 13 provides the employer with an opportunity to utilize the provisions of value engineering proposals to benefit from the contractor's experience.
- (k) Clause 13 would also apply to any instruction of the engineer, issued under sub-clause 3.5⁵⁸ if such instruction causes change to the contracted work. The issue of whether any instruction issued by the engineer under sub-clause 3.5 constitutes a variation or not requires analysis of the documents forming the contract. It is suggested that a sensible test is to examine whether the instructed work is not expressly or impliedly included in the contracted work.⁵⁹

Most employers, in view of the agency role of the engineer when initiating variations, and in view of the employers' attempt to control the budget of their projects, place constraints on the engineer's authority by requiring the employer's approval before the engineer could initiate certain variations⁶⁰. However, to provide protection to contractors, in case of instructed variation by the engineer which requires the employer's prior approval, sub-clause 3.2⁶¹ provides that:

⁵⁸ See n 33

⁵⁹ E Baker, B Mellors, S Chalmers, and A Leavers, *FIDIC Contracts: Law and Practice*, (5th edn, Routledge, 2009) 118.

⁶⁰ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 16, cl 3.2 states: "If the Engineer is required to obtain the consent of the Employer before exercising a specific authority, the requirements shall be as stated in the Particular Conditions."

⁶¹ *Ibid* 16-17

“However, whenever the Engineer exercises a specific authority for which the Employer’s consent is required, then (for the purposes of the Contract) such consent shall be deemed to have been given.”

In addition to the matters identified in items (a) through (k) above, numerous sub-clauses under the 2017 FIDIC red book stipulate that clause 13 to apply or that certain instructions are to constitute a variation. These additional matters are:

- (1) Under sub-clause 4.6⁶² [Co-operation], unforeseeable cost attributable to cooperating with employer’s personnel, other contractors employed by the employer, and legally constituted public authorities, as instructed by the engineer.
- (2) Under sub-clause 4.12⁶³ [Unforeseeable Physical Conditions], if instruction issued by the engineer, following the contractor encountering unforeseeable physical conditions, constitutes a variation.
- (3) Under sub-clause 5.2.1⁶⁴ [Definition of “nominated Subcontractor”], engineer’s instruction to the contractor to employ a nominated subcontractor.
- (4) In accordance with sub-clause 7.2⁶⁵ [Samples], engineer’s instruction to contractor to submit additional samples as a variation.

⁶² *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 28, cl 4.6 states: “If the Contractor suffers delay and/or incurs Cost as a result of an instruction under this Sub-Clause, to the extent (if any) that co-operation, allowance of opportunities, and coordination was Unforeseeable having regard to that stated in the Specification, the Contractor shall be entitled subject to Sub-Clause 20.2 [Claims For Payment and/or EOT] to EOT and/or payment of such Cost Plus Profit.”

⁶³ Ibid 32, cl 4.12.3 states: “The Contractor shall comply with any instruction which the Engineer may give for dealing with the physical conditions and, if such an instruction constitutes a Variation, Sub-Clause 13.3.1 [Variation by Instruction] shall apply.”

⁶⁴ Ibid 38, cl 5.2.1 states: “In this Sub-Clause “nominated Subcontractor” means a Subcontractor named as such in the Specification or whom the Engineer, under Sub-Clause 13.4 [Provisional Sums], instructs the Contractor to employ as a Subcontractor.”

⁶⁵ Ibid 42, cl 7.2 states: “The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works: ... (b) additional samples instructed by the Engineer as a Variation.”

- (5) In accordance with sub-clause 7.4⁶⁶ [Testing by the Contractor], instructions of the engineer under clause 13 for additional or amended tests, where results show no default on the part of the contractor.
- (6) In accordance with sub-clause 8.4⁶⁷ [Advance Warning], engineer may request contractor to submit a proposal to avoid or minimize the effect of any known or probable future events which may affect the contracted works in terms of cost or time, under sub-clause 13.3.2.
- (7) In accordance with sub-clause 8.12⁶⁸ [Prolonged Suspension], prolonged suspension affecting part of the contracted work will be treated as omission under clause 13.
- (8) Sub-clause 13.3.1 shall apply under sub-clause 11.2⁶⁹ [Cost of Remedying Defects], remedying defects that are not attributable to contractor.

⁶⁶ See n 163

⁶⁷ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 48, cl 8.4 states:

“Each Party shall advise the other and the Engineer, and the Engineer shall advise the Parties, in advance of any known or probable future events or circumstances which may:

- (a) adversely affect the work of the Contractor’s Personnel;
- (b) adversely affect the performance of the Works when completed;
- (c) increase the Contract Price; and/or
- (d) delay the execution of the Works or a Section (if any).

The Engineer may request the Contractor to submit a proposal under Sub-Clause 13.3.2 [Variation by Request for Proposal] to avoid or minimize the effects of such event(s) or circumstance(s).”

⁶⁸ Ibid 51, cl 8.12 states:

“If the suspension under Sub-Clause 8.9 [Employer’s Suspension] has continued for more than 84 days, the Contractor may give a Notice to the Engineer requesting permission to proceed.

If the Engineer does not give a Notice under Sub-Clause 8.13 [Resumption of Work] within 28 days after receiving the Contractor’s Notice under this Sub-Clause, the Contractor may either:

- (a) agree to a further suspension, in which case the Parties may agree the EOT and/or Cost Plus Profit (if the Contractor incurs Cost), and/or payment for suspended Plant and/or Materials, arising from the total period of suspension;

or (and if the Parties fail to reach agreement under this sub-paragraph (a))

- (b) after giving a (second) Notice to the Engineer, treat the suspension as an omission of the affected part of the Works (as if it had been instructed under Sub-Clause 13.3.1 [Variation by Instruction]) with immediate effect including release from any further obligation to protect, store and secure under Sub-Clause 8.9 [Employer’s Suspension]. If the suspension affects the whole of the Works, the Contractor may give a Notice of termination under Sub-Clause 16.2 [Termination by Contractor].”

⁶⁹ See n 164

(9) In accordance with sub-clause 13.4⁷⁰ [Provisional Sums], provisional sums are valued under sub-clause 13.3.1

The provisions of clause 13 along with other associated clauses, as discussed under section 3.3, address the agreement between the contracting parties in respect of variations, the power of the engineer to vary the contracted work, applicable price mechanism for variations, and limits on the time to vary the works under the contract.

Nonetheless, the variation clause under the 2017 FIDIC Red Book does not clearly deal with some situations, such as, (a) where the engineer approves a variation at the request of the contractor in order to assist him in a difficulty, (b) whether the engineer has the power to instruct changes to temporary works or work methods, as opposed to the permanent works. These matters are further discussed under Chapter 4 of this dissertation.

3.4. Why parties to a contract need to agree on a variation clause

In construction contracts, the parties to a contract are the employer and the contractor. In common law jurisdictions (on which the 2017 FIDIC Red Book is based), the principle of privity of contract provides that the effects of a contract are confined to the parties to that contract. Although the engineer is not a party to the construction contract, but he exercises the authority specified in the contract between the employer and the contractor. Therefore, the authority of the engineer, who is not a party to a construction contract, is derived from the mutual agreement of the parties to the contract, including the variation

⁷⁰ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 66, cl 13.4

clause. This authority does not extend to an amendment of the contract⁷¹, which requires the agreement of the employer and the contractor.

Under the 2017 FIDIC Red Book, the engineer is deemed to act for the employer⁷². The UAE Civil Code contains provisions that deal with agency which govern the nature and extent of employer's liability for engineer's conduct⁷³.

Therefore, and to further discuss the three main reasons set-out in section 3.1, as to why parties to a contract need to agree on a variation clause, the reasons are analysed from the perspective of each party to a construction contract.

From an employer's perspective; the importance of a variation clause to an employer could be summarized as follows:

- (1) Variation clause will give the employer the power, as a right under the contract, to unilaterally require varied work to be carried out, without causing breach of the contract and without the need to obtain the contractor's agreement to perform the varied work.
- (2) Variation clause will enable the employer to rely on the unit rates agreed with the contractor under the contract for the valuation of varied work, when varied work is similar in nature, without entering into commercial negotiation with the contractor for each and every varied work.

⁷¹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 16, cl 3.2 states: "The Engineer shall have no authority to amend the Contract or, except as otherwise stated in these Conditions, to relieve either Party of any duty, obligation or responsibility under or in connection with the Contract."

⁷² Ibid 16, cl 3.2 states: "...whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall act as a skilled professional and shall be deemed to act for the Employer."

⁷³ Articles 924 to 961 of the UAE Civil Transaction Code, Law No. 5 of 1985

- (3) Variation clause will allow the employer to amend the design of contracted works to incorporate employer's new requirements, update technology requirements, or amend errors or inconsistencies in the design of the contracted work.
- (4) Variation clause will give the engineer, the employer's agent, the authority to instruct varied work on behalf of the employer.
- (5) Variation clause will enable the employer to regulate its rights and obligations in the event of a variation and to agree in advance on a mechanism for valuing varied work, which will minimize the occurrence of disputes between the employer and the contractor.

From a contractor's perspective; the importance of a variation clause to a contractor could be summarized as follows:

- (1) Variation clause will provide the contractor with opportunity to increase the volume of contracted work, in case of additional work, and accordingly, provided that the contractor's rates that will be used to evaluate the variation are properly estimated and balanced, earn more money.
- (2) Variation clause will enable the contractor to receive compensation in terms of costs and time as a result of incorporating employer's requirements or design changes.
- (3) Variation clause, in providing authority to the engineer to vary the contracted work on behalf of the employer, will provide protection to the contractor from any denial by the employer to the contractor's recovery of payment due to instructed varied work or in respect of engineer's administration of the contract.
- (4) Variation clause will enable the contractor to regulate its rights and obligations in the event of a variation and to agree in advance on a mechanism for valuing varied

work, which will minimize the occurrence of disputes between the contractor and the employer.

In light of the above, a properly and expressly drafted variation clause will enable the employer to make necessary changes to the contracted work without invalidating the contract and will enable the contractor to benefit in terms of cost, time, or assistance in carrying out the contracted work, as the case may be.

It is suggested that variation clause grants employers with unilateral freedom of scope⁷⁴.

3.5. Consequences of absence of variation clause under a contract

The absence of a variation clause under a contract will have numerous consequences. Firstly, the employer and the contractor will not be able to benefit from the advantages listed at section 3.4. Secondly, the parties to a contract will encounter several disadvantages, as follows:

- (1) In the absence of a variation clause, the employer and the contractor will have to negotiate and make new agreement, including the agreement on the cost and time consequences, whenever they wish to incorporate any change to the contracted work. Although it is possible, and even preferable, that the employer and the contractor to reach agreement that variations to be carried out and paid under a separate agreement between them, however, this is not always achievable.
- (2) In the absence of a variation clause, the employer cannot initiate variations or omit any part of the contracted work without being in breach of the contract, and the engineer will not have any authority to instruct variations.

⁷⁴ A Jaeger and G H ok, *FIDIC a Guide for Practitioners*, (1st edn, Springer, 2010) 279.

- (3) In the absence of a variation clause, the contractor will be under obligation to complete the contracted work as specified in the contract, no more or no less.
- (4) In the absence of a variation clause, the contractor, in response to any attempt by the employer to vary the contracted work, will provide new price and negotiate the same based on the associated circumstances.

In view of the technical complexity involved and the impossibility for a designer to foresee every eventuality, it is rare for any construction project, even the smallest and simplest project to be completed exactly in accordance with the original design, and employer's requirements. If there were no variation clause in the contract, then for any necessary variation to be incorporated, would require the employer and the contractor to reach agreement on the varied work along with the cost and time consequences⁷⁵.

3.6. Abuse of variation clause by one of the contracting party

Although it is the employer who has the right to unilaterally vary the contracted work, nonetheless, both the employer and the contractor could abuse the variation clause under their contract.

One of the advantages of a variation clause is that it enables the employer to refine the design or incorporate new technologies as the work progresses, nonetheless, in practice, the provisions are often abused by some employers who see the opportunity to make arbitrary changes to the contracted work while proceeding.

One typical abuse to the variation clause is that careless employers tend to tender for works based upon uncomplete design, and later incorporate design development through

⁷⁵ A Ashworth, *Civil Engineering Contractual Procedures*, (1st edn, Addison Wesley Longman, 1998) 228.

instructed variations. This approach will create uncertainty in the scope of contracted works, and accordingly expose the contractor to high risk.

Other forms of abuse include the engineer instructing variations that exceed the scope of a variations clause and vary the basis on which the employer and the contractor has agreed in respect of the contracted work. Variations that exceed the scope of variations clauses are discussed in detail in Chapter 4.

On contractors' side, one typical abuse to the variation clause is that during tender, the contractor, utilizing his construction experience, could discover error in the design of the work or inconsistency in tender documents which, to be clarified, would necessitate addition of items that already exist in the contract's bill of quantities. In this case, most contractors would increase the rate for such item to maximize the compensation following valuation of contemplated variation. Similarly, the contractor would reduce the rates for the items that the contractor contemplates that they are likely to be omitted by the employer. Therefore, contractors' attempt to unbalance their rates, in contemplation of potential alteration or modification to the tender documents is deemed an abuse to the variation clause. In some cases, the engineer may carelessly issue instruction of variation for a scope of work that is already part of the contracted work. A typical abuse of the variation instruction by the contractor will be in advancing a variation claim and may receive compensation from the employer for such varied work.

In conclusions, each variation clause must be interpreted in the context of the underlying contract, and on an objective basis and in such a way as to produce a commercially sensible result and prevent abuse of the freedom granted to employers under the variations clauses.

4. Variation claims and express provisions

4.1. Variations that fall under the scope of variation clauses and considered variations under the contract based on the 2017 FIDIC Red Book

The 2017 FIDIC Red Book, like most standard forms of contract, is drafted based on the premise that the engineer will correctly administer the use of the variation clause, starting from the issuance of variation instruction, along with additional information required for the contractor to carry out the varied work without causing disruption or delay to the contractor's planned sequence of contracted work.⁷⁶

When considering any claim for a variation under a contract, as initiated based on the engineer's instruction, it must be decided whether or not the varied work included under the instruction differs from the contracted work which the contractor is obliged to perform under the contract. It is established⁷⁷ that in addition to the express obligations outlined under the contract, the contractor's obligations may include other ancillary works which, although not expressly described in the contract documents, are unavoidably necessary for the proper completion of the contracted work under the contract.

The 2017 FIDIC Red Book contains similar provisions, as follows:

- (a) Sub-clause 3.5⁷⁸ gives the engineer the power to issue additional or modified drawings, or instructions that are necessary for the execution of the work under the contract, without necessarily varying the contracted work, and

⁷⁶ A Hewitt, *Construction Claims and Responses*, (1st edn, Wiley-Blackwell, 2011) 11.

⁷⁷ See s 2.3

⁷⁸ See n 33

(b) Sub-clause 4.11⁷⁹ provides that the contractor's price includes all express and implied obligations necessary for the proper completion of the work under the contract.

The provisions under sub-clauses 3.5 and 4.11 of the 2017 FIDIC Red Book, equally apply to all types of priced contracts, whether lump sum⁸⁰ or measured⁸¹.

As discussed in section 3.1, the variation clause under the 2017 FIDIC Red Book provides for the authority of the engineer and the mechanism agreed between the employer and the contractor in respect of dealing with variations. Nonetheless, it is established that one of the major source of disputes in construction projects arise from the question of whether or not the engineer's instruction constitutes a variation under the contract. In practise, several situations could also occur frequently and give rise to variations claims, such as:

(1) When the engineer's instruction authorizes a variation to assist the contractor in difficulty.

The variation clause under the 2017 FIDIC Red Book does not deal expressly with this situation. Although it is part of the contractor's contractual obligations to take into consideration the costs associated with whatever changes or methods he might choose to adopt in the performance of the contracted works, when encountering a difficulty, it is suggested that issuing instruction from the engineer

⁷⁹ See n 18

⁸⁰ A lump sum contract is defined as a fixed price contract wherein the contractor shall vary out all the contracted work under the contract for a fixed specific agreed sum. In a lump sum contract, the employer does not accept the risk of variations in the quantities estimated at tender stage, upon which the fixed price was agreed.

⁸¹ A measured contract is defined as a contract wherein the employer will compensate the contractor based on agreed unit rates and actual quantities of work carried out by the contractor. In a measured contract, the employer accepts the risk of variation in the estimated quantities.

to assist the contractor in the encountered difficulty would benefit both the employer and the contractor⁸². In analysing such suggestion, it is noted that there would be two different arguments, the first is that there might be a variation to the contracted scope, but the employer argues that such variation was agreed to assist the contractor in a difficulty and that the employer did not have any benefit from such variation. The second is that the employer may content that the instructed work does not rank to a variation, as it forms part of the contractor's implied obligation under the contract. Examples of similar situation under common law are illustrated in *Kirk and Kirk Ltd. V. Roydon Corporation*⁸³, in *Charon (Finchley) v. Singer Sewing Machine Ltd.*⁸⁴, and in *C. J Pearce & Co. v. Hereford Corporation*⁸⁵.

⁸² I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995). Wallace suggests that delays to the work, which might be costly to the employer, may be avoided by the engineer's instruction to vary.

⁸³ (1956) J.P.L. 585, referred at J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008). In this case, the architect (acting as engineer) authorised the contractor to change the method of construction of a brick wall to be in two stages in lieu of one stage due to the default of contractor's supplier. Later the contractor advanced a claim of the ground that the architect instruction to build the wall into two stages constitute a variation. It was held that the architect's instruction, being a result of the failure of the contractor's supplier and design to assist the contractor, was not an instruction for the postponement of the work within the meaning of the variation clause, and consequently the claim must fail.

⁸⁴ (1988) 112 SJ 536, referred at J Adriaanse, *Construction Contract Law*, (3rd edn, Palgrave Macmillan, 2010). It is stated that:

"...vandals broke into a shop being converted, the day before it was due to be completed. Acting under a provision in the specification, the employer's agent ordered the contractor to make good the damage at the earliest possible moment. Nield J held that as it was as entire contract, all the work needed to be completed before the employer was liable to pay the price. The contractor was therefore bound to reinstate the damage and could not recover any extra payment."

⁸⁵ (1968) 66 L.G.R. 647, referred at M Abrahamson, *Engineering Law and the I.C.E. Contracts*, (4th edn, E & FN Spon, 1979). The engineer has issued instructions to the contractor to deal with encountered old sewer work, which involved additional work to the contracted work between the employer and the contractor. The instructed work was the only practical way to deal with the matter, and the contractor admitted that he would have done the same himself. It was held by Paull J. that what had been done was in the nature of a joint decision as to the best way of doing the work. Even if there were instruction under Clause 13 (under ICE conditions of contract, similar to sub-clause 3.5 of the 2017 FIDIC Red Book), they would not create any financial liability for the work, which the contractor was bound to do to complete the contract.

The case of *Yorkshire Water Authority v. Sir Alfred McAlpine Ltd.*⁸⁶ is another example of a situation where an employer was exposed to the possibility of a variation claim as a result of interpretation of the unwisely drafted and open-ended⁸⁷ variation clause under the contract.

(2) When the contractor provides extra or better-quality work.

Some commentators raise the question that if a contractor performed extra or better-quality work without any instruction from the engineer, can the contractor advance a variation claim?

The answer to this question is illustrated in the general rule set out in the case of *Re Chittick and Taylor*⁸⁸. The rule provides that in case a contractor did extra work, supplied extra material either of better quality or not required by the contract, without an instruction under the contract, the contractor will not be entitled to any variation.

⁸⁶ (1985) 32 BLR 114, referred at J Adriaanse, *Construction Contract Law*, (3rd edn, Palgrave Macmillan, 2010). In this case, the contractor was required to submit a programme and a general description of his method of construction, but the engineer's approval to the programme or the method of construction was not to relieve the contractor of any of his duties or responsibilities (Sub-clause 3.1 of the 1999 FIDIC Red Book contains equivalent provisions, which provide that the consent or approval of the engineer shall not relieve the contractor from any responsibility he has under the contract). In its tender, the contractor had submitted a method statement showing that the construction of the work, which was a tunnel, would be upstream. This was approved and accepted. Thereafter, the contractor contended that it was not possible to perform the work upstream and performed the work downstream. The contractor claimed that it was entitled to a variation instruction under clauses 13(1) and (3) of the conditions of contract. It was held that: "...the method of working would have been the sole responsibility of the contractor, but by virtue of the specification and the approval of the contractor's tendered method of working, upstream working became a "specified method of construction" under Clause 51 (1), and that by virtue of Clause 13(1) and (3) of the conditions, the contractor was entitled to a variation instruction in the event that the method of working proved to be impossible."

⁸⁷ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 897.

⁸⁸ (1954) 12 WWR 653, referred at Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013), <<https://docplayer.net/4082750-Construction-australia-variations-a-comprehensive-overview.html>> accessed 5 March 2019.

(3) When the actual quantities differ from the bills of quantities.

As pointed out in section 2.3, differences between actual quantities and those set out at the bills of quantities cannot be considered to change the contract sum under lump sum contracts, as the risk associated with the same is borne by the contractor. In re-measured contracts, and although differences between actual quantities and those set out at the bills of quantities frequently occur without any alteration or instruction to vary the contracted work by the engineer, but such differences will alter the contract sum.

In re-measured contracts, usually differences in quantities are dealt with under the measurement provisions⁸⁹, where the actual quantities will be considered without alteration to the unit rates and prices agreed between the employer and the contractor, nonetheless, contractors will often claim that the differences in the quantities should be dealt with under the variation clause in the contract. This attempt by contractors is to obtain the advantage of the more generous valuation of variations, which, in certain circumstances to deal fairly the nature and timing of varied work, allows the contractor to depart from the agreed unit rates and prices under the contract. It is suggested that the wording of sub-clause 13.1 (i) of the 2017 FIDIC Red Book frequently gives rise to such confusion⁹⁰. Sub-clause 13.1 (i) states:

⁸⁹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 61, cl 12.

⁹⁰ E Baker, B Mellors, S Chalmers, and A Leavers, *FIDIC Contracts: Law and Practice*, (5th edn, Routledge, 2009) 122. The reference to this Book is made to sub-clause 13.1 (a) of the 1999 FIDIC Red Book, which has an identical wording of sub-clause 13.1 (i) of the 2017 FIDIC Red Book.

“changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation)”

This confusion might be understandable because the wording of the sub-clause allows the differences in the quantities to be considered as a variation, but then qualifies this allowance by stating that the differences in quantities may not necessarily constitute a variation. The FIDIC Contracts Guide⁹¹ explains that the qualification in sub-clause 13.1 (i) confirms the provisions of re-measurement set-out at clause 12 of the 2017 FIDIC Red Book, that the Contractor shall carry out all contracted work and be paid for the same on a measurement basis, through applying the rates and prices in the bills of quantities to the actual measured quantities carried out, not on the basis of any quantities set out in the bills of quantities, without any need for the assistance of the variations valuation clause or of a new rate or price.

Therefore, under measured contracts, it is necessary to distinguish between differences in quantities due to re-measurement, and differences in quantities due to variations instructions. In this connection, it is recommended that the employer requires the contractor to submit a detailed break-down of rates and prices, to be used for accurate evaluation of future claims in respect of actual quantities.

(4) When the engineer directs work, that is part of the contracted work, as a variation.

When the engineer instructs the contractor to carry out a certain work as a variation, but such work is already part of the contracted work under the contract,

⁹¹ P Booen, *The FIDIC Contracts Guide* (1st edn, International Federation of Consulting Engineers, FIDIC, 2000) 218. Based on the identical wording of sub-clause 13.1 (a) of the 1999 FIDIC Red Book with the wording of sub-clause 13.1 (i) of the 2017 FIDIC Red Book.

the engineer's instruction cannot bind the employer to pay for the work directed under a variation clause, as the engineer has no authority to vary what is already agreed between the employer and the contractor⁹². The 2017 FIDIC Red Book contains equivalent provisions to that extent⁹³. As an example, in *Sharpe v San Paolo Brazilian Railway Co.*⁹⁴, it was held that the engineer had no authority to instruct work already impliedly included in the contract as varied work.

Therefore, in order to overcome any difficulty that may arise from the possible confusion between the power conferred in the engineer through the variation clause under the contract and the engineer's duties to intervene and give instructions to insist that the contractor discharges his contractual obligations under the contract, it is advisable that the contract document should sufficiently and expressly prescribe the contractor's working methods. If the contractor is carrying out a work that does not conform with the contract documents, then the contractor will be in breach of the contract for that reason and the engineer's instruction to strictly enforce the requirements of the contract documents, as to the working method or temporary works, will not form a variation.⁹⁵

4.2. Variations that exceed the scope of variations clauses and considered variations of the contract based on the 2017 FIDIC Red Book

In practice, and to benefit from the existence of agreed unit rates and prices between the employer and the contractor as well as the contractor's presence on the construction site, the engineer may instruct variations which, by reason of their nature, timing, or extent

⁹² See s 3.4

⁹³ Sub-clause 3.2 of the 2017 FIDIC Red Book. See n 71.

⁹⁴ (1873) LR 8 Ch App 597, referred at J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008)

⁹⁵ C Fischer, 'Unilateral variations in construction contract' [2013], *Construction Law Journal*, Const. L.J. 211.

fall outside the variation clause. It is established that the power of the engineer, although could be wide, is limited by the scope of the variation clause under the contract⁹⁶. As such, any change that exceeds the specified or implied limits will be outside the scope of the variation clause under the contract and will become a variation to contract. The 2017 FIDIC Red Book provides that the engineer will have no authority to deal with variations outside the scope of the contract⁹⁷.

Based on the similarity in wording of sub-clause 13.1 of the 2017 FIDIC Red Book and the 1999 FIDIC Red Book, according to Bunni, the authority of the engineer under the variation clause of the 2017 FIDIC Red Book is extremely wide, as it extends to the “form, quality or quantity of the Works or any part thereof”⁹⁸. Bunni also states that the engineer’s authority is “explicitly restricted” in respect of additional work, in sub-clause 13.1(v) to ‘necessary for the Permanent Works’. In addition, it is suggested that any variation instruction that is proven to be beyond the limits specified or implied under the contract will be a variation of contract not under contract and need to be the subject of a separate contract⁹⁹.

There is some English case law supporting this suggestion, for instance, in *Cooper v Langdon*¹⁰⁰ the contractor deviated from the contract drawings with the permission of the engineer. It was held that the contractor is liable to the employer for breach of contract, as the engineer has no authority to vary the contracted work in this way.

⁹⁶ See s 3.1

⁹⁷ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 16, 63. cls 3.2 and 13.1. See nn 71 and 52.

⁹⁸ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 299.

⁹⁹ D Chappell, V Powell-Smith, and J Sims, *Building Contract Claims*, (4th edn, Blackwell, 2005) 74.

¹⁰⁰ (1841) 9 M&W 60, referred at J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008) 250.

The law governing the contract may also impose limits on the engineer's power to instruct variations. In common law jurisdiction, where the engineer instructs varied work that exceeds the scope of the variation clause under the contract, the contractor has the right to refuse to perform such varied work¹⁰¹, or may be entitled to be paid on the basis on a *quantum meruit*¹⁰². The question arises as to whether UAE law have a concept similar to the common law principle of *quantum meruit* to address the issue of fair remuneration to the contractor when the construction contract is not clear? Before answering this question, this section will further explore some illustrations on the position of the common law and the suggestion of commentators.

According to Pickavance¹⁰³, if the engineer instructed work that is outside the scope of the variation clause, then the contractor has no obligation to comply with such instruction and will be entitled to refuse to carry out such instruction. The instructed work can be carried out through either:

- (a) a separate contract between the employer and the contractor, or
- (b) if the contractor opted to comply with the engineer's instructions without objection, the contractor's associated payment for performing the instructed work will not exceed the amount which could be obtained under the terms of the variation clause, or the amount determined to be reasonable and fair under the principle of *quantum meruit*.

¹⁰¹ E Baker, B Mellors, S Chalmers, and A Leavers, *FIDIC Contracts: Law and Practice*, (5th edn, Routledge, 2009) 125.

¹⁰² Latin for 'as much as he has deserved'. *Quantum meruit* claims are remedy sought for payment of a reasonable remuneration for work done. They arise where (a) work has been done under a contract but the parties have not agreed a price for such work, or (b) work has been done while the contract does not exist, discharged or replaced or believed to be valid but found to be void, and (c) where there is an agreement to pay a reasonable sum, that is effectively a new agreement with respect to the work done.

¹⁰³ K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 310.

Wallace¹⁰⁴ suggests similar recourses as suggested by Pickavance, but deals with the basis of compensation as follows:

- (a) if the instruction is issued by the engineer under the variation clause, and the contractor complies with the instruction, then the contractor will be deemed to have waived any right to payment other than what could be obtained under the variation valuation clause.
- (b) if the instruction is issued by the employer without any reference to the variation clause, as usually in most standard forms of contracts, it is the engineer not the employer who is authorised to issue instructions under the variation clause, and the contractor complies with the instruction, then, in the absence of agreement, the contractor will be entitled to reasonable remuneration on the basis of quantum meruit.

The approach under common law could be examined by reference to the English case of *Thorn v London Corporation*¹⁰⁵, wherein:

- (a) the difference between varied works that were contemplated by the contract and varied works that were not contemplated by the contract was set out. It was concluded that varied works that were not contemplated by the contract would not fall within the variation clause, and

¹⁰⁴ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 929.

¹⁰⁵ (1876) 1 App. Cas. 120, referred at J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013). Lord Cairns said: "...either the additional and varied work which was thus occasioned is the kind of additional and varied work contemplated by the contract, or it is not. If it is the kind of additional work contemplated by the contract, he must be paid for it and will be paid for it according to the prices regulated by the contract. If, on the other hand, it was additional or varied work, so peculiar, so unexpected and so different from what any person reckoned or calculated upon, that is not within the contract at all; then, it appears to me, one of two courses might have been open to him; he might have said: I entirely refuse to go on with the contract – *Non haec un foedera veni*: I never intended to construct this work upon this new and unexpected footing. Or he might have said, I will go on with this, but this is not the kind of extra work contemplated by the contract, and if I do it, I must be paid a *quantum meruit* for it"

(b) it was established that when the contractor is directed to carry out additional work that could not be ranked as variation under the contract, and for which no price has been agreed, the contractor will be entitled to a reasonable amount of remuneration for the work carried out.

Similarly, the same principle was applied in *Blue Circle Industries Plc v. Holland Dredging Co.*¹⁰⁶.

Using a similar approach to the English courts, the courts of the United States have developed the doctrine of ‘cardinal changes’¹⁰⁷. The effects of a cardinal change were defined in *Allied Material and Equipment Company v United States*¹⁰⁸ whereby a cardinal change would occur when the government directs a very drastic alteration to the work to the extent that it effectively requires the contractor to perform duties that are materially different from the duties tendered for, thus, render the government in breach.

In addition, in the United States case of *Luria Bros. v. U.S.*¹⁰⁹, it was held that changes were of such magnitude that they were a ‘cardinal change’ and not a variation under the contract, therefore, caused a breach of the contract.

The principles established in *Thorn v London Corporation* and that of a ‘cardinal change’ are not expressly dealt with under the variation clause of the 2017 FIDIC Red Book.

¹⁰⁶ (1987) 37 BLR 40, referred at J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008). In this case it was held that the employer’s instruction to the contractor could not be regarded as a variation, as it was beyond the scope of the contract and had to form a separate contract.

¹⁰⁷ In *Air-A-Plane Corporation v United States* (1969), referred at I Wallace, *Hudson’s Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995), the term ‘cardinal changes’ was defined as: “a drastic modification beyond the scope of the contract”.

¹⁰⁸ (1978) 569 F 2d 562, 565, referred in C Fischer, ‘*Unilateral variations in construction contract*’ (2013), *Construction Law Journal*, Const. L.J. 211.

¹⁰⁹ 369 F. (2d) 701, referred at I Wallace, *Hudson’s Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 934.

Bunni¹¹⁰ suggests that the authority of the engineer under any variation clause must be subject to an implied limitation of reasonableness as instruction cannot exceed the limit prescribed under the contract. Similarly, Uff¹¹¹ suggests that there should be some limit to the work which could be added to a contract, and if an engineer instructed additional work beyond such limit, then the contractor should be entitled to be compensated on a quantum meruit basis.

In answering the question of how UAE law deals with the issue of fair remuneration when the construction contract is silent, the following comparison between UAE law provisions with the common law principle of *quantum meruit*.

Article 888 of the UAE Civil Transaction Code¹¹² provides the contractor with an entitlement to a reasonable remuneration 'fair compensation' which is defined to be at least the cost of labour and materials used, in addition to a sum for overheads and a reasonable profit¹¹³. This is similar to the principles proposed by the English courts for reasonable remuneration.

Article 887 of the UAE Civil Transaction Code¹¹⁴ applies where the work carried out is so different from the work contemplated in the contract¹¹⁵. Sub-article (1) of Article 887

¹¹⁰ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 300.

¹¹¹ J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013) 282.

¹¹² Article 888 of the UAE Civil Transaction Code (Law No. 5 of 1985) states:

"If the consideration for the work is not specified in a contract, the contractor shall be entitled to fair remuneration, together with the value of materials he has provided as required by the work."

¹¹³ A Dimitracopoulos and A Van Niekerk, *Separated at birth, or long distant cousins?* (2005), *Law Update* 2005, 173, 15, <<http://www.westlaw.co.uk>> accessed 7 March 2019.

¹¹⁴ Article 887 of the UAE Civil Transaction Code (Law No. 5 of 1985) states:

"(1) If a muqawala contract is made on the basis of an agreed plan in consideration of a lump sum payment, the contractor may not demand any increase over the lump sum as may arise out of the execution of such plan.

(2) if any variation or addition is made to the plan with the consent of the employer, the existing agreement with the contractor must be observed in connection with such variation or addition."

¹¹⁵ See n 109

deals with the contractor's risk to in respect of the additional costs arising out of carrying out the work under a lump sum contract¹¹⁶. However, if the contractor carried out a work that is not part of the agreed plan (contract documents) and such work is consented by the employer, he may advance a claim for the work carried out.

Sub-article (2) of Article 887 requires that in case of any variation to the plan that is consented by the employer, the contract must be observed. Commentators suggest that it could be inferred that the price contained within the existing contract does not remain observed, as that would cause sub-article (2) to become redundant. Therefore, it is suggested¹¹⁷ that despite the change in plan, the contract should remain observed along with a change in price allowed for in sub-article (2).

Accordingly, in the event of an additional work carried out by the contractor at the consent of the employer and the parties cannot agree on the price for this additional work, under UAE law, the contractor should be entitled to claim for 'fair remuneration'. The principles under the provisions of Articles 887, and 888 of the UAE Civil Transaction Code provide for the fair and reasonable remuneration for a contractor similar to the principles used under English common law.

Example of the application of the fair remuneration principle under UAE law is illustrated in Dubai Court of Cassation cases 44/2208¹¹⁸ and 139/2009¹¹⁹, where the court held that

¹¹⁶ H Arab, 'Extracts from "The UAE Civil Transaction Code in the light of Recent Comparative Arab Case Law" - Chapter 3 Contracts of Work' (2004), Law Update 2004, 163, 5 available at <<http://www.westlaw.co.uk>> accessed 7 March 2019.

¹¹⁷ Ibid P. 3. The authors suggest that article 887 (2) operates as an exception to article 887 (1). They also conclude that: "...under UAE Law an entitlement to an increased price for lump sum contracts is generally denied, subject only to variations or additions, the pricing of which should be assessed in the context of the overall work carried out."

¹¹⁸ Dubai Court of Cassation 44/2008

¹¹⁹ Dubai Court of Cassation 139/2009

despite the absence of agreed price, the contractor is entitled to receive fair remuneration for the additional work carried out.

In view of the discussion outlined in section 4.2 of this Chapter, it appears that an argument from a contractor that the work as carried out represents a separate contract will only succeed in limited circumstances. In practice, employers often may see an opportunity under lump sum contracts to extract as much as possible from contractors, as such, it is of importance that contractors must be fully acquainted with the consequences of proceeding with the performance of instructed additional work without protest. Contractors therefore should take an early stand and object the execution of the instructed work that exceeds the scope of the variation clause under the contract.

4.3. Unintended variations

4.3.1. Instruction to change the contractor's method of working

In most standard forms of construction contracts, a contractor has the freedom to choose the methods of construction. It is usual to expect the contractor to design and be responsible for the temporary works¹²⁰ and his selected methods of construction.

The 2017 FIDIC Red Book contains similar provisions, where sub-clause 4.1¹²¹ provides that the contractor is responsible for the adequacy, stability, and safety of all methods of construction. The FIDIC Contracts Guide¹²² explains that under sub-clause 4.1 of the

¹²⁰ See n 46

¹²¹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 22, cl 4.1 states:

“The Contractor shall be responsible for the adequacy, stability and safety of all the Contractor's operations and activities, of all methods of construction and all of the Temporary Works. Except to the extent specified in the Contract, the Contractor: (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract...”

¹²² P Booen, *The FIDIC Contracts Guide* (1st edn, International Federation of Consulting Engineers, FIDIC, 2000) 97.

1999 FIDIC Red Book, which also applied to the 2017 FIDIC Red Book, the contractor, for information only and without any necessary consent or approval by the engineer, is required to submit details of his proposed arrangements and methods of execution. In addition, sub-clause 8.3¹²³ requires the contractor to submit a general description of the methods which he intends to adopt in the performance of the contracted work.

As discussed in section 3.3 of this dissertation, sub-clause 13.1 of the 2017 FIDIC Red Book does not provide the employer the right to direct changes to the methods of constructions adopted by the contractor. Accordingly, the engineer has no authority to interfere with the method of working proposed or adopted by the contractor.

In support of this general rules, United States courts have held that while performing his obligations under a contract, a contractor must achieve an ultimate result, and therefore, the contractor must have the discretion to determine the methods and means to achieve that result¹²⁴. Nonetheless, some commentators suggest¹²⁵ that there is an exception to this general rule, that is, when the engineer's instruction is issued to change the temporary works¹²⁶ and not the contractor's methods of executions.

¹²³ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 46, cl 8.3 states:

"The Contractor shall submit an initial programme.... The initial programme...shall include:

(k) (ii) a general description of the methods which the Contractor intends to adopt in the execution of the Works"

¹²⁴ *Big Chief Drilling Co. v. United States* (1992) 26 Cl. Ct. 1276 referred at A Jaeger and G Hök, *FIDIC a Guide for Practitioners*, (1st edn, Springer, 2010) 145.

¹²⁵ E Baker, B Mellors, S Chalmers, and A Leavers, *FIDIC Contracts: Law and Practice*, (5th edn, Routledge, 2009)

¹²⁶ See n 50 for the definition of temporary works. Under 2017 FIDIC Red Book, the term "Works", which the engineer may change under clause 13 (the variation clause), is defined under sub-clause 1.1.87 as: "means the Permanent Works and the Temporary Works, or either of them as appropriate." Therefore, instructing changes to the temporary works is within the power granted to the engineer under the variation clause.

In this connection, a question may arise, that is, if the contractor complies with an instruction of the engineer, who has no power to change the contractor's method of execution, is the contractor entitled to compensation? In answering this question, the following case law will provide detailed analysis to this matter.

In *Neodox Ltd. v. Borough of Swinton & Pendlebury DC*¹²⁷ the engineer had prevented the contractor from proceeding with the contracted work in accordance with the contractor's intended method and further instructed the contractor to change his working method. The result was that the contractor incurred more cost and advanced a claim for the increase in cost as a result of the changed methods of executions. It was held that the increased costs were not recoverable. Diplock J stated¹²⁸:

“In a contract in which there is no specific method of carrying out particular operations necessary to complete the works set out, and which provides merely that they shall be carried out under the Engineer's direction and in the best manner to his satisfaction, I find great difficulty in seeing how a direction by the Engineer intimating the manner in which the operations must be carried out in order to satisfy him can be a “variation of or addition to the works”. It seems to me to be no more than what the contract itself calls for, provided only that the Engineer is fair and impartial in making his decision to give such direction.”

In *Kitsons Sheet Metal Ltd. v. Matthew Hall Mechanical & Electrical Engineers Ltd.*¹²⁹ it was held that the direction to change the contractor's methods of working did not

¹²⁷ (1958) 5 BLR 34, referred at J Adriaanse, *Construction Contract Law*, (3rd edn, Palgrave Macmillan, 2010)

¹²⁸ Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013). See n 2.

¹²⁹ (1989) 47 B.L.R. 82, referred at Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013). See n 2.

constitute a variation. While in *Yorkshire Water Authority v. Sir Alfred McAlpine & sons Ltd.*¹³⁰ it was demonstrated that the instruction to change the contractor's method constituted a variation. This illustrates that to define whether a direction to alter the contractor's methods of working would be ranked as an unintentional variation or would not constitute a variation, depends on the terms of the contract and the clarity of the contract documents. Therefore, in practice, it is recommended that employers or engineers on their behalf should not include contractors' method statements as part of contracts' documents, and to leave the responsibility as to the choice of methods with contractors.

4.3.2. Approving a contractor's proposal

In certain situations, during the contractor's execution of the contracted work, the contractor may propose a change to the contracted work, either to assist him in difficulty¹³¹ or to alter the method of work adopted by the contractor, but through an instruction from the engineer, in order for the contractor to claim compensation arising therefrom.

For instance, in *Simplex Concrete Piles Ltd. v. The Mayor, Alderman and Councillors of the Metropolitan Borough of St Pancreas*¹³² the contractor was under obligation to

¹³⁰ See n 82.

¹³¹ See s 4.1 (1)

¹³² (1958) 14 B.L.R. 80, referred at J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013). Edmund-Davies J. said:

"The architect's letter of 30th July contained an instruction involving a variation in the design or quality (or both design and quality) of the works which the plaintiffs were being instructed to perform, and I have already indicated my views that he did so in circumstances in which he was accepting on the employers' behalf that they would be responsible for the extra cost involved. Such an action fell, in my judgement, within the 'absolute discretion' vested in him by clause 1 and was motivated by his great desire 'to get the job moving' as he put it, and regardless of the legal position of the plaintiffs under their contract. It was an action which led to the plaintiffs doing something different from that which they were obliged to do under

execute piles of specified capacity, which later proved to be impractical and the contractor proposed alternative option that involved more cost. Although the contractor was liable for the proven impracticality, nonetheless, the engineer accepted the contractor's proposal. It was held that the contractor was entitled to be compensated for the incurred additional cost as a result of the alternative proposal. According to Wallace¹³³, the decision given under this case 'seems wrong in principle', since the engineer has no authority to depart from the contract.

On the other hand, in *Howard de Walden v. Costain*¹³⁴ a different approach was taken by the court, wherein it was established that in some occasions the engineer may be called upon to issue an instruction to clarify what has to be done for the contracted work to proceed, and such instruction need not constitute a variation, even if it might involve extra work.

In view of the different approach on how courts dealt with the instruction of an engineer in approving a contractor's proposal, it is recommended that in cases where the engineer find it necessary to issue instruction that may unintentionally cause variation or involve additional work, but the necessity is arising from the contractor's default or for a risk that is allocated to the contractor, then it is necessary that the instruction of the engineer to expressly include that it is given on the term that it will not involve additional payment.

their contract, and it was an action which involved the defendants in responsibility for the extra expense which it entailed."

¹³³ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 895.

¹³⁴ (1991) 55 B.L.R. 123, referred at J Murdoch and W Hughes, *Construction Contracts Law and Management*, (4th edn, Taylor & Francis, 2008) 215.

This issue is not dealt with under the 2017 FIDIC Red Book. Other standard forms of contracts, such as the ICE conditions¹³⁵ deals with this issue, where it is provided under clause 51(3) that:

“...The value (if any) of all such variations shall be taken into account in ascertaining the amount of the Contract Price except to the extent that such variation is necessitated by the Contractor’s default.”

Therefore, engineers should be careful when intervening and giving instruction for the contracted work to proceed, as they could unintentionally expose employers to payment liability under the express power conferred to them by the variation clause in construction contracts.

4.3.3. Alternatives in Specification

Technical specifications, which form part of any construction contract documents, usually name specific brands or manufacturers for each material or system, which are to be used by the contractor in carrying out the construction work. Generally, specifications allow several alternatives for materials and systems using the terms ‘or equal’ following the named brands or manufacturers, to give the contractor the freedom to choose from the alternative brands or manufacturers.

Having substitution of brands, products, or manufacturer is of practical importance, as sometimes specifications are not up to date, and may name a brand that is obsolete or discontinued.

¹³⁵ ICE Conditions of Contract, 6th edition, referred to at J Uff, *Construction Law* (11th edn, Sweet & Maxwell, 2013) 300.

In this connection, sometimes an employer may insist on specific brand name, although the specifications under the contract between the employer and the contractor provide for two or three alternative brands, and therefore directs the engineer to instruct the contractor to use only the brand name that is preferred by the employer. Such instruction by the engineer may unintentionally constitute a variation under the contract, as in *Brodie v. Corporation of Cardiff*¹³⁶

4.4. Drawing a line between variations of the work under the contract and variations of the contract under the 2017 FIDIC Red Book

As discussed in Chapters 2 and 3, changes in construction contracts are unavoidable and that it is necessary to have within each construction contract a mechanism for incorporation of necessary changes to the contracted work without changing of the contract itself, and to give the engineer the power to make such changes under the contract, as an agent of the employer. Taking into consideration that the contractor is required to execute each variation instructed by the engineer, upon the power granted to him by the employer and the contractor, unless he has valid reasons to object, the power granted to the engineer should not be wide and must be confined. Therefore, it is important to draw a line and to distinguish between a variation that is instructed under the contract ‘variation under contract’¹³⁷, and a variation that exceeds the limit of a variation clause and becomes a ‘variation of contract’¹³⁸.

¹³⁶ (1919) AC 337, referred at I Wallace, *Hudson’s Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 879.

¹³⁷ See s 4.2

¹³⁸ See s 4.3

This section will examine practical tests and principles that would help drawing a line to distinguish between ‘variation under contract’ and ‘variation of contract’.

Before considering these tests and principles, it is useful to discuss some issues that would affect distinguishing between the two types of variations. The first issue is the that several standard forms of contracts, including the 2017 FIDIC Red Book, do not require parties to a contract to execute any specific document that indicates the consequences of an instructed varied work, as to whether it would change the contract price, or that it is instructed without any intended compensation but only to insist contractor’s compliance with the contract or as a consequence of discovered defective work. In practice, such document is referred to as ‘variation order’ or ‘change order’. Under the 2017 FIDIC Red Book, a variation may be initiated either by instruction from the engineer or by a request to the contractor to submit a proposal, thereafter, evaluation of the variation will be made by the engineer in accordance with clause 12 [Measurement and Evaluation]. The absence of such specific document, which will serve to indicate the intention of the instruction, could make it difficult to distinguish whether the instruction amount to a variation, either intentional or unintentional, before testing under which type of variations it will fall, if considered a variation.

The second issue is in respect of instructions given by the engineer as a consequence of contractor’s default. The 2017 FIDIC Red Book does not expressly exclude additional payment or compensation where an engineer’s instruction is issued due to the contractor’s default. This issue is discussed in section 5.4 of Chapter 5.

The third issue is the possible confusion in the wording of sub-clause 13.1 (a) of the 2017 FIDIC Red Book, as discussed at section 4.1 (3), where the wording of this sub-clause allows the differences in quantities of contracted work to be considered as a variation, but

also qualifies this allowance by stating that these differences may not necessarily constitute a variation.

The fourth issue relates to contractors' attempts, when faced with unexpected difficulties, to either obtain engineer's instruction or confirm an advice or technical reply issued by the engineer as an instruction in order to utilize it in advancing a claim for compensation based upon the engineer's instruction. The variation clause under the 2017 FIDIC Red Book does not expressly deals with this issue, as discussed in sections 2.2, 4.1 (1) and 4.3.2 of this dissertation.

The fifth issue is the requirements for sufficiently precise wording in connection with the engineer's power to make changes to the contractor's temporary work and methods of working while accepting the principle that the temporary works and methods of execution will be under the discretion and responsibility of the contractor¹³⁹.

As to 'variations under contract', the general principles to identify this type of variations are summarized as:

- (1) The varied work is outside the contracted work under the contract, express and implied.
- (2) The varied work should have been directed by or on behalf of the employer and instructed in accordance with the procedure agreed between the employer and the contractor.
- (3) The varied work should not have been carried out voluntarily by the contractor.
- (4) The varied work should not have been necessitated by the default of the contractor.

¹³⁹ I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 901.

- (5) The contractor has complied with the contract in respect of the requirements as to procedure or form in connection with varied work.

As to 'variation of contract', and although the dividing line between the two types of variations is sometimes a fine one, the following principles and tests could be used to identify this type of variation:

- (1) In the absence of a variation clause under the contract, and unless changes are authorized by the contract, any change to the work will amount to a variation of contract.
- (2) When the authority to instruct variations is limited, any change that exceeds the limits including the time limits for issuance of instruction, specified or implied, will form a variation of contract.
- (3) A variation that proposes to change the whole scope of contracted work or its character far beyond what was contemplated by the parties, will be considered a variation of contract. In this connection, a sensible view must be taken to determine the effect of the proposed variation. For instance, in a construction contract for 2000 identical villas, a proposed addition of 5 or 10 identical villas on the same construction site and under the same conditions does not appear to change the whole scope of contracted work. On the other hand, in a construction contract for one villa, a proposal to carry out a further one villa, even if identical and on the same site is considered beyond the scope that was contemplated by the parties. This is illustrated by the following quotation from the judgement of the court in the case of *Air-A-Plane Corporation v United States*:¹⁴⁰

¹⁴⁰ See n 107

“The basic standard...is whether the modified job was essentially the same work as the parties bargained for when the contract was awarded.”

4.5. The mechanism to deal with variations outside the contract or its scope

In situations where the work instructed falls outside the scope of the variation clause, it is submitted that the contractor would have two possible courses of action, but both have consequences. The first is that the contractor refuse to carry out the instructed work, being a variation of contract, which needs a new agreement between the employer and the contractor. Although a contractor will usually select to carry out additional work to increase his monetary earning, nonetheless, sometimes the nature of the proposed variation of contract or the timing is not reasonable and might cause the contractor to incur unrecoverable costs. It is noted that while refusal to comply with the engineer's instruction when exceeding the scope of the variation clause is not in itself a breach of the contract by the contractor, however, in view of the possible confusion of whether the instruction constitutes a variation under contract or a variation of contract, the contractor's refusal could be used by the engineer to show that the contractor has failed to proceed with the works with due expedition and without delay¹⁴¹.

The second course of action is of two folds¹⁴²:

- (a) If the instruction of a 'variation of contract' is issued by the engineer under the variation clause, and the contractor opted to comply with the engineer's instruction, then the contractor will in normal circumstances receive compensation in accordance with the terms of the contract.

¹⁴¹ N Bunni, *The FIDIC Forms of Contract*, (3rd edn, Blackwell, 2005) 364.

¹⁴² I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 929.

(b) If the instruction of a ‘variation of contract’ is directed by the employer without referral to the variation clause, then, in the absence of any agreement with the employer, the contractor will be compensated fair remunerations, as discussed in section 4.2.

4.6. Variations and delay under the 2017 FIDIC Red Book

Most standard forms of contract including the 2017 FIDIC Red Book distinguish between the time and cost effect of variations. Under sub-clause 8.5¹⁴³ the contractor is entitled to an extension of time if a variation has or will delay the completion under the contract.

Sub-clause 8.5 of the 2017 FIDIC Red Book is very similar to sub-clause 8.4 of the 1999 FIDIC Red Book, particularly the first sentence. The FIDIC Contracts Guide¹⁴⁴ explains that the first sentence of sub-clause 8.4, that is, “The Contractor shall be entitled” is “not stated as being subjective to anyone’s opinion”.

In this connection, it is submitted that, as a general principle, a variation requiring additional work or changes may, but does not necessarily, cause delay to the time for completion. The requirements under sub-clause 8.5 are: (1) that the contractor complies with the claim procedure under the contract, and (2) that the variation induce delay to the

¹⁴³ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 48, cl 8.5 (a) states: “The Contractor shall be entitled subject to Sub-Clause 20.2 [Claims For Payment and/or EOT] to Extension of Time if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes: (a) a Variation (except that there shall be no requirement to comply with Sub-Clause 20.2 [Claims For Payment and/or EOT]);”

¹⁴⁴ P Booen, *The FIDIC Contracts Guide* (1st edn, International Federation of Consulting Engineers, FIDIC, 2000) 173.

time for completion. In practice, and while variations may cause delay to an activity or few activities, but if these delayed activities have not caused delay to the completion of the contracted work, then the contractor should not be entitled to any extension of the time for completion.

Where an engineer instructs a significant number of variations within a specific period of time, a contractor would usually advance a claim for disruption of progress of work in addition to the time implication in the form of extension of time claim to allow the recovery of costs arising from the variations and their cumulative effects.

A question frequently arises in practice, that if the time for completion under a contract has lapsed while the contractor has not yet completed contracted work, in that case if the engineer instructs a variation that requires time to be completed, can the contractor submit that he is automatically entitled to an extension of time to complete the contracted work along with the instructed varied work? The answer to this question is perhaps best illustrated by the judgement of the court in the case of *Commissioners for State Bank Victoria v. Costain Australia Ltd.*¹⁴⁵ where the court held that an entitlement to extension of time only arose if the varied work caused delay to the progress of contracted work and there was no automatic entitlement to an extension of time as a result of a variation based upon the time at which the variation instruction was issued.

¹⁴⁵ (1983) 2 ACLR 1, referred at Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013), <<https://docplayer.net/4082750-Construction-australia-variations-a-comprehensive-overview.html>> accessed 5 March 2019. In this case an instruction to perform a variation was given after the original completion date but before the expiry of the extended completion date. The contractor claimed additional extension of time as a result of the variation. It was said:

“...the granting of an extension would almost invariably still find the Builder doing the extra work not in contract time. Thus where an extra that could be readily calculated to take one day to complete is ordered and attracts an extension of one day, it does not mean that this extra is carried out in contract time, for the one day is added to a date for practical completion that may be many months back.”

5. Limits on power to instruct variations

5.1. The timing to instruct variations

Most standard forms of contract have express provisions in respect of the period within which the engineer may instruction variations. Under Clause 13 of the 2017 FIDIC Red Book, this period is defined as “any time before the issue of the Taking-Over Certificate¹⁴⁶ for the Works”. Therefore, under the 2017 FIDIC Red Book, the engineer’s power to initiate variations ceases when the taking-over certificate is issued.

However, in the absence of express provisions under a contract in respect of the time limit to instruct variation, courts under common law jurisdictions had adopted similar approach, as illustrated in the case of *J&W Jamieson Construction Ltd. v. Christchurch City*¹⁴⁷ where the court concluded that variations could not be directed after the practical completion¹⁴⁸.

Under UAE law, the Civil Transaction Code does not expressly deal with the time limits to instruct variations under construction contracts, in the absence of express provisions for the same, however, it is expected that employers and engineer may face an objections in case the engineer initiated variations after the taking over of the contracted work by

¹⁴⁶ See n 56.

¹⁴⁷ (1984) Christchurch High Court, Cook J No. A 108/82, referred at Wood G and Fitzalan J, *Variations: A comprehensive overview*, (2013) 13. See n 2.

¹⁴⁸ Ibid 13, in *J&W Jamieson Construction Ltd. v. Christchurch City*, Cook J held:

“When that point is reached (certificate of practical completion has been issued), with all the consequences that result and with the acknowledgement that is to be inferred from the certificate, I am unable to see that it can remain open for the Architect to direct something which would require a change in the work by way of addition, reduction or substitution.”

the employer, based on the customs, article 106¹⁴⁹, which prohibits a party to abuse its right and article 246¹⁵⁰, which impose on the contracting parties a duty of good faith¹⁵¹.

5.2. Contractual limit on what constitutes a variation

In addition to the legal limitations on what constitutes a variation, as discussed in sections 4.1 and 4.2, it is submitted that the main source of limitation is provided by the agreement of the contracting parties under their contract. When the power granted to one party to unilaterally vary the contracted work is in any way limited, any change beyond the contractual limits, either specified or implied, will not be a variation.

The 2017 FIDIC Red Book provides for some contractual limitation on the powers of the engineer, acting as an agent of the employer, to instruct variations and on what constitutes a variation, as follows:

- (a) The first limitation is that it is only the engineer who is authorized to instruct variations, not the employer¹⁵².
- (b) The engineer's power, although broad, but limited in certain circumstances.

¹⁴⁹ Article 106 of the UAE Civil Transaction Code (Law No. 5 of 1985) states:

“(1) A person shall be held liable for an unlawful exercise of his rights.

(2) The exercise of a right shall be unlawful:

(a) if there is an intentional infringement (of another's right);

(b) if the interests which such exercise of right is designed to bring about are contrary to the rules of the Islamic Shari'ah, the law, public order, or morals;

(c) if the interests desired are disproportionate to the harm that will be suffered by others; or

(d) if it exceeds the bounds of usage and custom.”

¹⁵⁰ Article 246 of the UAE Civil Transaction Code (Law No. 5 of 1985) states:

“(1) The contract must be performed in accordance with its contents, and in a manner consistent with the requirements of good faith.

(2) The contract shall not be restricted to an obligation upon the contracting party to do that which is (expressly) contained in it, but shall also embrace that which is appurtenant to it by virtue of the law, custom, and the nature of transaction.”

¹⁵¹ M Grose, *Construction Law in the United Arab Emirates and the Gulf*, (1st edn, Wiley-Blackwell, 2016) 339.

¹⁵² *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 63, cl 13.1. See n 52

- (c) the engineer cannot instruction omission of part of the contract work in order to give to another contractor, unless agreed between the employer and the contractor¹⁵³.
- (d) The engineer cannot instruct the contractor to accelerate the progress of contracted work, as this will be considered as an amendment to the terms of the contract, which the engineer has no power to do so¹⁵⁴.
- (e) The engineer cannot instruct the contractor to recover lost time, if the time lost is not attributable solely to the contractor and for his default¹⁵⁵.
- (f) The engineer cannot change the methods of working as adopted by the contractor, but he can only initiate changes to the temporary works, in accordance with the contract¹⁵⁶.
- (g) The contractor, if he has grounds for, may object to the instructed varied work, otherwise, he is obliged to carry out the instructed varied work.
- (h) The contractor is not allowed to make any alteration to the permanent works without instruction of the engineer¹⁵⁷.
- (i) If the contractor supplied material of better quality, or carried out additional work without instruction from the engineer or approval to his proposal, he is not entitled to any extra cost resulting from the better quality or this additional work.
- (j) The formalities for giving a variation instruction must be complied with¹⁵⁸.

¹⁵³ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 64, cl 13.1 (iv).

¹⁵⁴ *Ibid* 16, cl 3.2.

¹⁵⁵ D O'Leary, 'Construction Disputes What are the common issues in dispute?' (2010), Law Update 2010, 233, 35, <<http://www.westlaw.co.uk>> accessed 7 March 2019.

¹⁵⁶ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 64, cl 13.1 (vi).

¹⁵⁷ *Ibid* 64, cl 13.1. See n 52.

¹⁵⁸ *Ibid* 65, cl 13.3.

(k) Variation instructions must be given in writing, and if given orally, there is a process to convert such instruction into written¹⁵⁹.

5.3. Cumulative effect of several variation

When faced with substantial number of variations, a contractor may argue that the cumulative effect of these variations is of such an extent to be incompatible with the contract and would usually use this argument to advance a claim for compensation due to prolongation and disruption caused by this cumulative effect. However, it is submitted that as a general principle, it is not the number of variations which could cause delay or disruption to the contracted work, but rather, it is the nature, timing and extent of variations. In Practice, there are a number of construction projects, which were completed on time and without disruption despite of the hundreds of variations instructed during the carrying out of the work.

There are a number of English case law supporting this principle¹⁶⁰. In these cases, the general principle adopted by the courts, which is the same principle under the 2017 FIDIC Red Book¹⁶¹, is that variations will be dealt with in accordance with the variation clause

¹⁵⁹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 18, cl 3.5.

¹⁶⁰ See *Laburnam Construction v. U.S.* (1963) 325 F. (2d) 451, referred at I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 935. The court rejected the contractor's claim for 'cardinal change' and stated that the work, as built, remained the same as the contractor has bid, despite of the several changes.

Also see *J.D. Hedin Construction v. U.S.* (1965) 347 F. (2d) 235, referred at I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 936. In this case, although the contract of 540 days period was extended to 1408 days due to employer's responsibility, and a major 33 variations were instructed to the contractor causing further delay to the contractor which the employer was responsible for, nonetheless, the court rejected the contractor's claim for cardinal change and held that the contractor is only entitled to compensation as specified under the contract.

¹⁶¹ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 62, cl 12.3.

under the contract, regardless of how substantial or numerous they are. In this connection, commentators suggest that when analysing the effect of variations, it is advised to deal with them on item-by-item basis.¹⁶²

5.4. Instructing variations for the purpose of remedying defects

Sub-clause 7.4¹⁶³ of the 2017 FIDIC Red Book provides the engineer with the power to instruct a variation under clause 13, to vary the location or details of specified tests, or instruct additional tests. However, this type of variation, although will be instructed by the engineer under the variation clause of the contract, nonetheless, will only be considered as a variation if the associated test is successful, otherwise, the contractor will not be able to recover the costs caused by this variation. The rationale is that if the instructed varied or additional tests failed, it means that the tested part of the contracted work is defective, and accordingly the engineer's instruction under clause 13 will be dealt with as if it is issued for the purpose of remedying defects.

¹⁶² I Wallace, *Hudson's Building and Engineering Contracts*, (11th edn, Sweet & Maxwell, 1995) 936.

¹⁶³ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 43, cl 7.4 states:

"The Engineer may, under Clause 13 [Variations and Adjustments], vary the location or timing or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the Cost and any delay incurred in carrying out this Variation shall be borne by the Contractor."

Furthermore, sub-clauses 11.2¹⁶⁴ and 11.6¹⁶⁵ of the 2017 FIDIC Red Book provide for a similar approach in respect of variations for the purpose of remedying defects. Where sub-clause 13.3.1 [Variation by Instruction] will only apply in case the cost of remedying defects is not attributable to the contractor. Sub-clause 11.6 also provides that the costs of the further tests instructed under this sub-clause shall be borne by the party liable for the cost of remedial work under sub-clause 11.2.

5.5. Omitting works to give to another contractor

Sub-clause 13.1 (iv)¹⁶⁶ of the 2017 FIDIC Red Book gives the engineer the power to omit any work but such power is qualified with the term ‘unless it is to be carried out by others without the agreement of the Parties’. This is to prohibit the engineer from omitting any work in order to give it to another contractor, as sometimes an employer may wish to benefit from a lower price for part of the contracted work, which is obtained after the conclusion of the contract with the contractor.

¹⁶⁴ Ibid 56, cl 11.2 states:

“All work under sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

- (a) design (if any) of the Works for which the Contractor is responsible;
- (b) Plant, Materials or workmanship not being in accordance with the Contract;
- (c) improper operation or maintenance which was attributable to matters for which the Contractor is responsible (under Sub-Clause 4.4.2 [As-Built Records], Sub-Clause 4.4.3 [Operation and Maintenance Manuals] and/or Sub-Clause 4.5 [Training] (where applicable) or otherwise); or
- (d) failure by the Contractor to comply with any other obligation under the Contract.

...If it is agreed or determined that the work is attributable to a cause other than those listed above, Sub-Clause 13.3.1 [Variation by Instruction] shall apply as if such work had been instructed by the Engineer.”

¹⁶⁵ Ibid 59, cl 11.6 states:

“All repeated tests under this Sub-Clause shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.”

¹⁶⁶ See n 52

The same position is reiterated under sub-clause 15.5¹⁶⁷ of the 2017 FIDIC Red Book, where the employer is prohibited from terminating the contract for its convenience in order to execute the work, or any part thereof, by himself or by others.

In addition, sub-clause 8.12¹⁶⁸ of the 2017 FIDIC Red Book allows the contractor to deal with the work that is affected with a prolonged suspension as omitted under clause 13. In this connection, it is suggested that the work treated as omitted cannot be awarded to another contractor.

The common law position is illustrated in the Australian case of *Commissioner for Main Roads v. Reed and Stuart Proprietary Ltd.*¹⁶⁹.

United States court have taken a similar approach in *Gallagher v. Hirsch*¹⁷⁰, where the term omission was interpreted to mean that such part of the work is being taken out of the contract altogether, but not to be given to another contractor.

In addition, Grose¹⁷¹ suggests that if the employer omitted any part of the contracted work to give to another contractor, the contractor may claim that the employer's non-compliance with the restriction under sub-clause 13.1 (iv) amounts to a 'deliberate

¹⁶⁷ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 83, cl 15.5 states:

"The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving a Notice of such termination to the Contractor...the Employer shall not execute (any part of) the Works or arrange for (any part of) the Works to be executed by any other entities."

¹⁶⁸ See n 68

¹⁶⁹ (1974) 131 C.L.R. 378 referred at K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 327. In this case the employer instructed another contractor to perform part of the original contractor's scope under the contract. The judge said that the employer was not permitted to take away a portion of the contract work from the contractor so that the employer may have it performed by some other contractor.

¹⁷⁰ (1899) N.Y. 45 App. Div. 467, referred at K Pickavance, *Delay and Disruption in Construction Contracts*, (2nd edn, LLP, 2000) 327.

¹⁷¹ M Grose, *Construction Law in the United Arab Emirates and the Gulf*, (1st edn, Wiley-Blackwell, 2016).

default' in the context of sub-clause 17.6 of the 1999 FIDIC Red Book, which is equivalent to sub-clause 1.15 of the 2017 FIDIC Red Book¹⁷².

Under UAE law, it is submitted that, in the absence of express contractual provisions, the principles of good faith and the prohibition of abuse of rights, as set out in Articles 246¹⁷³ and 106¹⁷⁴ of the UAE Civil Transaction Code would act to limit the power to omit work in order to give to another contractor.

5.6. Instructing acceleration under variation clause

In construction contracts, acceleration describes actions taken by a contractor to complete certain work in a shorter time than expected. Acceleration usually involves additional cost arising out of the additional working hours, additional labour, additional equipment, and advancing delivery or manufacturing of elements of the work.

Under the 2017 FIDIC Red Book, in particular sub-clause 3.2¹⁷⁵ and clause 13, it is expressly provided that the engineer has no power to instruct the contractor to accelerate the progress of work and complete earlier than agreed between the parties.

In practice, the engineer may sometimes instruct the contractor to take certain measures to overcome delays to completion of the contracted work, which are caused by reasons that do not entitle the contractor for an extension of time¹⁷⁶.

¹⁷² *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 9, cl 1.5. Clause 1.15 provides that the liability of a party to the other part in respect of indirect and consequential damages, including loss of profit cannot be limited in certain cases. It states: "This Sub-Clause shall not limit liability in any case of fraud, gross negligence, deliberate default or reckless misconduct by the defaulting Party."

¹⁷³ See n 149

¹⁷⁴ See n 150

¹⁷⁵ See n 71.

¹⁷⁶ *Conditions of Contract for Construction for Building and Engineering Works designed by the Employer*, (2nd edn, International Federation of Consulting Engineers, FIDIC, 2017) 49, cl 8.7.

In the absence of express provisions empowering the engineer to instruct acceleration under the variation clause, the engineer cannot instruct acceleration and the contractor can refuse to accelerate the work without being in breach of contract. Nonetheless, in some situations, a contractor may encounter delays that entitle him to an extension of time, but the engineer determines that the contractor shall not be entitled to an extension. Here, the contractor might not be confident of the final decision in respect of his entitlement to an extension of time, and therefore decide to accelerate and recover the delay in contemplation that if he is awarded the claimed extension, then he may recover the acceleration cost. This approach might still be cheaper than the delay damages under the contract in case it was concluded that the contractor is responsible for the delay.

6. Conclusions and recommendations

It is concluded from this dissertation that although the variation clause under the 2017 FIDIC Red Book has developed to provide more clarity compared to the previous versions of the Red Book, nonetheless, it does not expressly limit the scope and extent to which a contract work under its conditions may be varied. It is established that one of the most challenging issues in respect of the variation clause under the 2017 FIDIC Red Book is to clearly identify to what extent can the engineer alter the contracted work under the variation clause. This is viewed by some commentators as a deficiency in this variation clause, while other commentators suggest that setting out comprehensive criteria within the 2017 FIDIC Red Book to assist in this identification would not allow contracting parties to agree, in consideration of associated facts and circumstances, whether certain variations fall within or outside the scope of their contract.

The approach adopted under common law courts is generally that the contracted work must not be varied too drastically. In concise form, the general principle set out by the courts is that whether a certain variation is within or outside the scope of the contract is a matter to be decided on a case by case basis, taking into consideration associated circumstances.

Under UAE law, it is concluded that the principle of good faith along with the provisions prohibiting the abuse of rights by any of the contracting parties would limit the right to instruct variations.

In view of the unilateral freedom of scope granted by the variation clause under the 2017 FIDIC Red Book, as well as the comparison made between the variation clauses under the 1999 FIDIC Red Book and the 2017 FIDIC Red Book, it is recommended in this

dissertation that FIDIC should consider the listed recommendations in order to provide better clarity and draw a line between variations under contracts and variations to contract:

- (1) to include more clarity in the variation clause, to the scope and extent of what would constitute a variation under the contract, and
- (2) including clear and express terms which expressly negate cost and time compensation for instructions issued:
 - (a) to vary the contracted work as a consequence of a breach of contract by the contractor,
 - (b) to vary the contracted work of due to discovered defects,
 - (c) to insist the contractor's compliance with the contract, and
 - (d) at the request of the contract to assist him in difficulty.

In addition, this dissertation recommends the following suggestions as best practice to be adopted by employers, engineers and contractors in avoidance of variations:

- (1) It is recommended that employers require contractors to submit detailed break-down of rates and prices, to be used for accurate evaluation of future claims in respect of actual quantities.
- (2) It is recommended that employers, or engineers on their behalf, should not include contractors' method statements as part of contracts' documents, and to leave the choice of methods to contractors.
- (3) It is recommended that in cases where the engineer finds it necessary to issue instruction, due to contractor's default, the instruction of the engineer must expressly include that it is given on the term that it will not involve additional payment.

- (4) It is advised that careful study of documents forming any contract by engineers will help avoiding unnecessary variations and minimize employers' exposure to fanatical liability.
- (5) When contract documents are properly prepared with minimum inconsistencies and ambiguities, and employers decide on all major aspects of design rather than developing the design while contracted works are being carried out by contractors, a number of instructions needed to vary the contracted work will avoidable.

These recommendations will provide the suggested balance between the recommended and required greater clarity and limitations in the variation clause, which would reduce disputes between contracting parties, and the need to have practicable and reasonable mechanism that allows implementation of necessary or desirable variations during construction period.

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8. Word Count

Word count: 15,198 words

Annex – 1

Figure 3.2 -1:

Comparison of the variation clause in the following standard forms of contracts:

- A. The 1977 FIDIC Red Book (Third Edition)
- B. The 1987 FIDIC Red Book (Fourth Edition)
- C. The 1999 FIDIC Red Book (First Edition),
- D. The 2017 FIDIC Red Book (Second Edition), and
- E. The 2005 JCT Standard Building Contract with Quantities (First Edition)

A. **The 1977 FIDIC Red Book**

A reproduction of the variation clause under the 1977 FIDIC Red Book.

“51 (1) The Engineer shall make any variation of the form, quality or quantity of the Works or any Part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following:-

- (a) increase or decrease the quantity of any work included in the Contract,
- (b) omit any such work,
- (c) change the character or quality or kind of any such work,
- (d) change the levels, lines, position and dimensions of any part of the Works, and
- (e) execute additional work of any kind necessary for the completion of the Works

and no such variation shall in any way vitiate or invalidate the Contract, but the value, if any, of all such variations shall be taken into account in ascertaining the amount of the Contract Price.

51 (2) No such variations shall be made by the Contractor without an order in writing of the Engineer. Provided that no order in writing shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities. Provided also that if for any reason the Engineer shall consider it desirable to give any such order verbally, the Contractor shall comply with such order and any confirmation in writing of such verbal order given by the Engineer, whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of this Clause. Provided further that if the Contractor shall within seven days confirm in writing to the Engineer and such confirmation shall not be contradicted in writing within fourteen days by the Engineer, it shall be deemed to be an order in writing by the Engineer.”

B. The 1987 FIDIC Red Book

A reproduction of the variation clause under the 1987 FIDIC Red Book.

“51 (1) The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

- (a) increase or decrease the quantity of any work included in the Contract,
- (b) omit any such work (but not if the omitted work is to be carried out by the Employer or by another contractor),
- (c) change the character or quality or kind of any such work.
- (d) change the levels, lines, position and dimensions of any part of the Works,
- (e) execute additional work of any kind necessary for the completion of the Works, or
- (f) change any specified sequence or timing of construction of any pan of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 52. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible.

51 (2) The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause. but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.”

C. **The 1999 FIDIC Red Book**

A reproduction of the variation clause under the 1999 FIDIC Red Book.

“13.1 Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal.

The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that the Contractor cannot readily obtain the Goods required for the Variation. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.

Each Variation may include:

- (i) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),
- (ii) changes to the quality and other characteristics of any item of work,
- (iii) changes to the levels, positions and/or dimensions of any part of the Works,
- (iv) omission of any work unless it is to be carried out by others,
- (v) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or
- (vi) changes to the sequence or timing of the execution of the Works.

The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.”

D. **The 2017 FIDIC Red Book**

A reproduction of the variation clause under the 2017 FIDIC Red Book.

“13.1 Variations may be initiated by the Engineer under Sub-Clause 13.3 [*Variation Procedure*] at any time before the issue of the Taking-Over Certificate for the Works.

Other than as stated under Sub-Clause 11.4 [*Failure to Remedy Defects*], a Variation shall not comprise the omission of any work which is to be carried out by the Employer or by others unless otherwise agreed by the Parties.

The Contractor shall be bound by each Variation instructed under Sub-Clause 13.3.1 [*Variation by Instruction*], and shall execute the Variation with due expedition and without delay, unless the Contractor promptly gives a Notice to the Engineer stating (with detailed supporting particulars) that:

- (a) the varied work was Unforeseeable having regard to the scope and nature of the Works described in the Specification;
- (b) the Contractor cannot readily obtain the Goods required for the Variation; or
- (c) it will adversely affect the Contractor’s ability to comply with Sub-Clause 4.8 [*Health and Safety Obligations*] and/or Sub-Clause 4.18 [*Protection of the Environment*].

a.

Promptly after receiving this Notice, the Engineer shall respond by giving a Notice to the Contractor cancelling, confirming or varying the instruction. Any instruction so confirmed or varied shall be taken as an instruction under Sub-Clause 13.3.1 [*Variation by instruction*].

Each Variation may include:

- (i) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation);
- (ii) changes to the quality and other characteristics of any item of work;
- (iii) changes to the levels, positions and/or dimensions of any part of the Works;

- (iv) the omission of any work, unless it is to be carried out by others without the agreement of the Parties;
- (v) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work; or
- (vi) changes to the sequence or timing of the execution of the Works.

The Contractor shall not make any alteration to and/or modification of the Permanent Works, unless and until the Engineer instructs a Variation under Sub-Clause 13.3.1 [*Variation by Instruction*].”

E. JCT 2005 (Standard Building Contract With Quantities) (SBC/Q)

A reproduction of the variation clause under the JCT 2005 SBC/Q

“Definition of Variations

5.1 The term ‘Variation’ means:

- .1 the alteration or modification of the design, quality or quantity of the Works including:
 - .1 the addition, omission or substitution of any work;
 - .2 the alteration of the kind or standard of any of the materials or goods to be used in the Works;
 - .3 the removal from the site of any work executed or materials or goods brought thereon by the Contractor for the purposes of the Works other than work, materials or goods which are not in accordance with this Contract;

- .2 the imposition by the Employer of any obligations or restrictions in regard to the matters set out in this clause 5.1.2 or the addition to or alteration or omission of any such obligations or restrictions so imposed or imposed by the Employer in the Contract Bills or in the Employer’s Requirements in regard to:
 - .1 access to the site or use of any specific parts of the site;
 - .2 limitations of working space;
 - .3 limitations of working hours; or
 - .4 the execution or completion of the work in any specific order.”