



Research Article

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The Ten-Year Guarantee of the Contractor and the Engineer on Ensuring the Durability of the Building in the System of Applying the Saudi Building Code: A Comparative Study

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Abstract

This study aims to clarify the personal civil liability of the contractor and engineer for the damage and demolition in buildings and facilities and the defects that may appear during the warranty period. The general rules in civil liability were not sufficient in construction and building. During a warrant on the building, the negative result may appear as complete or partial demolition or defects that threaten its safety and durability. This changes the purpose for which it was established, whether in the national economy or compromising public security and public tranquillity. This also varies from a threat to individuals and their money. This pushed the legislators, including the Saudi regulator, to decide on a set of exceptional guarantees characterized by strictness consistent with the tragedies resulting from the collapse of buildings in whole or in part, from multiple aspects and effects. The most important of these guarantees is the decimal responsibility or the decimal guarantee that the Saudi regulator has imposed in Article (8) of the Saudi Building Code application system and clarified by Article (29) of the Executive Regulations for the Saudi Building Code Application System. We have adopted in the research: the descriptive, analytical, and comparative approach of the relevant texts in the system of application of the Saudi building code on which the study is focused, which is the case of the responsibility of the contractor and the engineer, for any demolition or defect in the construction after the issuance of the occupancy certificate, compared to some Arab legislation, which is the Egyptian Jordanian and Bahraini. This study discusses the nature of the decimal guarantee and its duration. Then, we focus on the provisions of the decimal guarantee. The study recommended that the Saudi regulator stipulates the warranty claim against the contractor and engineer. The lawsuit occurs after three years have passed since the demolition occurred or the defect was discovered, contrary to what was mentioned in the Saudi Civil Transactions System, which requires ten years to pass, because the ten-year liability is a private liability. The solidarity between the contractor and the engineer should not be limited to joint liability but should extend to include solidarity in the guarantee.

Keywords: contractor (executor), engineer (designer), ten-year guarantee, building demolition, defects, liability, contracting

1. Introduction

1.1 Study background and Context

The Saudi Building Code is a crucial document in the context of construction and building laws. It outlines the criteria and principles to assure the integrity, resilience, and quality of buildings within the Kingdom of Saudi Arabia. The Saudi Building Code stands out as a significant document. The ten-year warranty that is required of both contractors and engineers is one of the essential components that has been included into this legislation. This guarantee requires that the aforementioned experts be held personally and legally accountable for any damage, faults, or possible demolition that may take place during the stated ten-year warranty term after the completion of a structure. Although there are broad standards of civil responsibility, they often prove insufficient when attempting to handle the intricacies of problems relating to building. Buildings are more than just physical things; they provide a variety of services that are important to the national economy, public security, and individual well-being. Building failures, whether they result in the whole or partial destruction of the structure or in problems that compromise its safety and durability, have ramifications that transcend beyond monetary considerations. In light of these issues, the Saudi regulator, seeing the possible hazards presented by building collapses, has created extraordinary assurances, with a special emphasis on the decimal responsibility or guarantee.

1.2 Rationale and Significance of the Study

This research takes a descriptive, analytical, and comparative approach, carefully studying the relevant documents within the Saudi Building Code application system. The study intends to identify trends, similarities, and variations by concentrating on the responsibilities of contractors and engineers and comparing these provisions with comparable legislation in other Arab states. The purpose of this comparative study is to give useful insights into the efficiency of the Saudi system, presenting a full grasp of the strengths and limitations in comparison to the rules of other regional organisations.

The relevance of this research is situated in the fact that it has the ability to influence decision-making on the Saudi Building Code as well as regulatory adjustments. The study adds to a greater knowledge of best practises in assuring the longevity of buildings by deciphering the complexity of the ten-year guarantee system and comparing it with legislation that is equivalent in other Arab nations. This comparative analysis not only prepares the way for prospective changes but also paves the way for a full review of the present system. This ensures that the Saudi Building Code continues to be resilient, effective, and responsive to the ever-evolving difficulties in the building sector. In the end, this research is an important step towards improving the dependability and safety of buildings in Saudi Arabia. Additionally, it is an extremely helpful reference for policymakers, industry experts, and researchers alike.

The importance of the research emerges from both the social and legal aspects: From the social aspect: This topic gains great importance due to its connection to an important aspect of human life through the means the law has to protect the safety of lives and property and protect the interest of the employer. From a legal perspective: The importance of the study is that the responsibility of the contractor and the engineer for any demolition or defect in the construction or building after the issuance of the occupancy certificate has not been adequately studied in the Kingdom of Saudi Arabia, whether at the level of university literature and dissertations or in the field of research and articles

1.3 Research Objectives

This study aims to:

- a) Shedding light on the regulation of the Saudi Regulator for the Protection of Buildings and Installations in the Kingdom of Saudi Arabia in tightening the responsibility of the contractor and engineer in accordance with the Saudi building code application system, Especially since the Saudi civil transactions system does not regulate this responsibility.
- b) Opening the way for the legal researcher by contributing to laying the foundation for them to delve deeper into further studies in the field of this research, as it is considered the first study on this topic (the scope of the ten-year warranty according to the Saudi building code application system).

2. Review of Related Studies

2.1 Overview of the Saudi Building Code

To guarantee public safety and health, buildings in Saudi Arabia must adhere to the minimum standards outlined in the Saudi Building Code (SBC), which is a collection of legislative, administrative, and technical norms and criteria. A Royal Decree dated 11th June 2000 directed the creation of a national committee made of representatives of Saudi universities and governmental and business sectors. The Council of Ministers of the Kingdom of Saudi Arabia gave its approval to the National Committee's overarching proposal for creating a unified national building code in September 2001. Several Codes have been reviewed in order to choose a foundational Code for the Saudi Building Code. The International Codes from the United States, Canada, and Australia, as well as the European Code and the Arab Codes, are all relevant to the National Committee. The International Code Council (ICC) was selected as the foundation for the Saudi Building Code after extensive consultation with experts from key Saudi institutions, government agencies, and the commercial sector via questionnaires, a symposium, and specialised workshops. The International Code Council (ICC) authorises the Saudi Building Code National Committee (SBCNC) to implement, adopt in part, or adopt in full the ICC codes and standards for use in the SBC, and the ICC disclaims any responsibility or liability to the SBCNC or a different party or entity for any modifications or changes made by the SBCNC to the ICC codes and standards. By holding specialised meetings, symposiums, and workshops and with the assistance of experts from within and outside of Saudi Arabia, the National Committee took its own decisions related to code content in order to increase the involvement of all specialists in the building and construction industry in the Kingdom through the public and private sectors, universities, and research centres. In April of 2003, technical committees and subcommittees began working to produce the Saudi Building Code, which adjusts the basic code with the social and cultural context, natural and climatic circumstances, kinds of soil, and qualities of materials in the Kingdom.

The development of building rules in Saudi Arabia is evidence of the country's dedication to promoting environmentally responsible and risk-free methods of building and construction. In addition, Alrashed and Asif's (2014) research on the state of sustainability in the Saudi construction sector provides an opportunity to further enliven the historical context of the Saudi Building Code and the ten-year guarantee it provides. This research sheds light on the shifting attitudes that are prevalent within the sector, highlighting the ever-increasing significance of factors related to sustainability, such as long-term durability, which is consistent with the overarching purpose of the ten-year guarantee. The incorporation of environmentally responsible business practises as well as strong assurances is in line with Saudi Arabia's larger aim for sustainable development, which takes into account economic, social, and environmental factors.

In a nutshell the history of building codes in Saudi Arabia is a narrative of continual progress, with the formation of the Saudi Building Code serving as the culminating event. In his research

advocating the function of local Saudi building codes in evaluating energy performance, Shamseldin (2023) shows the modern emphasis on holistic building quality, which encompasses both energy efficiency and long-term durability. In his study, Shamseldin proposes the importance of local Saudi building codes in assessing energy performance. The inspection of Article 8 and the accompanying ten-year guarantee highlights the constant dedication of the government to the construction of safe, durable, and long-lasting structures. Through the implementation of these standards, Saudi Arabia not only protects the soundness of its edifices but also instils a feeling of trust and confidence in the hearts of its people. As a result, the country is able to further solidify its status as a pioneer in innovative and forward-thinking construction techniques.

2.2 *Contractors and Engineers Legal Liability for Building Durability in Saudi Araia; A Brief Review*

Key factors in developing the Saudi Arabian construction sector have been the guarantee and accountability of contractors and engineers for building durability. The Saudi Building Code is a comprehensive collection of standards for the construction sector in the Kingdom. Its goal is to assure the safety and durability of structures. In his analysis of public contract administration, Al-Gunaiyan (1992) dives deeply into the complexities of contractor responsibility. Contractors' accountability extends to the buildings' long-term longevity, which he says is crucial, and contractors have a significant responsibility for ensuring this. Abdallah, Assaf, and Hassanain's (2019) analysis, which emphasises the repercussions of flaws in design documents, is consistent with this viewpoint. The findings of this research highlight the value of thorough documentation and the role played by engineers in guaranteeing the long-term viability of buildings right from the start of the design process.

Alabbasi, Agkathidis, and Chen (2023) illustrate the dynamic character of the Saudi Arabian construction business by investigating cutting-edge methods including robotic 3D printing of concrete building components. The findings of this research highlight the improvements in construction processes and the need for architects and contractors to modify their liability frameworks to include new technology without compromising the integrity of their buildings. To this conversation, Alfalah, Alasaibia, Alshamrani, and Al-Sakkaf (2023) provide a comprehensive framework for evaluating the quality of building construction. To satisfy the demanding requirements of the Saudi Building Code, their work highlights the multifaceted nature of building durability by combining many quality factors that contractors and engineers must address.

Alrashed and Asif (2014) surveyed the Saudi construction sector to get their take on sustainability, which has become an increasingly important topic in the construction industry. The research is helpful because it shows how contractors and engineers think about sustainability in construction. Aligning with the aims of the Saudi government's Vision 2030, it highlights the need of a long-term vision in which the longevity of buildings is tied to environmental concerns. Bubshait and Al-Gobali's (1996) investigation of contractor prequalification procedures in Saudi Arabia provides an innovative perspective. Their views shed light on the first phases of project selection, emphasising the importance of contractors in guaranteeing the longevity of structures right from the pre-construction period. The legal and contractual issues of contractors' and engineers' culpability come into emphasis via works such as Medallah (2015) and Sarie-Eldin (1994). Medallah's analysis of Saudi Arabian construction law practise and project law gives a thorough comprehension of the legal framework guiding the responsibilities of contractors and engineers. According to Sarie-Eldin's research, FIDIC civil engineering conditions in Arab nations provide valuable insights into the contractual procedures used to assure building longevity. To ensure that contractors and engineers keep their claims of building durability in accordance with the Saudi Building Code, these legal viewpoints play a significant role in creating liability frameworks.

Engineers and contractors have a great deal of obligation to fulfil because of Article 8 of the Saudi Building Code, which requires a ten-year warranty on all constructions. This assurance demonstrates the Saudi government's dedication to ensuring the public's safety and the high quality

standards it has implemented. In a study on the elements that influence the application of the Saudi Building Code, Al-Mudhei (2009) highlights the legal responsibilities contained in Article 8, drawing attention to the length and type of this assurance. Engineers and contractors face personal and legal liability for any damages, demolitions, or faults that occur during the ten-year term after a building's completion. This time element of the guarantee assures that the durability of buildings is not only a short-term commitment, but an assurance for the long-term, thereby strengthening the reliability of the Saudi Arabian building sector.

This ten-year guarantee has far-reaching constitutional implications that will affect the nature of the relationships between customers, engineers, and contractors. The contract administration rules for public infrastructure projects provided by El-Adaway et al. (2018) shed light on the legal challenges involved in assuring the longevity of buildings. Accurate record-keeping, careful planning, and a dedication to quality are prerequisites for the guarantee's fulfilment. Because of the potential legal ramifications of failing to adhere to these requirements, engineers and contractors must be diligent throughout the whole building process. Hassanain et al. (2017) explore further into the difficulties of establishing building management systems in Saudi Arabia, bringing to light the complexities of the law pertaining to the upkeep of structures after their construction is complete. The ten-year guarantee includes both pre- and post-construction management, highlighting the extensive legal duties shouldered by engineers and contractors.

Contractors and engineers not only have the legal responsibilities mentioned in Article 8, but also have to negotiate the complex terrain of building contracts. In their review of international construction contracts, Abraham and Alvarenga (2005) stress the need for crystal clear language in guarantee and liability sections. Contractual language should be clear and consistent with the standards of Article 8 to avoid disagreements. Zaki's (1992) study of the function of insurance in Saudi Arabia's building industry offers valuable information on the precautions that contractors and engineers take. Legal guarantees have insurance mechanisms built into them to safeguard against the possibility of litigation. This convergence of legal frameworks, construction contracts, and insurance systems highlights the difficulty of assuring building durability in Saudi Arabia, and highlights the necessity for a comprehensive awareness of the legal environment by all parties involved.

3. Study Methodology

3.1 Research Approach

In the research, we adopted: the descriptive, analytical, and comparative approach to the relevant texts in the Saudi building code application system, which is the focus of the study. It is a case study of the contractor and engineer being responsible for any demolition or defect in the construction or construction after the issuance of the occupancy certificate, compared to some Arab legislation, namely Egyptian, Jordanian, and Bahraini.

3.2 Study Design

To compare the responsibilities of contractors and engineers in Saudi Arabia with regard to building durability, this study used a qualitative research approach based on a case study technique. The motivation for utilising a case study method rest in its usefulness in offering in-depth, contextualised insights into particular real-life scenarios, allowing for a deep assessment of the legal frameworks and practises associated to creating durability guarantees. This research seeks to examine and evaluate the legal responsibilities of contractors and engineers in Saudi Arabia, Egypt, Jordan, and Bahrain.

3.3 Data Collection Procedure

We relied on secondary sources such as official government departments, websites, and databases in

Saudi Arabia, Egypt, Jordan, and Bahrain to compile the data. The official nature of these sources lends credence to the gathered data, providing support for the validity of this selection. The major emphasis was on gleaning useful information from Article 8 of the Saudi Building Code, which explains the responsibilities of contractors and engineers in terms of durability guarantees for buildings in Saudi Arabia. In order to provide a full picture of the Saudi legal duties, this research delves into the nuances of Article 8. It also compares the legal systems of Egypt, Jordan, and Bahrain by reviewing comparable statutes and laws in each of those nations and drawing conclusions about the differences and similarities among them. Using already published government papers assures the accuracy of the information and permits a thorough investigation of the many legal subtleties surrounding durability guarantees in buildings. Incorporating results from other studies in this area also increases the analysis's depth, providing useful insights gleaned from existing research. This methodical approach to data collection, based on official legal documents and previous scholarly research, increases the study's validity and credibility and lays a solid groundwork for the comparative analysis of legal liabilities of contractors and engineers in these countries.

3.4 Data Analysis Procedure

Qualitative content analysis would be the most appropriate method for analysis given the design of the qualitative study, which compares the legal liabilities of engineers and contractors in Saudi Arabia, Egypt, Jordan, and Bahrain with respect to building durability guarantees, and the data collection process, which concentrated on government sources, ministries, agencies, and previous studies. Qualitative content analysis is especially useful for examining complicated legal documents, rules, and academic literature since it enables the methodical investigation and interpretation of textual material. It gives scholars a more sophisticated knowledge of the material by allowing them to find patterns, themes, and variances within the textual data. By organising, classifying, and interpreting the textual material, qualitative content analysis makes it easier to derive important insights and conclusions. Furthermore, the versatility of qualitative content analysis allows you to examine both explicit and implicit elements of the texts, enabling you to understand not just the explicit content but also its underlying context and consequences. This approach allows you to thoroughly examine the nuances of the legal responsibilities since legal papers are extensive and diversified. We systematically compared Article 8 of the Saudi Building Code with related texts from Egypt, Jordan, and Bahrain using qualitative content analysis.

4. Results and Discussion

4.1 Article 8 of the Saudi Building Code

Article 8 of the Saudi Building Code (Hence, SBC) was drafted in connection to the general legal regulations of the Saudi building systems. Article 8 upholds that "the designer, the contractor and the supervisor shall carry out the work assigned to them according to the code" (SBC, 2014 as Amended). Article 8 of the Saudi Building Code largely outlines the legal duty of engineers and contractors regarding the durability of structures. Engineers and constructors have personal legal accountability for any damages, demolitions, or faults that may arise within ten years of a building's construction, as outlined in Article 8's "decimal responsibility" or "decimal guarantee." Engineers and contractors are now required by law to prioritise the stability and safety of the buildings they design and build. Aligning with the strict criteria established by the Saudi Building Code to protect public safety and the built environment, it emphasises their role in maintaining the quality and integrity of buildings.

The premises of the article 8 are further predicated on the foundations of other articles in the SBC. For instance, Article 2 section 1 upholds that "the code shall apply to all construction works in the public and private sectors, including the design, implementation, operation, maintenance and amendment of the building, and also applies to existing buildings in the event of their restoration,

change in use, expansion or modification” (SBC, 2017a). In other words, contractors and engineers in the building and construction industry, irrespective of whether it is in the public or in the private sectors, or whether the structure is existing already, are liable to adhering to the standard recommendations and offer guarantee for a period of ten years. In the area of engineering responsibility, this article emphasises that engineers are liable for constructing buildings in line with the criteria of the Saudi Building Code. Abdallah, Assaf, and Hassanain (2019) provide further detail on the effects of inaccuracies in design documentation, highlighting the value of meticulous engineering methods. Article 8 of the code establishes the engineer's responsibility for any structural infractions. There may be legal repercussions for any design flaws or construction failures that occur during the ten-year guarantee term.

This article further serves as notice to contractors that they must carry out building projects in accordance with the requirements of the building code. In his analysis of contract administration for public projects, Al-Gunaiyan (1992) highlights the contractor's responsibility for the final product's quality and longevity. Substandard materials, poorly executed labour, or disregard for safety regulations may all lead to structural problems that trigger the culpability provisions of Article 8. To ensure compliance with regulations, it is the supervisor's responsibility to mediate between designers and contractors. In their research on contract administration requirements for public infrastructure projects, El-Adaway et al. (2018) highlight the need of supervisors in maintaining high standards of construction. Supervisors may also face legal action if their inability to ensure a high standard of construction results in poor quality work. Hassanain et al. (2017) shed light on the difficulties of establishing building management systems in Saudi Arabia from a legal perspective. Legal ramifications for engineers, contractors, and supervisors who breach Article 8 may vary from fines and penalties to suspension or revocation of licences, jeopardising their professional position in the field. Shamseldin (2023) further highlights the changing legal environment by discussing the potential function of local Saudi building rules in evaluating the energy efficiency of buildings. In the event of a breach of Article 8, aggrieved parties may file a civil claim to recover damages for the defective construction. This would serve to hold the guilty parties legally accountable.

There are also stipulated consequences for the violation of the building standards as contained in the SBC applicable in article 8, which are spread across other articles in the SBC. Below are specific documentations on the implications of the violations of the legal bindings on contractors, designers and engineers:

- i. Article 10: “Anyone who violates the code must remove the violation or correct it in accordance with the code within a period to be determined by the relevant authority, and the violator shall be notified with the same. If the violator does not remove or correct the violation during the specified period, the relevant authority shall refer the violation to the committee stipulated in Article (Fourteenth) of the law as defined by the regulations” (SBC, 2014 as Amended, p.5).
- ii. Article 11: “When the violation is dangerous, the relevant authority must notify the violator with it, stop the building, part, or section that constitutes hazards, or prevent occupancy or evacuate the building until the violator removes or corrects the violation in accordance with the code, and refer the violation to the committee stipulated in Article (14) of the law within a period not exceeding five working days from the date of discovering the violation” (SBC, 2014, p.6).
- iii. Article 12: “Subject to the provisions stated in Articles (ten) and (eleven) of the law, whoever violates the code or any of the provisions or regulations of the law shall be punished with any of the following or both of the following penalties: 1- A fine not exceeding one million riyals for a single violation in a single building. 2- Suspend the practice license for a period of no less than one month and not exceeding one year” (SBC, 2014, p.7).

It is necessary to discuss the information that is provided in Articles 10, 11, and 12 of the Saudi Building Code in regard to the civil obligations of building contractors and engineers in Saudi Arabia, demonstrating its importance as indicators to the implications of violating the code in relation to

Article 8.

According to the provisions of Article 10, anybody who violates the code is required to immediately correct the violation in accordance with the requirements of the code within a time frame that has been predetermined by the appropriate authority. This directive emphasises the civil responsibility of building engineers and contractors by highlighting their need to swiftly correct any deviations from the requirements of the code. In addition, this directive highlights the civil liability of building owners. If this is not done, the infringement will be reported to a committee, which is a clear indication of the serious implications that may result from carelessness or failure to comply with regulations. The promptness and accuracy that are required in the correction of breaches stress the responsibility of engineers and contractors for guaranteeing the durability of buildings, which in turn emphasises their civil culpability in relation to the criteria set by the code.

Article 11 ratchets up the severity of the punishments for infractions that create an immediate risk. In this situation, the competent authority has the ability to either suspend any ongoing construction operations, restrict occupancy, or evacuate the building until the violation is addressed. The immense weight of duty that this law throws on the shoulders of construction engineers and contractors. In situations in which the structural integrity of a building is in jeopardy, not only is prompt action required but it is also required by law. Because of the urgency described in this article, the statutory obligation of engineers and contractors is emphasised, as are the possible legal repercussions that may arise in the event that these individuals fail to meet the essential standards of safety and durability.

Article 12 lays out the legal consequences that result from infractions, including the imposition of fines of up to one million riyals for a single infraction in a single building and the suspension of practise licences for a certain amount of time. These fines are a clear reflection of the civil liabilities that construction engineers and contractors are responsible for bearing. The imposition of monetary penalties has the potential to have a substantial influence on their financial situation, while the suspension of their practise licences has the direct effect of diminishing their professional skills and reputation. These punishments are not just meant to be punitive; rather, they are intended to make engineers and contractors responsible for the structural integrity of a structure. Infractions of this code have a civil responsibility, which is highlighted by the threat of these fines, which highlights both the legal implications that may come from such infractions as well as the civil liability they carry for maintaining the safety and durability of building structures in Saudi Arabia.

4.2 Case Studies of Practical Application of the SBC

There are limited information and records of findings of various studies that provide examples of real incidents where the decimal guarantee and liability issues have come into play in the Saud context, mainly when the focus is on the discussion of the applicability of the SBC in offering warrantee to building owners. However, there are reputable studies that offer clear examples. The reality of the implementation of SBC and its decimal guarantee is reflected in many real-life instances, as documented by Alsayed et al. (2007) on their study about the development stages of concrete structure specification through Saudi Building Code. Practical implications and issues faced by the stakeholders are provided in this study. The decimal guarantee would see action registered as a result of cases where structures made out of concrete failed to meet the prescribed standards. For instance, if a property built against the SBC has structural defects within a decade of its guarantee phase, then decimal guarantees would require corrective measures. This case study draws practical implications from the decimal guarantee showing its importance in ensuring compliance with safety and durability requirements stipulated by the SBC of concrete structures.

Another concrete example of the practical utilization of decimal guarantee in a different environment is presented by Nahhas's (2017) comparative study between Saudi Building Code and 1997 UBC. During ten-year coverage the decimal guarantee would be applied in case of seismic issues with a building, which makes architects and engineers responsible for any structural deficiencies.

This case study gives us an opportunity to explore genuine occurrences where the decimal guarantee has been invoked pointing that right building practices should withstand seismic forces. It provides useful information about the role of sub-decimal guarantee in resolving issues associated with structural integrity, thereby emphasizing on the importance of SBC towards building durability.

Another case study that further illustrates the value in this respect was provided by Shamseldin (2023) who proposed local Saudi building codes as a tool for evaluating energy performance. In this light, the decimal code reaches beyond structural issues to more general sustainability themes. Should a building introduced in strict compliance with the provisions of SBC fail to meet appropriate energy performance requirements within such period, an actuation would take effect by triggering integral corrective measures. This case study demonstrates the flexibility of decimal guarantee, pointing out different aspects of building performance and trying to substantiate its crucial contribution for SBC solid comprehensive standard support.

Within Abduljabbar's (2019) economic analysis of the off-plan real estate policy in Saudi Arabia, from 2009 to 2016 that involves pure instances linked with decimal guarantee and assurance issues are dictated within how this occurs during construction spheres. For instance, the study discussed a case where the development falls under the Saudi Building Code and suffers from structural or performance issues within ten years of its warranty period. This leads to the use of decimal guarantee that holds all architects, engineers and contractors participating in such a project accountable. The economic impacts emphasize the need for a solid construction structure, since deviating from prescribed standards not only undermines structural integrity but also affects investors and stakeholders. Abduljabbar's study does indeed provide the connection between real incidents where decimal guarantee applies in off-plan developments and the handling of liability issues with regard to economic activity, emphasizing on how code keeps investments safe while ensuring that built environments remain within stipulated parameters.

Taleb and Sharples (2011) discuss a new angle with respect to the evolution of sustainable residential buildings in Saudi Arabia by addressing legal liability issues occurring as sustainable practices form an integral part in accordance with Saudi Building Code. From a practical perspective, the study discussed an instance when the sustainable characteristics fails to comply with specifications in time frame at which it is defined by guarantee. The decimal guarantee, in this way, became a tool that solves these problems by ensuring accountability and sustainable nature of the building's design. The study by Taleb and Sharples discusses actual cases of using sustainable building practice that are in line with the liability framework under SBC. The research stresses the dynamic nature of this code, demonstrating that it can adapt to new trends in construction and thus ensure a good quality and long life for buildings in Saudi Arabia.

These case studies as a whole highlight the practical importance of decimal guarantee in Saudi Building Code. They illuminate real cases where issues of liability have been raised, focusing on how the code has provided a platform holding stakeholders to account regarding ensuring durability and safety in buildings. When these events are examined thoroughly, there is a better understanding regarding how the decimal warrant provides an essential tool to ensure stringent construction standards as well safeguard built space in Saudi Arabia.

4.3 Specific Legal Obligations of the Contractors and Designers under Article 8

The amendment of the SBC in 2018 amounted to the adjustment of the article 8. The civil liability and the legal obligations of the designers, contractors and engineers. The current statutory projections of article 8 states that "the designer supervising construction of the building and the executer have to be collectively responsible for compensating the owner for what happens in a certain period comprising the whole or partial demolishment and any defect that threatens building strength and safety including hidden defects. The necessary regulations will determine the provisions necessary thereto." In order to show culpability under the contract in accordance with the legislation of the SBC, there ought to be proof of violations of the contract, and such violation should result in damages.

Additionally, the presence of a causal relationship between the breach and the losses experienced, which must be proven. This indicates that civil obligation will only arise if the breach or collapse was produced owing to the conduct of an architect or designer. If this is not the case, then the defect will not be considered to have been proven by causation principle. If the designer and the contractor are able to demonstrate that the flaw was brought on by an external source that was above their ability to influence, then they will not be held accountable for the problem. In the case of the obligations of the engineer and the contractor, the only way to overturn such obligations is to demonstrate that there was a break in the chain of causality; otherwise, they would be held accountable. If the defendant cannot demonstrate that the occurrence was caused by another individual or an event that occurred outside of their control and that the chain of causation was broken, then the defendant will be found accountable for the event. It is possible for the contractor or the designer to assert that the flaws were not the result of their actions, improper actions, or defaults. Nevertheless, the designer and the contractor are unable to dispute or defend by arguing that the project's design and construction were carried out by applying needed standards and in compliance with the specification and the terms of the contract, despite the fact that the structure collapsed.

The "but for" rule will be used in the event that there is more than one cause, that is, a breach committed by a number of different parties, or for several breaches. This rule states that the loss could not have taken place if it weren't for the breach, which includes the defect, damages (loss), and causal connection. The arbitrators will certainly determine which element contributed the most to the outcome, and then hold the party responsible for that component accountable for their actions.

Both the designer and the contractor are equally responsible for any flaws in the structure's construction, regardless of whether such flaws were the result of an issue in the structure's design or in its execution. That is, the designer will be held responsible for the mistakes made by the contractor, and the contractor will be held responsible for the mistakes made by the designer; but, both parties have the opportunity to transfer their obligation. However, under terms of the employer, both parties will be held equally responsible for any damages. It is none of the employer's concern how they choose to divide up the roles they play. It is possible that this is unjust, and it prompts the issue of how designers or engineers may be held accountable for bad building, as well as how a contractor can be held liable for defective design. However, from the perspective of a critic, this may be the case. Because there is a possibility that neither party was at fault in the design or supervision of the situation, the shared culpability does not imply that both parties are required to pay the employer.

4.3.1 Compensation

According to the provisions of Article 8, both the designers and the contractor are equally responsible for repaying the employer for any damages caused by their errors. That is to say, if it can be shown that the defects were brought about by the acts of either one of them, then the party whose actions brought about the flaw will be responsible for paying the compensation; alternatively, if the flaw was brought about by the conduct of both of them, then both of them will be responsible for paying the compensation. What will take place in the event that the party obligated to pay compensation does not possess the financial means to do so? For instance, if the contractor was successful in proving that the flaw or collapse was caused by a faulty design, the designer would be found accountable, and the court would order the designer to pay the damages. Therefore, the employer will not be reimbursed since the designer either fails to possess the financial means to make the payment, has become bankrupt, or has vanished from Saudi Arabia. Most likely not, since the legal duty is one of joint and several liability, which means that the contractor, even if they are not at fault and have not played a role in the cause of the defect in any way, are still required to pay the compensation to the employer. The detractors may claim that this is unjust, questioning why the party that was not at blame should have to pay for the losses caused by the party that was at fault. Rationality is the cornerstone of the decimal guarantee (DG), which is a joint and several liability in which both parties

are voluntarily guaranteeing each other to reimburse the employer. They do this with the understanding that they will do so from the very beginning. Another significant benefit of the DG in Saudi Arabian law is that it offers the employer a high level of protection.

In general, according to the SBC and article 8 in particular, there is no such thing as excessive compensation or inadequate reimbursement; only genuine losses are ever reimbursed; to put it another way, the extent of compensation is directly related to the real damage that was sustained. As a result, the compensation that an employer may get under the DG is equal to the entire real damages that the company has incurred. When assessing compensation, the extent of the failure, the magnitude of the damages, and the losses that were sustained are taken into consideration. Substantial damages might include the whole or a part collapse of the building, as well as problems that jeopardise the structure's stability or safety. If the building was completely destroyed, then the expenditure of reconstructing will be considered the appropriate form of compensation. If the building was only partially destroyed, then the cost of restoring the structure will be considered the appropriate form of compensation; however, if the structure cannot be restored, then the cost of reconstructing will be considered the appropriate form of compensation. In the event that the flaw was there and the employer ended up fixing the building, the actual cost of restoring it will be compensated for, together with any extra costs the employer incurred as a result of the fault.

Because the liability of designers and contractors, for the major defects, is unlimited under the provisions of the Contract Law and the KSA Civil Transaction Law, the obligation under Articles 8 may not be limited or capped. For instance, "the employer and the contractor or designer cannot agree to cap the liability at, say, up to 10% of the overall value of the project as compensation for DG, and such an agreement will also be nullified when the DG is triggered". It is essential to keep in mind that the parties will not benefit from the agreement to restrict or limit the decimal guarantee (DG). This indicates that there is no limit on the amount of compensation that may be given for DG, however it explains that there is a cap on the amount of culpability for anything else. However, there is no way to limit any responsibility that stems from the breach. In addition, DG cannot be restricted due to the fact that it is a contractual duty that is stipulated by the provisions of the law.

4.3.2 Period

Contractors and designers are required by Saudi Arabian law, specifically the SBC, Contract Law, and KSA Civil Transaction Law, to provide their clients with a guarantee that the works completed by them are without structural as well as safety flaws for a period of ten years. This period of guarantee is known as the decimal guarantee (DG) time frame. In spite of the fact that DG also introduces the idea of shared responsibility for a period of 10 years, the reason it is referred to as DG is because it runs for an entire decade (ten years). The whole objective of the DG is to compel both the designer and the contractor to be collectively liable despite their individual decisions. Although they rarely accepted to be collectively liable, they are jointly liable under Saudi Arabian law. If the life cycle of the construction project is shorter than ten years or if the structure is transitory and has a projected life cycle duration of less than a decade, for example for a temporary facility, then the Parties are unable to reach an agreement to lower (shrink) or restrict the term of DG. For instance, if the design life cycle length of a structure is just three years, then the DG is only valid for those three years, despite the fact that the construction may be operational for a longer amount of time.

The DG term commences as on the day of submission of works under Article 8 of the SBC. It is normal practise in the Saudi Arabian building sector for the employer to provide a Taking over Certificate (TOC) to the contractor and the designer after the facility has been substantially built and is set to be handed over or put into use. To what extent the TOC complies with applicable legislation? The prevailing impression is TOC is legitimate under the SBC till the parties are not in disagreement with it. However, if one of the parties files a lawsuit to change the date the DG goes into effect, it's unclear whether the court would look at the date the TOC was issued or the date significant construction was finished. It's important to double-check the legislation to see whether it mandates

the use of a TOC before committing to a response. As the law does not need a TOC to be issued, but rather requires delivery of works or facility, it is very unlikely that the court will be familiar with the word TOC and will instead use the terms as stipulated by the law, which uses the phrase "delivery" to describe the completion of the contract. When compared to the TOC, how does delivery vary? Delivery indicates the works are substantially complete and the employer may utilise the building or project without serious outstanding construction issues.

Is there any chance of a structural fault occurring after a TOC has been granted if there are still important activities to be completed that are connected to the structure? There is a risk for structural flaws to emerge since the building has not been completed yet and work is still in progress. Employer will also ensure that the facility is operational before activating the DG. In the event that there are still building improvements being done someplace, even if it is available to use and the employer begins utilising the facility, the period of DG is not activated. Once the TOC is given and the building is declared complete and safe for use, the court will likely begin the 10-year countdown. Also, if a project has three phases and the employer has taken possession of each phase at various times, how will the DG apply to the building or facilities, passed on portion or sections? Therefore, when will the DG period begin: at the issuing of the first TOC, upon the issuance of the final TOC, or upon the date of takeover of each portion or section? The response is that the DG periods will be calculated independently for each division or subdivision beginning on the date that it is assumed by the employer. As an instance, during the building of a roadway, tunnels and bridge, if contractor allows part of the road temporarily for traffic, the issue "arises as to whether the period of DG is triggered for that section or not" (Madi & Malhas, 2023). By following the aforementioned logic, it is evident that if the route is opened for temporary diversion, then it is viewed as traffic management for completion of the works, hence the DG is not activated. However, the DG period begins when the employer requests the contractor to open lanes or a portion of the bridge or tunnel for traffic, or when the contractor transfers responsibility for opening the roadway, bridge, or tunnel to the employer.

However, Contractor has not yet received the TOC from Employer. This illustrates that the DG period begins as soon as the facility is made available for use or occupation by the employer or his beneficiary. This is similar to the terms of the FIDIC contract, which provide that employer⁸⁸, who has beneficial use, is considered to have acquired possession of any portion of the works that it uses or occupies.

4.3.3 Legal Implications of the Proposed Amendments to the Warranty Claim Duration

The suggested amendments regarding the warranty claim period under Saudi Building Code including three years from date of collapse or structural defect discovery have several legal implications for construction in Saudi Arabia. In this short time, one of the biggest difficulties is timely detection of such structural problems. Although a shorter duration of warranty might encourage quick arbitration, the potential latent or slow structural issues disclosure within three years raises doubts. Overcoming this task would require the improvement of inspection and monitoring systems within construction to detect problems as early as possible, avoiding conflicts after the warranty claim period.

In light of these challenges, the proposed amendments represent significant benefits to construction professionals and stakeholders. A 3-year period for warranty claims clearly defines the timeframe within which legal action can be taken reducing apprehension and potential dangers of expensive protracted proceedings. This conforms to the international warranty period standards, allowing for a more universal and transparent legal environment. In addition, the shorter lifespan can motivate architects, engineers and contractors to maintain high building standards because they are well aware that the timeframes for potential liability are brief. This proactive culture of quality assurance can help bring some degree in integrity and longevity within the Saudi building architecture.

A clear and defined limitation period to bring legal actions would be an important legal

advantage of the proposed amendments, as it reduces uncertainty in relation to claims duration and financial burdens associated with long-term proceedings. This corresponds to international norms of the warranty expiry thereby enhancing uniformity and transparency in legal regulations. Moreover, the reduced warranty period may encourage architects, engineers and contractors to adhere tighter rules of construction knowing that they are liable for a short time. This proactive approach to quality assurance may result in general improvement of traceability and reparability as well.

Another significant legal consideration relates to the increased speed of litigation that means faster dispute resolutions and reduced disruptions due to constructions. It simplifies the legal procedures and at the same time it can increase pressure on judicial processes. In order to handle the expected influx of claims, a capable and agile legal infrastructure must be developed for its administration. From the perspective of construction industry, this new emphasis on preventive measures along with stringent quality controls could open gates to several claims free environments. This change to proactive risk management can lead the industry towards a culture that is accountable and responsible, thereby influencing the survivability of structures.

The last legal implication relates to the impact it might have on building professionals' accountability and ethics within construction as a whole. The reduction in the warranty claim duration may motivate architects, engineers and contractors to become more proactive and responsible when it comes to construction. Increased attention to the short deadlines for potential responsibility can alert professionals to more closely follow building codes and standards. Hence, the suggested amendments not only have a legal impact but also influence the broader ethical environment of construction in Saudi Arabia.

4.4 *Comparison of DG in Saudi Arabia with Egypt, Jordan and Bahrain*

Saudi Arabia is a country adhering to the Islamic system, whereby it is adopting a legal framework rooted in civil law jurisprudence. This legal system draws influence from the broader legal practises seen in the Middle East, which, in turn, have their origins in the global legal structure. Notably, the foundations of this legal framework may be connected towards the International Civil Code. However, it is also widely implemented outside the confines of Saudi Arabia, including other very prosperous building industries worldwide. The imposition of DG is seen in several regions of Asia and Europe, with a notable concentration in the Middle East. Several countries, including the United Arab Emirates, Egypt, Iraq, Kuwait, Jordan, and Bahrain, enforce the practise of joint liability. Decimal guarantee may likewise be imposed in other civil code countries across the globe. This section focuses on the examination and comparison of the provisions of the DG in Gulf Cooperation Council (GCC) nations with the corresponding provisions in Saudi Arabian legislation, namely the Saudi Building Code (SBC).

4.4.1 *DG in Egyptian Civil Law*

The inclusion of the provision of Decimal Guarantees (DG) in the Egyptian civil code dates back to its publication in 1948. According to Egyptian law, both the designer and contractor have joint and several liability for any deficiencies that pose a risk to the stability or safety of a building, including its partial or complete collapse. The designer and contractor shall not be exempted from liability for design and construction defects, even if the flaw or collapse was caused by a problem in the ground itself and the employer consented to the defective construction. The duration of responsibility extends for a period of 10 years commencing from the date of the project's delivery, unless the anticipated lifespan of the structure is less than ten years. The prescribed time frame within which a claim may be initiated is three years, commencing from the moment the employer becomes aware of or should reasonably have been aware of the flaw or collapse.

According to Egyptian legislation, in cases where a designer has only entered into a contract for the purpose of designing a construction, their responsibility is restricted to any faults in the design

itself, and does not include any issues arising from poor craftsmanship or execution. The doctrine of strict liability, which cannot be limited or waived, renders any agreement that seeks to restrict or exclude strict responsibility null and void, subject to being invalidated by the judicial system. The rules in Egyptian and Saudi Arabian legislation exhibit significant similarities, but with nuanced distinctions. Notably, the Egyptian law does not expressly mandate the designer responsible for designing the project to oversee the construction in order for DG arrangements to be applicable.

In the context of Egyptian legal system and jurisprudence, the concept of DG is seen as an inherent right attached to the property itself, thus making it inseparable from the structure. Consequently, it is deemed transferable, enabling successive owners of the building to avail themselves of this assurance. Although the doctrine of privity of contract does not extend to the subcontractors, this serves as evidence that the contractor retains accountability for the subcontractor's tasks, and the responsibility cannot be transferred to the subcontractors. According to Saudi Arabian legislation, particularly the Saudi Building Code (SBC), the later buyer is not entitled to file a lawsuit against the designer and contractor. Nevertheless, it should be noted that in some regions of Saudi Arabia, the purchaser who follows the first buyer has the legal right to initiate legal proceedings against the developer. Consequently, the developer may transfer the responsibility to take legal action against the designer and contractor involved in the project.

The similarity between the Saudi Building Code and Egyptian laws, especially on Decimal Guarantees is a result of their desire to create an environment that emphasizes structural building resilience. Both the legal frameworks recognize construction professionals like architect s, engineers and contractors as instrumental in ensuring that constructed entities are safe and reliable. The common emphasis upon the obligation of these professionals refers to a mutual understanding regarding effective legal protections supporting building standards that ensure protection from harm for occupants and public interests as well. In this foundational principle, the convergence is an indication of understanding the necessity of legal frameworks for regulating and maintaining permanence to structures.

The second shared point is implicit acceptance of Decimal Warranty idea in both jurisdictions. The SBC and the Egyptian Civil Code emphasize that professionals must be liable for any structural deficiencies that may impinge on a building's integrity. This common concept points to a consensus that some form of guarantee mechanism is pivotal in handling potential deficiencies and damages, underscoring the legal duty of construction engineers for an extended period. The recognition of the Decimal Guarantee principle as a legal instrument for providing protection against permanence leads to finding common ground between Saudi and Egyptian legislative systems though there can be some differences in particular provisions.

Nevertheless, serious differences rise when comparing the specific mechanisms and duration that are applied in Decimal Guarantees within Saudi Building Code to those contained in Egyptian legislation. Although both sets of laws recognize the principle, there are differences between how they formulate and limit guarantees reflecting legal heritages and industry practices as well likely cultural concerns. In the SBC, the period that can be defined as a guarantee term according to Article 8 stands within relatively wide time frames. Such a long duration gives more opportunity to find structural problems and fix them. However, the Egyptian Civil Code can include different provisions relating to the term and scope of guarantee which may be interpreted based upon notions peculiar to Egypt together with its legal heritage as well as construction incentives. This difference in temporal aspects refers to the delicate ways each legal systems views how long professionals ought not to bear for structural stability liability on buildings.

4.4.2 Comparing DG in Saudi Arabia, Jordan and Bahrain

The majority of the Gulf Cooperation Council (GCC), including Saudi Arabia, adhere to their own civil codes. Since the civil codes of the countries of the Gulf Cooperation Council are drawn from the civil laws of Egypt and France, they are quite similar to those two codes in many ways. The DG

regulations in Bahrain, Saudi Arabia, and Jordan are compared head-to-head in Table 1, which may be seen below. Because Jordan did not implement its Civil Codes until 2014, only a limited amount of information is now accessible on the provisions of Omani DG. However, based on a high-level analysis of the provisions of DG in Jordan, it would seem that they are fairly comparable to the requirements in Saudi Arabia.

Table 1: Comparing DG in Saudi Arabia, Jordan and Bahrain

Countries	Civil Code Provisions	Persons that are Liable	Scope of Liability	Period of Liability	Limit period for Claim of Liability
Saudi Arabia	Saudi Building Code (Article 8)	Designers and Contractors	Any flaw in a work that compromises its structural integrity and safety, in addition to any damage, partial or whole	10 years	Three years from finding out collapse or structure defect as a suggestion
Jordan	Article 634 of the Civil Code	Architect, Engineer or Contractor	Any flaw that puts the stability or integrity of a structure, as well as the possibility of its partial or complete collapse, in jeopardy.	Ten years	Three years from proven collapse or finding out of defect
Bahrain	Article 692 of the Civil Code No. 67/1980187	Architect, Engineer or Contractor	Any defect in a work that compromises its structural integrity and safety, in addition to any damage, partial or whole	Ten years, and by agreement less than ten years for buildings that are less than ten years old	Three years from proven defect

Data in the table above compares civil code regulations of Saudi Arabia, Jordan, and Bahrain that address designers' and contractors' liability for defects in built projects. These clauses are critical in comprehending the legal frameworks in these nations that control building durability and the related civil culpability.

The Saudi Building Code, specifically Article 8, governs civil responsibility in the kingdom. If there is a problem with the work's structural integrity or safety, or if any damage occurs to it, the designer or contractor is responsible. There is a three-year deadline for filing claims from the date of detection of a collapse or structural fault, and a ten-year liability term. This clause highlights the broad extent of culpability, which includes not just structural problems but also any harm that compromises the integrity of the structure. The rigorous liability period and the short time frame for claims emphasise the need of prompt action and adherence to the criteria of the building code, emphasising the legal repercussions for carelessness.

Architects, engineers, and contractors in Jordan are subject to civil responsibility as outlined in Article 634 of the Jordanian Civil Code (Madi & Malhas, 2023; Samarah, 2017). They are responsible for any defect that might cause the building to collapse in whole or in part. Like Saudi Arabia, the three-year limitation period begins after the earlier of the established collapse or the discovery of the defect and runs for ten years. Aligning with the broader issue of building durability and safety, this clause highlights the shared accountability of architects, engineers, and contractors and emphasises the significance of maintaining the structural integrity of structures to avoid collapse or flaws.

The building code of Saudi Arabia converges with Article 634 of the Jordanian civil law in that both have a common element which includes how construction professionals are viewed as an integral part and parcel of ensuring safety plus there is also structural coherency, economy on various parts. Indeed, the two legal provisions emphasize on accountability issues for architects and engineers as well as contractors of constructions that have to comply with standards. This common emphasis shows a convergence in recognizing the moral duty of professionals to preserve building durability, exemplifying mutual awareness necessity for legal mechanisms that control and guarantee the longevity of structures.

Another area of convergence regards recognition of the concept in guaranteeing perpetuity for constructed structures. Both Article 634 and Saudi Building Code recognized the need for a legal mechanism through which professionals would be held liable in case of structural deficiencies that

may endanger safety or stability of buildings. This mutual recognition provides a common ground in understanding the need for introducing and working with guarantee mechanisms to help address possible defects or damages that may arise chronicling on account of legal responsibility contract professionals carry over set period.

Nonetheless, a major point of divergence emerges when analyzing the particular means and scope implemented in Article 634 and Saudi Building Code. The Saudi Building Code, as follows from Article 8 provides the warranty period of ten years allowing for a rather long liability duration. This elongated window allows for more structural issues to be seen and corrected. As opposed to this, the Jordanian Civil Code Article 634 can incorporate different provisions as related to duration and scope of a guarantee within boundaries influenced by traditions adhered for construction industry in Jordan. This difference in temporal aspects shows the specificity of approaches that each legal system applies to professionals' liability for building integrity structurally over time. In addition, divergence concerns the possible differences in terms of legal implications for professionals following an infringement such as a violation of code. Article 634 and the Saudi Building Code may provide specific penalties or measures, affecting the legal landscape of each jurisdiction. In view of these disparities, it is apparent that the legal systems in Jordan and Saudi Arabia present diverse modes of operation as well as factors that guide construction professionals' responsibilities and liabilities with regard to building durability.

Article 692 of Civil Code No. 67/1980187 governs civil liability in Bahrain (Alnimer, 2019). Any architect, engineer, or contractor who contributes to the creation of a work that has a flaw that affects the work's structural integrity or safety is responsible for any and all resulting harm. There is a three-year deadline for filing claims beginning on the date of the discovered flaw, and a liability term of ten years, and by agreement less than ten years for buildings that remain in Bahrain for less than ten years. The provision in Bahrain emphasises the time-limited aspect of obligation, with a shorter liability term compared to Saudi Arabia, Egypt and Jordan. The clause highlights the need of fixing faults swiftly, matching with the wider theme of guaranteeing building durability and safety within a predetermined period.

These results provide insight on the disparities in civil code provisions across these nations and the resulting differences in the civil responsibility of designers and contractors, which is central to the study's overarching research question. Different countries' legal systems give rise to varied liability statutes of limitations and liability coverage. Understanding the legislative frameworks affecting building durability is a complex issue, and studying these rules allows for a detailed comparative analysis and adds vital insights to the matter at hand.

Comparing the laws of the civil codes of Saudi Arabia, Jordan, and Bahrain that address civil responsibility for building durability shows both parallels and variations between the legal systems of these three countries.

a. Similarities:

- i. Architects, engineers, and contractors are responsible for any problems that endanger the safety and stability of a structure in all three nations. The scope of culpability comprises flaws that might lead to partial or full collapse, emphasising the significance of keeping construction durability requirements.
- ii. There is a three-year -Three years as suggested in Saudi Arabia- window of opportunity to file a claim in any of the three nations, beginning with the earlier of the date of the proved collapse or the discovery of the fault. To encourage prompt settlement of legal disputes relating to building durability, this time period establishes a deadline for bringing claims.

b. Differences:

- i. Duration of Liability: The duration of liability varies from country to country. With a ten-year liability term in place, Saudi Arabia holds designers and builders to a higher standard of responsibility. However, the liability term in Jordan is 10 years and In Bahrain, it is ten years, and by agreement it is less than ten years for buildings that are less than ten years old. The lengthier liability period in Saudi Arabia emphasises the need of long-term responsibility

- and stresses the relevance of durable construction.
- ii. Liability Categories: While all three jurisdictions hold architects, engineers, and contractors accountable for errors and deficiencies, Saudi Arabia expands the scope of culpability to include any harm, regardless of its severity. This expanded view of the law's scope highlights the all-encompassing nature of responsibility in Saudi Arabia with regard to the structural integrity of buildings.
 - iii. Comparison of the Saudi Building Code and the Saudi Civil Code: Article 8 of the Saudi Civil Code directly references the Saudi Building Code, demonstrating the close relationship between general legal requirements and sector-specific rules. When it comes to civil concerns beyond construction, however, Jordan and Bahrain look to larger provisions in their respective civil codes (Article 634 in Jordan and Article 692 in Bahrain) (Alnimer, 2019).

To sum up, although these nations do agree on certain basic concepts of civil responsibility for building durability concerns, the discrepancies in liability periods, liability breadth, and particular legal references show that their legal systems are not identical. The Saudi Building Code provides extensive requirements for the durability of buildings in Saudi Arabia, reflecting a high degree of harmony between law restrictions and industry norms. However, the term of culpability and the particular legal references utilised are different between Jordan and Bahrain, despite the fact that the two countries share comparable legal principles. It is essential for anyone involved in the construction sector to have a firm grasp of these intricacies, and it also aids in comparative studies of building durability requirements between nations.

5. Conclusions

The purpose of this research was to lay out the contractor's and engineer's individual civil liability for building and infrastructure damage and destruction, as well as for any faults that may manifest within the warranty term. In the realm of construction and building, the standard civil liability laws fell short. The unfavourable outcome of the building warranty might manifest as either the whole or partial destruction of the structure, or the presence of faults that seriously compromise its stability and longevity. Whether it's affecting the national economy or threatening peace and quiet, this defeats the original purpose of the institution's creation. The danger to people and their money is distinct from this. This prompted lawmakers, including the Saudi regulator, to settle on a set of unique assurances characterised by strictness in light of the tragedies caused by the partial or complete collapse of structures. The decimal guarantee, sometimes known as the "decimal responsibility," is the most crucial of these assurances. Article (8) of the Saudi Building Code's implementing regulations makes this mandatory, while Article (29) of the Executive Regulations for the Saudi Building Code's implementing regulations provides clarification. Focusing on the case of the contractor's and engineer's liability for demolition or defect in the construction or construction following the issuance of an occupancy certificate, we adopted a descriptive, analytical, and comparative approach to the relevant texts in the Saudi building code application system on which the study is based, and we compared these to some Arab legislation, including the Egyptian, Jordanian, and Bahraini versions of the law. In this analysis, we look at the specifics of the decimal guarantee and how long it lasts. We next turn our attention to the details of the decimal guarantee. The research concluded that the Saudi regulatory body should include stipulations on the contractor's and engineer's warranty claim. After three years have elapsed after the destruction or exposure of the fault, it is too late to hear this. It is important that the contractor and engineer stand together in more ways than only joint responsibility and guarantee.

In this extensive research evaluating the civil liability regimes for building durability in Saudi Arabia, Egypt, Jordan, and Bahrain, some major results have been found. Firstly, the study demonstrates that all four nations share a basic principle of holding designers, engineers, and contractors responsible for any faults or problems affecting a building's structural integrity and

safety. The length of culpability, however, varies significantly depending on the country, from 10 years in Saudi Arabia to ten years, and by agreement it is less than ten years for buildings that are less than ten years old in Bahrain. Furthermore, Saudi Arabia takes a more holistic approach to building durability issues by including any damage, whether partial or total, within the scope of culpability. With a standard three-year as a suggestions limitation term across all nations, the research emphasises the need of pursuing legal action in a timely manner to resolve claims involving building faults. Reference to the Saudi Building Code (Article 8) in this law also exemplifies the country's careful coordination of general legal principles and sector-specific rules, which together provide a solid basis for long-term stability of constructed structures.

There are far-reaching implications for several stakeholders in the building business from these findings. In order to avoid expensive legal implications, architects, designers, and contractors must have a solid grasp of these legal frameworks, which in turn requires them to adhere strictly to industry norms. Insights from these differences may help policymakers and regulatory bodies improve current laws, leading to a more unified and thorough strategy for ensuring building durability throughout the area. The report also emphasises the significance of harmonising legislative frameworks both nationally and internationally, as a means of encouraging international cooperation in building codes. The result of this kind of harmonisation would be safer and more long-lasting buildings throughout the Middle East and beyond by encouraging cross-border collaboration, streamlining legal procedures, and ensuring consistency in construction practises.

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References

- Abdallah, A., Assaf, S., & Hassanain, M. A. (2019). Assessment of the consequences of deficiencies in design documents in Saudi Arabia. *Architectural engineering and design management*, 15(4), 282-296.
- Abdulaal, A. A. (1987). *Planning and building regulations in Saudi Arabia in relation to privacy and Islamic tradition*. University of Glasgow (United Kingdom).
- Abduljabbar, R. (2021). *Economic Assessment of Off-plan Real-estate policy in Saudi Arabia-2009-2019* (Doctoral dissertation, International School Of Management).
- Abraham, W., & Alvarenga, M. I. D. A. (2005). *FIDIC: An analysis of international construction contracts*. Kluwer Law International BV.
- Alabbasi, M., Agkathidis, A., & Chen, H. (2023). Robotic 3D printing of concrete building components for residential buildings in Saudi Arabia. *Automation in Construction*, 148, 104751.
- Alaidroos, A., & Krarti, M. (2015). Optimal design of residential building envelope systems in the Kingdom of Saudi Arabia. *Energy and Buildings*, 86, 104-117.
- Alfalah, G., Alasaibia, A., Alshamrani, O., & Al-Sakkaf, A. (2023). A Holistic Framework for Assessing the Quality of Building Construction in Saudi Arabia. *Buildings*, 13(7), 1666.
- Alghafis, M., Sibley, M., & Latif, E. (2022). A review of existing literature in Saudi domestic architecture. *Conservation of Architectural Heritage*, 261-271.
- Alnimer, R. M. F. (2019). Compare and Contrast of Contractual Liability for the Third Party's Act under the Bahrain Civil Law and Jordanian Civil Law.
- Alrashed, F., & Asif, M. (2014). Saudi building industry's views on sustainability in buildings: questionnaire survey. *Energy Procedia*, 62, 382-390.
- Alsayed, S. H., Al-Salloum, Y. A., Shuraim, A. B., & Al-Negheimish, A. I. (2007). Evolution Of The Saudi Building Code For Concrete Structures (SBC 304). In *Saudi Engineering Conference*.
- Alyami, S. H., Rezgui, Y., & Kwan, A. (2013). Developing sustainable building assessment scheme for Saudi Arabia: Delphi consultation approach. *Renewable and Sustainable Energy Reviews*, 27, 43-54.
- ARABIA, P. I. S. (2007). The Saudi Building Code.

- Attia Naim, G. (1985). Decennial Liability and Insurance under Egyptian Law. *Arab LQ*, 1, 504.
- Al-Gunaiyan, K. A. M. I. (1992). *Evaluation of contract administration for public projects in Saudi Arabia* (Doctoral dissertation, King Fahd University of Petroleum and Minerals (Saudi Arabia)).
- Al-Mudhei, A. A. (2009). *Factors Affecting the Implementation of the Saudi Building Code* (Doctoral dissertation, King Fahd University of Petroleum and Minerals).
- Al-Otaibi, M. (2011). *Evaluation of contractor performance for pre-selection in the Kingdom of Saudi Arabia* (Doctoral dissertation, © Mohammed Al-Otaibi).
- Al Surf, M., Susilawati, C., & Trigunarysah, B. (2014). The role of the Saudi government and the Saudi building code in implementing sustainable housing construction in Saudi Arabia. In *Proceedings of the 20th Annual Pacific Rim Real Estate Society Conference* (pp. 1-19). Pacific Rim Real Estate Society.
- Balabel, A., & Alwetaishi, M. (2021). Towards sustainable residential buildings in Saudi Arabia According to the conceptual framework of "Mostadam" rating system and vision 2030. *Sustainability*, 13(2), 793.
- Bubshait, A. A., & Al-Gobali, K. H. (1996). Contractor prequalification in Saudi Arabia. *Journal of management in Engineering*, 12(2), 50-54.
- El-Adaway, I. H., Abotaleb, I. S., Eid, M. S., May, S., Netherton, L., & Vest, J. (2018). Contract administration guidelines for public infrastructure projects in the United States and Saudi Arabia: Comparative analysis approach. *Journal of construction engineering and management*, 144(6), 04018031.
- Fawzy, S. A., El-Adaway, I. H., Perreau-Saussine, L., Abdel Wahab, M. S., & Hamed, T. H. (2018). Claims for extension of time and additional payment under common law FIDIC: Civil law analysis. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 10(4), 06518002.
- Fawzy, S. A., El-adaway, I. H., Perreau-Saussine, L., Wahab, M. S. A., & Hamed, T. H. (2019). Provisions of Unforeseeable Physical Conditions under FIDIC and under Egyptian Civil Law: A Comparative Analysis. *Const. L. Int'l*, 14, 11.
- Hassanain, M. A., Bin-Mohanna, A., Al-Hammad, A. M., & Sanni-Anibire, M. O. (2017). Challenges to the implementation of building management systems in Saudi Arabia. *Built Environment Project and Asset Management*, 7(2), 130-142.
- Homsy, P. C. (1982). Legal Aspects of Doing Business in Saudi Arabia. In *Int'l L.* (Vol. 16, p. 51).
- Jamoussi, B., Abu-Rizaiza, A., & Al-Haij, A. (2022). Sustainable Building Standards, Codes and Certification Systems: The Status Quo and Future Directions in Saudi Arabia. *Sustainability*, 14(16), 10314.
- Madi, H., & Malhas, F. (2023). Applying FIDIC Contracts in Jordan. In *FIDIC Contracts in Africa and the Middle East* (pp. 168-203). Informa Law from Routledge.
- Medallah, A. K. (2015). A review of projects and construction law practice in Saudi Arabia. *J. Pol. & L.*, 8, 94.
- Mobley, B. W. (2004). Outsourcing post-conflict operations: Designing a system for contract management and oversight. *JOURNAL OF PUBLIC AND INTERNATIONAL AFFAIRS-PRINCETON-*, 15, 21-37.
- Nahhas, T. M. (2017). A comparison of Saudi building code with 1997 UBC for provisions of modal response spectrum analysis using a real building. *Open Journal of Earthquake Research*, 6(02), 98.
- Samarah, A. A. A. H. (2017). *Responsibility of the Contractor and the Engineer for the Guarantee of Building Solidity in the Jordanian Civil Law: Comparative Study* (Doctoral dissertation).
- SAMRAJ, A. C. (2018). *Decennial Liability under UAE Law (Articles 880-883 of Law No. 5 of 1985)* (Doctoral dissertation, The British University in Dubai (BUiD)).
- Sarie-Eldin, H. (1994). Operation of FIDIC civil engineering conditions in Egypt and other Arab middle eastern countries. *The International Lawyer*, 951-972.
- Shamseldin, A. (2023). Proposed role of the local Saudi building codes in assessing the energy performance of buildings in KSA's GBRs. *Ain Shams Engineering Journal*, 14(5), 101966.
- Taleb, H. M., & Sharples, S. (2011). Developing sustainable residential buildings in Saudi Arabia: A case study. *Applied Energy*, 88(1), 383-391.
- Wu, L., Lu, W., & Chen, C. (2023). Strengths and weaknesses of client-server and peer-to-peer network models in construction projects. *International Journal of Construction Management*, 1-15.
- Yasamis, F., Ardit, D., & Mohammadi, J. (2002). Assessing contractor quality performance. *Construction Management & Economics*, 20(3), 211-223.
- Zaki, M. A. K. E. (1992). *Enforcing the role of construction insurance in Saudi Arabia* (Doctoral dissertation, King Fahd University of Petroleum and Minerals (Saudi Arabia)).