



REVIEW ARTICLE

ENGINEER STANDARD OF CARE IN TRADITIONAL AND GREEN BUILDING CONTRACTS

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ARTICLE INFO

Article History:

Received 26<sup>th</sup> March, 2017

Received in revised form

10<sup>th</sup> April, 2017

Accepted 23<sup>rd</sup> May, 2017

Published online 30<sup>th</sup> June, 2017

ABSTRACT

This research aims to define the Engineer Standard of Care in Green Buildings as it is an emerging issue. Standard of care shall define Engineer's liability in case of green building dispute. Thus, it discusses the traditional standard of care, the green slandered of care, the modification by expansion or limitation of such standard. This is in light of the Jordanian bylaws. It concludes that the nature of green building requires special standard of care and the engineer must be aware of all conditions that may expand or limit his liability.

Key words:

Engineer, Architecture, Standard of care,  
Construction, Green building.

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Citation: Dr. Shereen N. Abu Ghazaleh and Dr. Hassan Sami Alabady, 2017. "Engineer standard of care in traditional and green building contracts", International Journal of Current Research, 9, (06), 53336-53342.

INTRODUCTION

In light of the environmental and efficiency responsibility concern in resources use, a relatively new concept emerged. It is Green Building or Green Constructions or the developed sustainable building. <sup>i</sup> This concept has emerged as one of the solutions raised to elevate water and energy consumption as well as to provide fresh air and to transfer constructional wastes from landfills into environmentally friendly useful materials. However, this type of building became with time inevitable issue according to many studies which discussed climate change issue and seeking global clean environment. <sup>ii</sup> Green buildings are defined as an environmental friendly constructions, efficiently built and designed for the optimum use of resources throughout the principle of sustainable green construction, including resource-efficient use, reuse of recyclable materials, nature conservation and disposal of hazardous substances and adoption of quality. <sup>iii</sup> On the other hand, the US Environmental Protection Agency (USEPA) defined Green Building as "the practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal—the complete building life cycle from siting to design,

construction, operation, maintenance, renovation, and demolition". However, this concept may go beyond this to include economic considerations and other considerations related to the structure strength and concrete and comfortability while designing classical buildings. In addition green buildings are well-known by its sustainability and high performance. <sup>iv</sup> Green buildings concept refers also to the quality and characteristics of actual structure in light of Green building sustainability principles and methodology. Where many techniques and practices were used to enforce not only resources use efficiency but also the reduction of environmental impacts<sup>v</sup> and since green building issue is relatively new, it is necessary to show the liability limits of green building's engineer compared to traditional building's engineer taking into consideration that such buildings practice is very limited in Jordan. Therefore, it is important to define the Engineer Standard of Care in Green Buildings to in case of dispute related to green building and the Modification case of such Standard ; either extending or limitation of this standard of care.

The Traditional Standard of Care

The main issue here, includes the legal bases for care commitment; whether commitment of care or commitment to achieve goal? The level of required care is usually the reasonable man standard. This is the legal concept of this standard which represents the person who equate conditions

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and take into consideration the characteristics of persons at risk, as it requires more care in case of more risk. Thus, the care standard depends on conditions, but each case has its own appropriate standard by which a person might be deemed legally negligent. <sup>vi</sup>Originally, care standard was found to avoid negligence. For instance, in *Blyth v Birmingham Waterworks* case “negligence” was defined as the failure to do something that could be done by another rational person, or doing something that could not be done by another rational or keen person. However, rational behavior shall be determined by a subjective standard of a normal or rational person not by a defendant. <sup>vii</sup> In other words, a contractual obligor shall be deemed guilty if he has partially or defectively executed his commitment or delayed the execution of such commitment. Such a violation represents a negligence by an obligor which raises his liability as a standard professional person would not do if he were in the same circumstances.

*Bolam v Friern Hospital Management Committee* put (Bolam Test) to evaluate professional negligence, where it assured the difference between professional and ordinary negligence. It further explained that when a person assigned to a case requires special skill or specialization but he lacks for such specialized skill, a negligence test shall rely on the care standard of normal rational person, and it is not required that a person has high skill such an expert to be judged as negligent. Therefore, according to (Bolam Test) skill was limited to the reasonable level of specialization of a defendant. <sup>viii</sup> Thus, according to Article 358 of the Jordanian Civil Code, it could be considered that, originally, a green building engineer or contractor commitment shall be maintain the work or to be cautious. It is actually the same as a general standard not a particular standard. In all cases, the engineer shall be asked about fraud or material fault as defined in this article regardless of being a general or a particular standard of care, and this is an exceptional case. On the other hand, in *Regional Health Authority Ashcroft v. Mersey* case, the court affirmed that the more the proficiency of a person is, the higher level of care should be expected. <sup>ix</sup> Otherwise, in *Wimpey Construction UK v Poole* case, the claimant urged that Bolam Test shall not apply in case a customer paid for a high professional skilled person, however the judge denied. <sup>x</sup> Herein, the fault and default of obligor should be verified to proof his liability for taking care. Therefore, the owner should proof that the engineer failed to do his work. If he could proof such a fault, the proofing burden transfers from the owner to the engineer who should proof the foreign cause. However, in terms of achieving a result, a fault should be supposed. Originally, such care should be as if it is assumed by a normal person. Whereas, such care increase or decrease depending on the provisions of the law or the terms of a contract. In all cases, constructional engineers’ liability, whether taking care or achieving a result, shall rely on the nature of the contractual commitments. Then, a contractual failure shall be related to a failure in achieving a result in case of the commitments to achieve a result. While, in the case of a commitment to take care, the contractual failure shall be a failure in taking the required care. Thus, we should investigate the engineer’s standard of care in green buildings contracts.

### The Green Standard of Care

An engineer’s scope of work is usually divided into pre-contractual, contractual and post-contractual obligations. In the pre-contractual stage, the obligor shall prepare perfect and

economic plants. During the performance of work, the obligor shall supervise and manage work to achieve the benefit required by the employer. Such obligations should be reasonably and professionally practiced in accordance with the contract. As mentioned, the required standard which has been addressed in *Bolam v. Friern Hospital* case, which stated that a professional man shall not require a high skilled professional, where it is sufficient to practice an ordinary professional skill.

<sup>xi</sup> In *Lusty v Finsbury Securities*, it was concluded that it was necessary to call a professional expert in the same art to provide evidence that the practice is acceptable or not. <sup>xii</sup> Care standard or the accepted professional standard of care is the minimum required by law from engineers. However, according to AIA B101 document this standard was defined as: “an Architect shall perform its professional services according to the ordinary care standards provided by such like engineers practicing the same work or performing their work under the same conditions” <sup>xiii</sup>

It is worth mentioning, that the work required from an engineer is based on a personal consideration, i.e. the engineer shall personally perform its assigned work because the beneficiary selected him for its owned experience. Should the engineer assigned another person to perform its contract, the employer may terminate the contract. <sup>xiv</sup> However, such peculiarity apply to green contracts as the owner intended to select a green building specialized engineer. Subsequently, it is not accepted to assign its work to another engineer unless the latter is a green building specialized engineer. The legal base for such consideration is derived from Article 356 of the Jordanian Civil Code which states that: “if the right subject is a work which its nature or by contract demands to be performed personally by the obligor, the obligee may reject to pay for other parties. If the obligor failed to perform its work, the obligee may ask the court to perform such work at the expense of obligor or to perform it without prior permission as necessary.” Similarly, the French Civil Code stressed the personal consideration, however should such personal performance violated, an obligee (owner) may, after obtaining legal permission, perform the work himself. Where according to Article 1144 of the French Civil Code: “A creditor may also, in case of non-performance, be authorized to have the obligation performed himself, at the debtor's expense .” The latter may be ordered to advance the sums necessary for that performance”

However, engineers' liability is usually considered contractual liability due to the contracts signed between owners and them. Liability of implementers are raised once they act a practice that should not be acted by a like professional person under the same conditions. Also we pointed to the difference between a person who perform traditional engineering work and who practice green engineering work. This will certainly affect the standard which it will be subject to measure. For instance, one of the green buildings’ errors the design of the rainfall harvesting networks in such a manner that does not allow recycling of such water, in case of designing stray solar systems, or if the building failed to obtain the required green building certificate according to the contract, and etc. Of course, the base of liability herein is the presence of damage caused by a failure, thus, there should be a casualty. The Jordanian Civil Code set out the engineer liability in terms of designs and plans of the project, Article 789 of the Jordanian Civil Code provides that: “If the work of the design engineer is restricted to making the plans to without supervising the

execution, he shall be liable only for defects in the plans.” Thus, it is clear that if the design engineer undertakes the designs only, shall be merely responsible for the errors in designs, this means he shall not be liable for errors in supervision and performance. However, what is the case in terms of green building? In light of the absence of legal provisions related to green buildings in Jordan, it could be possible to apply this article 789 though standard of liability in the case of green building should be different; because the green design engineer shall bear all the designing effects which do not match green building principles. In other words, the contract is a base to determine the obligation of the engineer so when it states the obligation to design green building the standard of care shall be more than in traditional building.

Nevertheless, the question who is the design engineer meant by Article 789 of the Jordanian Civil Code?

It might be assumed, *prima facie*, that the Design Engineer is an Architect, and this is the common belief. As, on one hand, it is not provided that a joint engineer with a contractor should be an architect. Instead, he might be a consulting engineer or a civil engineer. In this regard, according to Article 788 of the Jordanian Civil Code: “(1) If the subject matter of the contract is the construction of buildings or other fixed installations, the plans for which are made by an engineer, to be carried out by the contractor under his supervision, they shall both be jointly liable for a period of ten years to make compensation to the employer for any total or partial collapse of the building they have constructed or installation they have erected, and for any defect which threatens the stability or safety of the building, unless the contract specifies a longer period.”<sup>xv</sup> Where the period for completion of engineering works shall extend from the date of work commencement till the date of completion, and such period shall be determined in the bidding’s annexes. As well, it shall include the extension periods according to the signed contract.<sup>xvi</sup>

On the other hand, it is not binding that the Design Engineer is an Architect, he might be a Civil engineer that may design concert plans to a building, Mechanical engineer that designs water network or an electrical engineer that designs electricity distribution plans. The Jordanian legislator did well as it stipulated, in article 788 of the Jordanian Civil Code, the design engineer only. And also in Article 789 it stated that the design engineer who developed the construction designs. Conversely, the Iraqi legislator, for instance, incorrectly described it, in many articles, as an Architect. Such as in Article 870 of the Iraqi Civil Law which stated that: “The Architect and the Contractor shall both be jointly liable for a period of ten years to make compensation to the employer for any total or partial collapse of the building...”. In addition, Article 872 of the same Law stated that: “The Architect and the Contractor shall be waived from the decided liability...” Sometimes, the engineers of different kinds shall undertake to develop the plans of building which include engineering works of construction and other modifications on such specifications related to the project. Such plans might be provided, upon agreement, by the owner or the contractor according to the contract and each case has its own contracting terms and legal provisions.<sup>xvii</sup> In all cases, Green Building engineer (either the architect, mechanical, civil or electrical ...) is different from traditional building engineer. Therefore, each practice of green building needs green design, as the architect, for example, has to draw the plans with sun refractions, design green roofs of

the buildings and other things. On the other hand, the civil engineer plays an important role in green buildings compared with traditional building in regard of designs, material used thus the engineer will have special green specification and designs. Similarly, other engineers such as mechanical and electrical and others, as all of them have to design their works in green manner.

However, given the development in construction sector and particularly green buildings, it became clear that engineers need more expertise and they will face more challenges that may affect Care Standard. In 2007, the American Institute of Architects addressed “the standard of care” in the contracts documents as a measurement of design professional.<sup>xviii</sup> However, according to new green buildings standards, the engineers have to improve their performance in their project management and to explicitly determine their objectives, requirements and guarantees for such buildings. The owner will certainly ask for an experienced engineer in green field to guarantee the contraction of green building according to the contract specification.

It worth mentioning, that individuals may apply for obtaining LEED certificate as accredited professionals according to one or more than one LEED rating system. However in terms of LEED v.3.0 program release, the USGBC and the Green Buildings Certification Institute – created by the USGBC which has been established to implement and apply professionals accreditation criteria according to the three levels of LEED Professional Credentials system, namely: the First level, LEED Green Associate: For professionals who want to demonstrate green building expertise in non-technical fields of practice – denotes basic knowledge of green design, construction and operations. The second level: LEED Accredited Professional (AP) with specialty: signifies advanced knowledge in green building practices and reflects the ability to specialize in a particular LEED Rating System. Third level, LEED Fellow: LEED Fellows are a highly accomplished class of individuals nominated by their peers and distinguished by several years of professional green building experience. LEED Fellows must also have achieved a LEED AP with specialty credential.<sup>xix</sup> However, the question is: Whenever an engineer has obtained LEED Professional Credential and sign with (LEED® AP) mark after its name, does this raise its care standard level of care standard? Or shall it raise the customer’s expectation? Does the measure of its care performance will be subject to what should be done by an ordinary reasonable engineer under the same conditions? Or according to other LEED accredited professional?

Actually, the engineer who utilize such accreditation intends to promote himself that he owns more knowledge than the traditional engineer. However, does this raise his level to an expert with higher care standard? Once an engineer promote himself as if he owns specific experience, the court shall consider him with high level. In all circumstances, if an owner of engineering corporation were appointed because it has obtained LEED certificate and due to its experience in such field, he should expect such level of service. Reference to the USGBC website, LEED Credentials differentiate between building professionals in terms of science and skills on one hand, and in terms of LEED procedures successfully. LEED accredited professionals have a comprehensive understanding of LEED rating system and procedures.<sup>xx</sup> However, this could not be as statement that “LEED® AP” is an expert and should

be considered of higher professional level than others. Nonetheless, since the number of Architects are continuously and rapidly growing, it is possible that in case of malpractice claims against a LEED-Architect, the care standard requires an evidence by other LEED Professional. However, since an ordinary professional may not have particular knowledge of the raised issue, the court may find that the care standard in such field is different.<sup>xxi</sup> As seen, there is difference between a care standard in the case of traditional engineering and a care standard in the case of green buildings which needs specific engineering know how. Also, in the new standard, an owner can claim against the responsible Architect for its failure in a green building standard. To do so, there should be an evidence for breaching the engineering professional conduct.

In legal language, the engineer should be asked according to an ordinary man standard to determine its negligence and breach. Usually, a court consults expertise to investigate negligence of the engineer compared with similar engineer, thus, if failed to achieve the required care standard. Therefore, the traditional standard could not be sufficient to determine if the green building' engineer is negligent or not. Thus, an engineer who works in green field should adhere the green building principles to be very close to the successful green engineer' standard. Because many engineers, who follow standard measures in their practice and risk management in their designs and contracts, may forget these fundamentals when they started to negotiate green design.

The successful Green engineer is the one who address reasonable contracting conditions, manage owner's expectations and make the project's scope of work under control. An engineer should abide green engineer standards through addressing rational provisions and showing the actual benefits of the building. Subsequently, any courtesy by the engineer in terms of vague or unclear provisions put by the owner may cause engineer liability because he failed to meet the ordinary green engineer standard. Therefore, an engineer should be professional in such field to be able providing advice before contracting and designing workable plans. These principles and rationality should be always abided by the engineer starting from its consultation by the owner before agreement, including designs, supervision, consulting the owner in terms of construction steps and discussion of alternatives including the feasibility for the inclusion of environmental designing techniques. Engineers should maintain records of such negotiations with the owner including the decisions of the owners related to the application of environmental designing techniques. It is also necessary to maintain written records, where some green contracts include provisions related to the green design or the concerned green alternatives where any failure in the compliance with those obligations shall be deemed a violation for the ordinary engineer standard.<sup>xxii</sup>

However, the issue herein, what is the nature of the engineer liability regarding consulting in green buildings? Is it an obligation of providing care or achieving a result? To answer the above question, we should first identify the engineering consulting and to identify its stages. The engineering consulting is to seek opinion and advice from the engineer consultant, i.e. it is a contract signed between two parties, and the first is the engineer consultant whereas the other is the customer. The first party owns the engineering experience which will be translated into engineering plans upon the employer's request, whereas the second owns a set of ideas

that will be translated into applicable engineering plans.<sup>xxiii</sup> However, the determination of the engineer's duties through his intellectual performance which became as an outcome of its professional experience until reaching the present professional position which qualifies him for such contract.<sup>xxiv</sup>

Regarding the engineering consulting stages, it starts with the first stage by the conclusion of the contract either a traditional or a green contract, where the owner and the engineers negotiate the advantages and disadvantages of the intended work. There might be also an independent commitment or obligation through a particular contract, and it could be addressed through professional engineer or contractor who is able to provide consultation in which will be faced by an explicit consultation contract. Meanwhile, the consultation service may take other method by providing designs, supervision or civil, electrical or electromechanical engineering works or further other works. Obviously, the most important issue is to effectively abide the required professional criteria. Otherwise, in the event of default or failure in terms of providing such consultation, the responsible person who provided the wrong consultation shall abide its guarantee to the other party. The consultant engineer should inform its customer of the risks threatening the expected construction. Although it should be a pre-contracting obligation for some, however it is considered among principal obligations in the engineering consultation contracts and assumed as derived from the contract signed between the engineer and the customer due to insufficient information and technical experience of consultation applicant.<sup>xxv</sup>

The obligation of informing the owner in green contracts is considered a specific obligation. Where it includes all the engineers: the consultant, the architect and the construction engineer. It also includes the periods before and after contracting. Besides, it includes the overlooked violations by the responsible person in contrary of green practice. Thus, the obligation of informing is considered a must in all construction stages, as it is duty to be achieved, otherwise, the obligation shall be deemed not achieved due to the higher level of green buildings contracts' requirements compared with what is required by an ordinary person. Consultation and the obligation of informing include the obligation of advisory services, to encourage the owner do or not to do an action in addition to warning of the owner of performance risks. Engineering works performers should also inform the owner of any amendments related to the construction process. In one case an engineer sentenced to be liable for failure to inform. In this case, the maintenance contract subject to the heating system of the building calls for informing the customer of the amendments thereof, otherwise the engineer shall be in violation with the notification condition.<sup>xxvi</sup> The employer, on the other hand, shall not be entitled to make any amendments unless upon the approval of engineering works performer. Changes or alterations should be in consistent with the general framework of the contract. Any changes or alterations in the works outside the general framework of the contract shall be deemed in a violation with the signed contract, because it shall not be solely entitled to do so unless upon the approval. Otherwise, there is a need for new contract or an appendix to the contract.<sup>xxvii</sup>

In administrative contracts, due to public interest included in such contracts, there is a chance for contract alteration during the implementation of contract. However, this right to make

alteration is not absolute, it is subject to many constraints; some of which, to the provisions of the performance of public facility and its needs. Some vary from facility to another according to the contract. Others, are related to the burden or assignments of the contract parties. However, it should be within the reasonable and ordinary limits in terms of quantity up to the extent that shall not lead to the termination of the contract or alteration of its main subject or create new subject matter contrary to the agreed one.<sup>xxviii</sup> The consultant engineer shall also advise its customer during the delivery processes. In a French case, the court decided that the engineer shall help the employer receive the work and shall advise the employer upon delivery.<sup>xxix</sup> However, the obligation of informing may be based on Article 466 of the Jordanian Civil Law as it states that: "The property sold must be known to the purchaser sufficiently to avoid gross uncertainty". This article relates to the sale contract, but it could be used to measure that the legislator required the obligation of informing the other party. Some consider that the engineering consultation contract is a special kind of construction contract, because there are different types of construction contracting, in which each has its own characteristics that distinguish it from the other. At the same time, all these contracts have the same general features of consultation contract. On the other hand, although the consultant engineer is responsible for providing designs and plans, which is agreed to be mental works in general, yet it should be considered as an obligation for the benefit of the employer.<sup>xxx</sup>

However, the question, herein, is it possible to apply this new standard on the Green Buildings' Architects in Jordan? These buildings are relatively new in Jordan, and there is lack in the information related to its requirements and hidden issues. Accordingly, if a green building dispute arises, the Jordanian courts shall enforce the principle of "the traditional ordinary man standard applied on the traditional buildings". However, the judgement may take long period of time to change the concept of the traditional standard into new green one, because the speed of development of this standard in judgement shall be associated with experience thereof. Should the judge raise a case of green building to a traditional engineering expert, the expert report would be absolutely based on the traditional standard. However, once the expert is specialized in green buildings, its report would be based on the new green standard. Therefore, once the courts rely on green buildings professional experts, the standard shall develop quickly. Unfortunately, according to the absence of reasonable evidence, the judgments may be conflicted depending on the expert whether specialized in green building or not. Therefore, the Jordanian courts are urged to refer the case to a green building expert once the contract is related to green buildings.

### Modification of Care Standard

As shown above, the green building contracting means that all the parties shall abide the specialized person standard in such buildings according to its engineering field, whether civil, architect, electrical or mechanical. However, the question herein is: Is it possible to extend such standard or to constraint it? For the first impression, the answer may be that "*pacta sunt servanda*". Thus, the contracting parties may extend or limit the care standard. However, in order to answer this question, the conditions for either extending or limiting the care standard must be investigated. Usually, traditional buildings design and construction relies on the minimum requirement of the applied

construction code. However, the green building engineer may design projects of features exceeding the minimum requirement to achieve means or methods that reduce the negative impact of the building on environment.<sup>xxxii</sup> Of course, any obligations or liabilities exceeds the limits of any adopted code by parties shall be deemed an extension of the care standard.

Expanding the care standard may be caused by a condition stipulated in the contract, for example, to stipulate in the contract that the engineer shall perform the work with high proficiency. So, the engineer who signed such a condition shall act as best as any other engineer does. Similarly, if the contract states that the engineer is an expert in a specific field, in such case, it could be argued that the care standard requires an expert engineer and that the engineer raised its level of performance as well as the owner's expectations.<sup>xxxiii</sup> Furthermore, the contract may include additional conditions in terms of providing pre-advice or during work or at delivery time. Such advice or consultation may also extend the required care standard to cover the green building requirements. Such consultations are deemed special services and experiences which raise the level of liability of the consultant party and should be compared with higher care standard.

It is believed that engineer's commitment in traditional contracts generally is to take care. However, the commitment of consultant engineer may be considered to achieve a result according to the nature of the contract and its terms, actually, there is clear indication in the contract stating that an engineer shall achieve a result. Additionally, in green buildings contracts all parties involved in such contract shall be responsible for such condition although it is not mentioned or indicated in the contract. So, the care standard in green buildings is higher than in traditional buildings. Also the obligation of informing confirms the care of different standard required by parties to green building contracts. So, any failure from the parties who perform the green project shall be judged to be liable. Whereas, the same case may consider the same party irresponsible in the traditional building contracts. The consultant engineer shall provide advice during all stages of the building including the liability against designs defects and the errors by technicians, so its commitment is originally to provide mental and intellectual performance.<sup>xxxiii</sup> Therefore, the commitment of engineers in green building contract may exceed the performance of its work, including informing the owner with every stage of the construction in terms of items related to green building. The parties responsible for the performance of green works shall be under liability in case of negligence of informing. This is in accordance with Article 144 of the Jordanian Civil Law that provides: "Intentional silence in a case or an event shall be deemed a deception if it is proved that the deceived party would not have sign the same contract if he had knew such case or event". Accordingly, we can apply this article on the engineers in green building.

Among the other issues related to the care standard what is called "Passive Design", where it raise the liability in green building. This standard might be a contractual condition between the employer and the designer, or it might be stated by laws to apply such standard as stated by the German law. Both cases include higher level in the care standard of a green building than specialist; "Passive Design" requires good insulation with multiple windows and small heater which adapt to the cold weather in Northern Europe and Canada for

instance. Adversary, in hot climate, such as in the UAE, better insulation may lead to less use and less consumption of cooling energy, so it help to avoid the installation of larger land thermal or solar system than it should be in the ordinary case.<sup>xxxiv</sup>

Similarly, Smart Building, which is a new standard, is a twining and merge or combination between a green building and traditional ones. In such buildings, smart and comfort developed techniques are used in terms of electricity, heating, water, security, networking or communication means as well as in the remote services and many other utilities. One example of Smart Buildings is Le Hive, the first globally building won the “excellency” certificate under BREEAM rating system. This building provided excellent care and comfort for increased happiness and safety for occupants. Le Hive is the abbreviation of a French terminology which means the Hall of Energy and Innovation. The seven-floor building showed the “Schneider Electric” position as energy management specialized company which merge the integrated control of Energy practiced extensively by its experts. Le Hive, which is also known as smart buildings testing benchmark. It provides perfect energy performance through smart designs and systems, in addition to the remarkable engagement of employees in the behavioral education in order to reduce consumption by 50%. Such engagement produced many benefits such as reducing wastes, water saving and recycling.

<sup>xxxv</sup> Therefore, if the engineer is asked to design a green building with smart specifications, the required standard shall be raised for the architect, the civil engineer and the consultant engineer. Most liability in green buildings is based on designers, manufacturers and implementers. As well, the supplied materials or the design should be harmonized with green building.

Sometimes, the parties may limit or constrain such standard in the green contract to commit to specific green codes. Such codes could help engineers and other parties in undertaking its green practice. Thus, in case of indicated specific codes for such buildings, and such code be in contrary with a contractual item which indicated a traditional building or adopted a traditional care standard, the judge shall consider such item or article void because the basic commitment was based on a specific code. Therefore, the parties' liabilities should be based on such code as such codes requires special and constant standard to be applied, and wherever such specific code is enforced, it shall be deemed a term of the contract. Article 164 of the Jordanian Civil Code stated that: “the contract may include a condition that confirm its content, or was recognized by custom or practice. It may also include any beneficial condition for particular interest of any party or even a third party, unless it is prevented by legislator or it is in contrary to public order or morals”. On the other hand, the limitation of care standard or the exception from joint liability is not accepted in green buildings and shall be deemed void according to Article 790 of the Jordanian Civil Law. However, the engineer have the choice to release himself from the green building liability by declaring that it shall be liable for traditional building standards only.

## Conclusion

As seen throughout this research, mainly, the required standard of care is the reasonable standard of ordinary man and it is adopted usually for avoidance of default, as the examination of

default or negligence shall be based on the natural person reasonable care standard who does not own a specialized skill. Overall, there is difference between the care standard used in green buildings and the one used in traditional buildings, as the first one requires special engineering knowledge. The engineer shall also be aware of the condition that expand or limit his standard of care in order to perform his work with the required standard and avoid liability. Accordingly, it is recommended that the engineer follow the green engineer standard through the determination of rational conditions. On the other hand, it is highly recommended that the Jordanian Engineers Association should declare the engineer standard of care in green buildings and should develop the green buildings engineers capacity.

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