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Joint Liability of the Parties to Green Buildings Contract

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Abstract

This article aims to illustrate the liability of all parties involved in the construction of green buildings in comparison with the parties in traditional building contracts in light of the ConsensusDocs 310, and to highlight the traditional Jordanian provisions in this regard. Thus, it discusses joint liability before and under contract. It examines the global typical documents organizing participation in green building represented by the ConsensusDocs 310 and Green Building Addendum (GBA) and it explores the Organizer of Participatory Parties. The paper concludes that the concept of joint liablity in green building is different from that in traditional building and suggests that the Jordanian legislator shall benefit from the ConsensusDocs 310 and GBA in organizing the green building issue.

Key Words: *Green Building, Joint Liability, ConsensusDocs 310, Construction, Contractor, Owner, Engineer.*

Introduction

Most countries, at present, encourage the growing trend in green buildings, since it is characterized by its high-performance in terms of using energy, water and materials more efficiently and using measures in terms of design, construction, operations, maintenance and demolition with less impact on human health and environment. Countries all around the world are eager to create new green buildings, and seeking to develop traditional and old buildings in order to comply to green building standards.[i].

Sustainable development stands for "the use of natural resources in such a manner that maintains them for the favor of the next generations, maintains environmental integration and does not cause ecosystem deterioration or inbalance between its elements" (Art. 2 of Jordanian Environmental Protection Law no. 52 of 2006).

Green building projects require planning for establishing extensive communication networks and previous participation among the parties involved in such projects compared to traditional projects. Since the participation involves multiple parties sharing responsibilities for the completion of green buildings, where project owners, design engineers and contractors share the responsibilities that affect the achievement of green building requirements. Moreover, many choices and decisions are made to achieve the desired green building accreditation. Such choices or decisions may include a decision on accurate design or

construction. Therefore, achieving green building certification will depend on collective decisions and actions within a single project (NASBP & SFAA, 2011)

The participatory aspect in green building contracts is very important and effective. It is different from traditional contracts. In traditional contracts, there are multiple contracts between owners, engineers, contractors, and sometimes with suppliers. All of these contracts are independent from each other, where the only thing which joins parties in traditional contracts is decennial liability. Article 788 of the Jordanian Civil Code provides that both the architect or engineer who designs the structure of a building and the contractor who constructs it are jointly liable to the employer for the partial or complete collapse of the construction in addition to any defect that would threaten the safety or strength of such structure, and joint liability is for ten years from the date of the work's undertaking.

However, warranty for buildings shall apply for the partial or complete collapse and for any defect in the building, provided that such a defect threatens the safety of the structure, and is hidden. In such a case, the architect/engineer and the contractor are jointly liable for a period of ten years from the date of taking over the work or since noticing them. The ten years is not a period of prescription, as it should not be interrupted by alwaqf or ceasing, but it shall apply on an ineligible person, except for an act of fraud by the architect/engineer who are subject to long period of prescription (Ibrahim, 2013, p. 51).

Under Article 1792/ (1) of the French Civil Code: "Any architect, contractor, technician, or other persons connected with the employer by virtue of hire through an industry contract or a construction contract, are deemed builders of the work". Article 1792 / (4) also underlined that builders are jointly liable for their obligations. However, any of the builders could be excluded from joint liability according to the conditions thereof. For example, a contractor found to be irresponsible for providing a house with a heating system - originally designed for a solar-based house holding an energy saving award certificate, where the technical details related to the obtained award certificate were supposed to be applied to another selected house. Actually, the heating system was installed for the selected house, but without matching the details and specifications assumed by the contest. However, the house did not match the local climatic requirements, so the basic requirements were changed. The contractor performed his work correctly, however he/she failed because of the bad selection of a house since he/she could not apply the award's requirements on the selected house, therefore it was concluded that the contractor shall not bear any liability therein. In another case, it was concluded that a manufacturer shall not bear a joint liability with a contractor unless it was verified that the latter abided by the installation instructions issued by the manufacturer (Civil Cassation 1999-6, 3. The French Civil Code (Dalloz)).

It is worth mentioning, however, that joint liability – i.e. the participation, cooperation and sharing of the organization of technical issues among parties in green building -- may provide solutions and treatment for all expected difficulties and problems as well as finding alternatives for other professional parties.

Joint Liability before and within Contraction

Joint liability means that all green building parties were fully aware of the details therein, where such awareness and understanding should be based on mutual consultation and communication basis. Thus, joint liability means technical and personal cooperation between green building parties in order to achieve a comprehensive green project. And at the same time, good participation paralleled proper documentation processes before starting the project for the completion of the implementation, which constitutes the reference documentation for all parties.

However, there is no clear joint liability among builders in traditional buildings unless they are joined by contracts. Should the builders be joined together with contracts they shall be deemed one entity, and everyone has the right to claim against another under the signed contract. Should the concrete consultant

engineer be harmed by a non-contracting engineer he/she has the right to claim against him/her for tort (Alawdun, 2004, p. 91). In contrast, a consultant engineer shall be liable if he/she has violated the exigencies of confidence during the performance of his/her duties and did not consider the consequences of the construction process. For example, an architect who predicted the occurrence of a groundwater flood close to the surface of the construction and took the precaution of special designs of higher building foundations. However, the architect neglected to ensure himself the adequate deepening of such foundations and the validity of the soil nature for such process (ibid., p. 92).

Whereas, in green building projects, joint liability of the contracting parties exists at all times, so any claims or demands, by a third party, against any consequence in the green building, shall be in the interest of all other parties, since each party has to ensure commitment to their obligations. Thus, all parties shall exclusively bind their obligations and promises to their technical potential and not to rushed and exaggerated promises. Green building parties shall seek to meet the green project standards, organize their joint performance process, and define the responsibilities of each of them.

Parties shall have to examine the used materials and their installation techniques as well as evaluating continuously their green performance in each construction stage. Should a party find any defect or technical problem, he/she shall inform owners or consultant engineers thereof. Though, in green building it is better to maintain a defect during implementation regardless of its cost rather than hiding such a defect, because green buildings have connected technical issues and every simple mistake may lead to a significant economic loss if a building does not obtain the required green certificate.

Compared with traditional projects, green projects are significantly different in terms of work handover as it should be better joined and integrated. In traditional contracts, a building is designed by an archetict then supervised by a construction engineer and implemented by a contractor. It is clear, then, that design, supervision and implementation processes are separated, as there is no interaction between parties. Rather, the design engineer merely asks other parties to implement his design and transform his/her measures into reality. Such design of business diagrams and others show details of the work to be constructed in terms of dimensions and measurements. Designs are considered the essence of the engineering construction profession; a specialized architect usually prepares it and a copy of it should be given to the owner and employer in order to obtain approval. At present, most laws worldwide require owners to appoint an architect before getting their official approval (Amro, 2006, p. 300-301). A construction engineer should transform the architecture designs into reality by supervising their implementation by a contractor.

Given that a contractor is committed to deliver his work as agreed under traditional projects, he/she should act, firstly, to deliver and put into place the work under the employer's disposition without any limitation, and secondly to inform the employer of the work's completion. Upon meeting the above two conditions, a contractor shall be deemed to have fulfilled his obligation, seen as the employer not the contractor shall be responsible for the delivery of work (Ogail, 2016, p. 164).

Usually, the architect is the person responsible for receiving the work and he/she should be an honest advisor of the employer. This is becuase he/she shall be obliged under his duties to help the employer in the delivery process and to advise him/her as a specialized person, taking into account that the employer has no experience (Amro, 2006, p. 49).

While the joint liability element was associated in green building with adding considerable challenges for the implementing parties of such projects, this feature aimed mainly at best practice for the construction process of the building. In addition, the best tool of risk management is communication and participation to reach common understanding among architects, engineers and owners (contracted parties). Once everyone understands the nature of risk associated with operations and materials in green building design, this may reduce the level of risk associated with the green building construction and the operation, maintenance and

materials of green buildings, thus impacting positively on the number of claims and litigation (O'Connor, 2012). Therefore, there is no separation between parties of green building projects, as architect, engineer and contractor are mutually interactive, thus the owner has to involve all of them in a single crucible.

In some cases, green buildings subcontracts may extend to long periods and the joint liability thereof may extend for many years, such as energy and renewable energy contracts. The energy contract is actually a complicated contract including engineering services, materials supply, construction, measurement, maintenance, evaluation and monitoring. Such a contract shall be performed over a period of 5-10 years. Therefore, it is a long-term contract having multiple risks. However, a warranty provided for the owner, in terms of energy savings, is the basic element of such a contract.

For example, in traditional building contracts, an architect is assigned under an independent contract with the owner to do detailed engineering schemes. However, after the completion and authentication of such schemes, a number of contractors enter into negotiations with the owner to implement such a project. Once the owner selects one of them, a new contract shall be signed between the owner and the contractor.

However, in green building, there is expansion in this area as the engineering design contracts of green buildings should not be separated from the consultation other parties, and the project should not be under the control of the architect, such as in terms of solar panels or waste management and other issues. It is, however, possible to hire contractors for the implementation of the project in a certain way or manner. On the other hand, the issue may be related to the equipment or materials used. Therefore, suppliers should be hired or consulted. Even though there are multiple contracts with parties such as the architect, contractor and other parties, there is joint liability and such liability exists even before contracting, at the time of consulting, when the parties carry out the construction of the green building.

Some argue that traditional building contracts initially require a professional contractor, since the construction contract should not be taken free of charge, thus it should be performed by someone who is a professional. On the other hand, there are some works that cannot be performed except by people under control and organization. As well, most engineering works shall not be eligible for contracting unless after obtaining administrative licenses, so it is necessary to hire a non-professional contractor, as this description of a contractor may affect his liability (Ogail, 2016, p. 16-17).

For green building, a contractor should usually be a professional in terms of green building criteria and should act in a professional manner with the other parties of the project, as such a type of building needs specific certification which could not be achieved without the participation of all implementing parties.

Moreover, the commitment to inform in green buildings contracts is an essential obligation to all parties. For example, informing the owner of the different construction stages (benefits and harms), as well as informing the owner of the probability of failure to achieve certification for green building. Thus, it means that the commitment to inform shall be a joint liability of architect, consultant engineer, implementer engineer and contractor. Whereas in traditional architecture contracts the obligation to inform is an original obligation attached to the consulting engineer only because of the nature of his work and commitment that is linked to such an obligation.

So, the commitment to inform shall be undertaken by a consultant engineer who should provide the required information needed to reach satisfaction. Whereas, in the engineering consultation contracts, the subject of such a contract shall be providing a consultation service, thus consultation should be provided only after signing the contract (Alshahwan, 2009, p. 84-85).

Hence, we can consider the architect, engineer and contractor's commitment to informing as a sub-liability of their main obligations as in a traditional construction contract. In addition, the commitment to informing shall be more rigorous for architects, engineers and contractors in green building compared with traditional

construction contracts. As well, the owner should be informed by all the aforementioned parties during all stages of construction, since the owner usually aims to obtain green building certification, and in some cases to get a pacific rating of the green certificate. Thus, in green building the duty of care to inform is higher than in traditional building.

For example, if the green building contract pointed to a Platinum LEED Certificate, it means that engineering and construction works should meet the professional level of such a certificate. In addition, it should be clear that the work demands further features and criteria, in addition to the main objective of obtaining the green certificate. Such a goal shall not be reached without the participation of all parties. In addition, the contract should nominate who is responsible for coordinating the activities of the different parties and the duties of each one therein.

There are some practices that can be performed in traditional construction, but not cause any liability, while such actions may result in the responsibility of the architects, engineers or contractors in green building. For example, after obtaining preliminary approval for the construction of a traditional building, or at an incomplete stage of some secondary schemes, the engineers and contractors shall start their work in construction or parts of it, before the completion of the designs of some of the remaining schemes, in order to take advantage of the time and because of the presence of paid technicians and administrators at the work site. However, this cannot be applied in green building, because such building depends on the joint liability approach and the unity of the work unit. In addition, there are distant targets, which do not exist in traditional building, for obtaining green certificates. For example, if work starts even if the initial layouts are just done, it is possible for them to be incompatible with another party who has not finished his designs, meaning they should go for demolition, or carry an additional financial cost. However, if the parties decide to continue work despite mismatching the green standards, at the end the construction could be incompatible with green building standards. Herein the joint liability arises.

In order to obtain a specific green certificate, the owner should not assign joint liability to other parties by allowing any of them to include a condition or a clause relieving him/her of commitment or compliance with the requirements of that certificate. In addition, the owner may insert green buildings' requirements, which state that a failure of one party in the performance of his duties in terms of the implementation of green building shall be deemed a breach of the contract. However, the contract may just point to the architect who should meet the green building rating conditions or requirements. However, the architect can cause liability to the owner for not achieving the required rating certificate (Zimmer & Rohleder, 2010).

However, the question herein is: who should ensure the obtaining of such a certificate? There is no doubt that to achieve the goals of green buildings, the liability items of all parties of the project, each according to his assignment, should be standardized. Where the basic contracts shall determine the overall core works needed for the completion of the project's work required by all involved parties, so as to compel engineers and contractors to complete construction under their assignment, design contracts should require also that services continue during the completion of the project period, and, as applicable, continue the procedures to obtain the certificate, including the purchases that require a long period of time (ibid.).

Of course, if all parties in green building, even the owner (personally or through his advisors) have the adequate experience and know-how in green building, the joint liability element will be more effective, since they are familiar with all obligations namely in terms of existing green buildings laws and regulations. This shall constitute a guarantee that the parties will perform a typical green building, because green building techniques are continuously evolving. Therefore, a party must be aware of all the green building techniques, so they are easy for him to cope with. Testing of the construction may also be more effective when trying to evaluate new products and systems. The communication between the project parties is the key solution. Moreover, the owner must be aware of any risks discovered during the testing process.

It is concluded from the aforementioned that there are many interventions in the green building process starting before, and then continuing during, the contract and after the completion of it. Such pre-participation and continuous participation between contracting parties exists in green building whereas it does not exist in traditional building.

It is also clear that there is a kind of implicit control over green building that is not found in traditional buildings, and this can be seen through participation and joint liability among all parties involved in green building to ensure a green certificate. This is considered a new constraint on the involved implementers because they are all responsible by virtue of joint liability for any defects in the construction. Hence, obtaining a rating certificate for the green building will be just an outcome of such direct and explicit control over the implemented green works.

Global typical documents organizing participatory of green buildings ConsensusDocs 310 and Green Building Addendum (GBA)

Green building experience is still recent in Jordan, so each time when we look for a distinctive legal feature of "green buildings" from traditional buildings we use the experience and legislation of other countries that have preceded us in this area.

Building code policy is called a "hanging fruit" policy, because its composers can realize the extent of cost saving that can be obtained through the green development project during a relatively short period of time. For example, in California, the state that is reputed for its leadership of the sustainability movement, the average per capita consumption of energy remained steady during the period from 1975 – 2005. Meanwhile, during the same period, the average per capita consumption at the national US level increased by fifty percent. Observers believe that California has succeeded where others failed because it used efficient building codes and performance standards and measures (Perkins, 2009, p. 65-66).

However, it is worth mentioning that US local codes often include the development of both residential and commercial buildings. In addition, building codes regulate the existing and new constructions. It is estimated that by 2035 about 75% of the buildings in the US will either be new or renewed (Mazria, 2010, p. 9).

Thus, the present study is concerned with ConsensusDOCS as it provides a clear model of the new legal concepts of green buildings in order to suggest it as the basis for the Jordanian laws or the Jordanian Engineers Codes.

ConsensusDocs and the Green Building Addendum (GBA) are the product of leading construction associations in the United States, such as the Construction Contractors Association, a group of architects and engineers and owners of considerable experience in green building, and others who are specialized in green building.

GBA is considered a part of the ConsensusDocs that identifies the roles and responsibilities of the parties and identifies the green building facilitator who shall be responsible for green building certification, including documents to be submitted thereof. Such documents display the clear and accurate contracting principles related to green building as well as project delivery approaches. This document also provides a list of agreements models and how to avoid claims. It is also makes each party aware of his/her role or responsibility towards the green project (ibid.).

GBA are considered a typical green contract at the international level in terms of identifying all green buildings issues and details, in terms of risks and responsibilities in such new contracts. Thus, such documents can be considered a typical standard framework that benefits green building implementers in

Jordan when entering into green contracts in light of the absence of such green buildings legislations. So, it is a series of contract forms widely used in the construction sector.

The following are a set of general principles and elements listed in the ConsensusDocs (ibid.):

- The use of contractual best practices to identify the project participants collectively, with their particular roles.
- Determine the critical efforts for implementing and coordinating to achieve a successful project with elements of green building, mainly projects that see a third party green building rating recognition.
- Dealing closely with the ConsensusDocs and other standard contract documents.
- Offering a recommendation that such documents shall be attached to each involved party's agreements in the project.
- Identify the scope, allocation responsibility and risk of green building, and observe the design changes and/or construction of the project to accommodate the objectives of green building.

Article (1) of the GBA states that the main purpose is the modification and complementation of pre-existing or coexistent prepared design and construction agreements on green building projects. In addition to the operational alterations of the agreements which consist of the essential obligations for the GBF to implement its tasks, it comprises the cooperation and coordination of performance with other project participants that have agreed to the terms of the GBA. Frequently, alteration in construction contracts covers some of the existing building landmarks. In this case it would be agreed to change a certain part of the building such as the main building walls, which form the building shape, or the internal partition walls. It may even extend to cover balconies and stairs (Alshahwan, 2009, p. 36).

Article (2) emphasizes the importance of providing uniform and clear definitions that constitute an essential element of a standard document for the construction and design of green buildings. These definitions shall be accredited between parties. This article also defines the GBF and considers its role and responsibilities to be among the essential elements of the documents. While it indicates, nonetheless, that a project may be executed without GBF, still it explains that its presence enhances the successful fulfillment of the green elements in the building, provided that it is possible to continue the project without a GBF.

Article (4) and Article (7) discuss GBF roles, responsibilities, preparing and issuing plans and specifications as well as reviewing any essential revisions by the architect/engineer. In addition, the procedures of objection allow for the resolution of any conflict concerning incorporating elected green measures into the plans and specifications. Green building project objectives are emphasized under Article (3) in which they may not necessarily require ultimate review as the last accreditation is usually by a third-party rating agency or service. It also provides scenarios where formal compliance with an established green rating system is preferred, as in the case of desiring the performance of energy and/or environmentally beneficial criteria, and in the event of selecting both the rating recognition and the actual performance-related options in the GBA rating achievement at the specified level beside performance consistent with the identified energy and environmental parameters are sought from the design, materials, equipment, construction, and commissioning supplied and performed on the project.

Article (5) discusses in more detail the path, identification and selection of green measures to the achievement of the selected green rank. It also indicates additional elements of the green status; it is furtermore emphasized that the elected green status shall be brought to the attention of both the engineer

and the contractor involved in the project of green building. This article recognizes that the engineer and/or the GBF are usually engaged in the green building project process earlier than the contractor.

Detailed procedures are provided in Article (6) for each participant incorporating green measures into the plans and specifications of the project and it describes how to react in the case that the measures conflict with services agreed upon in the agreement. It also provides the GBF with the procedures to be followed in preparing the reports that shall advise the owner of the green measures specifically to be incorporated into the plans and specifications. It places the GBF in the role of facilitating the steps to be undertaken in achieving the desired elected green measures and places appropriate coordination and cooperation obligations on the project participants. Moreover, it confirms the liability of the engineer for the project design and for incorporating green measures into the necessary documents for execution of the work consistent with those elected green measures.

Article (8) identifies specific risk allocation principles to be addressed in the contracts, such as responsibility for the selected green status, reinforcement of existing liability provisions and characterization of certain damages as experienced by the owner as a result of not achieving the elected green measure. GBA can be attached to any green building agreement. It could also be an agreement between the owner and one of the other parties. Further, it can be used as an annex to a green contract that does not involve the owner.

However, it should be noted that an employer cannot claim from the subcontractor unless indirectly. This is because originally there should not be any direct relationship between the employer and the subcontractor because they did not enter in a direct contract. Therefore, the employer may not claim directly from the subcontract on its obligation, but an employer can claim from the subcontractor, indirectly through the prime-contractor. Moreover, an employer cannot claim warranty from the subcontractor unless by claiming indirectly through using the right of the prime-contractor (ibid., p 246-247).

Nevertheless, this GBA document is ultimately appended to the GBF agreement as it enables the GBF to coordinate project parties' works or duties and they should be aware of each other's roles and responsibilities step by step in particular as they relate to the achievement of the project's green elements and rating goals such as an LEED certificate. The GBA is also intended to identify the roles and responsibilities of the GBF and his/her performance required in coordinating project parties' roles. In the following part, related articles are given.

The Organizer of Participatory Parties

In order to distinguish the role of Facilitator in the traditional buildings contracts from the role of GBF, we shall first briefly show his role in traditional building and then highlight the new and completely different role in green building.

Traditional Buildings Facilitator

The concept of a facilitator or supervisor, who is appointed by the owner, is totally different in the case of traditional building compared with a green building facilitator (GBF). In traditional building, the owner can appoint a supervisor to follow the work of engineers and contractors in terms of the implementation of their contracting agreement according to the specifications given by the contract. Should the supervisor (facilitator) find any violation, he/she shall inform the owner of the default. The facilitator may be given the authority by the owner to sign notices to engineers or contractors.

A facilitator, in traditional building, is a natural person present at the construction site organizing the roles of the different parties there. Usually, a facilitator has a significant role in large construction projects that

include many different companies responsible for different specific fields of work. Thus, the speed of the performance of the work requires intervention continuously over the period of a project. However, such work intervention demands that one party stop his assigned work until the other party does so (Algbori & Ibrahim, 2013, p. 97).

However, the presence of such a supervisor (facilitator) shall not overlap with the independence of the engineer and contractor, while observing the proper implementation of a building contract.

According to Article (38) of the Jordanian Engineering Offices and Companies regulations which states on the enforcement of engineering supervision as mentioned in paragraph (A): "The public entities shall not implement their construction projects unless under the presence of engineering supervision", also the same paragraph provides that: "a private project shall hire engineering supervision for projects exceeding an area of two hundred square meters. However, Paragraph (B) of the same article enforces: "partial supervision for construction on areas between (200-400 square meters), whereas if the area exceeds (400 square meters) a full supervision becomes a must".

Article (11/d/2) of the Jordanian National Law for Building states "the necessity of engineering supervision across the implementation of construction work from beginning until completion, to ensure the application of the specified codes in the building license and the laws and regulations issued by the Jordanian Engineers Association, the Jordanian Construction Contractors Association and Jordanian Engineering Offices and Companies regulation and any legal procedures thereof".

Therefore, it is clear that the Jordanian legislator has regulated the issue of an engineering supervisor (facilitator) in traditional building and has done so well because the role of the supervising engineer, especially in large projects, has great importance in monitoring the implementation of the works according to the designs, overseeing the accuracy and matching reinforcement. Also, tests might be done on concrete conformity to specifications. He/she shall also have several coordinating roles with regard to material demand as well as preparing them for a structural engineer. Additionally, he/she may recommend the release or ceasing of payments to the contractor, or resolve disputes between parties, in which case he/she acts as a facilitator and agent of the employer. This is the role of the supervisor (facilitator) in traditional construction contracts.

Therefore, a facilitator in traditional building is considered a consultant or advisor with a role to oversee all action on the work site. On the one hand, he/she observes the designs of the architect and its accuracy. At the same time, he/she observes the contractors as they execute their work and observes the building materials supplied to the job site, and tests them. A traditional building facilitator shall also coordinate the agenda of business and the supply of materials and coordinate, in the case of a timing clash of work, which contractor starts work first. Moreover, the facilitator gives advice every time he/she notes weakness in implementation for any reason whatsoever.

It is worth mentioning that the legal nature of the facilitator's contract is a mental service contract to provide consultation, advice and opinions to organize the work site in order to avoid risks or accidents and for the purpose of achieving greater safety on the construction site (ibid., p. 104).

Thus, a facilitator needs to be a long-experienced person in construction works, as his role will prevent the potential risks in contracts. Finally, a facilitator can be a natural person and often can be moral person, and in both cases it is usually a construction specialist with long experience.

Green Building Facilitator (GBF)

A Green Building Facilitator (GBF) is a different concept, since the coordination of green building efforts by different parties may be considered a problem in itself, particularly when determining specific materials

or techniques. Therefore, the GBF position has been created to represent an independent entity or personality assigned for coordinating the submission of a green building certification and goals.

The roles and responsibilities of the GBF are considered to be very important in contracts. For example, the GBF could be the architect/engineer, a contractor, construction manager or even a third-party advisor/independent consultant, as long as the GBF is not in-house employee or a staff member of the owner (Perkins, 2009, p.67).

No doubt, there are benefits to the Green Building ConsensusDocs Addendum when referred to in the contract as a binding document for parties. Yet, the question arises herein: Is there a benefit from the commitment to appointing a Green Building Facilitator (GBF)? The answer certainly would be positive, because the cooperation and participation posed by the document would strengthen and support the role of the Green Building Facilitator (GBF). As well, it will set out his/her main and side tasks, and it will set the clear and explicit foundations of cooperation and participatory to all parties, and it will develop the role of cooperation, participation and experience exchange among involved parties through the GBF.

This process can be legally organized. For example, the contracting parties can be forced to determine the key party of a green building contract that shall be responsible for the entire project, in order that he/she bears the responsibility on behalf of the other parties, and then he/she becomes solely responsible to the owner. In all circumstances, such a key party can personally claim against any other party in the case that he/she violates his/her commitment. The key party shall take more fees than other parties, because he/she bears the risk of all the work and shall provide specialized technical and administrative services. And because he/she shall include various building operations to achieve one goal, as well as the supervision of the implementation and supervision of several parties, of course, from different specializations.

The key party shall ensure to take guarantees from each specialized party. Usually this condition applies for contractors, subcontractors and suppliers as their specialized works will not be subject to the control or supervision of the key party. Therefore, the key person shall take guarantees from them against the achievement of the outcome. Also, a contractual guarantee shall be taken against indirect damages.

Such advice will have a significant impact on the owner, as he/she will ensure, through information exchange with other parties, that he/she reaches the typical criteria of green building. This will also meet the needs of owners, avoid contractual problems for them, and find solutions to any urgent problem.

Alternatively, an owner can rely on an engineering consulting firm or a professional counselor engineer specialized in green buildings instead of the key party. In this case, on the one hand, he/she will give advice in terms of engineering works intended to be implemented, which may solve problems with other parties of the contract, and will follow up the implementation according to the specifications and the contract. On the other hand, he/she will run the participatory management process in the green building contracts, where such a management process shall be during the pre-contract negotiations and preliminary agreements, as well as during contract and upon the execution of the contract and the delivery of the project.

Conclusion

As seen throughout this article, the liability aspect in green building contracts is different from traditional contracts. It is organized on an international level by the ConsensusDocs 310 as these projects require the establishment of extensive communication networks and mutual consultation before and during the implementation among the involved parties and consequently they will be jointly liable. Joint liability adds considerable challenges on the implementing parties of such projects; this feature aims mainly to ensure best practice in the construction process of the building. GBA is also considered a typical green contract at the international level which identifies all green building issues and details, in terms of risks and

responsibilities. On the other hand, the GBF would bear the risk of all works and would provide specialized technical and administrative services. Therefore, we hope the Jordanian legislator regulates the liability of parties involved in green building construction taking into account the international model as illustrated in this article.

[i] Traditional building is all about a coherent man-made connected to the ground and to construct a building means either to build or renew a building. (Abedlfatah K, 2003, p 35)

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