



REVIEW ARTICLE

CONTRACTUAL SUGGESTIONS FOR THE OWNER IN GREEN BUILDINGS CONTRACTS

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ABSTRACT

Green building contract varies from traditional building contract in various perspectives. This paper aims to show the most important contractual suggestions to be considered by the owner to achieve its goal, that include: achievement of Green Certification, determination of pre-contracting requirements, avoidance of warranty limits provided by traditional constructions legislations, assignment of advisor, contracting with Experts. It concludes that the owner shall take into consideration the different nature of green building contract and address the most important contractual suggestion to achieve best results and avoid liability.

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INTRODUCTION

Green building appeared at the beginning of the twenty-first century, it overcomes the problems of traditional construction and the environment, where it uses land and energy efficiently, conserve water and other resources, improve indoor and outdoor air quality, and increase the use of recycled and renewable materials. (Howe, 2010 Green buildings are defined as "the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy. (Practices and Concepts of Green Buildings, 2003) However, the Environmental Protection Agency (EPA) defines green building as follows: "The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction". (EPA, Green Building, 2016) Green buildings increase the building efficiency in terms of energy, water and materials use. As well, reducing building impacts on human health and the environment, through better siting, design,

construction, operation, maintenance, and removal—the complete building life cycle. (Howe, 2010) This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or 'high performance' building. In order to include the green buildings' elements in construction contracts, it should be well-known that a traditional triangle of construction consists of three main elements: costs, time table and quality. A contract with clear and precise terms shall achieve the required quality in the planned period of time for the exact cost. On the other hand, in analysis of green building expected claims, it is predicted that most cases will be based on the breaches of contract, fraud, deception and negligence. (O'Connor, 2012) In this research, we are going to explain the owner contractual suggestions with engineers and contractors to overcome some of the defaults that might cause liability due to misunderstanding to the nature of green contracts as well as to ensure that the responsible parties shall bear the liability if the owner's goal of green building did not achieved. Thus, we will seek alternate contractual solutions to protect the owner as there is a lack of green buildings' legislations in particular in Jordan. In other words, to avoid any ambiguity due to lack of green buildings related legislations; the following basic issues should be considered:

Achievement of Green Certification

There are several third-party-administered systems for Green Certifications; the three most widely accepted in the United

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States are Energy Star, Green Globes, and the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design green building rating system. (White et al., 2011) For example, a building owner may desire the project to be designed with certain green works with the aim to achieving of a certain level of LEED certification, hence the risk of failing to achieve this certification is on whose responsible for the project the designers and contractors. Thus, contract provisions must be drafted to explicitly state the desired level of LEED certification, who is responsible for achieving such certificate and what the penalties of such failure. (Baker et al., 2010) Parties in green building contract must realize the owner's incentives for seeking green building certification, as the idea of promoting a green building links to profit and goodwill as well. In respect to profit green buildings enjoy potential advantage for the owner as it would be sold and rent at a higher price and cost savings associated with reduced energy and water usage. (Shapiro and Cheatham, 2010) On the other hand, if the owner overlooked an explicit statement of green contractual conditions that bind the other party to achieve a specific green certification, he will lose any associated privileges with such certificate such as tax credits. In *Southern Builders v. Shaw Development* (No. 19-c-07 11405, 2007) the owner failed to receive tax incentives because the project did not achieve LEED certification in a timely manner. Shaw Development, a real estate development company, contracted with Southern Builders, a general contractor, to construct the Captain's Gallery Luxury condominiums project in Crisfield, Maryland in this case. Shaw Development failed to prove that Southern Builders was required under the contract to construct a building that complied with LEED-Silver instead it relied on a general contract between Owner and Contractor that is the American Institute of Architects (AIA) A101-1997 Standard Form yet it contains no explicit term in regard of achieving LEED or any other green building rating system. In addition to project manual that includes general description of the project and specific building requirements. The project manual makes a specific reference to achieving a green building certification: "Project is designed to comply with a Silver Certification Level according to the US. Green Building Council's Leadership in Energy and Environmental Design (LEED) Rating System, as specified in Division I Section "LEED Requirements" yet, it did not reference Southern Builders.

It worth mentioning, however, that the Jordanian legislations has started to provide incentives to those who seeks green construction, such as increasing the number of floors, tax exemptions, increase engineering shares, and payment facilitation. (Practics and Concepts of Green Buildings, 2003) At the same time, it is recommended the Jordanian legislator shall not extend the scope of large tax incentives unless based on in-depth studies. Financial incentives might be strong tools as it is more accepted worldwide. Once the government provided such green financial incentives, it should look to the general financial effect of such incentives and ensure that it is attached to the green standards. (Shapiro and Cheatham, 2010) For instance, "in 2005, the Nevada legislature established sales and property tax exemptions for green buildings. Any building achieving LEED Silver certification qualified for 93 percent exemption from sales tax on all building materials and up to 50 percent abatement from property taxes for up to 10 years. Two years later, it became clear that so many projects qualified for exemptions that the state budget would be severely impaired, to the tune of \$900 million in lost revenue over the next decade. To escape the budget crisis, a new law was enacted

that lowered the property tax exemption to 25 percent for LEED-Silver, 30 percent for LEED-Gold, and 35 percent for LEED-Platinum, and required developers to meet higher energy-efficiency standards." (Darren A. Prum, 2009) When contracting on green buildings and require that the engineer or the contractor must achieve green certification, such certificate should be issued according to the latest standards of green certification as green buildings are still in ongoing growth, such as those agencies providing LEED certificates, which seeks updating its codes according to the most developed green technologies and recent innovations in this field. This constitutes additional guarantee for the owner.

3. Determination of Pre-contracting Requirements

The importance of determining the goals and strategies refers to the fact that most constructional projects begins by determination of what is necessary to be inserted to building design by the owner with respect to the building's site, use of its built-on space, as well as, the determination of energy needs, architectural design. etc. In case of green building, there are – practically – additional objectives beside the accepted standards in general. Before contracting one of the most important requirements is that the owner should avoid traditional construction clauses, as the nature of green buildings is different and because such clauses would be explained in such a manner that can cause legal charges or disputes between the parties. Thus, an owner is recommended to follow the international standards of green buildings, as there are non-traditional responsibilities on the engineers and contractors of green buildings. For example, the architect and the contractor undertakes to construct a project that achieve LEED Silver certification, or to assigned responsibilities of both the engineer and the contractor. Besides, a language of the contract must contain warranty to ensure the intended performance of the products and equipment incorporated into the project. "Often in the case of energy-efficient design and construction, the contracts call for an energy audit using objective criteria to establish that the sustainability goals have been achieved by the energy system put in place." (Baker et al., 2010) The contract should clearly state who is responsible for achieving the design requirements of the project based on the rule "*pacta sunt servanda*". The owner should explicitly declare compensation clauses in case of the presence of negligence according to the contract. Such compensation should be constrained to the green buildings' standards. However, such conditions could be an addition to the natural person criterion required by the regular standard. Furthermore, a contract should assign the party responsible for collecting documentations as a part of green rating process. (Perkins, 2009)

Probably, the contract may include a provision which determine the value of compensation paid by the contractor in case of breaching, delaying or failing to achieve the contract's provisions. Also, it could be a flat payment for each delayed day. However, according to the Jordanian Civil Code, Article 364 stated that value of damages shall be previously fixed, and the court has the authority to alter the agreement between the owner and the engineer or the contractor. Further, this article stated that any other agreement shall be void. Consequently, it could be concluded that the previous determination of compensation shall be deemed useless as the court may judge by the actual compensation and may cancel what have been previously agreed between the parties. In Jordan, Art. 355 of

the Jordanian Civil Code stated that in kind action shall be the original option. However, the second paragraph of the same article provided that the court may, upon an order of the Debtor (Contractor) for such compensation provided that the Creditor (Owner) shall be entitled for only financial compensation, provided that such compensation will not cause adverse harm to owner. Therefore, contrary to traditional buildings contracts a Judge shall resort to the in kind action against the contractor and shall assign a third-party contractor to complete the construction works. The owner may leave the in kind compensation to choose compensation which is risky in green buildings. Therefore, the owner should not choose this option, because the actual and accrued costs in such case are invisible. For example, the failure in achieving Green certification might cause material losses for owner, even if the building was completed by a third party.

However, the question herein is who should be responsible for the consequential damages? AIA Document A201-2007 defines consequential damages as "Damages incurred by the owner for rental expenses, for losses of use, income, profit, financing, businesses and reputation, and for loss of management or employee productivity or the services of such persons". This require to manage such damages contractually through the agreement of all parties of mutual waiver of consequential damage in order to mitigate these unclear or unknown risks related to green building. (O'Connor, 2012) On the other hand, owners should recognize the limits of required payments specified by the contract, because green buildings are new buildings, and the cost of such buildings are different than traditional buildings, and because the achievement of green certification means the ownership of green building and therefore the costs of green building should be higher. The owner may ask for further guarantees by contractors to increase warranty, such as performance bond which ensure the construction developer's performance according to the contract through the guarantor company of project's owner. However, the contractor shall be assigned in the contracts' documentation. In case of contract's failure, the guarantor should compensate such failure or covering the costs to complete the project (NASBP & SFAA, 2011). The contract may refer to a special Green code, however, if there were any reservation on such code the contract should also indicate the amendments agreed upon by the parties. Yet the issue here is if engineering works did not begin and a new version of green code issued, do parties resort to the old code or the updated one? If the parties abide to perform the assigned works based on the most recent version of specific green code, while the work did not yet begin, the contractor should abide the most updated standards or specifications otherwise, they shall bear burden of liability and compensation if the works performed on an old code. On the other hand, the parties may also agree on the performance of the work which not yet began according to the most updated amendment, provided that the owner shall charge the costs differences or to continue works on the old code. Or else, the contractor shall charge compensation if it did not provide the owner choose any of both codes. (The Jordanian legislator defines Code in Art. 2 of National Building Law no 7 for the year 1993)

4. Avoidance of Warranty limits provided by traditional constructions legislations

Construction warranty is originally designed in favor of the owner, in Jordan, it is concerned with the liability of engineer

or contractor for a period of ten years for any total or partial collapse of the building they have constructed or installation they have created. So, it is considered a legal instrument pursuant to the law. Therefore, it is a part of public order. So, the liability agreements, in terms of immunity or liability alleviation shall not apply herewith and shall not be violated by individuals as it was assumed in favor of employer and both public descendants (heirs) and particular descendants (purchaser and donated) shall have benefit of such warranty. (Al-Juboury, 2007)

According to Article 788/1 of the Jordanian Civil Code, which indicated the scope of warranty in the existing construction contracts, where "the architect/engineer who designed a structure and the contractor who built it, are jointly liable to the employer for any complete or partial collapse and for every defect (even if it was attributed to the land itself) which threatens the strength and safety of the structure, for a period of ten years from the date of taking over the works". However, if we look at the phrase "existing construction" shall we adopt the limited traditional concept of traditional building starting with bases and ending with final finishing of building, or shall we adopt more expanded concept that covers all the construction works including the minor ones such as maintenance, decoration, simple developments,...etc. According to the same article, it is visible that the legislator extended the scope of warranty to include those buildings and constructions that may face defects and threatens strength and safety of building. Apparently, the legislator has adopted the broad concept of constructions but subject to the strength and safety of the building. Thus, minor construction works, such as maintenance, decoration, simple developments, ...etc., are not included by such broad concept of building safety. The French legislator has also adopted the broad concept of construction in Article 1792, as the judicial decisions explained this extension with the exception of some simple works. The French Judiciary stated that "the architects who were assigned to full completion of the building, shall not be exempted from liability with respect to defects included by the Decennial Liability, as such defects caused exclusively by performance disruption. (French court of cassation, 1995) The French Judiciary extends to include renovation and expansion works in the Decennial Liability. For example, a seller of building which has been renovated shall declare liability for defects occurred in such building pursuant to Article 1792 of the French Civil Code without a need for a proof of manufacturing contract or construction contract as long as the performed works are similar to building or construction works. (French Court of Cassation, 1995) "the purchaser of building which was originally built for its interest, and then decided to sell it after completion, upon its direct right under Decennial Liability claim. However, this was also applied on small house completed by the seller before two years of sale" (French Court of Cassation, 1995) The French jurisdiction interpreted the scope of origin, i.e. the origin meant by Article 1792, where the decision issued was related to lands cleaning and backfills near bridge (French court of cassation, 1995) In another trial barriers or partitions were put to prevent the soil sliding (Daloz, 2007).

The French judiciary shows other constructional works under the article 1792, including fireplaces, back-plates, mantelpieces, plastering of the bottom of walls, the pavements and tiles of rooms, ..etc. (Daloz, 2012) Despite this extension, the French judiciary, through many decisions, excluded some

works from the scope of this warranty including for instance the hot air pillars installed on the steel crutches fixed to the concrete columns attached to the building shall not represent a subject of origin. Also the installation of water heater in an apartment, installation of segment on an existed smokestack without building restoration, the installation of detachable generators and the aesthetic paintings shall not form a subject of origin according to Article 1792. (Daloz, 2012)

Accordingly, and in terms of what provided by both the Jordanian and the French Civil Code, it is concluded that despite the expansion in building concept, there are some secondary, decoration and engineering works which were excluded from the scope of warranty. However, the question herein: whether it is possible to apply the same scope of liability in green buildings and this secure an owner to be fairly compensated? The warranty concept specified by the civil code, although it extended the constructional standard, yet it does not serve the green building' owner, as the green buildings are distinguished by the relatively joint liability of developers. As well, some simple works were excluded from scope of warranty such as decorations and other works as shown above. Such simple works can cause one of the reasons for seizing or deprivation of green building certificate at all. For example, replacement or elimination of some air conditioning units, replacement of water saving taps or glass thickness or the use of traditional maintenance techniques that do not take into account the particular requirements of green buildings should, which did not included according to French and Jordanian Codes, shall not be indeed excluded from the warranty scope of green buildings. In light of the absence of green legislations that organize such issues to be included by "Decennial Liability", owner is recommended to underline such concerns in the contract by an explicit language in terms of period and works to be covered.

5. Assignment of Owner Advisor

Usually, an owner does not have technical experience related to green buildings, therefore it select, beside its advisors, the approach of project delivery and determine the project' objectives and staff activities through contracting with different bodies and then the allocation of responsibilities of different parties. The advisor shall assist the owner, when starting the work in a green building, in determining specific criteria for the project as demanded by the owner, as every owner has its own vision regarding the design and the functions of built construction. At the same time, the owner is seeking economic benefits provided for such buildings, such as tax credits, energy and water savings. Accordingly, there is a need that a contract assign owner advisor, in order to deal with other parties (engineers and contractors) and to protect the owner from fraud or poor performance. The owner advisor shall focus on the three main following objectives linked to the owner's interests: (Schlegelmilch et al., 2003)

- 1- Retaining the invested capital and market share through the mitigation of risk / exposure to expected operational risks.
- 2- Extend the operational performance period through the promotion of strong maintenance programs.
- 3- Encourage mitigation of vulnerability to natural disasters or human-made disasters.

Basically, in traditional buildings' contractor does not perform his work under the supervision of the owner, such as in

employment contracts, since the contractor shall not follow the owner, but rather it should be independent. Article 785 of the Jordanian Civil Code dealt provides the owner the power of termination if it is impossible to repair the defected works or enforced the contractor complete the work in accordance with the conditions of the contract, and if it appears that he is carrying out what he has undertaken to do in a defective manner or in a manner in breach of the agreed conditions, the employer may require that the contract be terminated immediately if it is impossible to repair the work". Moreover, any costs for assigning another contractor to implement the work shall be bared by the original contractor. In contrast, in green buildings contracts, it is different while the owner may interfere through its advisor or the facilitator of green works. In addition to the joint role of other parties even before contracting.

In all cases, the owner should notify the contractor, in any time, to avoid its errors and the owner shall provide the contractor a period of time to do so. Such warning is necessary to claim against the contractor in terms of termination and compensation or the owner may claim the contractor for the increased expenses thereof. Such legal approaches addressed by the Jordanian laws shall not be sufficient in green buildings as the nature of implementing work between parties and their liability is different. The owner should contract with an advisor such as consultant engineer specialized in green buildings to ensure the commitment of parties to a particular code because of the absence of Jordanian green legislation. Overall, there should be a particular strategy for each building to avoid the failure and risks and to apply part of the green projects criteria matching each building. Indeed, the assignment of green-building advisor has technical and economic impact on the owner. It should be considered a fundamental element of green buildings, as an advisor can explain the accurate details of what should be provided in such buildings, the credits and incentives provided by law, playing the intermediate link between the ideas and investment ambitions of the owner and the architect; to construct a green building meeting the actual investment. The advisor may also provide the owner multiple choices to perform the work. For example, the owner might be convinced with design idea and its investment benefits however refuse the cost or consider that the cost exceeded the financial limit of the project. Herein, the crucial role of the owner's green advisor is creating alternatives with less cost, to show its advantages and disadvantages.

Moreover, it is visible to find Green-buildings specialized advisory body, to provide warranty to meet green requirements, through supervising green works only and contracting with concerned companies and by studying its contract item by item as well as supervising materials supply contracts and matching them to green conditions, further to supervising implementation. It could be supposed to include a legal provision enforcing owners to contract with a Green-buildings specialized advisory company and it can function as a guarantor for the project. Of course, there is a need to enact other laws or regulations to organize the licensing of such Green-buildings specialized advisory companies. The owner may authorize its consultant to take some legal actions including giving a notice to the contractor in case of breaching the contractual commitments. This commitment is very important for claiming; the notice in contractual commitments is obligatory not voluntary. The purpose of the notice in green buildings contracts is to draw the attention of the contractor

and the engineer to a performance error, if such error is neglected then it would become complicated or greater. The owner or its consultant usually gives adequate time for repairing the error or the defect. However, giving a notice shall not be deemed of public order. Thus, the owner may exempt itself of such notice by stating that in the contract. Certainly, if the notice could not be enacted, it shall be infeasible. The assignment of a consultant does not only include the consultant, the engineer or any other advisor who owns engineering experience in green buildings. Further, an owner consultant might include a green-building specialist lawyer. Accordingly, a consultant lawyer should provide the advice or legal consultation at all stages of green building. Yet, the issue herein: what is the nature of the contract signed between the employer and the consultant lawyer? Mainly the mission of the lawyer is to defend the interests of its clients, either in the field of jurisdiction or otherwise outside this field. Thus, a lawyer should advise the client to do what he/she believes will save the interests and rights of the owner before the court. Thus, the contract between the lawyer and the owner may be considered, according to the presence and absence of dependency relation. If there is a dependency relation with the owner, the contract shall be deemed an employment contract, whereas if the lawyer is independent, the contract shall be deemed a construction contract. Consequently, in the first case the mission of lawyer, which is the consultancy and advocacy. However, in the second case the rules of agency shall be applied. (Shanab, 2004)

6. Contracting with Experts

The owner should contract with green-buildings experienced parties who in turn qualified, rely on appropriate techniques in project management and shall display the specifications that should be included in the green building construction. While many people claim to have expertise in green design and construction, often this expertise is not very deep, given the fact that green building is relatively new. Yet, the owner shall before contracting, verify the party's experience through asking for submission of accredited certificates, appropriate documentations and proofs of the green qualifications and practical experience. Moreover, stating the experience of the expert to the contract as an agreed provision between the parties. In case any inaccuracy within the provided information has been detected, the responsible party shall be in charge of such fraud and default before the owner. Thus, it is critical that construction documents specify the qualifications of the persons whom will be overseeing the process to ensure that the sustainable goals are achieved. One generally accepted and recognized certification is the LEED Accredited Professional (AP) designation, which the USGBC hands out. The recently adopted LEED v3.0 has three different levels of accreditation. In addition to LEED, many other certifying organizations exist throughout Western Europe and Canada. However, to ensure the presence of experienced project team, there is a need for detailed references representing their experience in green buildings and energy efficiency. As well as to involve their experiences in the contract's documentations and submitted warranties upon the negotiations on project's agreements. Yet, first to clearly assign the responsibility for every element of green buildings elements among members of the project team to avoid confusion as well as to allocate experiences among project' stages properly. (Zimmer and Rohleder, 2010) Of course, with the increased expertise in green building the constructions projects will become more adapted to this new

status and less problematic for parties. Also, the projects will be more developed, and then the relationship will be positive between experience growth and the elimination of contractual problems. Therefore, the increased experiences will reduce liability cases in green buildings. "Green roofs" is a new innovated form of green buildings certification and rating systems, which has recently occupied wide publicity. Green roofs cover – at least – even partially the buildings' roof with green plantations such as: trees, shrubs and gardens. Green roofs design cannot be performed by ordinary engineer or usual contractor, rather it needs green specialized engineers and contractors. Such new green techniques have many advantages.

Usually Green roofs provide additional green areas to those locations lack for it. It also reduce energy consumption in the buildings, as well it reduces rain run-offs. It can also increase the virtual age of building's roof. Adding green roof to the building also increase the beneficial area of the building through providing local source of food. Green roofs can also reduce the impact of "Heat island" at urban areas. While traditional buildings make cities hotter through absorption of solar heat and reflecting the absorbed heat outside. Vegetative or green roofs reflect less heat to the surrounding air. Further, among other technical non-traditional concerns which need experience to design and implement these works, water harvesting in general and rainwater in particular. However, this non-traditional technique may cause new problems in green buildings. Because rainwater run-off in green buildings often collected in the cooling wells at the site. Whereas wastewater and gray water including rainwater are often used in irrigation . However, the correct orientation for water harvesting from ceiling to the reservoirs may cause greater challenges compared with traditional systems. (Shapiro and Cheatham, 2010)

7. Conclusion

Green building contracts enforce the owner to take crucial decisions in regard of designs, products and construction techniques up to construction completion. It has different nature than traditional building contract. This requires the owner to drafting a contract that contain clear and precise terms determine the most important contractual suggestions discussed in this paper. Otherwise, the project may not achieve the desired green building goals – or even worse – that one or more parties may be liable.

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