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Recommended Clauses for Green Consultancy Contract in the Construction Sector

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Abstract

It is undeniable that the construction industry has a significant impact on the destruction of the natural environment. Therefore, policymakers and key stakeholders are trying to overcome the impact of the construction sector through the implementation of the green building concept in every stage of construction work. However, this effort encounters various obstacles, such as a low understanding of green building, low participation in implementing green building concepts, and the emergence of various risks in green building projects. This study aims to investigate the contractual aspects of green building projects through a comprehensive approach that includes integrative literature reviews, questionnaire surveys, and a focus group discussion. This study found eleven contractual issues of green consultancy contracts. Based on these findings, various clauses were developed and validated with experts through a focus group discussion. This resulted in a recommendation of nine contract clauses to be included in the green consultancy contracts. This research is useful for the body of knowledge related to the development of green consultancy contracts in the construction sector, which is rarely studied, particularly in the Indonesian context. Practically, the results of this study can be used directly by green building consultants in negotiating their contracts with employers. By integrating these clauses into the consulting contract, it is hoped that the potential for disputes between consultants and employers can be minimized.

Keywords: Consultant, Construction, Green building, Green contract

INTRODUCTION

The construction industry is a sector that has a significant impact on the environment. This sector contributes 35% of energy-related greenhouse gas in Europe [1] with the concrete being responsible for 8% of greenhouse gas emissions [2]. Global material use is expected to more than double by 2060, with one-third used as construction materials [3]. Global warming has increased greenhouse gas emissions and resulted in the ozone layer thinning in the atmosphere [4]. Apart from that, climate change has also had a serious impact on social, economic, and cultural life [5]. Various problems related to climate change will continue if efforts are not made to overcome them. This issue is so important that the United Nations has even included it in the 17 Sustainable Development Goals (SDGs).

There are at least two SDGs related to the construction sector and climate change. Effective use of natural resources and the application of smart technologies play a role in realizing SDG-9, namely industry, innovation, and infrastructure. Meanwhile, building resilient communities that invest in energy-efficient buildings and green building certification programs are examples of real climate program action related to SDG-13, namely climate action. The application of the green building concept contributes to curbing the rate of global warming by improving the microclimate [6]. The green building concept is a concept of planning, designing, construction, and operation of a building with the vision of reducing negative impacts on the environment [7]. This aims to maintain the quality of the environment (water, air, and land) as well as maintain the natural balance of the environment so that it does not cause disasters [8].

However, implementing the green building concept encounters several challenges. The most important problem faced by construction industry players is the failure to understand that there is a difference between conventional projects and green building projects. This causes construction industry players to rely only on standard contracts, which do not always identify and prevent risks in green building projects, thus potentially giving rise to construction disputes [9]. Hence, describing green contracts is one of the most effective strategies. A well-designed green contract can identify and clarify the goals, design specifications and targets, as well as the rights and responsibilities of each party involved.

In implementing green building work, the role of a design consultant is very important. The design consultant is the first party to make plans and designs for a project, where the employer's ideas are stated in a planning document, which will be implemented by the contractor. Design consultants must consider the consequences of using environmentally friendly materials and additional

work, as well as the services and guarantees provided [10]. Green building designs are very different from conventional buildings, so a good green consultancy contract is needed. While a construction contract is an agreement outlining the rights, obligations, and responsibilities of the contractual parties participating in a construction project, a consultancy contract specifically regulates the agreement between the project owner and the consultant involved in the construction work [11]. In the context of this research, a green consultancy contract is defined as an agreement that regulates the rights, obligations, and responsibilities of the project owner and consultant to reduce emissions, increase adaptation to climate change, and reduce the environmental impact of construction projects.

As one of the important documents in carrying out construction work, in 2020, the American Institute of Architects (AIA) published a standard form of consultant's service, namely AIA Document C204TM–2020 [12]. Its creation was intended for application on a broad range of sustainable projects, such as those where the goal is to achieve a sustainability certification or to incorporate performance-based sustainable design or construction elements. The consultant answers inquiries about the sustainability plan to help with procurement and construction, as requested by the owner. The C204–2020 document addresses the risks, obligations, and prospects associated with projects with significant elements of sustainable design and construction. However, there has not been a similar standard form developed in Indonesia, the largest construction market in Southeast Asia.

In Indonesia, green building certification is carried out by the Green Building Council Indonesia (GBCI). Founded in 2009, it is a non-governmental and not for profit-oriented organization that is fully committed to facilitating sustainable transformation in the construction industry. One of GBCI's main activities is Greenship, namely the green building certification program in Indonesia. Greenship is an assessment system that is used as a tool for construction actors in implementing best practices and achieving measurable standards for green buildings. There are six categories in the Greenship assessment system, namely: (1) appropriate site development, (2) energy efficiency and conservation, (3) water conservation, (4) material resources and cycle, (5) indoor health and comfort, and (6) building and environmental management [13].

Literature review shows various contractual issues related to green buildings. For example, [4]argue that a clause is needed that explains the responsibility of the party causing damage resulting in work delays. Another issue that often arises is related to tax incentives. Several countries in the world and cities in Indonesia implement tax incentives for green buildings. Therefore, a clause is needed that regulates responsibility if green goals to obtain tax incentives are not achieved [10]. Other issues are related to guarantees for obtaining green certification [14], green building performance [15], and sustainable steps that must be the responsibility of each key stakeholder [4].

In addition, a clause is also needed that explains the responsibility for compensation if the sustainable goals are not achieved [4]. The costs that must be paid by the project owner to achieve green building performance also receive special attention [10]. In planning and designing, the parties must also agree on the project's green goals, such as whether to be certified and the type of certification to be achieved [15]. As in the implementation of other construction work, the implementation of green buildings also requires contractors and subcontractors who meet the requirements for implementing green buildings [4]. Issues related to the terms and criteria that must be met by design consultants and contractors to improve the standards of green building maintenance must also receive attention [10]. Likewise, the requirements for green materials to be used in the project need to be agreed upon in the consultancy contract [2], [15].

These various contractual issues need to be understood and agreed upon by the parties involved in the planning of green building projects. As a documented record of commitment from both parties, the consultancy contract between the owner and design consultant is important to be formulated as clearly as possible in order to mitigate risks, maintain compliance, and prevent potential conflicts that may arise during the work execution. However, drafting consultancy contracts that emphasize green aspects has its challenges. The lack of information regarding contractual issues in green consultancy contracts is the focus of this research. Hence, this research aims to provide green contract clause recommendations for construction consultancy contracts in Indonesia.

METHOD

This research applies a mixed-method approach to obtain more comprehensive, valid, and reliable data. The research begins with a literature review, which aims to identify various contractual issues related to green building. The results of the literature review were used as input in developing the questionnaire. The questionnaire was validated first with two expert respondents, who had the criteria of working as green building consultants with a minimum of five years of experience. Table 1 shows the survey variables that have been validated. Next, questionnaires were distributed to target respondents who met the criteria for working as design consultants or contractors with a minimum educational background of a bachelor's degree and experience in implementing green buildings for at least one year.

The selection of survey respondents was based on their direct involvement in green building projects and their professional roles in shaping or executing elements of consultancy contracts that relate to sustainability. The respondent group included green building consultants, architects, MEP (Mechanical, Electrical, and Plumbing) consultants, quantity surveying (QS) consultants, and green contractors. These stakeholders were chosen because they contribute to the formulation, interpretation, and implementation of contract provisions that influence a project's green performance.

Although the study focuses on consultancy contracts, such contracts are inherently multi-disciplinary and require collaboration among various parties involved in the design and construction process. Green building consultants provide strategic advice on certification and sustainability goals; architects and MEP consultants are key to translating these goals into design deliverables; QS consultants evaluate the cost implications of sustainability requirements; and green contractors offer practical insight into the enforceability and impact of such clauses during project execution. Their perspectives ensure a comprehensive understanding of how contractual issues related to sustainability are perceived and addressed in practice.

Table 1. Survey Variables

Code	Contractual issues	Description	References
X1	Consequential damages and rights	Clarifies liability and compensation terms in cases where failure to meet green performance targets leads to project delays, financial losses, or reputational damage	[4], [10]
X2	Tax incentive	Addresses the consultant's role in identifying and incorporating eligible green-related tax incentives into project planning or documentation	[10], [14]
X3	Guarantee of obtaining a green certificate	Specifies whether consultants are contractually obliged to deliver a certified green building and outlines accountability if certification is not achieved	[4], [10], [14]
X4	Green building performance	Defines expected post-occupancy building performance and whether the consultant is responsible for design-related outcomes	[4], [10], [15]
X5	Sustainable steps for stakeholders	Requires stakeholders, including consultants, to follow sustainable procedures throughout the project lifecycle	[4], [10]
X6	Responsibility for failure to achieve sustainable goals	Outlines the consultant's responsibility if project sustainability goals are not met, including potential remedies or penalties	[4], [10], [14]
X7	Costs related to green building performance	Clarifies who bears the cost for implementing sustainability features or resolving green performance gaps	[4], [10], [14]
X8	Green goals and objectives	Formalizes the sustainability goals of the project, and defines how these objectives guide the consultant's deliverables and services	[10], [15]
X9	Requirements on project partners/subcontractors	Ensures that consultants align subcontractor or third-party services with green performance targets and contract standards	[4], [10]
X10	Green building maintenance standards	Requires consultants to integrate green maintenance considerations into design or advisory services, supporting long-term sustainability outcomes	[4], [10]
X11	Green materials	Includes consultant responsibilities to recommend or specify sustainable, non-toxic, low-impact materials in line with certification and performance goals	[2], [4], [10], [14], [15]

The questionnaire consists of two main parts: respondent profiles and measurement of green consultancy contract issues. A five-point Likert Scale is used, with 1 representing 'very unimportant' and 5 representing 'very important'. The questionnaire was distributed online via Google Form on March 2-27, 2023 and managed to get 66 responses. The results of the preliminary examination showed that there were only 53 valid responses with the profile, as presented in Table 2.

Table 2. Survey Respondent Profiles

Profile	Number	%
Educational background		
Bachelor degree	32	60.4
Master degree	20	37.7
Doctoral degree	1	1.9
Total	53	100
Working experience		
1-3 years	21	39.6
3-6 years	10	18.9
6-9 years	9	17.0
More than 9 years	13	24.5
Total	53	100
Affiliation		
Green building consultant	26	49.1
Architect	9	17.0
Green contractor	10	18.9
MEP consultant	3	5.7
Quantity surveyor consultant	5	9.4
Total	53	100

The data obtained from the questionnaire survey was tested for validity and reliability. The validity test is carried out by comparing the

calculated r value for each variable with the r table. The results of the analysis using SPSS software show that the calculated r value for each variable is in the range of 0.500 to 0.750, which is greater than the r table (0.279), so all variables are declared valid. Meanwhile, the reliability test with SPSS shows a Cronbach's alpha value of 0.853, which is greater than the required value, namely 0.700, so the variable is declared reliable. The data was then analyzed using the Relative Importance Index (RII) technique. RII is a statistical analysis technique for determining the ranking of research variables with formula (1) where W is the factor weight, A is the highest weight, and N is the number of respondents. If two variables with the same RII score are obtained, then the variable with the smaller Standard Deviation (SD) value is more significant [16].

$$RII = \sum W / (A \times N) \quad (1)$$

Next, a draft of recommended clauses for a green consultancy contract was developed. These clauses were validated through a focus group discussion (FGD) held on April 11, 2023. The FGD involved five expert respondents who are green building consultants and have more than five years of experience. The FGD was conducted online via a Zoom meeting to make it easier for participants to gather in the FGD session. The number of experts was limited to five people to provide each participant with the same opportunity. The recruitment of experts was homogeneous considering that the issue was related to the design of green consultancy contract clauses. The results of the FGD were analyzed qualitatively in the form of recommendations for changes to the sentences in the clauses and approval of the clauses collectively by expert respondents.

RESULTS AND DISCUSSION

Contractual Issues in Green Buildings

Table 3 shows the results of the RII analysis of eleven contractual issues related to green buildings. Based on this result, all issues have significance to become contractual clauses (RII value above 0.7) with the top three issues being green building performance, sustainable steps for stakeholders, and green materials. Green buildings must have measurable performance in terms of saving energy, water, and other resources in accordance with the application of green building principles [15]. Clauses regarding sustainable steps that are the responsibility of each stakeholder must be clearly defined in the consultancy contract to mitigate potential disputes [10]. Meanwhile, the use of green materials is essential in green buildings, and careful selection of building materials is required to achieve the expected goals [4].

Table 3. Result of RII Analysis

Code	Contractual issues	RII Score	SD	Rank
X4	Green building performance	0.9094	0.695	1
X5	Sustainable steps for stakeholders	0.8528	0.738	2
X11	Green materials	0.8528	0.812	3
X10	Green building maintenance standards	0.8491	0.731	4
X3	Guarantee of obtaining a green certificate	0.8453	0.912	5
X8	Green goals and objectives	0.8415	0.840	6
X7	Costs related to green building performance	0.8340	0.914	7
X9	Requirements on project partners/ subcontractors	0.8302	0.818	8
X1	Consequential damages and rights	0.8302	0.864	9
X2	Tax incentive	0.7925	0.919	10
X6	Responsibility for failure to achieve sustainable goals	0.7736	0.921	11

Recommended Clauses for Green Consultancy Contracts

In the next stage, a draft recommendation clause is developed and discussed in an FGD. Issues related to consequential losses and rights (X1) and tax incentives (X2) are combined into one clause because they are related to each other. Likewise, issues related to guarantees for obtaining green building certification (X3) and responsibility if green building goals are not achieved (X6) are combined into one clause. In general, the results of the FGD show that expert respondents agreed with the contractual issues but with several notes for improvement, including changes to clause sentences and additional explanations. The result of the clause recommendations for green consultancy contracts can be seen in Table 4.

Although this study does not assess the implementation of the recommended clauses in actual green consultancy contracts, these recommendations remain highly relevant to current professional practices. These clauses were developed based on insights from experienced green building consultants and reflect common gaps and challenges that persist in the integration of sustainability into consultancy services. Issues such as unclear sustainability responsibilities, absence of performance metrics, and weak alignment with green certification processes continue to be observed in practice, as noted in recent professional discussions and related studies [17], [18].While the extent of adoption may vary and was not within the scope of this study, these recommendations offer a forward-looking reference point for improving the contractual framework in green building projects.

Their relevance lies in their practical applicability and alignment with the broader industry shift toward more accountable and performance-based sustainability practices.

Table 4. Final Recommended Clauses for Green Consultancy Contracts

No	Issues	Final Recommended Clauses
1	Green building performance (X4)	The Consultant must carry out work consistently in accordance with the principles and practices as well as technical guidelines for green building assessment tools with the aim that the project can meet the green building performance assessment.
2	Sustainable steps for stakeholders (X5)	• Employer 1. The Employer must implement the sustainable actions outlined in the approved sustainable plan—and any approved modifications—whenever such actions fall under the Employer's responsibilities or are required by this contract. The Employer should request the Architect and the Construction Management Consultant to perform services in accordance with the sustainable plan. 2. The Employer must provide relevant information as requested by the Consultant to achieve sustainable goals, including as-built drawings, design drawings, construction documents, shop drawings and other documents. 3. The Employer agrees to sign all documents required by the certification body, including documents necessary to designate the Consultant as the Employer's agent for the limited purpose of obtaining green certification. 4. The Employer is obliged to comply with the requirements of the certification body relating to the design, implementation, and utilization of the project during construction and after the project is completed. •Green Building Consultant 1. The Consultant must provide the Employer with copies of all agreements required by the certification body to register the project and achieve green building certification. The Employer and Consultant must review and confirm that the Employer can accept the terms of the agreement so that the Consultant can continue ongoing services. 2. The Consultant shall hold ongoing meetings with the Employer, Architect, CM Consultant, and other consultants in accordance with mutual agreements to review and discuss the potential for green building certification and potential sustainable actions, as well as confirm sustainable goals, implementation strategies for sustainable actions, and discuss the potential impacts of ongoing action on the project schedule, program and Employer's budget for the project. 3. The Consultant shall prepare a sustainability plan in accordance with the objectives and targeted sustainability actions and submit it to the Employer and Architect for the Employer's review and approval. 4. The Consultant must coordinate the approved sustainable plan with the Architect's schematic design document and submit proposals for adjustments to the sustainable plan to the Employer and Architect and request the Employer's approval. The Consultant must adjust the approved ongoing plan. 5. The Consultant must review the design development documents and construction documents, inform the Employer and Architect of any proposed adjustments to the approved sustainability plan and seek the Employer's approval. 6. The Consultant must carry out the ongoing actions that are the Consultant's responsibility in the plan and any approved changes to the sustainable plan.
3	Green materials (X11)	The materials used must follow the directions of the Consultant who refer to the technical guidelines for green building devices issued by the relevant certification body.
4	Green building maintenance standards (X10)	1. The Employer must hire an Architect who can carry out his services consistently with expertise and experience in green building construction and is professional in sustainable design. 2. The Employer must hire a CM consultant who can accommodate the green performance targets set by the Employer or Consultant, carrying out work in accordance with this contract document, including sustainable actions that are the responsibility of the CM consultant in the sustainable plan.

5	Guarantee of obtaining a green certificate (X3) and Responsibility for failure to achieve sustainable goals (X6)	The Employer and Consultant agree that the achievement of sustainable goals depends on many factors outside the Consultant's control such as the Employer not complying with required documents, work or services provided by the Architect and Contractor and other Consultants or interpretation of credit requirements by the certification body. Therefore, the Consultant does not provide any guarantee that the project will obtain green building certification.
6	Green goals and objectives (X8)	The Consultant knows that the Employer's green goal is the project to be (certified/uncertified) as a green building by a certification body.
7	Costs related to green building performance (X7)	All costs for registering a project with a certification body including registration fees and other fees charged by the certification body will be paid and are the responsibility of the Employer.
8	Consequential damages and rights (X1) and Tax incentive (X2)	Neither party shall be liable to the other party for any indirect or consequential loss or damage which the other party may suffer in connection with the contract other than delay damages. Indirect or consequential damages in this case include, among others: • Energy savings not achieved and undesirable operational costs incurred; • Loss of financial or tax incentives due to conditions for receiving incentives not being met; • Unachieved gains in worker productivity resulting from suboptimal worker attitudes, skills, or efficiency.
9	Requirements on project partners/ subcontractors (X9)	The Employer releases the Consultant from all claims caused by the Contractor or sub-contractor not carrying out the recommendations or directions given by the Consultant.

Research Implications

The development of specific contractual clauses for green consultancy contracts has profound implications for Indonesia's construction industry, where the adoption of sustainable practices is still in its early stages. Indonesia is experiencing rapid urbanization and infrastructure growth, contributing to significant environmental degradation. The construction sector is a major contributor to carbon emissions, waste production, and resource depletion. It accounts for 39% of global energy-related carbon emissions [19]. Consequently, integrating green building principles into the contractual framework of construction projects is a critical step toward achieving sustainability goals in Indonesia, including its commitment to the Paris Agreement and the United Nations Sustainable Development Goals, through the reduction of greenhouse gas emissions.

In the context of Indonesia, the low understanding and awareness of green building concepts among key stakeholders present a significant barrier [20]. Many construction professionals, including employers, consultants, and contractors, lack familiarity with green building certification systems such as Greenship by Green Building Council Indonesia, which is Indonesia's equivalent to LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method) certifications. By developing and including clauses that explicitly outline sustainability requirements, roles, and responsibilities, this research addresses the knowledge gap and ensures that all parties involved are aligned in their understanding of green building objectives. This alignment is crucial in promoting compliance with national green building standards and fostering a culture of sustainability in the construction industry.

The Indonesian construction sector also faces challenges related to limited participation in green building initiatives. Many developers perceive green projects as costlier and riskier compared to conventional projects, particularly in a market driven by price competition. This is reflected in the small number of buildings in Indonesia that have green building certifications [21]. The findings of this study are significant as they propose risk allocation mechanisms within green consultancy contracts that address potential uncertainties, such as achieving green certification, green material compliance, or unforeseen costs associated with green technologies. By embedding such clauses, consultants and employers can share risks equitably, thus increasing stakeholder confidence and encouraging broader participation in green building projects across the country.

Furthermore, Indonesia's unique socio-economic and regulatory context must be considered when implementing green consultancy contracts. The lack of enforceable policies and incentives for green building practices often discourages private sector investment in sustainable construction [22], [23]. This research's practical contribution lies in providing a contractual framework that can operate effectively even in the absence of robust regulations. For example, clauses addressing green material sourcing, waste management, and energy efficiency can directly support project implementation while creating a foundation for future regulatory developments.

These contractual provisions not only align with global best practices but also provide localized solutions tailored to Indonesia's construction landscape.

Another implication of this study highlights the importance of the recommendations for contract clauses specifically designed for agreements between employers and consultants in green buildings. This contract clause aims to anticipate and minimize potential conflicts or disputes that often arise due to differences in the interpretation of responsibilities, scope of work, or expectations related to green building projects [24]. With clear and comprehensive clauses, the working relationship between employers and consultants can be more structured, transparent, and effective, thus supporting the smooth implementation of green consulting services [25]. Hence, this recommendation also contributes to the achievement of green development goals that are in accordance with sustainability standards and project needs.

Finally, this research enriches the growing body of knowledge in sustainable construction within Indonesia, offering valuable insights for policymakers, academics, and practitioners. The recommended clauses can be integrated into public and private sector projects, serving as a benchmark for future green consultancy contracts. They also have the potential to influence Indonesia's green building policy development, particularly in areas such as tax incentives, certification processes, and public awareness campaigns. By addressing barriers such as low understanding, limited participation, and the risks of green projects, this study serves as a catalyst for transforming Indonesia's construction industry into a more sustainable and environmentally responsible sector.

In summary, this study provides novelty for construction contract management knowledge by providing recommendations for green consultancy contract clauses in the Indonesian context. The formulation of green consultancy contract clauses in Indonesia cannot be separated from the unique regulatory, cultural, and institutional landscape of the country. In terms of regulatory complexity, Indonesia's regulatory framework for sustainable construction is still evolving [26]. Although the government has introduced green building regulations (e.g., Ministry of Public Works and Housing Regulation No. 21/2021), enforcement remains inconsistent, and implementation is often fragmented across regions. This regulatory ambiguity necessitates contractual clauses that explicitly define environmental obligations and performance benchmarks.

On the other hand, Indonesian business culture is heavily influenced by informal networks and personal relationships [27]. Trust and mutual understanding often supersede formal mechanisms of accountability [28]. Therefore, green consultancy contracts must carefully balance formal provisions with clauses that acknowledge collaborative and trust-based approaches. Meanwhile, the institutional capacity to monitor and enforce green construction practices is still developing. Limited technical expertise among some stakeholders and a lack of standardized procedures can hinder the practical application of sustainability principles [29]. Consequently, contractual clauses should provide clear roles, responsibilities, and reporting mechanisms to mitigate institutional shortcomings. By addressing these contextual factors, the recommended clauses are tailored not only to international best practices but also to the specific challenges faced in the Indonesian construction sector. This enhances the practical applicability and relevance of the proposed framework.

CONCLUSIONS

This research aims to design recommendations for green contract clauses for construction consultancy contracts. Based on the literature review, there are eleven contractual issues in green buildings that need special attention from key stakeholders. Furthermore, through quantitative analysis and FGD, recommendations for final clauses consisting of nine contract clauses were obtained. The results of this research provide theoretical contributions by presenting issue rankings and clause recommendations in green consultancy contracts. Practically, the results can be used as a reference for green building consultants in negotiating their consultancy contracts with project owners. On the other hand, this research has a limitation in that the expert respondents involved are all affiliated with green building consultants. Drafting a good contract should involve the parties involved in the contract, namely the employer and the green building consultant. Thus, future research is advised to consider the involvement of employers in FGDs so that the draft clauses become fairer for the parties and can be used as standard clauses of green consultancy contracts.

On the other hand, while this study was conducted in 2023, the insights gathered from green building consultants remain relevant to current conditions. It focused on practical recommendations for incorporating sustainability principles into consultancy contract clauses, an area shaped by professional practice, regulatory alignment, and institutional standards that evolve more gradually than public awareness. As such, the findings provide a foundational reference for enhancing green consultancy contracts, particularly in contexts where sustainability integration into contractual frameworks is still developing in Indonesia. These results can inform both ongoing policy discussions and future updates to professional practice.

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