

# Isn't It Time for Quantity Surveyors to Contribute to Sustainability?

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## Abstract

The construction industry faces criticism for its slow adoption of sustainable development, sparking global discussions on shifting from traditional practices to sustainable construction practices (SCP). With enhanced support and knowledge in sustainability, Quantity Surveyors (QS) have the potential to significantly influence SCP implementation, leveraging their in-depth understanding of building life-cycle costing. However, despite their crucial skills and potential to contribute to sustainable development goals, their role remains under-recognised in much of the literature and industry practice. This research seeks to explore ways in which QS can enhance their influence on SCP implementation within the construction sector. This is accomplished through a comprehensive literature review and semi-structured interviews with QS professionals from diverse organisations involved in both public and private UK projects. The findings highlight four key limiting factors—Cost Consideration, Stakeholder Influence, Standardisation, and Knowledge—that restrict QS influence in implementing SCP. A deeper insight into these factors empowers QS to more effectively drive SCP implementation in construction projects.

## 1. Introduction

The construction industry enhances quality of life by creating spaces for living, working, and socialising, thereby supporting global economic growth. Given this impact, the industry is expected to play a significant role in advancing sustainability. However, it faces criticism for its relatively slow adoption of sustainable development [1]. Current practices are unsustainable, contributing to resource depletion and rising carbon emissions. In the UK, the construction sector is under significant societal pressure to meet sustainable development targets [2]. As such, the shift from traditional construction practices to Sustainable Construction Practices (SCP) is now more urgent than ever. Consequently, all stakeholders in the construction field face increasing pressure to integrate SCP into future projects.

The role of QS is becoming more and more important to SCP. As the core construction cost consultants, QS provide critical cost information and value management advice [3]. Due to their extensive range of skills, their participation in other facets of construction is rising, further evolving their role, and sustainability is a core part of that. For their increasing important role, QS being incorporated in earlier in the project lifecycle [4]. As their earlier involvement, QS stand with project managers and designers in providing early advice to the client, and then significantly impact their awareness toward sustainability. QS can leverage their current expertise, coupled

with knowledge in sustainable development, to help clients realise the benefits of implementing SCP. With their strong understanding of construction costs, life-cycle costing, and value management, QS are well-positioned to contribute for SCP from the early project stages [5]. It is therefore essential for the industry and professionals like QS to undergo significant changes to prevent further environmental harm [6]. However, QS currently lack the awareness and opportunities needed to fully engage in this shift [7]. As a result, their influence on sustainable decision-making is limited compared to other construction roles [8]. This research seeks to identify ways to support QS in enhancing their influence on SCP as the industry evolves.

Therefore, the aim of this study is to determine how QS can effectively drive SCP adoption in construction projects. Addressing existing research gaps, this study will assess the UK construction industry and the role of QS through a literature review and interviews, focusing on three core objectives: (1) To explore the evolving role and awareness of QS in supporting sustainable development; (2) To assess the influence QS currently have on SCP implementation, and (3) to examine the barriers restricting QS in SCP implementation and strategies to overcome them. By addressing these objectives, the research aims to deepen understanding of the factors that can enhance QS's ability to promote SCP, thereby increasing SCP adoption rates in the UK.

## 2. Research Background

### 2.1 Sustainable Construction Practices (SCP)

Sustainable construction involves establishing and managing a healthy built environment based on principles of resource efficiency and ecological sustainability [9]. In contrast to conventional construction, sustainable construction endeavours to balance economic, social, and environmental principles rather than solely prioritising economic outcomes in a project [10]. These principles are acknowledged as the "three pillars" for achieving sustainable development in construction projects.

Promoting SCP is a pivotal strategy for the construction industry to progress towards sustainable development [11]. SCP implementation has shown promising results, with projects demonstrating up to 36% less energy consumption and a remarkable reduction of operating and life-cycle costs by up to 50% [12]. Previous studies have investigated a series of SCP aligned with sustainability principles. SCP offer benefits across all construction stages by incorporating innovative materials and methods, such as using synthetic turf for a snow-free ski slope atop a waste-to-energy plant in Copenhagen [13]. Recycling construction materials also supports environmental protection; for example, repurposing solar heaters and photovoltaic panels contributes to building efficiency while conserving materials. SCP can improve water management and reduce waste, for instance, by utilising rainwater for toilet flushing or installing rainwater harvesting systems [14]. Additionally, with people in the UK spending 90% of their time indoors, optimising indoor environments can enhance health significantly [15]. Well-designed, sustainable projects not only lessen environmental impacts but also create healthier, more productive spaces. Sustainable infrastructure can improve individual well-being by integrating natural light, air quality, and scenic views while reducing volatile organic compounds [16]. Thus, broader SCP adoption can promote a healthier, more comfortable built environment, positively affecting well-being and quality of life.

The implementation of SCP presents numerous challenges, necessitating adjustments and innovations. If the construction industry aims to achieve sustainable development, it must allocate capital towards research and development efforts to enhance the effectiveness and affordability of SCP [17]. Projects must prioritise energy-efficient and environmentally friendly while balancing limited time and resources. Moreover, all barriers do not have an equal impact on all stakeholders, requiring specific solutions to be derived [18].

### 2.2 The New Role of Quantity Surveyors Toward SCP

QS is the most essential professional in the construction industry to address such complex duties, particularly in the assessment of the economic sustainability of projects [4]. Traditionally, QS serve as construction cost consultants to various industry stakeholders, providing essential cost information, leading consultations, and offering value management advice [19]. As the industry transitions towards SCP, the role of QS has evolved to provide new services for sustainable projects. For instance, QS have significant involvement in measuring sustainable construction performance, particularly in areas like life cycle costing (LCC) appraisal [20]. LCC is a tool used to assess economic performance by providing a comprehensive view of total costs, especially within construction [8]. It examines various options to meet clients' financial objectives while aligning with their social and environmental responsibilities. By evaluating both current and projected costs and revenues, LCC aids in decision-making throughout a project's lifecycle or for a specific timeframe [21]. As green building certifications become more common, Quantity Surveyors (QS) can guide clients on the extra costs involved in meeting various certification levels [22]. Additionally, cost management professionals or QS play a key role in calculating embodied

carbon emissions and analysing the trade-offs between cost and embodied carbon, helping clients find the most effective solutions [23].

Research identifies several barriers that limit QS from fully participating in sustainable construction. One key barrier is the high initial cost of adopting SCP, which are often viewed as more expensive and riskier than traditional methods [21]. In the UK, 40% of organisations cite these high costs as a deterrent to SCP adoption [20]. The additional "Green Premium" for SCP varies widely, ranging globally from 0.4% to 21%, depending on how it is calculated [15]. Another major challenge is client demand, which typically prioritises economic success over social and environmental outcomes. Clients play a critical role in determining project sustainability levels, and their investment choices greatly impact SCP implementation. However, many clients are hesitant to adopt SCP for long-term environmental benefits, focusing instead on market value [17, 20]. Studies suggest that clients require assistance to fully understand and realise SCP benefits in their projects [14]. Advisors must be aware of clients' budgets, functional needs, and sustainability goals to effectively guide them toward optimal solutions. Additionally, a lack of sustainability knowledge and skills presents a significant barrier to SCP implementation [24]. Research by Durdyev et al. [14] indicates that only a small number of large project developers adopt SCP due to limited knowledge. Professionals without sufficient expertise may avoid SCP or provide suboptimal advice to clients. The Royal Institution of Chartered Surveyors [25] recommends that QS enhance their carbon management skills, which are becoming increasingly important in construction projects.

### 3. Research Methodology

This research employed interviews as the primary method of data collection, requiring participants to discuss QS's role and awareness, their potential influence, and the barriers towards contributing to sustainability. The interviews were conducted through virtual meetings via Microsoft Teams.

The research successfully gathered participation from 14 QS-related professionals across the UK. These professionals represented a wide range of company sizes and types within the construction industry, managing projects valued between £5 million and £233 million, encompassing both private and public sectors. All participants possessed industry experience, with a minimum of 2 years' involvement, including relevant experience in sustainable projects. Participants with under 6 years of experience focused on QS-related technical expertise, while those with 10+ years of experience were also engaged in project management responsibilities (See Table 1 for further participant details).

**Table 1** Interviewee's information

Interview	Current Role	Working experience	Background
A	Director	27 years	Quantity surveying
B	Assistant Quantity Surveyor	3 years	Quantity surveying + Project management
C	Senior Quantity Surveyor	35 years	Economics, building economics and quantity surveying
D	Project Manager and Surveyor	20 years	Quantity surveying
E	Lead Quantity Surveying	23 years	Building economics and quantity surveying
F	Quantity Surveyor	6 years	Quantity surveying
G	Consultant Quantity Surveyor	6 years	Quantity surveying
H	Quantity Surveyor	2 years	Civil engineering + Project management and quantity surveying
I	Assistant Quantity Surveyor	4 years	Quantity surveying + Project management and quantity surveying
J	Graduate Quantity Surveyor	2 years	Quantity surveying
K	Senior surveyor	5 years	Quantity surveying
L	Quantity Surveyor	2 years	Quantity surveying
M	Quantity Surveyor	4 years	Quantity surveying
N	Quantity Surveyor	2 years	Commercial management and quantity surveying

Following the interviews, transcripts were generated, coded, and analysed using NVivo. Based on the interview findings, a framework was proposed to support QS professionals in integrating their role with sustainable development, while emphasising their capacity to influence sustainable construction practices.

## 4. Research Findings

### 4.1 Evolving Role and Awareness of QS Toward Sustainability

To stay current in the sustainable development market, participants agreed it is crucial to deepen their expertise in costing sustainable projects. Participant I noted that while this shift won't happen instantly, sustainability is "becoming a larger part of the job," making their role in sustainability increasingly essential. Seven out of fourteen participants highlighted the importance of demonstrating both the financial and long-term benefits of sustainable development. Participant K viewed their role as a custodian of knowledge, providing expertise on how SCP add value. They saw their responsibility as helping clients understand sustainable development, illustrating SCP benefits, and presenting innovative solutions for cost savings and enhanced value.

However, four less experienced participants mentioned that while their organisations value sustainability, they haven't yet gained much exposure, as other job aspects take precedence. Participant J discussed their struggle to gain senior management's attention on sustainable innovations, noting, "anything that doesn't yield short-term returns on investment, they do not want to know about." Similarly, Participant C, with 35 years of experience and involved in upcoming sustainability research, faced challenges discussing long-term benefits of sustainable projects. This underscored the limited knowledge available and the lack of emphasis on understanding sustainable development's benefits in the UK, restricting QS.

Participants D and C shared instances where the council insisted on costly sustainable timber frames over cost-effective PVC windows. Participant D further noted that private clients' interest in sustainability often wanes when costs are involved, suggesting that clients view sustainable options primarily through a cost lens. Participant A highlighted that clients seek QS advice mainly for profitability-focused options, noting the challenge Qs face in conveying the value of sustainable development.

Despite the rising interest in sustainability, Participant H expressed that the QS's role remains unclear, as designers currently handle most project sustainability aspects. Participant F added that the majority of design work is complete before Qs are involved, limiting their influence: "our influence on the overall design doesn't enable us to play a significant role."

All participants acknowledged that they act more as supporters to designers rather than as directive advisors on sustainability. Consequently, 11 out of 14 participants felt they did not require in-depth sustainability knowledge, as clients prefer quick service over the exploration of optimal or innovative sustainable solutions. As a result, Qs typically make only minor adjustments rather than shaping sustainability-related decisions directly.

Discussing the drawbacks of this approach, Participant H emphasized the importance of costing materials accurately, especially when sustainability is considered late in the project, leading to multiple deliveries and higher costs and carbon footprints. Qs, if adequately trained, could share economic insights on sustainability, contributing to better sustainable choices earlier in projects. Barrett et al. (2026) highlighted that Qs play a vital role in minimizing unviable costs and carbon. Participant H further stressed the need for sustainability training, stating, "there needs to be more focus on how we as Qs can have a genuine impact." As the industry evolves, Qs must adapt their roles and responsibilities to stay relevant, expand their sustainability knowledge, and meet market demands.

### 4.2 QS Influence on SCP

Due to limited opportunities, 10 out of 14 participants reiterated that extensive sustainability knowledge was not required in their roles. Additionally, 8 participants observed that the design team has limited influence over SCP implementation, as client objectives largely dictate project decisions. For example, Participant D described a project where a garden wall was needed; while durable brick walls with a 30-year lifespan were recommended, the client opted for less sustainable wooden fences with a 10-year lifespan due to lower upfront costs. This highlights that client preferences significantly impact project sustainability, as the short-term costs of SCP often outweigh perceived long-term benefits. One participant commented, "life-cycle considerations aren't something many people focus on." Although QS can communicate SCP's long-term economic advantages, the final decision ultimately rests with client priorities.

Additionally, when discussing why extensive knowledge of sustainable development is not currently necessary, Participant D explained that most sustainable construction practices (SCP) are implemented merely to "tick a box". They used solar panels in the UK's cloudy environment as an example; for construction stakeholders

the panels achieve the title of 'sustainability' and look great aesthetically, however in reality they "may well fuel a toaster". Therefore, many of the 'sustainable elements' incorporated may seem sustainable without understanding the SCPs. Such 'tick-boxing' activities are influenced by the client's desire to enhance their market-value rather than to support sustainable development.

Conversely, Participant C highlighted that government-based clients try to set a benchmark for correctly implementing SCP and are willing to pay higher Green-Premiums. However, this is currently not effective as witnessed by exiting trends on SCP implementation. Hence, to overcome this, Participant A suggested that the UK requires strict legislations "to actually force people and designers to implement them".

Moreover, all participants agreed that regulated clients are more likely to seek sustainable advice by the design team. Highlighting the lack of opportunities provided to QS, as they are not included in the sustainable design decision-making processes. For this however 10/14 participants suggested that they not only require opportunities but also more tailored resourced to equip them. Participant L went further and discussed the importance of QS helping clients see the sustainable development benefits through numbers and figures as "It needs to be visual for them as they are heavily focused on their budgets and short-term benefits".

When asked how their companies help them gain sustainability awareness, participants gave mixed answers. Participants C&F mentioned they were not supported as influencing sustainability is not their job, so they have limited sustainability input. While Participant F felt the lack of training was 'appropriate'. This may be as while working for large organisations, both still lack sustainability exposure compared experienced colleagues. Equally, 4/14 participants discussed their experience in working for smaller companies and receiving minimal training opportunity and support. Participant J justified this as "These larger companies have more capital devoted into training". Nonetheless, despite 5/14 more experienced participants, working in larger companies emphasised the importance of learning about sustainability and sharing upcoming research with their colleagues. Yet felt their firms were also doing little to supporting them. Despite sustainability training being essential for industry professionals to maintain relevant in long-term. All participants agreed their influence on sustainability adoption will increase as they are supported by their companies to gain sustainability knowledge.

### 4.3 Barriers of QS' Engagement to SCP

Participants were asked about the main barriers to implementing sustainable construction practices (SCP). Across the board, participants expressed that clients are reluctant to invest in SCP due to perceived risks and high costs. Participant C specifically noted that SCP needs to be better adapted to the UK's climate, highlighting that achieving sustainable goals in the UK requires a greater investment in research and innovation, which is currently lacking. This section also explored challenges QS face in influencing SCP adoption. According to Participant G, when QS possess strong expertise, clients are more confident and open to SCP. With the necessary skills and knowledge, QS can guide clients in understanding and evaluating SCP options effectively.

Participant A added that clients often choose sustainable options primarily to enhance market value rather than for genuine commitment. If SCP appears to improve market positioning, clients may select it because "clients always want to build projects economically." Thus, while SCP adoption may seem to be rising, it often reflects a response to public scrutiny rather than a meaningful sustainability strategy. Nine out of fourteen participants also commented on the "tick-box" approach within the industry, where SCP is implemented superficially without a thorough evaluation of options. This tendency can lead to SCP choices that are environmentally counterproductive. For instance, five participants pointed out the issue of materials that are transported over long distances. Participant C illustrated this dilemma, saying, "if it's got to travel 2000 miles to get here, is it better for the environment than buying a local product that's maybe not as sustainable?" This example shows that superficially "sustainable" choices can, in reality, raise carbon emissions through transportation, yielding minimal environmental benefit. Participant B also suggested that the high cost of SCP in the UK results from insufficient research, education, and corporate responsibility. Increased research efforts could drive innovation in UK-specific SCP, making materials more locally available, reducing transportation costs, and ultimately lowering emissions.

Participant D pointed out that the industry needs to move past "tick-box" sustainability and the pursuit of sustainability for mere market value, explaining, "everybody around the table is winking at each other and saying we'll do this because it looks good." Instead of prioritising genuine SCP understanding, many stakeholders focus on appearing sustainable without learning which SCP would be most effective. To overcome this, seven out of fourteen participants recommended that the government should support greater standardization and transparency. Participant D explained how standardization could increase clarity in sustainability choices, using electric cars as an example; although they are marketed as "environmentally friendly," their materials and origins are often unknown. Construction stakeholders similarly need to be transparent about the materials and transportation choices involved in SCP rather than simply listing "sustainable" components. Regulatory involvement could also curb market inefficiencies that allow unsustainable suppliers a competitive edge. According to nine out of fourteen participants, strong legislation would push clients toward sustainable

investments. Standardizing SCP would foster consistency and transparency in sustainability efforts, enabling QS to confidently recommend optimal SCP and drive demand within the UK.

Another significant barrier, discussed by eight out of fourteen participants, is the timing of sustainability considerations, as it is often introduced late in the process. Ten out of fourteen participants noted that the design phase is critical for key project decisions, yet QS are traditionally not included early enough. Participant I highlighted the missed potential, noting that QS could play a far more influential role in project design. If sustainability isn't integrated at this stage, there is little that QS can do later to steer the project sustainably. Participants suggested that QS should have more access throughout the entire project lifecycle, allowing them to stay informed of construction advancements and devise innovative solutions. Participant L added that "construction is basically teamwork, and collaborating on design will enable professionals to significantly increase SCP implementation, making it more efficient."

All participants agreed that expanding roles in sustainability requires more training for QS. Participant M pointed out that clients hire QS to ensure projects are efficient and cost-effective, but sustainable markets are volatile, making this task challenging. Participant H noted that "QS need to understand client needs to balance economic and environmental goals for sustainability." However, Participant B expressed concern that "traditional companies may not see the value in investing in this training" due to the time and cost involved. Participant M, however, argued that while training is time-consuming, it ultimately yields benefits for the company, especially in larger organisations with more resources to influence sustainable research and innovation. With enhanced training and skills, QS would be far better positioned to drive the implementation of optimal SCP.

## 5. Discussions

The findings of this research reveal four important factors (see Figure 1) to the engagement of QS to sustainability, also the core factors impact their potential contribution to SCP, including: (1) Cost minimization, (2) Stakeholder Influence, (3) Standardisation, and (4) Sustainability-related knowledge. The below sections will further discuss them in detail.



**Fig. 1** Four factors to successful SCP implementation

### 5.1 Cost Minimisation

The high cost of SCP is widely seen as the main barrier to their implementation, particularly for QS, who, as cost consultants, focus on cost efficiency. Participant C pointed out that if SCP were mandated in all projects, the resulting expense could put many low-income individuals at risk of homelessness. Additionally, SCP's value is often rooted in long-term benefits, a factor frequently overlooked by clients who prioritise immediate profits. Participant L emphasised that QS play an essential role in guiding clients toward greater understanding and selection of optimal SCP. On the other hand, Participant D noted that even when the long-term benefits of SCP are explained, most clients remain focused on immediate financial gains. Thus, until SCP costs decrease, QS will struggle to promote their broader adoption.

However, as sustainability gains momentum, clients who ignore SCP may face negative long-term consequences. Projects that prioritise short-term profitability at the expense of sustainability may ultimately become unsustainable and risk losing value or failing over time. Therefore, integrating sustainable practices doesn't necessarily mean sacrificing profitability, especially when considering the life-cycle cost (LCC) of energy-efficient projects, which often reduce operational and maintenance expenses. Furthermore, as SCP becomes more standardised and accessible, their costs are likely to decrease. Participants A and C underscored the importance of SCP becoming commonplace, drawing parallels with products like PVC and flat-screen TVs that have become affordable with widespread use.

For SCP to become the industry norm, stakeholders, including QS, must collaborate to normalise and increase SCP implementation. QS should help clients recognise the potential downsides of neglecting SCP, as increased SCP demand will drive economies of scale, making SCP more affordable over time.

## 5.2 Stakeholder Influence

Several factors impact both the timing and approach to implementing sustainable construction practices (SCP). While QS and designers can recommend sustainable options, their actual influence is limited, as final decisions lie with other stakeholders. The construction industry has a reputation for slow adoption of innovation, with more experienced QS often hesitant to embrace sustainable risks. Participant M pointed out that beyond clients, seasoned professionals may also resist sustainable practices, contributing to industry inertia.

Participant J highlighted the need for all construction professionals to pool their expertise in order to create optimal sustainable solutions for projects. Yet, implementing SCP for superficial reasons—such as “tick-boxing” and boosting market value—has become increasingly common. Research by Ma and Luu [20] suggest that clients are more likely to adopt SCP if they believe it will enhance market value and profitability, rather than out of a genuine understanding of SCP options. Reflecting this, Participant D shared that many sustainability initiatives require little knowledge as they’re often conducted merely for appearances. They cited the use of solar panels in the UK’s cloudy climate, where solar panels may serve more as a symbol of sustainability than a practical solution. These implementations, although seen as “sustainable” by the public, don’t deliver their full environmental benefits. Not only do they incur high transport-related carbon emissions, but they may also lack effectiveness. For the UK’s climate, SCP options like rainwater harvesting could be far more efficient, offering greater benefits.

Given this trend, government intervention is crucial. Governments play a vital role in regulating industry behaviour and can enforce correct SCP use while restricting conventional construction practices (CCP) that contradict sustainability goals. According to Participant D, government incentives and stricter standards could drive industry innovation and increase transparency, setting an example for private clients. As government policies significantly shape sustainable development, they have the power to either enhance or limit QS influence on SCP adoption.

Moreover, literature emphasises the importance of involving QS early in projects to achieve cost-effective, energy-efficient outcomes [26]. However, Participant C noted that QS are often brought in only after design completion, making changes challenging and costly. This discrepancy highlights a gap between theory and real-world application. Additionally, all participants noted that clients rarely seek sustainability advice from QS, considering it primarily the designer’s role. Participant L pointed out that this restricts QS in their ability to make impactful sustainability suggestions. Organisations should provide more support and opportunities for QS to engage in sustainable design discussions from the start, promoting collaboration with design teams.

Overall, key stakeholders—such as client priorities, government regulations, and organisational support—currently limit the influence of QS on sustainability. To achieve meaningful progress, all stakeholders must work collaboratively, taking shared responsibility for sustainable outcomes rather than leaving the burden to specific team members alone.

## 5.3 Standardisation

The lack of standardisation is a major barrier, significantly affecting not only QS but also the broader goal of sustainable development. Achieving sustainability currently relies on a comprehensive, well-defined set of standards to ensure a level playing field for all stakeholders [17]. Participant K highlighted that increased legislation could drive the industry towards greater sustainability while encouraging exploration of advanced, innovative solutions. Additionally, Participants A and D emphasised the need for more transparent conversations, moving away from “tick-box” approaches focused on market value alone. Therefore, standardisation is essential to ensure that SCP are genuinely sourced and implemented sustainably. With clear industry standards and limits on unsustainable options, QS will find it easier to advocate for SCP and training them to these standards will enable them to offer effective, sustainable services.

## 5.4 Sustainability-related Knowledge

The knowledge factor can be split into two aspects: first, the necessity for the UK to invest in research and development to enhance understanding of more effective sustainable construction practices (SCP); second, the need for Quantity Surveyors (QS) to continually expand their expertise in sustainability.

### 5.4.1 Research

For SCP to be implemented effectively, they must be adapted and accessible to the UK's unique environment. However, research in the UK is still in its early stages, as evidenced by the limited UK-focused sustainability literature. Without sufficient SCP research, QS lack the comprehensive information needed for effective SCP implementation. Additionally, 5 out of 14 participants pointed out that most construction materials are currently transported over long distances, leading to high carbon emissions and potential inefficiencies in the UK climate. Therefore, more research and incentives are essential to develop SCP tailored for the UK, which would, in turn, support local suppliers in creating more eco-friendly options, lowering transportation costs, and reducing carbon emissions.

### 5.4.2 Evolving Awareness

Without knowledge and experience in sustainability, QS are limited in their ability to influence SCP effectively. QS are known for their adaptability and capacity to embrace innovation by expanding their expertise and integrating sustainability-related responsibilities into their role. Participant H highlighted the need for more dialogue on how the QS role can evolve to support sustainability goals more effectively. However, Participant E noted the difficulty of balancing their core responsibilities while staying up-to-date with emerging innovations. In response, Participant B underscored the importance of companies dedicating time and resources to the professional development of QS. Organisations should invest in training opportunities to equip QS to better advise clients on SCP implementation.

QS have significant potential to broaden their impact in the UK, with opportunities such as Net-Zero initiatives, carbon-emission assessments, and advanced LCC methods. Participant C added that incorporating innovative technology like Building Information Modelling (BIM) can also empower QS to drive sustainability and reduce inefficiencies. To effectively advise clients on SCP in areas not solely focused on design, QS must continually enhance their sustainability knowledge. QS with sustainability expertise are better positioned to address environmental challenges by engaging with designers early in project development, enabling them to promote sustainability proactively rather than as a secondary support function.

## 6. Conclusion

This research aimed to analyse how Quantity Surveyors (QS) can contribute to implementing sustainable construction practices (SCP) in construction projects as the industry evolves. A focused literature review was conducted to address the research objectives, and interviews were used to explore identified gaps. First, the literature suggests that the QS role has expanded beyond traditional cost consulting, positioning QS as key stakeholders in supporting sustainable goals. However, interviews indicated that although QS have a broad scope of responsibilities, they lack sufficient sustainability knowledge, which limits their capacity to support SCP implementation effectively. Second, the literature implies that trained QS, equipped with sustainability knowledge, can balance environmental, social, and economic goals, thus greatly influencing SCP adoption. Yet, interviews revealed that QS currently play a supporting rather than influential role in project sustainability, focusing on assisting designers. This limited influence stems from a prevailing belief that sustainability is outside their primary responsibilities, alongside a lack of sustainability expertise. Furthermore, QS are often introduced later in project stages, reducing the extent of their influence over SCP choices. Lastly, literature highlights that barriers to SCP implementation are often generalized and lack a perspective focused on individual stakeholders. Both the literature and interviews show that clients remain hesitant about SCP due to high costs, an issue best addressed by increased government intervention and standardization. Interviews also revealed additional challenges, such as client demand, transparency, opportunity, and limited knowledge, which QS identified as barriers to their impact on SCP implementation.

This research identified four main factors limiting QS influence on SCP adoption: (1) Cost Considerations, (2) Stakeholder Influence, (3) Standardization, and (4) Knowledge. These factors are critical to empowering and preparing QS to influence SCP implementation effectively. Addressing all four factors could enhance SCP adoption in the UK and bring the country closer to meeting its sustainability targets.

- (1) SCP adoption is largely hindered by costs. QS, as cost consultants, are expected to use their expertise to make SCP more appealing to clients. However, achieving this requires further research, increased standardization, and broader SCP implementation. Once SCP are optimized for the UK and standardization limits unsustainable options, QS will be better positioned to promote SCP adoption. This, in turn, would drive demand, increase SCP availability, and reduce costs, enhancing SCP attractiveness.
- (2) Secondly, consistent stakeholder collaboration enables QS to significantly influence sustainable decision-making. All stakeholders—including clients, governments, organizations, and designers—must contribute to sustainability efforts. Client demand directly influences project sustainability levels and SCP adoption. To make SCP selection based on long-term financial, social, and environmental value

rather than short-term cost, QS can guide clients in recognising the broader benefits of SCP. Government policies and standardization can restrict unsustainable options, empowering QS to advocate for SCP. Organizations should offer QS tailored training and opportunities to apply their skills in SCP implementation. Designers, by involving QS earlier in project planning, can benefit from QS expertise in promoting sustainable choices.

- (3) Increased standardization reduces clients' ability to select unsustainable, cheaper, and more convenient construction practices, fostering transparency and reducing "tick-boxing." This would enhance QS influence over SCP implementation in projects.
- (4) The construction industry must invest in research to develop SCP tailored to the UK, thereby reducing transportation costs and carbon emissions. QS should continually update their knowledge on sustainability, emerging concepts, and innovative tools to increase their influence on SCP implementation.

The research faced some limitations, as it focused on the UK construction industry and its professionals, which may affect generalizability. Future studies could validate and expand upon these findings through empirical research to gain further insights into the QS role and the interplay of these factors in SCP adoption.

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## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

*The authors confirm contribution to the paper as follows: **study conception and design:** Quan Phung; **data collection:** Laiba Khan; **analysis and interpretation of results:** Nguyet Tong, Laiba Khan, Quan Phung; **draft manuscript preparation:** Laiba Khan, Quan Phung. All authors reviewed the results and approved the final version of the manuscript.*

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