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Relational Contracting for Sustainable Construction

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ABSTRACT

'Classical' or traditional construction contracting systems are frequently criticized for lowering productivity and satisfaction levels. Secondly, a broader perspective and a longer time horizon are being urged in order to develop more sustainable construction. Thirdly, a suitable procurement strategy is needed to allow the foregoing two issues at appropriate project stages. These three concerns are consolidated in this paper, to interact based on 'relational contracting' (RC) principles, for more sustainable construction. RC principles allow a degree of collaboration between contracting parties that is not allowed under classical contracting systems. Such collaboration can empower improved performance at all project stages. Secondly, the 'sustainable relationships' that are thereby generated, also inculcate 'long term' mindsets that facilitate the desired focus on more sustainable designs and construction methods which would better address the whole life cycle of the planned structure. In this context, relationally integrated teams and related techniques and tools e.g. for enabling joint risk management (JRM), and for evaluating sustainability, are seen to be useful for sustainable construction, which will in turn provide a sound foundation for sustainable development.

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INTRODUCTION

Sustainable delivery of construction projects requires integrated efforts of contracting parties from earlier project stages, in order to jointly consider sustainability issues and provide suitable solutions starting from the design stage, and to continue such collaboration through to the delivery stage. Such integration is not currently allowed under the widely practiced traditional procurement strategies and 'classical' contracting systems. They are criticized for resulting into poor productivity and low stakeholder satisfaction levels. Therefore, a wider and longer term perspective has been argued for more sustainable construction. While there are other obvious negative contributors to be addressed, much of the blame for poor industry performance and short-sightedness is attributed to the traditionally adversarial contracting modalities (Gottlieb, S.C., K. Haugbølle, 2013). These adversarial dynamics dissipate resources and energies on: (a) inter-organizational interface management e.g. with multiple/ duplicated supervisory levels and (b) disputes on perceived responsibilities/ contractual liabilities, across the entirey of the increasingly complex construction project supply chains (Ling, F.Y.Y., 2014).

Relational contracting (RC) theory (Macneil, I.R., 1974) provides a sound basis for addressing such potential dispute-generating future issues, e.g. through: (a) a major re-alignment towards 'common objectives' and 'partnering' approaches in general; and (b) injecting a healthy dose of joint risk management (JRM), over and above classical (and neo-classical) contracting and risk allocation principles (Rahman, M.M., M.M. Kumaraswamy, 2002). Effective delivery of sustainable construction also requires sustainability assessment during the feasibility, design, construction, operation, maintenance and decommissioning stages; and through suitable tools to help in injecting sustainability considerations into decision-making at those cycle stages (Ugwu, O.O., 2003).

Moreover, such integrated efforts and assessment of sustainability issues should be organized in suitable procurement arrangements, in order that their joint strategic decisions could better target the broader and longer-term overall organizational objectives. This paper provides a broad overview of strategies and potential benefits of such approaches, harmonized along with a proposed procurement arrangement, with a focus on generating integrated teamworking towards sustainable construction.

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Relational Contracting and Joint Risk Management:

Traditional construction procurement and classical contracting strategies are blamed for adversarial force fields (e.g. profit) that drive project participants apart. Valuable time and resources are wasted on complex cross-organizational interfaces, and disputes on contractual responsibilities and liabilities. 'Transaction costs' are thereby increased across the supply chain. In this context, contracts were classified into 'classical', 'neoclassical' and 'relational'; their basic differences were identified (Williamson, O.E., 1985) and relevant comparisons were summarized. Moreover, many clients were noted to be risk-evasive under classical contract regimes, where contractor selection strategies have been mainly price-based, and hence often led to performance shortfalls, as well as a neglect of environmental and whole-life considerations that would have otherwise increased tender prices. The needs for broader selection criteria, optimized construction supply chains and smoother inter-organizational transactions have been highlighted by practitioners and researchers, (Rahman, M.M., 2005; Rahman, M.M., 2012).

The RC principles provide a sound basis for reducing the formal transactions, friction and disputes by: (a) focusing on 'common objectives' through value for money; (b) more co-operative approaches e.g. through integrated project delivery arrangements; and (c) injecting joint risk management (JRM) mechanisms over and above traditional or 'classical' contracting principles and practices. RC and JRM can empower proactive procurement and project delivery strategies, e.g. by providing suitable incentives for designers, contractors, sub-contractors and suppliers, aiming at a longer-term vision; and a more holistic teamworking mind-set (Rahman, M.M., 2012) and crafting sustainability principles in a suitable procurement arrangement (Kilbert, C.J., 2013). The need for such a shift is highlighted by many studies that highlight the importance of cooperation for project success. Moreover, the value of RC in these respects has been confirmed by a series of well-structured surveys (Rahman, M.M., 2003).

Relational approaches could also extend beyond just one project and lead to more 'sustainable' relationships e.g. through the 'framework agreements', integrated supply chains, or any innovative procurement arrangements, or even less formal arrangements that clients (with large and continuing construction project portfolios, e.g. in the housing and health sub-sectors) can develop with selected contractors and other team members. Such arrangements enable a client to choose project team members for each specific project from a small group that is quite familiar with its specific needs and priorities. This then reduces misunderstandings and transactional friction between team members who have worked together before. This in turn reduces overheads, rework and therefore overall costs. Moreover, contractors, consultants and suppliers who foresee a reasonably continuous volume of work of a certain type (e.g. supermarkets or hospital buildings), would be readier to invest in equipment and specialist personnel that could further reduce overheads and unit costs in the long run.

Sustainability Issues and Indicators:

The previous focus on 'cost', 'time' and 'quality' performance was driven by the zero-sum mindsets imposed by rigid classical contracting systems. Apart from the attitudinal shift encouraged towards the win-win culture, as advocated in collaborative efforts discussed above; an increasing awareness of infrastructure life-cycles and wider sustainable issues has helped to broaden the portfolio of performance criteria applied to construction projects for sustainable construction, for 'creating a healthy built environment using resource-efficient ecologically based principles'. The aim is to deliver built assets that enhance quality of life, offer customer satisfaction, offer flexibility and the potential to cater for user changes in the future, provide and support desirable natural and social environments, and maximize the efficient use of resources (Rahman, M.M., 2003). A suitable sustainability crafting strategy at the design stage, and an assessment method involving appropriate sustainability indicators, is thus called for, to evaluate sustainability issues at various life-cycle stages.

In this respect, a classification of an hierarchy of indicators was suggested to assist designers to address sustainability issues in their designs (Kashyap, M., 2003). Moreover, approaches to injecting durability considerations into the design process were suggested, with examples for durability design of bridges through the evaluation of long term performance, operation and maintenance requirements, materials durabilities and life-cycle costs. Furthermore, a survey captured interesting perceptions on 55 sustainability indicators to be used at various life-cycle stages. For example, 'resource utilization' was ranked on top overall, in terms of re-usability of moulds and formwork; while public health & safety was considered very important. Solid waste management, innovative materials, and design flexibility were also considered important by the respondent stake-holders (Ugwu, O.O., 2003). All these are essential factors/ strategies for 'green construction' in general, and are useful to apply for sustainability assessment.

Sustainable Construction Procurement Arrangements:

Sustainable construction refers to the application of the principles of sustainable development to the

construction industry, to all kinds of construction projects and from 'cradle to grave', i.e. project selection, site selection, feasibility, design, planning, through to operation, demolition and reuse; and also balancing between social, environmental and economic aspects of developments. These are perceived to be achieved by a sustainable procurement arrangement where organizations meet their needs for goods, services, works and utilities that achieve value for money in terms of benefiting the organization, and also to society and the economy, while minimizing damage to the environment.

Previous studies focused on identifying factors for sustainable construction and strategies for embracing sustainability practices, but not on sustainable procurement arrangement. As such, a recently commenced study has extracted 41 factors in a preliminary literature review. These are being processed through further study and consultation of the industry experts, targeting to develop a framework for sustainable procurement arrangements, in order to harmonize and offer a balanced solution between relational contracting and sustainability, as discussed in the previous two sections. All these are expected to offer relational integration required for sustainable construction projects, as in figure 1. This in turn will allow convergence of the relevant resultant force-fields towards teamworking.

Concluding Observations:

RC can yield multiple mutual benefits. Apart from boosting productivity & client satisfaction levels through improved relationships, trust and JRM, the longer-term RC perspective empowers and encourages a focus on sustainable construction. This should generate more sustainable relationships across the supply chain, which would in turn feed back into further benefits e.g. through reduced costs of future transactions, which should require fewer checks, justifications and paperwork. For example, these approaches can contribute to continuity of work for consultants, contractors, sub-contractors and suppliers – with 'large' current clients; apart from enhanced reputations helping to attract new clients. Clients can also benefit from lower prices, given the reduced overheads of the supply chain, arising firstly from continuous work of a certain type, e.g. public housing or road construction. This also enables the supply chains of such clients to invest in people skills and equipment that can provide more efficient and cost-effective services of this type over the longer term. The increasing knowledge of each-others' needs and the trust generated in sustainable relationships would also reduce transactional friction, disputes and indeed the control efforts required from all parties involved.

However, RC must be approached with care, to minimize potential dangers of misinterpretation and/or abuse. Secondly, RC may not be universally applicable to all construction scenarios, while different degrees of RC may be more appropriate to suit conditions and priorities on certain projects. Special efforts are also needed to overcome the inertia, if not resistance of experienced personnel trained in the 'non-trusting' approaches of classical contracting. Taking these observations into consideration, along with the findings summarized in this paper, it is concluded that carefully managed RC can significantly boost efforts towards sustainable win-win-win scenarios for all stake-holders, and thereby towards sustainable construction, that will contribute to sustainable development.

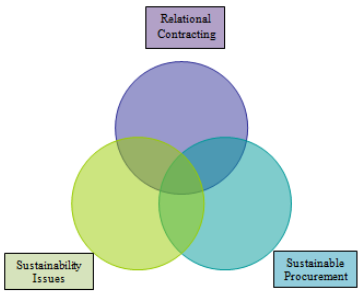

Fig. 1: Sustainable Construction.

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