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INDUSTRY DEVELOPMENT

Refereed Paper

COLLABORATION AND ENGAGEMENT THROUGHOUT THE SUPPLY CHAIN: THE ROLE OF GOVERNMENT

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ABSTRACT

Collaboration is acknowledged as a key to continued growth in the Australian construction industry. Government, as a major industry client, has an important role to play with respect to fostering collaboration and ensuring the global competitiveness of the industry. The paper draws upon data collected for the *Construction 2020* study and aims to demonstrate that government can a) help to break down the adversarial situation that currently exists between clients, project managers and subcontractors; and b) allow the supply chain to collaborate more effectively in terms of satisfying the relational and financial needs of all parties. Government can also provide a clear set of guidelines (backed up by a functional dispute resolution system) that will promote confidence with respect to forging relationships. Thus, the paper will discuss the way in which public policy can be more closely aligned with actual industry needs in order to promote greater collaboration.

Keywords: Public Policy, Collaboration, Supply Chain

1.0 INTRODUCTION

Collaboration and strategic alliances remain significant topics in today's business world. The formal commercial application of the idea began to evolve and mature in the 1980s, when a number of business scholars writing for a strategic management audience identified the advantages of working with competing firms in order to derive benefits from perceived synergies. The advantages of sharing core competencies and exchanging process technologies were also emphasised. Indeed, Hamel, Doz and Prahalad (1989, 133) wrote that "collaboration between competitors is in fashion". A decade and a half later, this trend continues. Above all, one thing remains clear. Collaboration in all its forms, such as formal alliances, joint ventures and partnering, can only succeed in an environment that facilitates trust and the timely exchange of information (Cox and Townsend, 1998).

The potential of collaboration has shifted in recent years to the supply chain, where competition is not an issue, but reducing total system cost most certainly is. The Australian construction industry has traditionally been viewed as "fragmented and adversarial" (Hampson and Brandon, 2004, 16). Construction firms, in general, have not demonstrated a great propensity to work together throughout the supply chain. This is mainly the result of divergent corporate goals, different roles in the supply chain (and therefore perceived lack of compatibility), and an unwillingness to commit to long-term commercial relationships (Miller *et al.*, 2001). Various studies maintain this is a worldwide phenomenon (Construction Task Force, 1998; Latham, 1994). As a result, construction businesses, both large and small, have come to the realisation that a more streamlined and relationship-oriented business model, with respect to procurement, outsourcing and contracting labour, can have benefits for the whole of the industry, and its constituent supply chains.

This situation described above is reinforced by the *Construction 2020* data, where "less adversarial business relationships" was one of the top priorities listed by questionnaire respondents (CRC-CI, 2004). Furthermore, the "fragmented and adversarial industry structure" was the most frequently selected barrier to change – it was selected by 166 of the 285 respondents, although internationally focussed organisations saw this as less of a barrier (CRC-CI, 2004). Of those 166 industry respondents, 31% viewed the industry structure as the most significant barrier to change (CRC-CI, 2004). Problems clearly remain, especially in terms of allowing a relationship-oriented model to take root. Indeed, one discussion of construction industry partnering points out the benefits to clients and major contractors, but adds that SMEs are being short-changed (Crane, 2005). Many construction firms based in Australia believe it is government's role to assist – at least in part – in bringing about change. Indeed, qualitative analysis of the *Construction 2020* data suggested that "improving the business environment" was one of three important themes to emerge from the study, and that "leadership by government" would be required (Hampson and Brandon, 2004, 39; CRC-CI, 2004).

2.0 THE BROADER SUPPLY CHAIN PICTURE

The future for collaboration and strategic alliances does not rest merely with firms existing at the same level in the supply chain. Rather, it will rest increasingly with the various individual components that constitute it. This is especially the case since outsourcing has become increasingly important (Bragg and Kumar, 2003, 40; Dayanand and Padman, 2001), while interest in vertical integration has generally declined (Grossman and Helpman, 2002; Rasheed and Gilley, 2005). For the construction industry, outsourcing will often take the form of off-site manufacture by subcontractors or other suppliers (Hampson and Brandon, 2004). The *Construction 2020* project and its outcomes highlighted the Australian construction industry's acknowledgement of the importance of outsourcing and off-site manufacture as a means of driving down costs (CRC-CI, 2004). Lei (2005, 196) defines outsourcing as "the

decision to utilize other firms to perform value-creating activities ... once conducted in-house”, while Rasheed and Gilley (2005, 522) add that “outsourcing [is] ... the fundamental decision to reject the internalization of an activity”. Outsourcing thus allows firms to concentrate on their core competencies (Allen and Chandrashekar, 2000; Quinn, 1992). The logic behind this, in the case of the construction industry, is that it allows project management firms to concentrate on strategic project management and coordination (Dess *et al.*, 1995), which is what Quinn (1992, 72) would define as their “own internal knowledge”. Thus greater engagement of all supply-chain components is more imperative than ever before. A failure to do so could result in highly costly misunderstandings that could ultimately reduce the intended savings generated from an off-site manufacturing and outsourcing approach (Grossman and Helpman, 2002).

As a result of a failure to integrate more fully, the construction industry as a whole remains less competitive (especially in a global sense) than it could otherwise be. The key, therefore, to reducing total system cost is to enable the various components to interact in a more relational and less transactional fashion (Miller *et al.*, 2001). According to the *Construction 2020* data, the Australian construction industry already recognises this as the ideal state, and has even listed it as a definite trend. In fact, 144 of the 285 respondents felt this to be the case (CRC-CI, 2004). Still, industry itself has found it difficult to achieve a more relationship-based industry structure. As will be explained, this is for a variety of reasons.

The industry structure needs to be taken into account. The Australian construction industry is dominated by a relatively small number of top-tier project management firms that are responsible for overseeing the most financially significant projects. Naturally, these large firms cannot (and indeed choose not to) do everything themselves and therefore contract-out sections of their projects to smaller and more specialised firms. Studies estimate subcontracting to be in the vicinity of 80% of contract expenditure in first-world nations – a recent paper from the United Kingdom quotes 85% (Packham *et al.*, 2001). This implies that subcontractors should have a larger role to play in the management of the construction process (Saad and Jones, 1998). An important outcome of the *Construction 2020* report is that businesses would like to see “a regulatory, financial and procurement framework which encourages longer-term thinking and returns, a sharing of ideas and innovations between stakeholders, and a fair distribution of risks and returns” (Hampson and Brandon, 2004, 16). The inverse of this is the current adversarial system characterised by fragmentation and low-bid tendering. This, according to the *Construction 2020* survey data (CRC-CI, 2004), is preventing the industry from becoming stronger.

The Australian construction industry is one of the nation’s largest employers. According to the conservative ABS definition, the industry currently remains the 4th largest contributor to GDP across all industries and comprises 340,000 businesses, which employ 716,000 persons (ABS 5206.0 of 2005; 8777.0 of 2003; Australian Business Register Data, 2002). One study pertaining to the United Kingdom, whose construction industry is broadly similar, holds that “for every person employed in construction [in the official figures] another half of a person is in self-employment” (Miller *et al.*, 2004, 534). Furthermore, Australian governments are committed to integrating Australia more fully into a global marketplace, which will obviously increase the pool of potential entrants into the Australian market. Indeed, “globalisation of the business environment” is acknowledged as an important driver in the Australian property and construction industry (Hampson and Brandon, 2004, 2). This being the case, it is clearly in the national interest to reduce the adversarial nature of the industry so that it can respond better to the changing state of the market. In short, a fragmented, adversarial and barrier-filled industry will find it difficult to withstand the pressure of increased competition, which may result in greater industry fragmentation. Nor can such a situation provide the right environment to foster the development of companies based in Australia (or that of subsidiaries of offshore-based companies with Australian interests) with

respect to competing in overseas markets. Consequently, it is in the common interest of both government and industry to forestall this possibility.

3.0 THE ROLE OF GOVERNMENT

Given the position and interests of today's construction industry firms, it is difficult to imagine that a swathe of legislative changes or regulatory reforms would produce a less adversarial and more equitable industry. Indeed, a correlative interpretation of the *Construction 2020* data suggests that industry respondents believe that more levels of regulatory control would make existing regulations appear outdated (CRC-CI, 2004). This was especially the view of asset management organisations (CRC-CI, 2004). According to the same data, construction industry practitioners have placed an emphasis on increased public/private partnerships; in fact, 96 out of the 285 respondents felt that this was a growing trend (CRC-CI, 2004). What the data do not tell us, however, is how a greater level of co-operation between the public and private sectors might come about.

That local, state and federal governments remain some of the major clients of the Australian construction industry is highly significant. Of especial import is that government interaction with the construction industry also sets a benchmark or industry standard that is generally followed by private enterprise. As Miller *et al.* (2004, 538) point out, "Government policies can play a crucial role because of the importance of government in shaping demand conditions directly and indirectly". As a consequence, government clients should be responsible for ensuring that this benchmark serves the construction industry as a whole and, by extension, the national economy – rather than just immediate political interests (Latham, 2004). This, of course, will necessitate a change in public policy mindset.

In addition, government must devise the means to communicate, in an effective and timely fashion, the long-term benefits of commissioning marginally higher-cost (but more value-for-money) projects to the constituency (Latham, 2004). Qualitative data gleaned from *Construction 2020* makes it clear that client education is a requisite for an improved construction industry, especially since it allows better-informed clients to make better-informed decisions (CRC-CI, 2004). Indeed, 91 of the 285 questionnaire respondents selected "lack of informed client leadership" as a barrier to change (CRC-CI, 2004). This view is supported by other studies (e.g. Miller *et al.*, 2004). Thus government must make a greater commitment in terms of determining "what they want out of a building and its environment" (CRC-CI, 2004).

Aside from these broader observations, specific barriers are preventing positive change. There remains an ingrained culture that the lowest price is the best (Hampson and Brandon, 2004), which is reflected in traditional subcontracting regimes (Bresnen and Marshall, 2000). As introduced above, governments are generally concerned, for political purposes, to deliver projects on-time and under-budget, sometimes to the detriment of quality (Low and Tan, 1996). It is traditionally assumed that the rapid and low-cost completion of major infrastructure projects, such as highways, bridges and port facilities, will be popular in the eyes of the electorate. A failure to do so is thought to have the inverse effect.

One respondent to the *Construction 2020* survey questioned the interest in "short-term political gains in infrastructure", which often resulted in "long-term cost to the industry and community" (CRC-CI, 2004). Another respondent urged that politics be removed from the decision-making process (CRC-CI, 2004). The combination of politics and procurement has become particularly manifest in the wake of public sector agencies becoming more closely aligned to the political agenda of the government of the day, and the move to embrace a whole-of-government perspective (Brown *et al.*, 2003; Waterhouse *et al.*, 2001). This is a result of what is termed New Public Management (NPM) and its more relationship-oriented

offshoot (viz. hybrid model NPM), which became increasingly *de rigueur* in the 1980s and thereafter. These ideas have also gone hand-in-hand with the notion that providers of public services should “be chosen by competitive tendering” (Smyth, 1997, 21), with the emphasis on “short-term cost savings” (Smyth, 1997, 25).

Insufficient thought is still given to value for money with respect to the overall lifecycle of the constructed facility. Unfortunately, the phenomenon of bounded rationality, as Erridge *et al.* (1999, 37) point out, can result, in the event of vague selection criteria and unclear delivery requirements, in bids “at a lower than optimum price”. Thus, when tenders are called for a new government project, applicants often feel that they must present an application that will meet client expectations in the short-term, but does so at minimal cost (Low and Tan, 1996). This sets an industry standard. As a consequence, the Australian construction industry is characterised by low-bid tendering. A concomitant of this, when it is understood that the successful project management applicant will contract out sections of the project to specialised firms, is inequitable risk-sharing and low profit margins for the smaller project participants (Erridge *et al.*, 1999). This is especially so given the preponderance of short-term relationships.

Of note is that 108 of the 285 respondents to the *Construction 2020* questionnaire listed current industry profit margins as a barrier to change (CRC-CI, 2004). Moreover, reduced profits margins and onerous contractual obligations have widened inter-organisational distrust (Packham *et al.*, 2003; Miller *et al.*, 2004), a situation which has hindered the development of more integrated relationships. This is especially the case when the day-to-day uncertainty of the industry means that small subcontracting firms may be characterised as “price takers” (O’Farrell and Hitchens, 1988; Miller *et al.*, 2001). For many firms (and especially SMEs), low profit margins, especially when the increasing cost of variables such as fuel and raw materials are taken into account, are becoming unsustainable.

This situation demands rectification. The data collected for the *Construction 2020* project indicate that respondents feel that government should set an appropriate standard across the board (CRC-CI, 2004). Likewise, the industry is increasingly eager to point out the advantages of a client-driven construction industry. This being so, public sector clients must realise the effects of their role as “opinion leaders”. Opinion leaders can have a tremendous impact on the decisions taken by people or agencies that look for direction from what is perceived as an important and thus highly influential person or entity. Government policy in terms of contracting-out and procurement often becomes an industry norm. This is especially the case since government clients (in the case of higher-level infrastructure projects) often demand that contractors have a history of operating in the required way. Thus firms that do not regularly submit tenders for public works projects often choose to operate according to the prescribed fashion. Pre-qualified supplier arrangements might also be adduced. Public sector clients, therefore, must realise that a lifecycle analysis of facilities should take precedence over the current – and almost universally damaging – low-bid tender mindset that characterises the industry (Low and Tan, 1996). A push towards overall and long-term quality, i.e. a value-for-money solution rather than merely a ‘cheap’ and short-term vote-winning solution, will help raise margins throughout the supply chain. This, it seems, will allow firms to invest more in their own infrastructure and capabilities.

The point might be taken even further. If construction firms currently operating in the Australian market are to compete effectively in the global market, they need to plan for the future rather than merely attend to the needs of the day. The incorporation of innovation into the construction industry is viewed as a clear desideratum (Brandon, 2005; Hampson and Brown, 2005). Indeed, the literature emphasises that government, as an important client, has a key role to play in terms of driving innovation through demand (Miller *et al.*, 2004, 539). But innovation comes at a substantial premium and struggling companies (such as many SMEs) may be unable to commit the financial resources needed for technological change – even

though evidence exists to suggest that smaller firms are often more willing to embrace innovative practices or new technologies (Lefebvre *et al.*, 1997). This was recognised as early as the late 1980s in a study conducted by O'Farrell and Hitchens (1988).

In today's industry environment of low margins and relative day-to-day uncertainty, only the larger players (i.e. project management firms) have the ability to incorporate cutting-edge practices into their operational make-up. One of the benefits of outsourcing for these firms is that they are able to devolve the risk of investing in frontier technologies to smaller subcontracting firms (Rasheed and Gilley, 2005). However, if these smaller firms fail to innovate owing to financial pressure, the overall efficacy of outsourcing is substantially reduced – a situation of benefit to nobody. Thus the current climate will have the most immediate effect on Australian construction industry SMEs, which are the backbone of the industry.'

The latest data indicate that 94% of Australian construction business employ fewer than five people each (Hampson and Brandon, 2004, 10). It is vital, therefore, that these small businesses find a voice so that their needs are adequately addressed. Indeed, most Australian construction businesses are small, with over 90% having an annual turnover of less than \$1M (ABS 5206.0 of 2005; 8777.0 of 2003; Australian Business Register Data, 2002). As a consequence, it is surely in the national interest to enable construction industry SMEs, collectively one of the nation's biggest employers, to commit themselves more readily to forward thinking, lest they be overtaken by new market entrants with the ability to apply cutting-edge techniques to future projects. While conventional models of economic growth place SMEs in a secondary role and stress the way in which they support the activities of larger firms (Reynolds *et al.*, 1999), more recent studies contend that the facilitation of entrepreneurship (and thus lower-echelon growth) among SMEs can have an important impact on a nation's economy (Miller *et al.*, 2002; Miller *et al.*, 2004). Government, therefore, needs to do all it can in order to allow SMEs to invest in themselves and thereby remain competitive.

Increased government regulation is not always necessary in terms of promoting an improved business environment. Rather, a change in *policy* rather than regulation should have positive effects for all stakeholders. Indeed, a move towards "best possible project solutions over the life cycle of the facility" (Hampson and Brandon, 2004, 17) not only allows greater savings in the long-term (i.e. in terms of suitability, maintenance and sustainability), but also allows greater freedom with respect to setting margins – which means that the financial benefit can be filtered down from project management firms to contracted firms of all sizes. The realisation of this should be incorporated into public sector procurement and outsourcing policy. Moreover, this change in mind-set should see potential project management firms, which are obviously key participants, putting forward tenders that are reasonable in terms of cost, but are still likely to entail a project solution that serves – if not in some aspects exceeds – the present demands of the client. The emphasis should be on value and "good design" (Latham, 1994, 5). A less adversarial atmosphere between the various links in the supply chain (the expected concomitant of loosening profit margins) will enable a more appropriate environment for greater collaboration to take place. A fairer distribution of risks and returns should also result, which will particularly be welcomed by construction industry SMEs (especially those seeking to innovate).

4.0 INTEGRATING THE SUPPLY CHAIN

Major construction companies operating in Australia are now able to work together in a consortium in order to bid for high-profile projects. A good example of this is the consortium (viz. ConnectEast) recently formed by Macquarie Bank and the major construction companies Thiess and John Holland. In 2004, ConnectEast successfully bid for the high-

profile Mitcham-Frankston toll road in Victoria. Despite this, collaboration needs to exist in the vertical plane in addition to the horizontal so that the industry might become more flexible and responsive (Spencer, 2005).

Construction projects usually involve temporary multi-organisations that fall by the wayside after project completion (Cherns and Bryant, 1984; Winch, 1989). This means that project participants spend a good deal of time adjusting to new partnering situations. This, of course, hardly helps the project team to achieve lean construction goals, or to ensure rapid harmonisation of practices (Miller *et al.*, 2001; Stewart *et al.*, 2003). Thus industry collaboration need not relate solely to the larger project-management firms joining forces (which, in any case, could be counterproductive from a competition perspective). Rather, it should entail large firms engaging more readily with SMEs and off-site manufacturers, and SMEs and off-site manufacturers engaging more readily with their equipment or labour suppliers. Outsourcing and contracting-out, therefore, cannot continue as “arm’s-length market transaction[s]” (Rasheed and Gilley, 2005, 526), although Lei (2005) points out that this is the most usual method. In addition, SMEs need to be able to set aside their differences in order to collaborate more effectively and thus broaden their bargaining power. In the present contracting scenario, larger firms are well-gearred to survive, but smaller firms are not (Miller *et al.*, 2004).

The scenario envisaged above would allow construction firms based in Australia to become even more competitive than they currently are. Of course, collaboration between individual components of the supply chain will be a requisite component of this change. It is widely recognised that effective collaboration can only take place in an atmosphere of information-sharing. Widely-recognised, too, is that strategic partnerships between suppliers and retailers, which can be defined as multifaceted, goal-oriented, long-term-partnerships between two companies in which both risks and rewards are shared (Simchi-Levi *et al.* 2003, 147), will benefit the entire industry, and not those entities immediately associated with the supply of materials. Industry information that flows in a timely fashion throughout the supply chain enables suppliers to make intelligent demand forecasts, which, of course, can help reduce total system-wide cost (a concomitant of stock-outs and carrying excess inventory). Information supplied at the wholesaler and retailer level can quickly allow other members of the supply chain to produce and supply the right amount of product, thereby reducing inventory costs, depreciation and lead times (Sadarangani and Gallucci 2004). Similar information can be transmitted even further up the supply chain so that raw materials needed for manufacturing or construction processes are there when needed (Hannon, 2003). It is obvious that, while every demand forecast is inherently inaccurate to some degree, means exist by which this inaccuracy can be minimised (Mentzer and Moon, 2004). Thus the symbiotic nature of a supply chain, when viewed as a system, needs to be taken into account – savings result “when there’s collaboration from all companies in the supply chain” (Mentzer and Moon, 2004, 40). Once again, collaboration is the key. Of course, it is in the industry’s best interests – and that of its governing bodies – to ensure that this occurs.

The *Construction 2020* data appear to indicate that government is expected to make an increased effort to provide the appropriate framework for greater collaboration to take place. This need not necessarily refer to further legislation or increased regulatory activity, although some streamlining in certain areas might prove useful. Given that the Australian construction industry is generally described as risk-averse (Hampson and Brandon 2004), it seems clear that government needs to create an environment that will promote more confidence. Trust is obviously required, especially in terms of the dissemination of information, which is arguably the most vital element with respect to ensuring the success of a collaborative approach to business (Packham *et al.*, 2001).

While the last thing that the industry wants is a further set of regulations, what it *does* want, as far as can be determined from the *Construction 2020* data, is a clear set of guidelines that

will determine industry best practice for collaboration between firms of all sizes. Thus the role of government as legislator/regulator needs to be scrutinised more closely. In addition, a functional and equitable dispute-resolution system would need to be put in place in order to provide a fall-back should a collaborative exercise come undone. A study conducted in the UK has shown that subcontracting firms feel that “they are vulnerable to bullying by main contractors”, which is undoing much of the good work already achieved (Packham *et al.*, 2001, 12). It is imperative, therefore, that peak industry groups and government establish and communicate guidelines for effect interaction (and arbitrate or resolve matters where necessary) in order to foster confidence. Furthermore, a dispute-resolution mechanism would also provide further guidance on best practice with respect to collaboration. Thus, government can help to alleviate some of the uncertainty (especially with regard to SMEs) and thereby promote a less adversarial industry.

Research conducted in the United Kingdom, and Wales in particular, suggests that government (especially regional government) has an important role to play in terms of allowing SMEs to engage more readily with each other (Stewart *et al.*, 2003). Again, this relates to *policy* rather than legislative or regulatory change. It is recognised that people and firms often do not want to collaborate in the more traditional industries. In a hypothetical situation in which, if two SMEs were to work together, one would gain 15% more as a result and the other 10% more, the latter company might prove reluctant to proceed on the basis that the other firm is securing a greater advantage. Government cannot make these firms work together – so much has been proved. However, government can provide a conduit that will allow such firms to interact more readily and develop the trust required to deepen their commitment to collaboration.

Construction firms can do much themselves in order to promote further engagement between large companies and SMEs. The business advantage of such interaction needs to be pointed out so that recalcitrant firms are more prepared to listen to the call for greater collaboration. With regard to this, public policy has an important part to play in making sure that this becomes more widely recognised. In particular, the larger and dominant firms need to understand better the degree to which they rely on SMEs. This is naturally where the CRC for Construction Innovation has an important didactic role to play. A continued failure to address the concerns of SMEs, i.e. dwindling profit margins, the increasing devolution of risk, and the greater demand for reduced lead times (which results in greater workplace pressure for small owner-operators in particular), could prove highly problematic. In time, a reduced pool of construction industry SMEs could allow these smaller firms to raise their contract fees or labour costs, which could, in turn, affect the performance of the larger firms and thereby bring the existing industry members into a precarious position. This could encourage even greater intrusion into the Australian property and construction marketplace, something which the current state of the industry may find difficult to absorb.

5.0 CONCLUSION

In sum, it is up to construction industry businesses to realise the benefits of becoming involved in more integrated and more flexible supply chains that can readily adapt to client and market needs. The establishment of more relationship-oriented (rather than merely transaction-oriented) business practices, a greater interchange of information, and a more equitable sharing of risk and revenue will see the Australian construction industry better poised to deliver in an increasingly globalised industry. As a consequence, public sector agencies, as important clients of the construction industry, need to realise that, in order for the Australian industry to remain a significant employer and wealth generator, they must do more to provide the appropriate business environment.

Government agencies clearly have an important role to play. Thus, in terms of promoting greater industrial integration and collaboration, it seems necessary to point out that tighter legislation and more rigorous industry regulation is not the key. In fact, such a scenario might have adverse repercussions (it may drive down the value of companies already operating in the industry). One might adduce the ongoing debate concerning the privatisation of Telstra, which is allegedly constrained by government regulation that inhibits its overall business performance. Greater regulatory control may also give construction industry businesses a sense of greater constriction – it would hardly promote investment at a firm level. Rather, government and its agencies must lead the way by means of more appropriate policy, especially with respect to their own actions as industry clients, in addition to providing the appropriate dispute-resolution mechanisms and accompanying safety-nets.

The mindset of cheapest equals best, which has led to a culture of low-cost tendering and devolution of risk to smaller parties, needs to be changed. The over-arching desire for “short-term profit” and “quick-fix horizons” (Hampson and Brandon, 2004, 13) must be erased from the minds of senior public service executives, and, what is more, the ministers whom they serve. While quick returns on government dollars may win votes in the general community (at least in the short term), the pressure that it puts on the industry as a whole is highly detrimental. A more collaborative construction industry will lead to a stronger and more flexible construction sector, and one better positioned for the impending rigours of operating in a more global and thus more competitive marketplace.

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