



# Factors Leading to Successful Implementation of the Prison Capacity Development Programme in New Zealand

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## Abstract

Following establishment of the Prison Capacity Development Programme (PCDP) a major programme of work was scoped to increase available prison capacity in light of forecast increases to prisoner populations and to replace end-of-life prison facilities. This paper reports on research evaluating a project to implement double bunking accommodation at four sites in New Zealand.

The research employed a case study methodology. Qualitative information was gathered from four prison sites. This enabled multiple site-specific perspectives to be captured which enabled commonalities and differences across cases to be identified. The fieldwork included interviews with 20 participants reflecting various roles and responsibilities associated with the construction project.

Collaboration was unanimously cited as a primary explanation for the project's success. Collaboration was integral to each component of the project and was referenced in connection to the relationship between national office and prison staff, the Department of Corrections and the construction companies. The importance placed on collaboration was evidenced in the use of collaborative work practices at each stage of the project. In addition, collaboration was garnered through a multi-tiered and multi-located management model. In this model national office provided strategic leadership and a strong coordinating role while each of the prison sites, in an appreciation of site specific expertise, were empowered to make the majority of the on-site decisions. This helped ensure the final build met the users' requirements. Other factors that influenced the success of the project include clear expression of imperative, characteristics of the physical environment and adoption of strategies to maintain business as usual.

**Keywords: stakeholder collaboration, construction project management, prison construction**

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## 1. Introduction

The Prison Capacity Development Programme (PCDP) was established by the New Zealand Department of Corrections in December 2008. A major programme of work was scoped to increase available prison capacity to meet a Ministry of Justice forecast of prisoner population numbers and to replace end-of-life prison facilities. The first project to be progressed was the addition of capacity through double-bunking parts of the existing prison estate. Double bunking has been implemented in other western countries to deal with steadily increasing prison populations. In 1995 Canada was double bunking 25% of its prisoners (Daubney 2002) and the American Bureau of Prisons currently allows for 25% of its maximum security prisoners and increasing to 100% of low security prisoners to be housed two to a cell (Higgins 1996). Other researchers suggest that prisoner population intensification by double bunking can raise concerns about civil liberties and prisoner welfare (Higgins 1996; Bennett, Flanagan et al. 1997) however this paper does not traverse these issues. They are considered outside the scope of the research, which is to identify factors that have contributed to successful implementation of the projects.

Double bunking was seen as the only practical option that could deliver the necessary capacity in the required timeframe and in 2009 Cabinet gave approval to begin double bunking four existing regional prison sites as well as to allow for it in the redevelopment of Mount Eden Prison in Auckland. By double bunking existing cells, the Department was able to add, at a cost significantly under what had been budgeted, capacity equal to three prisons in less than 12-months. These achievements were seen to be significant in light of the fact all four projects were completed in populated prison environments, where usual operations were required to be maintained throughout the construction period. Full integrity of the security system was required in circumstances that could see up to 150 contractors on site at any one time. This was further exacerbated by the security risks posed by the number of tools contractors needed to bring on site, the risk that contractors might introduce contraband and the risk of prisoner escape.

Given the budgetary and timescale successes (Waterhouse 2010), and especially in light of the fact that no security breaches occurred during the construction period, the Department of Corrections commissioned an evaluation to understand factors leading to the project's success (Roguski, Kingi and Gjerde, 2010). This paper presents the findings of that report and in the process contributes to knowledge about construction projects undertaken in populated prison environments.

Traditional, sequential procurement methods are by far the most popular in the New Zealand construction context as they are considered best to enable the contracting parties to limit their exposure to financial and time risk (Wilkinson and Scofield 2003). However, such methods are also considered to take longer and create adversity between the contracting parties, as attention to risk management dictates behaviour in the relationship (Barrett and Barrett 2006). In response, owners may insist on higher levels of contractual control which in turn leads to diminished levels of trust between the parties. The nature of the double bunking projects, their

settings in live prisons and the imposed restrictive time constraints gave cause for the Department to explore alternative procurement and contract management methods.

Partnering arrangements are presented as useful methods to improve construction project performance and there is evidence of increased use of these forms of contractual relationship over the past 20 years. Murray and Langford (2004) identify three key objectives that underpin current interest in partnering; helping establish agreed mutual objectives, providing a methodology for problem resolution and creating a culture of continuous, measured improvement. A fundamental tenet of partnering is the sharing of responsibility and risk, which can enhance collaboration between the contracted parties (Bresnan & Marshall 2000). However, partnering does not appear as a *one-size-fits-all* concept, it is a term applied to a wide spectrum of management approaches. Thompson and Sanders (1998) suggest that partnering occurs over a broad continuum with applications coalescing around four key stages – competition, cooperation, collaboration and coalescence. The traditional owner contractor relationship is represented as competition in this continuum, which the authors argue takes place in the absence of partnering. The other three stages incorporate increasing levels of alignment and commitment between the contracting parties. As contracting parties move away from their competitive stances, Thompson and Sanders argue that cooperation becomes commonplace and the desire to work jointly or to collaborate arises, particularly around efforts to improve project processes.

Normative theories of partnering and collaboration have been dominant in the literature since the 1990s, when interest in collaborative working relationships began to emerge. Comparisons are made with other industries such as manufacturing, where long range views enable development of strategic relationships rather than a focus on short term, one off projects. Partnering and collaborative working arrangements are often researched and presented as stylised models and abstractions. Participants in the construction process can find such models difficult to adopt and put into practice. Bresnan (2009) argues that what is needed is better evidence from local practices where interaction is negotiated rather than 'applied'. The present research addresses this need.

Trust, when it is allowed to flourish in a working relationship, is said to reduce transaction costs and enable sharing of sensitive information. As trust has a positive influence on the strength of inter-organisational relationships in a construction project it can be argued to have a positive influence on project success (Akintoye and Main 2007). Indeed, it is consistently shown to be a desirable way of helping align teams behind goals and objectives in a project context (Bresnan 2009).

Shelbourn and Bouchlaghem, et al. (2007) developed a framework through which to investigate the UK construction industry's requirements for and general uptake of collaboration in projects. Based on their findings they propose six essential requirements for effective collaboration:

- A clearly articulated model for working together in collaboration

- Processes that enable collaborators to agree a common vision and priorities for the collaboration and to promote trust
- Standards that enable technologies to work effectively
- Examples of good practice
- Design of technologies taking into account people
- Clarification of liabilities for outcomes of collaborative processes

It would appear that formal collaborative efforts require considerable planning and structuring to ensure success of the outcomes.

A number of factors must be managed to avoid perceptions of failed collaboration. These relate to lack of trust and consultation between collaborators, lack of experience and poor business fit (Akintoye and Main 2007). The most important factor leading to failure is the failure of one of the partners to the collaboration failing to uphold their end, in terms of meeting the agreed goals and objectives.

Akintoye and Main (2007) investigated contractors' perceptions of collaborative relationships in construction. They were found to be generally positive about collaboration and to come into such arrangements in order to share risk, access innovation and technology, make efficient use of scarce resources and to meet client requirements. Beyond this Akintoye and Main found that success in collaborative project settings is strongly influenced by levels of resourcing, the extent to which the partners are contractually on equal footing, the extent to which non-financial benefits are understood and accepted and clarity in expression of the project objectives.

## **2. Research Methods**

A qualitative evaluation methodology was used. The study aimed to gather multiple perspectives on issues influencing the construction. Initially findings were analysed for each prison separately and then findings were compared across each of the prison sites. This enabled commonalities and differences to be located.

To ensure that a variety of perspectives were gathered, the research drew on individual and small group interviews with national office staff, the project team and construction companies. Regional and construction company perspectives were gathered at the following four Double Bunking project sites. Inmates were not interviewed as the study focused on the success of the construction and not on inmates' attitudes of double bunking.

In total 20 participants were interviewed. Participants were selected to reflect the various roles and responsibilities associated with the construction project. Interviews followed a semi-structured interview format. Individual interviews were carried out with national office representatives and with the two participating prison managers. Small group interviews occurred at prison sites with site team members. Interviews ranged between 60 and 90 minutes and, on all but one occasion, were audio recorded with participants' consent.

Interview data was analysed to locate patterns and themes relating to the research objectives and wider contextual issues. In practice, a process of constant comparative analysis was used throughout the lifespan of the research. In the first instance this meant that emerging findings were consistently tested to determine the extent to which they were common or unique to each individual prison's participants. Next, the findings for each of the four prisons were compared with similarities and differences identified.

### **3. Findings**

The project's success was initially attributed to a strong mandate to increase available prison capacity within a short-timeframe. The mandate was supported by funding of double bunking projects at four existing prison sites.

Project participants unanimously cited collaboration as a primary explanation for success as collaborative organisational cultures developed within each of the construction sites and also between the site and national office. The importance placed on collaboration was evidenced in the use of collaborative work practices at each stage of the project. For instance, the initial design and costing phase of the project was achieved in a short timeframe due to the strategy of bringing together a team of relevant consultants to scope and cost the project. The group worked intensively together over a four week period to develop the required plans.

The emphasis placed on collaborative work practices was attributed to a combination of the Project Director's influence and prison manager leadership. The Project Director reinforced collaboration through a recruitment and procurement process that used a commitment to collaboration as an important assessment criterion. Collaborative work practices were also attributed to prison managers and staff professionalism. For instance, Prison Service staff explained that their initial concerns about the extensiveness of the double bunking project were alleviated through prison managers having involved prison management teams in jointly scoping the project requirements. As an outcome of this process each site developed a sense of ownership of the project which provided the foundation for professional pride (working towards deliverables and timeframes) and viewing the project as a collaborative endeavour.

#### **3.1 Organisational structure**

Rather than an autonomous and centralised approach to management this example highlights that a factor in the success of the project was a multi-tiered and multi-located management model. In this model the national office provided strategic leadership and a strong coordinating role while each of the prison sites, in an appreciation of site specific expertise, were empowered to make the majority of the on-site decisions. The combination of centrally located strategic leadership and on-site expertise engendered collaboration throughout each project phase and each level of responsibility. This ensured that the final build met end users' needs.

Time and communication efficiencies were generally attributed to the structure of each of the prison-specific project teams and the fact that these teams were located at each of the four prison sites. The prison project team primary structure was framed around the Site Liaison Officer, the Site Project Manager for Construction, the Prison Construction Security Officer and the Construction Project Manager. Table 1 outlines roles and responsibilities of each position.

**Table 1: Roles and Responsibilities of Prison Construction Project Teams**

Project Role	Primary Responsibilities
Site Liaison Officer	Reported directly to the Prison Manager. Primary responsibility was to ensure that the Double Bunking Construction Project occurred without impacting on business as usual. Major components of the role included: <ul style="list-style-type: none"> <li>▪ Managing the project line and ensuring that prison operations were not negatively affected</li> <li>▪ Overseeing security arrangements</li> <li>▪ Ensuring there were sufficient prison personnel on-site</li> <li>▪ Scheduling the decanting and recanting process. Decanting of prison units involved moving inmates to other units or prisons to allow the double bunking construction to occur and recanting involved arranging for prisoners to be moved back into completed/double bunked units</li> <li>▪ Working alongside the Prison Manager to recruit and place new staff</li> <li>▪ Communicating to the Prison Manager and Prison Services (National Office)</li> </ul>
Site Project Manager for Construction	Reported directly to the Department's Double Bunking Project Director. Primary responsibilities included: <ul style="list-style-type: none"> <li>▪ Avoiding and minimising any effects of the construction on business as usual</li> <li>▪ Administering the contract with the construction company(s)</li> <li>▪ Issuing instructions to the contractor</li> <li>▪ Managing interactions with the contractor concerning the design and implementation of the design.</li> <li>▪ Acting as the interface between the contractor and the project on-site team</li> </ul>
Prison Construction Security Officer	Reported to the Site Liaison Officer. Responsible for developing, implementing and maintaining construction security protocols and practices throughout the duration of the project
Construction Project Manager (Construction company)	Reported directly to the construction company's senior management. Primary responsibilities included: <ul style="list-style-type: none"> <li>▪ Primary interface with Site Project Manager for Construction</li> <li>▪ Managing all aspects of the construction and ensure that the project deliverables are met within required timelines</li> <li>▪ Attending all on-site project meetings</li> <li>▪ Securing subcontractors</li> <li>▪ Ensuring the construction workers adhere to security protocols</li> <li>▪ Pricing each aspect of the project and liaising between the construction companies' Quantity Surveyor and the Department's Quantity Surveyor.</li> </ul>

While the way in which the project team was structured and located provided the foundation for efficient on-site communications, this does not fully explain the success of the project team per se. In this regard participants drew attention to a number of additional factors. First, participants discussed key attributes, specific to each role, that go some way in explaining much of the success of project teams. These attributes provided the basis for recruitment to each role and or the project. Next, the success of the project teams can be attributed to efficient selection processes. Prison managers related having a clear understanding of the attributes needed for

the roles of Site Liaison Officer and the Prison Construction Security Officer and appointed accordingly. Each of these positions was appointed from within the prison staff at each site.

### **3.2 Procurement and contractual relationships**

Historically, the Department has used traditional (often referred to as 'confrontational') contractual arrangements that have involved contractors being invited to tender on a set of completed designs. A major criticism of this method is that it is less suited to changes in scope and in detail, which were considered inevitable because design was largely incomplete at the time of contractor appointment. Another is that it does not allow the builder to give input to the design phase regarding buildability. The traditional model treats design and construction as separate entities leading to risk that ineffective communication, difficulties coordinating activities or conflict between the designers and the contractors will arise. A fast-track approach was adopted for each project site with the design activity overlapping into the construction phase.

Standard forms of contract in the New Zealand context allow for the engineer or architect to act in a third party capacity to oversee the project's management. A significant modification to the Department's previous practices saw them remove the role of the engineer to the works, the administrator, from the construction contracts in the Double Bunking Project. In doing so, the Department took on the roles of contract administrator and project manager, requiring a direct working relationship with the contractor. A collaborative arrangement was integral to the success of the project because project design was on-going throughout most of the construction period. With many decisions required to be made on-site removal of the third party administrator forced the client and contractor into a closer working relationship, which facilitated collaboration.

As the project developed as a dynamic build (design, pricing and constructing took place in quick succession or they were overlapped) the tender process was designed to engage construction companies that demonstrated technical ability and a willingness to participate in collaborative working arrangements. The importance of collaboration was reflected in the tender assessment criteria with up to 70 percent of the assessment based on non-priced attributes. Much of the emphasis placed on collaboration was based on Prison Services participants' previous unsatisfactory experiences with projects that had used confrontational (rather than collaborative) contractual relationships. In these situations the confrontational relationship was reported as pitting the construction company against the client when variations to the design might result in increased costs. Further, in regard to companies with a large bureaucratic structure, variations to design within such a model were perceived to result in a protracted re-costing process that risked slowing the construction process down.

Throughout the procurement process potential contractors were given clear messages that any collaborative arrangement needed to jointly exist at the national and prison site levels. This occurred most obviously through:



Pre-tender submission scoping exercises – prior to submitting a tender for the Double Bunking Project contractors were invited to visit the prison sites with the expectation that understanding the prison environment would provide an efficient knowledge base to inform their tender preparations. As an outcome of this process prison staff informed contractors about the challenges of working within a secure prison environment and that a close collaborative arrangement, between the prison and the contractor, would be expected

Tender presentations - all companies that had submitted a tender were asked to provide a presentation to the procurement panel which, while primarily comprised of national office staff, included a representative from each of the prison sites. Through this process contractors were questioned about how they would maintain site security while carrying out the build and how they would work alongside the prison to maintain business as usual (including security).

Traditional construction projects have involved contractual arrangements around a specified design and related pricing structures. As aspects of the Double Bunking Project's design were incomplete, and given the project's time constraints, the Department was not able to enter a price specified contractual arrangement. Rather, the Department utilised a contract variation process that allowed the works to continue while pricing occurred simultaneously. This enabled the design-construction process to occur dynamically whereby the aspects of the build were designed, priced and built in quick succession.

The fact that the procurement process successfully secured contractors committed to collaborative working arrangements appears to have provided the Department with a sufficient level of trust to be able to instruct unpriced contract variations. This way of working was reinforced through contractors providing transparency around costs and decisions underpinning their cost-related decisions. For instance, in relation to prices for material, subcontractors' quotes and any breakdowns of prices were provided to the Department. Both parties' use of their own quantity surveyors provided a sense of assurance over costing which in turn facilitated a greater sense of trust and reinforced the use of contract variations that enabled the build to continue while costs were approved later.

### **3.3 Communications**

A detailed communications plan guided the development of multi-tiered communication streams. These streams threaded through and across prison sites and occurred bi-directionally whereby prison site communications were channelled to national office staff and vice versa.

The various communication streams reinforced and maintained the collaborative working model established by the Project Director. The following describes the types of on-site communication strategy used at one prison to plan for and maintain business as usual. Through the various communication streams each of the prison sites were able to learn from the others and the national office team was able to have an in-depth overview of what was occurring at each of the sites.

#### **Case Study: Otago Regional Corrections Facility**

*Every Thursday the site project team [Site Liaison Officer, Site Project Manager for Construction, Prison Construction Security Officer] would meet with the contractor and sub-contractors for a Tool Box. The meeting provided an opportunity for the contractor and sub-contractors to discuss what work had been undertaken the week before and scope out the work that was coming up the next week. It needs to be understood that the Tool Box meeting is generally held between contractors and sub-contractors only. It was because of our collaboration with the contractor that we [the project team] were invited to sit in. It was an excellent way for the project team to know what was going on.*

*After the Tool Box meeting the project team held a Weekly Coordination meeting to discuss issues arising out of the Tool Box meeting with a special emphasis on those construction activities planned for the coming week. We would discuss the coming week's construction activities and issues that might affect prison operations. Because of the very nature and speed of the project it was import to meet and anticipate problems and work out solutions.*

*Outside of this formal weekly coordination meeting the Project Manager and I would meet daily to discuss any arising issues. We each had an open door policy. I would brief the Prison Manager on a weekly basis and he may or may not choose to come to one of our weekly coordination meetings.*

**Site Liaison Manager**

### **3.4 Prison security**

External consultants who had not worked within a prison environment or knew little about secure environments were able to rely on the experience of prison operational experts who provided input at each project phase. Each of the construction companies had anticipated, on average, a 20 percent reduction in productivity because of the time taken to comply with prison security measures. For instance, the time associated with entering and exiting the secure environment as well as delays associated with waiting for deliveries to arrive at the construction site or those associated with having to travel to dedicated buildings for lunch and toilet breaks. However, through a number of on-site efficiencies productivity remained at a high level. Participants attributed the majority cost savings to these on-site efficiencies as initially anticipated delays were circumnavigated.

Security-related efficiencies were discussed in reference to processing construction workers and in terms of providing environments in which construction workers felt sufficiently secure to be able to work efficiently. Each of the prisons established a security clearance and training system that, once completed, resulted in construction workers accessing the prison in a time efficient manner. To be eligible for clearance all construction workers were required to undergo a health and safety induction and training on security requirements for working within the prison. They were also required to obtain a security clearance.<sup>3</sup> Once security clearance was received appropriate photo identification was issued. Identification cards were found to reduce the

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<sup>3</sup> Initially all contractors were required to obtain a Ministry of Justice security clearance. However, because of up to six week time delays each of the prisons used a Police security check which they were able to do through the prison's on-site database.

amount of time required to process a worker through the sally port as it indicated to the Corrections Officer that all security checks had been done.

A 2.4 metre fence was constructed around each of the construction areas (including units and new infrastructure builds). Placed within these sites were contractor sheds, toilets and a secure utility area that allowed the workers to lock their tools away at the end of the working day. Having a secured site enabled the construction workers to stay in the one place the whole day and mitigated the risk of tools being lost in the process of bringing them on site and the number of officers need to escort the workers throughout the working day. Hessian, scrim and/or sheets of black plastic were placed around each of the 2.4 metre fenced sites. This provided a demarcation between prisoners and construction workers and was reported as giving workers a sense of safety. It also prevented communication between prisoners and workers which was regarded as an important intervention as communication risked solicitation.

#### 4. Conclusions

Although the literature does not provide examples of construction carried out in a secure prison environment, we can note previous research that supports the findings of this research. Barrett and Barrett (2006) posit that good outcomes can be driven by project constraints. Constraints can be in the form of either resourcing or time constraints, which require the project team to work in a collaborative and creative manner resulting in a demonstrable benefit to the community. In the case of the Double Bunking Project the tight project timeframe drove the collaborative working processes and innovative practice evident at each prison site and across the four sites where the double bunking occurred. In addition, there were open lines of communication which continually facilitated learnings across sites and speedy decision-making processes at a local level and strategies to maintain business as usual expedited the completion of the build with significant cost savings to the client. Trust is of paramount importance in such a process, along with ongoing consultation, underpinned by the level of experience of those working on the project.

The literature also includes a growing number of best practice examples for collaboration and partnering in construction projects (see for example Bresnan and Marshall 2000; Barrett and Barrett 2006; Akintoye and Main 2007; Badenfelt 2010; Yang, Huang et al. 2011). The efforts to examine practice in this manner and disseminate the findings enable practice to be informed by rigorous examination of practice activities, rather than relying solely on guidance from normative theory. Table 2 outlines best practice indicators alongside our findings.

**Table 2: Best Practice Indicators Exemplified by the Double Bunking Project**

Best Practice Indicator	Success Rating	Qualification
Initial values and objectives of a project should be agreed by all parties at the outset in the format of the brief	High	The project was driven by a strong imperative which provided a foundation of shared agreement

Briefing should continue throughout the project and when the brief does adapt and change it should be clearly communicated to all parties, as the brief is the benchmark against which project success must be measured	High	Collaboration also arose from multi-tiered communication streams. These streams threaded through and across prison sites and occurred bi-directionally whereby prison site communications were channelled to national office staff and vice versa
Change is a trigger for collaboration between contracting parties and constraints introduced through change help to focus the efforts	High	Each of the contracting companies demonstrated a strong willingness to adapt and to bring innovative ideas to the build
Trust is a dynamic quality in a contractual relationship and it should throughout the project be actively nurtured by all parties. Project managers have a particular role to play in this and teambuilding efforts can help engender a trusting relationship between the parties. Trust in staff – trust between client and construction company, trust that builders would deliver, trust that client would be fair in the on-going design, pricing, building process	High	Trust underpinned the Department and contractor relationship. This was initially secured through the procurement process and reinforced through the mutual use of Quantity Surveyors and site specific project teams
Trust allows parties to collaborate more effectively as there are perceived to be fewer barriers to participation and creativity. Problem solving – contractors took ownership these and came back with innovative solution	High	Multiple examples were provided of innovative and creative practice
Systems to harvest and pass on knowledge within the project team and participating organisations will help enable fruitful collaboration. Innovative practice, often undertaken in a collaborative setting, grows on a foundation of appropriate knowledge and experience. Reporting structure, site visits, onsite presence of architect, QS and Costing	High	A combination of site-specific project teams and multi-tiered communication streams resulted in a high degree of knowledge management. This was most obvious in relation to: <ul style="list-style-type: none"> <li>▪ Each of the prison sites were able to learn from one another</li> <li>▪ The national office team was able to have an in-depth overview of what was occurring at each of the sites</li> <li>▪ External consultants who had not worked within a prison environment were able to rely on the experience of prison operational experts</li> </ul>

## References

Akintoye, A. and J. Main (2007). "Collaborative relationships in construction: the UK contractors' perception." Engineering, Construction and Architectural Management **14**(6): 597-617.

Badenfelt, U. (2010). "I trust you, I trust you not: a longitudinal study of control mechanisms in incentive contracts." Construction Management and Economics **28**(3): 301-310.

Barrett, P. and L. Barrett (2006). "The 4Cs model of exemplary construction projects." Engineering, Construction and Architectural Management **13**(2): 201-215.

Bennett, K., T. J. Flanagan, et al. (1997). "Getting tough on prisoners: results from the National Corrections Executive Survey 1995 " Crime and Delinquency **43**(1): 24.

Bresnan, M. (2009). "Living the dream? Understanding partnering as emergent practice." Construction Management and Economics **27**(10): 923-933.

Bresnan, M. and N. Marshall (2000). "Building partnerships: case studies of client-contractor collaboration in the UK construction industry." Construction Management and Economics **18**(7): 819-832.

Daubney, D. (2002). "Striking a balance: A strategy to encourage community corrections in Canada." Corrections Today **64**(1): 46 - 67.

Higgins, S. (1996). "The BOP's response to population growth." Corrections Today **58**(2): 110.

Murray, M. and D. Langford, Eds. (2004). Architect's handbook of construction project management. London, UK, RIBA Enterprises Ltd.

Roguski, M., Kingi, V. and Gjerde, M. (2010). Double bunking construction project. Wellington: Victoria University of Wellington

Shelbourn, M., N. M. Bouchlaghem, et al. (2007). "Planning & implementation of effective collaboration in construction projects." Construction Innovation **7**(4): 357-377.

Thompson and Sanders. (1998). "Partnering continuum." Journal of Management in Engineering. 14(5): 73-78.

Waterhouse, P. (2010). Double bunking capital cost management review. Auckland, Value Solutions Ltd: 12.

Wilkinson, S. and R. Scofield (2003). Management for the New Zealand construction industry. Auckland, NZ, Pearson Education NZ Ltd.

Yang, L.-R., C.-F. Huang, et al. (2011). "The association among project manager's leadership style, teamwork and project success." International Journal of Project Management **29**(3): 258-267.