

Women in Construction

Exemplar Project Outcomes Report

July 2021



Queensland
Government

Executive Summary

The Queensland Government's Women in Construction exemplar project at Cannon Hill sought to test the capacity of the South East Queensland construction industry to supply sufficient frontline female trades to support future government targets for female participation on government construction projects. It also explored whether setting targets would increase costs and investigated the impact of increased workforce diversity on a construction worksite.

Achieving 31 per cent overall female participation on the project clearly shows that applying a target boosts gender diversity. Unpacking the data further, the project achieved 74 per cent female external professional services such as architects and engineers, 22 per cent frontline women on tools and, 39 per cent of QBuild's professional and project administration officers, were women.

An additional positive outcome of the project was the educational and promotional exposure it gave to local school girls through the *Try A Trade* days to 'see what they might be' and, the broader impact of other government agencies and industry adopting similar project methodologies to accelerate female participation in construction trades.

Final cost analysis of the project proved that setting targets to employ more women on construction projects does not result in additional project expenditure, especially as this project was delivered during the COVID-19 pandemic.

The symbiotic relationship formed by QBuild, the National Association of Women in Construction (NAWIC) and Construction Skills Queensland (CSQ) saw the project achieve significant milestones, successful industry attraction, strong educational benefits, workplace health and safety best practice and, influence government projects and programs into the future.

Recommendations

It is recommended that the Minister approve:

1. Continued delivery of government exemplar projects through partnerships with QBuild and other asset-owning government agencies such as Housing Partnerships Office, the Department of Education, Queensland Health and the Department of Employment, Small Business and Training, to determine metropolitan and regional capacity to support future government targets.
2. Continued support to Tier 1 and 2 building contractors such as Hutchinson Builders to deliver industry exemplar projects in Brisbane metropolitan and regional Queensland areas.
3. Amendment of the Queensland Procurement Policy with a staged target for government metropolitan construction projects of 10 per cent female participation over the next five years.

Context

In mid-2019 when the exemplar project was being established, the female participation rate in frontline construction was just 2.4 per cent in Queensland. By the end of 2020, CSQ reported an increased female construction workforce of nearly 5 per cent, aligning with recent trends in increased female uptake of apprenticeships and greater representation of women in the electrical, carpentry, painting and earth moving sectors.

The Queensland Government strongly supports the NAWIC target of 11 per cent for women in frontline construction on government projects, articulated in NAWIC's 'Women on Tools 11% Strategy', and is working to accelerate current female rates through practical initiatives like the exemplar project that work in harmony with NAWIC's strategy.

The exemplar project was a successful 'in-house' collaboration managed by QBuild and involving Housing Partnerships Office as the client, Major Projects providing strategic guidance on the women in construction component, supplemented by invaluable external support from NAWIC and CSQ.

An aspirational overall target of 30 per cent female participation was set for the professional officers, tradespeople and administration staff working on the project to construct a social housing complex, valued at \$7 million, comprising 20, one-bedroom units at 16 Bombery Street, Cannon Hill.

Governance

The exemplar project was managed through a range of guidance and reporting mechanisms including:

- Project Oversight Group – comprised representatives from QBuild, Housing Partnerships Office, Major Projects, Communications, NAWIC and CSQ who met monthly to manage metrics capture, promotional and educational opportunities and reporting requirements.
- Building Construction and Maintenance (BCM) Category Council and Industry Reference Group – quarterly progress reporting and strategic guidance.
- Executive reporting – to senior departmental and ministerial levels on specific media opportunities.



Key QBuild exemplar project officers on site
Alex Mitchell, Project Manager; Kim Lester, Site Foreman and
Wes Iuli, Project Supervisor

Methodology

The project was delivered through the QBuild Construction Management methodology and agile delivery framework to satisfy value for money outcomes and government policy obligations. It was tendered in accordance with the Queensland Government Procurement Policy.

The 28 trade packages were individually tendered to local contractors, with each contract developed in accordance with Australian Government Standard Contracts, with the inclusion of specific non-price criteria. Bespoke criteria was developed to deliver the female participation outcomes involving mandatory requirements from contractors to nominate how they would provide a 20 per cent or more female workforce to deliver their scope of works, with an accompanying action plan.

These workforce plans supported the Principal in meeting the diversity targets and were reviewed as part of each tender evaluation process, informing the non-price criteria weightings.

To optimise the pool of available sub-contractors with frontline female employees, NAWIC conducted progressive targeted social media campaigns for specific trades across their wide-ranging networks, ahead of the staged release of QBuild's tender packages.

Metrics

The professional services quantitative metrics were calculated through analysis of the Principal Consultant's hourly rates and overall design fee. The breakdown of staff details provided in the submission enabled a comprehensive analysis of each individual's time working on the project.

Metrics were captured daily for frontline trades and labourer employees via their on-site hours worked using the QBuild sign-in app with a QR code, meeting COVID-19 requirements. A gender tick box captured the data that was collated into a spreadsheet, removing visitors, delivery drivers and non-trade related personnel. Work hours were calculated based on an average 8-hour work-day, with the female participation percentage derived as a percentage of total hours.

The female professional and administration staff participation rate was calculated using recorded hours from timesheets in QBuild's Ellipse enterprise system, with their hours reported directly from the system.

Qualitative data

The project captured extensive qualitative feedback and commentary from male and female participants using a variety of mechanisms including a mandatory induction survey administered online and in hard copy, one-on-one interviews and use of an on-site comments book.

Outcomes

Construction outcomes

The Queensland Housing Strategy 2017-2027 is a 10-year framework driving key reforms and targeted investment across the housing continuum. The Housing Construction Jobs program prioritises housing capital investment in key locations based on growth and demand. The Cannon Hill exemplar project was identified through market analysis and demand in the area, with 46 high and very high need applicants eligible for social housing units in the Cannon Hill area, as at 30 June 2019.

Biscoe Wilson was appointed Principal Consultants and their design included materials and finishes that maximised procurement from local industries, suppliers and contractors. The project progressed through design, development and approvals from June to November 2019.

The project achieved the following key delivery milestones:

- 2 December 2019 - Director-General approval of project
- 13 March 2020 - the Minister turned the sod and officially launched the project
- Early works and fencing commenced with a 100% female crew
- 30 March 2020 - progressive letting of tenders for trade packages
- 1 June 2020 - bulk earthworks and concrete footings commenced
- 14 September 2020 - first floor pre-tension slab poured
- 20 October 2020 - second floor slab poured
- 5 November 2020 - third floor slab poured
- 23 November 2020 - fourth floor slab poured
- 11 January 2021 - finishing trades commenced
- 22 March 2021 - roof completed
- 25 May 2021 - scaffold removed
- 28 June 2021 - Practical Completion achieved.

The exemplar project delivered a five storey, rendered concrete block social housing complex comprising 20 one-bedroom units, covered car parking, an outdoor communal space and is lift-serviced. Four apartments are 'platinum' level and 16 are 'gold' level design in accordance with the Liveable Housing Design Guidelines.

Financial outcomes

The total project budget of \$7 million comprised the following breakdown of costs:

- Total construction costs - \$6 million, comprising:
 - QBuild construction costs - \$1.2 million
 - Subcontractor costs, not delivered by QBuild - \$4.8 million
- Professional services, statutory fees, charges and levies - \$1 million

The project's Quantity Surveyor allowed a 4 per cent provisional margin for the women in construction target. These funds were to be used for trades tendering higher than the estimate. As trade packages were costed within budget, this spend was subsequently used for scope change and type 2 client-requested variations. An independent Quantity Surveyor's market costs confirmed that the sub-contracted tender packages did not result in increased costs from the female participation requirement.

The COVID-19 pandemic required additional cleaning personnel and processes, on-site facilities and amenities adding approximately \$60,000 to the project budget.

Female participation outcomes

The three workforce categories on the project are defined as:

- Professional officers, usually university qualified people who deliver engineering, design or architecture services for the project and include Principal Architects, mechanical and electrical engineers, certifiers and landscape architects.
- Frontline tradespeople with trade qualifications, apprentices and other on-site employees who support construction activities such as the site supervisor and foreman; tradespeople including electricians, carpenters, plumbers, tilers, painters, scaffolders and block layers, labourers, traffic controllers, doggers and fencers.
- Administration staff provide off-site support including contract administration, project administration, superintendency and procurement activities, including tender management.



The project achieved the following female participation rates:

- ✓ 31 per cent overall
- ✓ 74 per cent external professional services
- ✓ 22 per cent frontline trades and labourers
- ✓ 39 per cent QBuild professional and project administration officers.

Principal Consultants Biscoe Wilson confirmed they encourage, stimulate and promote diversity in construction and their team of architects, structural and civil engineers, hydraulic designers and landscape architects comprises a greater than 60 per cent female workforce.

Biscoe Wilson was awarded the Cannon Hill project before it was declared a women in construction exemplar project and their workforce composition is 'just BAU' according to their electrical engineer. Government is leading by example to ensure gender diversity becomes BAU for frontline trades as well.

Latest CSQ data shows more women choose finishing trades such as carpentry and painting, than the heavier structural trades of roofing, scaffolding, concreting, block laying and form work. The project's structural trades sub-contractors reported challenges in finding sufficient qualified female block layers, form workers and scaffolders to meet the 20 per cent target and resorted to employing female labourers they recruited from labour hire companies, local gyms and through family connections.

Educational outcomes



Cannon Hill exemplar project Try a Trade plumbing session
TAFE WorldSkills trainer oversees Redlands Vocational College students trying their hands at installing copper pipe

The exemplar project hosted two *Try A Trade* events in partnership with CSQ and NAWIC.

The days successfully promoted the array of construction career options to over 40 local female school students who tried their hands at carpentry, tiling, plumbing, bricklaying and painting.

The Years 9 to 11 girls toured the active commercial construction site and received invaluable mentoring and career advice from NAWIC's female trade-qualified mentors and apprentices.

Delivered in conjunction with International Women's Day and Queensland Women's Week, the on-site events gave the girls a real opportunity to 'see what they might be', with one student subsequently pursuing a plumbing school-based traineeship, following the second *Try a Trade* day.

The exemplar project also hosted a NAWIC-led Local Connect session, with MEGT support, for career advisors from 10 local schools to promote the importance of encouraging girls to consider a construction career.

The engagement of secondary school career advisors allows a broader reach than the direct *Try A Trade* events for students.



The value of experiencing a live construction site, engaging with female trades and professional construction role models plus learning about the multitude of trade careers through active hands-on experience with tools and materials, were significant educational outcomes of the exemplar project.

Social outcomes

The exemplar project's very positive social outcomes confirmed current research findings on the significant benefits of gender diversity in the construction industry. Trade women's attention to detail, collaborative problem-solving approach, workplace tidiness and gentler treatment of tools, were all identified in on-site interviews as advantages of greater female participation on the project.

An experienced QBuild project director observed that the striking difference for him on the exemplar project was the very different working environment he perceived on-site – from the friendly greeting at the front gate through to an exceptionally harmonious and supportive atmosphere consistently evident across the many trades workforces.

This observation was echoed by the project's female floorer and two female painting apprentices who all remarked on the exemplar project's unusually calm and ordered working environment, even at the finishing stage where multiple trades are frequently working in close proximity and under time pressure to meet Practical Completion deadlines. 'There was none of the usual aggro as tempers get frayed with blokes working on top of each other,' observed a third year painting apprentice.

This distinctive workplace harmony and relaxed and friendly atmosphere were strongly reflected in the high level of satisfaction in working on the project recorded by the QBuild employees, sub-contractors and labourers in all the project's qualitative metrics.

Other factors that influenced employees' high satisfaction levels were delivering good quality housing for people in need, the excellent team work, clean and very safe working conditions, the opportunity to learn from experienced tradespeople and the unusual experience of 'girls supporting girls' with greater numbers of women on-site.



'By far the best construction worksite I've worked on'

The project's dogger Tash Maidment with 8 years construction industry experience as a concreter and dogger

The project also achieved outstanding safety outcomes with no lost time injuries recorded during the 12-month construction period. This resulted from QBuild's exemplary workplace health and safety best practice and the calmer atmosphere, higher order organisational and attention to detail skills that the project's interviewees attributed to the increased numbers of female workers on-site.

Looking forward

The Cannon Hill exemplar project has led the way for wider government and industry adoption of female participation targets in construction projects. The Department of Employment, Small Business and Training plans to include a 15 per cent target for women in frontline construction roles on their \$100 million 'Equipping TAFE for our future' capital infrastructure program. Delivered over three years, this regional and South East Queensland TAFE re-development program will include similar trade package requirements and conditions to those used for the exemplar project and its outcomes will be valuable to inform government procurement policy changes going forward.

Similarly, the private construction industry has responded to this gender diversity momentum, with Hutchinson Builders engaging enthusiastically with the exemplar project team throughout construction and set to commence their own industry exemplar project at Pacific Pines on the Gold Coast in September 2021. They will use the project methodology and outcomes of the exemplar project as a basis for their Department of Education project.

The exemplar project has clearly demonstrated that this modest gender diversity target is achievable and does not impact project costs, instead it yields major benefits to construction workplace, safety standards and project delivery outcomes. Government has a responsibility to support and accelerate gender diversity in the construction industry and this project has clearly shown that it can be done.

Acknowledgements

The exemplar project team sincerely thanks the following organisations for their commitment and support in increasing the participation of women in Queensland's construction industry:

- National Association of Women in Construction - Queensland
- Construction Skills Queensland
- WorldSkills TAFE Queensland
- BUSSQ Superannuation
- Housing Partnerships Office, the Department of Communities, Housing and the Digital Economy