



**UNSW**  
Australian  
Human Rights  
Institute

# PROJECT 5

## A WEEKEND FOR EVERY WORKER

**Final Report**  
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**Prepared by**  
The Australian Human Rights Institute, UNSW Sydney



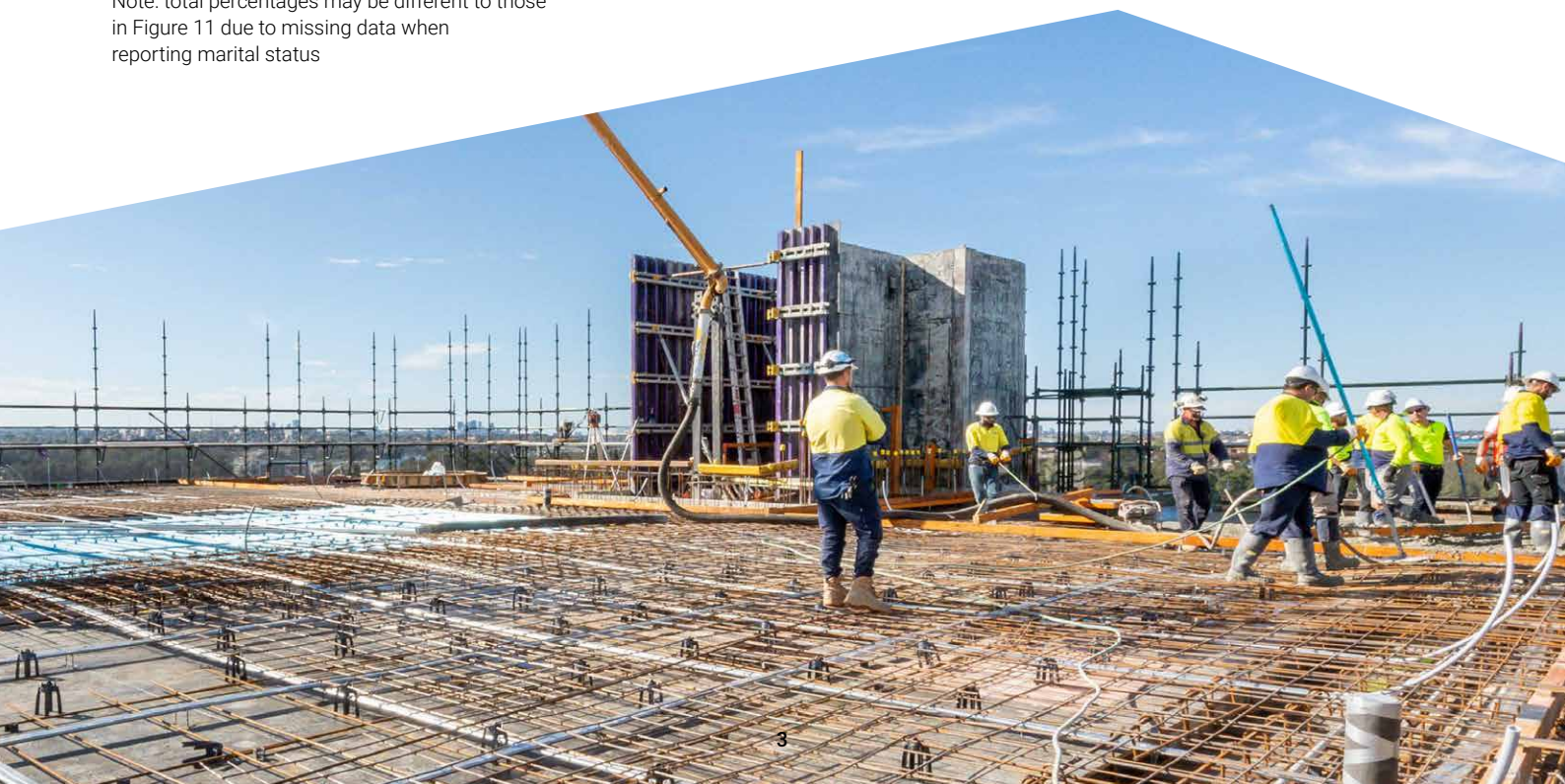


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**Disclaimer**

Any errors or omissions are those of the authors only.

Although every effort was made to accurately capture, record and appropriately analyse information contained in this document, the conclusions are subject to the limitations of the data and methodologies used and described.

# Glossary

## Concord site

The Concord Hospital Redevelopment Project in Sydney's inner-west includes construction of new aged care, rehabilitation and mental health services. It operated a five-day work week and was the first site to be incorporated into the study group known as Project 5.

## Five-day work week

During Project 5, participants worked longer work hours Monday to Friday and did not work on weekends. Five-day work week schedules effectively redistribute, rather than reduce, working hours.

## Job satisfaction

A combination of positive and negative feelings that workers have towards their work.<sup>1</sup>

## K10 - Kessler Psychological Distress Scale

A 10-item questionnaire to yield a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent four-week period. Based on these items a score can be computed (10-50), where a higher score indicates a higher level of distress.<sup>2</sup>

## Liverpool site

Liverpool Hospital early works, in Sydney's south-west, was a five-day work week project added to Project 5.

## Mount Street site

A high-rise commercial building site in Mount Street, North Sydney, operating a six-day work week was added as a control site to help the research team determine the effect, if any, of COVID-19 on the wellbeing of workers.

## Next of kin

Almost all next of kin who took part in the Project 5 study were the wives or long-term partners of construction workers.

## Preliminary costs (known as 'prelims')

The cost to set up and operate a safe, effective and workable building site (for example, site sheds and office hire, utilities, security, scaffolding and plant equipment, bins and cleaning and consumables, site supervision).

## Psychological distress

When someone has "deeply unpleasant feelings, symptoms or experiences. These experiences may or may not be due to mental illness".<sup>3</sup>

## Quality of life

An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment.<sup>4</sup>

## Relationship Quality Index (RQI)

A six-item measure designed to assess the quality of relationships in married and cohabiting couples.<sup>5</sup>

## Salaried workers

In the context of the construction sector, managerial, professional, administrative, and supervisory workers (for example, foremen) receive a salary, meaning that they are paid a fixed annual salary irrespective of the hours they work each week.

## Wage workers

In the context of the construction sector, skilled and unskilled tradespeople and labourers are paid an hourly wage. This is based upon an hourly rate up to a standard work week, above which penalty rates (usually double time) are paid for overtime. Penalty rates are also applied to weekend work.

## Wellbeing

A complex construct that concerns the degree to which a person is living an optimal experience. It is often defined as a combination of the attainment of pleasure and pain avoidance and finding purpose and meaning.<sup>6</sup>

## Work-life balance

The division of one's time and focus between working and family or leisure activities.

# Executive Summary

- > Project 5 examined whether changing construction workers' schedules to include a full weekend would make a positive difference to their wellbeing in a sector characterised by long and unpredictable working hours, which have an impact on physical and mental health.
- > On the construction sites examined, working hours were re-allocated to create a Monday to Friday working week. The sites were closed on weekends, and workers were encouraged not to work elsewhere.
- > Most workers adhered to the five-day working week and preferred it to the usual six-day week. They reported improvements to their wellbeing, and their relationships with colleagues, their partners and their children.
- > The next of kin who were interviewed described the five-day work week as life changing. With their partners more available and active in family life, they felt their own wellbeing had also improved.
- > Among the recommendations of Project 5 is for governments to implement a five-day work week in construction contracts, ensuring that taxpayer-funded projects are delivered by a workforce that's both physically and mentally healthy.

## INTRODUCTION

The Australian construction industry is a powerhouse of the nation's economy. Construction is Australia's third largest employer with a workforce of more than 1.15 million people and contributes 8.8% to the national Gross Domestic Product (GDP).<sup>7</sup> However, despite its importance to the national economy, construction sector conditions are not kind to workers. A strong body of evidence suggests that working conditions are harmful to the physical and mental health of construction workers. Every second day in Australia, a construction worker dies by suicide. For the long-term sustainability of the industry, and the health and wellbeing of the wider community, it is vital that these conditions are improved. Currently in Australia, it is standard practice for construction workers to work at least a half-day on Saturdays, meaning they miss out on leisure activities their family and friends who work in other industries are enjoying. This study, known as Project 5, examined whether giving a group of construction workers access to the regular weekend of Saturday and Sunday would improve their wellbeing. Project 5 also inquired into the effects of construction sector conditions on the community more broadly, by interviewing the next of kin of construction workers about how working hours and conditions impacted family life. An economic analysis was included to determine the costs or savings of shifting to a five-day work week.

## ABOUT THIS REPORT

Workers were recruited to participate in Project 5 from three Sydney construction sites operated by construction firm Roberts Co. Two of the sites implemented a five-day work week. These were construction sites for hospital redevelopments, where the client was the state government service Health Infrastructure NSW. The third site was a control site where the usual six-day work week operated. This report presents the findings of surveys and interviews with the workers who participated, the next of kin who participated, and construction industry stakeholders who were interviewed for their views on the five-day work week. Project 5 contributes a much-needed contemporary case study of how a work schedule modification can change work-life balance and the flow-on effects to wellbeing, not only for workers but for their partners. The Project 5 study was launched in February 2020, and recruitment was impacted by both the Black Summer bushfire disaster and the global COVID-19 pandemic. In turn, this has impacted on the research team's ability to present a full economic analysis on the cost benefit of the five-day working week examined in this intervention.

## TESTING THE FIVE-DAY WORK WEEK

Introducing a weekend, something most workers take for granted, does not sound like a radical intervention. However, in the Australian construction industry, the practice of working

on Saturday at higher pay rates (known as overtime) is deeply rooted. Increasingly, workers are also being asked to work on Sundays, as construction companies work to ever more demanding schedules to keep costs down. Construction work is financially rewarding, but there is a cost in wellbeing terms. Research by advocacy group Mates in Construction has found that Australian construction workers are six times more likely to die by suicide than from an accident at work.<sup>8</sup> Research has established that conditions in the sector are linked to high stress, burnout and poor mental health.<sup>9</sup> These issues can contribute to substance abuse<sup>10</sup> and relationship breakdowns, creating a ripple effect in the community. Construction firms have acknowledged these issues with initiatives that seek to support individuals, such as employee assistance programs, rather than making structural changes. In this sense, Project 5 was indeed ambitious. With the backing of an innovative client (Health Infrastructure NSW) and contractor (Roberts Co.) the study asked workers to look beyond old notions of productivity and adopt new methods of working in order to accommodate the five-day week schedule.

## KEY FINDINGS

There is a positive link between the five-day work week and improvements in workers' wellbeing. However, data collection was hampered by COVID-19 lockdowns in Sydney, meaning it was not possible to perform repeat surveys with the same construction workers. This prevents the Project 5 research team being able to definitively say that a shorter working week resulted in improved mental health outcomes for workers, or that it resulted in an economic advantage. That said, the research did identify trends in the improvement of quality of life and mental health for workers the longer they spent working a five-day week and there was no increase in variable costs of delivering the project with a five-day work week.

### Inquiries into the effects of a five-day working week on construction workers and their families found:

- > Most workers (75.4%) preferred a five-day work week over either a six- or seven-day working week.
- > Workers reported improvement in work-life balance – 50% said they found a great difference to their work-life balance and 28% said they saw some difference to their work-life balance.
- > Next of kin noticed improvements in their partner's mood and wellbeing during Project 5, reporting that they were less fatigued, more relaxed, and more available to enjoy their social and family life.
- > Next of kin were limited in the employment they could pursue as a result of their partner's long hours in construction, and this also reduced their time for respite from parenting and domestic responsibilities.

### **An economic evaluation of the costs and benefits of a five-day work week on the health of workers found:**

- > Weekly analysis suggested an increasing trend in the quality of life among workers on a five-day work week site.
- > K10 scores capturing mental distress reduced from 17.13 to 14.2 over a 20-week period (May 2020 to October 2020).
- > Monthly analysis showed a decreasing trend in injury rates for Project 5 sites.
- > There was no increase in variable costs of delivering the project with a five-day work week. The only difference was in the preliminary costs (for example, site sheds and office hire, utilities, security, scaffolding) because of the longer duration of the project. On Project 5 this totalled \$61/sqm based on the gross floor area of 44,000 sqm.

### **Analysis of the challenges and successes of implementing the five-day work week found:**

- > A particular obstacle to introducing a five-day week is the view held by many clients that hours spent on site equate to productivity.
- > The project team had to think creatively and plan carefully to re-schedule construction to a five-day working week. They observed greater productivity during Project 5, as workers were motivated to complete work by Friday, and enjoy their two-day weekend.
- > Project 5 has shown what can be achieved when clients play a critical role in sponsoring, testing and evolving project delivery interventions in the construction sector.
- > Construction was completed in line with the Roberts Co. five-day contract program and quicker than an alternate tenderer's six-day week program.
- > During the course of Project 5, workers, unions and contractors agreed to include a five-day work week in their Enterprise Bargaining Agreement (EBA), demonstrating the support among workers for the move.

## **RECOMMENDATIONS**

### **For governments:**

- > Australian governments, with the scale of construction works they undertake, have both the influence and authority to require a five-day work week on their construction sites and should lead by example in this area.

### **For all clients including government:**

- > Procurement processes should include a rigorous assessment of work schedules proposed in tenders, to ensure they can be delivered without adverse impacts on the health and wellbeing of workers.

### **For the industry:**

- > The industry should prioritise mental health and wellbeing as well as physical health and safety. Initiatives to improve wellbeing on worksites could include fairer and simpler construction contracts with subcontractors, and mental health and wellbeing training.
- > Project 5 has demonstrated the benefits of investing more time in the planning phase of construction. It is recommended that industry follow this example as the flow-on effect is a smoother construction phase with less pressure on workers.

### **For researchers:**

- > More research on interventions to improve wellbeing in this sector is urgently needed. Project 5 has identified a range of avenues for further inquiry, including an economic analysis of the lost opportunities to employ partners of construction workers, who often refuse work or promotion because of their partner's long and irregular working hours.



# Introduction



## 1.1 CONSTRUCTION WORK CONDITIONS AND THEIR IMPACT

- > Australia's construction industry is its third largest employer; however, research finds that its working conditions are linked to heightened stress, burnout, poor mental health and gender inequality.
- > There are higher rates of serious mental health disorders and suicide among Australia's construction workforce compared to the general population.
- > Long working hours, including working on Saturdays, are standard practice in the sector.
- > So far, most industry responses have attempted to support individuals rather than make structural change.
- > Five-day work weeks have been adopted by industries such as manufacturing, mining and energy, but research in the construction industry is limited.

The construction sector is a significant driver of economic activity in Australia. It is Australia's third largest employer and despite its prominence as a growth sector, it faces a skills shortage. Construction also remains Australia's most male dominated sector with women's participation tracking backwards.<sup>11</sup> Work conditions in the construction sector are characterised by long and inflexible work hours. Long hours are in part driven by clients' project timelines and deadline expectations, which over time contribute to a workplace culture where long hours and working on Saturdays and even Sundays is now viewed as normal and often expected. In capital cities, commuting to work further reduces the time available for workers to spend caring for their families and themselves.

Research has found that work conditions in construction have implications for the health and wellbeing of workers and are linked to heightened stress, burnout, poor mental health and anxiety.<sup>12</sup> Construction workers have higher rates of physical injuries than the general population.<sup>13</sup> There are also persistent higher rates of serious mental health disorders and suicide in the construction sector compared to the general population and other occupations. According to Australian advocacy group Mates in Construction,<sup>14</sup> every second day in Australia, a construction worker takes their own life. Mental illness among female construction professionals is also more common than in the general population.<sup>15</sup>

The factors contributing to mental ill-health and suicide among construction workers are undeniably multi-faceted and complex. However, work conditions, organisation and culture in the industry have been identified among them. In the same vein, work conditions and culture have been identified as a barrier to women's participation in construction careers.

Long work hours spill into family and personal time and lead to high levels of work-family conflict and in some cases,

relationship breakdowns.<sup>16</sup> Work-family conflicts have been shown to contribute to physiological distress, burnout, sleep problems, anxiety and substance abuse in construction workers.<sup>17</sup> While studies have investigated the impact of work-family conflict on construction workers, little is known about the impact of construction work conditions on the wellbeing of workers' families and partners.

Research has also looked at the effects of masculinity in the construction industry and its relationship to the health and wellbeing of workers. The masculine culture of the workplace has been tied to health and safety concerns<sup>18</sup> and make it harder for workers to seek help due to the stigma associated with mental health and being perceived as unreliable.<sup>19</sup> Work stresses, such as layoffs, have a particularly negative effect on male workers with a traditional view of male roles.<sup>20</sup> Another latent factor is the gendered nature of the construction sector where work practices are still modelled around male breadwinning with no room for workers to undertake care responsibilities.<sup>21</sup>

Workplaces are increasingly seen as a point of targeted intervention to promote wellbeing and prevent mental illness, especially among men who are less likely to seek help for mental illness.<sup>22</sup>

## 1.2 INDUSTRY RESPONSES

Construction companies have applied a variety of responses to address worker wellbeing. Most responses remain focused on the individuals (e.g., Mates in Construction, wellbeing leave, employee assistance programs, resilience programs), rather than attempting to make structural change to work patterns including through the enterprise bargaining process with unions and large contractors and as a directive from clients. Changes to workplace structure and conditions, including work hours, appear to influence the health and wellbeing of workers. For instance, there is evidence that extended breaks between working weeks is important for work-life satisfaction.<sup>23</sup> Flexible working practices, including shorter hours or a five-day work week, have also shown significant impacts on workers.<sup>24</sup> Despite these findings, there has been little uptake of this model in the Australian construction sector.

## 1.3 FIVE-DAY WORK WEEK

In an effort to address worker wellbeing, a five-day work week has been adopted by industries such as manufacturing, mining and energy, as well as sectors where shift work is the norm, such as policing and health. Five-day work week schedules effectively redistribute, rather than reduce, work hours.

Research into work modification and working time reductions in the construction industry is limited, with very few trials and studies in this area ever conducted. Research on interventions is now relatively old and narrowly focused. For this reason, contemporary live case studies are urgently required to build a comprehensive understanding of the effects of different project delivery models. Of the few studies that have been undertaken in Australia, all examined civil engineering projects delivered under alliance contractual arrangements in the state

of Queensland, limiting the ability to apply these studies to other settings.<sup>25</sup> In the three studies conducted, two evaluated a five-day work week (i.e., lengthening daily work hours and reducing the number of working days per week). Evaluation was undertaken post-hoc, engaging with small sample sizes (fewer than 80 participants). They suggest the interventions had a positive impact on work-family conflict, increased satisfaction with work-life balance and improved health and wellbeing due to greater rest and recuperation time on weekends. These studies revealed that waged workers were supportive of the five-day week to the extent that their income was not impaired. When waged staff were not given access to overtime pay, they did not support the intervention. Meanwhile, their health improved considerably less than their salaried co-workers, whose pay was unchanged. These findings

demonstrate the trade-offs that workers make when weighing up work-life balance.

International studies of the five-day work week have found mixed results around health benefits for workers. In some cases, health improved, while in other cases no change was reported.<sup>26</sup> Most international studies found an improvement in work-life balance and family life, and improvements in organisational outcomes, such as morale, job satisfaction, productivity and quality of work. Some studies found an increase in work intensification, too.<sup>27</sup> Five-day work weeks have also been shown to decrease workplace accidents and absenteeism with minimal loss of pay to workers and minimal cost to employers.<sup>28</sup>

# Project 5: A weekend for every worker

- > The five-day work week resulted from an alternative tender submitted by Roberts Co. which increased the cost of the project by 1%.
- > The Concord site team completed works in line with the five-day contract program and quicker than an alternate tenderer's six-day week program.
- > With no weekend available for 'catch-up' work and strict adherence to working hours set in the development application, Project 5 workers said they felt more productive and efficient.

Responding to the need to address the issue of worker wellbeing and gender equality in the construction sector, in 2019, Roberts Co. submitted an alternative tender for the Concord Hospital Redevelopment project commissioned by Health Infrastructure NSW. The alternative tender was for a five-day work week program and price. At the time of the tender, the alternative five-day work week – longer work hours Monday to Friday and no work on weekends – added 1% to the contract price and 12 working weeks to Roberts Co's theoretical six-day week program. In practice, the project was completed in only seven additional weeks, in line with their five-day contract program which was faster than one of the alternate tenderer's six-day week program (see Appendix A for the independent project manager's report on the program analysis).

The increase in cost was associated with time related to preliminary costs only (i.e., the cost to set up and operate a safe, effective, and workable building site for example, site sheds and office hire, utilities, security, scaffolding and plant equipment, bins and cleaning and consumables, site supervision). The costs of subcontractors undertaking the work did not increase.

## COST

### Tender

Six-day work week preliminaries:  
\$ 31,744,679

### Tender

Five-day work week preliminaries:  
\$ 34,438,406

*NB. Additional cost of construction on a five-day work week program applied to preliminaries only. There were no additional costs from subcontractors.*





## Concord Hospital Redevelopment in a Snapshot

The Concord Hospital Redevelopment Project will provide for the construction of a new Clinical Services Building with a Gross Floor Area (GFA) of 44,000 m<sup>2</sup>. The new building, known as the Rusty Priest Centre for Rehabilitation and Aged Care, re-houses and expands existing aged complex care and rehabilitation services, veteran's physical and mental health treatment and rehabilitation services. The project also includes an integrated cancer care centre, as well as inpatient services in new purpose-built facilities.

The project specifically included:

- > a three-storey atrium linking the new building and the current clinical services building,
- > a link at lower ground floor below the atrium for goods and services to be transported between the new building and the existing building,
- > new glass lifts and associated lobby slabs servicing the existing building,
- > a basement level loading dock, patient drop off and short-term parking and cold shell for radiation oncology,
- > 214 inpatient beds, treatment chairs for cancer and infusion services, offices, support spaces, outpatient consult rooms and allied health treatment areas.

### PROJECT 5 TIMELINE

- > **November 2019**  
UNSW Sydney Human Ethics approval obtained.
- > **February 2020**  
Data collection on Concord Hospital Redevelopment commenced.
- > **March 2020**  
Due to the first COVID-19 lockdowns in NSW, data collection halted and resumed in May 2020. Additional questions were added to the survey and interview about the effects of COVID-19 on participants. Two additional Roberts Co. construction sites were added to the study. Liverpool Hospital early works, a five-day work week project was added to the study group known as 'Project 5'. Mount Street Project, a high-rise commercial building operating a six-day work week, was added as a control site to determine the effect, if any, of COVID-19 on the wellbeing of workers.
- > **October 2020**  
The five-day work week was finalised in the Enterprise Bargaining Agreement between Roberts Co. and the Construction, Forestry, Maritime, Mining and Energy Union.
- > **April 2021**  
Project 5 interim report issued.
- > **Throughout 2020 and 2021**  
NSW COVID-19 lockdowns restricted onsite data collection.
- > **19 – 30 July 2021**  
Construction sites were locked down in NSW due to public health orders. Post-lockdown, access to available vaccinated tradespeople was restricted.
- > **July 2021**  
Data collection ended.
- > **Late-August 2021**  
Concord Hospital Redevelopment main works completed (COVID-19 delays extended the program completion by one month).

Figure 1. Concord Hospital Redevelopment Project Overview and Timeline

After the five-day work week proposal was accepted, Roberts Co. and Health Infrastructure NSW engaged UNSW Sydney in 2019 to evaluate the effectiveness of the five-day work week on the wellbeing of construction workers and their families. The evaluation had three aims:

1. To measure changes in the wellbeing of construction workers and their next of kin,
2. To conduct an economic evaluation of the shortened work week, comparing in monetary terms the costs and benefits of the intervention,
3. To analyse how the five-day week delivery model challenges and addresses construction industry norms.

While the central intervention was a five-day work week, across the Roberts Co. sites they also introduced complementary interventions. These innovations were also considered in the research evaluation, and included:

- > Online site inductions and streamlined safety procedures using technology including a subcontractor's app with a site contact list, QR code control and weather information.
- > Changes in contract conditions between Roberts Co. and subcontractors, effectively reducing Roberts Co.'s sanctioning powers and paying subcontractors on the same day each month.
- > Targeted mental health first aid training and safety training.
- > Improved site facilities for workers such as a breastfeeding room.
- > For Roberts Co. employees, access to three wellbeing leave days and \$1000 per annum to spend on their wellbeing.
- > Signage at the front of the site that read: "Thank you to our subcontractors and stakeholders, we can't build without you," and named every subcontractor.

## 2.1 HOW IT WORKED

It was one thing to propose the five-day work week on paper, but another thing to put it into practice. No work on weekends required Roberts Co. to re-think its construction planning. On the Concord site, the working day which normally operates from 7am – 3pm was extended by two hours from 7am – 5pm, to provide overtime pay during the week and give workers a two-day weekend. The development application approved work hours remained unchanged and Health Infrastructure NSW held Roberts Co. to these hours to give respite to adjoining hospital facilities. On the Concord site, the subcontractors generally worked the same hours they would have worked across a six-day week but in a five-day week, giving workers two days of weekend to rest. While workers were discouraged from working on other sites on weekends, there were no formal contractual arrangements between Roberts Co. and subcontractors to enforce this. All the trades who had regular crews on the project at any stage of the project generally worked their crews on Concord for five days with no transfer to other projects on a Saturday. In terms of rostered days off (RDOs), flexible RDOs were worked by workers who wanted to work, whilst the site was shut for fixed RDOs.

The study group became known as "Project 5". In response to COVID lockdowns in March 2020, a control group was added to the study. The Mount Street Project, a high-rise commercial building operating a six-day work week, was added as a control site to determine the effect, if any, of COVID-19 on the wellbeing of workers. At the same time, Liverpool Hospital early works, a five-day work week project was also added to the study to increase the number of participants in the study.

Roberts Co. followed the tendered five-day work week program throughout the course of the study at both Concord and Liverpool projects. Exceptions were made on direction from Health Infrastructure NSW when:

- > erecting and dismantling the tower cranes, because of the high-risk nature of the works,
- > undertaking specifically requested interface work with the existing hospital site (for example road closures within the precinct, works on the atrium section where the new building joined the old building),
- > implementing public health orders in response to COVID-19, (for example adjusting the site accommodation to comply with the 4m<sup>2</sup> per person rule) at very short notice
- > work was requested to be expedited for a three-week period at the end of the project to make the facilities available for the COVID-19 response. During this period the site operated a seven-day work week.

# Research evaluation

- > This study examined two Sydney construction sites that operated a five-day work week, and one Sydney construction site that operated a six-day work week. All three sites were managed by Australian construction firm Roberts Co.
- > The first phase of the evaluation was a survey, completed by 253 workers between February 2020 and July 2021. Twenty-five workers participated in interviews.
- > In the second phase, workers were invited to nominate their next of kin to take part in the research. Sixteen next of kin were interviewed.
- > The final evaluation method, the economic evaluation, aimed to test the cost effectiveness of the intervention from an employer and employee perspective.
- > Interviews were also conducted with stakeholders from the project site and construction industry more broadly.

### 3.1 METHODOLOGY: THE FOUR PHASE EVALUATION

The evaluation assesses the short and medium-term changes experienced by workers and their next of kin and is based on an outcomes framework that was developed early in the study (see Appendix B).

The following questions guided this study:

1. What are the short- and medium-term changes for workers?
  - a. What are the effects of a shorter working week on wellbeing at work?
  - b. What are the effects of a shorter working week on the wellbeing of workers outside work/at home?
2. What are the short- and medium-term changes for the workers' next of kin (partner and family)?
3. Is the shorter working week a better model? What worked well and what could be changed?
4. What is the economic effectiveness of the shorter working week model?

Three cohorts were engaged in this research – construction workers, workers' next of kin and project and construction industry stakeholders – who were surveyed and/or interviewed (Figure 2).

Data collection commenced in February 2020 and concluded in July 2021. Data collection paused in March 2020 due to the first COVID-19 lockdown in Sydney and resumed in May 2020. Data collection then continued through periods of COVID-19 lockdowns and restrictions.

To answer the evaluation questions, the research was conducted in four phases.

#### Phase 1. Worker surveys and interviews

Waged and salaried workers were invited to participate in the survey as they commenced work on the study sites (wave 1). They were also asked to complete a second survey<sup>29</sup> (wave 2) at least three to six months after the initial survey, to understand how their wellbeing had changed over that period. In the survey, workers were invited to take part in interviews and to nominate their next of kin to take part in the research.

The survey and interviews focused on four areas of wellbeing, in alignment with the literature and logic model (see Appendix B) that was developed early in the evaluation plan: (1) mental health (2) physical health (3) characteristics of the work itself including satisfaction (4) effect on life outside of work.

The survey applied a combination of validated instruments to measure wellbeing, including the Kessler Psychological Distress Scale (K10), the Relationship Quality Index (RQI),<sup>30</sup> and a combination of objective and subjective reporting. It collected demographic information (age, sex, family status), the number of paid hours they worked before starting at the study site, the number of paid hours they worked on the site, wellbeing questions, work practice preferences, job satisfaction and time spent undertaking unpaid domestic work.

Worker interviews took place from March 2020 to October 2020. The interview questions focused on wellbeing, work-life balance, the effect of the intervention, adherence to the intervention, preferred working conditions and construction work conditions and their impact on work-life balance.

COHORTS	WORKERS*	WORKERS' NEXT OF KIN	PROJECT AND CONSTRUCTION INDUSTRY STAKEHOLDERS
Methods	Survey	Survey	Interviews
	a. Study group Wave 1 = 253 Wave 2 = 34	a. Study group = 10	12
	b. Control group Wave 1 = 58 Wave 2 = 0		
	Interviews	Interviews	
	a. Study group = 19	a. Study group Wave 1 = 8 Wave 2 = 6	
	b. Control group = 6	b. Control group Wave 1 = 1 Wave 2 = 1	

\* Waged and salaried workers inclusive of all subcontractors and Roberts Co. employees

Figure 2. Study participants and methods

Workers were recruited to participate in the survey via the Roberts Co. site smartphone app, which featured a Project 5 widget that directed workers to the survey on the UNSW website (Figure 3).

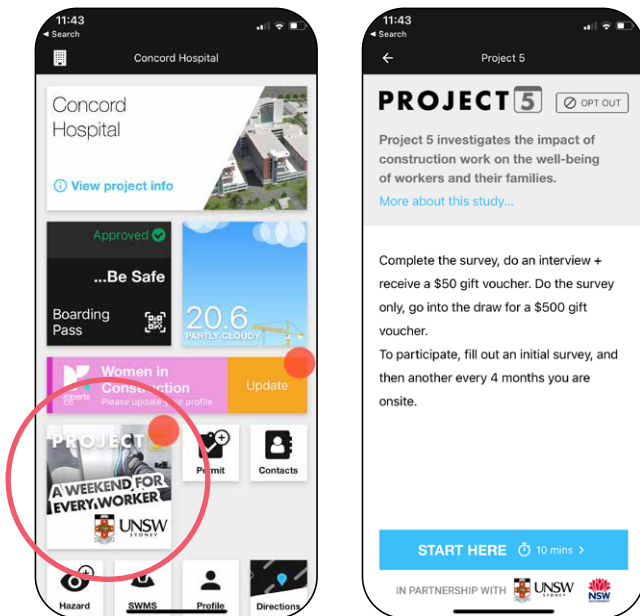


Figure 3. Participant recruitment via the Roberts Co. smartphone app

Researchers from UNSW Sydney also attended the site in person to introduce workers to the research study and encourage participation. The research team found that workers did not respond to reminders to participate sent via the smartphone app, leading the research team to attend the sites more regularly and telephone workers to encourage them to complete the survey over the phone.

## Phase 2. Next of kin survey and interviews

Workers were invited to nominate their next of kin to take part in the research. Next of kin were contacted by researchers via SMS. Those who consented to participate were sent a link to an online survey and given the option to undertake two interviews, conducted four to six months apart. Next of kin interviews took place from March 2020 to January 2021. The timing was designed to capture potential changes in their relationships and wellbeing. The survey and interviews focused on four areas of wellbeing (as noted above), plus the effect on the next of kin's employment, gender roles and preferred working conditions for construction workers.

## Phase 3. Economic evaluation

The final evaluation method, the economic evaluation, tested the cost effectiveness of the intervention from an employer and employee perspective. The economic evaluation drew on secondary data from Roberts Co. including safety data, scheduling and financial data as well as key data from the survey findings.

## Phase 4. Interviews with project and construction industry stakeholders

From May 2021, project and construction industry stakeholders were interviewed about the five-day work week. Project stakeholders included Roberts Co.'s CEO and Head of Operations, the Concord Hospital Redevelopment Project Director and Site Supervisor, a Health Infrastructure NSW representative and two subcontractors representing structures and services trades. Industry stakeholders included representatives from industry membership groups (NSW Master Builders, Australian Contractors Association, Property Council of Australia), a trade union representative and industry groups focused on mental health (Foundation House and Mates in Construction). Interviews focused on three areas (1) the context, establishment, and execution of the intervention, (2) learnings and insights and (3) future directions and interventions.





### 3.2 SURVEY RESPONDENTS

Between February 2020 and July 2021, a total of 253 workers completed the survey, comprised of 237 from the Concord site and 16 from the Liverpool site. From the control group at the Mount Street site, 58 workers completed the survey in the period between May 2020 and December 2020 (Figure 4). Due to the sample size of the control group, the research team decided to disregard the survey data of the control group for the statistical analysis below and economic evaluation. Therefore, the statistics presented in this report are based on the study group (treatment group) known as Project 5 (from the Concord and Liverpool sites).

In the study group, most workers (90.1%) were male, 40.7% were born in countries other than Australia and 3.6% were Indigenous. More than two-thirds of workers were under 40 years old (Figure 5) and most were either married or in a de facto relationship (50.2%) or had never been married (39.1%) (Figure 5).

		WAVE1	WAVE 2	TOTAL
<b>Project 5 Study Site</b>	Concord Hospital	237	34	271
	Liverpool Hospital	16	0	16
<b>Control Site</b>	Mount Street	58	0	58
<b>Total</b>		<b>311</b>	<b>34</b>	<b>345</b>

Figure 4. Number of survey respondents across sites  
\*Two repeat answers from Mount Street were excluded from the analysis

DEMOGRAPHIC CHARACTERISTIC	CATEGORY	N (%)
<b>Gender</b>	Male	228 (90.1%)
	Female	16 (6.3%)
	Missing <sup>31</sup>	9 (3.6%)
<b>Indigenous Status</b>	Non-Indigenous	234 (92.5%)
	Indigenous	9 (3.6%)
	Missing	10 (4%)
<b>Age Group</b>	17-23 years	27 (10.7%)
	24-29 years	70 (27.7%)
	30-39 years	79 (31.2%)
	40 to 49 years	38 (15.0%)
	50 years +	26 (10.3%)
	Missing	13 (5.1%)
<b>Country of Birth</b>	Australia	139 (54.9%)
	Other	103 (40.7%)
	Missing	11 (4.3%)
<b>Long-Term Illness or Disability</b>	No	229 (90.5%)
	Yes	14 (5.5%)
	Missing	10 (4%)
<b>Intimate Partner Relationships</b>	Never married	99 (39.1%)
	Widowed	3 (1.2%)
	Divorced	8 (3.2%)
	Separated but not divorced	7 (2.8%)
	Married or de facto	127 (50.2%)
	Missing	9 (3.6%)

\* Where workers did not answer this question.

Figure 5. Study group demographic characteristics

Most workers stated their occupation as 'other,' which included crane operators, traffic controllers, scaffolders, concreter, and construction workers. Almost one-fifth were project managers, and 40% were from services trades such as plumbing, electrician, mechanical service (Figure 6). Managers and supervisors constituted just under one-third of the sample (16.3% and 16.3% respectively) with the largest group identifying as tradespeople (Figure 7).

Workers' next of kin were also invited to complete a survey and interview. However, few completed the survey (n=10), in part because only less than half (42%) of construction workers provided their next of kin's contact details (Figure 2). Given the low number of survey responses from next of kin, this data has been excluded as it cannot assure statistical significance.

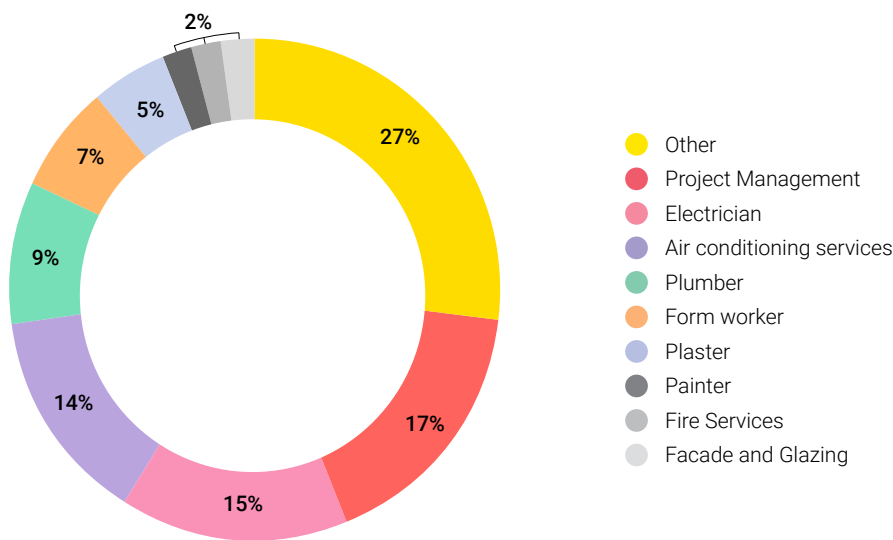


Figure 6. Worker occupations on the study sites (n=242)  
(NB: 'Other' included crane operator, traffic controller, scaffolder, construction worker.)

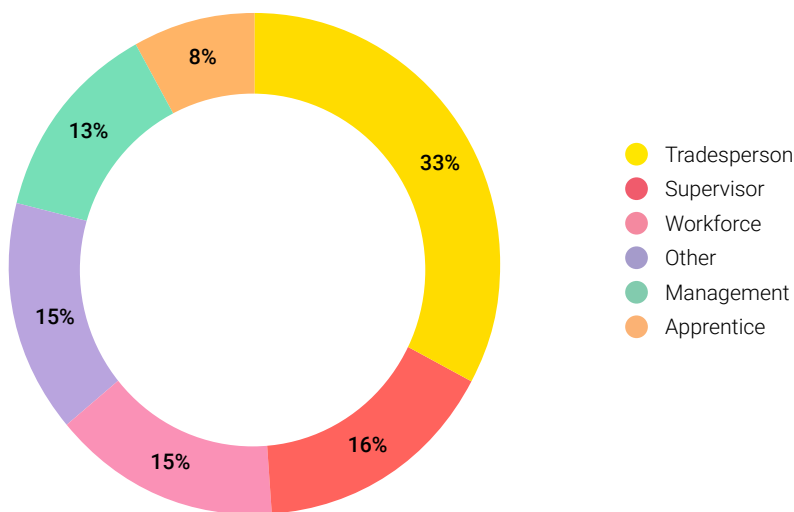


Figure 7. Worker roles on the study sites (n=242)

3.3 INTERVIEW RESPONDENTS

Between March 2020 and October 2020, a total of 19 interviews were conducted with construction workers from the Concord and Liverpool sites (Figure 8). In addition, a total of eight interviews were conducted with construction workers from the control site, Mount Street.

Between March 2020 and January 2021, a total of nine construction workers' next of kin were interviewed, with seven giving a second interview approximately six months after the first. Seven next of kin were recruited from the Concord site, one from the Liverpool site and one from Mount Street (Figure 8). A total of 12 project and industry stakeholders were interviewed in 2021.

	PROJECT 5 SITES		CONTROL SITE	TOTAL
	Concord	Liverpool	Mount Street	
Construction Workers	17	2	8	27
Next of kin	Wave 1=7 Wave 2=5	Wave 1=1 Wave 2=1	Wave 1=1 Wave 2=1	16
Project and industry stakeholders				12

Figure 8. Number of interview respondents across sites



# Findings

The findings are set out into four parts.

- > PART ONE details findings pertaining to the construction workers.
- > PART TWO provides findings pertaining to construction workers' next of kin.
- > PART THREE discusses the economic analysis of the implementation.
- > PART FOUR describes how Project 5 challenged construction norms while implementing the five-day week, and how it overcame some of these challenges to break new ground with the intervention.



## 4.1 CONSTRUCTION WORKERS

- > Workers stuck to the five-day work week, with the study achieving 78.3% adherence. A key driver was enforcement of Monday to Friday workdays and no work on weekends by the client and contractor.
- > On average, workers reduced their working hours by 3.2 hours per week during Project 5, compared to their previous job.
- > Three-quarters of workers said they would prefer to work a five-day week than other options, including a six-day week.
- > Job satisfaction increased during Project 5, including a clear improvement to work-life balance.

### 4.1.1 Adherence to the five-day work week

Before commencing a five-day work week, workers reported mixed feelings about the change. Some were excited to recalibrate their work-life balance, or as one worker put it, “I expected to get my life back”. Others were concerned that a five-day work week would reduce their income, increase their work hours during the week and disrupt their workflow.

However, the majority (78.3%) of workers reported adhering to the five-day work week and not working on other sites during the weekend, despite the construction industry having a fluid workforce with opportunities to work on multiple sites (Figure 9).

Among site managers and white-collar workers, there was strong adherence to the five-day work week. Not only were they only attending the site five days a week, but they were also refraining from weekend work off-site. In interviews, workers cited fewer emails sent on weekends from the site management and subcontractors as evidence of this.

One of the key drivers behind the adherence to the five-day work week, according to workers, was that it was “builder driven”. It was led, adhered and enforced by the contractor and client who closed both the Concord and Liverpool sites on weekends.

According to the workers interviewed, subcontractors did not appear to prevent workers from gaining access to other weekend work and attempted to accommodate those who were determined to work weekends on other construction sites.

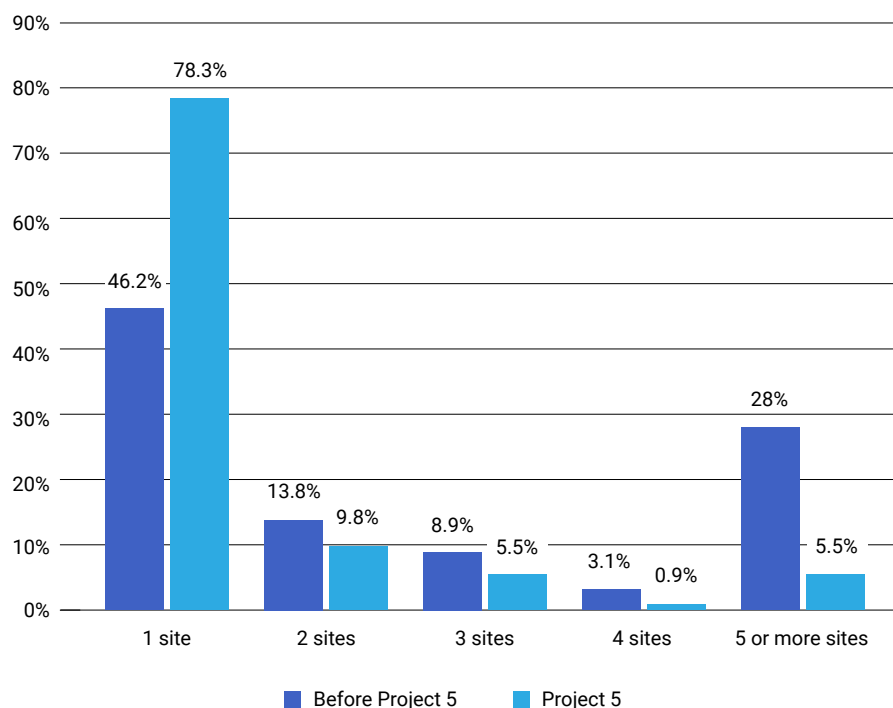
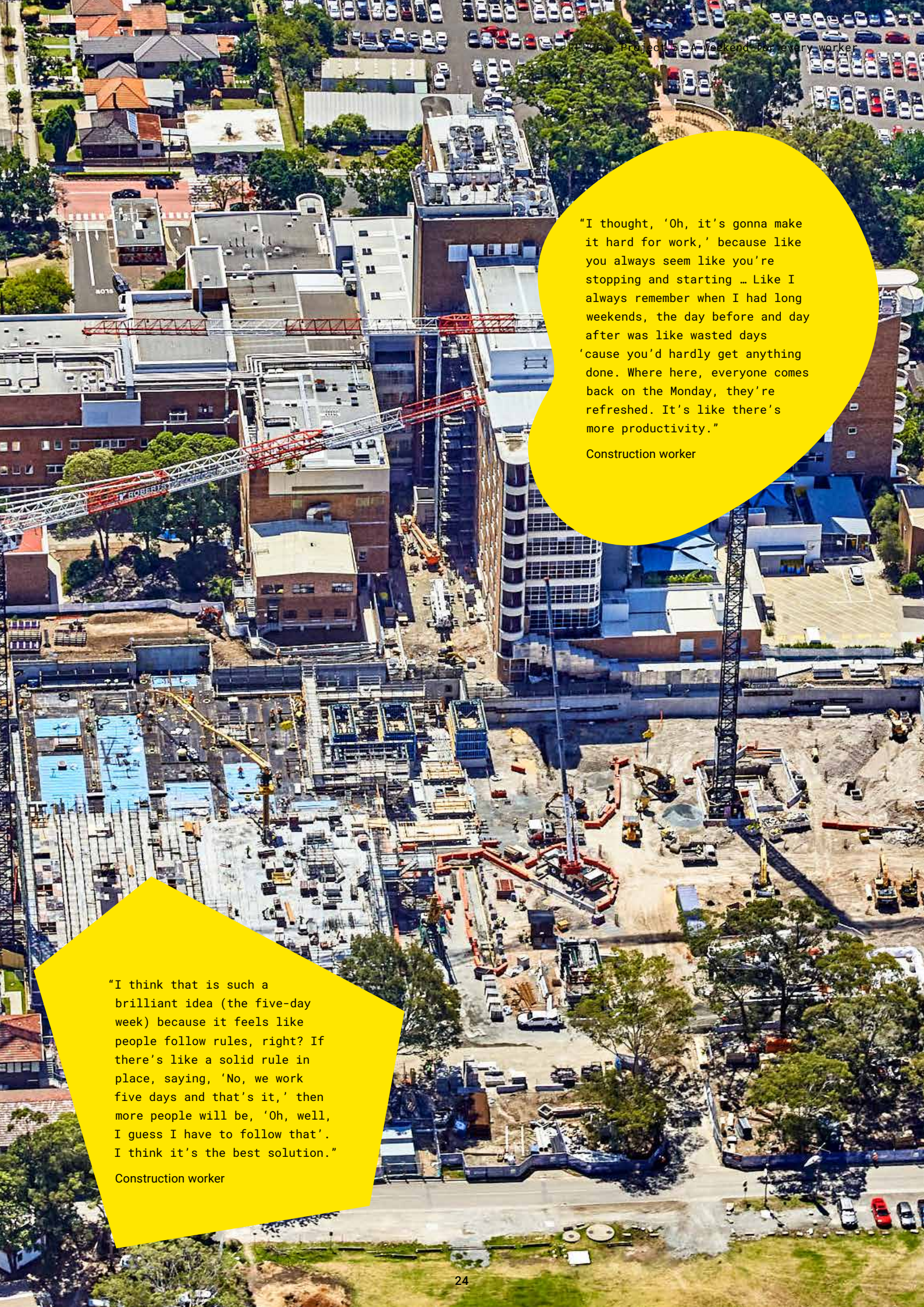


Figure 9. Number of sites where workers were employed, before and during Project 5 (n=235 before Project 5, n=225 during Project 5)





Project is a weekend for every worker

"I thought, 'Oh, it's gonna make it hard for work,' because like you always seem like you're stopping and starting ... Like I always remember when I had long weekends, the day before and day after was like wasted days 'cause you'd hardly get anything done. Where here, everyone comes back on the Monday, they're refreshed. It's like there's more productivity."

Construction worker

"I think that is such a brilliant idea (the five-day week) because it feels like people follow rules, right? If there's like a solid rule in place, saying, 'No, we work five days and that's it,' then more people will be, 'Oh, well, I guess I have to follow that'. I think it's the best solution."

Construction worker



#### 4.1.2 Construction work hours

On average, workers did 45.6 hours of construction work per week during Project 5, a reduction of 3.2 hours per week from their previous project.<sup>32</sup>

There was a shift in the total number of work hours for workers on Project 5 compared to their previous project. On Project 5 there was a decrease in the number of workers working over 50 hours per week, with almost half of Project 5 workers working between 40 and 49 hours per week (Figure 10).

In lieu of working on Saturdays, the week was reconfigured with longer working days Monday to Friday. Recognising the impact of long working hours on their wellbeing, some workers suggested that in addition to a five-day work week, working hours needed to be reduced and regulated.

#### 4.1.3 Work schedule preference

Three quarters of workers (75.4%) said they preferred to work a five-day week over alternative project delivery models, including a six or seven-day week (Figure 11).

From the alternative work schedules proposed, three quarters of respondents preferred a five-day work week. A third of workers (33.3%) preferred a 48-hour week over five days with weekends free. A quarter (27.8%) nominated a 40-hour week over five days with weekends free. A small proportion (12.2%) said they preferred to work six or seven days a week. Another small group (9.7%) nominated alternative work schedules that included (a) longer working hours (50 to 57 hours) across five days (b) longer work hours (60 hours) over six days and (c) a compressed (40 hour) four-day week. Workers interviewed additionally suggested changes to rosters and shifts (for example, three shifts per day), staggered starting hours to address presenteeism and workers being assigned to projects closer to their homes.

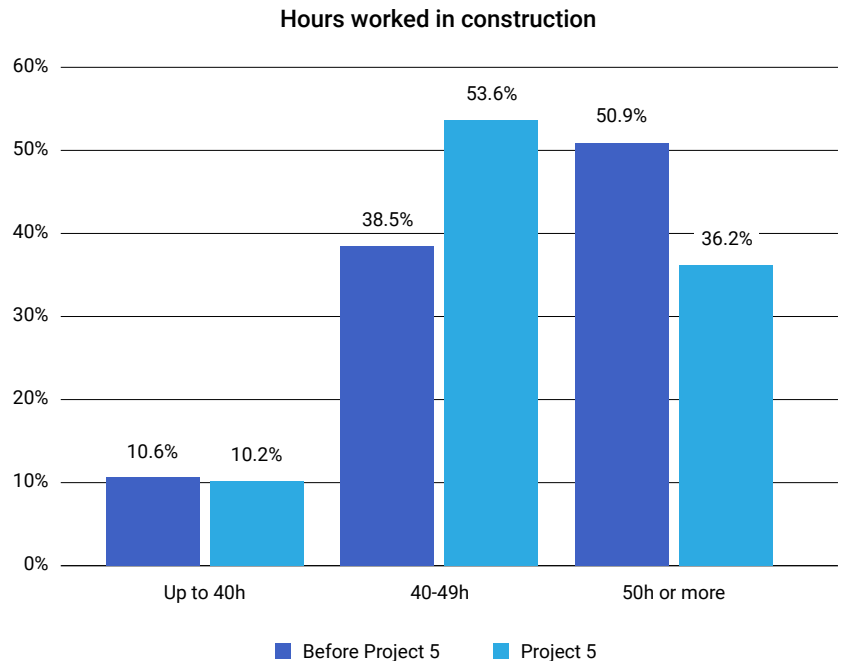


Figure 10. Total work hours (n= 226 Before Project 5, n=235 During Project 5)

"Starting later and finishing later ... it's just little things like that that are just changing culture a little bit, that could probably alleviate a lot of that anxiety of, 'Oh, I should hang around,' or, 'I look like I'm bailing early,' kind of thing."

Construction worker

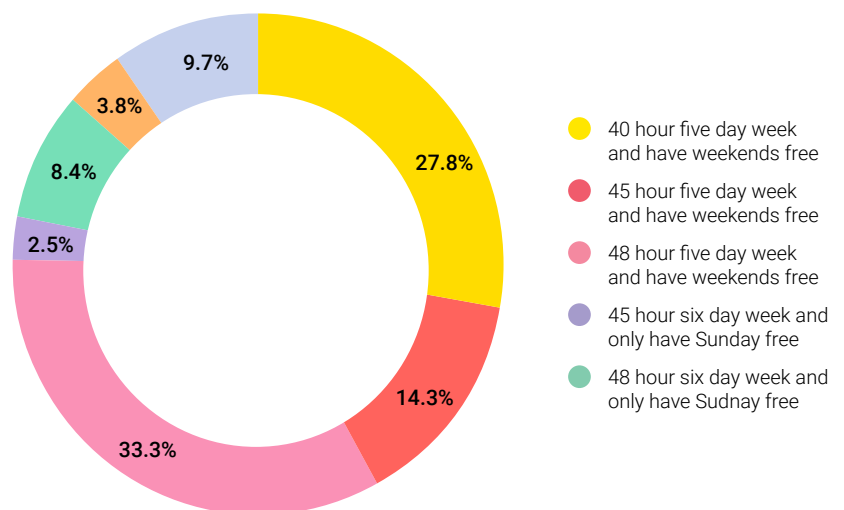


Figure 11. Work schedule preference (n=237, missing 16)

Although they were only a small group (7.2% of the cohort) separated, widowed and divorced workers showed the strongest preference for a five-day work week and fewer working hours, followed by their peers who had never married and those who were married/de facto (Figure 12).

Feedback provided in the interviews suggested that older male workers (+50 years old) who had long worked weekends would be resistant to a five-day work week, using Saturday labour as a “way of escaping ... avoiding home” life. However, over half (60%) of the older workers surveyed said they preferred working between 40 and 45 hours a week from

Monday to Friday (Figure 13). Interestingly, a third of older workers (+50 years old) and a third of the youngest worker cohort (17 to 23 years old) said they would prefer to work a 40-hour week. Across all age groups, there was a consistent preference (70-80%) for a five-day work week.

So popular was the five-day work week among some construction workers in Sydney, that some workers asked their employer to be assigned to the Concord project. As one subcontractor manager explained, “I know a lot of people were trying to get on that site and I would get phone calls off boys to get on that site.”

**Work schedule preference by marital status**

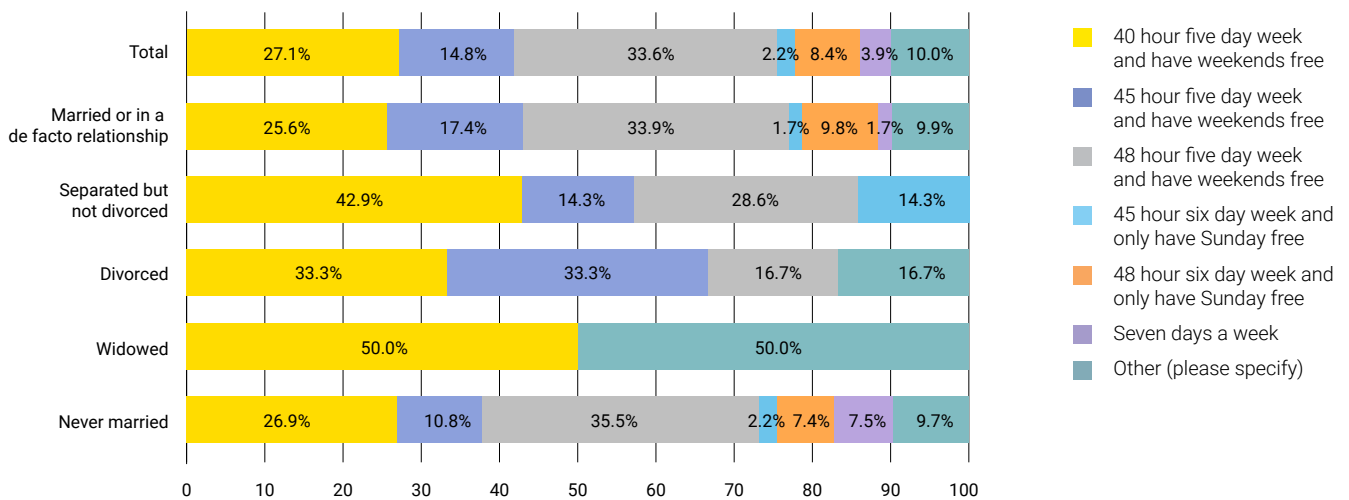


Figure 12. Work schedule preference by marital status (n=229)  
(Note: total percentages may be different to those in Figure 11 due to missing data when reporting marital status.)

**Work schedule preference by age**

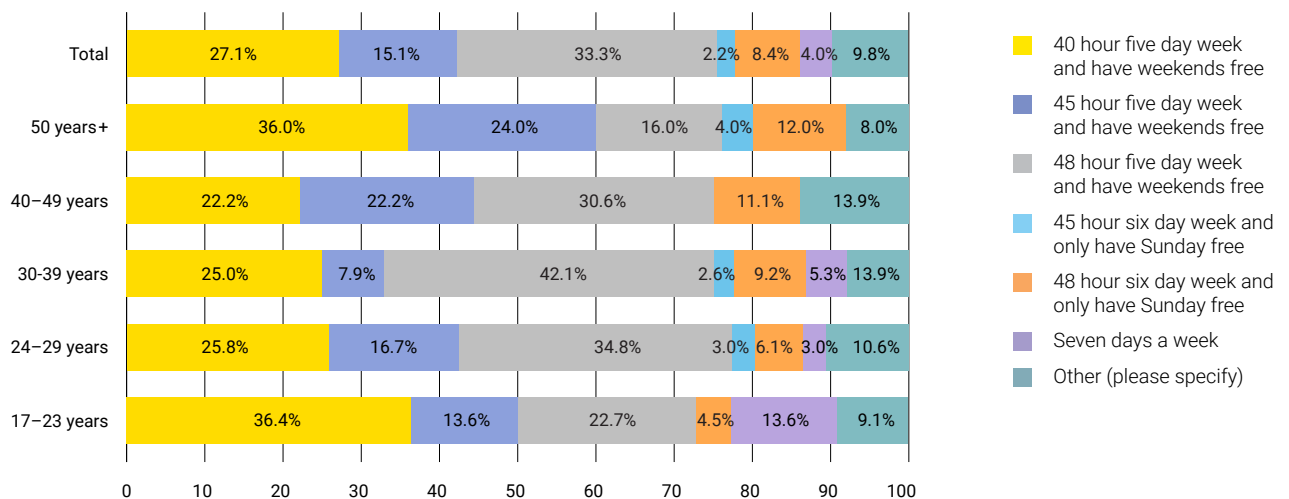


Figure 13. Work schedule preference by age (n=225)

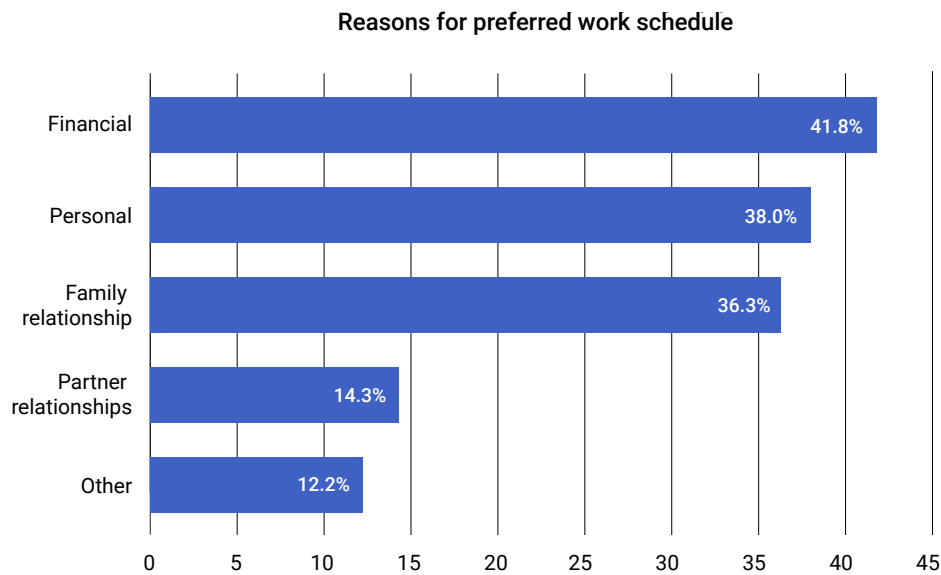


Figure 14 Reasons given for preferred work schedule (n=237, missing 16)

#### 4.1.4 Reasons for preferred work schedule

There were three equally weighted drivers behind workers' preferred schedules (Figure 14):

- > Financial reasons (41.8%)
- > Personal reasons (38%)
- > Family relationships (36.3%)

##### FINANCIAL REASONS: A PERSONAL COST-BENEFIT ANALYSIS

Finances had a major influence on workers' schedule preferences. While there was an overall preference for a five-day week, the financial effect was different for salaried workers and wage workers. There was no financial gain for working on a Saturday for salaried workers, thus many were in favour of the five-day week. For them, Saturday work was seen as overtime they were not remunerated for.

For wage workers, there remained a tension between the financial motivation to work overtime and the recognition that long work hours often hurt their wellbeing and work-life balance. Saturday work has historically provided waged workers with access to overtime pay at higher rates than regular pay. This additional income was described by workers as "the cream", that allowed them to "cover bills and for spending money on non-essentials such as taking the family out".

Workers acknowledged that weekend overtime was no longer as valuable as it once was compared to overtime Monday to Friday. Over the past two decades, overtime rates for most unionised construction workers have changed in New South Wales to become more uniform across the working week.<sup>33</sup> During the course of this study, an agreement struck by workers, unions and contractors to include a five-day work week in their Enterprise Bargaining Agreement demonstrates a preference among workers for a five-day work week.

A little under half of the workers (47.6%) said they preferred to work a five-day week with access to between five and eight hours of overtime per week (see Figure 11). This was confirmed in the interviews:

"A five-day working week with a little bit of overtime in the week to help people out financially and everyone can have their weekends at home."

Construction worker

"Five days, long hours, you're still gonna make enough money... and then you get the two days off. I think it's a good thing... I think you get better productivity. You're a bit more refreshed come Monday."

Construction worker

However, workers noted that there would always be outliers who preferred longer work hours. As one said, "...you're always gonna get the people that just wanna work, like want money, money, money."

Many waged workers said working on Project 5 forced them to undertake a cost-benefit analysis of having their weekends free. As one worker stated, "... we talk about a thousand dollars in my pocket difference [a week]. Because I was working 75 hours, 77 (hours), you know. But to be honest with you, I don't care about that ... I much rather spend time with my family or myself than actually the money."

Access to overtime work appeared to differ across the workforce, depending on a worker's role and the stage of the project. One worker on the Concord site observed: "I know the guys that have been here for 12 months already with no overtime at all, they're picking up weekend work ... just to help them out financially". From the interviews, it seemed that a lack of access to overtime during the working week may undermine the popularity of the five-day work week.

Besides financial reasons, project needs, and employers' expectations, the willingness to undertake overtime also appeared to be driven by the precarious nature of construction work. As one worker explained, "The focus is very much on the workers getting the money because you don't know when your next job, you know, you may be out of work after this job." If workers resisted doing overtime when asked, they put their job security in jeopardy. As one worker explained: "If you wanna do just eight hours a day, five-days a week, I don't think the company's too happy with you either. They like you to do a certain amount of overtime."

Other workers noted the equation was simpler when they had no choice. As one worker reflected, "As much as I wouldn't want to do it, if there was weekend work, I'd do it ... you say to yourself, 'I want to watch my kids play sport,' but it's costing \$400 to do it. Like as much as you don't want to, the money available just makes it too hard to turn down. So, I like the fact that I can't be put in that situation to choose between like earning more money and spending time with my family."

## PERSONAL AND FAMILY REASONS

Personal and family reasons shaped work schedule preferences in line with financial reasons (Figure 14). Spending more time with family, especially children, was a strong consideration for workers. As one noted: "I'd like to see my son more than I see my site manager... I feel like the five days is perfect for that."

Free weekends gave workers more time with family and friends, and as one worker reported, a rare opportunity to attend their children's activities. "I've never been to any of my kids' award things and they've had a couple of award ceremonies, and I've never been able to make it."

Working a five-day week gave workers extra time to undertake life administration and domestic chores, to exercise and participate in leisure activities, to travel, to socialise, and to relax and recover.

"You actually had time to spend time with your family, do something on the weekend, as opposed to having the Sunday with the normal six-day construction week, and you're trying to do everything at once, and do the groceries, clean the house, do washing, put this away, whatever other chores, odds and ends you had to do, and then spend time with your family. And then you're exhausted, and you basically start [work] again the next day."

Construction worker

"I really like it [the five-day work week]. Every Friday for the last 10 years it's not been the last working day of the week. There's no better feeling than finishing on a Friday and going home, and knowing you've got two days off where I can do stuff or we can go away and see people or do stuff. It's just like whenever we used to have shutdown weekends. They'd come around maybe three or four times a year and it's just like, "Whoa! Is that what a weekend feels like?"... I really think it's a good concept, personally."

Construction worker



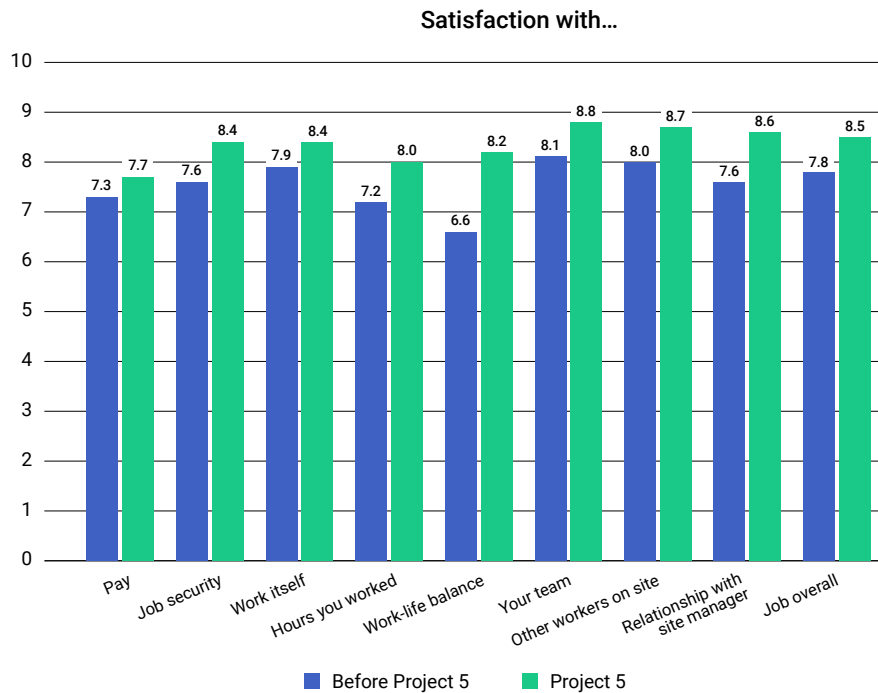


Figure 15. Satisfaction with aspects of work (paired sample t-test,  $p < .001$ )

#### 4.1.5 Impact of the five-day work week on workers

##### JOB SATISFACTION

Workers reported an increase in all areas of job satisfaction during Project 5 compared to their previous job. Various circumstances, including psychological, physiological, and environmental circumstances may cause a person to identify as satisfied with their job.<sup>34</sup>

The greatest improvements were made in the areas of work-life balance (from 6.6 to 8.2), work hours (from 7.2 to 8.0) and job security (from 7.6 to 8.4) (Figure 15). In both interviews and survey results, workers reported higher job security during Project 5 compared to previous jobs.

##### WORK-LIFE BALANCE

Half of all workers (50%) indicated the five-day week made a great difference to their work-life balance and more than a quarter (28%) indicated it made some difference. This was despite COVID-19 restrictions during the research period which prevented some Sydney workers from leaving their neighbourhoods except for 'essential' work, including construction. Around a fifth of workers indicated the five-day work week made no change to their work and free time (16%) or made them feel even busier (6%).

"When you don't see your kids for a couple of days 'cause they're in bed by the time you get back or they start asking, 'When are you coming home?' I think that's, that's not a work-life balance ... I think it's having those Saturdays. You see your kids and your wife on a Saturday, and you can have dinner with your family in the afternoon, I think that's a work-life balance."

Construction worker

Workers defined work-life balance as "getting my workload achieved and still having time to see friends, family and do activities", "being able to leave work at a reasonable time" and "being able to go to work and come home, and not think about work."

Reasons for improvements in work-life balance included more rest and more time away from the site. Workers said they felt "definitely happier" and did not "dread" returning to the site on Monday. Workers reported appreciating having a "real" weekend, that is, all of Saturday and Sunday off, to plan quality time with family and friends.

"When you work Saturdays, you usually finish after one-thirty, two o'clock, and that, then it depends on how busy you are; sometimes four o'clock. Your day's pretty much gone. I don't

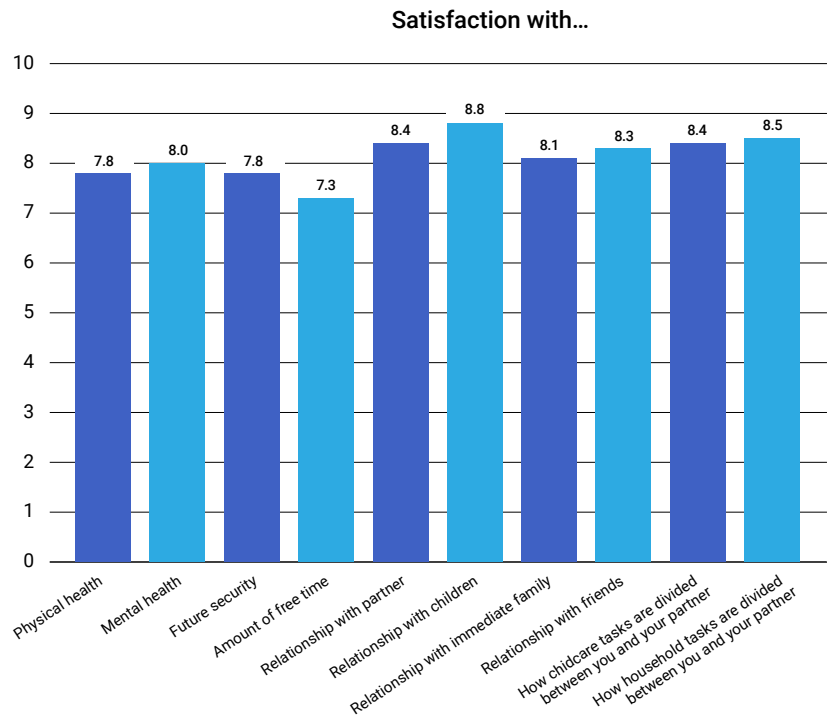


Figure 16. Satisfaction with aspects of life during Project 5

have the energy to go out. And then you have Sunday to rest instead of enjoying your family.”

While workers said their work-life balance improved during Project 5, their satisfaction with the amount of free time in their lives was lower than other areas (Figure 16). They noted that their work-life balance could be improved further with the reduction of long work hours, greater access to flexibility in their roles and with standardised work hours.

“We still do between 50 and 55 hours a week working Monday to Friday, so we still do the hours. It’s just, when you walk out of a Friday afternoon, you can go home and have a drink on a Friday and a Saturday night and know that you’ve got the weekend to enjoy yourself and spend some time with the family.”

Construction worker



The research found that the construction sector has some way to go in delivering regular consistent working hours. Only a minority of workers said they regularly fulfilled their domestic obligations, spent time relaxing, and spent time with their partner, family, and friends. Concerningly, only a small proportion of workers (15.3%) said they spent time looking after their children with almost half (44%) of workers saying they never or hardly ever did so (Figure 17). Almost half of the workers surveyed said the time they spent fulfilling their

domestic obligations (40.2%), relaxing (48.6%), or spending time with their children (40.5%), partner (44.1%) and family/friends (45.2%) was inconsistent and unpredictable (i.e., doing this sometimes).

Taking a closer look at the time workers spent on domestic work during Project 5, a trend emerged during the study where workers increased the hours they spent doing domestic labour the longer they spent on Project 5 (Figure 18).

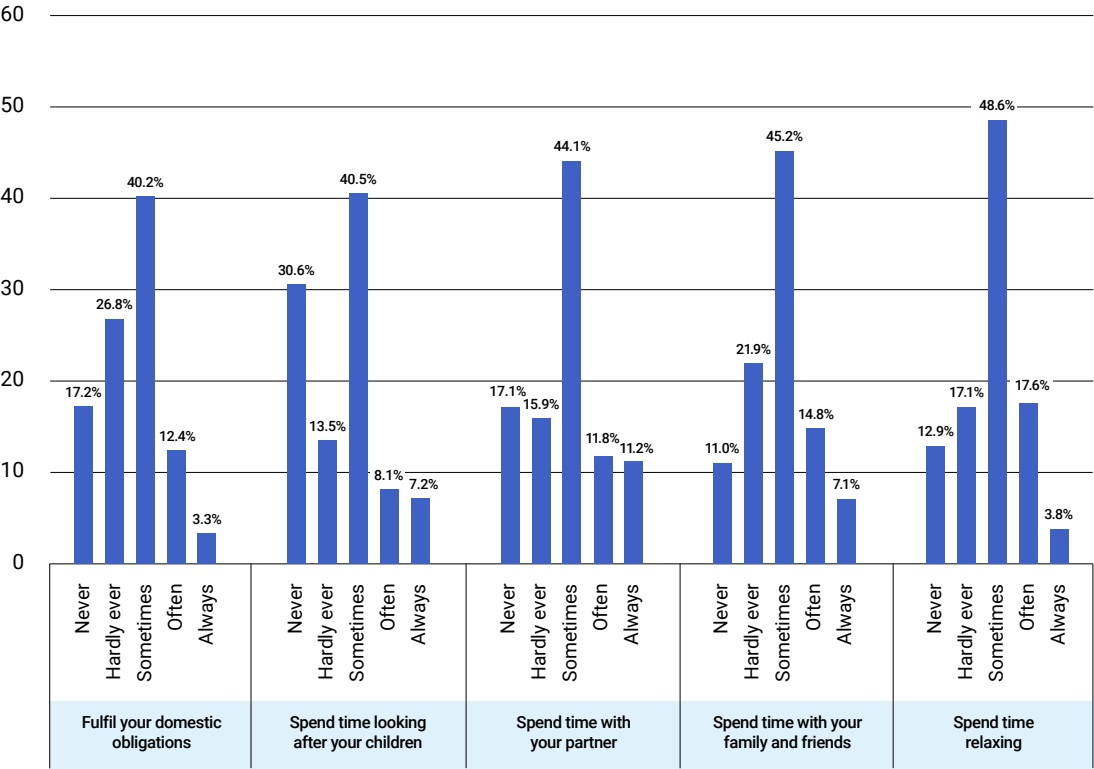


Figure 17. Time spent on activities outside of work during Project 5

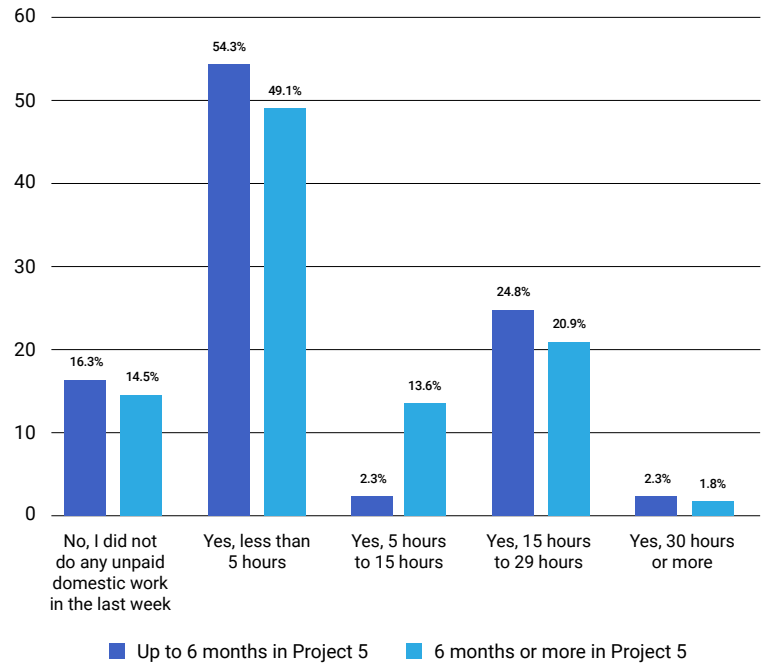


Figure 18. Time spent doing unpaid domestic work

INTIMATE PARTNER RELATIONSHIPS

A consequence of improved work-life balance was better relationships with partners, children, and families. During Project 5, workers expressed the highest satisfaction with their relationships with their children, followed by their partner, friends, and immediate family (Figure 16). Weekends away from site gave workers more time to spend on relationships.

“Doing five days? Yeah, no, she’s loving it. As I said, you’re home to help with the kids and to do stuff around the house. For us to spend time together as a family or just me and my wife too.”  
Construction worker

“I think we’re sort of a little bit happier, if anything, just because there is more time. There’s more time to do things and you’re available more often instead of being stuck at work ‘til nine o’clock unloading trucks and doing something ridiculous.”  
Construction worker

Workers identified that one of the biggest impacts of having weekends free was more time to spend with their partners.

Other workers said that since moving to the five-day work week, they “probably argue a lot less”. Workers recognised that traditional construction work had strained their relationship with their partner, because they were less able to assist with childcare and household tasks. According to workers with a partner, household chores were often split according “to whoever has more time” or “whoever is at home”. In almost all cases, the bulk of chores and childcare was left to their partner, in most cases a female partner. During Project 5, workers were more available to support their partner with childcare and household tasks. However, most workers in the study said they were satisfied with how childcare and household tasks were divided with their partners, despite it being inconsistent (Figure 16).

“It would probably be good if I was able to help out more to just pick up and drop off my daughter from school. I would generally do that maybe once a week to help out. But, you know, if you could share that a little bit more so that it was almost 50/50, I guess that would be a huge help.”  
Construction worker

Workers said that their partners often thought they worked “far too many hours”, but they had “come to accept it”. The financial and material benefits to the family were often cited by workers as a reason for this acceptance. Some workers found it hard to balance their financial needs and their personal and family

needs: "It's a Catch-22, you need the money but then you're not home." Workers recognised the high attrition rate of personal relationships within the construction sector due to long work hours and working weekends. Fatigue from work conditions – long, irregular work hours and a six-day work week – took a toll on relationships: "It was a factor in us breaking up ... I was too tired to wanna do anything fun. I just need sleep or I just wanna sit on the couch, I just can't be on my feet. I can't be talking anymore ... it can be pretty damaging to a relationship because you don't get good time together. You only get tired time together."

Others described having no time to talk to their partner, nor the patience to listen: "We have more time to talk. I had no patience to listen before. I was always, always busy. Many, many times my wife will ring me to talk to me and I'd be rude on the phone for no reason."

The research team observed that many workers, the majority of whom were men, found it difficult to discuss the effect of work on their relationship. This contrasted with their ability to discuss work and their relationship with their children.

#### RELATIONSHIP WITH THEIR CHILDREN

Workers placed a great emphasis on their relationships with their children and they took the greatest satisfaction from this, compared to other relationships and different aspects of their life. Some participants had left previous employers because they were expected to work Saturdays and weekends, missing out on time with their children.

"Why I left [name of construction company] back in the day was because it was too much and, basically one of my kids, he was playing soccer and said, 'Oh, should have seen the goal I scored. I did this. I did that.' And it was just like, 'Yeah. I've had enough of this shit. I'm sick of it. I'm missing out.' This is the prime time when I should be around, not going to work. So I resigned from there and that was that."

Construction worker

One of the critical advantages of the five-day work week, according to workers, was that it allowed them to spend more with their children and therefore, they noticed an improvement in the quality of their relationship with their children (Figure 16). "Definitely notice it more with the kids. You get out and do stuff together ... the kids enjoy that... bit of one-on-one time. I think the kids have benefitted from it."

"Saturday from eight 'til four just consists of me and my son just catching up on all the time we missed out on during the week. Just hanging out. Playing games. Reading stories. Just having fun with my son."

Construction worker

"I'm sure that in the near future, when I'm not working weekends, it should help the relationship with my kids, spending more time with them and being there to watch them play and stuff."

Construction worker

As documented earlier, free weekends allowed workers to watch their children play sport, an important activity for construction workers. As one worker reflected: "I barely got to go to any of my boys' soccer games or any of my daughter's sports. I never got to go. But here, having the Saturdays, brilliant."

Being present in their lives and giving them attention was important to their child's happiness, according to workers. Equally, a lack of attention, due to long working hours, led children to acting out in school. Workers concluded that construction's rigid work practices, the precarious nature of the sector and their own commitment to work meant they regularly missed their children's important events such as school concerts, sports carnivals, and award ceremonies. Six-day work weeks, fly-in-fly-out work and shift work resulted in less time spent with children and less quality relationships, especially with younger children. One worker interviewed explained: "I was working in [city] and coming home on weekends. Basically, my son didn't know who I was. My eldest son, he was three, so he knew ... but I had no relationship with my middle son. I still kind of find that relationship a bit tough now with him."

"Doing [project name], I was working seven days a week. That put a strain on the kids. The kids were sort of like, 'Dad, when are you gonna have a day off? Like we don't get to see ya.' One day my daughter came in. She was crying and that sort of, yeah, that, I think that was a bit of a wake-up call, and I just sort of went, 'You know what? It's not worth it.' So, I just pulled back a bit. For sure, it would have a bit of an effect on the kids. Especially when you get along with them too. It makes it hard."

Construction worker



Nonetheless, a few workers felt that the longer and irregular work hours Monday to Friday during Project 5 did encroach on their daily exercise regime, and workers with small children and babies said the longer hours Monday to Friday prevented them seeing their children and engaging in activities like feeding and bathing.

### WELLBEING AND MENTAL HEALTH

Workers defined wellbeing in different ways. Some said wellbeing was “being physically and mentally healthy” while others referred to wellbeing as “being in a good state of mind” and “being happy”. Workers said factors like adequate sleep, eating healthy food, having time to exercise and feeling positive within themselves were all contributors of wellbeing. Workers drew a relationship between their wellbeing and their mental health, recognising that one effects the other. As one worker stated: “If you’re suffering something at home and whatnot, it can affect you at work. It could affect all aspects of your life, really, and if you do suffer from a mental illness, it starts to impact both your physical and mental wellbeing.” Workers acknowledged that there was stigma associated with discussing mental health and it was a “taboo” subject by comparison to wellbeing. According to workers, stress, including financial and work stress and working conditions such as intense and long working hours, poor working relationships and low job satisfaction, impaired their wellbeing. In other words, improving conditions such as work hours, work relationships and job satisfaction would improve their wellbeing. While the five-day working week might not reduce total working hours for some, the two days off at the weekend had a positive effect on the mental health of workers according to those interviewed.

Mental health was also measured through the Kessler Score (K10) - a 10-item questionnaire to yield a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent four-week period. Based on these items a score can be computed (10-50), where a higher score indicates a higher level of distress. During Project 5, the average K10 score across workers on the site was 15.8, on par with that reported by other construction workers in the Household, Income and Labour Dynamics in Australia (HILDA) survey. Based on the K10 score, responses can be grouped in: Low (10-15), Moderate (16-21), High (22-29) and Very high (30-50) level of psychological distress. According to the NSW Mental Health Commission<sup>36</sup> psychological distress is when someone has “deeply unpleasant feelings, symptoms or experiences. These experiences may or may not be due to mental illness”. Respondents with high levels of psychological distress are at risk and should seek immediate support. Almost 85% of Project 5 workers reported a low to moderate level of non-specific psychological distress. People with high or long periods of psychological distress may experience difficulties with their daily lives, such as maintaining relationships or employment and can be at risk of developing a mental health issue<sup>37</sup> (Figure 19). More than one in 10 (12.7%) reported a high level of distress, and 2.8% reported very high levels of distress. From moderate psychological distress up to very high, support should be sought.

A few workers said they had experienced bouts of depression and anxiety when working away from home, or on a six-day work week, due to stress, separation from family and long working hours. “Constant throttle” with no “breathing space” or “reprieve” had led workers to “disassociation with most things”. One worker explained how construction work stress impacts family relationships, wellbeing and mental health: “There’s a lot

Level of psychological distress (K10, n=226)

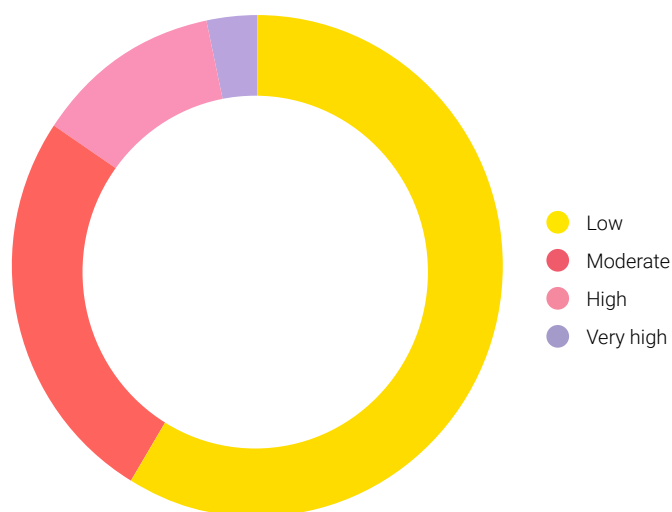


Figure 19. Level of psychological distress (n=226)

of stress involved with the job too which carries, which can get you down a bit. You have bad days at work and things like that, and then you have an argument with your wife at home, then it's a flow-on effect." Work conditions and team relationships on site also affected wellbeing.

"When I was at [name of construction company], I did get a little bit depressed, just given the hours I was doing and missing out on my family, and that sort of stuff, which was another part of the reason I resigned from there ... I did speak to my wife. I went to the doctor and I also got a bit drunk once and told one of my friends at the pub."

Construction worker

During Project 5, workers said they had seen a change in their wellbeing compared to working a six-day work week. According to one: "Since I've been working five days, I became a different person. I became a better person. More relaxed. Sometimes you don't have the time to listen to little things and it was just always busy, busy, busy. Became a more anxious person than just a normal, normal human being."

While the five-day work week improved the wellbeing of all construction workers, other factors impaired the wellbeing of women construction workers. For example, a small cohort of

women workers interviewed recognised that a tolerance of sexism, sexist and sexual behaviour impacted their wellbeing while working in construction. Some women said they would not sit with their own work crew at lunch time as they "don't like the way they talk ... just sexual things, kind of perverted". As a result, women on site converted a shed that was provided by Roberts Co. for breastfeeding, into a lunch shed for women. It was labelled, quite accurately by some men on site, as a "women's retreat". Female waged workers working for subcontractors said they did not complain about their male peers' sexist behaviour for fear of backlash, being offered fewer work hours or appearing weak.

Just over a quarter (28.8%) of workers surveyed said they had received wellbeing and mental health training. More than half of these workers (59.7%) received this training on the Project 5 site and the remainder (40.3%) received the training elsewhere. Despite the lack of wellbeing and mental health training, over two-thirds of workers (67.9%) said they could recognise mental illness in themselves and over half (56.8%) said they could recognise mental health in others. Workers also recognised the need to be "attuned" to people's behaviour on site to identify when they may need support for wellbeing and mental health issues.

Most workers (82.9%) indicated they would ask for help if they thought they had a mental illness. The first points of contact would be their general practitioner (doctor) (55.2%), followed closely by their partner, friend, counselling service and family member (see Figure 20). According to workers, having someone approachable to talk to about their mental health was important.

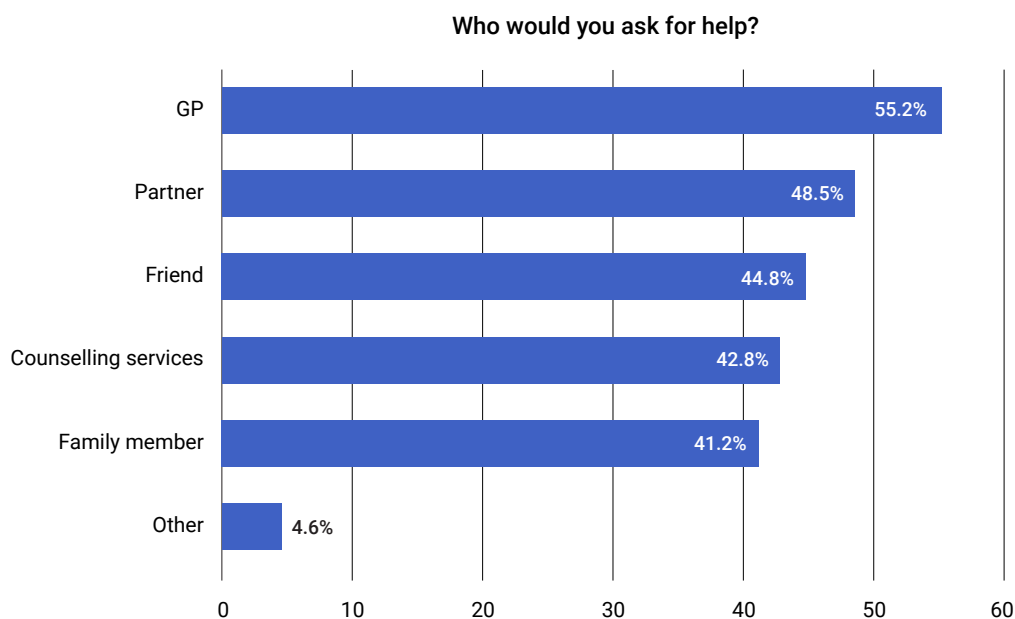


Figure 20. Where workers would seek help for mental health issues (n=253).

#### 4.1.6 IMPACT OF THE FIVE-DAY WEEK ON SITE COHESION

Project 5 was also characterised by improvements in site relationships between workers and their team (from 8.1 to 8.8), the site manager (from 7.6 to 8.6), and other workers on the site (from 8.0 to 8.7) (Figure 15). Several workers said that this had a positive influence on their mental and physical health. Many workers identified the Concord site as an exemplar, while survey results found that almost all workers found the work environment was “as expected” (80%) or “exceeded their expectations” (19%).

Workers described their workload as “pretty similar” to projects where they worked on weekends, yet the five-day work week contributed to improved site relationships and team interaction, largely a result of having time away from site to rest and recover on weekends. As one worker surmised, “I think it’s just a happier work site, to be honest”. Another noted, “Everybody that comes to our site so far that I’ve seen have said, ‘This place is unbelievable ... I’m happy coming to work’. I don’t think many people that I know can say that they’re happy going to their job ... I think it’s made me a happier person. I think I’ve got probably a lot more drive for the actual job, for my job, my position. And what else? I think it’s just a happier work site, to be honest.”

Many workers linked the improved relationships between workers on the Concord and Liverpool sites to the five-day working week. Some noted that the behaviour of workers on the site was “less intense” and less “aggressive” compared to other sites operating a six-day week.

The flow-on effect, according to workers, was “less stress”, greater empathy, trust and cooperation. The result of which was enhanced project cohesion and improved productivity compared to traditional six-day week projects.

“I think if anything, productivity is probably higher. People seem to be happier. The job’s how the job should be. It’s sort of defined. You know what’s going on. People have their role. The place is clean. It looks good. Everything’s in a great, kept manner. Safety is like as it should be, and people are on top of it. People seem to be motivated to work because I think they probably know they’re gonna get the weekend and they can recover, do whatever they need to do, and they’ve got time for their family, and then they have to get back to it.”

Construction worker

#### PRODUCTIVITY

According to workers, the absence of weekend work meant they felt more productive during Project 5 compared to working on a six-day week project. It resulted in:

- > Workers being better rested and less likely to make mistakes
- > Workers being expected to work proficiently from Monday to Friday rather than relying on Saturday to make up for lost time
- > Disciplined project planning and delivery by the site team, including forward site planning, daily schedules (e.g., crane life schedules) and clear consistent communication to the workforce
- > More hygienic site accommodation and amenities.

“It’s improved my efficiency because, ‘cause you always have that attitude, “I’ll do that job tomorrow,” or, “We can sort that tomorrow ‘cause I’ll be in on Saturday.” But now it’s like no. I don’t take any shit home [on] the weekend. I just make sure I’m efficient with the time. In terms of efficiency and productivity they’ve definitely improved.”

Construction worker

“You’re getting proper direction. The job’s organised. It’s clean. There’s actual cleaners walking around cleaning things. It smells clean. You can smell disinfectant. People know what they’re doing.”

Construction worker

“The management’s good, the structure’s good, people that work there are good. The facilities are good, like the amenities are good.”

Construction worker

Workers acknowledged that for “out of the ordinary tasks” and “out of sequence work,” Saturday work was useful. Although commonplace in construction, most workers described Saturdays as less productive and producing lower quality work, despite being an avenue to overtime pay.

"You can build stuff in the same time in five days than what you do on a Saturday, you know. Saturdays to me sometimes are just lost. Guys come in. They're just there to get the overtime and they'll, they'll cruise around, and they'll actually probably do two hours of productive work."

Construction worker

As a result of COVID-19, workers in site management roles spent some time working from home during the study. Many felt the flexibility to work from home, at least one day per fortnight, would increase their productivity.

#### SAFETY AND WORKER FATIGUE

Over two-thirds of workers (68%) indicated safety on the site met their expectations and a third (30%) said it exceeded their expectations. According to workers, two critical factors improved site safety during Project 5: a tidy site and fatigue management.

Having weekends off work gave workers access to regular rest and recovery, which they described as important, "especially when doing [a] dangerous job". The result according to workers was that they were "a lot fresher" and did not feel "fatigued." As one worker noted, "Everyone just seems a bit more chilled out. No one seems run-down". By comparison, the lack of recovery time on a six-day work week left workers little time for rest and recovery – "just mentally don't get time to recuperate" – and ran the risk of workers "working fatigued". For some workers, the opportunity to rest, recover and switch off from work was considerable. As one worker noted, on a six-day work week, "no matter how much time you sleep, unless you're getting time to just sort of tune out, then you're just constantly tired."

"I personally do make less mistakes because I do have time to rest and have a social life, and not think about work all the time. Whereas, with the six-day, that's all I could think about. Even on my days off, I would be stressing over something that I had to do that this coming week. But, having that weekend off, it does help because you do actually get time to sort of disconnect from work and forget about it."

Construction worker

A five-day work week also reduced the considerable travel time borne by workers by up to six hours per week in some cases. "I get up at three-thirty of a morning and don't get back 'til sometimes seven-thirty, and it's enough time to have dinner, have a shower, read stories with the kids and then go to bed." Or in the case of this apprentice, "I take public transport at the moment and living out in [suburb] I have to get up at 4 am to catch like a bus then a train, then another bus, to make it to work about six-thirty." Workers interviewed said travel, coupled with long work hours and working night shift, increased the risk of accidents travelling to and from work.

#### 4.1.7 Leadership

Some workers reported that the five-day work week reduced the often-unspoken expectation placed on workers to always be available for work. The Roberts Co. workforce and culture on site was recognised widely by workers as professional, inclusive, and friendly with a focus on quality outcomes for workers and the project. "[The] attitude comes not only from my project manager but from the project director and our CEO all the way down. They really like enforce and promote work-life balance in this business."

#### 4.1.8 Resistance to the five-day work week

Both the research team and workers observed resistance to the five-day intervention from other workers within the construction sector, competing companies, clients and government officials. The five-day work week appears to challenge the identity of construction workers, building and business norms.

"I know we're sort of, we're changing the mould and a lot of people don't like that. I've got a lot of friends who are in construction [saying], 'You only do five days a week. You guys don't do your jobs. You don't do, you know, what we do.' Yeah, that's right. We enjoy what we do, you know."

Construction worker

"I don't think it's a money thing, I think they're just stuck in the old ways. Some people don't want to evolve."

Construction worker

## 4.2 CONSTRUCTION WORKERS' NEXT OF KIN

- > The majority of next of kin said they would prefer their partners to work fewer days and fewer hours.
- > While next of kin appreciated the relatively high wages their partner could earn in construction, the long hours and their partner's absence on weekends placed a strain on their relationships.
- > For next of kin with children, working conditions in the construction sector meant their partners were often unavailable for fun activities, like weekend sport, as well as the labour of child raising.
- > Next of kin were limited in the employment they could pursue as a result of their partner's long hours in construction, and this also reduced their time for respite from parenting and domestic responsibilities.
- > Next of kin noticed improvements in their partner's mood and wellbeing during Project 5, reporting that they were less fatigued, more relaxed, and more available to enjoy their social and family life.

Almost all next of kin interviewed were the wives or long-term partners of construction workers. All but one was female. Most had young children and were either working part-time or not currently employed, with the worker in construction being the primary earner in the household.

When asked why they wanted to participate in the research, a number said they took part because of the importance of the intervention on their life and their relationship with their partner. One next of kin held back tears as they explained, "It's so significant to me ... I mean it's changed [my relationship with partner] a lot ... Sorry, I'm just getting a bit emotional actually. Yeah, sorry. I just mean, it would mean the world if he didn't work so ... sorry. If he could work five days like what you'd think is quite normal, that would change our life."

The majority of next of kin said they would prefer their partners to work fewer hours and fewer days. Those with young children would particularly prefer their partners to finish work earlier.

"Getting home a bit earlier during the week would be amazing or just knowing, yeah, that it's a five-day week."

Next of kin

"The current arrangement that he's in is definitely the better, the better option, you know, Monday to Friday."

Next of kin

"It makes it better. It's more positive, yeah, 'cause he's at home with us. So we get to see him more."

Next of kin

Another preference of next of kin, which they said would benefit the workers, themselves and their families, was shorter work hours and more certainty around hours and finishing times, to allow for better planning.

### 4.2.1 Views on construction work

Overall, next of kin thought the construction sector was well paid, but had the downside of long hours, presenteeism and expectations from the employer and their partner to work overtime.

One next of kin described the compromise. "As a spouse of someone who works there, it can be great, but then it can get tough when they do massive overtime hours and expected to work six-day weeks standard. And that can get a bit tough, but then on the flipside of that is that in the construction industry, they're paid very, very well comparatively. So I guess that's the compromise you make."

Next of kin expressed the view that a construction worker's value was demonstrated by adhering to long work hours and being totally available. "There's a real old-school mentality that you need to be there and you need to be there all the time. And, if you're not, it's assumed that you're not doing the job."

But next of kin could clearly identify that money was not the sole driver of workers accepting long work hours. Many spoke about the culture of masculinity in the industry, and its connection to overwork and the unwillingness of their partners to take sick leave. According to the next of kin, their partners risked being sanctioned and worse still, losing their job, if they took leave for sickness and wellbeing issues. Speaking up about mental health and seeking help was therefore difficult for construction workers. As one next of kin explained, "I guess whether you suffer anxiety, depression ... Whether you can ask for help or if you see the signs that you need help. I guess guys don't really ask for help. Don't really talk about it, I guess... Not like the girls."



#### 4.2.2 Impacts of construction work

When speaking about the impacts that construction work had on their lives outside of work, next of kin most frequently raised the topics of:

- > relationships with their children,
- > their relationship with their partner,
- > their share of domestic labour and ability to undertake paid work,
- > their own mental health and wellbeing and that of their partner.

The five-day work week altered each of these in a positive way. In the short-term the five-day work week gave their partner more time at home on weekends to spend with their family. In the medium term, next of kin thought the five-day work week would provide “a more stable life overall” within their family and relationship.

#### 4.2.3 Relationship with children

The issue raised most often by next of kin was the limited time their partners spend with their children due to work practices. This was raised in two ways. First, in relation to the worker's relationship with their children and their involvement in their children's lives. Second, in relation to the worker's lack of time to attend to childcare and contribute to the domestic labour associated with raising children.

Next of kin compared the quantity and quality of time construction workers had available to spend with their children to fathers working in other sectors. As one worker explained: “He doesn't see them on a weekday in the morning because he's up and gone, so he doesn't have that same relationship I guess that other children would have where they see more of their father. And then I guess he doesn't have as much energy when he does have free time.”

Workplace conditions in the construction sector (long work hours, six and seven-day weeks) left many partners of construction workers feeling as if they were operating as a single parent, taking on the full parenting role with limited support from their partner. “He couldn't drop them off at before-school care and pick them up from after-school care, and still go to work because his work hours didn't allow that. If he was a single dad there's no way he could continue working in the construction industry.” This situation was exacerbated for couples with limited or no family support, for example when their own parents were overseas, interstate or had passed away. As one next of kin explained, “when I first had my child, it was almost as if I was a single mother six days a week because he worked tremendously hard, but I couldn't rely on him to do anything for the day, for six days a week. And that's fair enough because he was at work. But even when I started to get to go back to work, I had to be the person that would drop my son off to day care, pick him up. Everything had to revolve around that job”.

Although work often denied them time to take part in their children's lives, some next of kin also believed partners were “reluctant” to ask for more flexible conditions, as one next of kin who was yet to have children with her partner explained.

A shift to a five-day working week was overwhelmingly positive for workers' relationships with their children because of the potential for more quality time and interaction in their lives. “I think it's amazing [Project 5]. I dread the thought of him going off this project onto another one. I think for him it's more around actually knowing who his daughter's friends are and who their parents are, and, you know, going to watch her play a game of netball or, or whatever. Even just to go and, go catch up with some friends. Yeah. I'd say that stuff has made a huge difference.” Another next of kin relayed a similar sentiment about the five-day work week, “It'll be life-changing ... because it allows him to actually be a father to the children. And it allows me to be a regular person, not a person who needs to be in three places at the same time.”

#### 4.2.4 Intimate partner relationship

When their partner was working a six-day week, next of kin said they struggled to fit “alone time” into the one day off while also respecting their partner's need to rest, spend time alone and see others. The inconsistency of work hours made it difficult to plan for family activities and time together.

The cumulative demands of traditional construction work practices in some cases led to a deterioration in intimate partner relationships. Next of kin described a feeling of “resentment” that “you have to do everything,” which led to discord between them and their partner.

However, during Project 5, some next of kin noticed that their partner working a five-day work week had removed the tension in their relationship as it gave them quality time together and allowed for their partner to rest and recover from work. “I can definitely say that in the last few months it's changed because we would literally be fighting all the time beforehand, because there was no time. And there was no downtime ... I've just noticed that we're a lot more connected in the last few months than we were for many years there. And I think that, and I can't imagine that that's a coincidence with timing. I can only imagine that that is because of him having that more time off.”

#### 4.2.5 Women's economic security

Traditional construction work conditions impact the ability of partners to work. Some next of kin said they had not been able to work at all, while others said they could not work as much as they would like, or as much as they used to. In some cases, the next of kin's access to their own career advancement and employment opportunities was curtailed by constraints placed on them from their partner's work.

A critical issue raised by some next of kin was that due to their partner's work hours, they could not rely on them to undertake their share of domestic labour or child raising duties.

There appeared to be an expectation that the female next of kin's work needed to be more flexible to fit around their children's needs and their construction partner's work. This, in turn, meant that they had to be effectively "on call," which affected how much work they could do, and whether they could work at all. As one explained, "I was offered a different role at work, and it would have meant that I worked an extra half an hour each day, and I had to turn it down because I physically wouldn't be able to pick up the children. I can't ask him to pick the children up because I know that the nature of that work is there's no set end time to the day. So it does limit my job opportunities."

Their partner's income and the value placed on it also contributed to the next of kin being the parent who would attend their children's activities and needs. For example, "For me, I'll just take eight hours of annual leave or I can negotiate to work from home on a certain day so that I can, you know, make an appointment, take one of my children to speech therapy or, you know, see the award in assembly, or something like that. I can take portions out of my day whereas for him it's a whole day or it's nothing. And it's hard to explain to your child, 'No, we're not coming because it actually is costing us \$400 for Dad to sit there and watch you receive that award'."

Other next of kin, however, were frustrated and concerned about their future economic security should their relationship with their partner break down. One explained, "it's also not that fair on me because I'm the one who's working reduced hours and, if our marriage doesn't make it to the end, then I come out with less super, less income and he's the one who's worked and has got a bigger nest egg. It's the whole gender inequality."

While some accepted their predicament, the solution often reinforced traditional gender roles. As one partner explained, "Well, I don't work so I guess 'cause he just, he makes the money and I stay home and watch the kids. That's just our balance ... He does the financials and I just take care of the home." Many were concerned gender stereotypes were being reinforced to their children, rather than being challenged. As one next of kin explained, "I don't necessarily love my son seeing but that's what he sees. He sees me working less than Daddy and he sees me doing more of the household stuff. And that's what he sees but that's just basically there's no other way around it."

#### 4.2.6 Work-life balance and wellbeing

Long work hours can impact workers' social wellbeing and health as they often find themselves out of sync with friends and family and unable to socialise, exercise or develop a hobby. According to their partners, working a five-day work week gave workers more time to spend on social wellbeing and health activities. They could now be included in activities on Saturdays and were no longer too tired on Sundays to spend time with family. Concurrently, this gave next of kin a chance to have time away from their care responsibilities. "I can't commit to anything, really, because I never know, like I

can't even make a hair appointment to get a haircut because I don't know what time he's gonna be home. I'd like to do more things with the school like I wanna be on the P&C Committee, but I can't make the meetings because I don't know if he's gonna be home or not."

The accumulation of working long hours over a long period of time, next of kin observed, wore their partners down. While working a six-day week, many described their partner's mood as "constantly tired," "cranky," "grumpy," "snappy" and in some cases demonstrating signs of being "depressed" and "physically and mentally exhausted". For the next of kin, the five-day work week gave them a reprieve from caring roles and provided them with time to spend on themselves and their wellbeing, "I mean it does give me a break when he's around; don't get me wrong. I can go see my own friends and spend some time by myself."

The majority of next of kin saw a noticeable improvement in their partner's mental health and wellbeing during Project 5, commenting, for example, "He seems happier. I've already seen changes. He seems happier, more relaxed". Another next of kin said their partner "seems happier generally and more excited to go to work ... If you're having to work six-day weeks and they're all long days, you kind of get beaten down over time and you get into that routine of 'my life is to work', whereas now, if you get that extra day and you're actually matching the schedule of all of your friends who are all generally working five days, it just means you have more time for social things and that work-life balance."

Extra time with family meant that everyone in their household was happier, according to one next of kin, while some observed an improvement in their own wellbeing. "It's definitely changed, the wellbeing, because I was really at the end of my tether. I would say that 100 per cent, if it [the working week] could go to five days, that would be amazing. I would be really disappointed if he chose to do six, like if he had a choice ... that would then put a lot more stress back onto me."

Next of kin spoke about how the sheer number of hours, expectations of work, and a work schedule that included Saturdays and sometimes Sundays affected the physical health of their partners, particularly access to sleep and rest. Others spoke about how the mental and physical stresses of the job had an impact on their partner's health. For example, "I think [construction work] affects [the quality of his life outside work] because, you know, it's obviously quite a physical job as well, often, sometimes, in that job. So obviously he's, he's, physically exhausted, mentally exhausted 'cause it's a high-risk job." Another next of kin observed that the work practices "also affected his health in a way, because he was losing weight and everything." With the five-day work week, next of kin observed improvements in their partner's physical and mental health, particularly in their partner's sleep and especially over the weekend.

### 4.3 ECONOMIC EVALUATION

- > A standard economic evaluation was not possible due to COVID-19-related disruptions in collecting longitudinal and control site data.
- > A weekly cohort analysis suggested an increasing trend in the quality of life indicator among the cohort working at the Concord Project 5 site.
- > K10 scores capturing mental distress reduced from 17.13 to 14.2 over a 20-week period (May 2020 to October 2020), suggesting a trend towards improvements in worker mental health on a five-day work week site.
- > The monthly combined injury rates per 1,000 workers and per 10,000 hours worked showed a decreasing trend from May 2020 to October 2020 for the Concord site.
- > The cost of implementing a five-day work model on a project is \$61/sqm higher compared to a six-day work model.

#### 4.3.1 Overview

Three construction sites were identified for data collection. On two sites, the five-day work week was implemented ("treatment" sites) and on the third site, a standard six-day week work model continued (the "control" site). For economic evaluation purposes, the aim was to collect wellbeing data from all three sites (via the K10 survey) and then convert the K10 indicator to the quality of life (QALY) indicator (EQ-5D) using the transformation equations provided in Mihalopoulos et.al. (2015). We intended to collect data in two waves for each survey participant (baseline and six-month survey) and then compare the six-month change in QALY on treatment sites to the corresponding six-month change in QALY at the control site. It was hypothesised that this incremental change in QALY between treatment and control groups would reflect the impact of Project 5 on construction workers' wellbeing. The second part of economic analysis then quantifies costs and savings associated with the five-day work week. These mainly include incremental costs of implementing the five-day work week, adjusted for any savings in terms of reduced incidence of injuries on the treatment sites under the hypothesis that better wellbeing of workers leads to a better safety record on the sites. Finally, the incremental cost of implementing the five-day work week is divided by change in QALY to get the Incremental Cost Effectiveness Ratio (ICER) i.e., how much money is required to improve QALY by one unit if the five-day work week is implemented.

Unfortunately, the timing of Project 5 coincided with the end of the bushfire emergency in February 2020 and the beginning of the global COVID-19 pandemic. Specifically in March 2020, NSW went into lockdown due to COVID-19. In Sydney, the restrictions started easing in early May 2020 with schools and other sectors fully open by the end of May 2020. Sydney faced no

further restrictions until the end of 2020, when the construction industry closes for the Christmas holiday break. In the context of the above issues, our data collection was affected in following ways:

- a. Although construction work was allowed subject to social distancing restrictions during lockdown, we decided to postpone collection of baseline data on mental health (K10 indicators) until May 2020 when restrictions eased. This was done to ensure that initial uncertainty and stress attributed to the global pandemic (which affected the general population and not just construction workers) was not captured in our data. The delay in collection of baseline data led to very few follow-up surveys at six months (in November 2020) as construction sites were closing in November for the Christmas holiday break. Thus, we could not use longitudinal data for our analysis.
- b. The scale of the project control site was much smaller than the treatment sites and not enough workers could be surveyed for our data collection. In the end we decided that the sample size from the control site was insufficient for any meaningful economic analysis.

From the perspective of economic evaluation, absence of data from the control group and no sufficient data from follow-up surveys is a major drawback, due to which incremental changes in QALYs and thus ICER cannot be calculated.

However, there are some interesting trends in the data collected from the treatment sites and we present these trends for the benefit of similar projects in the future. As data was collected over a period of time, trends in QALYs and safety data from Project 5 sites can be presented in a cohort/time format for a period of May to October 2020 (a period relatively uninterrupted by COVID-19 lockdowns). Similarly, data on the incremental costs of implementing the five-day work week can also be useful for future studies.

#### 4.3.2 Trends in QALY (a cohort analysis)

The K10 survey was used to collect data on the mental health of workers. K10 is a widely used, simple measure of psychological distress with values varying from 10 (no distress) to 50 (severe distress). This score can then be converted into a corresponding EQ 5D measure of QALY using the following equation (Mihalopoulos et.al. 2015):

$$EQ-5D = 0.86446497 - 2.9261616 * K10^2$$

We created weekly cohort data by taking the mean K10 score of individuals interviewed in a particular week. This score was then transformed into corresponding EQ-5D values. Figure 22 plots these cohort level EQ-5D values for weeks where data from at least four individuals was collected. The mean K10 score over all weeks was 15.32, varying from 17.13 in week 20 to 14.2 in week 36 (see Figure 21). The corresponding EQ 5D values vary from a minimum value of 0.77 (week 20) to a maximum value of 0.80 (week 31). The fitted line of the data also shows an increasing trend in QALY measure on Project 5 sites over a 20-week period (from week 20 to week 36) (see Figure 22).

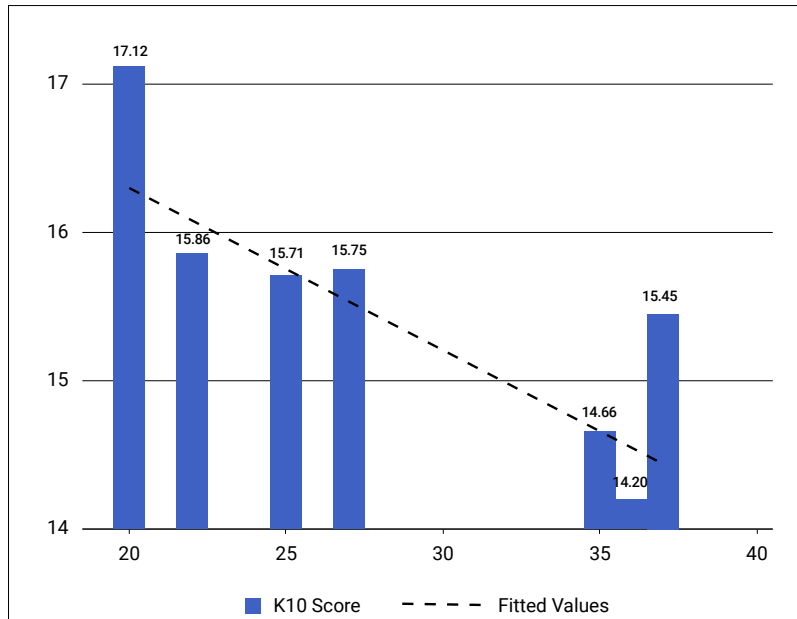


Figure 21. K10 Score trend (May 2020 to Oct 2020)

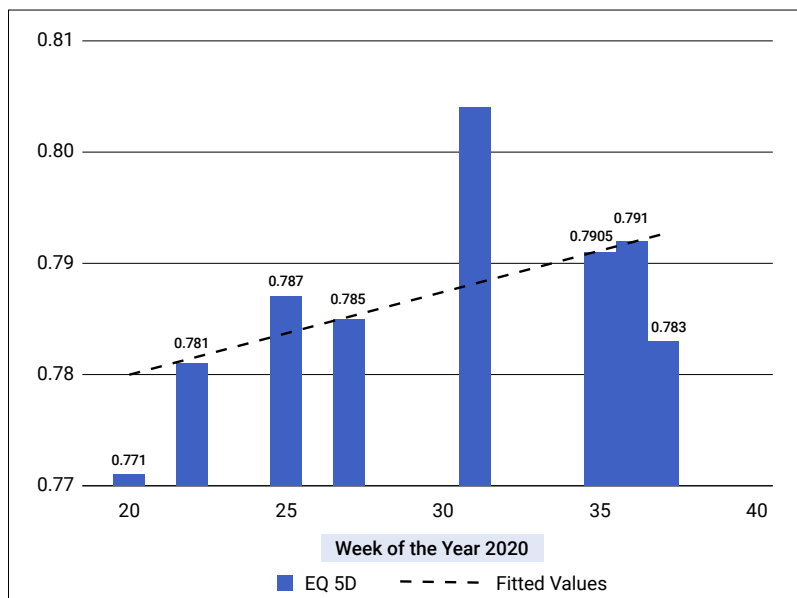


Figure 22. Weekly trends in EQ-5D QALY measure in Project 5 sites (May 2020 - October 2020)

4.3.3 Trends in the safety data

It is hypothesised that better mental health of workers can potentially reduce the incidence of injuries on the worksite, thereby saving time lost to injuries and reducing costs of medical treatment, resulting in cost savings for management. Monthly data was collected for three types of injuries: Lost Time Injury (LTI), Medical Treatment Injuries (MTI) and First Aid

Injuries (FAI). The monthly frequency rate of total incidence of these three injuries per 10,000 hours worked and per 1,000 workers is shown in Figure 23 and Figure 24 respectively. Indeed, Project 5 had a better safety record than the average construction project in Australia.<sup>38</sup>

Although injury rates were low to begin with, the monthly trends show a decreasing trend in injury rates for Project 5 sites.

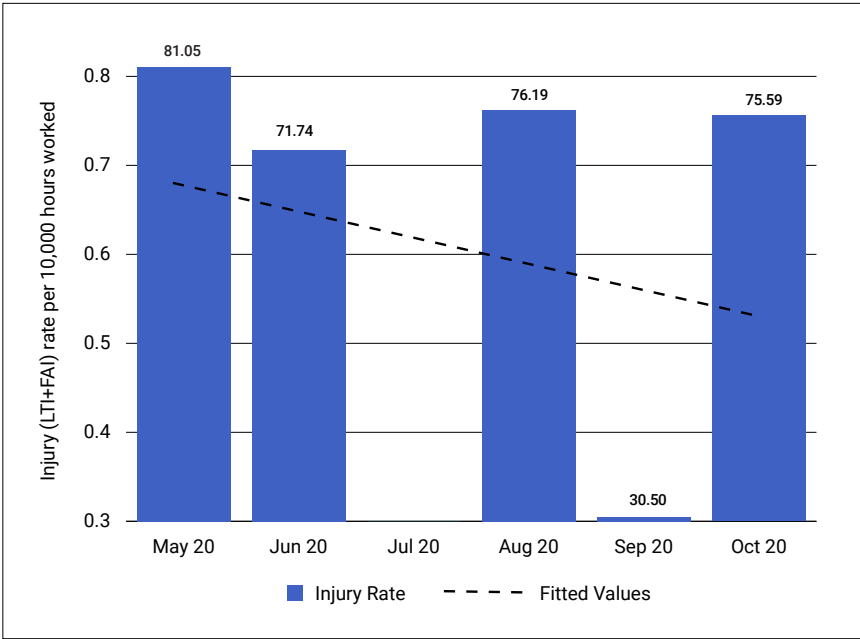


Figure 23. Injury rate (MTI+LTI+FAI) per 10,000 hours worked (May 2020 – Oct 2020)

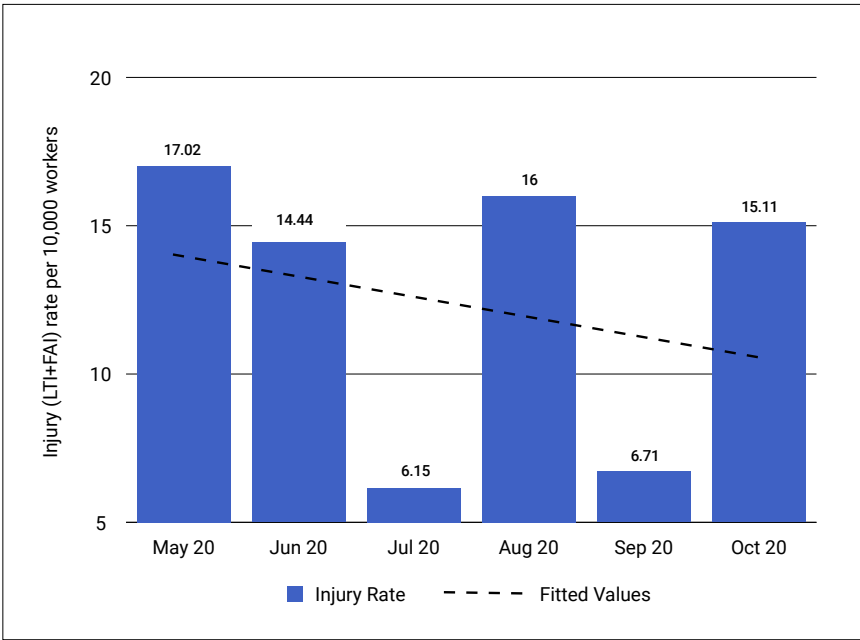
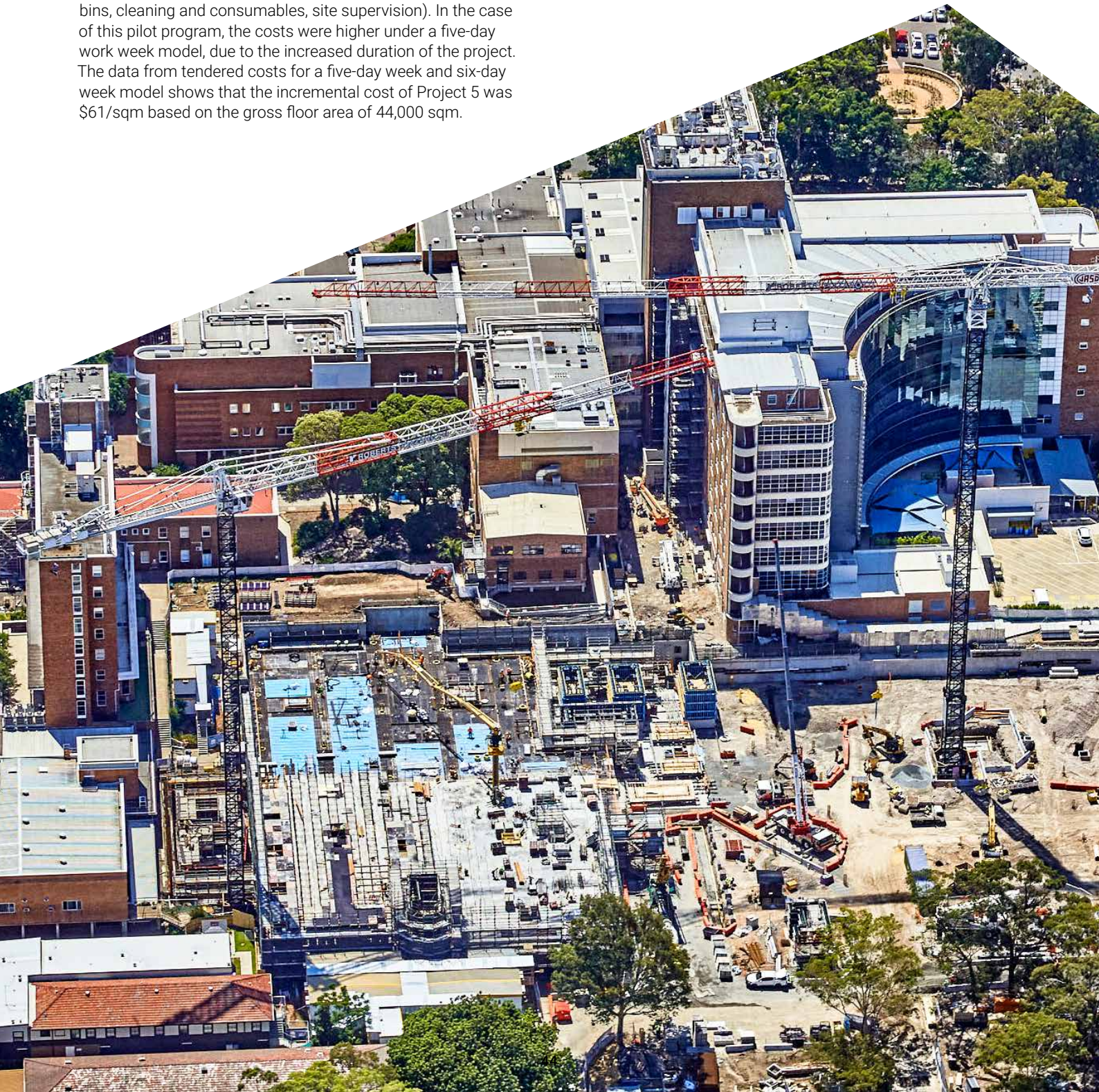


Figure 24. Injury rate (MTI+LTI+FAI) per 1,000 hours worked (May 2020 – Oct 2020)



#### 4.3.4 Incremental cost of implementing project 5

One of the key aspects of the economic evaluation is to compare changes in QALY to the incremental cost of implementing the five-day work week. The data from the Concord site shows that variable costs of the project, such as the cost of sub-contractors, remain the same for management under a five-day week and a six-day week model. The only difference that arises is in the preliminary costs, which are mainly the fixed costs to set up and operate a safe, effective and workable building site (for example, site sheds and office hire, utilities, security, scaffolding and plant equipment, rubbish bins, cleaning and consumables, site supervision). In the case of this pilot program, the costs were higher under a five-day work week model, due to the increased duration of the project. The data from tendered costs for a five-day week and six-day week model shows that the incremental cost of Project 5 was \$61/sqm based on the gross floor area of 44,000 sqm.





#### 4.4 CHALLENGING CONSTRUCTION NORMS WHILE IMPLEMENTING THE FIVE-DAY WORK WEEK

- > Narrow views of productivity were identified by industry stakeholders as a barrier to the five-day work week, with many believing clients would view the move as counterproductive.
- > Government procurement practices were another industry norm that act as an obstacle to reform, as governments tend to look at direct costs of a tender, and not indirect costs such as health costs for the workforce.
- > After participating in the Project 5 study, subcontractors realised Saturdays were not a productive day of the week. Project stakeholders witnessed workers' enthusiasm to finish tasks by Friday, as they looked forward to the two-day weekend.
- > The invitation by a government client, Health Infrastructure NSW, to submit different delivery models in the procurement phase was the essential launching pad for Project 5.
- > Support among workers for the five-day work week led to its incorporation into the NSW Enterprise Bargaining Agreement (EBA) with a number of large contractors while Project 5 was still in progress.

Putting the five-day work week into action on a large health project in Sydney required the project team of Roberts Co. and Health Infrastructure NSW to think creatively about how to work around entrenched practices and mindset in the construction sector. The following section draws on interviews with industry stakeholders to document their views about the five-day work week and its likely success in the construction sector. It also documents feedback from project team members on the obstacles they encountered when delivering a five-day working week during Project 5, and their responses.

##### 4.4.1 Construction norms

###### VIEWS ABOUT PRODUCTIVITY AND WORK HOURS

According to construction industry stakeholders, a key challenge of implementing a five-day work week would be the client's view of productivity. Industry stakeholders believed that clients simply equated the number of work hours with the level of output, with little thought for the quality of the work produced. In other words, clients would view the five-day work week as significantly less productive than a six-day work week because it would take longer to deliver a project. As an industry stakeholder asserted, "It's really going to live or die by productivity ... Clients need to know that the jobs can be delivered on time to high quality and to a reasonable cost or competitive cost."

This view of productivity, however, gives little consideration of the quality and value of work hours or the health and safety of

the people working these hours. This sentiment also overlooks anecdotal evidence by industry and project stakeholders that Saturday work is often unproductive and costly. There was recognition in the stakeholder interviews that many building programs tendered by clients set unrealistic timeframes. "I think, the industry has gone way too far on programs being that tight and a builder wanting to win the next job and taking projects on in a timeframe that is unachievable. And that's why we're seeing seven days a week, 24-hours a day jobs operating. And I think [the five-day week] just relieves the pressure and brings it back to organising jobs properly, making sure that they're set up from day one, and they're run in an efficient way. And I think it all benefits a business."

Most industry stakeholders agreed that further research currently being undertaken by the NSW and Victorian Construction Industry Cultural Taskforce (CICT) was required to build a greater evidence base about the effects of different project delivery models on people in the sector, productivity and cost of projects.

###### EXISTING PROCUREMENT PRACTICES

Construction industry stakeholders perceived that government procurement practices routinely prioritised construction costs over indirect costs and value considerations in tender assessments, often overlooking the value or indirect costs associated, for example, the health benefits to the workforce of different project delivery models. This is another key challenge for delivery models like the five-day work week.

For the five-day work week to become uniform, according to industry stakeholders, government as a large and influential client would need to mandate it, or run the risk of it being applied ad hoc, leaving systemic issues such as long work hours, low gender equality and poor worker wellbeing remaining intact.

"I think it needs to be driven from government, initially, on government projects. And then I think the, the private sector will follow on, eventually. But unless it's driven from somewhere, I think it'd be done ad hoc and not take off."

Industry stakeholder

"The [construction] industry is very good at doing what it's told to do. If you ask the industry to build you a pink elephant, they'll build you a pink elephant. But they're not so good when it comes to looking to do things, taking a step back and looking to do things differently. Therefore, if we're going to see progress in this area, external intervention is important."

Industry stakeholder

Interviews with industry stakeholders recognised the complexities of working with governments, where policy and timing can be influenced by political motives. There was also the challenge of working with the different levels of governments in Australia. By their complex and political nature, governments can simultaneously act as a barrier to change and an enabler of change, as an industry stakeholder warned, "I think government's role as client here can be both helpfully, sort of far-sighted and empathetic, and also stubbornly constrained in what it's always done. Quite often at the same time."

#### RESISTANCE TO CHANGE

Construction industry norms are so deeply ingrained that a real challenge to the five-day work week is resistance to change. One industry stakeholder commented, "There is nothing special about working a five-day week." The project team also recognised "a lot of scepticism" within the industry. As one industry stakeholder surmised, "I think there are some that feel a bit threatened by it almost. Threatening the traditional way of construction. And there are those that really welcome it".

"I think it's fair to say that there'd have to be changes in outlook and behaviours right across the board by all people involved in construction. So right from clients to contractors, to supply chain, to the workforce. There'd have to be a significant change in mindset and we are a very conservative industry, traditional industry that doesn't like change."

Industry stakeholder

#### 4.4.2 Breaking new ground: implementing Project 5

##### PLANNING AND THINKING OUTSIDE THE BOX TO ACCOMMODATE THE FIVE-DAY BUILDING CYCLE

The project team had to demonstrate great creativity and innovation to operate a five-day working week within the context of a sector where long hours and a six-day working week are deeply embedded in practice. The team overcame these challenges by conducting building workshops and through careful planning. For example, the team had to re-think the way concrete was poured, to work around the five-day week. This required adjusting their timing and using different concrete treatments to accommodate the two-day break. Due to the site's proximity to neighbouring hospital buildings, the team also had to complete concrete pours by 6pm, rather than later in the evening which is often the case. The project team observed greater efficiencies on site under the adjusted schedule. "We noticed that the subbies [subcontractors] would genuinely push for the pour on the Friday rather than let it slip to the Monday. They were driven to ensure the works were complete by Friday as they loved having two days off. We have also noticed subcontractors providing more labour to the site rather than drive a smaller crew harder with more overtime."

Commenting on the difficulty of changing building norms, the project director from Roberts Co. said, "It's actually not been that hard, to be honest. It's actually been surprisingly simple to get the message across and to get people motivated to do it. I think it's because people want it."

A further success in the implementation of Project 5 was that Health Infrastructure NSW provided upfront project planning on time, including timely internal project sign-off and tender documents to contractors. The early phases of construction, often managed by the client, have a large influence on productivity. In the interviews, project stakeholders proposed that more time spent in the early phase, producing quality design, would result in greater productivity in the construction phase.

"The six and seven-day crunch at the back-end of a program that you see on most construction jobs is because we've wasted time at the front end, because we haven't got design. You don't resolve design, you can't procure. You can't procure, you can't build. So instead of saying every job has to have six and seven days of construction at the back end, fix the root cause, and I think the root cause is good and timely design."

Industry stakeholder

##### ENCOURAGING INNOVATION IN WORKER WELLBEING AT PROCUREMENT STAGE

Project 5 has shown what can be achieved when government clients play a critical role in sponsoring, testing and evolving project delivery interventions in the construction sector. According to industry stakeholders, government clients have traditionally prioritised tight programs and bottom line, overlooking the value or indirect costs associated with building.

Thus, the fact that Project 5 was the result of a Health Infrastructure NSW procurement process was acknowledged as an implementation success. In its tender to contractors, Health Infrastructure NSW requested innovation focused on work, health and safety. This gave Roberts Co. the opportunity to propose a five-day work week program. Inviting different delivery models in the procurement phase was the essential launching pad for Project 5. Health Infrastructure NSW has been able to play a key collaborative role in testing an initiative for its potential to improve the health and wellbeing of the community; one of its core values. As the Health Infrastructure NSW representative articulated:

"In government we obviously have the ability to directly impact health and safety on our sites and we've been asking ourselves for a few years now where can we actually influence and drive some innovation, and so we started asking our contractors to give us an innovation offering in work, health and safety ... That collaborative tendering process I think is something we want

## Success from the perspective of the subcontractor

- > Subcontractors were surprised at how quickly workers "got on board" with the five-day work week and how popular it was, particularly amongst younger workers.
- > Subcontractors assessed their teams working on Project 5 to be "happier" and a "more productive" workforce, as free weekends gave workers time to rest and recover physically and mentally, resulting potentially in high productivity and better safety decisions.
- > According to subcontractors, work hours on Project 5 were comparable to a six-day program. However, Project 5 had a cost benefit, as subcontractors discovered the considerable overtime costs for Saturday work were not commensurate with the value of work undertaken on Saturdays.

"I don't think there was that much time lost even though we were working one day less because I think the guys knew that they only had five days, whether they put the extra effort in or because they were just a happier and more productive workforce they managed to get virtually the same result. From what I can tell, I don't think it's affected the program too much."

Subcontractor

to do more and more of, so hearing from our partners which projects best suit them, how the project teams align with those projects, how much time they actually think it's going to take to deliver a project, and giving everyone enough breathing room."

The Health Infrastructure NSW representative added that the choice of the five-day program for the Concord Hospital redevelopment had "really started a conversation" about change across government and business. "We're not saying it's going to be the be-all and end-all to solve all of the culture problems in the construction industry but we're trying. We're trying something and we're going to test whether it worked or not."

### IMPROVING THE WORK-LIFE BALANCE AND WELLBEING OF WORKERS

Industry stakeholders believed a five-day work week was likely to produce better work-family balance and improve worker wellbeing. Stakeholders from Mates in Construction and Foundation House, an alcohol, drug and gambling addiction treatment centre for the construction industry, said the five-day week would help to mitigate relationship breakdowns, which they found often led to episodes of anxiety and depression, and potentially, drug and alcohol abuse and/or suicide. Better work-life balance and fewer working hours also contributed to improved fatigue management and a safer construction sector for some stakeholders. "If your mind's not on the job, you're not only a risk to yourself but everybody else working around you. And I think that those extra-long working hours also has an impact ... for the safety relationship."

### WORKING TOGETHER

Clear evidence of implementation success was the support for the five-day week from waged workers and its eventual incorporation into the NSW Enterprise Bargaining Agreement (EBA) with a number of large contractors while Project 5 was still in progress. As the union representative noted, anecdotal evidence of the benefits of a five-day work week had been growing in Queensland, where five-day work weeks had been

trialled. "The feedback I'd received prior to Concord from our Queensland branch, around the five-day week, was that fatigue came down massively. Sick days came down massively. And just morale on the job was improved massively. From the feedback I've received from Concord, it's pretty well how it went out there."

In addition to the five-day work week, the new NSW EBA also included greater flexibility of work start and finish times and a provision for job sharing to break the male breadwinner worker model and to encourage "single fathers, single parents, single mothers, older people" to take up "a part-time" role inclusive of "pro-rata entitlement[s]."

### A NEW APPROACH TO MOVE THE SECTOR FORWARD

Project 5 was recognised by industry stakeholders as a timely, innovative and necessary approach by Health Infrastructure NSW and Roberts Co. to address the wide range of damaging health effects of current construction work practices. One stakeholder remarked, "I think the five-day week is the biggest thing to come out in our industry in 20 or 30 years." Others viewed the five-day work week as an answer to the sector's skills shortage and gender inequality, and an avenue to retaining older workers and attracting and retaining younger workers.

"These are really two big issues [gender inequality and worker wellbeing] that we need to address as an industry if we're to improve the sustainability of the industry, and one key factor with both of those, to address both of those issues, is the working conditions that we have as an industry and primarily the amount of hours that we work as an industry."

Industry stakeholder



# Discussion

When the Project 5 research team embarked on this study in February 2020, we had no idea that smoke from the 2019-2020 Black Summer bushfires nor a global pandemic was just around the corner. COVID-19 disrupted the research with sector-wide lockdowns and restrictions to sites. This hurt our team's ability to recruit workers and ultimately impacted our research objectives and outcomes, notably the economic evaluation.

Our research findings, therefore, are shaped by the unusual context in which this study took place.

Throughout Project 5, various improvements were witnessed to the lives of workers and their next of kin, including:

- > An improvement in workers' wellbeing, job satisfaction and work-life balance
- > An improvement in workers' relationships with their partners and children
- > An improvement in next of kin's wellbeing and work-life balance.

## 5.1 WELLBEING IMPROVED AT WORK

Workers reduced their working hours by 3.2 hours per week during Project 5, compared to their previous job, with most working between 40 and 49 hours per week. A shorter work week and reduced working hours resulted in increased job satisfaction and improved wellbeing. During Project 5, workers reported improved satisfaction in their workplace relations and site cohesion, work-life balance, work hours and job security.

Workers reported improvement in work-life balance – 50% said they found a great difference to their work-life balance and 28% said they saw some difference to their work-life balance. There was also an increasing trend in the quality of life indicator among the cohort working at the five-day work week site. Additionally, the mental distress of workers and injury rates reduced over the 20-week period from May 2020 to October 2020. This data reflects a period within the construction lifecycle that does not include the project completion phase, when work hours tend to increase. However, it does show a trend towards improved wellbeing as a result of a shorter working week. Interviews with workers confirm this.

Site cohesion improved during Project 5, owing to workers having time to rest and recover on the weekend. Workers reported greater empathy, trust and cooperation during Project 5. Improvements in behaviour, less aggression and intensity contributed to site productivity, and improvements in worker wellbeing, mental health and safety.

According to workers, further gains in work-life balance could be made with the reduction of long work hours, standardisation of work hours and greater access to flexibility in their roles. For female workers, a tolerance of sexism, sexist and sexual behaviour continues on site and has a negative effect on their wellbeing.

### 5.1.1 Wellbeing improved outside work and at home

Improved work-life balance on Project 5 gave workers more time to spend on rest, social activities, exercise and quality time with family and friends. More time spent with family and friends produced stronger relationships and improved worker wellbeing.

This was a major shift for many workers who recognised that traditional construction work practices had often put a strain on their relationship with their partner, children and family, as the accumulation of working long work hours over a long period of time affected their partner's mood and wellbeing. For some, physical and mental exhaustion from longer work hours had been a source of irritability and tension within their intimate partner relationships. Partners of construction workers saw a noticeable improvement in their partner's mood and wellbeing while working a five-day work week, reporting that their partner was less fatigued, more relaxed, and more available to enjoy their social and family life.

Having weekends off meant workers could spend more time with those they loved. Many workers said a shorter work week improved their relationship with their intimate partner. It also gave workers the opportunity to be more available to support their partner with childcare and household tasks, something

not possible when they were working a six-day week or working fly in fly out.

It was clear in the research that having a strong relationship with their children was important to workers. Like their relationship with their partner, the quality and quantity of time workers had available to spend with their children was limited by traditional construction practices. For many workers, Project 5 was the first time in their construction career that they were able to consistently attend their children's weekend activities, most notably sporting events. This was significant for workers.

Having the weekend off made it easier for workers to navigate childcare arrangements too, which might be why a shorter work week was most popular with separated and divorced workers. Workers felt strongly about being present in their children's lives and giving their children attention. They realised that their presence as a parent was important to their child's happiness and improved the quality of their relationship with their children.

A shorter working week gave workers more free time to spend exercising, socialising and resting, all of which improved worker wellbeing.

There does remain a tension for waged workers, as greater work-life balance often comes at a cost to their income, particularly for male workers who often assume a main breadwinner role. While Project 5 went some way to reducing work hours, irregular and long work hours Monday to Friday continue to act as a barrier to workers with childcare roles and responsibilities. This is especially relevant for the inclusion and progression of women in construction, as women undertake the bulk of society's caring roles. While most workers highlighted the importance of spending time with children on weekends, few expressed a desire to undertake more childcare during the week, and most were satisfied with the unequal division of household and childcaring labour. It seems that gender roles remain deeply embedded within work structures and individual mindsets. In construction, this undermines workforce gender equality, while putting pressure on family relationships, including relationships with children. As Strazdins et al.<sup>39</sup> remind us, "within families, long work hours create a gendered system of who has a job and who has time for care".

### 5.1.2 Workers' next of kin experienced significant change

Almost all next of kin interviewed were the wives or long-term partners of construction workers. All but one was female. Most had young children and next of kin were either working part-time or not currently employed, with the construction worker being the primary earner in the household. Workplace conditions in the construction sector (long work hours, six and seven-day weeks) left many partners of construction workers feeling as if they were operating as a single parent, taking on the full parenting role with limited support from their partner.

Project 5 was a significant intervention for partners of construction workers. In the short-term, their personal relationships and both their own and their partner's wellbeing improved because of the intervention. While they preferred the five-day work week to other work schedules, many next of kin would also prefer their partner to work shorter and more

regular hours to allow them to take a larger role in childrearing. A medium-term change for next of kin was greater opportunity to undertake more paid work and accept promotions that were previously unavailable to them due to their role as the family's primary carer.

This increase in workforce participation would address concerns raised by some next of kin about their future economic security should they encounter a relationship breakdown. However, if construction work conditions are left unchanged, female partners of construction workers will continue to be structurally and financially disadvantaged.

### 5.1.3 A better model matters

The benefits of a shorter working week showed up in various facets of construction work, including:

- > A reduction in work hours to under 50 hours a week on average
- > A reduction in workers' travel time to site
- > An improvement in site cohesion and reduction in aggressive behaviour on site

### WHAT WORKED WELL

Consistent with international research from other sectors where a shorter week was trialled, our research found improvements in health-related behaviour such as wellbeing. However, our study was unable to determine if mental distress and injury reduced over the life of the project. Industry stakeholders from Mates in Construction and Foundation House, an alcohol, drug and gambling addiction treatment centre for the construction industry, recognise that work-life balance and better wellbeing acts to mitigate relationship breakdowns that potentially lead to drug and alcohol abuse and/or mental illness.

Productivity generally refers to the amount of work that is produced per unit of time. Productivity was not specifically measured in this study, but workers interviewed observed that they felt more productive during the five-day work week, compared to a six-day week project. This could be due to workers feeling better rested and less likely to make mistakes. Working Monday to Friday meant there was no possibility of lost time to be made up on Saturday, and the Concord site's location next door to a palliative care ward meant that work hours at night were constrained. Thus, workers felt the work hours they performed were of a higher quality and value. According to Roberts Co., a five-day working week offers site the same number of total overall working hours as a six-day work week. A shorter work week also drove efficiencies in the site team, requiring them to challenge long standing construction norms and undertake consistent and disciplined project planning and delivery. In other words, the site team played a critical role in changing the schedules of work to meet project milestones within the shorter delivery window of the working week.

The focus on upfront planning and improvements in worker fatigue and site cohesion resulting from a shorter week coincided with a reduction in aggressive and adversarial

behaviour. Construction's adversarial culture is a latent factor contributing to mental ill-health in the construction workforce and gender inequality, thus the shorter week may eventually assist in improving construction culture.<sup>40</sup>

The projects studied with the shorter working week were delivered on time and budget. Time and cost performance, the completion of work to a pre-determined timeline and to a set budget are essential determinates of project success.<sup>41</sup> There is a lack of evidence to support whether projects with a six-day work week consistently deliver against time and cost performance. Indeed, this is an area for future research and inquiry. Further, as Lingard et al.<sup>42</sup> argues, a major problem in construction is the continued practice of equating hours spent at work with productive time. As other studies have reported, workers in our study stated that productivity was lower on a Saturday, and our study suggests that time spent at work may not be the best basis for determining the value of work.

On this pilot project, the incremental or extra cost of implementing a five-day work model project was \$61/sqm compared to the cost of six-day model. This does not mean that all projects that adopt a five-day work week model will incur additional costs to operate. Although the results of Project 5 show that the EQ-5D measure of quality of life improved over a 20-week period (as captured by the increasing trend) for workers at the five-day work week sites, this cannot be necessarily attributed to a five-day work week model due to the absence of corresponding comparable trend for the control group. The trends from the safety data show that the initial injury rates are very low compared to industry standards and further show a declining trend over the 20-week period on five-day work week sites, thereby leading to potential cost savings from avoidable injury for Roberts Co. The economic analysis from this pilot study has suggested suitable methodology for such a setting, provided an accurate measure of incremental costs for Project 5, some key trends in quality of life measures from the treatment sites and outlined challenges in collection of data, which will be useful for future projects.

A shorter work week has been applied in a variety of industrial contexts including healthcare, policing, manufacturing, mining and engineering. Our findings align with studies from outside the construction sector and find that a shorter work week improves the wellbeing of workers and their work-life balance without damaging productivity and competitiveness.

### WHAT STILL NEEDS TO CHANGE

Waged workers are currently incentivised to work long hours in construction. The shorter work week chipped away 3.2 hours of their week, but their working hours remained high, at 45.6 hours per week. We know that long hours make it difficult to combine work with care and domestic labour, as there are only so many hours in the day. As Strazdins et al.<sup>43</sup> warn, if men who work long hours (47 hours per week) try to add care and domestic work, their mental health declines. Women working 45.6 hours a week will likely need to transition to part-time work to accommodate care and domestic work and in this case, their mental health is also likely to decline.

Work hours were more regulated during Project 5 than on most traditional sites, with work ceasing by 6pm in consideration of patients and staff in adjacent hospital buildings. The new EBA introduced during the study makes allowances for flexible work start and finish times. While this is important in order to attract and retain workers with care responsibilities, the inconsistency of work hours, including requesting overtime at short notice, makes it very difficult for workers and their partners to plan their personal lives, or to fulfil personal commitments such as childcare, eldercare, regular exercise, hobbies or social events.

#### 5.1.4 Unexpected findings and relevant learnings

##### WHO PAYS?

The questions of who pays for working time modifications and work reductions and the benefits, trade-offs and other outcomes that might flow from the implementation of these strategies is an important one. In the case of Project 5, Health Infrastructure NSW, Roberts Co. and workers jointly paid a price for the shorter working week. Health Infrastructure NSW paid approximately 1% of the total value of the project and received a project on time and budget using safe and healthy workers. Roberts Co. paid for the cost of the other interventions, including wellbeing training to workers, wellbeing leave, improved amenities, redistribution of risk in the contract with subcontractors and investment in smartphone technology. Waged workers reduced their overtime work hours and income but also benefited from improvements to family life, work-life balance, and job satisfaction.

##### PRIORITISING WELLBEING AND INNOVATION IN PROCUREMENT

To make the five-day week a reality on a major Sydney health care project required a creative mindset from the Health Infrastructure NSW and Roberts Co. team. Firstly, Health Infrastructure NSW encouraged innovation in worker wellbeing at the procurement stage of the Concord Hospital redevelopment. This enabled Roberts Co. to put forward a five-day week alternative program. Working collaboratively with contractors in the pre-contract stage of a project provided government with an innovative and necessary project delivery model that aligned with Health Infrastructure NSW's core values. It also demonstrated that the pre-construction phase, which is often managed by the client, has a significant influence on site productivity. Piloting and testing the five-day work week sparked a discussion within government and industry about alternative procurement and project delivery models. Government clients and contractors play a critical role in sponsoring, testing and evolving project delivery interventions in the construction sector.

##### POPULARITY OF THE FIVE-DAY WORK WEEK

While some workers were apprehensive at the start of Project 5, the majority of workers (75.4%) preferred a five-day work week over either a six- or seven-day working week (Figure 11). Waged workers preferred access to five to eight hours of overtime over a five-day working week. Across all age groups, there was a consistent preference for a five-day work week. Separated and divorced workers showed the strongest preference for the five-day work week ahead of those never married or married.

Unexpectedly, during the study, the five-day work week was agreed to and finalised in the Construction, Forestry, Maritime, Mining and Energy Union's Enterprise Bargaining Agreement with Roberts Co. and other large contractors. This action demonstrated how quickly the workers adapted to the five-day work week and saw its value as a project delivery model, despite reducing their access to overtime across the week.

##### ECONOMIC SECURITY OF WOMEN

Academic research has long detailed the barriers to women's participation in the Australian construction sector. In this study, we disclosed the sector's impact on female partners and families of construction workers. Notably, inconsistent and long work hours and work weeks in construction inhibit female partners from entering paid full-time employment, which in the medium term, reinforces traditional stereotypes of the male breadwinner and in the long term may act to impact the economic security of women as they retire with less superannuation.

##### DENIAL AND STIGMA

Undeniably, the research team observed that for many workers, the majority of whom were men, found it difficult to engage in a discussion about the effect of work on their intimate relationship with their partner. Workers often denied or minimised the effect of construction work practices on their relationship. This was in contrast with their ability to discuss openly the effect of construction work on their relationships with their children and work colleagues. Their reluctance to open up on this topic was also in contrast to the extensive feedback offered by their partners. Whether workers were unaware or in denial about the effects of their work on their relationship, it does demonstrate that discussing problems on the home front may carry a stigma for construction workers and reinforces the gendered constraints that act against workers seeking help within the workplace. It may have also contributed to the challenges the research team faced in recruiting next of kin for the study via workers.

##### EFFECTS OF OTHER INTERVENTIONS

It is important to recognise the other interventions that ran alongside the five-day working week. This included fairer and simpler construction contracts, breastfeeding rooms, wellbeing training for all workers, and several interventions for Roberts Co. employees (see section three for more details). Roberts Co. also has an above industry average safety record. The effect of these measures, while not subject to this study, should not be overlooked, as one intervention alone will not address the complexity of wellbeing, mental health and gender inequality in the construction sector. Rather, a constellation of targeted interventions by industry stakeholders is needed to shift the dial.

## 5.2 LIMITATIONS

The construction sector workforce is highly fluid, meaning that individual workers may not spend long periods of time on one site or may work on multiple sites in any week. Some workers we engaged with during Project 5 had little English language or

were illiterate. Our efforts to recruit workers via the Roberts Co. smartphone app did not render the quantity of survey responses needed for rigorous research. We changed tack and recruited workers in person at recruitment BBQs on site. With COVID-19's arrival, we added a control case to determine the effects, if any of COVID-19 on worker wellbeing. Over the course of the study, COVID-19 restrictions impacted our access to sites and our ability to re-engage with workers to see the longitudinal effects of a shorter work week. As in previous studies, we were limited to surveying the number of workers on our construction site, therefore limiting the sample size. This was evident in the survey of the next of kin. A limited number of referrals from workers resulted in a low number of survey responses from next of kin. This data has been excluded as it cannot provide statistical significance.

A further limitation to our research is participant bias. In other words, people opt into the study if they feel strongly for or against an intervention. In the case of Project 5, workers may have requested to work or not to work on the five-day work week site, although moves to adopt a five-day work week in the EBA shows the intervention's popularity with workers. On site, our recruitment of workers from various trades aimed to eliminate participant bias.

An untested limitation to our study was the use of the K10 test to evaluate the psychological distress of workers in a hyper masculine work environment where mental health is laden with stigma. The research team intends to investigate further the effects of gender on the effectiveness of psychological distress instruments such as K10.

There was only a small number of women in our study, reflective of the construction sector. Future research needs to be undertaken to study the effects of working hours on the wellbeing and retention of women in construction.

There were exceptions to the site operating from Monday to Friday and these include coordinated works with and at the request of Health Infrastructure NSW. These included the Concord site being asked to work seven days a week in the final three weeks of the project to open the hospital early to accommodate a surge in COVID-19 cases. Other works, such as those that are too dangerous to take place during a normal construction day, such as crane erection and utility shutdowns, also took place outside the designated work times.

Therefore, practical experimental design constraints, including an inability to repeatedly survey the same construction workers, prevent us from drawing causality between a shorter work week and improved mental health outcomes for workers or claiming that there is an economic health advantage to a five-day work week. Notwithstanding this, there is enough evidence to support a link between a shorter working week and improved wellbeing for workers. Our results confirm that concerns by industry stakeholders about work hours and wellbeing of workers in the construction sector, and the consequences of this, are well justified. The need to address wellbeing, mental health and

women's economic security remains an important feature of government campaigns and sector demands, yet these appear to be at odds with persistent patterns of over work in the construction sector.

### 5.3 COMPARING PROJECT 5 TO SIMILAR PROGRAMS IN THE PAST

Five-day work weeks have been adopted by industries such as manufacturing, mining and energy, but research in the construction industry is limited. Five-day work week schedules effectively redistribute, rather than reduce, work hours. Workers in our study were able to find a better balance between their work and their non-work life thanks to a shorter work week. This is in line with the findings of most international studies (Bambra et al. 2008, Lingard et al. 2008). The shorter working week's positive influence on productivity, job satisfaction and overall satisfaction aligns with another academic study (Baltes et al. 1999).

Our research also aligns with the findings of Lingard et al. (2008) – two case studies of a five-day work week (shortened work week) on Australian infrastructure and construction projects. They suggest the interventions had a positive impact on work-family conflict, increased satisfaction with work-life balance and improved health and wellbeing due to greater rest and recuperation time on weekends. These studies revealed that waged workers were supportive of the five-day week to the extent that their income was not impaired, however in Project 5, overtime rates were the same from Monday to Friday and on the weekend. Therefore, workers in our study were more concerned with gaining access to overtime work and less concerned about what day they worked overtime. When waged staff were not given access to overtime work at all, they were less supportive of the intervention.

There are three key areas where Project 5 stood apart from previous research into shorter working weeks. Firstly, Project 5 resulted in a reduction of working hours over the shorter work week. Second, while unable to paint a complete picture, our study provided a window into the mental health of workers while working a five-day work week. Third, our study included the voices of construction workers' partners, a long-overlooked stakeholder of the construction sector. Capturing the effect of traditional construction work practices at the household level adds to the case for change in construction sector delivery patterns. Our research revealed the gendered consequences of traditional construction work on workers' partners and on their relationships, wellbeing, work-life balance, and future economic security.

### 5.4 FUTURE RESEARCH AND INQUIRY

The health and wellbeing impacts of existing conditions on construction workers include heightened stress, burnout, and poor work-life balance (Dong, 2018; Lim et al., 2017; Lingard and



Turner, 2015; Powell et al., 2018). The shorter five-day work week goes some way to addressing this. While we have mentioned additional inquires in the section above, more can be done.

- > Building on Project 5, the NSW and Victorian Construction Industry Taskforce have commenced a data scan of different project delivery models across horizontal (e.g., roads, bridges) and vertical (e.g., schools, prisons) infrastructure projects. This research is necessary to build knowledge and evidence of different project delivery models and the effect they have on work hours, worker health and shifting gender inequality in the construction sector.
- > Given we were unable to provide an economic evaluation of the five-day work week due to circumstances beyond our control, this could be the focus of future research. A future economic evaluation could explore the cost of construction work on the female partners of construction workers to quantify the gendered effects of existing work practices.
- > While there is extensive evidence of the effect of the six-day work week on the wellbeing and work-life balance of workers, there is little evidence of the time and cost effectiveness of this model, despite its normative appeal. Additionally, anecdotal evidence was provided in this study by workers, subcontractors, project and industry stakeholders that the quality of work delivered on Saturdays is not equivalent to the quality of work delivered Monday to Friday. Further research is required to substantiate this. While normalised, six-day work week models should face the same level of scrutiny as alternative project delivery models proposed.
- > With Project 5, Health Infrastructure NSW demonstrated the positive impact of pre-construction procurement practices by government clients on the productivity of construction sites. Further inquiry is required into alternate government procurement processes and their effect on project delivery productivity.
- > With the inclusion of the five-day working week in the NSW Enterprise Bargaining Agreement with large contractors, longitudinal research could track whether this intervention is successful and/or what resistance is levelled against it.
- > With high substance abuse and problem gambling amongst younger male construction workers<sup>44</sup> further research could study the effects of different construction work patterns on the wellbeing of 18–30-year-old single men. Industry stakeholders provided anecdotal evidence that work conditions contribute to young people leaving the construction sector. Further academic evidence is required to substantiate these claims.
- > There is a growing skills shortage in the construction sector and according to industry stakeholders', young workers and apprentices are leaving the sector due to poor work-life balance. Future academic research is required to explore whether this is the case and if so, what work conditions are preferred by young workers in order to retain them in the sector.

# Conclusion + recommendations

In recent years, workplaces have been viewed as a place for targeted interventions that promote wellbeing and prevent mental illness, especially among men, who are less likely to seek treatment for mental illness. Besides, there is a moral and legal obligation on employers to provide working environments conducive to the wellbeing, health and safety of their employees.

In NSW, the Work Health and Safety Act defines 'health' as including both physical and psychological health. Under the new Safework Code of Practice: Managing Psychosocial Hazards at Work<sup>45</sup> released in May 2021, it is the public duty of businesses and representatives of businesses including workers "to ensure, so far as is reasonably practicable, the health and safety of workers and also to ensure that other persons are not put at risk from work carried out arising from the business or undertaking."

The five-day work week model is a one size fits all approach, with most workers adhering to prescribed workdays Monday to Friday. It does not deviate much from the traditional project delivery patterns which have been followed in part due to overlapping tasks and roles on construction sites, limited hours of operation, different pay structures for workers and tight program time frames. However, the five-day work week is tailored to the normative measure of success for construction projects, completed on time and on budget. Yet as this study shows, the five-day work week can produce positive effects by reducing work hours and improving worker wellbeing and work-life balance and a better construction culture. Project 5 has shown that it is "reasonably practicable" to take better care of workers.

This study is a valuable contribution to the limited academic research on interventions in the construction industry globally in relation to different working time arrangements and their impact on people and their families working in the construction sector.

## 6.1 RECOMMENDATIONS

### Actions for clients

#### CONSTRUCTION PROGRAM TIMELINES MUST CONSIDER WORKER HEALTH

Clients are in a strong position to lead the changes needed to improve the health of the Australian construction sector. With the volume and scale of construction work they undertake, government clients are in a stronger position to initiate major change and improvement in supply practice and delivery, than those engaged in one-off projects. Long working hours and a six-day working week are being driven, in part, by clients' expectations. Unreasonable project timelines contribute to a workplace culture that views long hours as inevitable and worse still, normal. Clients should pay for the time it takes to deliver a construction project safely, without harming the wellbeing and health of construction workers and their families.

#### INTRODUCE A FIVE DAY-WORK WEEK

As a major client, governments are in the position to instigate, where possible, a standard five-day work week structure on construction projects as part of their agreements with contractors. With government leadership, the five-day work week could initiate a more positive construction work culture, supporting healthy behaviours on site and addressing the stigma and shame around mental health. Where clients set the expectation that a five-day work week should be consistently applied, contractors and subcontractors can feel comfortable executing and adhering to the adjusted delivery model. If clients cannot consistently apply a five-day work week to all construction projects, they should clearly outline the case for a six-day work week program, and how it will not negatively impact worker health, gender equality and social sustainability.

#### IMPROVE PRE-CONSTRUCTION PLANNING TO IMPROVE ON SITE PRODUCTIVITY

The early phases of construction, often managed by the client, have a large influence on productivity. Timely information in the pre-construction stage is essential (see for more details Timely Information on Infrastructure Projects<sup>46</sup>). Early collaboration with contractors in the tendering process is needed to 'stress test' projects to ensure they can be reasonably delivered within specific timeframes without adverse impacts on people. Requests for innovation by industry in government tendering will further advance project delivery efficiencies. Clients should ask builders if the program tendered provides enough time to build the job to high quality safely.

### EMBED SOCIAL SUSTAINABILITY INTO PROCUREMENT

All construction tenders should include substantial social procurement targets on gender, such as women's participation in construction roles and women's retention. Tenders should also require contractors to detail how the contractor will address gender-related safety issues such as sexual harassment. Tender evaluations should weight social impact higher than cost. Tender programs should take into consideration the intended and unintended effects of project delivery models on worker health, gender equality and the social sustainability of the construction workforce.

### LEGISLATIVE AMENDMENTS TO WORKPLACE AMENITIES

Clean and safe amenities for women on construction sites continues to be a safety problem. Legislative amendments are required across Australian states to ensure a prescriptive minimum standard for workplace amenities is provided on construction sites.<sup>47</sup>

### REDUCE AND REGULATE WORK HOURS

In addition to introducing a five-day work week, working hours needed to be reduced and regulated by clients and contractors to lighten the impact of construction working hours on the wellbeing of workers and their families. Irregular work hours make it difficult for workers to plan and share in childcare. It disproportionately leaves caring to the partners of workers, who are most likely to be women. Long, irregular hours limit women's participation in construction, particularly in site roles. There are currently no statutory limits on working hours in Australia and the federal government should consider whether this needs to be revised in order to ensure the safety and wellbeing of workers in high-risk sectors.

### Action for contractors

#### ONLY TENDER PROJECTS THAT DO NOT HARM WORKERS HEALTH

Project 5 demonstrated that contractors can be the source of innovation and mindset change. To comply with their moral and legal obligations as employers, contractors should stress test projects according to the tender program's potential effect on workers' health, gender equality and social sustainability. To lead change, contractors should instigate and propose alternative project delivery models where possible that result in a healthy workforce, greater inclusion and better social sustainability.

### PLANNING BY PROJECT TEAMS

Project 5 has demonstrated the benefits of investing more time in the planning phase of construction. It is recommended that industry follow this example as the flow-on effect is a smoother construction phase and less pressure on workers.

### A FAMILY OF INTERVENTIONS

A constellation of targeted and industry-specific initiatives focused on creating mentally healthy construction workplaces is warranted. Initiatives could include fairer and simpler construction contracts between contractors and subcontractors, breastfeeding rooms and improvements in site technology such as AI technology. Further research should be conducted on the effectiveness of these interventions.

### TACKLING STIGMA AND ADDRESSING WORKER WELLBEING

With just over a quarter of workers surveyed indicating that they had received wellbeing and mental health training, it is recommended that all workers on construction projects

undertake a course that includes information on the signs of common mental health conditions, the impacts of stigma, effective communication, and mental health in the workplace. Better resourcing for more awareness raising work by Mates in Construction, Foundation House and Incolink Wellbeing and Support Services would also benefit the sector. Psychological safety should be treated like physical safety and included with site inductions. Just as all construction workers need to obtain a "white card," before entry to an Australian construction site, proving they have undertaken compulsory safety training, a white card for mental health safety should also be introduced.

### More research

Existing research on project delivery interventions to address the wellbeing of workers and their families, including the five-day week, is porous and limited. New case studies are urgently required to build a comprehensive understanding of the effects of different project delivery models. A small percentage of all government project costs could be allocated to a research fund to build the necessary evidence base.



# Appendix A

Program impact analysis five-day  
vs six-day work week for Concord  
Hospital redevelopment

Executive summary + Key findings









# Concord Hospital Redevelopment

## 5-Day vs 6-Day Work Week Programme Impact Analysis

Executive Summary and Key Findings

7 December 2021

Final

[tbhconsultancy.com](http://tbhconsultancy.com)

## 1 Executive Summary

TBH has been engaged by Health Infrastructure to monitor and assess the impacts of a 5-day working week compared to a typical 6-day working week. This report outlines an analysis on the progress of the Concord Hospital Redevelopment project and provides a discussion on the findings from this analysis.

To determine the impacts of a 5-day working week TBH has tested and analysed the various measures of project performance through different trend analyses. The measures and theories used to assess programme performance are outlined below:

1. Roberts Co Programme Performance v Industry Tender Programmes
2. That the project will run at 5/6 (83%) of a 6-day project.
3. There is a potential for a 5-day working week to impact the productivity achieved.
4. Offsite Design and Procurement delays will be mitigated by the variance between a 5-day and 6-day working weeks.

To analyse the above points, TBH has considered baseline project assumptions, actual project data, project delays (both design and weather delays), and resourcing information provided by Roberts Co. In summary, TBH's analysis concludes:

1. Whilst the project did not complete in line with Roberts Co's theoretical 6-day work week programme, the project was completed prior to the forecast completion of one of the alternate tenderer's 6-day programme. Roberts Co achieved Completion later than the other tenderer's 6-day programme forecast completion. However, this tenderer was the incumbent Early Works Contractor and as a result likely had programme efficiencies which likely meant this was not a reasonable comparison with Roberts Co's programme.

The analysis finds that the project performed in line with Roberts Co's expected 5-day working week programme. This is discussed further in **Section 1.1.1** and **Section 1.1.2** below.

2. Overall, TBH's analysis indicates that there does not appear to be any significant increase in trade productivity on the programme due to the change to a 5-day working week. However, it was observed that in some instances certain trades were able to achieve and better industry benchmark productivity rates such as the formwork trade to IPU1. This is discussed further in **Section 1.1.3** of this report.

To gain a better understanding of the effects of a 5-day calendar on productivity rates, this study would benefit from observing trades over multiple projects.

3. TBH's analysis suggests that any critical off-site and procurement delays experienced throughout the project were at least partially mitigated due to the change in the on-site working calendar. For example, client and design activities, and the procurement of materials gained additional float to the onsite construction activities when compared to a theoretical 6-day

programme. This is due to the on-site works progressing to later forecast dates when compared to a 6-day calendar. This is discussed further in **Section 1.1.4** of this report.

We note that the new EBA was signed in October 2020. This would have likely introduced 2x additional fixed RDOs each month. Assuming the additional RDO is taken, this results in a typical 6-day working week calendar becoming a 5.5-day working week calendar. If this update was addressed at the start of the project, the programme impacts of moving from a typical 6-day working week to a 5-day working week would have likely been reduced.

The project was exposed to higher than usual amount of inclement weather delays (both rain and bushfire delays) throughout the structural works. Whilst Roberts Co were awarded EOTs for these events where critical programme impacts occurred, these delays would have likely impacted the overall productivity of trades on site due to the constant stop-start nature of the works. The project was also impacted by two separate COVID-19 events. We note that the first COVID event did not critically delay the project but would have impacted the productivity of trades on site. The number of resources on site were also affected by both COVID events, due to the social distancing restrictions and the Local Government Area lockdowns.

A summary of our key findings of the impact of a 5-day working week programme can be found in the sections below:

## 1.1 Key Findings

### 1.1.1 Roberts Co Programme Performance v Industry Tender Programmes

TBH has compared Roberts Co's programme performance against the alternate tenderer programme to assess the 5-day working week programme performance against what was envisaged by the industry at tender time. We note the alternate tenderer programme assumed a 6-day working week calendar. For consistency the tender programme forecast completion dates below consider all awarded EOTs.

This theoretical analysis highlights the following assumed completion date as outlined in the table below:

Programme Forecast Completion	Roberts Co (5-Day Programme)	Tenderer 2 (6-Day Programme inc. EOTs)
<b>Forecast Nett Completion (inc. Validation Period)</b>	24 August 2021 ( <i>Actual</i> )	8 September 2021
<b>Variance to Roberts Co Programme Completion</b>		<b>2 weeks</b>

The above table demonstrates that, when compared to the alternate Tenderer's programme, Roberts Co performed better than the theoretical alternate tenderer's 6-day programme. The Early Works Contractor also submitted a tender programme for the Main Works which forecast completion 10 weeks earlier than Roberts Co actual completion date (when considering all awarded

EOT's). Due to being the incumbent Early Works Contractor and already having access to the site, we expect this Main Works tender programme likely had programme efficiencies which likely meant this was not a reasonable comparison with Roberts Co's programme.

A copy of the summary tender programme comparison can be found at **Appendix A**.

### 1.1.2 The Project will run at 5/6 (83%) of a 6-day Project.

A typical 6-day working week is 48 hours (6 x 8 hrs a day) and a typical 5-day working week would be 40 hours (5 x 8 hrs a day). Theoretically, if the project was based on a 6-day calendar, the project should be completed in 83% of the time allowed for in a 5-day programme. To analyse the above theory, TBH has analysed project performance against EoT impacted Baseline metrics as outlined below:

#### **Programme Completion Dates**

TBH understands that Roberts Co were awarded EOTs of 78 working days and the contractual Date for Completion was 24 August 2021. When taking a pro-rata rate of EOTs awarded on a 6-day calendar, we have calculated an EOT impacted contractual Date for Completion of 6 July 2021 if a 6-day calendar was used.

Description	5-Day Baseline Programme (EOT Impacted)	6-Day Baseline Programme (EOT Impacted)	Completion Achieved	Variance to 5-Day Baseline (w.days)	
			5-day	5-day	6-day
	(a)	(b)	(c)	(c-a)	(c-b)
<b>Date for Practical Completion</b>	24 Aug 21	6 July 21	24 Aug 21	-	<b>+7 wks</b>

*\*We note that there has been a Greater Sydney wide COVID construction shutdown of 2-weeks and further restrictions to construction since the recommencement on 31 July 2021. For the purpose of this report, Completion was achieved 24 August 2021.*

The programme completion dates indicate that there is likely a 6-7 working week difference in forecast completion dates if the project were worked to a 6-day calendar in place of the 5-day working calendar. If the project had been worked to a 6-day calendar we would have expected Roberts Co to have achieved Completion in early July 2021 compared to completion of 24 August 2021 on a 5-day calendar.

#### **Critical Path Analysis**

TBH's critical path analysis highlights that when considering all EOTs on the project, up until late 2020, Roberts Co were generally completing critical works in between the 5-day and 6-day EOT adjusted baseline programmes. In 2021, this trend line has dropped below the 5-day EOT adjusted baseline due to Roberts Co not progressing with critical path internal fitout and commissioning works as planned. This indicates that the change to a 5-day working calendar did not positively impact the project's critical path based on this analysis.



A copy of these graphs can be found at **Appendix B**.

What has been apparent from TBH's analysis is the likely inability of the contractor to mitigate critical programme delays and reduced trade productivity when utilising the 5-day working week. We expect that a 6-day programme would have provided further opportunities for the contractor to overcome productivity and contractor-imposed delays. We do not necessarily consider additional working days increases productivity but can provide further opportunities to offset critical programme delays.

#### **Volume of Works Analysis**

Similar to the above, TBH has performed an analysis of the Volume of Work completed on site in comparison to the 5-day and 6-day baseline. Overall, TBH's findings indicate, that even though Roberts Co completed critical works as planned or slightly ahead of the 5-day baseline for the majority of the project, the overall volume of work on site generally tracked toward the outer bounds or 'Late Start' parameters of a '5-day' programme and well behind the 6-day programme curves. Hence, it is reasonable to conclude from TBH's volume of work analysis that there is no evidence that working a 5-day working week improves the overall production levels on site or above what would have been reasonably assumed for a 5-day programme.

A copy of these graphs can be found at **Appendix C**.

#### **1.1.3 A 5-Day Working Week will impact Trade Specific Productivity Rates**

Over the course of the project, TBH analysed the data and performance of specific trades against baseline assumptions and industry standard productivity rates. In summary, TBH's analysis indicates that for the majority of trades Roberts Co were unable to exceed / meet the baseline trade productivity assumptions through the project. However, in some specific instances we witnessed Roberts Co outperforming some industry benchmark rates such as formwork to IPU1.

We have provided a comparison of Roberts Co's key structural trade productivity performance against baseline assumptions and industry productivity rates in the table below:

Trade	Roberts Co Baseline Programme Assumed Productivity Rate	Industry Benchmark	Achieved Productivity Rate
<b>Formwork</b>	12.6 m <sup>2</sup> /man/day	9 m <sup>2</sup> /man/day	9.5 m <sup>2</sup> /man/day
<b>Reinforcement (avg. 7 man crew)</b>	266 m <sup>2</sup> /crew/day	246 m <sup>2</sup> /crew/day	221 m <sup>2</sup> /crew/day

Overall, TBH's analysis indicates that there does not appear to be any significant increase in trade productivity effects on the programme due to the change to a 5-day working week. For example, the trade productivity analysis suggests that Roberts Co were unable to achieve their baseline programme productivity assumptions throughout the project.

The original programme contemplated three separate work fronts and crews to progress IPU1, IPU2 and IPU3. Roberts Co were delayed in receiving access from the early works contractor to progress works, which partially impacted their ability to progress with a portion of the structural works. The handover of the site was also split into further portions due to the early works contractor experiencing delays in completing their scope of works. We expect the fragmented access to the site from what was originally forecast likely influenced the projects achieved productivity rates to both structural and internal fitout trades.

#### 1.1.4 Offsite Design and Procurement delays will be mitigated by the variance between a 5 day and 6 day working weeks.

The change to a 5-day working week will likely mitigate the criticality and impact of offsite delays across the project due to the reduced construction progress when assigned to a 5-day calendar.

The impact of offsite delays to this project has been realised through:

##### **Fibre C Procurement Delay**

Roberts Co were affected by the late shipment and arrival of Fibre Cement cladding materials. As at Roberts Co's 30 April 2020 programme (prior to the realisation of COVID procurement issues), these materials were forecast to be delivered to site mid-June 2020. However, the latest shipment of materials were not received until late July 2021. If the project were on a 6-day work week, these items would have likely had an additional 6-7-week impact to Practical Completion. Hence, the assignment of the construction works to a 6-day calendar would have accentuated the criticality of these offsite procurement delays.

##### **Offsite Design and Approval Delays**

TBH has applied a typical 6 day on site calendar to the Roberts Co March 2019 Baseline Programme to compare the criticality of HI / Client tasks in the programme. Our analysis confirms that when a 5-day construction calendar is used in place of a 6-day construction calendar, client approval activities contain approximately 15-20% extra days of float. Hence, the use of a 5-day calendar has a positive impact on the criticality of Client-related offsite tasks (e.g. Client activities, design teams, and suppliers were able to keep up to speed with a 5-day programme better than a 6-day programme).

Similar to the above effects, all design activities will inherently contain more float and be less critical when a 5-day onsite calendar is utilised.

For example:

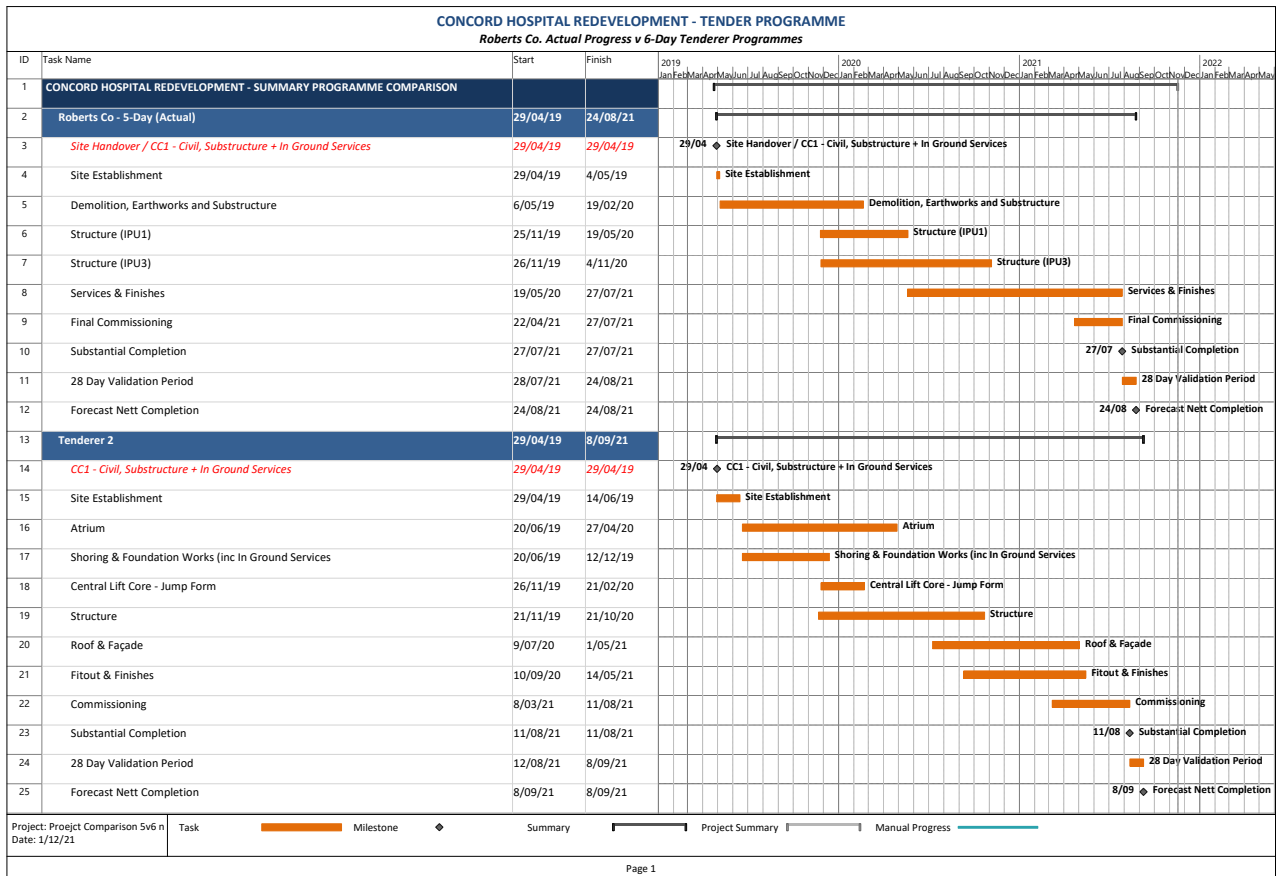
- In October 2019 and November 2019 - the critical path was being driven by delays to the issuance of CC3;

- On a 5-day construction calendar the activity 'Construction Certificate 3 Issued' originally contained 99 days of float, whereas if a 6 day Construction Calendar was applied this activity would only have 84 days of float;
- In TBH's October 2019 status, forecast completion was impacted by 22 working days due to the delay in receipt of CC3. If the project was being worked to a 6-day working calendar, this critical delay would have been accentuated. CC3 would have become critical earlier in the project and would have critically impacted the project by 37 working days (an additional 15 work days).

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190214 - Concord Hospital Redevelopment  
5-Day vs 6-Day Work Week Programme Impact Analysis

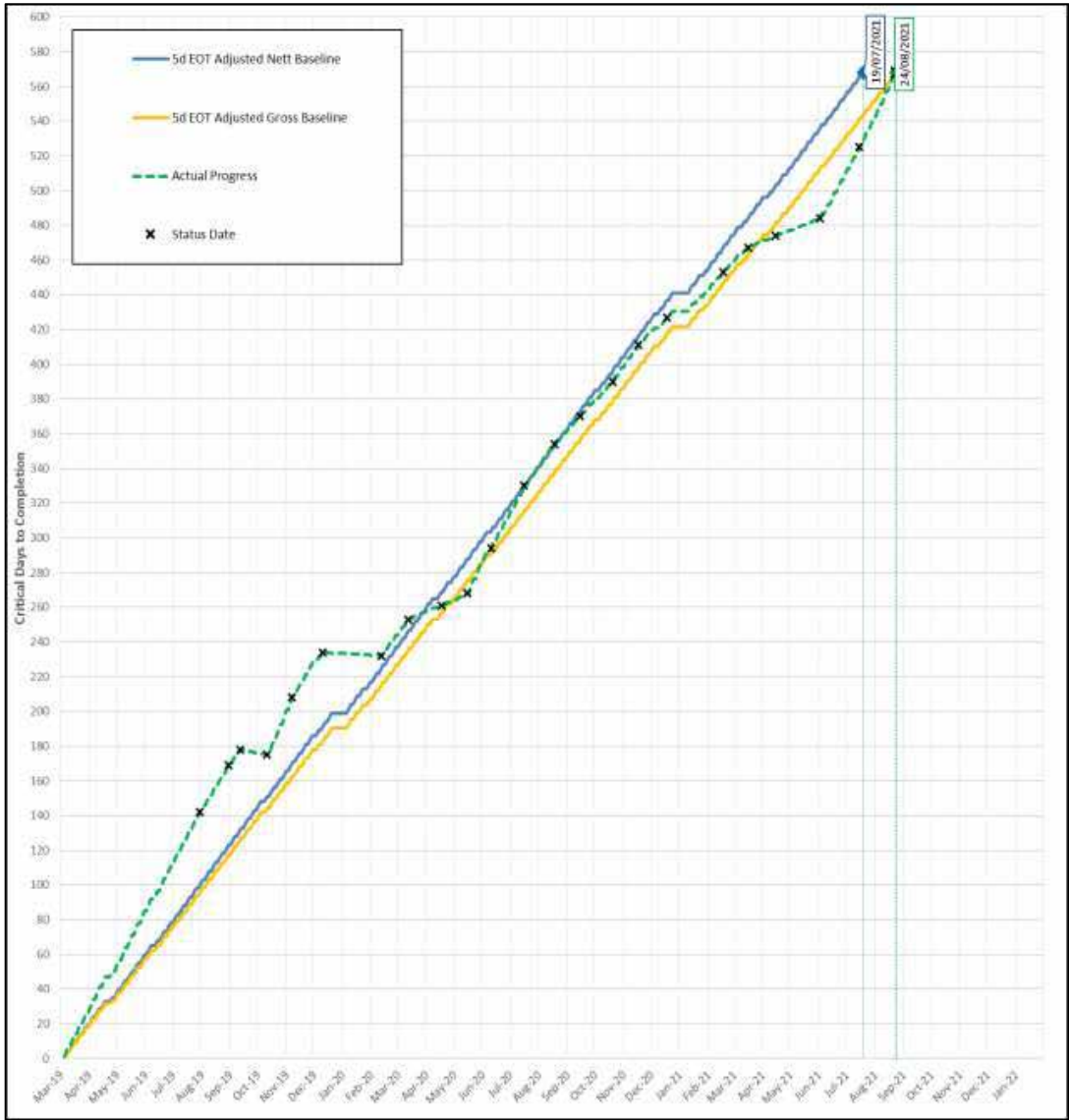
## Appendix A - Roberts Co vs Tenderer Programme Comparison



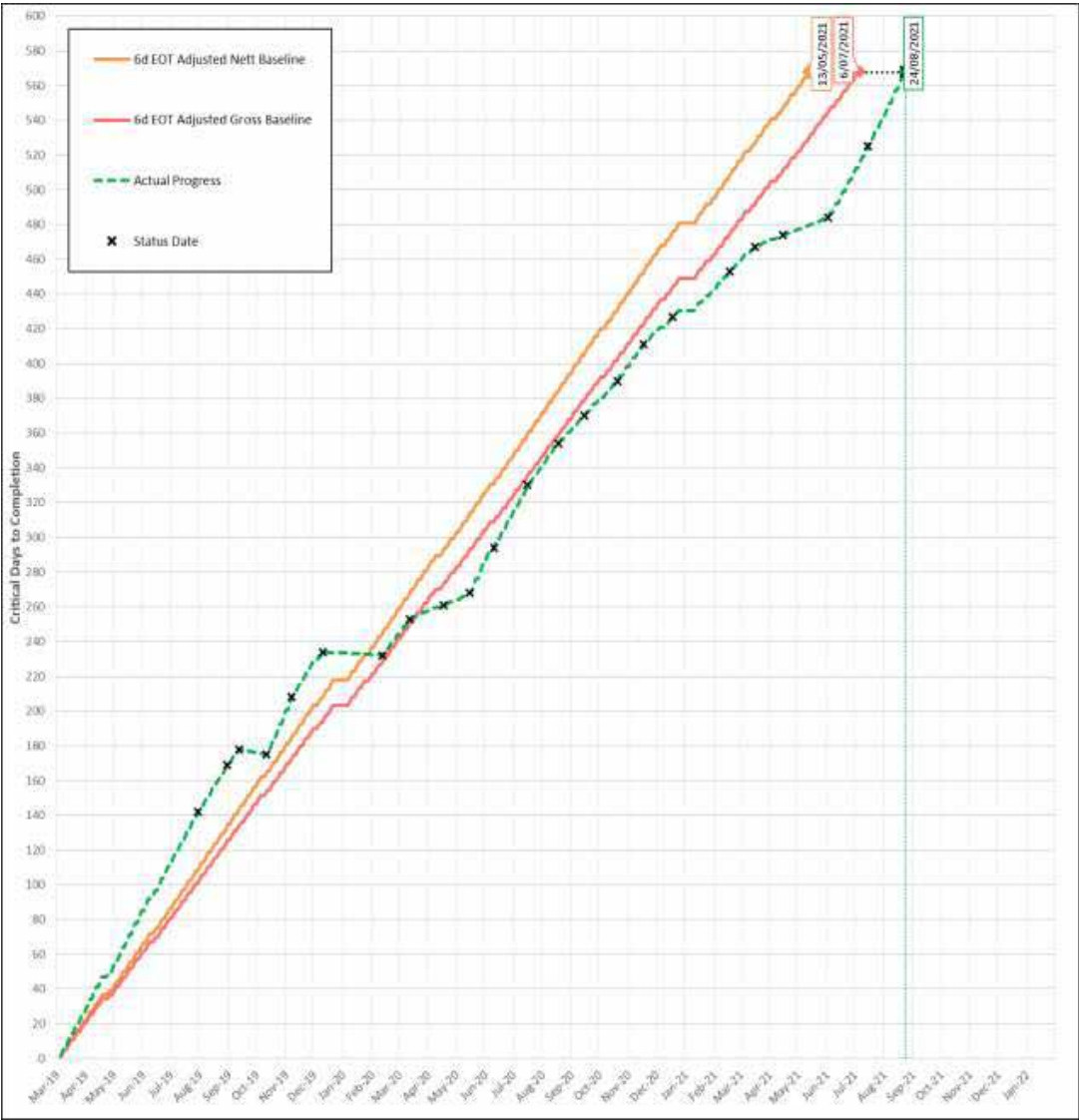


Appendix B - Critical Path Analysis Graphs

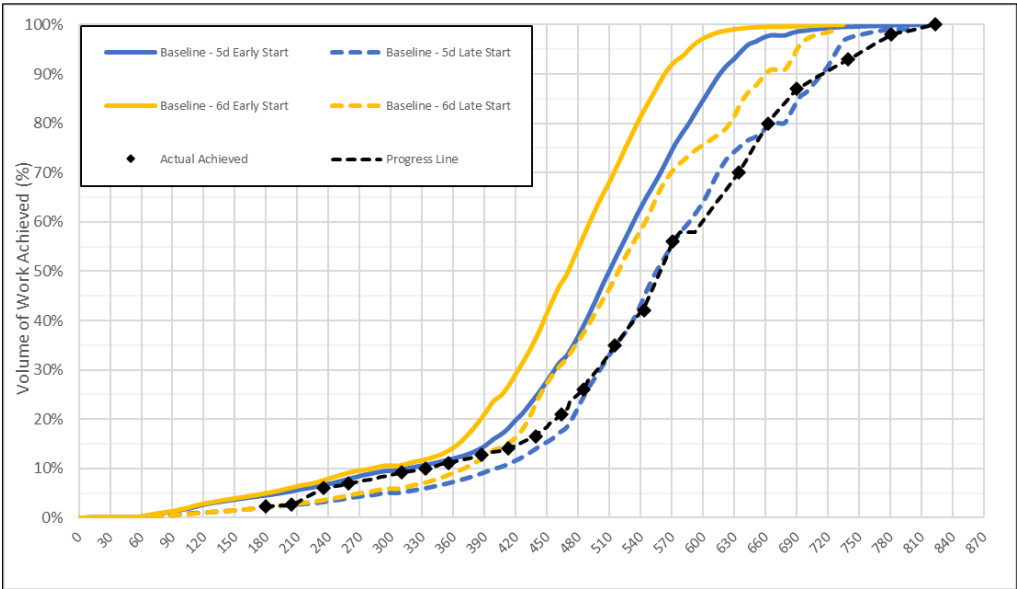
5-Day Programme Critical Path Analysis



6-Day Programme Critical Path Analysis



Appendix C - Volume of Work Analysis



## Appendix D - Client Approval Activities

Activity ID	Activity Name	5d Baseline Total Float	6d Baseline Total Float	Variance
CNC1820	Construction Certificate 1 - HI Satisfy Conditions	15	15	0
CNC2450	Construction Certificate 2 - HI Satisfy Conditions	60	53	7
CNC3380	Construction Certificate 3 - HI Satisfy Conditions	99	84	15
CNC21900	Construction Certificate 4 - HI Satisfy Conditions	102	84	18
CNC5250	Finishes FC Documents HI Non-Rejection Period	139	112	27
CNC2990	Structure (Core-Jumpform) - FC Documents HI Non-Rejection Period	53	50	3
CNC1640	Interior Design & Graphics	92	74	18
CNC21850	RMS, Ambulance, Utility Supply Authority, HI Utility & Other approvals Obtained (by HI)	23	17	6
CNC4860	Services FC Documents HI Non-Rejection Period	144	117	27
CNC1830	SSD Approval (assumed date - By HI)	15	15	0
CNC3250	Structure FC Documents HI Non-Rejection Period	95	83	12

# Appendix B

Theory of change logic model



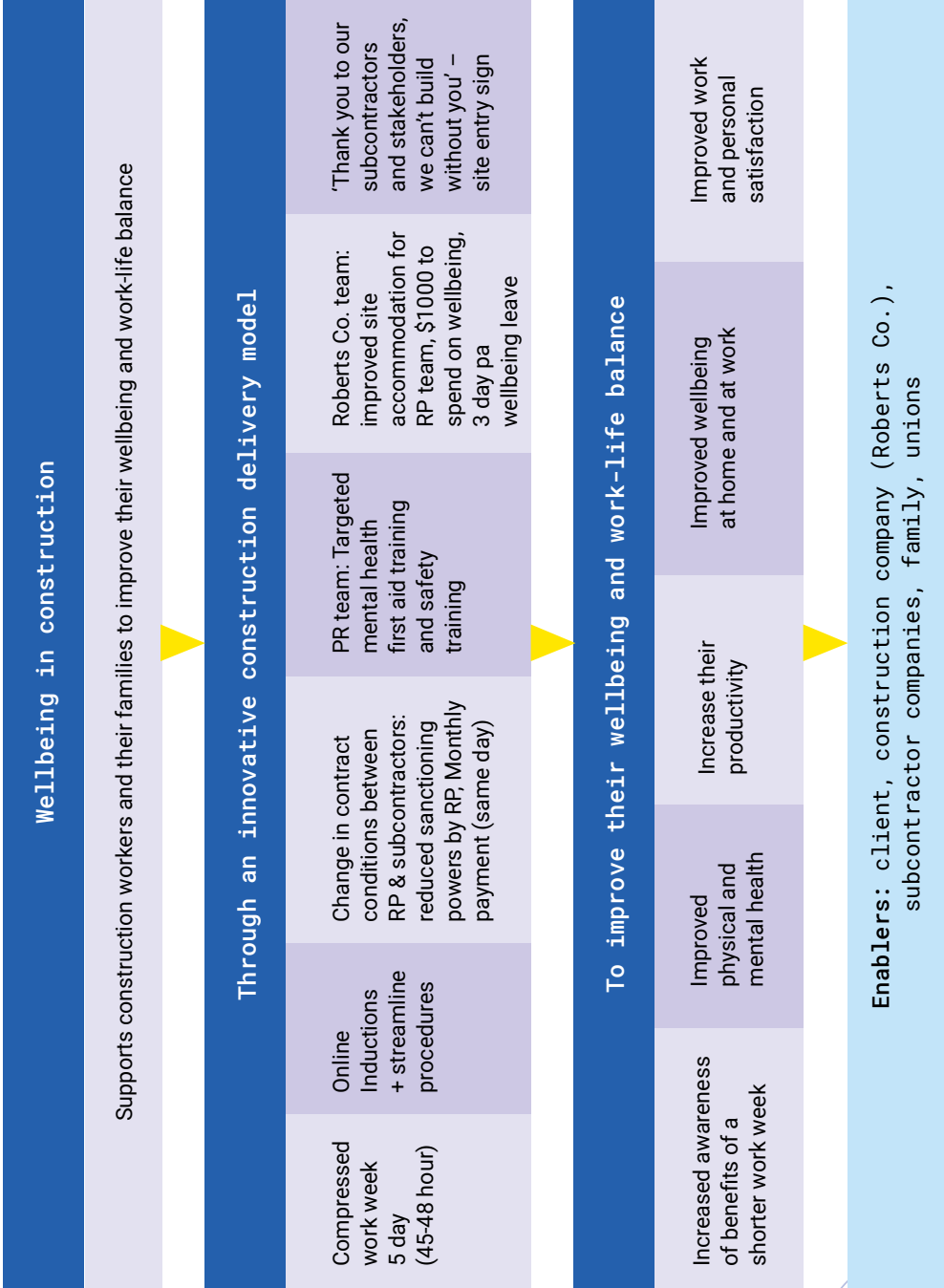


THEORY OF CHANGE (TOC)

An explicit theory or model of how a program or policy causes the intended or observed outcomes (Rogers, 2008). It consists of a change model and an action model.

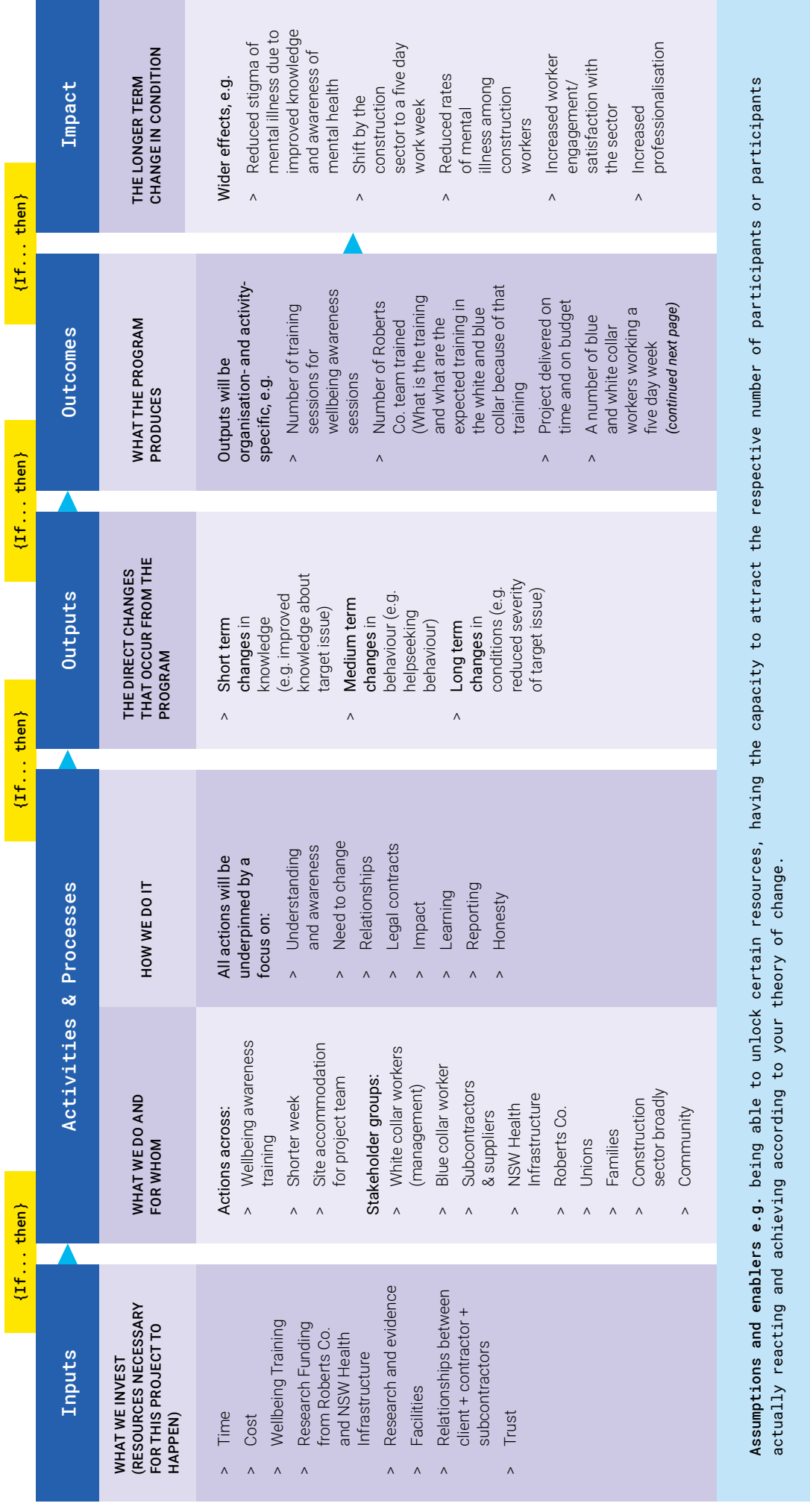
Easy steps to develop a TOC:

- 1. Define the **main activity** and **target population** for your program
- 2. **Develop the change model:** what changes are likely to be achieved through you intervention – think long term
- 3. Articulate the main processes through which you engage with the target population to achieve those outcomes



## LOGIC MODEL

A detailed visual representation of how your program will achieve its goals, including a comprehensive recording of the short, medium and long term outcomes.



LOGIC MODEL (CONTINUED FROM PREVIOUS PAGE)

A detailed visual representation of how your program will achieve its goals, including a comprehensive recording of the short, medium and long term outcomes.

Outcomes (continued from previous page)		
THE DIRECT CHANGES THAT OCCUR FROM THE PROGRAM		
Short term changes in knowledge (e.g. improved knowledge about target issue)	Medium term changes in behaviour (e.g. help-seeking behaviour)	Long term changes in conditions (e.g. reduced severity of target issue)
<ul style="list-style-type: none"><li>&gt; Improved awareness of workplace wellbeing for white collar workers</li><li>&gt; Improved awareness of workplace wellbeing for blue collar workers</li><li>&gt; Improved awareness of workplace wellbeing for family of workers</li></ul>	<ul style="list-style-type: none"><li>&gt; Reduced real work</li><li>&gt; Increase productivity &amp; decreased rework</li><li>&gt; Improved safety on site</li><li>&gt; Improved relationships and collaborative workplace behaviours – less stress and aggression</li><li>&gt; Improved family relationships</li><li>&gt; Reduced social isolation</li><li>&gt; Improved workplace wellbeing (satisfaction with job and aspects of the job)</li><li>&gt; Improved wellbeing at home (satisfaction with life and aspects of life)</li><li>&gt; Improved physical health</li><li>&gt; Improved mental health</li><li>&gt; Improved wellbeing of next of kin/children</li><li>&gt; Improved relationship with next of kin/children</li></ul>	<ul style="list-style-type: none"><li>&gt; Improved retention of women on site</li><li>&gt; Reduced suicide rate among construction workers</li></ul>

# Endnotes

- 1 Davis K and Nestrom JW (1985) *Human Behavior at Work: Organizational Behavior*. 7th ed. New York: McGraw-Hill.
- 2 Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, et al. Screening for serious mental illness in the general population. *Arch Gen Psychiatry*. 2003 Feb;60(2):184-9.
- 3 NSW Mental Health Commission (2018) – <https://www.nswmentalhealthcommission.com.au/content/indicator-2-psychological-distress>
- 4 World Health Organisation  
<https://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/>
- 5 Norton, R. (1983). Measuring marital quality: A look at the dependent variable. *Journal of Marriage and the Family*, 45, p. 147.
- 6 Carmichael et al., 2016
- 7 ABS June 2021 – <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release>
- 8 Mates in Construction. (2020) Why mates exists: The problem. Available at: <https://mates.org.au/the-problem>
- 9 Bowen P and Zhang RP (2020) Cross-Boundary Contact, Work-Family Conflict, Antecedents, and Consequences: Testing an Integrated Model for Construction Professionals. *Journal of Construction Engineering and Management* 146(3). American Society of Civil Engineers: 04020005. DOI: 10.1061/(ASCE)CO.1943-7862.0001784.  
Kotera, Y., Green, P., & Sheffield, D. (2019). "Work-life balance of UK construction workers: Relationship with mental health." *Construction Management and Economics* 38(4).  
Lingard, H. & Francis, V. (2009). *Managing Work-Life Balance in Construction*. Independence: Routledge, 2009.
- 10 Pidd, K., Duraisingam, V., Roche, A. and Trifonoff, A. (2017), "Young construction workers: substance use, mental health, and workplace psychosocial factors", *Advances in Dual Diagnosis*, Vol. 10 No. 4, pp. 155-168. <https://doi.org/10.1108/ADD-08-2017-0013>
- 11 Galea N, Powell A, Loosemore M, et al. (2018) Demolishing Gender Structures. Sydney, Australia: UNSW. Available at: [https://www.humanrights.unsw.edu.au/sites/default/files/2018-09/Construction\\_Report\\_Final.pdf](https://www.humanrights.unsw.edu.au/sites/default/files/2018-09/Construction_Report_Final.pdf).
- 12 Dong RR (2018) Study on mental health status and life quality of migrant workers in construction industry. *Journal of Environmental Protection and Ecology* 19(4): 1864–1872.  
Lim S, Chi S, Lee JD, et al. (2017) Analyzing psychological conditions of fieldworkers in the construction industry. *International Journal of Occupational and Environmental Health* 23(4): 261–281. DOI: 10.1080/10773525.2018.1474419.  
Lingard H and Turner M (2015) Improving the health of male, blue collar construction workers: a social ecological perspective. *Construction Management and Economics* 33(1): 18–34. DOI: 10.1080/01446193.2014.997259.  
Powell A, Galea N, Salignac F, et al. (2018) Masculinity and workplace wellbeing in the Australian construction industry. In: *Proceeding of the 34th Annual ARCOM Conference, ARCOM 2018*, 2018, pp. 321–330.
- 13 Choi SH, Redman RW, Terrell JE, et al. (2012) Factors associated with health-related quality of life among operating engineers. *Journal of Occupational and Environmental Medicine* 54(11): 1400–1405. DOI: 10.1097/JOM.0b013e3182611a85.  
Dong RR (2018) Study on mental health status and life quality of migrant workers in construction industry. *Journal of Environmental Protection and Ecology* 19(4): 1864–1872.  
Lingard H and Turner M (2017) *Work and well-being in the construction industry*. In: *Research Handbook on Work and Well-Being*. Edward Elgar Publishing.
- 14 Mates in Construction. (2020) Why mates exists: The problem. Available at: <https://mates.org.au/the-problem>
- 15 Kamardeen I and Sunindijo RY (2017) Attracting and retaining women professionals in construction: A work-stress management perspective. In: *Association of Researchers in Construction Management, ARCOM - 33rd Annual Conference 2017, Proceeding*, 2017, pp. 400–409.
- 16 Bowen P and Zhang RP (2020) Cross-Boundary Contact, Work-Family Conflict, Antecedents, and Consequences: Testing an Integrated Model for Construction Professionals. *Journal of Construction Engineering and Management* 146(3). American Society of Civil Engineers: 04020005. DOI: 10.1061/(ASCE)CO.1943-7862.0001784.
- 17 Bowen, P., Govender, R., Edwards, P., & Cattell, K. (2018). "Work-related contact, work–family conflict, psychological distress and sleep problems experienced by construction professionals: An integrated explanatory model." *Construction Management and Economics* 36(3): 153-174.  
Kotera, Y., Green, P., & Sheffield, D. (2019). "Work-life balance of UK construction workers: Relationship with mental health." *Construction Management and Economics* 38(4).  
Lingard, H. & Francis, V. (2004). "The work-life experiences of office and site-based employees in the Australian construction industry." *Construction Management and Economics* 22(9): 991-1002.
- 18 Galea N, Salignac F, Powell A, et al. (2021) When following the rules is bad for wellbeing: Gendered rules and wellbeing in the Australian construction industry. *Work, Employment & Society*. DOI: <https://doi.org/10.1177/0950017020978914>.
- 19 Western Australian Legislative Assembly (2014) *Shining a Light on FIFO Mental Health: A discussion paper*. Education and Health Standing Committee. November. Available at: [https://www.parliament.wa.gov.au/parliament/commit.nsf/%28\\$all%29/AD292116C942943F48257D9D0009C9E6?opendocument](https://www.parliament.wa.gov.au/parliament/commit.nsf/%28$all%29/AD292116C942943F48257D9D0009C9E6?opendocument)
- 20 Duke MR, Bergmann L, Cunradi CB, et al. (2013) Like Swallowing a Butcher Knife: Layoffs, Masculinity, and Couple Conflict in the United States Construction Industry. *Human Organization* 72(4). Society for Applied Anthropology: 293–301.
- 21 Galea N, Salignac F, Powell A, et al. (2021) When following the rules is bad for wellbeing: Gendered rules and wellbeing in the Australian construction industry. *Work, Employment & Society*. DOI: <https://doi.org/10.1177/0950017020978914>.
- 22 Harvey, S, Joyce, S, Tan, L, Johnson, A, Nguyen, H, Modini, M & Groth, M 2014, *Developing a mentally healthy workplace: a review of the literature*, National Mental Health Commission, Sydney, viewed 20 Oct 2021, <https://www.headsup.org.au/docs/default-source/resources/developing-a-mentally-healthy-workplace-final-november-2014.pdf?sfvrsn=8>  
Roche AM, Pidd K, Fischer JA, et al. (2016) Men, Work, and Mental Health: A Systematic Review of Depression in Male-dominated Industries and Occupations. *Safety and Health at Work* 7(4): 268–283. DOI: 10.1016/j.shaw.2016.04.005.
- 23 Brown K, Bradley L, Lingard H, et al. (2011) Labouring for leisure? Achieving work-life balance through compressed working weeks. *Annals of Leisure Research* 14(1): 43–59. DOI: 10.1080/11745398.2011.575046.
- 24 Lingard HC, Townsend K, Bradley L, et al. (2008) Alternative work schedule interventions in the Australian construction industry: a comparative case study analysis. *Construction Management and Economics* 26(10): 1101–1112. DOI: 10.1080/01446190802389402.
- 25 Lingard HC, Townsend K, Bradley L, et al. (2008) Alternative work schedule interventions in the Australian construction industry: a comparative case study analysis. *Construction Management and Economics* 26(10): 1101–1112. DOI: 10.1080/01446190802389402.
- 26 Bambra C, Whitehead M, Sowden A, et al. (2008) "A hard day's night?" The effects of Compressed Working Week interventions on the health and work-life balance of shift workers: a systematic review. *Journal of Epidemiology & Community Health* 62(9). BMJ Publishing Group Ltd: 764–777. DOI: 10.1136/jech.2007.067249.  
Construction Work Health and Safety @RMIT and Research School of Population Health, College of Health and Medicine, ANU (2021) *Triple Wins: Work Hour Cultures for Health, Wellbeing and Gender Equality in Construction Literature Review*. Melbourne, Australia: Construction Work Health and Safety Research @RMIT University.
- 27 Construction Work Health and Safety @RMIT and Research School of Population Health, College of Health and Medicine, ANU (2021) *Triple Wins: Work Hour Cultures for Health, Wellbeing and Gender Equality in Construction Literature Review*. Melbourne, Australia: Construction Work Health and Safety Research @RMIT University

- 28 Construction Work Health and Safety @RMIT and Research School of Population Health, College of Health and Medicine, ANU (2021) *Triple Wins: Work Hour Cultures for Health, Wellbeing and Gender Equality in Construction Literature Review*. Melbourne, Australia: Construction Work Health and Safety Research @RMIT University
- 29 This survey is a "repeat" version of the initial survey excluding elements that would not change over the reporting period, such as demographic information and information on previous work experiences.
- 30 Norton R (1983) Measuring Marital Quality: A Critical Look at the Dependent Variable. *Journal of Marriage and Family* 45(1). [Wiley, National Council on Family Relations]: 141–151. DOI: 10.2307/351302.
- 31 Where workers did not answer this question.
- 32 During Project 5 workers worked an average of 47.2 hours per week of **all types of paid work** (e.g., Uber Driving, waitressing etc) which is a reduction of 5.5 hours per week compared to before starting on Project 5.
- 33 Historically, workers in NSW received double time (double the standard rate) for weekend overtime and time-and-a-half (1.5 x the standard rate) for overtime on weekdays. Overtime for members of most unions is now currently paid at double time on weekends and weekdays.
- 34 Hoppock, R. (1935). *Job satisfaction*. Harper.
- 35 Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, et al. Screening for serious mental illness in the general population. *Arch Gen Psychiatry*. 2003 Feb;60(2):184-9.
- 36 NSW Mental Health Commission (2018), "Indicator 2. Psychological distress" <https://www.nswmentalhealthcommission.com.au/content/indicator-2-psychological-distress>
- 37 NSW Mental Health Commission (2021), "High psychological distress in adults and secondary students in NSW" <https://www.nswmentalhealthcommission.com.au/measuring-change-indicator/high-psychological-distress-adults-and-secondary-students-nsw>
- 38 Safe Work Australia (2021), Comparative Performance Monitoring Report – Work Health and Safety Performance, 23rd Edition, page 30. <https://www.safeworkaustralia.gov.au/sites/default/files/2021-11/CPM%2023%20-%20Work%20Health%20and%20Safety%20Performance.pdf>
- 39 Strazdins, L., Baxter J. A. & Li, J. (2017). "Long hours and longings: Australian children's views of fathers' work and family time." *Journal of Marriage and Family* 79(4): 965-982.
- 40 Dextras-Gauthier, J., Marchand, A., & Haines III, V. (2012). Organizational culture, work organization conditions, and mental health: A proposed integration. *International Journal of Stress Management*, 19(2), 81.
- Galea N, Powell A, Loosemore M, et al. (2020) The gendered dimensions of informal institutions in the Australian construction industry. *Gender, Work & Organization* 27: 1214–1213. DOI: <https://doi.org/10.1111/gwao.12458>.
- 41 Serrador, P. & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal*, 46 (1), 30-39.
- 42 Lingard HC, Townsend K, Bradley L, et al. (2008) Alternative work schedule interventions in the Australian construction industry: a comparative case study analysis. *Construction Management and Economics* 26(10): 1101–1112. DOI: 10.1080/01446190802389402.
- 43 Strazdins, L., Baxter J. A. & Li, J. (2017). "Long hours and longings: Australian children's views of fathers' work and family time." *Journal of Marriage and Family* 79(4): 965-982.
- 44 Pidd, K., Duraisingam, V., Roche, A. and Trifonoff, A. (2017), "Young construction workers: substance use, mental health, and workplace psychosocial factors", *Advances in Dual Diagnosis*, Vol. 10 No. 4, pp. 155-168. <https://doi.org/10.1108/ADD-08-2017-0013>
- 45 Safework NSW (2021), 'Code of Practice: Managing Psychosocial Hazards at Work'. Found at: <https://www.safework.nsw.gov.au/resource-library/list-of-all-codes-of-practice/codes-of-practice/managing-psychosocial-hazards-at-work>
- 46 <https://www.infrastructure.nsw.gov.au/expert-advice/timely-information-on-infrastructure-projects/>
- 47 See for further information Electrical Trade Union (2021), 'Nowhere to Go' Report, [https://d3n8a8pro7vbmxc.cloudfront.net/etunational/pages/1737/attachments/original/1631597263/2108\\_ETU\\_Women\\_Nowhere\\_to\\_Go\\_Report\\_FINAL\\_WEB.pdf?1631597263](https://d3n8a8pro7vbmxc.cloudfront.net/etunational/pages/1737/attachments/original/1631597263/2108_ETU_Women_Nowhere_to_Go_Report_FINAL_WEB.pdf?1631597263)