

A Building For The Builders

What is the Value of the Welfare Facility?



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Sir Robert
McALPINE

Acknowledgements



The exterior of the welfare facilities at 1 Finsbury Avenue

This work is the beginning of a greater exploration into a building for the builders. The work would not have been possible without the support of the Worshipful Company of Constructors and Chartered Institute of Building for running the scholarship. For that, I am incredibly thankful.

I would like to thank the Sir Ian Dixon scholarship panel for its guidance and support throughout the process.

I would like to thank Sir Robert McAlpine for putting me forward for the scholarship and the great mentors I have had in Jeff Tidmarsh and Alex Scott-Whitby.

I would also like to thank Wates for their contribution to the research, and my mentor Ben DeSanges, an essential point of contact throughout this process.

I am exceptionally grateful to all that took part in this research and I hope that your contributions will leave a lasting impact on the industry.

Finally, I would like to thank the Lord Jesus, who motivates me in all my work.

“Whatever you do, work at it with all your heart, as if working for the Lord, not human masters” Colossians 3:23

Summary

“Welfare facilities are those necessary for the well-being of your employees, such as washing, toilet, rest and changing facilities, and somewhere clean to eat and drink during breaks.” (Health and Safety Executive 2011, 1). Welfare facilities are central to life on-site, visited multiple times a day by workers as a place to rest and relax away from the chaos and physical stress of the construction site. However, the importance of the welfare facility has been forgotten. It has become a necessary space to meet legislation requirements but not an area of innovation. This research shows why this is an error and why the welfare facility is of value.

This research is essential as 1 in 4 people in the construction industry suffer from mental health issues each year (MIND cited by Mates in Mind 2018, 4). The welfare facility is necessary for the well-being of workers. The welfare facility is a tool to solve well-being issues in the industry. Furthermore, employers want to improve their workers’ productivity, and the welfare facility can be a tool to achieve this.

Initially, background research looked into existing studies about the welfare facility, its history, and a historic case study, the McAppy project. The aim was to glean existing knowledge on how welfare has improved over time and what motivated these improvements.

The second step was the primary data collection. The interviewees’ experience and opinions, as construction professionals, showed how the welfare facility has improved over their careers. A questionnaire issued to over 350 construction workers revealed how important the welfare facility was to them and where they wanted to see progress. This primary data collection enabled both blue and white collared workers to give their opinions on the welfare facility’s value.

The final step was looking at 5 case studies that utilised architectural assistants to design welfare as part of their community engagement, and whether this model benefitted the site workers and contractors.

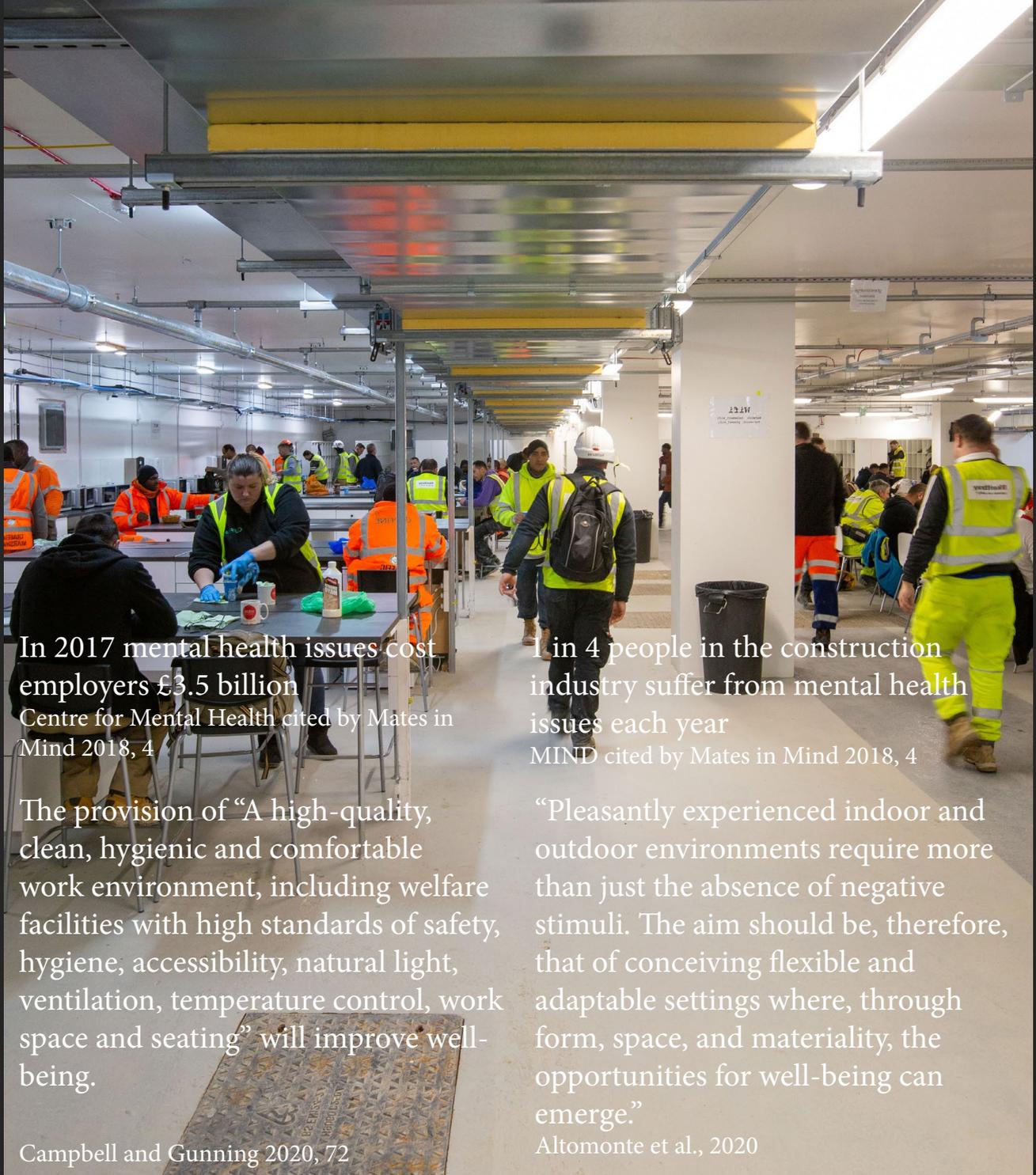
This report’s key finding was that good welfare facilities benefit the site-worker, contractor, and client, as the welfare facility is a tool to improve morale, productivity, and well-being.

The recommendations are that when a company is looking at best practice, the welfare facility should be an area of investment. The construction industry should tap into the potential of architecture students more widely as a form of community engagement. Finally, policy, legislation or both are needed to support industry-wide improvements.

Initial Research

“Welfare facilities are those necessary for the well-being of your employees, such as washing, toilet, rest and changing facilities, and somewhere clean to eat and drink during breaks.”

Health and Safety Executive 2011, 1



In 2017 mental health issues cost employers £3.5 billion

Centre for Mental Health cited by Mates in Mind 2018, 4

The provision of “A high-quality, clean, hygienic and comfortable work environment, including welfare facilities with high standards of safety, hygiene, accessibility, natural light, ventilation, temperature control, work space and seating” will improve well-being.

Campbell and Gunning 2020, 72

1 in 4 people in the construction industry suffer from mental health issues each year

MIND cited by Mates in Mind 2018, 4

“Pleasantly experienced indoor and outdoor environments require more than just the absence of negative stimuli. The aim should be, therefore, that of conceiving flexible and adaptable settings where, through form, space, and materiality, the opportunities for well-being can emerge.”

Altomonte et al., 2020

One of the central walkways dividing self-catered and catered spaces at Battersea Phase 3A facility

The Aims of the Research



1. To increase awareness of the welfare facility as an architectural typology
2. To assess the value of the welfare facility
3. To understand the current attitudes surrounding welfare facilities in the construction industry
4. To consider the evidence and make recommendations

The induction room at 1 Finsbury Avenue, the walls are constructed from reused doors

The History of Welfare

There is minimal information on the welfare facility's history as it was not considered essential until the 20th century. However, understanding the working conditions in the 19th century shows how welfare has developed over time. This research looked into working conditions from the industrial revolution to the present day to see where there had been improvements. This research looked at the progress that occurred but most importantly, the methods used to improve welfare.

Employers hardly considered workers welfare during the industrial revolution as productivity took precedence. The working conditions of Britain's railway workers, the Navvies reveal the poor treatment of workers and the consequences of these dire conditions (The Railway Museum, 2018). There were risks working on-site, and poor working conditions caused health problems and even death. The Woodhead tunnel project of 1845 exemplifies this, thirty-two workers died, one hundred and forty were injured, and shockingly twenty-eight people died of cholera due to poor living conditions (The B1M, 2017).

Throughout the industrial revolution, the attitude towards working conditions began to improve. Social reformers such as Edwin Chadwick attempted to highlight workers' issues (Laws, cited in Farnworth 2014). Chadwick revealed that the death rate at the battle of

Waterloo was lower than that at the Woodhead tunnel. (The B1M, 2017) In 1846 he wrote a paper on these issues, but it had minimal impact. Likewise, the builders themselves attempted to improve their conditions, such as in the 1859 London builders strike, but this also had a limited impact.

Real improvement occurred due to legislation, specifically the 1974 Health and Safety at Work Act and the Construction Design and Management Regulations.

Builders themselves do not have the leverage to make a change, as the industry they are critiquing is also their employer. If the industry wants to make a lasting change, it must come from those with more power than site workers; however, understanding site workers' opinions is essential.

Today, the construction industry is aware of mental health issues in the industry. However, workers have been aware of these issues for much longer. In the 1960s, Dominic Behan revealed the plight of construction workers in his song 'Building Up and Tearing England Down' (Genius, n.d). The history of welfare has shown that the industry needs to pay more attention to its workers' opinions to make a significant change. Once the construction industry is aware of the issues, improvements must be enforced by those with substantial power.



The working conditions for construction workers building canals in the 1800s



Navvies posing in front of a railway construction site in 1892. Note the working conditions of the site

The McAppy Project

The McAppy report is a recent historical case study, showing architects how they can approach the construction industry to improve the welfare facilities.

In 1973-76 the McAppy project was conducted by Architect Cedric Price with Sir Robert McAlpine. The aim was “to assess the health and happiness of... [McAlpine’s] organisation and to find ways of ensuring good industrial relations and maintaining standards and morale...” (Hardingham 2016, 399). It arose from a context with similarities to the present day and provided principles to improve welfare quality. The McAppy report responded to changing attitudes towards construction workers’ physical health due to the high number of accidents occurring on site. This report responds to the construction industry’s prevailing well-being problems, as shown in the initial research.

Three principals are evident in the McAppy Project. These principals should be present in all attempts to improve welfare.

Firstly, **proactivity not reactivity**. The industry must be proactive in making changes rather than reacting to issues when they occur on site. Cedric Price actively went on-site looking for hazards rather than responding to incidents once they occurred.

Secondly, **a constant strive for optimisation**. There is always room for improvement. The construction industry should aim for continual improvement and not settle for the bare minimum regarding the standard of welfare, we must strive for better.

Finally, **good intentions are not enough**. Good intentions are an essential starting point for improving welfare facilities. However, for lasting change, the industry must implement policies or legislation, so those good intentions are prioritised over other factors. Clients and contractors should have good intentions in writing so that factors such as the cost do not reduce the quality of the welfare.

111/0d/wA/pjd

Professor Joanne Robden
Fashion Department
RCA
Kensington Gore
LONDON SW7

21 November 1974

Dear Professor Robden,

We are currently engaged as consultants to a firm of building contractors in order to investigate methods of improving site conditions. One of the areas under investigation is protective clothing.

Would anyone in your Department be interested in doing research into this subject? I enclose a brief outline of relevant background material for your information. If there is an interest perhaps we could arrange a meeting in the near future in order to discuss the matter further.

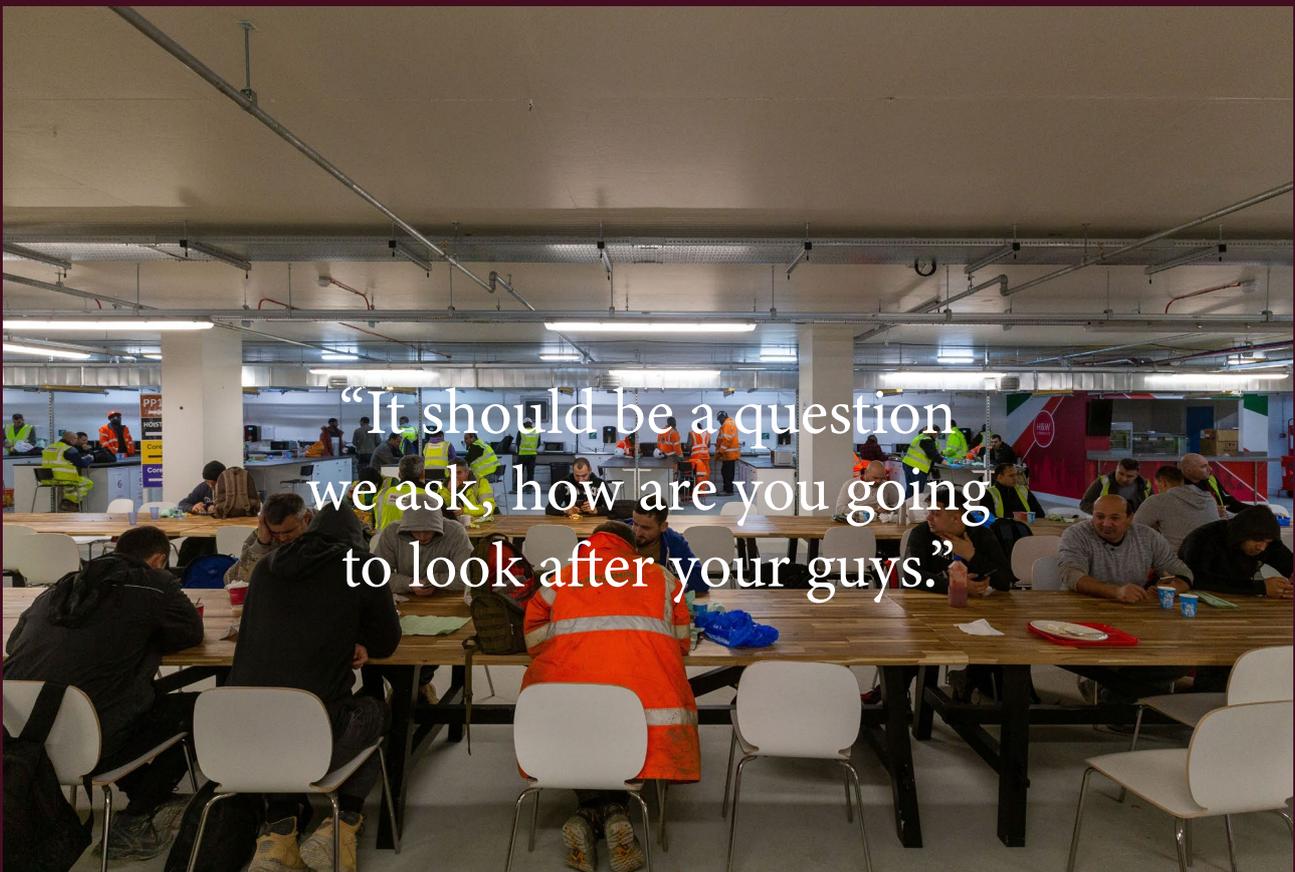
Yours truly,

Will Alsop
(Cedric Price)

A letter from the McAppy project regarding research into PPE

Interviews

The interviews revealed that the welfare facility is of value and is fundamentally vital to life on site. However, this exploration into the welfare facility produced other findings which fall under the following headings. The findings come from fourteen, thirty-minute interviews with construction professionals with various experience and differing job roles.



One of the places to eat and rest at Battersea Power Station Phase 3A

Disparity

A recurring comment from the interviewees was the disparity between the quality of welfare facilities throughout the industry. Larger contractors seem to provide better facilities as a result of larger budgets. However, the interviewees revealed that the availability of space was another factor that compromised the quality of the welfare provided. It provokes the question, how can we support smaller contractors to ensure that site workers throughout the industry receive the same standard of welfare facility.

Issues

The findings revealed two critical problems within welfare facilities, a lack of WCs and poor ventilation. Ensuring that the number of facilities is suitable for the number of workers at peak usage will resolve these simple issues. The other repeated problem was the abuse of the facilities by site workers. Vandalism reflects the attitude of workers towards their welfare facility. It should be viewed as a sign that there may be other issues present in the facility.



“If you have a nice environment, a nice rest area, the guys tend to appreciate it more and you tend to get better productivity out of them.”

The interior of the induction room at 1 Finsbury Avenue

Improvements

Significant improvement to welfare facilities in the past 30 years results from a change in attitude and legislation, such as the CDM regulations. The interviewees believed that the quality of welfare would continue to improve, especially due to Covid-19. However, the change would not be radical. There is a prevailing attitude in the industry of doing the bare minimum, meeting CDM requirements but not aiming to provide facilities beyond this standard.

Responsibility

The interviews revealed that there is an issue within the industry of responsibility. Clients need to take more responsibility for welfare facilities. Regretfully, the interviewees brought up clients' being ill-informed of their role and what the minimum standard is. Contractors must educate clients of their role and responsibility at the commencement of a project so that their lack of knowledge does not affect site workers. The quality of the welfare facility is an expression of how much the client cares for the operative.



“Space is the problem
because sites generally
aren't blessed with space.”

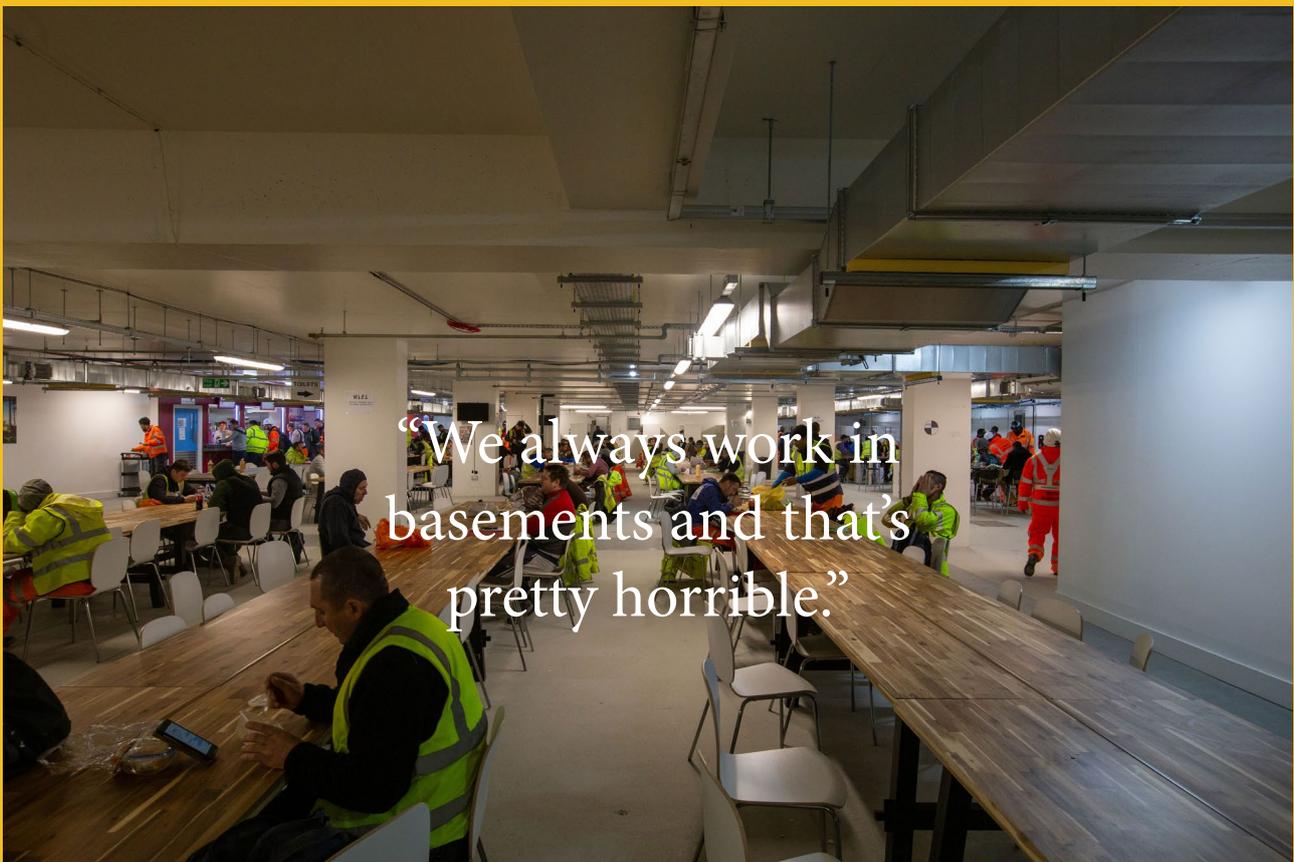
The interior of the induction room with a presentation screen and safety posters at 1 Finsbury Avenue

Money

In general, the interviewees argued that good quality welfare improved productivity on-site, being good value for money. However, the cost is a factor in the provision of welfare facilities. The unwillingness to pay for better welfare is an issue. According to Laura Burke, “the cost on mental health related illnesses to the construction industry alone is £2.25 billion to £2.86 billion” (Burke 2019, 26). Research must uncover whether investing in the welfare facility can reduce these costs. Clients must remember that better welfare does not always cost more.

Well-being

The interviews showed that the welfare facility is vital for well-being and that there is a need for better rest facilities on site. Rest facilities must consider not only the physical safety of workers but their comfort. There is a general lack of consideration for the well-being of workers. Workers do not report issues as a result of fearing job loss for critiquing their bosses. The questionnaire in the next section of the report will give much-needed insight from the users of the welfare facilities as to where they see a need for improvement.



“We always work in basements and that’s pretty horrible.”

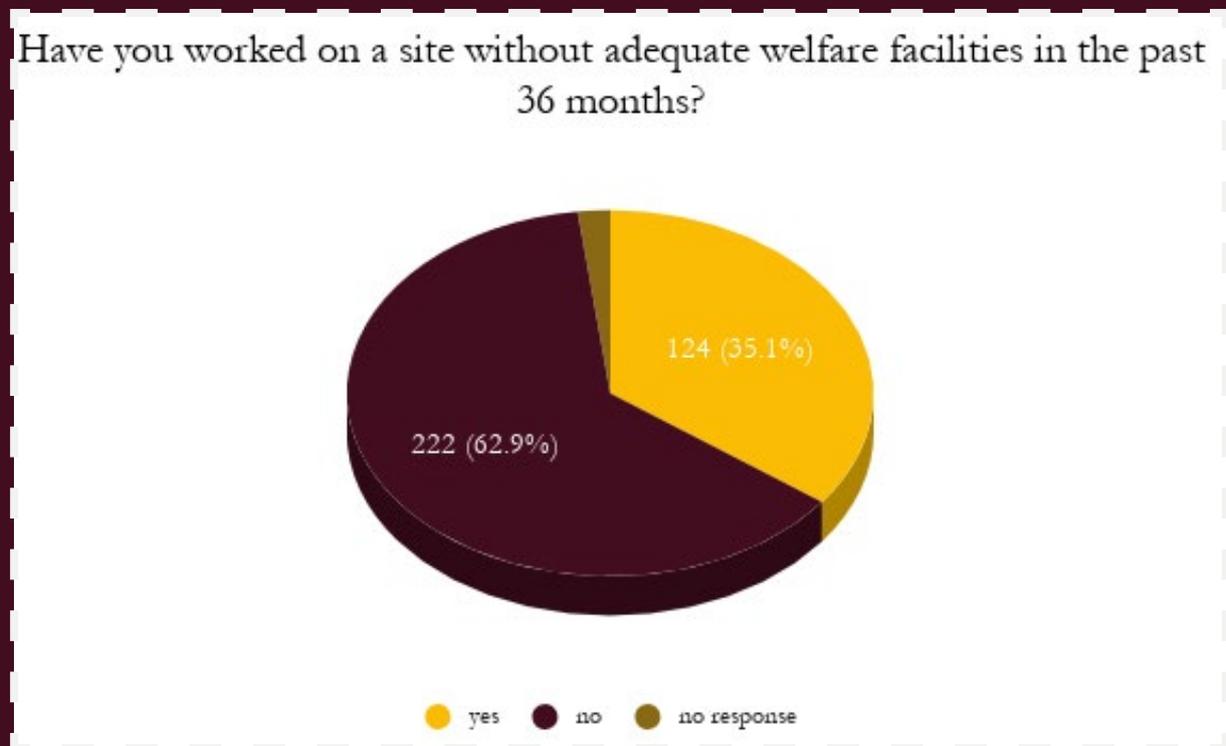
Additional seating space at Battersea Power Station Phase 3A

Covid-19

The challenges of Covid-19 have shown the importance of adaptability in the welfare facility. Adaptability enabled social distancing but will also solve common issues in the welfare facility, such as the workforce growing greater than expected. The staggering of breaks and separate entrances and exits are vital to making welfare adaptable. Contractors also have an important role. They must sufficiently consider the number of facilities required for all stages of a project. This consideration will ensure that the facilities are not under excessive demand, creating a less stressful environment for workers.

Questionnaires

The questionnaire gathered the opinions of site workers regarding the welfare facility. Three hundred and fifty-three construction workers, predominantly site workers completed the questionnaire to reveal the importance of the welfare facility. The questionnaire revealed that the welfare facility is of value to those that use it and is fundamental to life on site. Other findings come under the following headings.

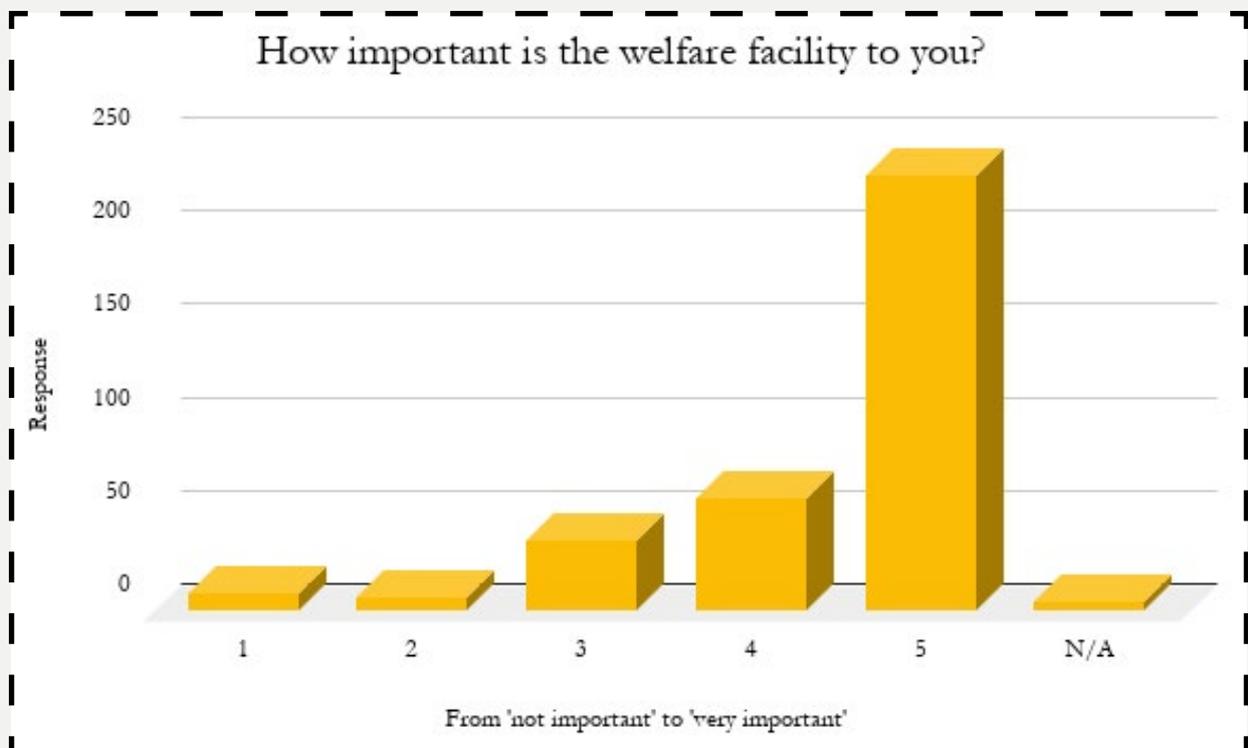


Demographic

The respondents of the questionnaire were predominantly from 6 London based construction sites. The response was mostly from site workers, 80.7% of the 353 responses. 43% of the workers were over the age of 40, 30% were between the ages of 31-40. These workers had varying levels of experience in the construction industry, 22.3% having less than five years experience and 22.9% with over 20 years of experience.

The Importance of the Welfare Facility

66% of those questioned stated that the welfare facility was “very important/essential”. The questionnaire asked workers to rate the importance of the welfare facility from 1-5. One was “not important/ not required”, five was “very important/essential”. Of the 353 responses, only 2.8% responded that the welfare facility was not important. These statistics reveal that to the workers on-site; the welfare facility is of high value.

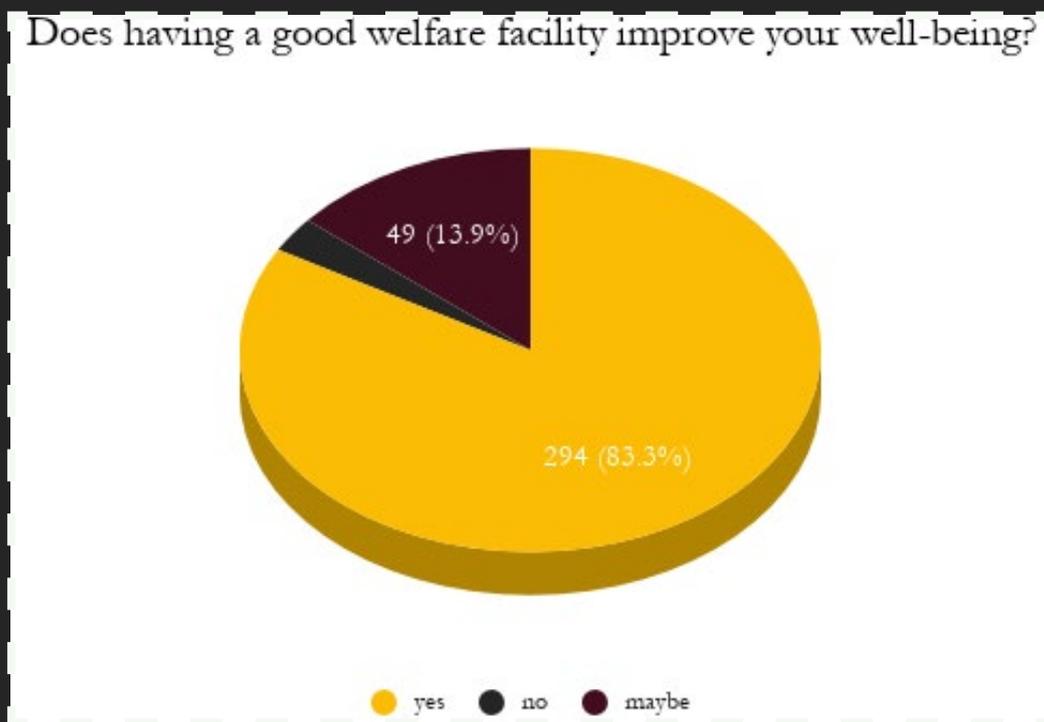


Welfare Usage

The frequency that workers visit the welfare facility became a tool to determine the welfare facility’s value. It would determine how much of an impact the welfare facility has on the user. The questionnaire showed that 43% of workers used the welfare facilities 2-3 times a day with a further 18% visiting the welfare facility more than three times a day. Therefore, the welfare facility is a central part of the workers day and should be viewed accordingly.

Self Reflection

The questionnaire asked workers to state how the welfare facility made them feel to understand the welfare facility's importance and whether it is an area worth investing. 61% of workers stated that having a good welfare facility motivated them to work harder. Motivation is an important statistic to consider with regards to improving performance in the industry. If there is evidence for increased productivity, it can then support the idea that welfare should have more investment. The second statistic showed that 83% of workers believed that having a good welfare facility improved their well-being, highlighting that the welfare facility is a tool to improve mental health and well-being amongst workers.



The Current Standard of Welfare Facilities

The data shows that the welfare facility is of good quality. When asked to rate the welfare facility from 1, unacceptable to 5, fantastic, the most common answer was 4. However, 35% of workers had worked on sites which they perceived to have inadequate facilities in the past 36 months. The demographic of the workers chosen for this questionnaire is limited as they worked for one UK contractor. Had more contractors been included, this result may have varied.

Style and Appearance

The questionnaire asked the workers to select their preferred welfare facility from two photographs. Option 1 received 46.5% of the vote, and option 2 received 49.3%. Stylistically these are very different welfare facilities and yet one was not massively preferred. Style does not seem to impact preference. The most important factors appear to be meeting key requirements and ensuring clean, comfortable spaces to rest in, with adequate space for the number of users.

8. Which welfare facility would you rather work in?

Mark only one oval.



Option 1



Option 2

An extract from the questionnaire showing the two welfare facility choices

Issues and Areas for Improvement

70% of workers stated that there were no recurring issues in welfare facilities. However, their suggested improvements showed apparent themes. One theme was an insufficient amount of WCs and hot taps. Furthermore, a lack of space was an issue within welfare facilities. Cleanliness and issues surrounding maintenance was another problem. Contractors can quickly solve these issues by ensuring that there is a regular cleaning schedule and that there are sufficient facilities for busy periods in the project.

Case Studies

One UK contractor has been exploring the design opportunities of working with architectural assistants to design the welfare facilities that they provide on their major projects. Architectural assistants have now designed five projects in both university contexts and working environments. These projects have aided the students by offering experience on a live project, whilst helping the contractor in their community engagement. The most significant benefit is that the accident frequency rating (AFR) on these sites is lower than a comparable regional counterpart.

This contractor was positively looking for innovation and freedom to design from the architectural assistants. The projects were diverse, some projects were serving up to 2000 workers and became miniature towns whereas, other projects focused on sustainability and reusing materials already present on site.

These projects have benefitted the contractor by reducing their accident frequency ratings and meeting 106/9 planning contributions. It has also exposed young trainee architects to the built environment and construction industry. There are limitations in using this information as it is all from one UK contractor on London based projects. However, an interesting trend is beginning to show and should be considered by other contractors when innovating their welfare facilities.

Project	AFR for project lifetime	AFR for a comparable regional project during project lifetime	Comments
Site A	0.07	0.12	Welfare has moved
Site B	0.24	0.1	2 RIDDOR's occurred before welfare was in place
Site C	0.09	0.1	>3,440,000 hours worked, still ongoing
Site D	0.08	0.1	>4,800,000 hours worked, still ongoing
Site E	0.00	0.09	>450,000 hours worked, still ongoing

AFR= (number of RIDDOR injuries X 100,000) / Number of hours worked.

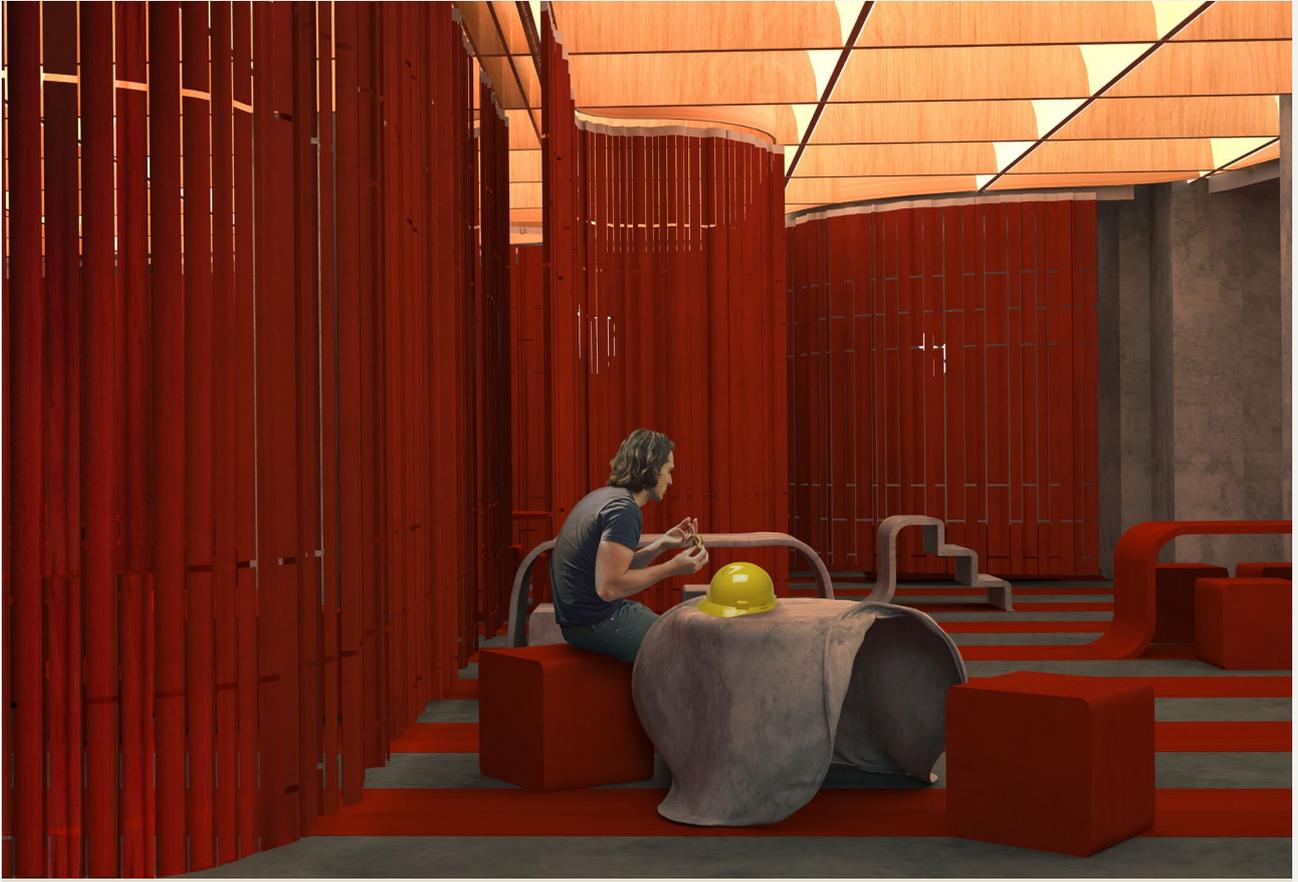
RIDDOR= The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

This data was accurate at the time of gathering, July 2020.

The following images show some of these innovative welfare facilities.



Architectural drawing showing the intended induction room at Battersea Power Station Phase 3A



Architectural drawing showing the intended seating area at Ilona Rose House



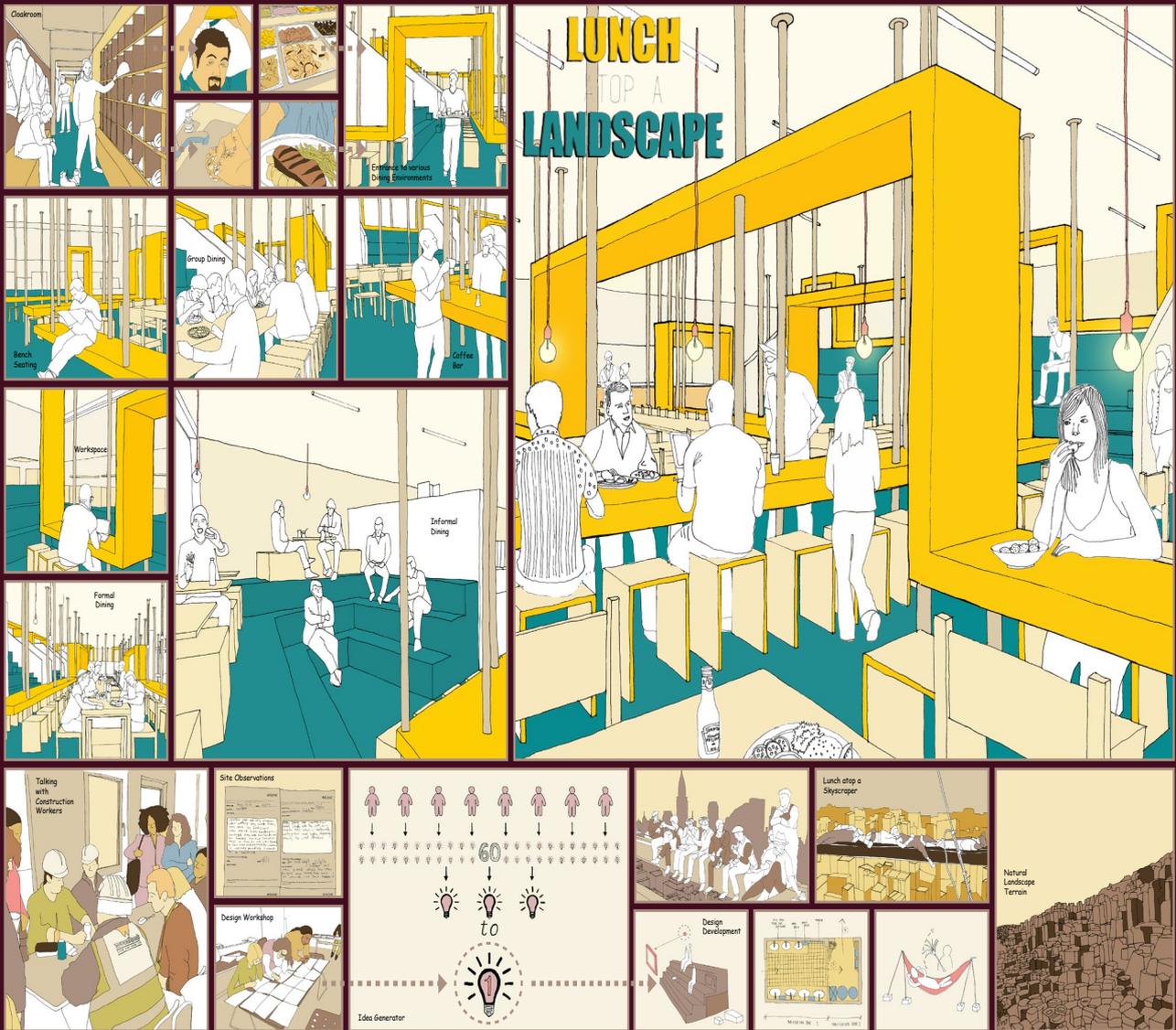
The main sitting and eating area at 1 Finsbury Avenue



The lighting feature designed from reused materials at 1 Finsbury Avenue



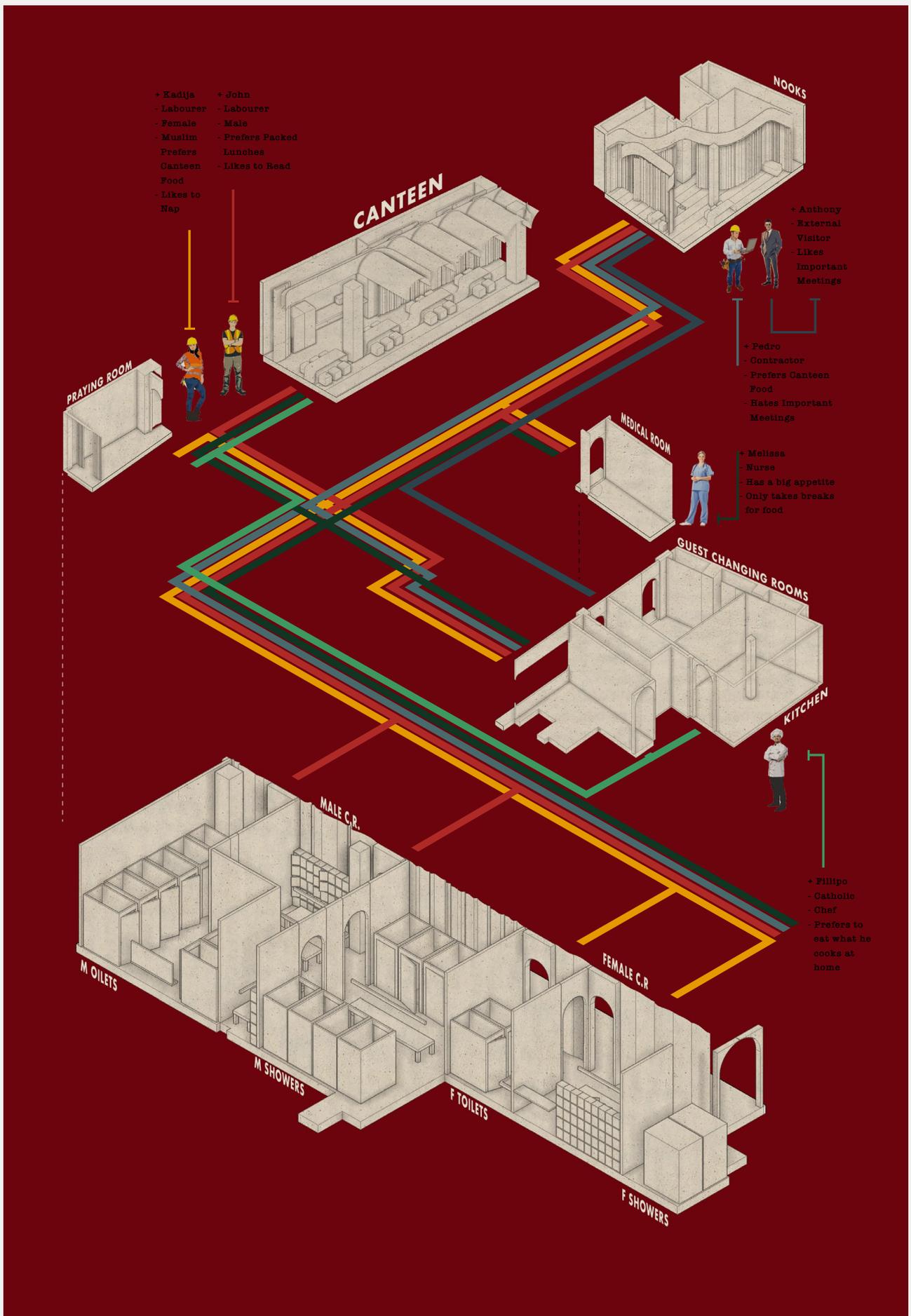
Tables and chairs made out of reused materials form the main seating space at 1 Finsbury Avenue



Sketches during the design process exploring the concept of the continuous table



At Broadgate welfare facility the table acts as a design feature travelling around the canteen



A diagram showing the circulation of the welfare facility at Ilona Rose House

Findings

The Value of the Welfare Facility

- Good welfare facilities benefit the site-worker, contractor and client.
- 66% of workers stated that the welfare facility was very important/ essential.

The Impact of the Welfare Facility on the Worker

- The welfare facility is a tool to improve morale, productivity and well-being.
- 61% of workers stated that a good welfare facility motivated them to work harder.
- 83% of workers believed that a good welfare facility improved their well-being.

A Change in Attitude

- A change in attitude is not enough to create lasting change in welfare facilities.
- There are disparities between different tier contractors.
- Insufficient attention is given to ensuring good standards on different types of sites.

Improvements and Legislation

- Legislation such as the Health and Safety at Work Act and CDM regulations have had a massive impact on the provision and quality of welfare facilities.
- 35% of site workers stated that they had worked on a site which they perceived to have inadequate welfare facilities in the past 36 months.

Responsibility

- There is an acceptance that welfare is a key component of construction best practice.
- The client is ill-informed of their responsibility regarding the welfare facilities.

Key Issues

- There is an inadequate amount of WCs without effective regular cleaning.
- The number of facilities are not sufficiently accommodating the number of workers.

Recommendations

A Change in Attitude

- The prevailing attitude of doing the bare minimum must be tackled by the construction industry.
- Further research must be conducted into quantitative data on the benefits of improving welfare. This data should be published as a relevant good practice metric.

Individual Responsibility

- When clients visit construction sites, they should visit the welfare facilities and question whether the facilities are adequate for the staff.
- More inspections are recommended on smaller construction sites to reduce the disparity in welfare conditions.

The Welfare Facility as a Tool

- The construction industry must view the welfare facility as a tool for improving morale, productivity and well-being.
- When a company is looking at best practice, the welfare facility should be considered an investment area.

Quantity

- Effective time management for comfortable use is required so that welfare facilities can function best at their busiest rather than at average capacity.

The Role of Policy and Legislation

- Policy, legislation or both are needed to support industry-wide improvements.

Innovation

- The construction industry should tap into architecture students' potential more widely as a form of community engagement.
- Innovative welfare facilities must consider maintenance to ensure that working conditions are sustainable.

Appendix



A photograph of the existing building at 1 Finsbury Avenue

Limitations

Secondary Research

The main limitation was the inability to use and collect physical sources due to Covid-19. The literature review utilised a free online database, which may have limited the number of results. Similarly, when researching 'The McAppy Project', only one key source could be found online, archives could not be visited due to Covid-19.

Primary Research

The main limitation was the sample size. The questionnaires and case studies came from two major UK contractors in London. Further research should consider contractors of different sizes. Furthermore, the interviews were not transcribed but noted. This notation enabled greater engagement between the interviewer and the interviewee; however, additional details may have been missed.

These limitations do not disregard the information that has been found but should be considered by future researchers when considering topics to research and whether to repeat certain areas of study with different sample sizes.

Future Research

More research is needed regarding the welfare facility in the UK. There is a need for more quantitative data to prove the value of the welfare facility. This data will then establish a benchmark on the budget per user for welfare facilities. Innovative welfare facilities should be researched considering the number of accidents on-site, workers' perceived well-being, and absenteeism. Future research should be conducted over a larger sample size, considering smaller contractors and construction sites outside of London.

Welfare Facility Questionnaire

Please fill in the questionnaire with the responses that most reflect your experience in welfare facilities, Thank you.

For the purpose of this questionnaire the welfare facility is being defined as the spaces required for the well-being of workers. This includes spaces such as the canteen, drying facilities, WC's and cloakroom.

1. Do you predominantly work on site or in an office?

Mark only one oval.

- Site
 Office

2. Which age group do you fall into?

Mark only one oval.

- 16-20 years old
 21-30 years old
 31-40 years old
 40+ years old

3. How long have you worked in the construction industry?

Mark only one oval.

- Less than 5 years
 5- 10 years
 11-15 years
 16-20 years
 More than 20 years

4. How many times a day on average do you use the welfare facility?

Mark only one oval.

- Less than once a day
 Once a day
 2-3 times a day
 3+ times a day

5. How important is the welfare facility to you?

Mark only one oval.

	1	2	3	4	5	
Not Important/ Not Required	<input type="radio"/>	Very Important/ Essential				

6. Does having a good welfare facility motivate you to work harder?

Mark only one oval.

- Yes
 No
 Maybe

7. Does having a good welfare facility improve your well-being?

Mark only one oval.

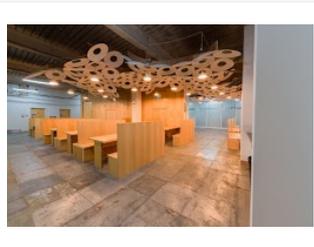
- Yes
- No
- Maybe

8. Which welfare facility would you rather work in?

Mark only one oval.



Option 1



Option 2

9. How would you rate the general quality of the welfare facilities that you have used?

Mark only one oval.

	1	2	3	4	5	
Unacceptable/ lacking provisions	<input type="radio"/>	Fantastic				

10. Have you worked on a site without adequate welfare facilities in the past 36 months?

Mark only one oval.

- Yes
- No

11. Have you noticed any recurring issues in welfare facilities on different sites, if so please describe them in question 12?

Tick all that apply.

- Yes
- No

12. If you could improve one thing about welfare facilities what would it be? If you have experienced recurring issues please note them here.

References

Text References

Altomonte, S et al. (2020). Ten questions concerning well-being in the built environment.

Burke, L. (2019). Workplace Mental Health in the Construction Industry. Available from: <https://www.ciobacademy.org/course/research-on-mental-health-in-construction-for-smes/> [Accessed 14/10/20].

Campbell MA and Gunning JG. (2020). Strategies to improve mental health and well-being within the UK construction industry. Proceedings of the Institution of Civil Engineers – Management, Procurement and Law 173(2): 64–74, <https://doi.org/10.1680/jmapl.19.00020>

Centre for Mental Health, Mental health at work: The business cost ten years on, (2017) [<https://www.centreformentalhealth.org.uk/news/mental-health-problems-work-cost-uk-economy-ps349bnlast-year-says-centre-mental-health/>], Cited by Mates in Mind, 2018 Annual Report.

Farnworth, R. (2014). The Sheffield, Ashton-under-Lyne and Manchester Railway – 1. Available at: <https://rogerfarnworth.com/2014/07/24/the-sheffield-ashton-under-lyne-and-manchester-railway-1/> [Accessed 12/03/20]

Genius. (n.d.) Building up and tearing England down. Available at: <https://genius.com/The-dubliners-building-up-and-tearing-england-down-lyrics>. [Accessed 10/04/20]

Hardingham, S. (2016) Cedric Price Works 1952-2003: A Forward Minded Retrospective. London, Architectural Association Publications.

Health and Safety Executive. (2011). Welfare at Work, Guidance for employers on welfare provisions. Health and Safety Executive.

MIND, Mental health facts and statistics, [<https://www.mind.org.uk/information-support/types-of-mental-health-problems/statisticsand-facts-about-mental-health/how-common-are-mental-healthproblems/#one>] Cited by Mates in Mind,

2018 Annual Report

The BIM. (2017). Health and Safety in Construction: A Visual History.[online video]. Available at: <https://www.youtube.com/watch?v=ifx9LE9071o> . [Accessed 12/03/20]

The Railway Museum. (2018). Navvies: workers who built the railways. <https://www.railwaymuseum.org.uk/objects-and-stories/navvies-workers-who-built-railways#who-were-the-navvies> [Accessed 17/03/20].

Image References, in order

Tables and chairs made out of reused materials form the main seating space at 1 Finsbury Avenue, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (19 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

The exterior of the welfare facilities at 1 Finsbury Avenue, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (14 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

One of the central walkways dividing self catered and catered spaces at Battersea Phase 3A facility, Battersea Welfare Completed - Osman Marfo-Gyasi (24).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

The induction room at 1 Finsbury Avenue, the walls are constructed from reused doors, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (24 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

The working conditions for construction workers building canals in the 1800s. Wall, N. (2017). Construction workers who built the canals. A 19th Century scene in Dulcie Street Basin on the Rochdale. Accessible from: <https://www.canalboat.co.uk/canal-boats/construction-workers-who-built-the-canals-1-4940962>. [Accessed 05/05/20]

Navvies posing in front of a railway construction site in 1892. Note the working conditions of the site. The Railway Museum. (2018). Navvies: workers who built the railways. Navvies posing in front of timbering shoring up the north end of the Gill's corner railway tunnel during its reconstruction in 1892. Available from: <https://www.railwaymuseum.org.uk/objects-and-stories/navvies-workers-who-built-railways#&gid=1&pid=2>. [Accessed 17/03/20].

Cedric Price. (1974). Letter from Will Alsop of the office of Cedric Price to Professor Joanne Robden of the Royal College of Art concerning research on protective clothing in conjunction with the McAppy project. Cedric Price Fonds, Canadian Centre for Architecture. Reference number:DR1995:0263:032:014:005. Available from: <https://www.cca.qc.ca/en/search/details/collection/object/474889>. [Accessed 18/04/20].

One of the places to eat and rest at Battersea Power Station Phase 3A, Battersea Welfare Completed - Osman Marfo-Gyasi (25).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

The interior of the induction room at 1 Finsbury Avenue, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (3 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

The interior of the induction room with a presentation screen and safety posters at 1 Finsbury Avenue, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (4 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

Additional seating space at Battersea Power Station Phase 3A, Battersea Welfare Completed - Osman Marfo-Gyasi (18).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

An extract from the questionnaire showing the two welfare facility choices. HSSE World.(n.d) Available from: <https://hsseworld.com/safety-applications/forms/>. [Accessed 14/10/20]. The main sitting and eating area at 1 Finsbury Avenue. SRM.(n.d). 1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (17 of 28).jpg. [Accessed 02/10/20].

Architectural drawing showing the intended induction room at Battersea Power Station Phase 3A. Joseet, G. Internal Render of Welfare Facility. Battersea Power Station Phase 3A. [Accessed 02/10/20].

Architectural drawing showing the intended seating area at Ilona Rose House. Florez, J. A0 x2 DOUBLE SIDED strips .pdf. Ilona Rose. Aberrant Architecture. [Accessed 02/10/20].

The main sitting and eating area at 1 Finsbury Avenue. SRM.(n.d). 1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (17 of 28).jpg. [Accessed 02/10/20].

The lighting feature designed from reused materials at 1 Finsbury Avenue. SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (25 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

Tables and chairs made out of reused materials form the main seating space at 1 Finsbury Avenue. SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (19 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

Sketches during the design process exploring the concept of the continuous table. Aberrant Architecture et al. (2015). 15.05.28. BLOOMBERG VISUAL.pdf

At Broadgate welfare facility the table acts as a design feature travelling around the canteen .Tidmarsh,J. (n,d). Bloomberg, IMG_2106.jpg

Diagram showing the circulation of the welfare facility at Ilona Rose House. Aberrant Architecture et al. (n,d) Ilona Rose house- A0 x2 DOUBLE SIDED strips .pdf

Light Feature, SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (25 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

One of the corridors at Battersea Power Station Phase 3A, Battersea Welfare Completed - Osman Marfo-Gyasi (21).jpg, ScottWhitbyStudio. [Accessed 02/10/20]. (filter added)

A photograph of the existing building at 1 Finsbury Avenue, Untitled, ScottWhitbyStudio. [Accessed 02/10/20]. (filter added)

The lighting feature designed from reused materials at 1 Finsbury Avenue. SRM_1 Finsbury Avenue Welfare © Osman Marfo-Gyasi (25 of 28).jpg, ScottWhitbyStudio. [Accessed 02/10/20].

Welfare Facility in Questionnaire. HSSE World. (n.d) Available from: <https://hsseworld.com/safety-applications/forms/>.

