

MANCHESTER SCHOOL OF ARCHITECTURE



CAN WE FIX IT?

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Manchester
Metropolitan
University



**MSA
LIVE 21**

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Partners

We will be working closely with the founder of This is Change, Rob Toon. This is Change is an event movement which aims to challenge the perception of the construction industry.

Rob has a passion for innovation and has a wealth of experience in the construction industry, working as a design manager on a variety of projects. Rob has always been keen to explore different opportunities to promote change within the construction industry via design management and corporate strategy. Working with the belief that people make construction a great place to work, This is Change aims to celebrate the people who work in the industry whilst pushing for enhancements in social, mental and physical well-being in the workplace.

Using his first-hand experience of current site accommodation conditions, it is Rob's belief that current site accommodation is not up to standard. In order to improve the working conditions of its staff, it is important to improve the perception of the construction industry. In doing so, Rob aims to alter the way contractors are treated at their place of work, thus improving their quality of life to protect their well-being in work.

This is the ultimate aim of This is Change; changing perception, altering practice, and finally improving the welfare of employees within the construction industry.



Agenda

CAN WE FIX IT?

Temporary site accommodation in the 21st Century is currently not fit for purpose. Working with This is Change, our project aims to re-imagine the way construction site accommodation is provided. We will challenge the issues found in temporary on-site accommodation, to design a proposal for a new modular system. By improving the provision of welfare facilities which are currently limited for contractors, the aim is to improve the programme of work and ultimately improve the delivery of projects on site. A cost-effective solution is preferred as we aim to develop a scheme which will meet the budget requirements for design managers.

During this project, students will be offered insight into the construction industry through talking to construction professionals. The construction industry employs a variety of job roles which work in collaboration to build the cities we live in. Ranging from architects, engineers, design managers, clients and contractors, site accommodation needs to respond to the needs of these various users. By engaging with a wide range of employees, we will build a picture of what site accommodation is currently lacking and where improvements need to be made to provide improvements for these different users. This project will offer an excellent insight into the world of construction for students who may never have attended a site before; helping them to comprehend how they can make a positive difference to project delivery within the industry.

There is a significant lack of welfare consideration for contractors within their existing workplace environment. Therefore, this project will provide a service to the wider construction industry through the development of a new design for on-site accommodation. The current standards of temporary on-site accommodation do not embody a professional working environment despite being the place of work for numerous professionals during project construction. Through an investigation into current office accommodation standards, students will uncover the disparity of welfare standards for office workers and contractors to enable them to offer an alternative approach to site accommodation. In creating a healthier and more positive working environment this project will foster better relationships and attitudes within the construction industry.

During the project Q&A sessions were hosted with varying construction professionals. This allowed an insight into the various roles performed on construction sites and provided a greater understanding of the construction industry in general.

During a Q&A session with Mathew Benson, an architect at Storah Architecture, it was possible to gather insight into the roles and requirements for each employee on a construction and their daily routines. This included detailed discussions about the role of the architect, prompting investigation into how welfare could be improved for site users by creating work-friendly environments which promoted well-being. Any proposal for improvement to site accommodation must also remain in line with HSE regulations and the units should remain functional with easily replaceable and repairable finishes.

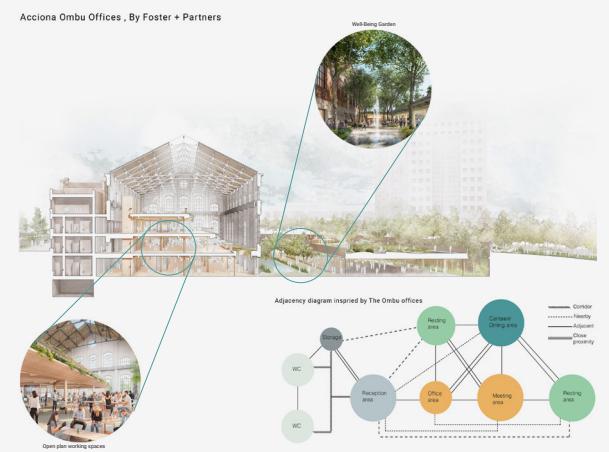
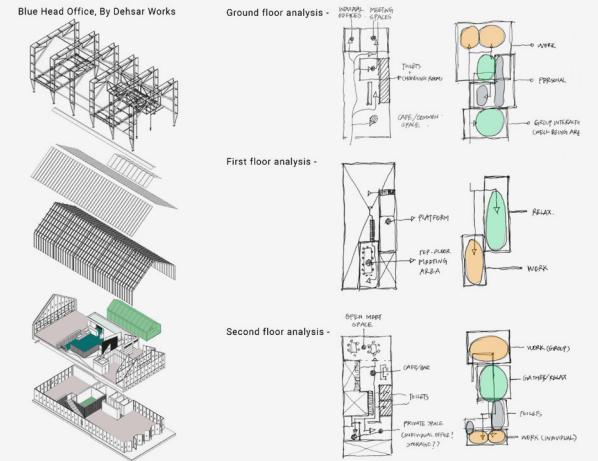
Through a discussion with the collaborator, Rob Toon, who also works as a design manager on construction sites, it was possible to identify the current amenities found within construction site accommodation. These include but were not limited to; large collaborative working spaces, private offices for site managers and large TV screens for sharing presentations and construction drawings. Focus was centred on creating efficient spaces that promoted diligence whilst supporting good mental health and well-being.



Research into current office environments in other industries influenced our design development. Looking at examples from across the world, such as Blues Head Office by Dehsar Works, Paddington Works by Threefold Architects and Acciona Ombu Offices by Foster + Partners, analysis of these spaces provided an understanding of how offices promote well-being for their staff.

It became clear that there is a disparity between temporary site accommodation within the construction industry and general office provision. This led to discussions to determine which elements of the scheme could be used from other industry sectors to improve health and mental well-being as well as creating productive working environments.

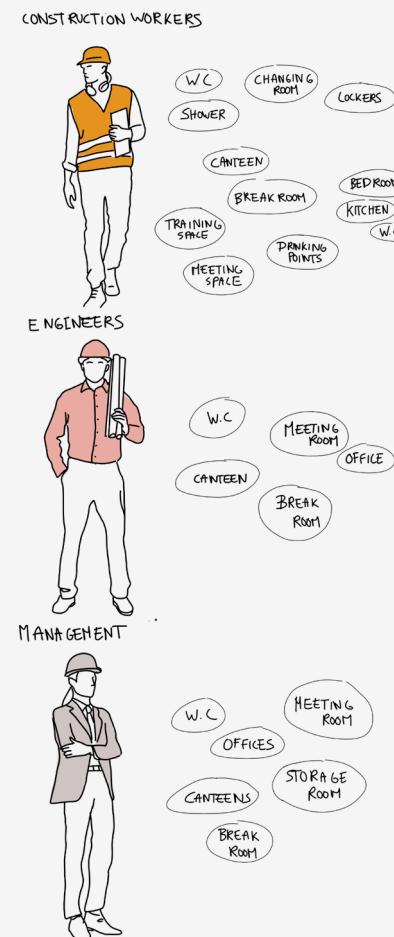
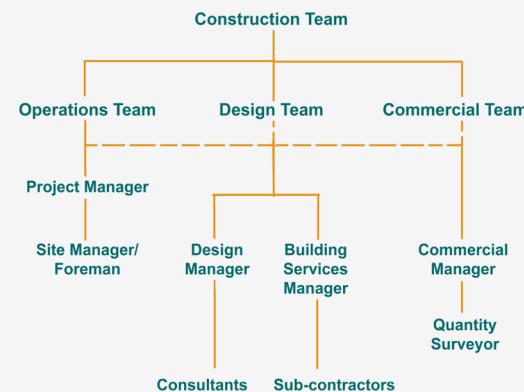
Developing spaces with temporary furniture created multi-use accommodation. This has been adopted within the design as an appropriate solution to the problem of insufficient temporary site accommodation providing; room for receptions, meetings, respite and storage within one boundary. Therefore, this ensures the units provide welfare facilities as a minimum requirement and reducing upfront costs for the design manager. Stacking cabins in a vertical arrangement optimises the use of the site by reducing the amount of floor space occupied by site accommodation, improving work-flow and productivity.



Understanding the users of spaces is crucial in design development, affecting the efficiency and use of a final proposal. After researching and understanding existing on-site facilities and their limitations, it was essential to develop an understanding of the users of these facilities and their required spaces. Discussions with Rob Toon gave a clear insight to the multitude of users who utilise on-site accommodation throughout the duration of a construction project.

These discussions and further research prompted the development of user profiles and more in-depth investigations into the spaces they might use whilst on-site. Reflecting on a day in the life of a construction worker, site manager and architect, for example, provided a detailed understanding of how the experiences of construction professionals differ whilst on-site.

These experiences also informed the types of spaces necessary on-site to allow the different job roles to successfully and efficiently be completed, whilst providing the appropriate facilities to promote good health and well-being. Additionally, using exercises such as preparing storyboards and flowcharts made apparent which spaces overlap for the varying job roles, indicating which spaces are most important to include and informing the design development.



Sub-contractors



Site Manager



Architect



Job Position

Project Manager
Quantity Surveyor
Architect
Site Manager/Foreman
Construction Worker
Engineer
Building Services Manager
Consultants
Sub-contractors

Job Role



Job Requirements

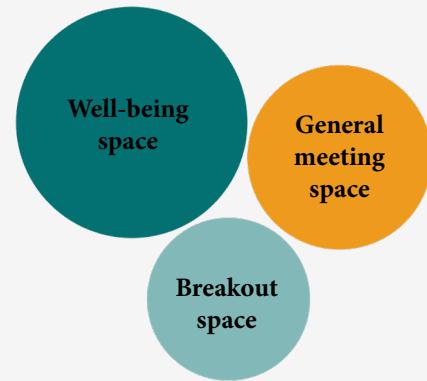
- Work frequently on-site
- Require a variety of equipment
- Potentially live on-site
- Mostly work off site
- Occasionally work on-site with workers

Spatial adjacency diagrams were used within the design process to acknowledge the varying spaces identified within a construction site, whilst reflecting on the varying daily routines of different construction professionals.

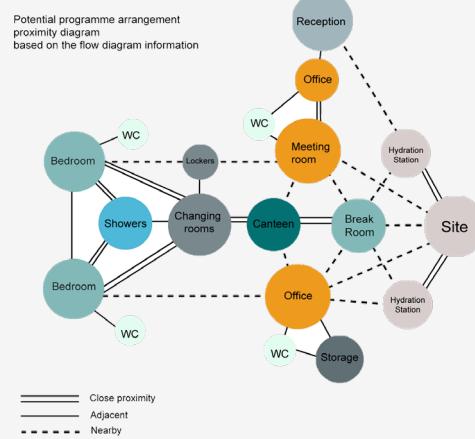
Three key programmes were identified from the previous research as important, including well-being areas, breakout spaces and meeting spaces.

These programmes informed the project design development, aiming to enhance the existing on-site facilities. Following the identification of these programmes, spatial adjacency diagrams depicted the rooms and spaces which encapsulated these programmes and their proximity relationships. This aided the layout of spaces within the design, identifying the links which could promote efficient use of and progression through the space.

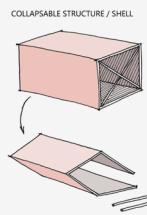
From this, it was possible to investigate how these spaces could be introduced spatially to promote cost efficiency and aid navigation around site. Coloured cladding was identified as a useful navigation tool, allowing both frequent and infrequent visitors to be visually guided around site.



Potential programme arrangement proximity diagram based on the flow diagram information



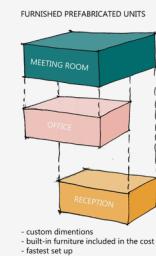
POSSIBLE SOLUTIONS
INITIAL IDEAS



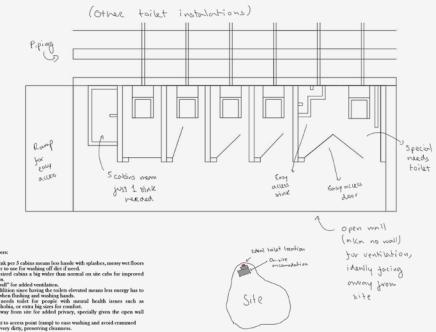
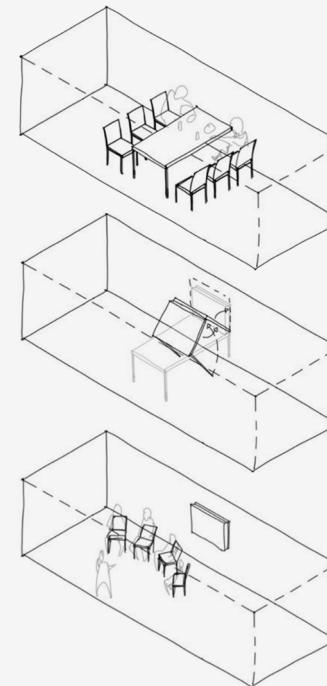
- compact, easy transportation
- adaptable space
- fast set up



- color coded cladding for easy orientation
- low cost
- easy shipment



- custom dimensions
- built-in furniture included in the cost
- fastest set up



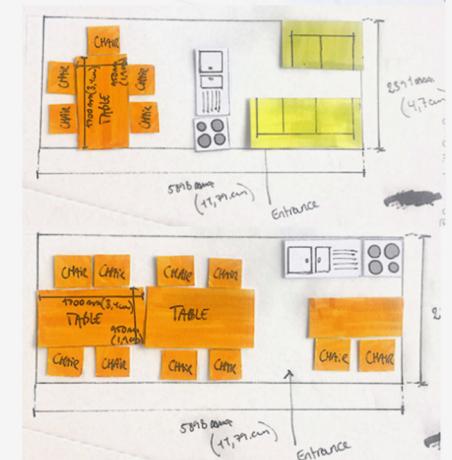
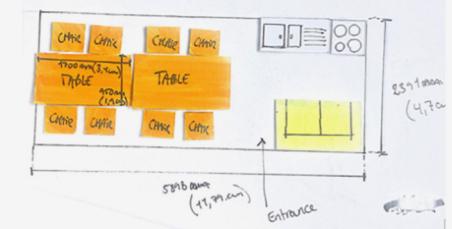
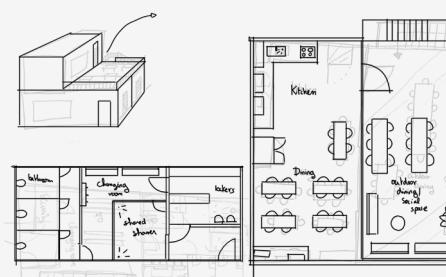
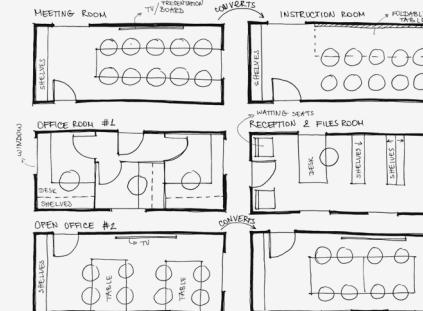
Initial plan

Key:

1. Changing rooms for workers
2. Shower
3. Bedding room
4. Kitchenette
5. Kitchen
6. Large meeting room
7. Reception area main entrance for general public
8. Reception area
9. Storage room
10. Site
11. Locker and changing area for visitors

Notes:

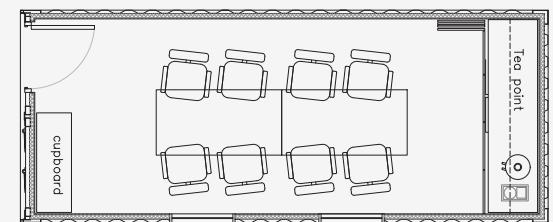
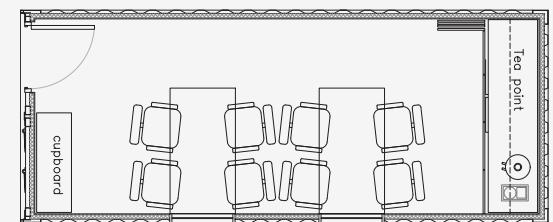
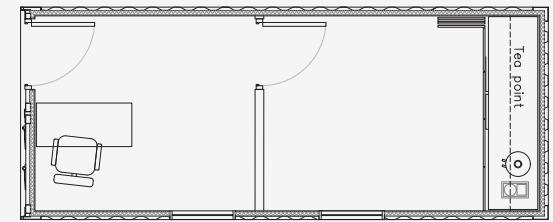
- 1. All parts of the container as they are to be indicated the area that have been merged together for an open plan kitchen.
- 2. The working zone has individual pods for privacy, creating one to six resting pods. Each pod has its own small quiet space to move private or relax when needed.
- 3. The area circled with red was thought to be a door to aitory units that are missing.
- 4. All of the rooms can be accessed through a central corridor, though people don't have to pass through every room when trying to access a specific area.

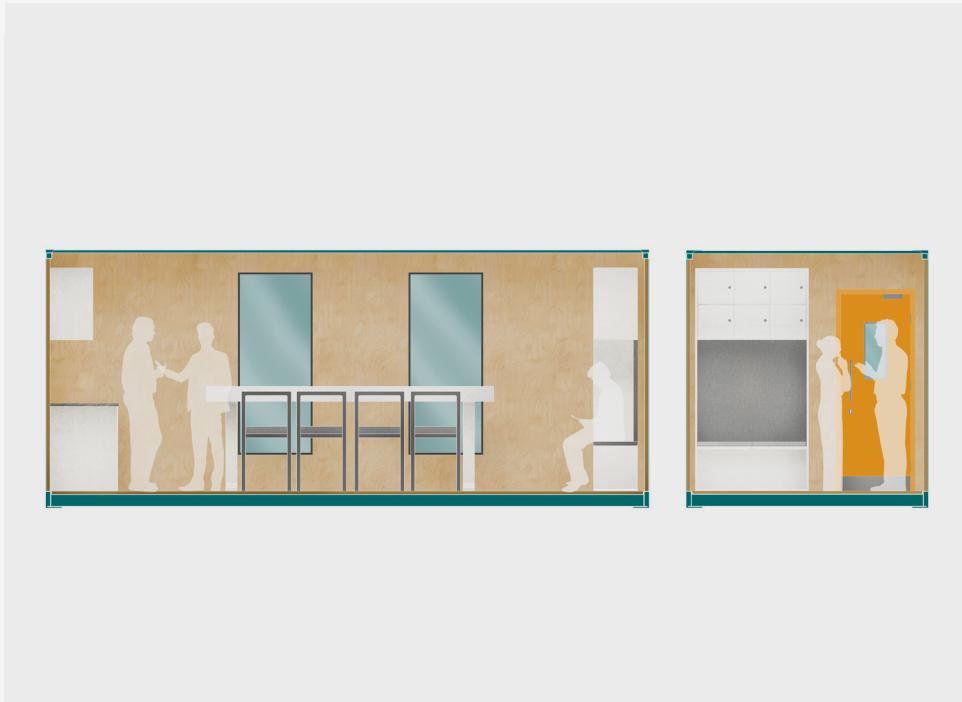
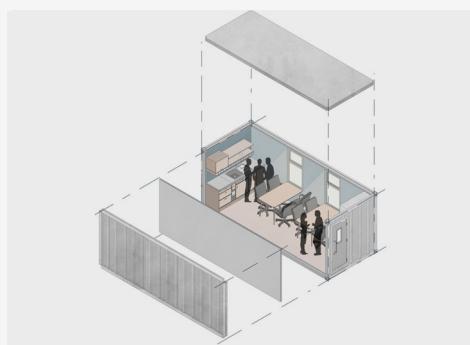


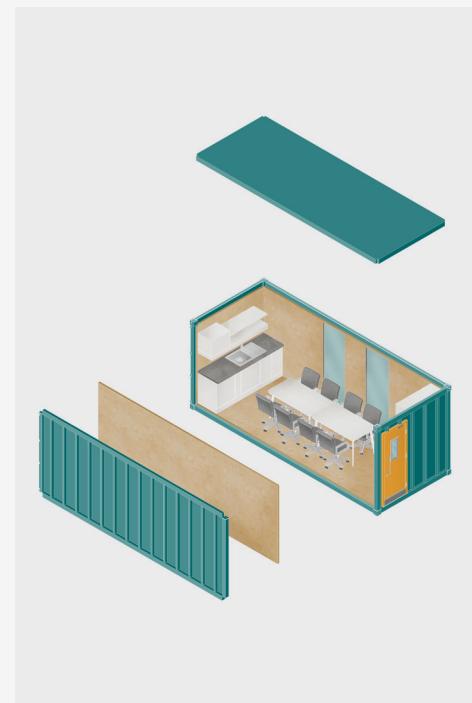
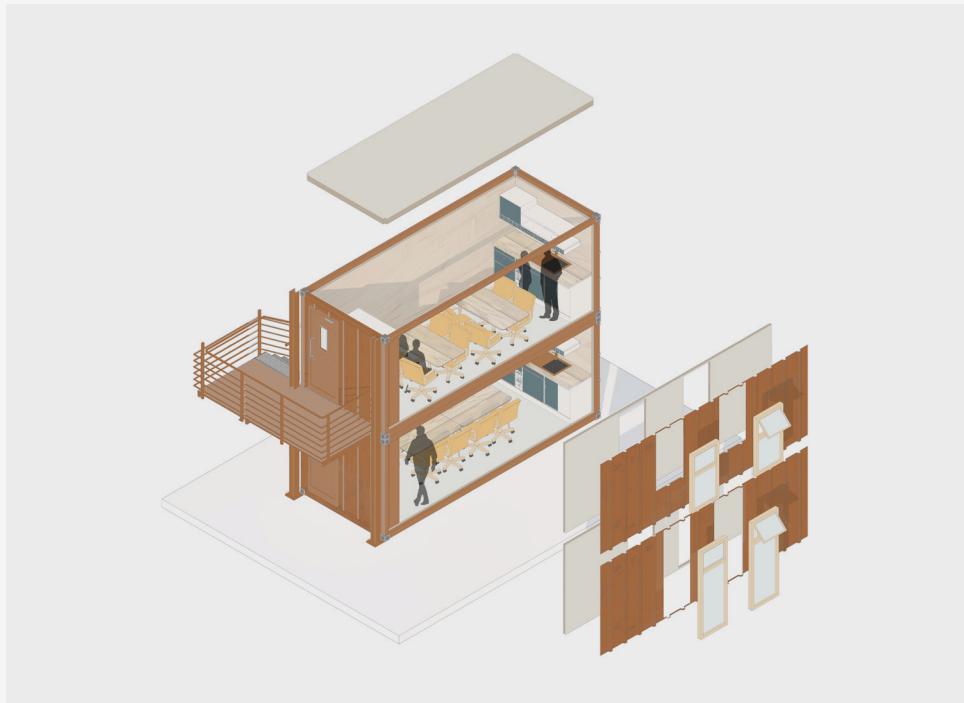
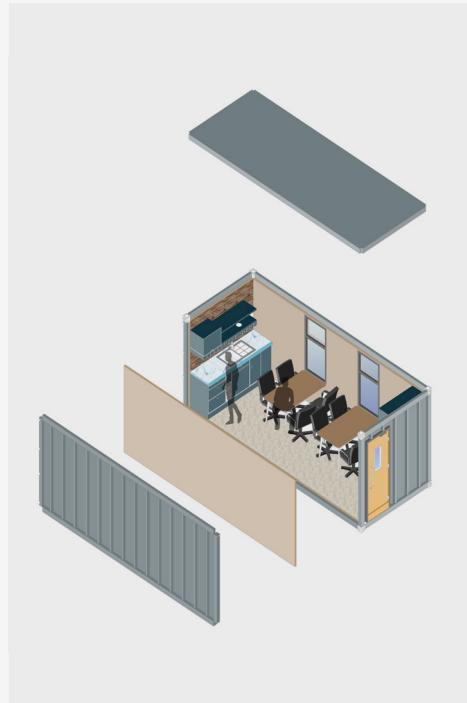
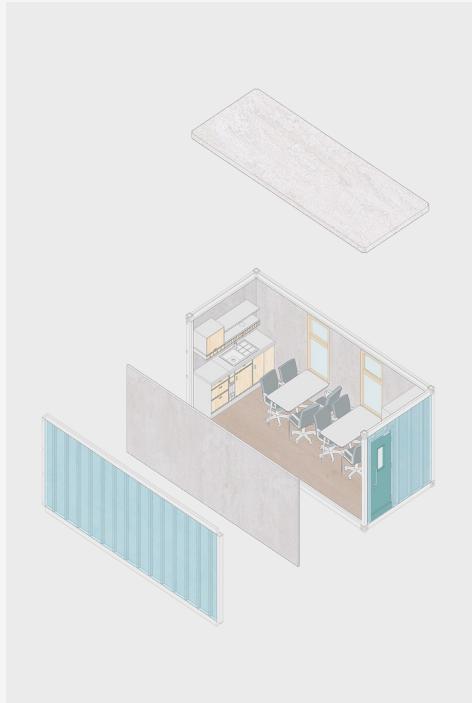


The proposal is based on a single module, using a 20-foot shipping container. Simple amenities such as a working kettle are deemed a luxury in most construction sites and there is little thought into daylighting and orientation of the site cabins. Therefore, a built-in "tea-point" that can be hidden away behind a moveable screen and large windows are implemented within the design proposal. The base module has been replicated and populated with various furniture layouts. A small office / flexible space could be used as a prayer room, a canteen and breakout space and finally a collaborative working space. The use of foldable furniture which covers the windows during off-site hours promotes security whilst also providing structural support during transportation. These fold-down tables also provide useful meeting spaces.

Large screens are highly useful during meetings and these can either be built in to the cabin or brought in on wheels. Finally, a storage unit is added near the entrance to provide secure space for important documents, spare PPE and a built-in seat for comfortable removal of site work-wear. This proposal uses a stacking technique to; save space on the site and allow a hierarchy in the site accommodation. Site managers require an optimum view of the site. This usually inhabits other activities occurring at the upper levels, however this flexible design promotes better use of the space.







ABOUT

Each year the MSA Live (formerly Events) programme unites M Arch. year 01 with B Arch. year 01 and 02 and M Land. Arch 01 in mixed-year teams to undertake live projects with external partners to create social impact.

LIVE PROJECTS

All MSA Live projects are live. A live project is where an educational organisation and an external partner develop a brief, timescale, and outcome for their mutual benefit.

SOCIAL IMPACT

All MSA Live projects have social impact. Social impact is the effect an organization's actions have on the well-being of a community. Our agendas are set by our external collaborators.

EXTERNAL

PARTNERS

MSA LIVE projects work with many organisations: charities, community groups, social enterprises, community interest companies, researchers, practitioners and educators.

STUDENT-LED

Our MSA masters students take the lead in the project conception, brief development, delivery and co-ordination of a small project. Other cohorts join for an eventful 2 weeks of activities at the end of the academic year.

KNOWLEDGE

TRANSFER

Working in teams within and across year groups and courses; MSA students participate in peer to peer learning. In addition, collaborators, participants and students engage in the transfer of tangible and intellectual property, expertise, learning and skills.

LARGE SCALE

This year approximately 600 students from 4 cohorts in MSA will work on 42 projects with partners.

QUESTIONS

For questions about MSA Live 21 contact MSA Live Lead:
Becky Sobell:
b.sobell@mmu.ac.uk

BLOG

live.msa.ac.uk/2021

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WEBSITE

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