

Pop-Up Teaching Spaces

Design Overview



Introduction

The COVID-19 pandemic has made all education providers concerned with how to safely provide additional space on their campuses.

FBM Architects have researched ways to provide this additional space in an economical manner within short timescales.

Our Pop-Up Teaching Spaces (PUTS) are the outcome of this exercise and have the following key benefits:

- *Economical & competitive with modular temporary accommodation (estimated £2000-2400/m² construction cost).*
- *Flexible, spacious, simple to erect.*
- *Ideally suited to high-profile campuses where protective stakeholders & planning authorities may object to modular solutions.*
- *Excellent ventilation and insulation to create healthy, sustainable accommodation.*
- *Festive, fun appearance to help lift the spirits of people inside & out.*

Design Principles

The design principles we established are:

- 'Kit of parts' approach means these can be installed where it would be difficult to install modular solutions.
- More attractive than modular classrooms - important to planners, academics & fee-paying students. Also means there is less pressure to remove them when the crisis is over. Can be re-purposed as pop-up libraries, social learning spaces, teaching or office accommodation.
- Inherently flexible - classrooms could be separated by solid partitions or heavy curtains to create larger spaces.

- Plug-in modules to corridor could be WCs, server rooms, stores, etc.
- Excellent ventilation and insulation to create healthy, sustainable accommodation.

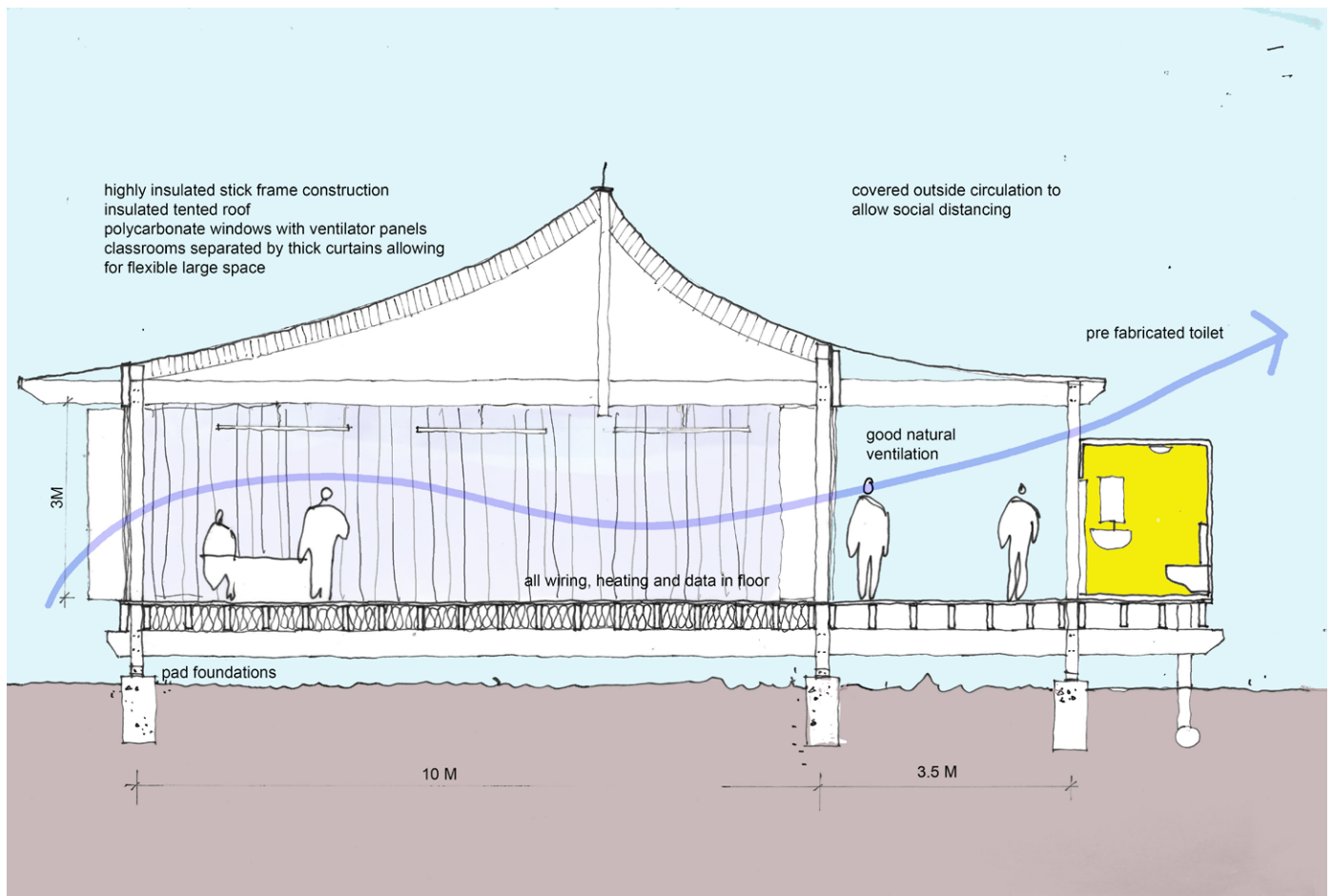
On the opposite page we've shown a variety of arrangements for the system showing how it can adapt to fit different briefs and locations.

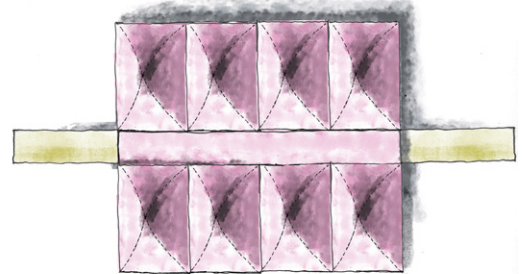
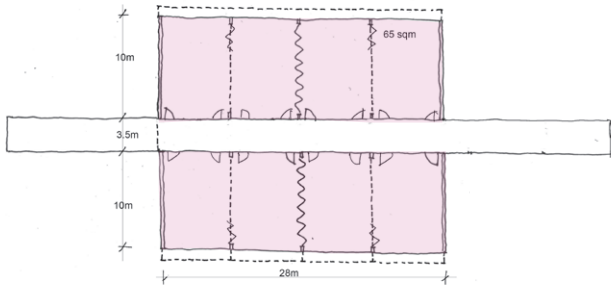
Below

Typical Section through classroom, walkway & WC

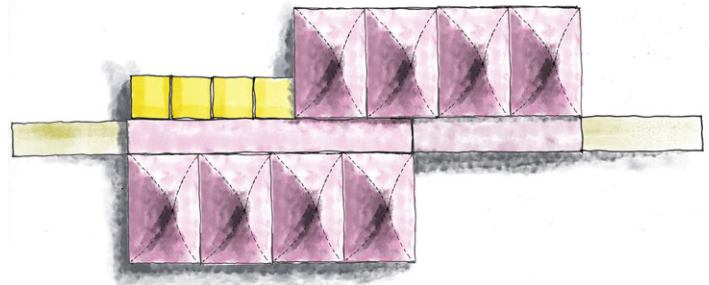
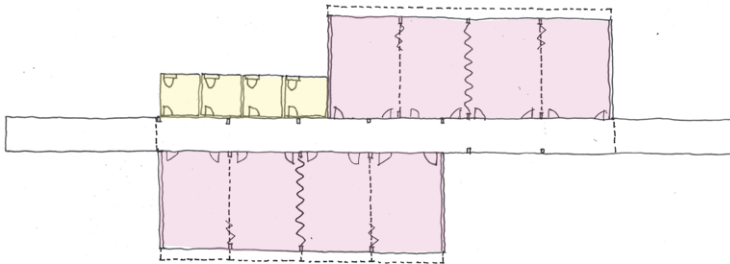
Opposite

3 layout options showing flexibility of system

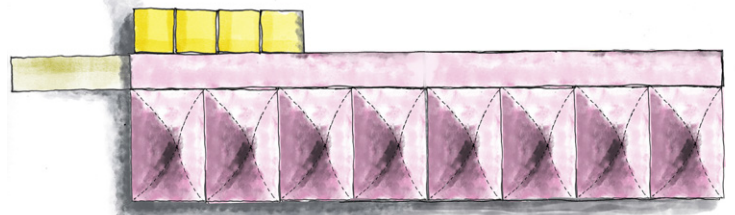
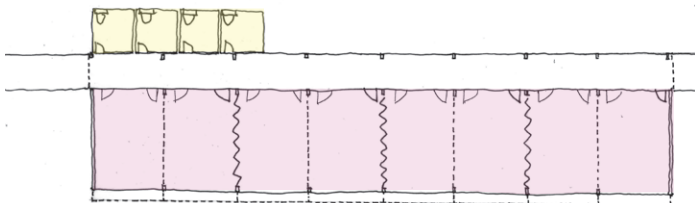




Option 01 - standard compact



Option 02 - enhanced compact



Option 03 - enhanced linear



Above

Site Plan showing Options 01 & 02 integrated into different settings.

Opposite

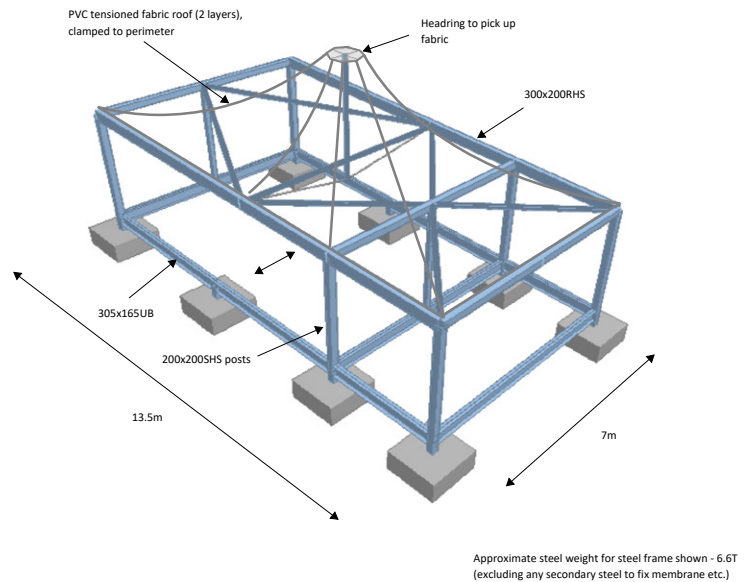
Perspective Views of Option 01 layout



Modular System Approach

We collaborated with David Dexter Associates who have extensive experience designing lightweight structures.

Working with them we developed a simple repeatable frame structure with a lightweight tented roof structure that is economical, effective and attractive.



Above

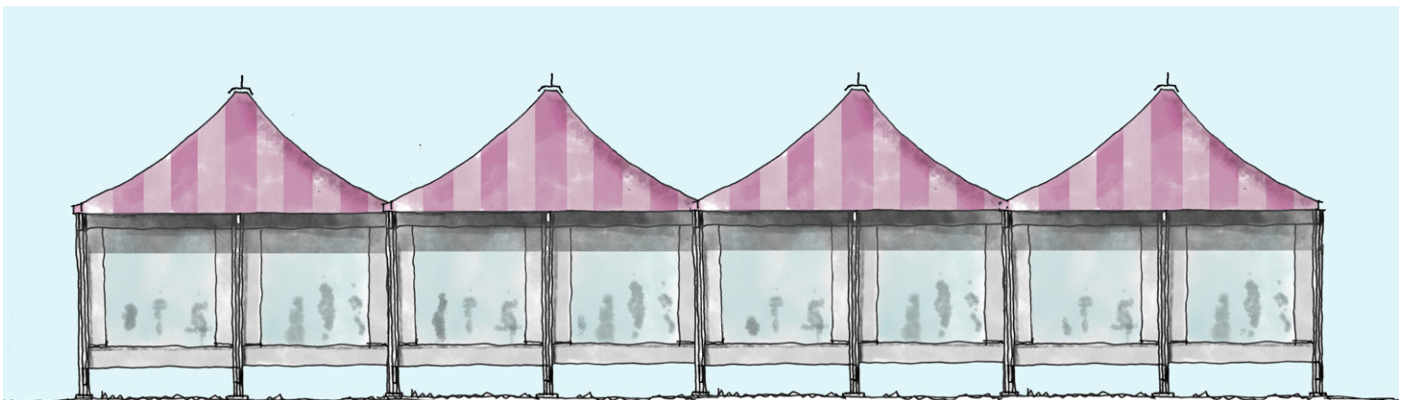
Structural Module Design by David Dexter Associates

Below

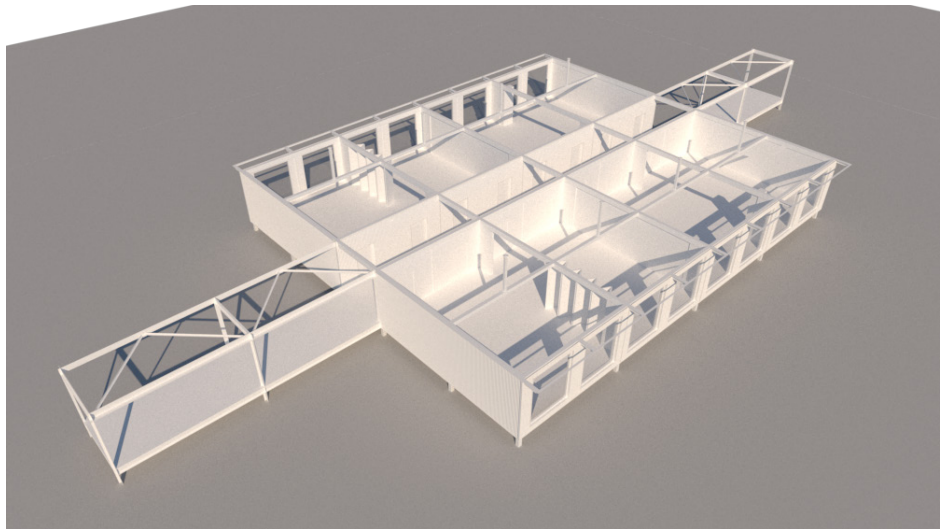
Concept elevation with light-weight tented roof profile

Opposite

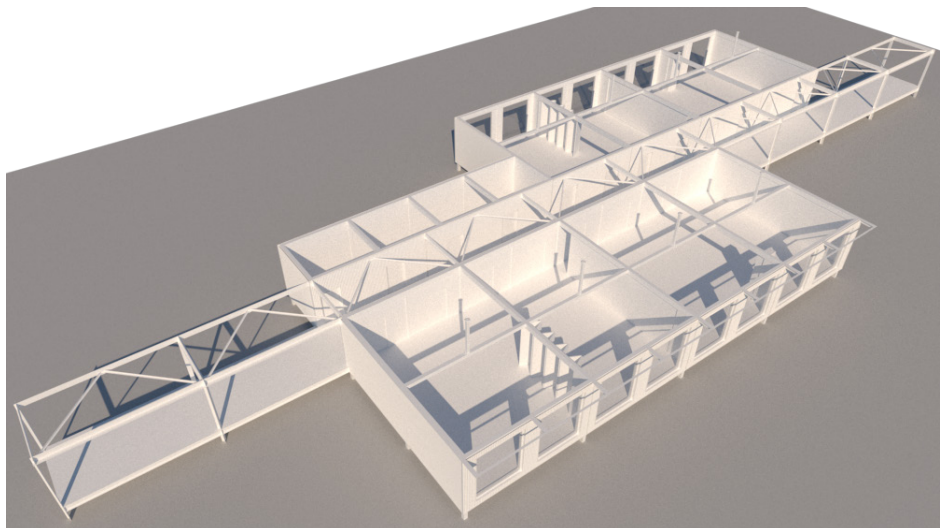
Structural Analysis Drawings of 3 layout options



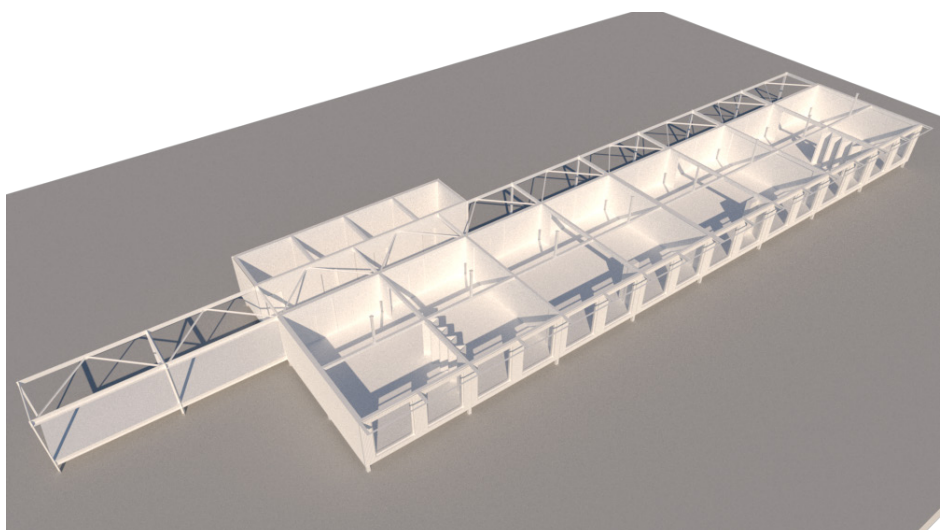
Option 01



Option 02



Option 03



Flexible Spaces

The modular design and the use of folding acoustic partitions between each modular space allows for a variety of spaces to be created for different uses. Multiple small seminars or tutorials can take place at once across several spaces and afterwards these can all be opened into one for larger space for lectures, assemblies, demonstrations etc.

The key idea here is to ensure you have the flexibility to tailor these spaces to your needs at different times of day rather than having unused spaces.

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- *More attractive than modular classrooms - important to planners, academics & fee-paying students. Also means there is less pressure to remove them when the crisis is over.*

- *Can be re-purposed as pop-up libraries, social learning spaces, teaching or office accommodation.*
- *Inherently flexible - classrooms could be separated by solid partitions or heavy curtains to create larger spaces.*

Below

Internal View showing two spaces being combined



Facts & Figures

How big is it?

- Each classroom/seminar room is 9.5m wide by 6.5m deep creating a 62m² space. These proportions are good for sightlines, acoustics and accessibility.
- Rooms are 3m+ tall with attractive vaulted ceiling created by the insulated fabric roofs.
- Corridors are 3.3m wide allowing two-way traffic while still maintaining social distancing.

How green is it?

- The pop-up spaces can be provided in standard and enhanced versions.
- Standard models achieve Building Regulations Part L & Part F compliance.
- Enhanced models are upgraded to suit specific client needs (BREEAM, SKA, LEED) with insulation and air-tightness criteria in excess of Building Regulations.

What's it made from?

- Structure – steel frame using standard off-the-shelf sections
- Envelope – external walls are profiled metal sheet or timber cladding on timber SIPS panels. Windows are painted timber frames with low-e double glazing. Floors are pre-fabricated timber cassette panels.
- Roof – tensioned twin-skin membrane with multi-foil insulation and fire resistant coating.
- Fit-out – to suit client brief with natural materials including linoleum sheet or sisal carpets with Fermacell board partitions and natural paint finishes.
- Heating & ventilation – air-source heat pumps with natural ventilation (standard) or MVHR ventilation (enhanced).
- Lighting – 100% LED lighting with absence detection and daylight dimming.

About Us

FBM Architects have been designing innovative education projects since 1991.

We are founder members of the Higher Education Design Quality Forum (HEDQF).

We work collaboratively with primary, secondary & tertiary education sector clients delivering new-build & refurbishment projects to suit all budgets & tight programmes aligned to academic timetables.

We pride ourselves on being team players who listen & learn.

Get in touch

If you want to get in touch to talk about Pop-Up Teaching Spaces or any other ideas for making your campus healthy, safe and sustainable please email Simon Fraser or John Moakes at:

studio@fbmarchitects.com

or phone them on:

020 7251 0543

We look forward to helping you improve your learning environment.

