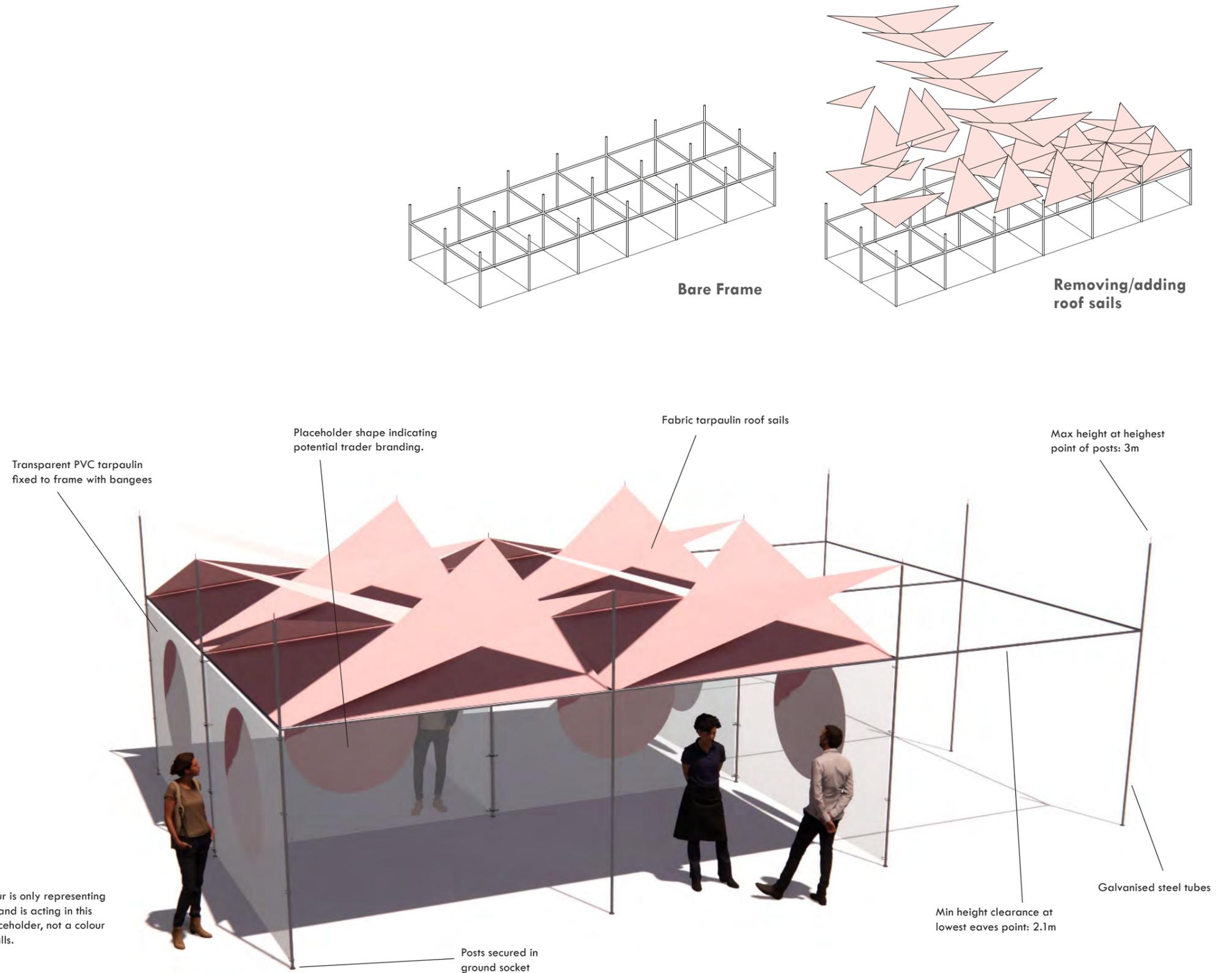


5.4 Option B: Frame

The Framework was developed in an attempt to resolve the existing stall typology into its most efficient and flexible structural expression. While the current stalls require a minimum of 2 posts (sometimes 4) per stall plus 4 at the end of each row, the Framework combines the posts at the spine of each row reducing the requirement to 1.5 posts per stall maximum plus 3 at the end of each row. The posts are also spaced further apart, and the roof structure is reduced to an absolute minimum of a single layer of single horizontal elements joining the posts together on a 3x3m grid. The roof is comprised of 2 simple shapes (potentially only 1, a skewed parallelogram) cut out of a fabric type of tarpaulin and stretched from the horizontal beams to the peaks of the posts. In this way the roof forms together with the posts and beams of the Framework a spaceframe participating in the structural performance of the Framework as an active structural member in tension thus reducing the structural components that would be traditionally required. An additional advantage of this roof geometry is that it eliminates the need for guttering by utilising and thus covering the edges of each grid square (1 stall) with the roof sails. The water can only run to the edges of the stalls or down the posts along the central spine of the rows where it is picked up by the surface channels, drains and gullies.

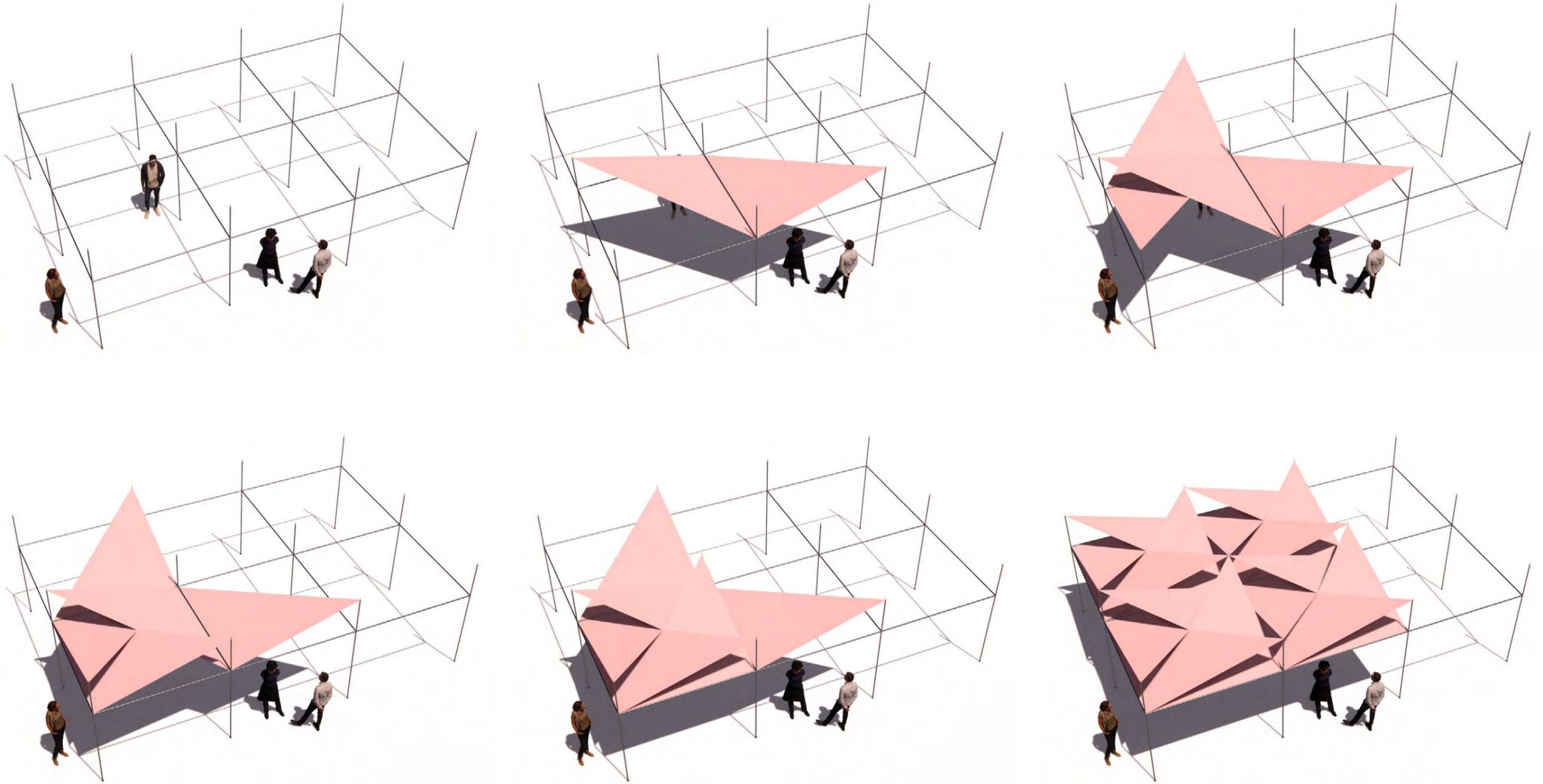
Each post of the Framework is secured to the ground in ground sockets and held in place with bolts. Similarly to the Module, the Framework can be divided to retail areas of any number of 3x3 units by positioning vertical separators of transparent PVC tarpaulin as required. When the Stalls need to be dismantled, the roof sails are unhooked and folded, the vertical posts are unbolted from the ground sockets and from the connections of every other pair (a total of 6 bolts per 2 stalls) and carried away by two people to a designated area.

Note: the pink colour is only representing a non-white colour and is acting in this illustration as a placeholder, not a colour proposal for the stalls.





Birds eye view of all stalls deployed on a typical market day

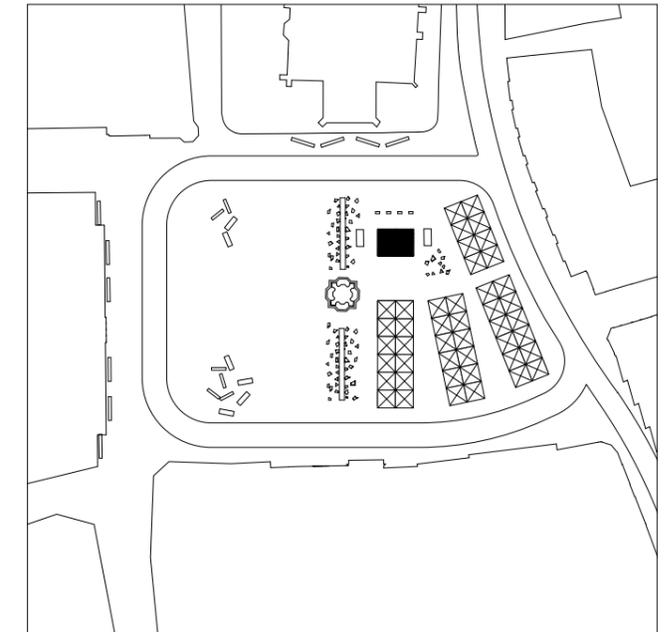


Sequence of roof sail weaving

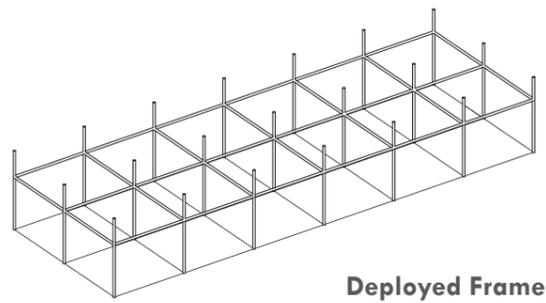
The Framework is the most efficient design option since it comprises of only simple steel posts and the beams holding them together. It achieves 99.7% footprint reduction across the site. In relation to the Module its downside is that it requires slightly more effort to disassemble and it would be expected to remain standing overnight during weekdays if not through the week.



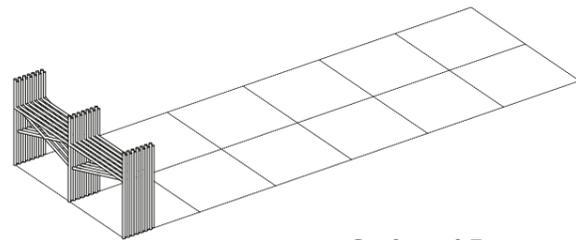
Birds eye view square partly cleared from stalls



Plan of partly cleared square



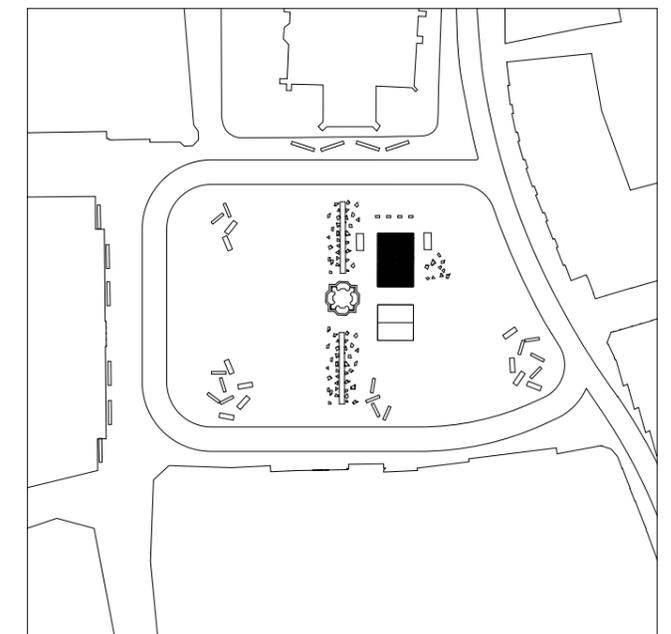
Deployed Frame



Gathered Frame



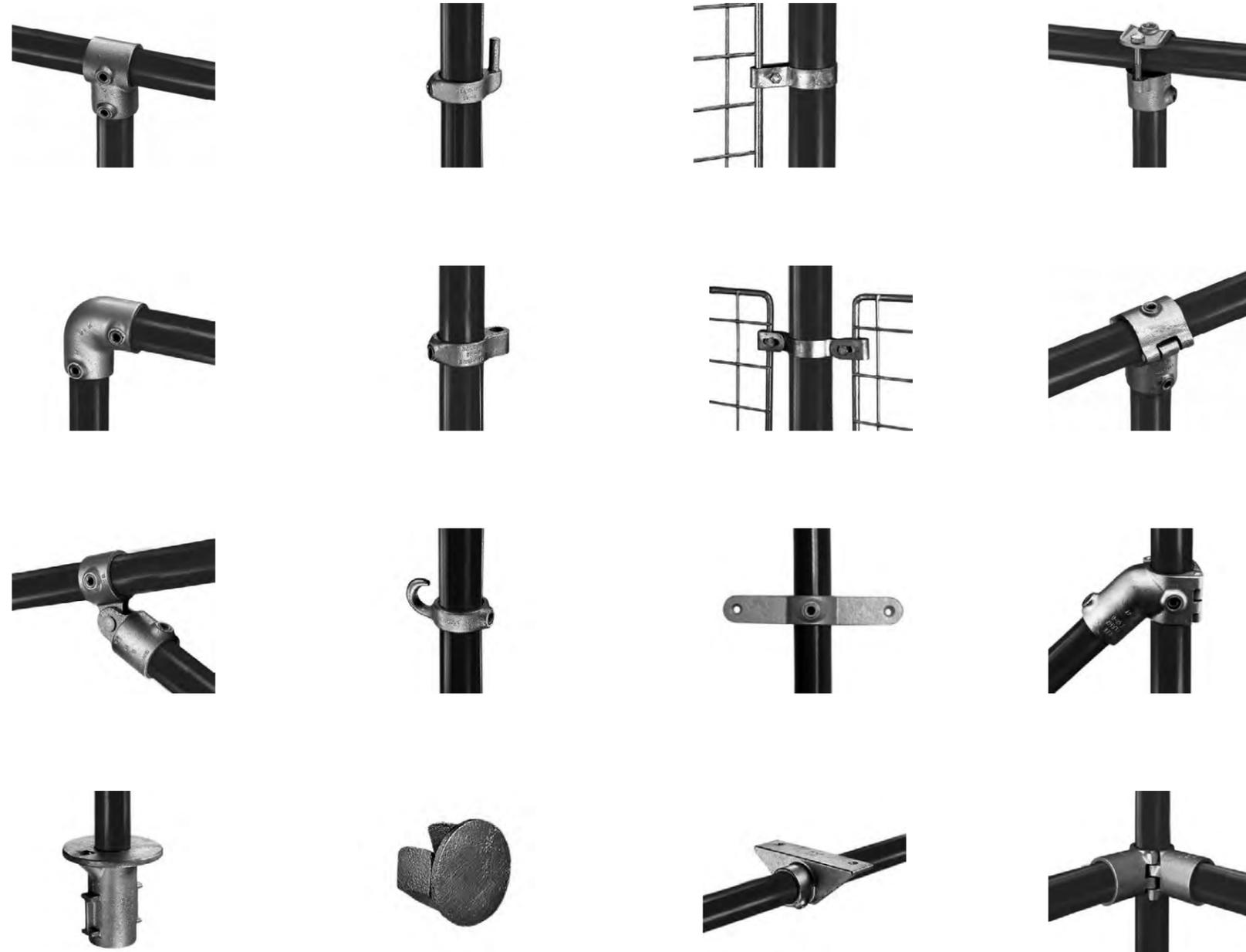
Birds eye view square fully cleared from stalls



Plan of fully cleared square

5.5 Structure and Materials

The proposal for the primary structure of the stalls is to employ the Kee Klamp system. It should be noted that this is not an exercise to develop a new product for the industry with specially machined parts to be mass produced in a factory but an architectural exercise of building something from known components to be mostly assembled on site. The Kee Klamp system offers an incredible combination of structural integrity, modularity, cost efficiency and compatibility. There is clear evidence that traders already use Kee Klamps either for their own structures or to attach extensions to the existing stalls. Providing a frame from Kee Klamp tubes and fittings means that any new extensions will happen in harmony with the market's own infrastructure. Kee Klamp also offers a certain structural aesthetic that is very apt to the condition of an open-air market frame and would recede in the background allowing the focus to be on the contents of each stall.



Kee Klamp fittings for the frame: T and elbow joins and ground socket for securing stalls to the ground.

Kee Klamp fittings for the frame. Swivel pin system, hook and security tap to protect certain screws from being tampered with.

Kee Klamp fittings for fixing panels to the frame.

Kee Klamp clamp-on fixings for attaching to stall frames without having to disassemble them.



Other parts of the frames are either borrowed from existing market stall solutions, such as tarpaulin rain gutters and post clamps (1) or from matching components such as solid galvanised steel castors with rubber rims (2).

The ideal material for the roof would be a waterproof cotton-synthetic mix canvas tarpaulin. This is a mostly natural and breathable fabric that would protect from the elements and is particularly hardy and tear-proof. (3)

The proposal for the vertical separators between stalls is to specify transparent tarpaulin (4) or wire rope netting (5), depending on the required use, as a standard across the piece in order to allow for as much light to be introduced under the markets canopies.



1. Rain gutter and post clamp



3. Waterproof heavy duty cotton canvas tarp



Evidence of existing Kee Klamp use by the traders



2. Galvanised steel castor



4. Transparent tarpaulin (PVC)



5. Steel wire netting

5.6 Canopies and Colours

The existing stall canopies are made out of single sheet of thick vinyl tarpaulin with a semi-gloss top side that features a pattern of alternating coloured and white stripes. Looking at historical photographs and prints of the square, the stalls appear to have carried fabric canopies of single colours. The stripe pattern begins to appear in photographs later on also with thinner stripes. It is unclear exactly when the current roof was installed but it is equally vague whether and to what extent the design and material was considered at the time of the installation beyond addressing the covering of the stalls as a practical exercise.

As a result, the current canopies sport a selection of the 3 primary colours and green of an unjustifiably bold, primary hue. The strong tones create stark contrasts with the white stripes and together with the selected material of the canopies produce an effect of crudeness and artificiality that is at odds with the architectural fabric of the square. The stripes are grouped together in batches of the same colours but they do not always align with the structure or the modularity of the stalls producing a visually inconsistent result across the market. The broad width of the stripes is less forgiving with this misalignment than a finer density pattern or a solid colour would have been. The canopy is mostly translucent with the darker stripes being more opaque than the rest of the surface. The pattern is particularly visible from under the stalls often clashing with the traders' own visual set up and branding resulting in interiors with a cluttered appearance.



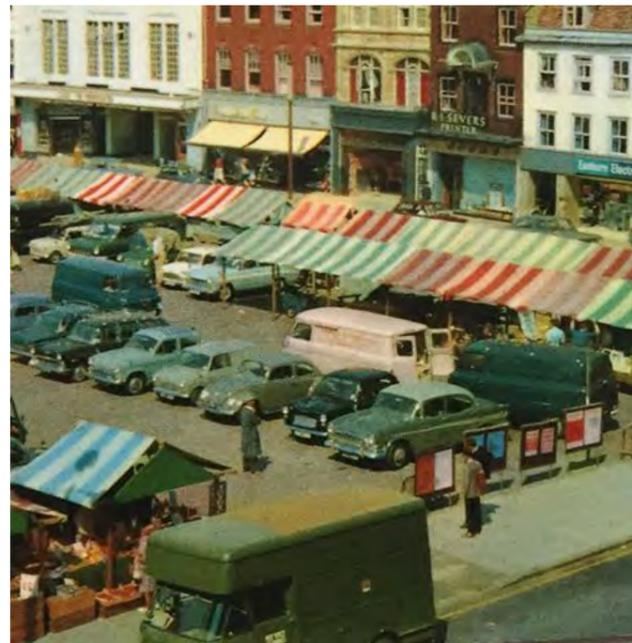
1841



1907



1915



1960's



c. 1970



1982



Birds eye view of the canopies (2020)

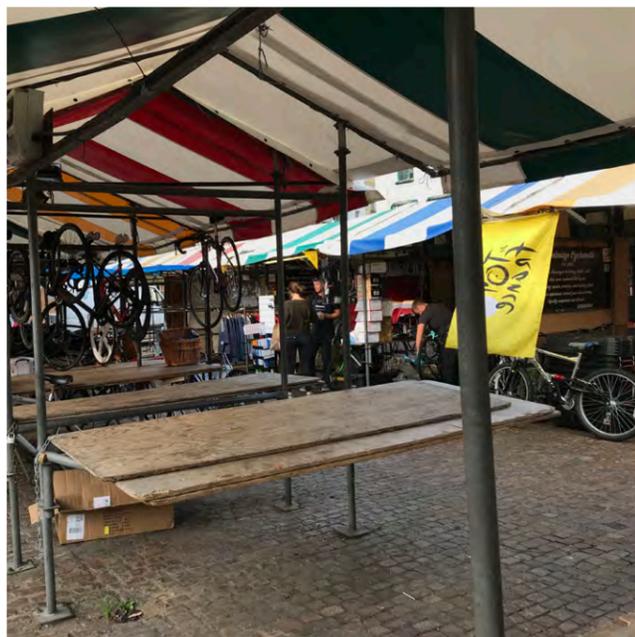
Regardless of the pattern or the material, the canopies have always shared the common attribute of being colourful and bestowing the market square a visual vibrancy. The proposal aims to refine the existing colours into hues that originate in the 4 colours in use today. The primary colours are mixed with the white to result in more softened hues achieving an improved visual synergy with the more natural palettes of the surrounding architecture but without depriving the stalls of their colourfulness.

The option of sampling some stripe patterns in the swatch mix is not completely abandoned but it may be more difficult to achieve technically with a cotton canvas without incurring high costs. This option will be explored further on the next design stage where technical feasibility and cost implications will be explored further.

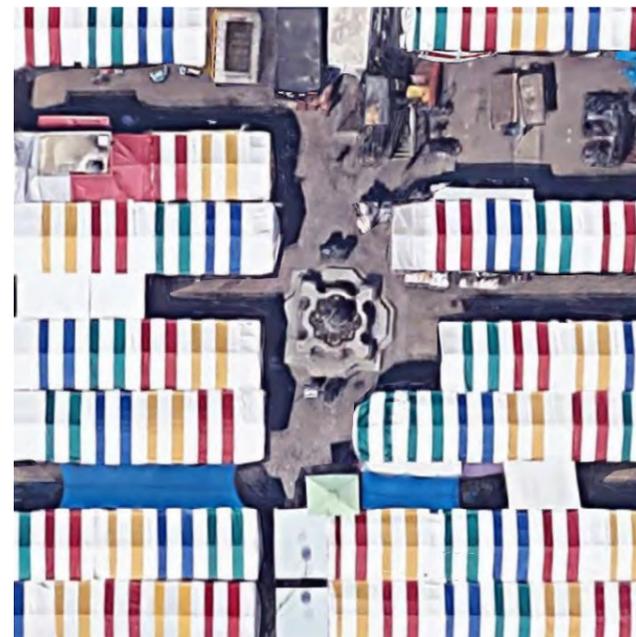
A potential mix and arrangement of the canopy colours is shown in the next pages for both of the stall options.



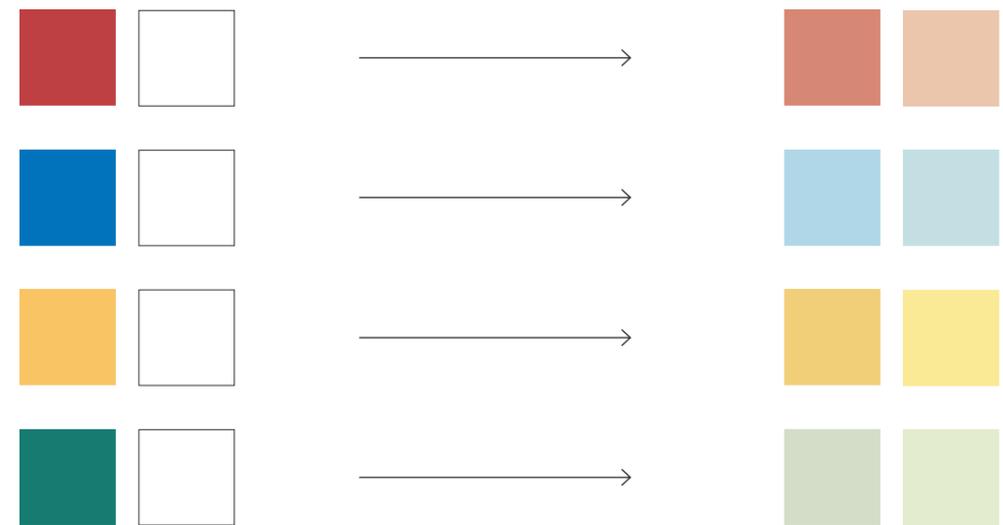
Building colour tones



View of the canopies from within the stalls (2020)



Aerial view of the canopies today



Existing colours

Proposed colours

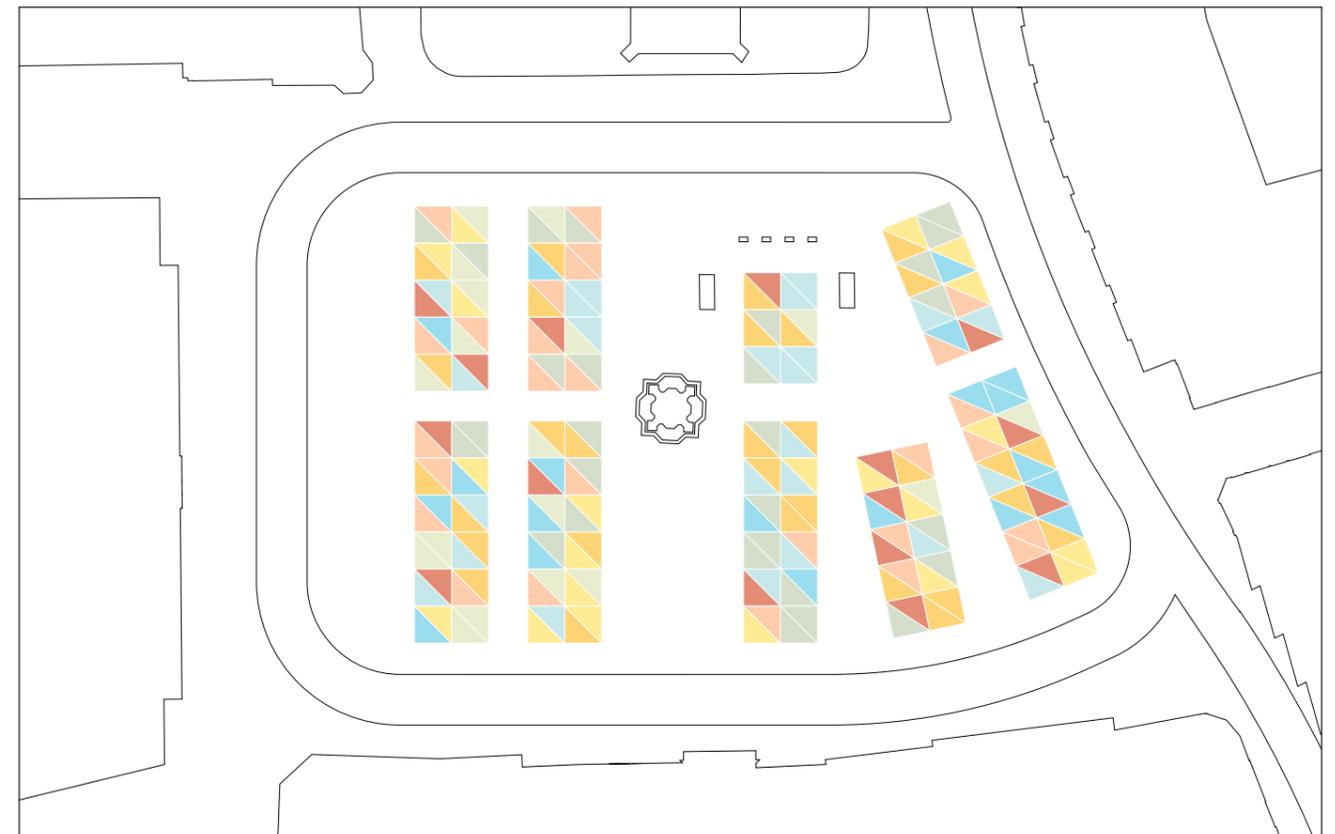
Triangle pattern of alternating tones for the roofs of the modular stalls



View from above

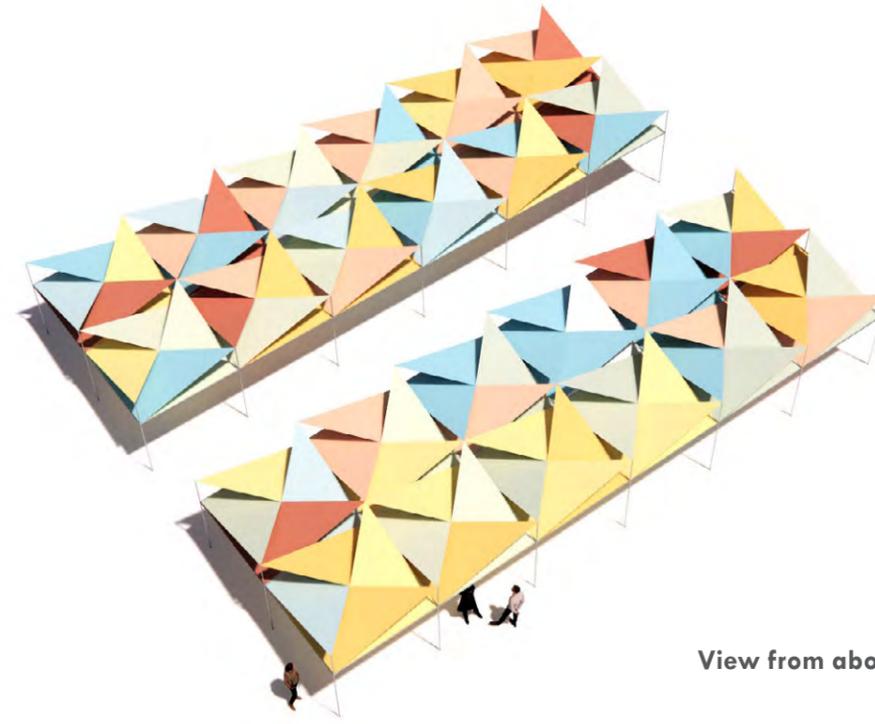


View of the colours from under and inside the stalls



Plan: Distribution of colours across the site

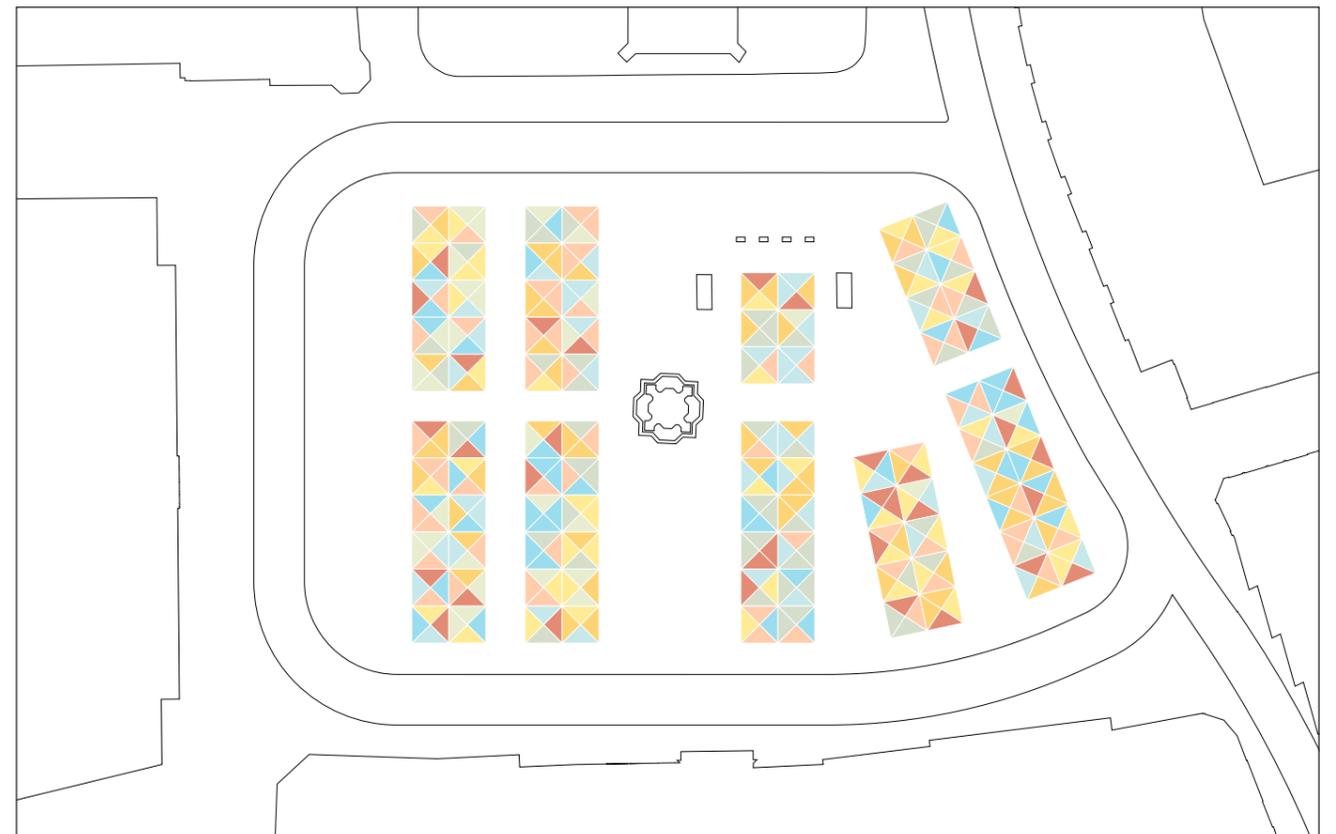
Triangle weaving pattern of alternating tones for the roofs of the frame stalls



View from above



View of the colours from under and inside the stalls



Plan: Distribution of colours across the site

6.0 Access

6.1 Road Layout

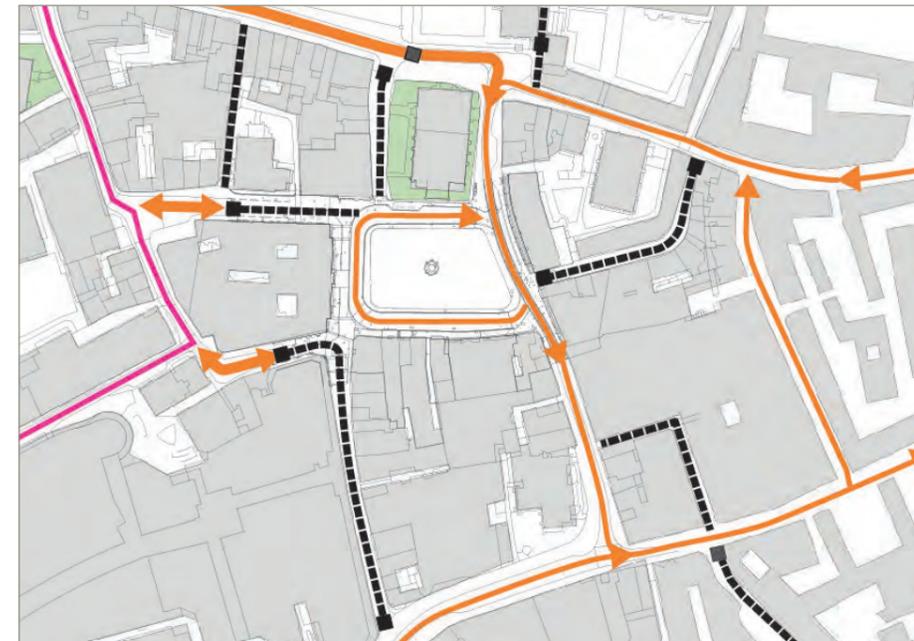
One of the overarching ambitions of the scheme is to create a more pedestrian, cycle and disabled friendly environment for Market Square. The vision is that the market square should be considered as a pedestrian-orientated civic space and people should be able to move around the market stalls and shops with as little interaction with motor vehicle traffic as possible. Over the years, however, the Market Square has been used by a combination of motor vehicles and pedestrians with limited success; there are issues including congestion, safety, efficiency, security, air quality and noise pollution. Therefore, the intention is to address the layout of the roads and their design in order to prioritise pedestrian movement across and around Market Square. The ambition is that people will visit the marketplace because it has been designed in a way that makes it a pleasant place to be. To encourage pedestrian footfall, the proposal is to minimise the disruption caused by loading/unloading of motor vehicles through a number of inset parking bays with restricted use at certain times of the day.

Proposed Changes to Road Layout:

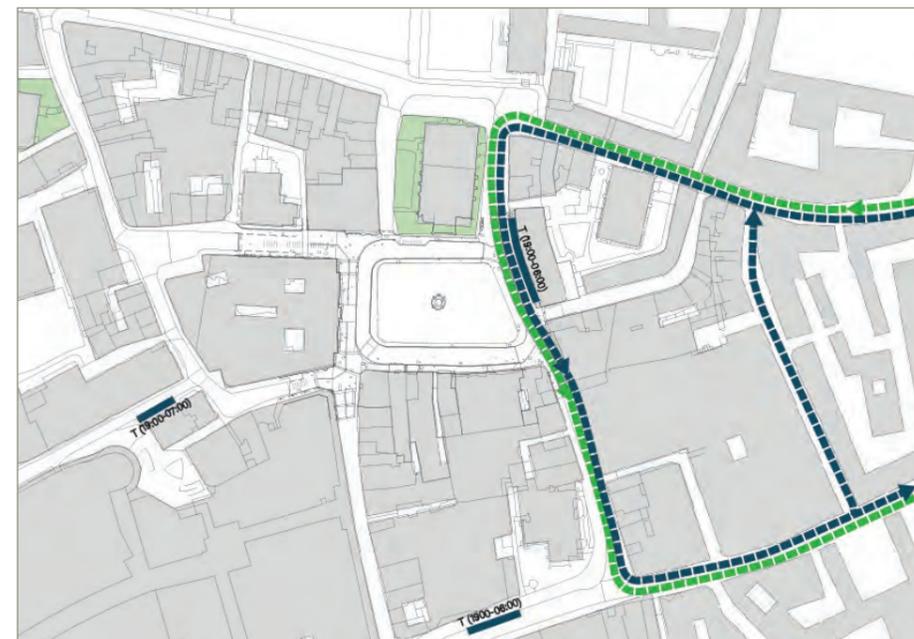
Principally, the proposal is to reduce the width of the road to 4.25m all the way around market square. The route taken by the motor vehicles will need to accommodate the correct size of motor vehicles and be suitably constructed for the weight of the trucks including the impact of power steering on the surfaces. The kerb drops will be reduced from 100mm to 25mm with a 45 degree chamfer which will help avoid physical damage to the street when motor vehicles drive up them to park, which can be potentially hazardous and incur additional costs for repair of over time.

The introduction of a number of specific inset parking bays will create a safer pedestrian environment. The location of the loading facilities and their availability are critical to the successful performance of the market square. Facilitating inset parking bays at the right place and at the right time can smooth traffic flow at key times while still benefitting the local shops and market traders. Inset bays allow motor vehicles to be loaded and unloaded without effecting the flow of traffic around the market square while also maintaining a minimum space for pedestrians to pass.

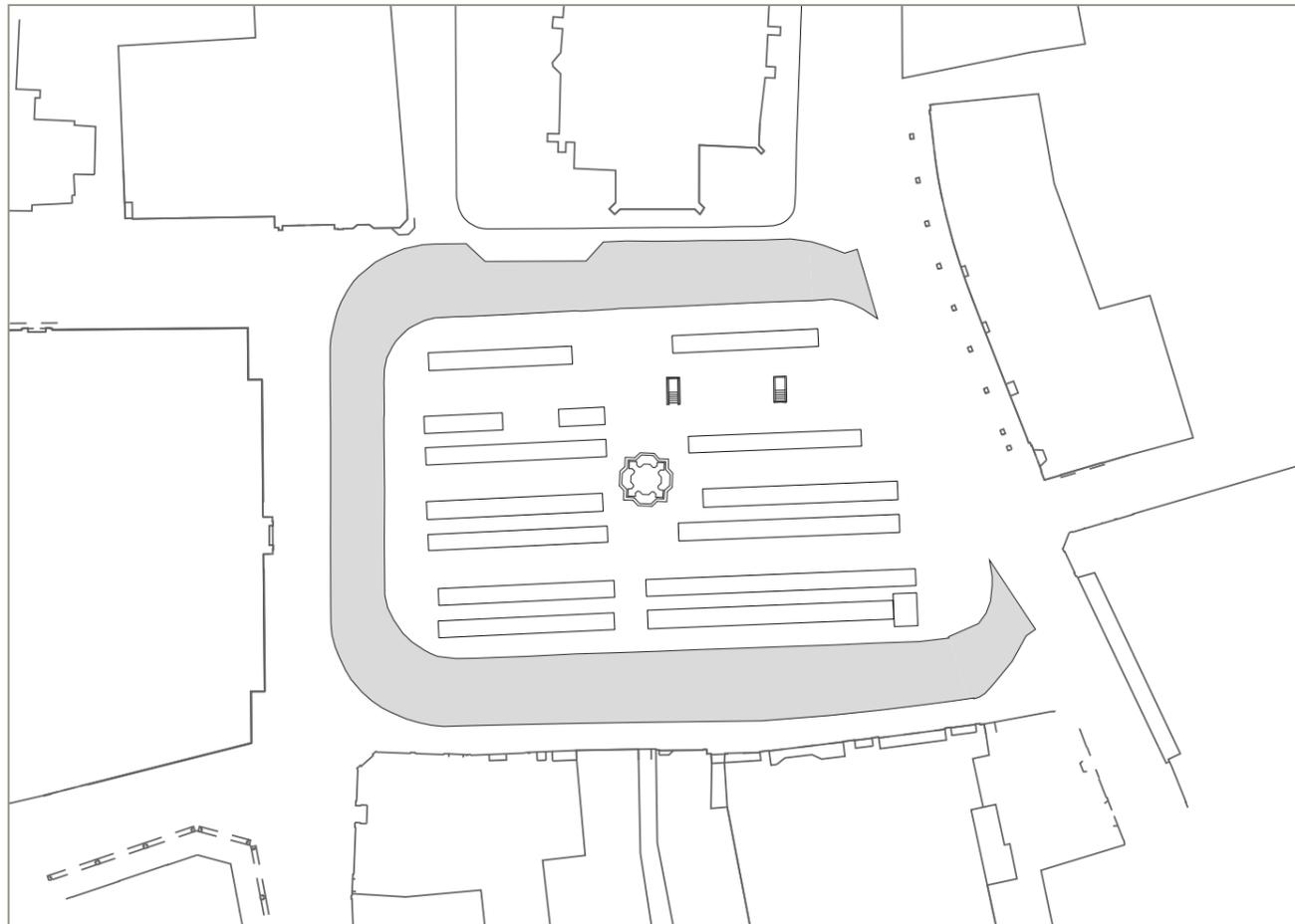
The overall layout has been rationalised to provide cleaner kerb lines to delineate between what is considered a road surface and pedestrian only surfaces.



Existing Vehicle Access routes into and surrounding the market with the direction of one way streets indicated by the arrows.

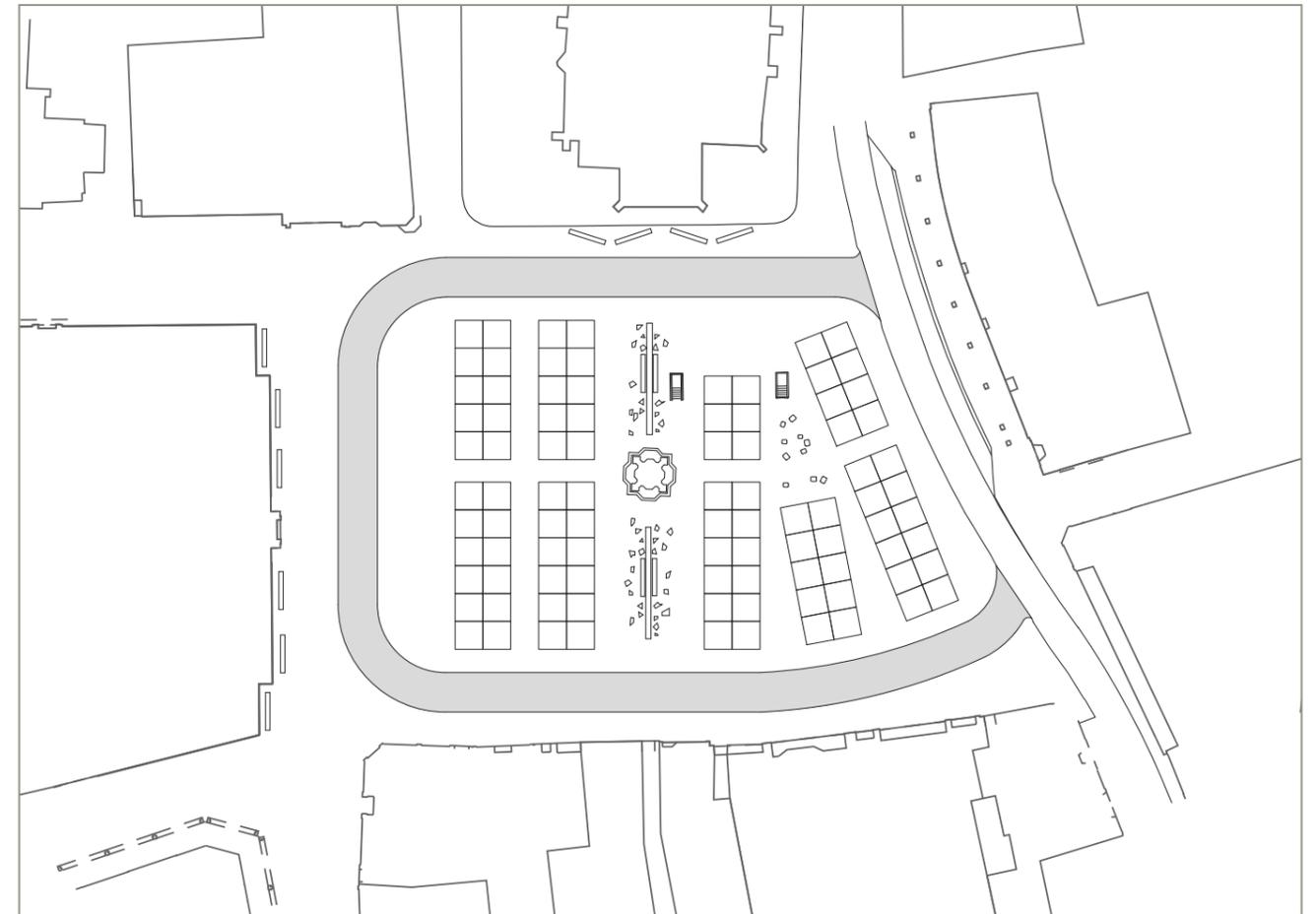


Existing Public Transport Access including the sightseeing tour bus, flexible dial-a-ride service and taxis



Existing Road Layout

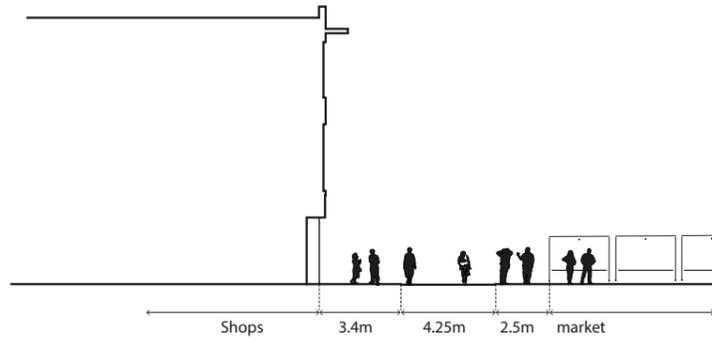
The existing road surrounding the market varies in width at different parts of the road. The kerbs are typically around 100mm in height and there is no designated parking around the square apart from a small taxi rank in front of Great St Mary's Church.



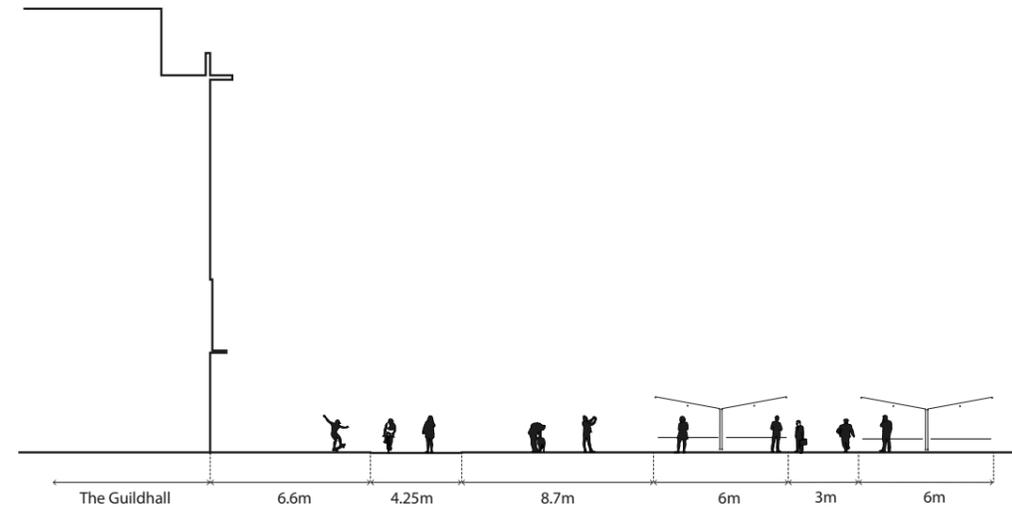
Proposed Changes to Road Layout

The proposed road layout will consistently be 4.25m all the way around the square and thereby aid efficiency and improve ease of accessibility for pedestrians, cyclist and motor vehicles within the Market Square.

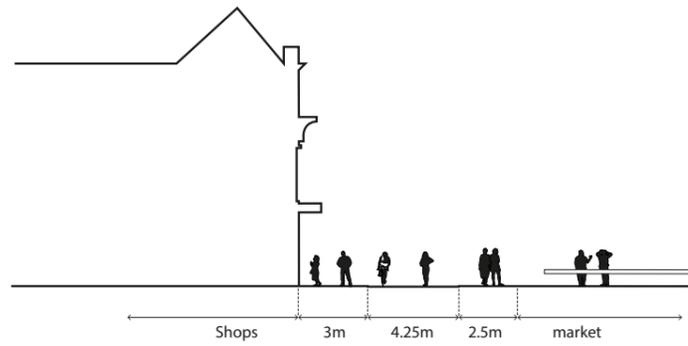
The proposal reduces the amount of road surface, thereby increasing the pedestrian area and it simplifies the road by removing some of the existing lay-by's and widening the footways around the square.



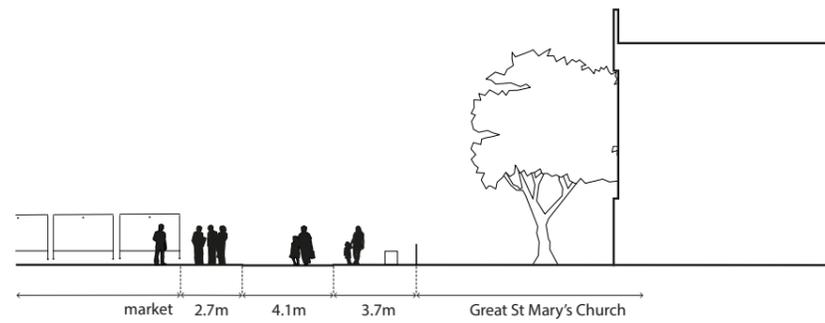
Section A-A



Section D-D



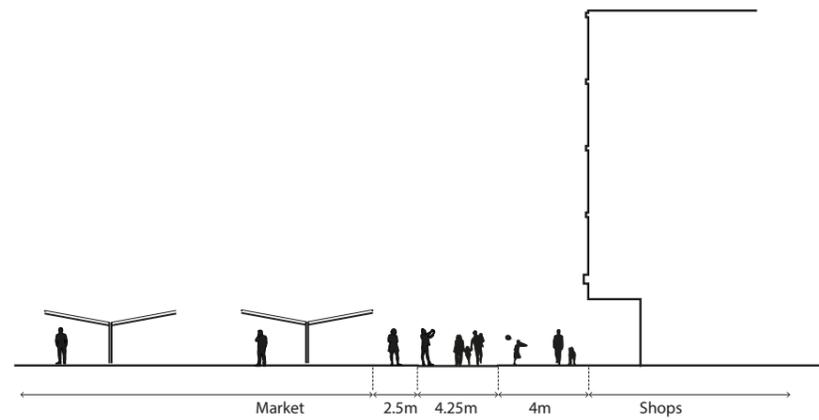
Section B-B



Section E-E

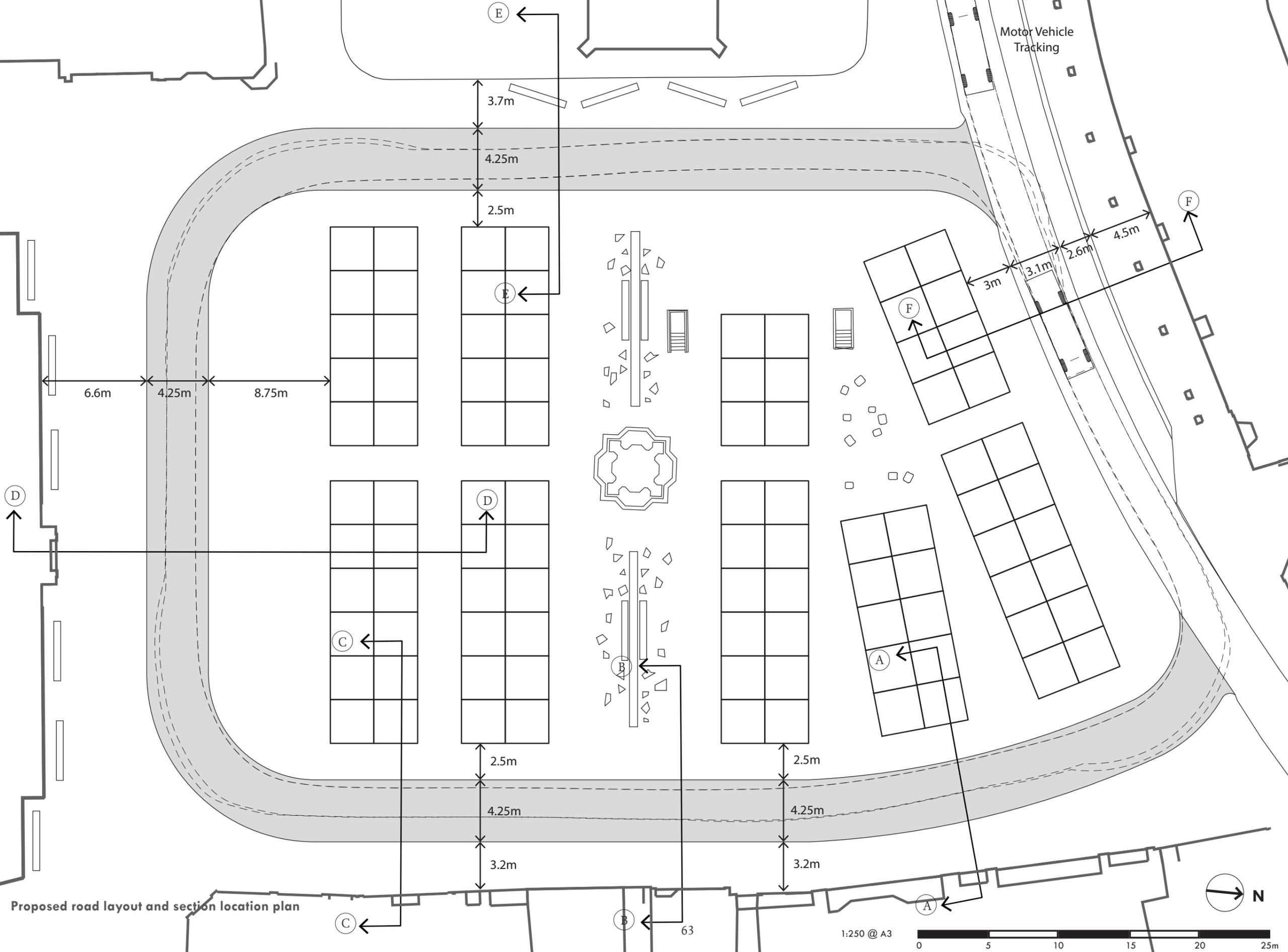


Section C-C



Section F-F

Proposed sections



Proposed road layout and section location plan

1:250 @ A3

0 5 10 15 20 25m

6.2 Inset Parking Bays

Part of the proposed highways strategy is to review and improve the current road layout for motor vehicle access around market square. Motor vehicles are vital for delivering goods to the shops and in setting-up or taking-down the market stalls. The current condition, however, is such that motor vehicles stop to load or unload where and when they are not intended to, which has a detrimental effect on road reliability and the safety of other users. This strategy provides a design response and guidance on improving the loading/unloading environment around market square by considering and balancing the needs of a variety of stakeholders. The type of vehicles delivering goods to market square ranges from a van or small truck while an articulated truck will deliver to M&S. On occasion a 26 tonne waste collection truck will enter Market Square to collect the waste bins.

The location of the loading facilities and their availability are critical to the successful performance of the market square. Facilitating inset parking bays at the right place and at the right time can smooth traffic flow at key times while still benefitting the local shops and market traders. Inset bays allow vehicles to be loaded and unloaded without effecting the flow of traffic around the market square while also maintaining a minimum space for pedestrians to pass thereby improving overall safety for all market users.

On-footway loading involves a vehicles mounting the kerb and parking across part of the sidewalk. Fundamental to this strategy is the need to ensure sufficient space remains for pedestrians to pass safely. The strategy we are proposing restricts this scenario to two specific time periods in the day – 07:00-08:00am and 15:00-16:00pm - when the market traders are expected to set-up and take-down their stalls.

Next Steps:

- * Test motor vehicle tracking for the larger articulated truck and the waste collection truck on the proposed 4.25m carriageway.
- * Review and engage stakeholders to consider how deliveries can be consolidated to reduce motor vehicle traffic. A number of issues including congestion, safety, efficiency, security and air quality and noise pollution can be addressed by managing and coordinating the delivery and servicing trips of the different stakeholders to market square. Frontages, land-use and deliveries all change over time so timings and strategies that were appropriate a number of years ago may not be applicable today.



Articulated delivery truck clashing with trader's van



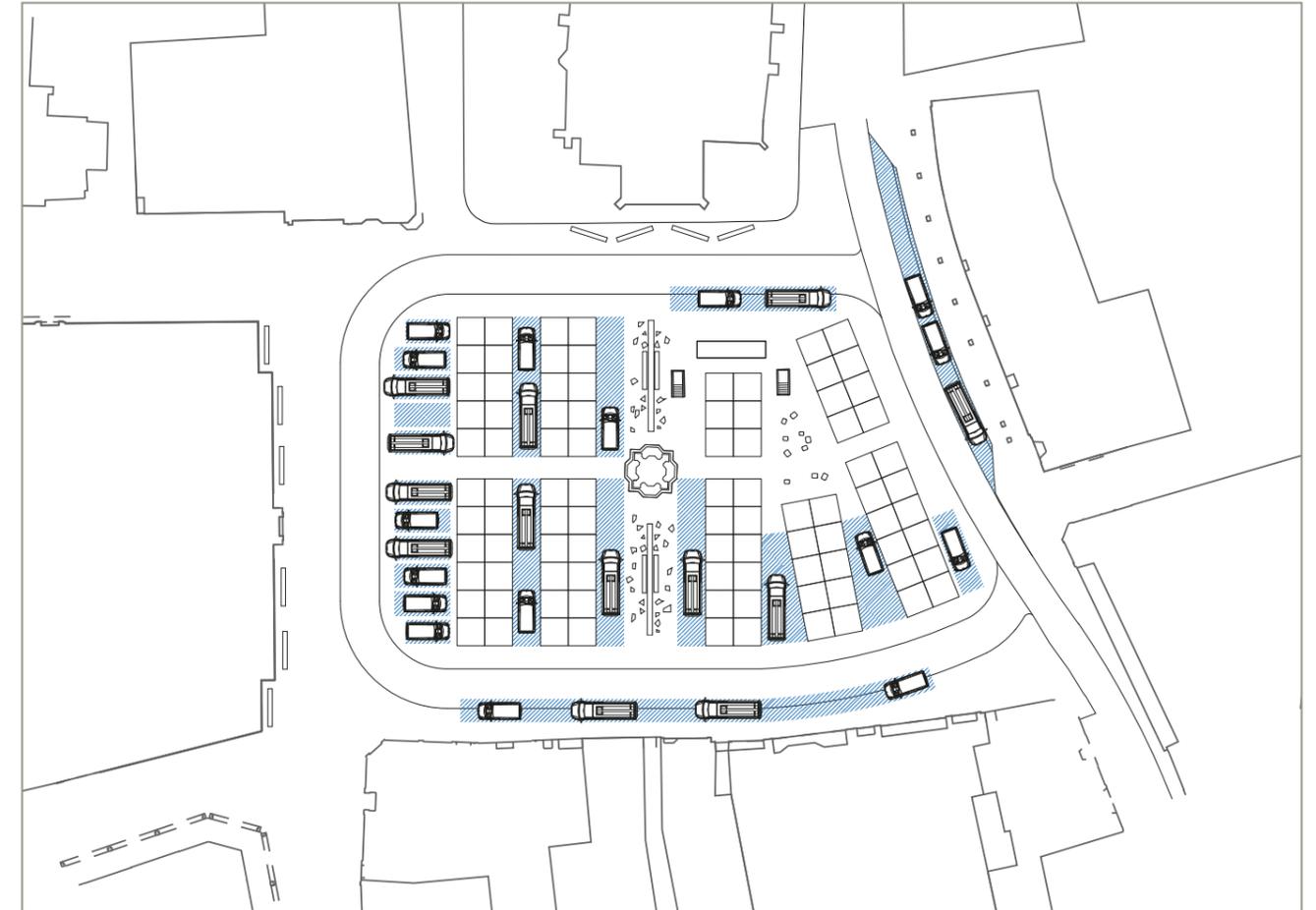
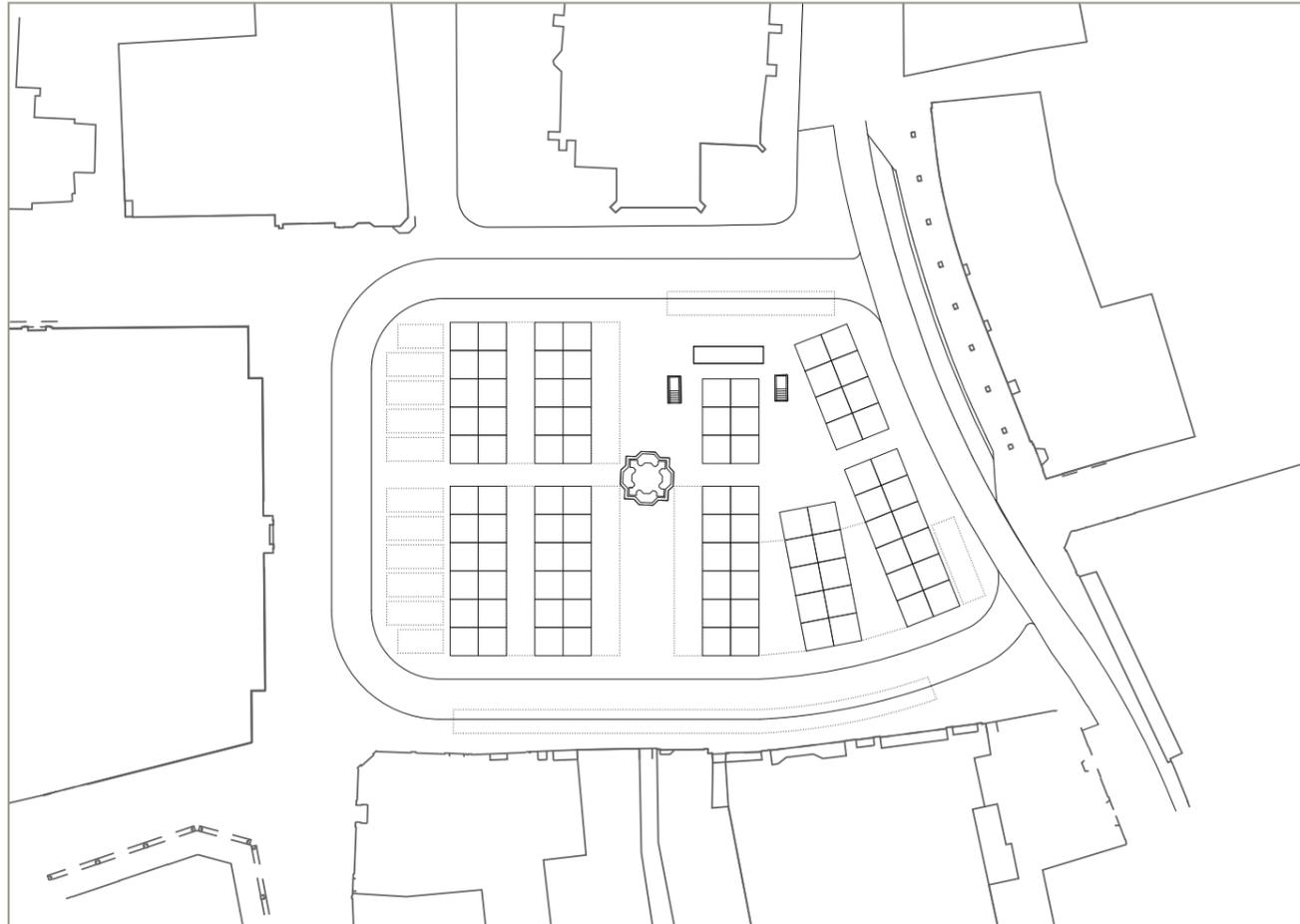
Unregulated parking creates problematic highways conditions and pinch points



Trader's van parking fully across footway restricting pedestrian access



Without designated spaces the traders park their vans at potentially dangerous locations



Market during normal operating hours

Outside of the designated loading and unloading hours for deliveries and market traders, the market square will have minimal vehicular traffic. The intention of having subtly demarcated parking bays is that the space and surfaces will feel like they are intended for pedestrians, rather than the pedestrians are encroaching onto parking spaces.

Proposed parking inset bays during loading/unloading hours

The inset parking bays are located around the Market Square to provide the market traders with as quick and easy access to their stall as possible, which will be particularly important if they have to carry heavy goods. It is expected that the traders will drive their motor vehicles between the stalls to drop off their goods and equipment before driving off and parking their motor vehicles elsewhere. Although they run the risk of becoming congested, it is intended that these internal thoroughfares provide quick and easy access to the stalls allowing the traders to set up as efficiently as possible.



The inset bays will be identifiable through stainless steel anti-slip demarcation studs which subtly contrast with the paving.

Example demarcation studs for inset parking bays

Inset bays are on-carriageway facilities, fully recessed into the footway, offering additional protection for parked vehicles by being positioned out of the general flow of traffic.



Example inset bay