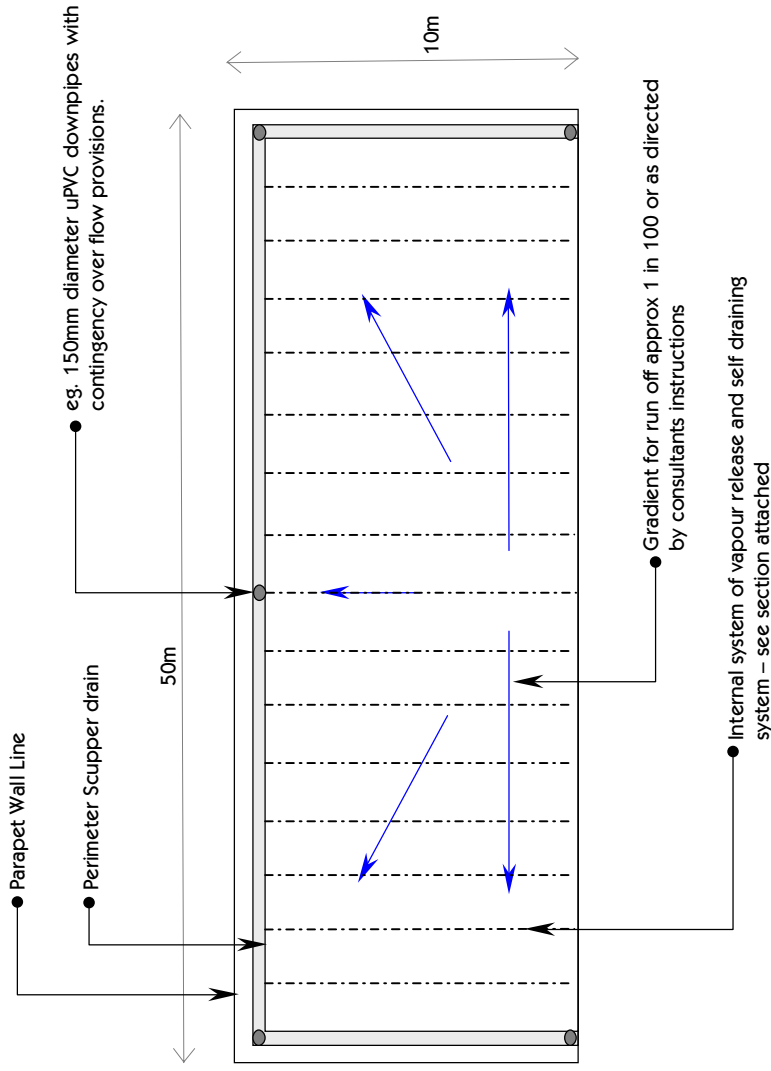


New Improved Roofmate* Application Details

Schematics Only – Not to Scale

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Plan View



NB: Specialists may choose to adopt their own installation procedures to comply with their own manufacturer's warranty. Please ask for section schematics if not provided with this plan.

Discussion Notes for Designers

This proposed installation details was formulated to cater for the following problems and common issues/errors found on site:

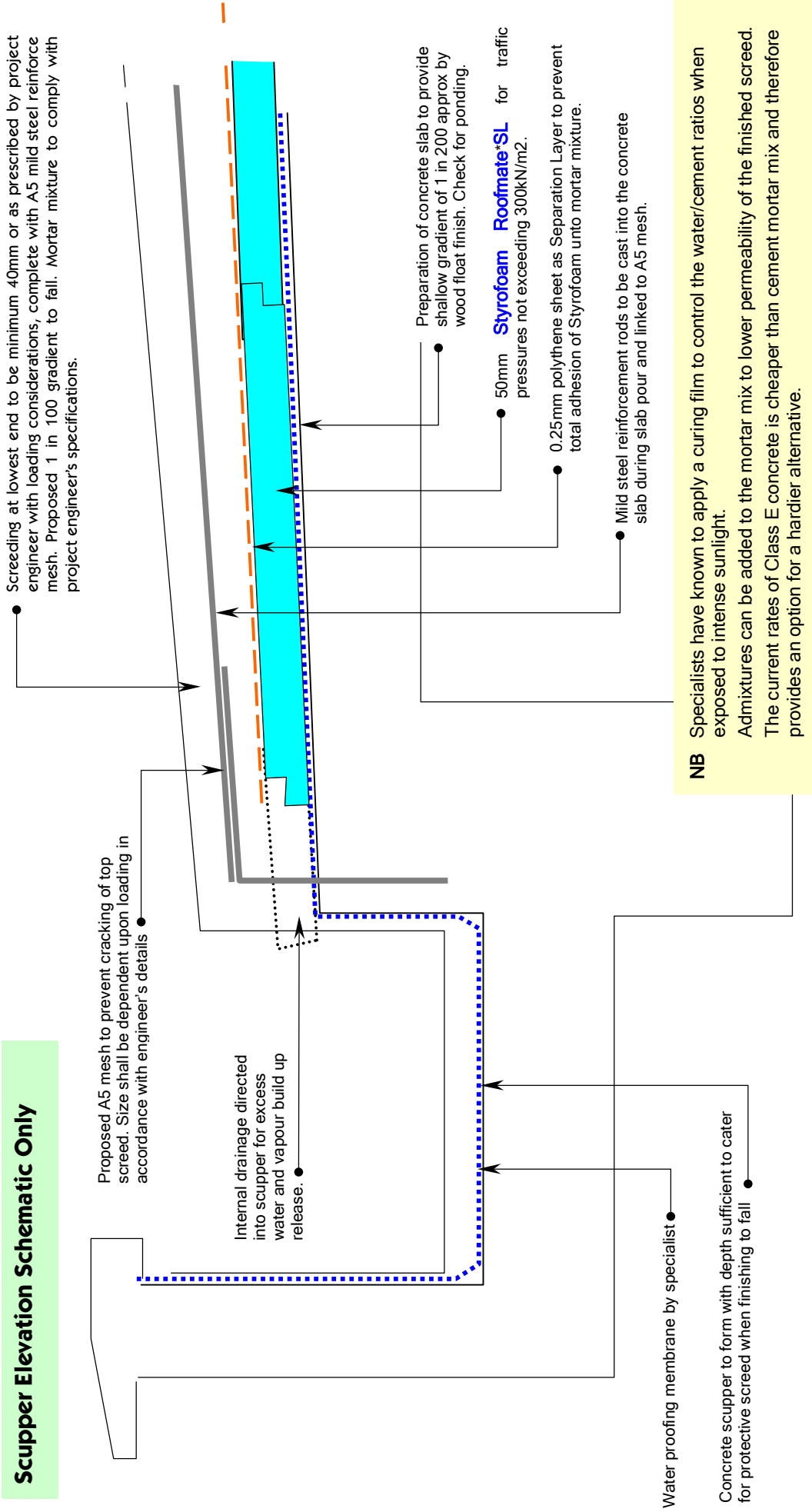
- a. Surface Cracking**
Works Contractors have found it difficult to control surface cracking due to transpiration at the mortar/concrete surface when exposed to intense afternoon heat. In this new proposal, we accept this common problem and provide features for this.
- b. Vapour Pressures**
Moisture leaking through these cracks builds up additional vapour pressures within the system which needs to be released. In addition, screed/mortar is porous and over time, seepage into the system will occur which gives rise to more vapour pressures.
- c. Depth of Scupper Drains**
Perimeter concrete scuppers need to be sufficiently deep enough to ensure that the highest level of rain water is contained within the concrete trench to avoid backflow between the screed and the concrete slab.
Some specialist reports, found that when providing a screed to fall in the scupper, quite often the screed thickness at one end exceeds the concrete trough.
- d. Concrete Scupper Drain Provision Necessary**
From reports from various specialists, scuppers are quite often left out and later formed using screed/mortar mixtures. Screed is not appropriate as it is much more porous than concrete. Moreover, the spill over will cause back flow in between the concrete slab and screeding layer.
- e. Rainwater Downpipes**
Rain water downpipes provision is quite often inadequate to cope during heavy downpour. Calculation check based on 300mm/hr rain recommended by meteorological station. At certain exposed locations, the recommendation rises to 400mm/hr rain fall.
Failure to provide adequate drainage would give rise to a "swimming pool effect" adding unpredictable structural loading and deflections to the roofs and may cause a system uplift.
- f. Preparation of Concrete Slab to Receive System**
Concrete substrate must also consist of a gradient to fall (at least wood floated finish), and must be checked for ponding before application of system. Where honeycomb, voids and pits are found patching must be performed for surface preparation to receive waterproofing system.

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Scupper Elevation Schematic Only



NB Specialists have known to apply a curing film to control the water/cement ratios when exposed to intense sunlight.
 Admixtures can be added to the mortar mix to lower permeability of the finished screed.
 The current rates of Class E concrete is cheaper than cement mortar mix and therefore provides an option for a harder alternative.

NB

The above is an indicative schematic issued as a preliminary guide only for designers and installers. Proposed changes were adopted based on data received from specialist contractors over a period of time. The actual construction details are to be approved by the project consultants before implementation. Each project has differing construction details and no two site situations are the same where Styrofoam* products may be applied in more ways than one and therefore The Dow Chemical Group and its distributors are not liable for the final design nor execution on site.

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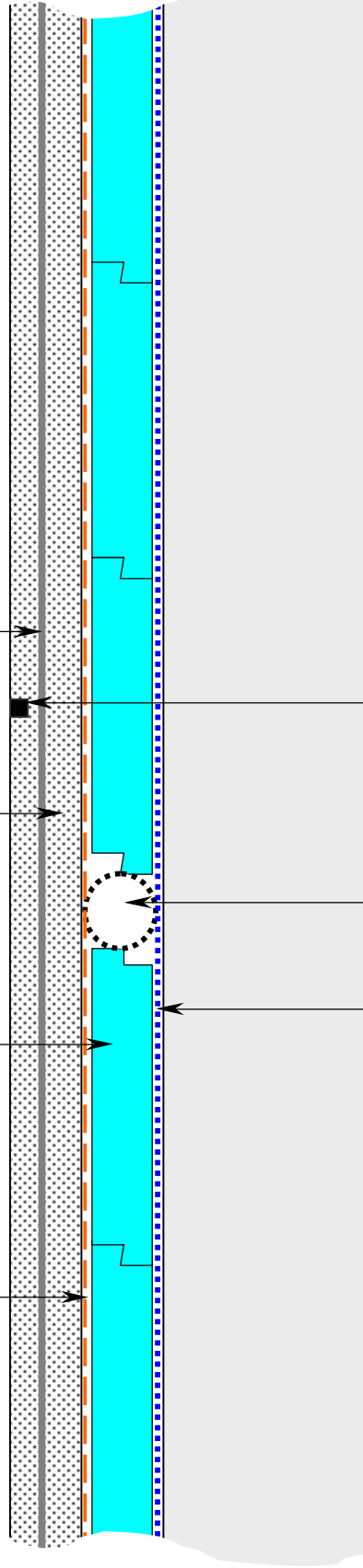
Vapour Released and Drainage System Option 1

50mm **Styrofoam Roofmate* SL** for traffic pressures not exceeding 300kN/m².

0.25mm polythene sheet as Separation Layer to prevent total adhesion of Styrofoam unto mortar mixture.

Screeding at lowest end to be minimum 40mm or as prescribed by project engineer with loading considerations, complete with A5 mild steel reinforce mesh. Proposed 1 in 100 gradient to fall. Mortar mixture to comply with project engineer's specifications.

Proposed A5 mesh to prevent cracking of top screed. Size shall be dependent upon loading in accordance with engineer's details



Expansion joints inserted every 3m bay or as prescribed by specialist.

Proposed 25mm to 50mm perforated GI pipe to be directed into scupper drain at 3000mm centres. Laying recommended at every 5 boards of 600 x 1250mm **Roofmate* SL** ship lap.

Water proofing membrane by specialist.

NB

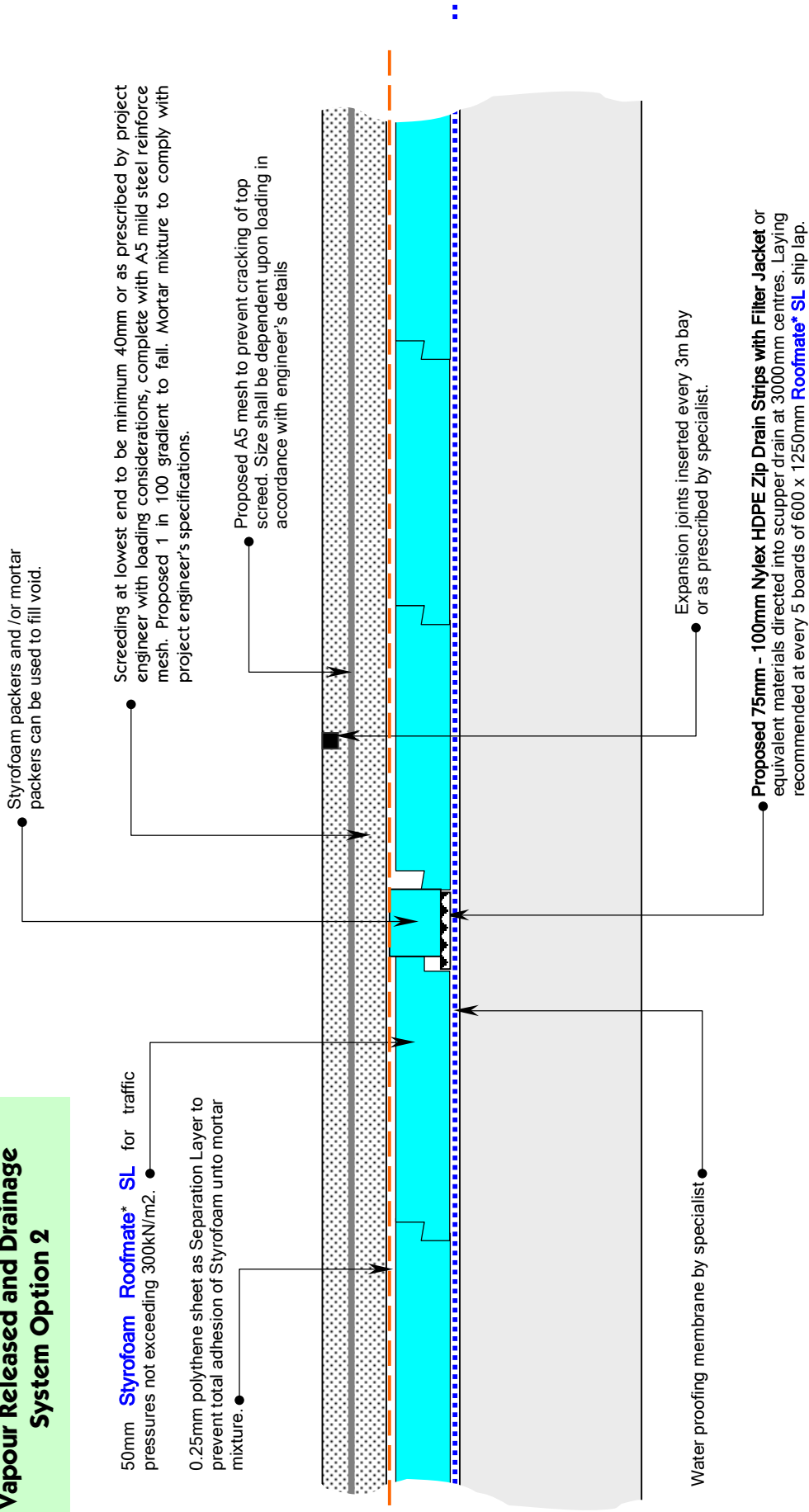
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Vapour Released and Drainage System Option 2



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