



ETFE DESIGN



Competition Brief

1. OVERVIEW

PROJECT

ETFE feature entrance canopy

BRIEF

To design a feature entrance canopy for a company at the forefront of tensile fabric design demonstrating the uses of ETFE

LOCATION

Main offices for company: (51.639114, -2.672341)

COMPANY VISION STATEMENT

"Architen Landrell provides sustainable architectural solutions to construction challenges through creativity and intelligence"

REFERENCES

- www.architen.com
- ETFE Foil: A Guide To Design:
<http://www.architen.com/technical/articles/etfe-foil-a-guide-to-design>

2. INTRODUCTION

Architen Landrell Associates have been specialists in the design, manufacture and installation of tensile fabric structures for over 30 years. In 2003 the company ventured into the relatively new market of ETFE with great success; their first installation consisting of an array of single-ply foil panels over Waverley Station in Edinburgh. Owing to the continued success of the subsequent ETFE installations that the company has performed a decision has been made to create an attractive yet functional technical demonstration of the options and capabilities a client/designer would have when working with ETFE. The most viable and useful option being a feature entrance walkway to the main offices on the premises.

3. DETAILS

What we are trying to capture with this entrance walkway is the strategy, synergy and philosophy of the company, meanwhile showcasing the company's creativity and innovation within the field. This feature will also give clients a tangible demonstration of the capabilities of the company and the uses, configurations and visual aspects of a relatively new material, increasingly being used in building envelopes due to its visual, translucent, physical and thermal properties.

For the covering the structure will be made predominantly from ETFE; consisting of any number of panels, but incorporating at least one of each of the following:

- 1-ply foil
- 2-ply cushions
- 3-ply cushions
- 3-ply movable-layer intelligent printed cushion

Supporting structure will be steel, timber or a combination of both. Aluminium framing for the ETFE panels will be bolted directly on to steel/timber (see Appendix 3: DEX channel cross-sections). Any other materials (for example PVC or glass) may also be used.

Desired coverage area (green) highlighted in Appendix 1 & 2 totalling approx 44 m²
Must not interfere with areas in red due to HGV traffic (Appendix 1 & 2)

4. CONSIDERATIONS

Snow/wind loading should be considered, but not calculated.

This may be supported by main office steelwork if desired, if free-standing, foundations should be considered.

Water-flow should be considered to ensure there is adequate guttering to take water away from the main entrance doors.

Trees ('A' – Appendix 2) can not be removed but may be cut back by approx 30%.

Floor-level damage/vandalism should be taken into account when dealing with inflated cladding.

5. EXPECTATIONS

We are expecting an accurately drawn up concept design for this structure incorporating all points mentioned above. The submission should include:

- Concept sketch/model with accompanying CAD design; hand-drawn is acceptable
- The philosophy behind your design choices, taking into account the 'Vision' from Section 1
- Justification/reasoning behind the elements of your design

You are able to visit the site of the installation with prior arrangement through James Ward (james.ward@ntu.ac.uk) to help with your designs, if there are any questions/concerns please contact either James Ward or John Chilton (john.chilton@ntu.ac.uk).

The top submissions for this project will be reviewed by the company and the most impressive design(s) will win £100. In addition to this there is potential for any outstanding designs to be considered for manufacture at the company's premises in Chepstow and subsequently installed as the walkway for the main entrance. Following this selection, a chosen design will also give the winner the opportunity to be involved with the technical design and manufacture process of the walkway on the premises through to detailed design drawings to enable fabrication.

APPENDIX 1: IMAGES FOR CANOPY LOCATION



Front view of offices



Walkway location



Proposed site of canopy, red area designates Parking & HGV traffic.

Step to top of door = 2130mm

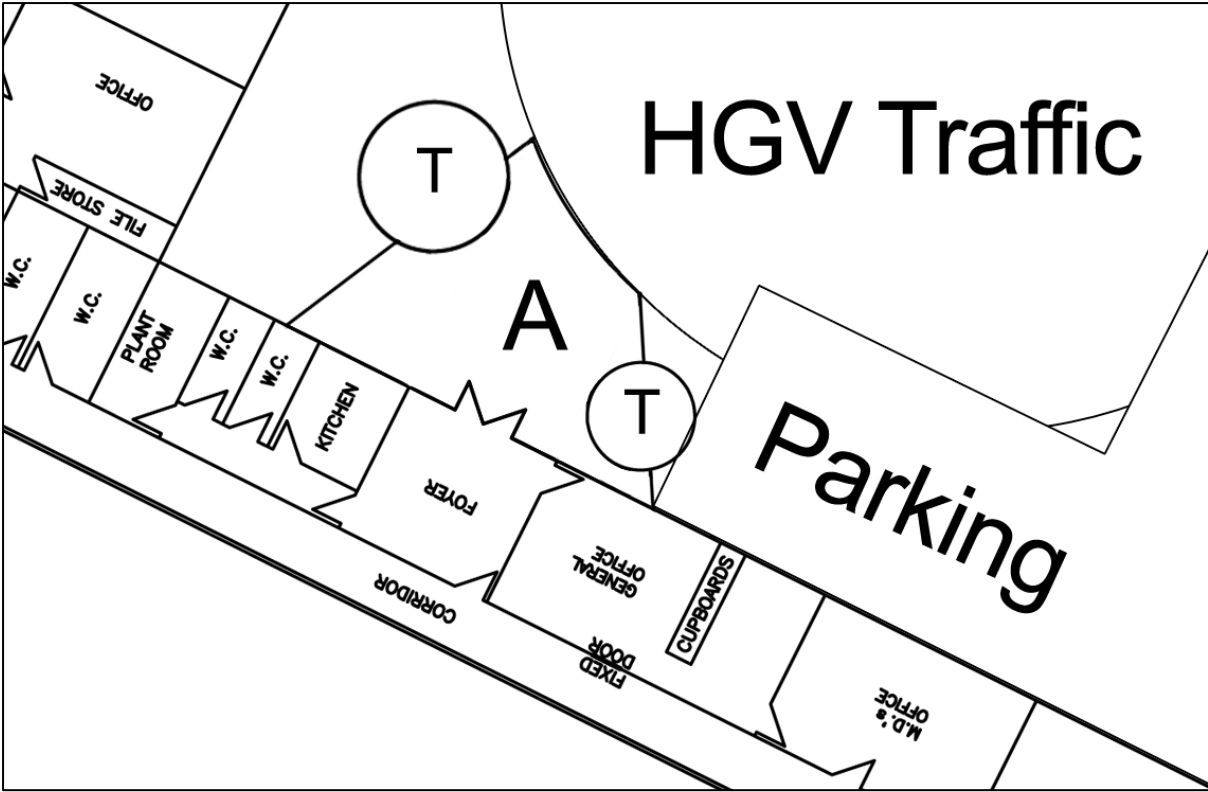
Step to top of wall = 2870mm

Floor to top of wall = 3000mm

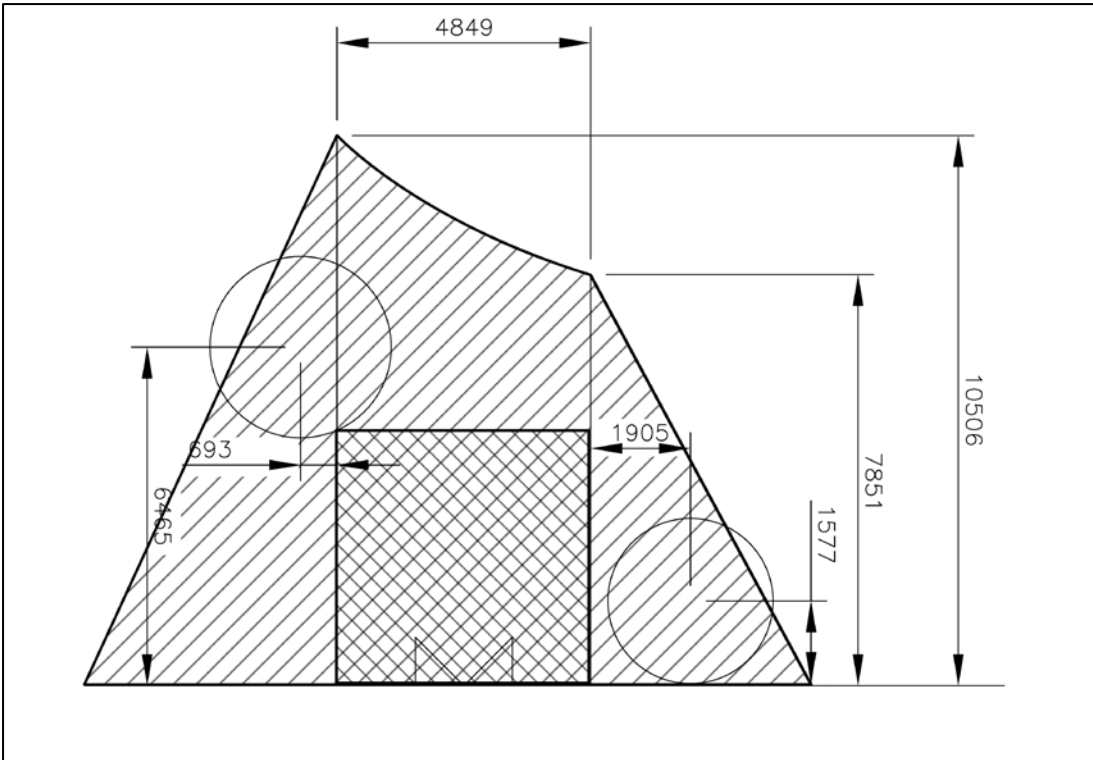
APPENDIX 2: PLAN VIEWS OF FACTORY



2.1: Overview of premises, hatched area indicates limits of proposed walkway location.

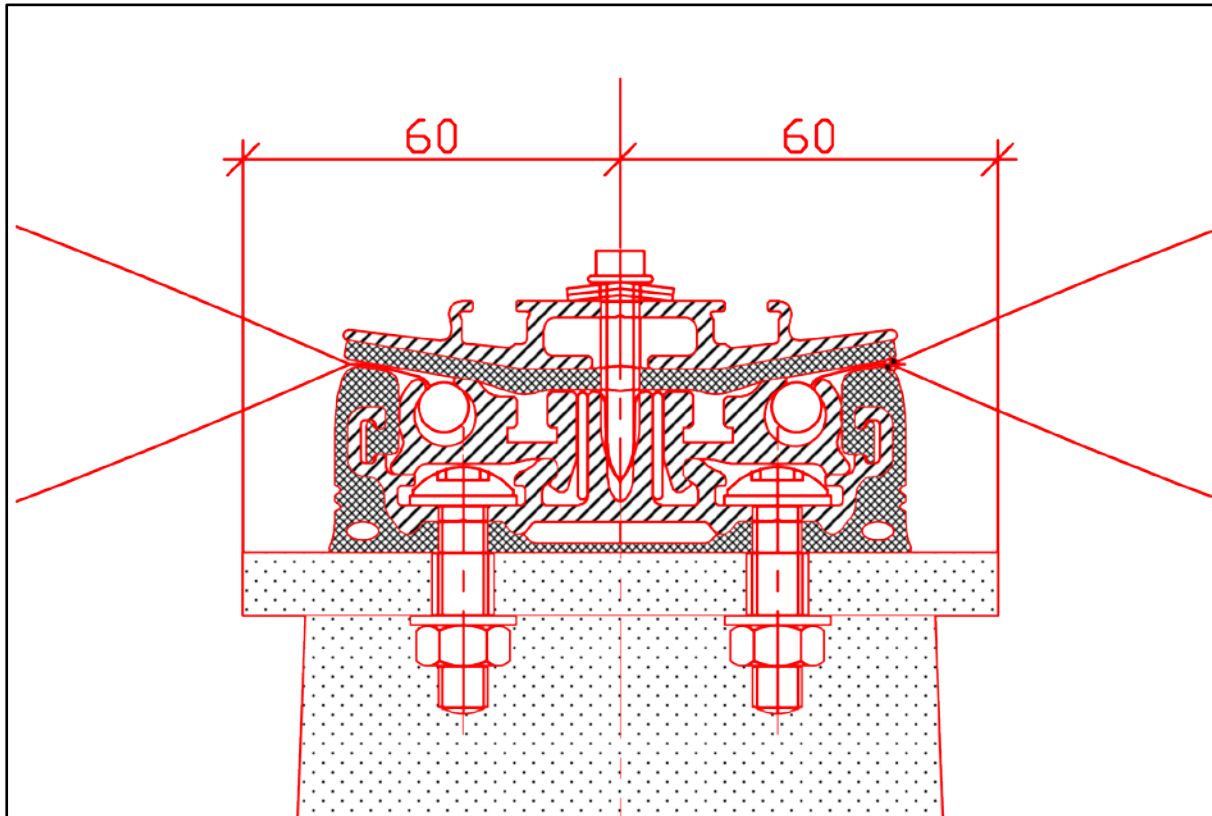


2.2: CAD overview of: walkway location - A; Trees - T; and Parking/HGV Traffic areas.



2.3: Dimensions of area for walkway. Hatched area indicates **available** coverage; double-hatched area indicates **minimum** coverage.

APPENDIX 3: ALUMINIUM ETFE CUSHION/FOIL FIXING EXTRUSION CROSS-SECTION; 'DEX'



CREDITS

ExCel roof photograph © Edmund Sumner

Plan view images © Google

All other images by © James Ward @ Architen Landrell Associates