eyetech®

JAMES & TAYLOR

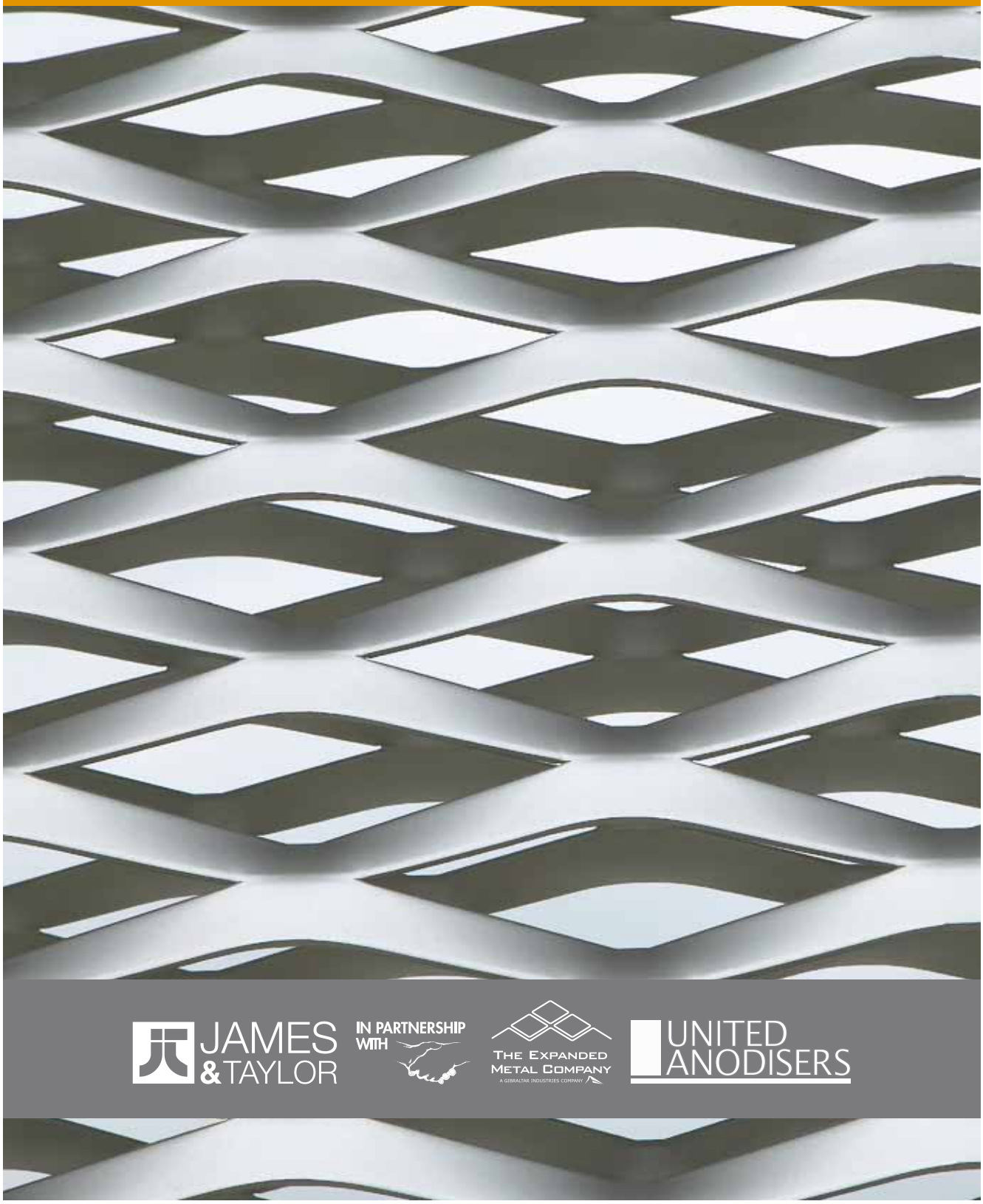
WHERE INNOVATION COMES AS STANDARD

eyetech Expanded Mesh Cladding System

Doc Ref: JTES - 003

Typical System Specification

Issue Date: 01/09/2010



JAMES & TAYLOR IN PARTNERSHIP WITH THE EXPANDED METAL COMPANY A GIBRALTAR INDUSTRIES COMPANY UNITED ANODISERS

New Museum of Contemporary Art, New York

eyetech system, designed and supplied by **James & Taylor**

JAMES & TAYLOR

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1. Typical System Specification

The **eyetech** expanded mesh cladding system has been developed by **James & Taylor Ltd** in partnership with The Expanded Metal Company, the originators of the metal expanding process. It is intended to provide a variable opacity, visually interesting, external, architectural screen that clads the building. **eyetech** provides minimal air-flow resistance coupled with increased levels of security and safety. The **eyetech** system typically comprises: **eyetech** expanded mesh panelling, link bracket components that attach the **eyetech** mesh panelling to its supporting substructure, vertical windpost support substructure and primary attachment bracketry back to the main structure.

Drawings showing typical **eyetech** cladding systems are available from **James & Taylor** upon request.

2. Material Types

Part of the appeal of **eyetech** expanded mesh is the ability to utilise a range of metal types to achieve a desired aesthetic.

These metal types include:

Aluminium alloy grade; 151 EX: A special grade of aluminium jointly developed by **James & Taylor** and the aluminium mill. Anodised post fabrication so as to exceed the standards set by BS 3987: 1991 – (Anodic oxidation coatings on wrought aluminium for external architectural applications). All anodised finishes guaranteed for the design lifetime of the building.

Cor-ten Steel expanded mesh: A self-finishing weathering steel alloy that is typically chosen for its rustic and honest appearance. Cor-ten's ability to form a protective oxide layer alleviates the need to add any secondary surface treatments and allows the material surface to handsomely age and develop through burnt orange tones to deep purples and autumn browns.

Copper alloys: Copper alloys, which include brasses, offer a subtle and variegated colour palette that will gradually mellow to warm shades of red and brown, enhancing the character of the building and its surroundings.

eyetech link brackets and primary structure attachment bracketry: unless otherwise specified these will be manufactured from stainless steel grade; 1.4301 (formerly known as 304).

eyetech fastener components; nuts, bolts and washers etc: unless otherwise specified these will be manufactured from stainless steel grade; 1.4301 - property class 70 (A2 - 70).

eyetech isolation and separation components: unless otherwise specified these will be manufactured from either PTFE or Durethan.

3. Manufacturing Tolerances

eyetech expanded mesh:

Panel lengths up to 3000mm = +/- 5mm
Panel lengths from 3000mm to 3500mm = +/- 6mm
Panel lengths from 3500 to 4000mm = +/- 7mm
Panel lengths from 4000 to 4500mm = +/- 8mm

Panel width = +/- 4mm

Lateral bow across panel width = max 10mm

eyetech windposts:

Principal dimensions associated with windpost section = +/- 1mm
Windpost wall thickness = +/- 0.25mm
Windpost length = +/- 3mm

eyetech link brackets and primary structure attachment bracketry:
Principal dimensions for;

Bracket projections up to 200mm = +/- 1mm
Bracket projections up to 300mm = +/- 1.5mm
Bracket projections up to 400mm = +/- 2mm
Bracket projections greater than 400mm = +/- 3mm

Fold/bend accuracy (all bracket projections) = +/- 1.5°

4. Material Finishes

eyetech aluminium expanded mesh:
eyetech aluminium windposts:
eyetech aluminium cappings:
} colour or clear anodised to BS3987:1991

Colour and clear (silver) anodised finishes may exhibit some colour variation. Top and bottom colour limit samples are available from **James & Taylor** upon request.

Some **eyetech** components are cut to length and drilled/machined after anodising. These secondary fabrication processes result in some unanodised cut edges and surfaces. These unanodised cut edges and surfaces do not reduce the durability of the anodised finish or effect the validity of their 'Design Lifetime Guarantee'; (see 15. Guarantees - Specimen Guarantee).

The anodising process requires components that are anodised to be fixed to jigs that allow their immersion into the anodising tanks. This 'jigging' process results in unavoidable marks ; usually a small unanodised 'centre punch' type mark on one side of the material at the jigging location and a corresponding unanodised or only partly anodised contact patch mark on the opposite side of the material. Marks from the 'jigging' process are minimised where possible but may be visible after construction is complete. These 'jigging' marks do not reduce the durability of the anodised finish or effect the validity of its 'Design Lifetime Guarantee'.

eyetech link brackets and primary structure attachment bracketry: stainless steel; hot rolled, softened and descaled.

eyetech fastener components; nuts, bolts and washers etc: stainless steel; cleaned, bright and passivated.

5. Adjustment and the Accommodation of Construction Tolerances

Unless otherwise specified **eyetech** expanded mesh cladding systems provide the following ranges of adjustment.

Lateral adjustment: to accommodate lateral concrete slab edge casting or steel perimeter beam or construction tolerances = +/- 25mm.

Longitudinal adjustment: to accommodate longitudinal concrete casting tolerances and longitudinally 'out of position' expansion bolts and pre-drilled/punched holes in steelwork.

Primary structure attachment bracketry to continuous horizontal cast-in channel = limitless.

Primary structure attachment bracketry fixed with expansion anchor or bolted to steelwork

= +/- 15mm.

Longitudinal adjustment at link bracket to mesh connections: to accommodate longitudinally 'out of position' windposts and accommodate mesh panel width manufacturing tolerances = +/- 8mm.

Vertical adjustment: to accommodate vertical structure tolerances when using a continuous horizontal cast-in channel = +/- 25mm.

Vertical adjustment at link bracket to windpost connections: to accommodate incorrectly levelled windposts and accommodate mesh panel height manufacturing tolerances.

Extruded link bracket bolt retention groove within windpost is continuous however vertical adjustment should be limited to +/- 15mm.

6. Joint Widths

Unless otherwise specified the **eyetech** expanded mesh cladding system is designed to provide the following nominal mesh panel to panel joint widths.

Horizontal joint widths = nominal 20mm
Vertical joint width = nominal 15mm

The vertical joint width may be adjusted (opened or closed) within limits stipulated by the architect but should not exceed the following;

Minimum adjusted vertical joint width = 5mm
Maximum adjusted vertical joint width = 25mm

7. Movement

Unless otherwise specified the **eyetech** expanded mesh cladding system will be designed to accommodate the following building movements.

Vertical differential floor slab deflections: max = +/- 15mm, (based upon a 20mm wide horizontal mesh panel to panel joint and mesh panel height above the joint of max 3000mm).

Horizontal movements within the structure: the **eyetech** expanded mesh cladding system is not designed to bridge horizontal movement joints located within the structure. If required, please consult James & Taylor's technical department for a specific project design.

Thermal movements within the eyetech cladding system: the **eyetech** cladding system is designed to accommodate all movements due to temperature change exhibited by the cladding system.

8. Fasteners

eyetech Fastener Types:

Unless otherwise specified, fastener types supplied will be manufactured to the following standards.

Hexagon headed bolts = DIN:931
Hexagon headed set screws = DIN:933
Nyloc nuts = DIN: 985
Washers = DIN: 9021
Security fasteners = ISO:7380

9. Packaging and Protection

eyetech mesh panels: supplied stacked and nested typically 30no. panels high on purpose made timber pallets. Mesh panels interleaved with loose polythene protective film and entire pallet shrink wrapped. Please note that no adhered or semi-permanent protective film is provided to protect the mesh panels during or after installation.

eyetech windposts: supplied with adhered polythene coat protection to back and side faces. Windposts are supplied in purpose made corex lined craneable stillages with corex interlayers between layers of windposts.

eyetech closer rails, hand rails, and angle trims: supplied in purpose made wooden or plastic crates. Individual components protected by loose polythene tube bag.

eyetech link brackets and primary structure attachment bracketry: supplied in purpose made wooden or plastic crates.

eyetech isolation and separation components: supplied boxed.

eyetech fastener components: supplied boxed.

10. Storage and Handling On Site

eyetech system materials must be stored carefully. **eyetech** system materials should remain within their transport packaging until ready for use. If stored outside, the storage location should be 'free draining', (preferably a hard standing), so as to avoid the potential of contamination from standing water.

Fully packaged and protected pallets of **eyetech** mesh may be very carefully stacked a maximum of 2no. pallets high. No other materials may be placed or stacked on top of the **eyetech** mesh panels/pallets.

When **eyetech** materials are unpacked or partly unpacked, care must be taken to ensure that damage is not caused by other works taking place in their vicinity.

When removing an **eyetech** mesh panel from its packaging care must be taken to ensure that the mesh being removed and the mesh panel beneath are not damaged by the removal process. Do not drag mesh panels across one another. Rotate mesh panels around their long edge with that edge resting on the delivery pallet. Always lift and carry **eyetech** mesh panels on edge. If **eyetech** mesh panels are to be temporarily set down or leant against a wall or other surface, ensure that the mesh panels are adequately protected in order to prevent scratching and marking.

Always wear protective gloves when unpacking and handling eyetech mesh panels.

11. The Installation Environment

The **eyetech** expanded mesh cladding system must not be installed in a harsh construction environment.

Work that might damage the **eyetech** system must be finished prior to its installation. It is particularly important that all wet trades in the vicinity of the **eyetech** system installation are complete prior to installation. Contact with cementitious materials such as concrete or mortar will damage the systems anodised surfaces. All painting and surfacing works should be complete. Paint splashes and paint or surface treatment overspray may prove very difficult to remove.

The cutting of reinforcement and other mild/carbon steel materials in the vicinity of the **eyetech** system may result in carbon steel contamination which may cause rust staining and spotting.

12. Installation

It is usual (dependent upon the precise nature of **James & Taylor's** appointment) for **James & Taylor** to provide detailed contract drawings. These will be specific to your project.

The following **James & Taylor** drawings describe in detail a typical **eyetech** multi-storey car park system installation. Although these drawings are specific to a multi-storey car park, they demonstrate the basic installation principles associated with most **eyetech** expanded mesh cladding systems.

EYETECH – MSCP – INST – 1 Rev B

EYETECH – MSCP – INST – 2 Rev B

EYETECH – MSCP – INST – 3 Rev B

EYETECH – MSCP – INST – 4 Rev B

EYETECH – MSCP – INST – 5 Rev A

EYETECH – MSCP – INST – 6 Rev B

Component types and installation procedures may vary dependant upon actual specific project detailing. **James & Taylor** project specific designs, drawings and installation procedures take precedence.

12. Installation cont.

eyetech Typical Installation Drawings

James & Taylor Contact Details

New Malden Office

Mitchell House
2 Montem Road
New Malden
Surrey
KT3 3QW

T +44 (0) 208 942 3688
E info@jamesandtaylor.co.uk

Manchester Office

Eastgate Building
2 Castle Street
Castlefield
Manchester
M3 4LZ

T +44 (0) 161 831 9977
E info@jamesandtaylor.co.uk

W www.jamesandtaylor.co.uk

13. C.O.S.H.H

The **eyetech** expanded mesh cladding system contains no substances that are known to be hazardous to health.

There is risk of superficial injury; cuts, abrasions etc, from contact with the material edges. Always wear protective gloves when unpacking, handling and installing the **eyetech** system components.

The **eyetech** system makes use of extruded aluminium components which are cut to length. This cutting to length process may leave some small chips of aluminium within or on the extrusions or within associated packaging. Always wear protective eyewear when unpacking, handling and installing the **eyetech** system components.

14. Periodic Inspection and Maintenance

It is recommended that components supplied and installed as part of the **eyetech** expanded mesh cladding system are inspected at least on a once yearly basis.

In most instances, adequate inspection may only be possible from the building exterior. In such circumstances, safe, high level access equipment may be required.

This initial visual inspection is to encompass the following:

Visually inspect mesh panels for evidence of mechanical damage. Marks, scuffs and general wear and tear may be deemed acceptable, however, deep cuts, abrasion or in extreme circumstances, puncturing of the mesh panels may necessitate the panels replacement. Whilst inspecting the mesh panels for evidence of mechanical damage, also inspect the surface of the mesh in order to establish its level of cleanliness, (see cleaning requirements). Should the anodised surface of the mesh panels exhibit an unacceptable level of soiling then a standard periodic clean should be carried out.

Visually inspect the condition and the security of the fastening bolts that secure the mesh panels to their associated fixing components. Visually inspect the link bracket to windpost connections and all primary structure attachment bracketry. If bolts, nuts or washers are found to be missing, they must be replaced immediately. If these connections are discovered to be loose, they must be re-tightened to the required tightening torque.

14. Periodic Inspection and Maintenance cont.

Recommended cleaning procedure – standard periodic clean: clean and wash down anodised finishes starting with those situated uppermost and then work downwards.

This is best carried out using a solution of clean tepid to luke warm water and 1% Teepol multipurpose detergent. It may be the case, dependent upon the nature of the materials to which the anodic film has been applied, and the degree of soiling, that dirt particles can be satisfactory dislodged through the use of a low/medium pressure lance primed and adjusted so as to deliver the correct volume of Teepol multipurpose detergent. If this method is employed it is important that any more vulnerable adjacent materials and finishes are not damaged. After cleaning in this fashion the anodic film may be finally 'washed/rinsed down' with the lance adjusted so as to provide a wide angle low volume mist of clean tepid to luke warm water.

Detergent Type:
Teepol multipurpose detergent

Manufactured by:
Harvey Waddington
Murray Road
Orpington
Kent
BR5 3RA

T +44 (0) 168 987 7202

14. Periodic Inspection and Maintenance cont.

Available from the following distributors:

Cleenol Group Ltd – Banbury	T +44 (0) 129 525 1721
Bunzl Cleaning – Lye	T +44 (0) 138 489 6781
James Lister & Sons Ltd – Smethwick Warley	T +44 (0) 121 553 2411
J. Bishop & Co. – Wolverhampton	T +44 (0) 190 240 5572
Tower Supplies – Poole	T +44 (0) 120 271 8000
S.A.Patient & Son Ltd – Devon	T +44 (0) 123 747 2765
CJS Portsmouth Ltd – Portsmouth	T +44 (0) 170 543 4500
Coventry Chemicals – Coventry	T +44 (0) 247 663 9739

Frequency of cleaning: the surfaces to which anodic films have been applied should be cleaned when they become soiled in order to maintain their appearance. The interval between standard periodic cleans will be determined by the rapidity and amount of soiling. In order to help prevent an unacceptable build up of soiling it is recommended that a standard periodic clean is carried out at least annually.

15. The aesthetic repair of cut or damaged anodised surfaces

eyetech Touch-Up Paint Application

The application of touch-up paint to cut/damaged edges or scratches is only necessary if desired for aesthetic reasons. The anodised finish adjacent to the cut/damaged edge or scratch will not flake, blister or suffer from filiform corrosion. The design lifetime guarantee applicable to the anodised finish states the following.

'The anodic film will not crack, blister, peel, chip, or suffer filiform corrosion for the guarantee period. Potential oxidisation at cut ends (joints) or potential oxidisation occurring on damaged areas will not propagate by undermining the adjacent anodic film. These corrosion properties are irrespective of maintenance.'

Should touch-up paint application be desired, the following procedures should be followed.

Spray Application

- Select the correct matching Alucolour spray paint.
- Ensure that the area to be treated is free from burrs. If not, dress with a fine file to remove burrs and/or sharp edges.
- Ensure that the surface to be coated is free from: oil, grease, dust or other contaminants that might impair the adhesion of the spray applied coating. In order to remove oil based contaminants, wipe the surface to be coated with a clean rag, lightly soaked in a suitable solvent such as Methyl Ethyl Keytone.
- Mask off any surrounding areas that do not require painting and any vulnerable materials adjacent to the eyetech system.
- Wear adequate respiratory and eye protection.
- Shake can vigorously for a minimum of 2 minutes.

15. The aesthetic repair of cut or damaged anodised surfaces cont.

- Only apply if ambient temperatures exceed 15°C.
- Apply Alucolour spray paint in several light mist coats. Be careful not to build up a heavy single coat which may run or drip.
- Drying time between coats will vary dependent upon ambient temperature. However, a minimum of 2 minutes should be allowed to elapse between the application of each light mist coating.
- Invert spray can to clear nozzle and store appropriately, away from direct sunlight and temperatures that might exceed 50°C.

Brush Application

- Select the correct matching Alucolour brush applied touch-up paint and applicator.
- Ensure that the area to be treated is free from burrs. If not, dress with a fine file to remove burrs and/or sharp edges.
- Ensure that the surface to be coated is free from: oil, grease, dust or other contaminants that might impair the adhesion of the brush applied coating. In order to remove oil based contaminants, wipe the surface to be coated with a clean rag lightly soaked in a suitable solvent such as: Methyl Ethyl Keytone.
- Shake the Alucolour brush/applicator vigorously for a minimum of 2 minutes.
- Only apply if ambient temperatures exceed 15°C.
- Remove excess paint from brush and apply a light coating to the surface that requires treatment. Be careful not to build up a heavy single coat which may run or drip.
- Drying time will vary dependent upon ambient temperature, however, a minimum of 10 minutes should be allowed to elapse between the application of each brush applied coat.
- Re-coat if necessary.
- Replace cap and brush and store away from direct sunlight that might exceed 50°C.

16. Guarantees

General: James & Taylor accept design responsibility in instances where any project specific **eyetech** system design is undertaken by **James & Taylor**. Liabilities that result from **James & Taylor's** design responsibility are professional indemnity insured.

Professional indemnity insurance policy details are available on request.

Anodised Finishes: all anodised finishes supplied as part of the **eyetech** system are guaranteed for the design lifetime of the building cladding.

Please see Specimen Guarantee.

16. Guarantees cont.

Specimen Guarantee

UNITED ANODISERS

LIFETIME GUARANTEE

There is hardly anything in this world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are his lawful prey.

John Ruskin
1819-1900

UNITED ANODISERS LIMITED, being approved licensees of Anolok I and Anolok II anodised finishes for the treatment of aluminium sheet and extrusion products, hereby guarantee, subject to the following terms and conditions, that all Natural, Anolok and Anolok II finishes supplied by us on this development, shall remain free of corrosion, free from fading and free from loss of coating adhesion for the design life of the building cladding.

These guarantee properties are neither maintenance dependant, nor affected by a marine environment.

1. Specification

United Anodisers finishes are guaranteed to meet BS 3987 in full and to meet this standard for the period of the guarantee.

2. Abrasion resistance

The anodised finish shall meet or exceed the hardness of glass. Abrasion resistance measured according to BS EN 12373-9:1999 shall have a thickness wear index of 1.4 or less. There is no erosion of the anodic layer during the guarantee period.

3. Light resistance

Natural, Anolok and Anolok II finishes will not fade irrespective of maintenance.

4. Corrosion resistance

The anodic film will not crack, blister, peel, chip, or suffer filiform corrosion for the guarantee period. Potential oxidisation at cut ends (joints) or potential oxidisation occurring on damaged areas will not propagate by undermining the adjacent anodic film. These corrosion properties are irrespective of maintenance.

CONDITIONS OF GUARANTEE

(i) Substrate aluminium to be 6063 or 6060 alloy for extrusion and J57S alloy for sheet or an alternative alloy agreed in writing by UA prior to anodising.

(ii) The customer has specified that the work be carried out to BS3987 as a minimum standard and made UA aware of any additional requirements in the contract specification.

(iii) The anodised material is not sited, now or in the future, in the direct influence zones of acid or industrial or other aggressive emission sources, which are known or believed to be damaging or corrosive to anodising. Furthermore, that the anodising is not exposed to acidic or alkali chemicals used to clean the facade or adjacent areas.

(iv) To preserve the visual appearance of the film, after the clean on completion, the anodising should be cleaned at least once a year using a neutral detergent and water. Acidic or alkali chemicals must not be used.

(v) Notification of any defect in the anodic coating is made to us in writing by registered post, complete with details of the apparent defect, within 60 days of the defect becoming apparent .

(vi) In the event of failure of any of the guaranteed properties, our liability is limited to a sum equivalent to the cost of rectifying the defect by re-anodising the failed parts. This includes dismantling, remaking and re-fixing of the parts. Alternatively, by agreement, we may carry out the rectification on site by remedial finishing.

(vii) Aluminium can corrode if in contact with other metals. During fixing and installation such contact must be avoided.

(viii) In the event of any claim against us under this guarantee, the burden of proof will be on the customer to prove, firstly, that we carried out the work in dispute and, secondly, that all other conditions of this guarantee have been complied with.

(ix) This guarantee is issued to UA's customer but is transferable to a third party with prior written agreement from UA.

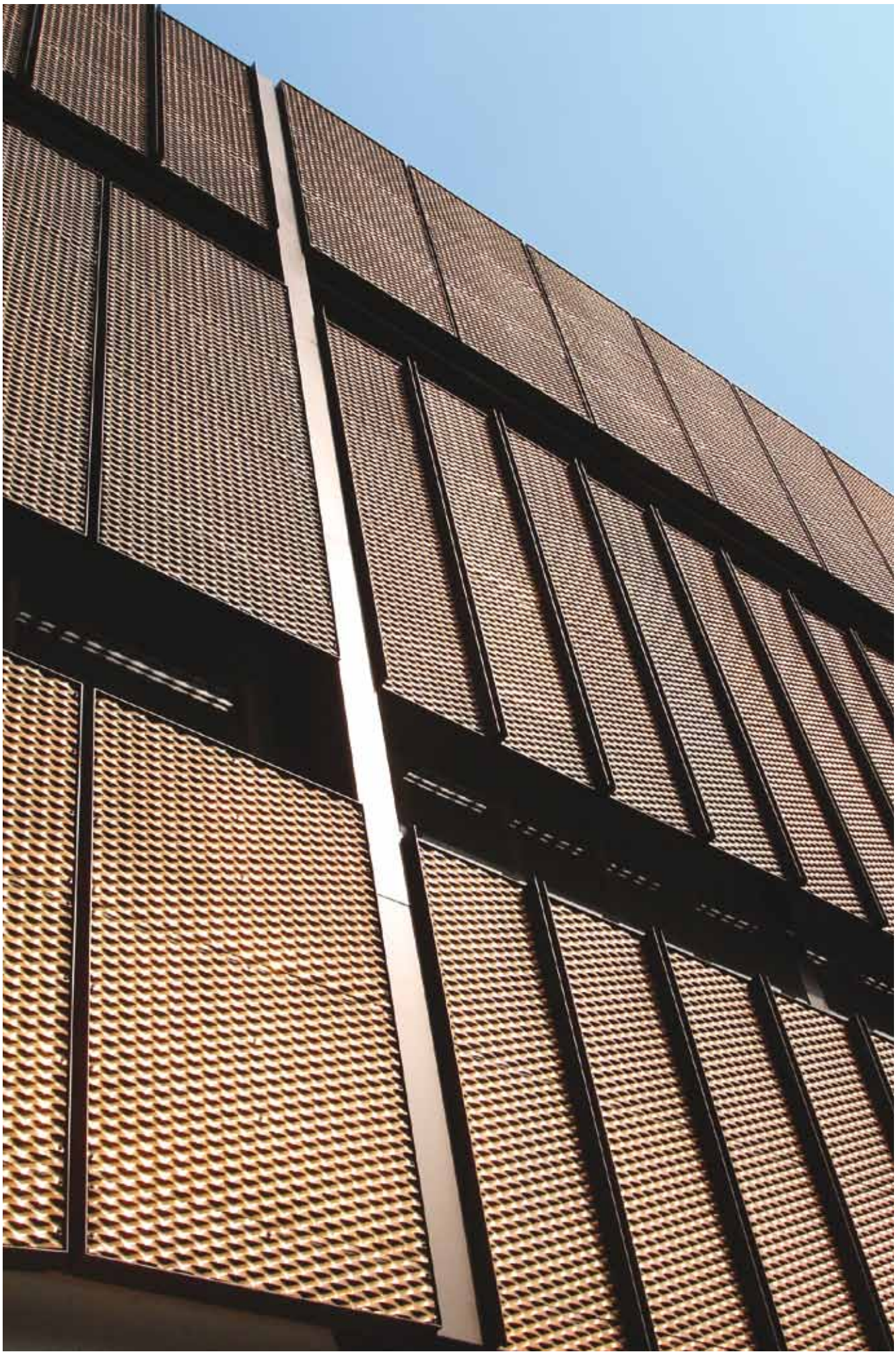
(x) In addition to the foregoing, our terms of business shall apply to all work carried out by us. In cases of conflict between such terms and the provisions of the guarantee, the provisions of this guarantee shall prevail.

For and on behalf of United Anodisers Limited

Director

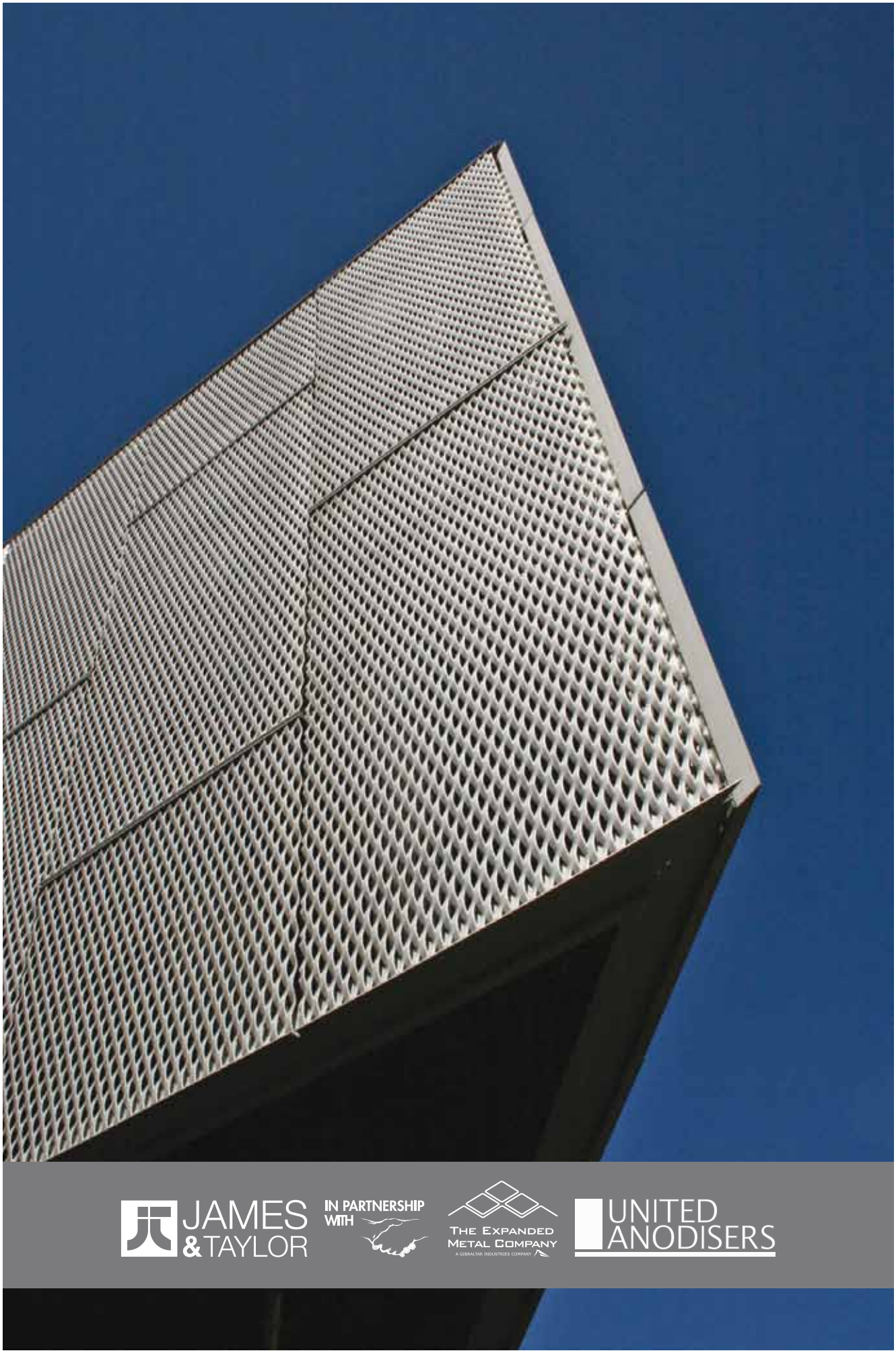
Date:

Development	
Customer	
Finish	



Queen Mary Innovation Centre, London

eyetech system, designed and supplied by **James & Taylor**



Stephen Lawrence Centre, London

eyetech system, designed and supplied by **James & Taylor**