Proposed

View looking South West along Denmark Place

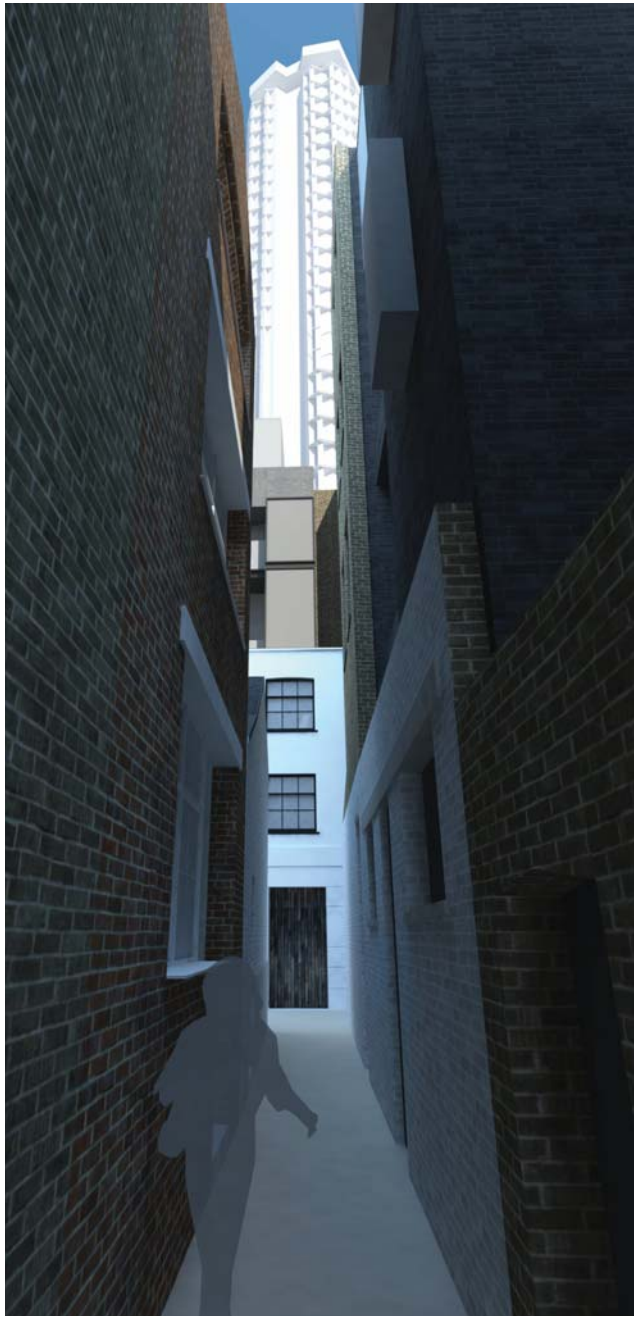
We have made minor amendments to the South elevation along Denmark Street, these can be summarised as follows :

- Ground floor entrances rationalised to reflect the updated Events gallery core to Building C

- Windows within the black brick 'extensions': The amended design of these allows the proportions and position of the windows to tie in with the windows of the existing buildings below. The design of the windows is contemporary to reflect the brick choice and brick detailing of the extension.

Consented

View looking North toward Denmark Place



Proposed

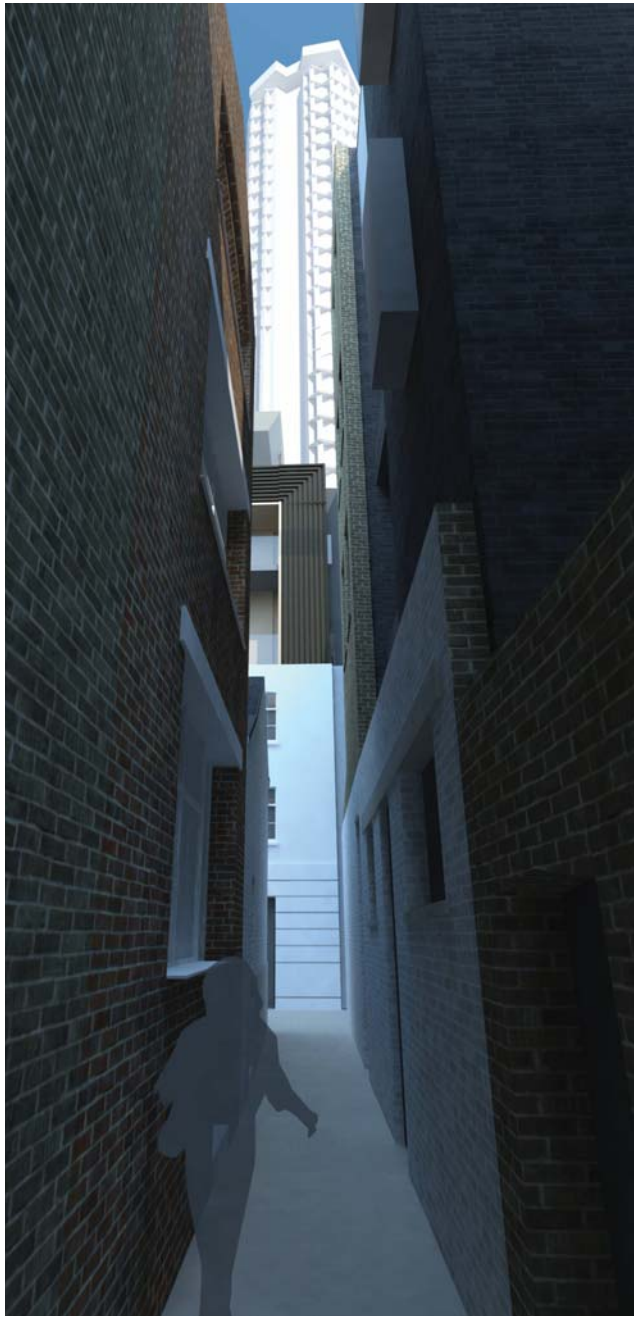
View looking North toward Denmark Place

The facade to the South side of Building B, 1-3 Denmark Place is an existing facade that is to framed and braced with steel. lifted to the other side of the site, and then craned back into position once the basement is formed. This proposal, as permitted in the consented scheme, retains that same philosophy.

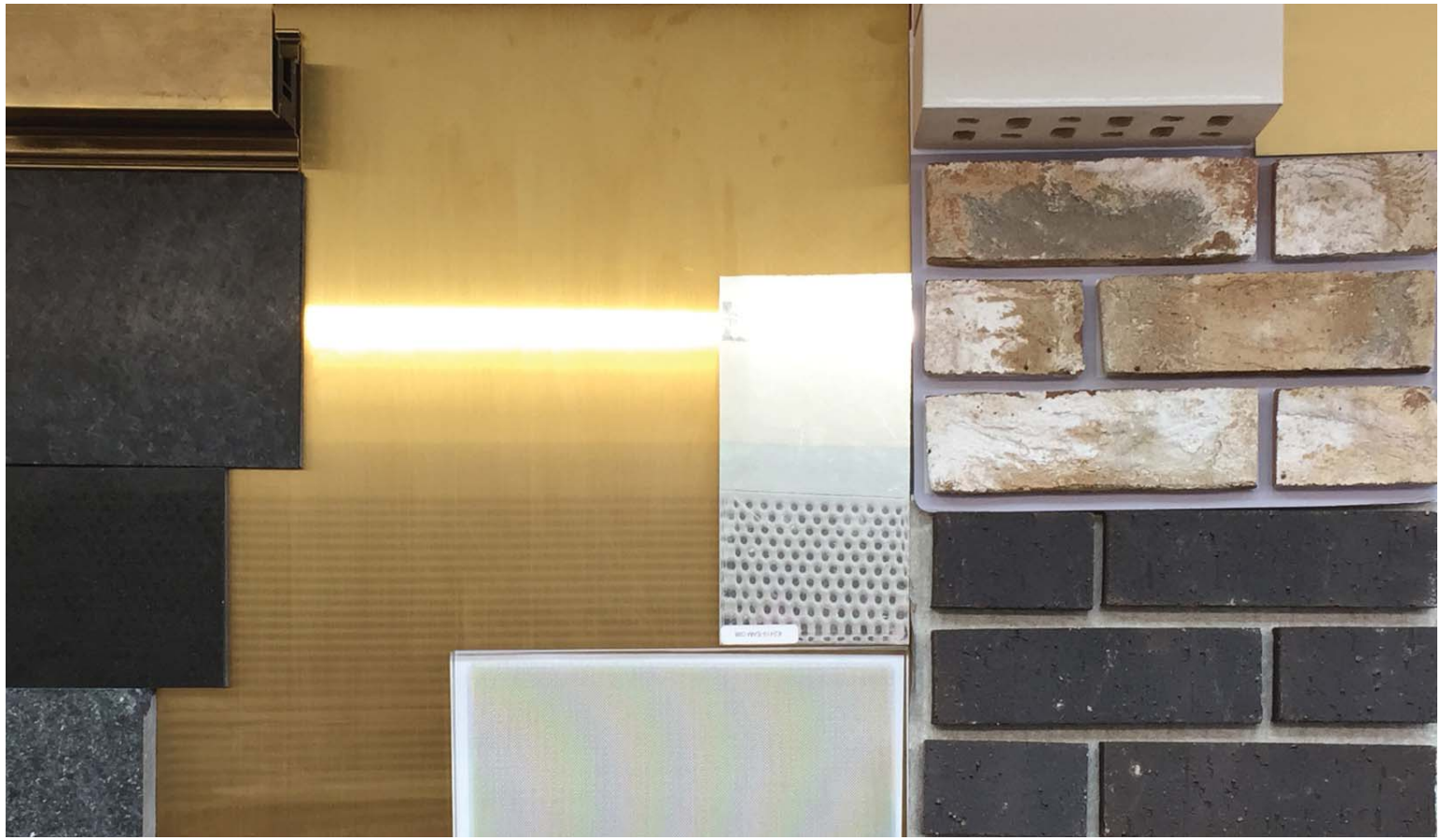
The amendment is that the relocated facade is repositioned approximately one metre further East to ensure the main entrance to the office is not blocked by primary structure to the building behind.

This amendment also has a more successful junction with the back of Building D, where the brick wall of the alley from St Giles High Street runs through.

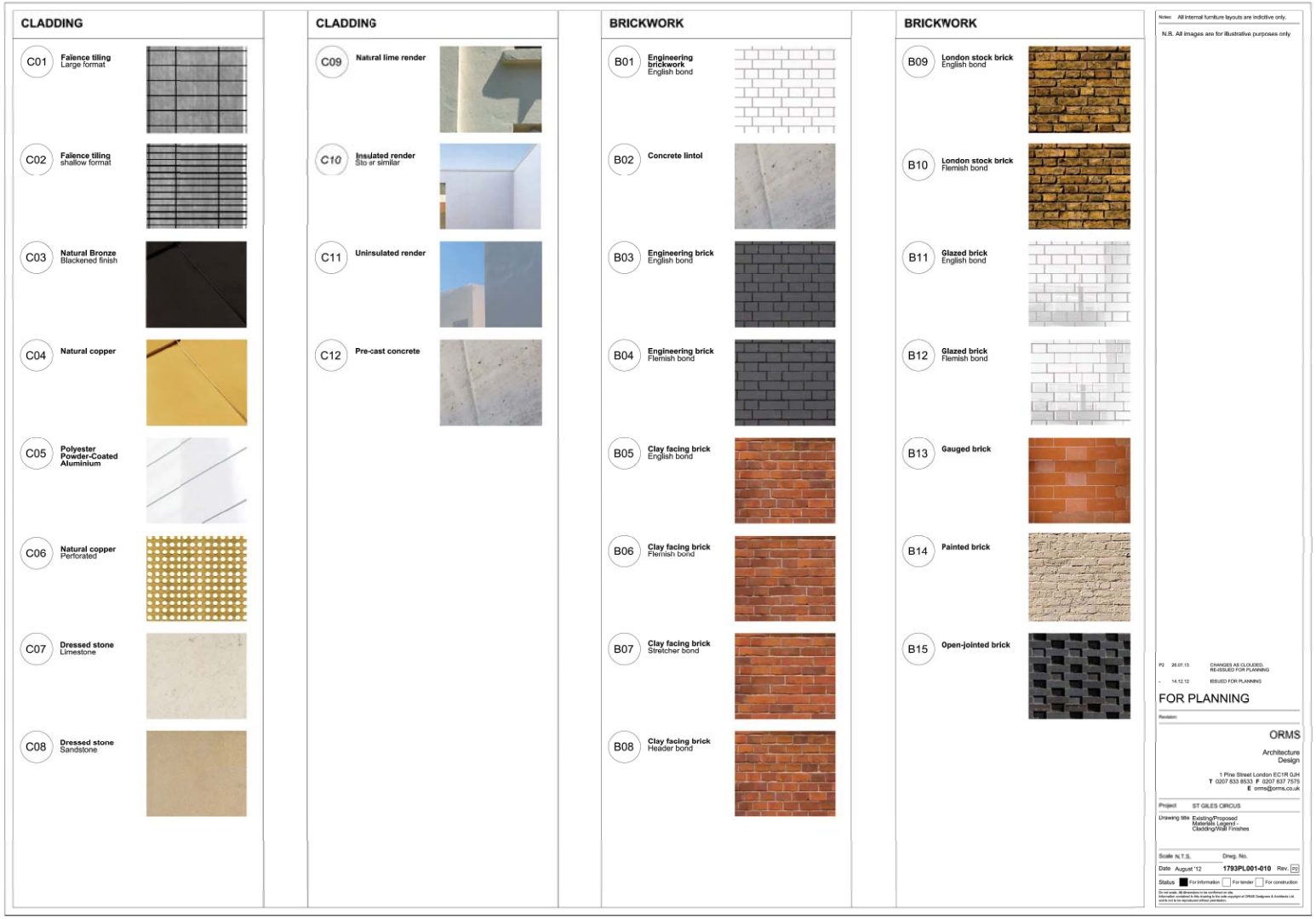
The image on the right shows that the right hand reveals of the windows visually align with the left hand edge of the granite leg behind. This is a more successful arrangement and more honest to the overall design of Building B.



Materials

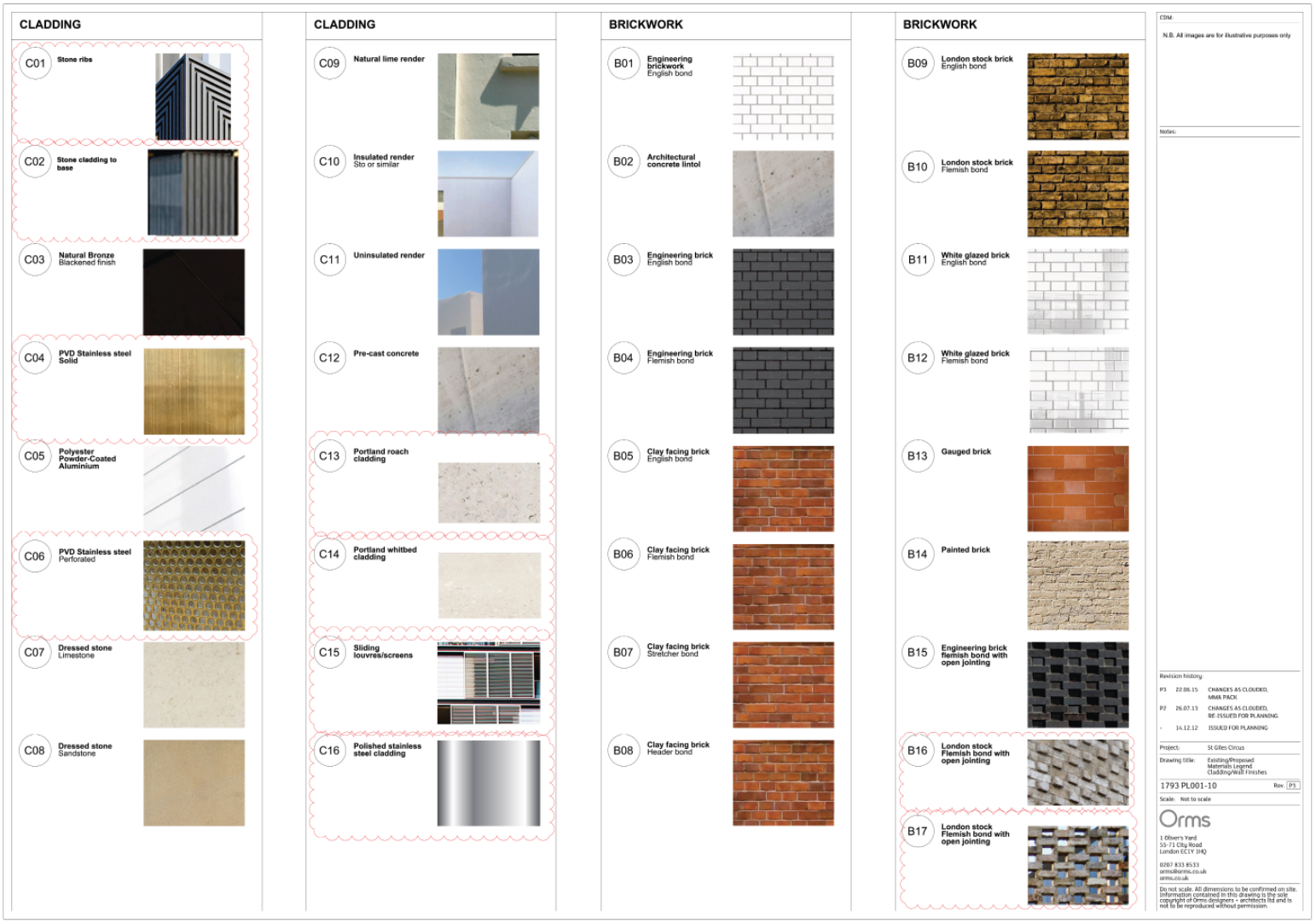


Consented


CLADDING
C01 Faïence tiling Large format
C02 Faïence tiling shallow format
C03 Natural Bronze Blackened finish
C04 Natural copper
C05 Polyester Powder-Coated Aluminium
C06 Natural copper Perforated
C07 Dressed stone Limestone
C08 Dressed stone Sandstone
CLADDING
C09 Natural lime render
C10 Insulated render Sto or similar
C11 Uninsulated render
C12 Pre-cast concrete
BRICKWORK
B01 Engineering brickwork English bond
B02 Concrete lintol
B03 Engineering brick English bond
B04 Engineering brick Flemish bond
B05 Clay facing brick English bond
B06 Clay facing brick Flemish bond
B07 Clay facing brick Stretcher bond
B08 Clay facing brick Header bond
BRICKWORK
B09 London stock brick English bond
B10 London stock brick Flemish bond
B11 Glazed brick English bond
B12 Glazed brick Flemish bond
B13 Gauged brick
B14 Painted brick
B15 Open-jointed brick
Notes: All internal furniture layouts are indicitive only.
N.B. All images are for illustrative purposes only
P2 26.07.13 CHANGES AS CLOUDED. RE-ISSUED FOR PLANNING
- 14.12.12 ISSUED FOR PLANNING
FOR PLANNING
Revision:
ORMS
Architecture
Design
1 Pine Street London EC1R 0JH
T 0207 833 8533 F 0207 837 7575
E orms@orms.co.uk
Project ST GILES CIRCUS
Drawing title Existing/Proposed Materials Legend - Cladding/Wall Finishes
Scale N.T.S. Dwg. No.
Date August '12 1793PL001-010 Rev. P2
Status For information For tender For construction

Proposed

The application drawings include a full set of materials drawings that reflect the amendments from the consented scheme. This spread illustrates the materials to the facades of the primary new build elements.



Materials: PVD Stainless steel

Buro Happold Design note

Further to discussions in the MMA Pre-App meeting we have commissioned Buro Happold Facade Engineering to review the PVD stainless steel cladding and provide a design note on the material, it's properties, longevity and precedent buildings.

Buro Happold's design note summarises the findings of BHFE's research with regard to the applicability of Physical Vapour Deposition (PVD) coated Titanium nitride (TiN) stainless steel sheets as cladding elements.

The report is published on the following pages and the key conclusions are listed below:

- There is a good track record of precedent applications up to 19 years old, which does support the use of this material for cladding applications.
- The strongest precedent is its use as roofing elements in domes of Orthodox churches in the humid continental climates of Russia and Ukraine. These climates are characterised by large seasonal temperature differences, with warm to hot and often humid summers, cold winters and precipitation usually well distributed through the year.
- The research, however, revealed that there are limited available standards and test data giving guidance on the long-term performance of PVD TiN coated stainless steel for cladding applications.
- The PVD TiN coating thickness greatly varies by application and manufacturer (see chapter 3: Manufacturers). Unless specific test data are provided by the manufacturer, it is recommended that Class 1 to AMS 2444 should be supplied.
- Stainless steel grade 1.4404 (formerly 316 weldable) to BS EN 10088-1 is the favoured metal substrate and is recommended due to its high resistance to corrosion, good surface quality and low maintenance requirements.
- Tests and precedents do not provide confidence in the use of this material at low level locations, where there is a higher risk of abrasion or damage.

With regard to the final point, regarding low level locations, the propsoed design limits the use of PVD stainless steel at low level to localised positions. However it has been used in Berlin at low level and has weathered well over 8 years.

BUROHAPPOLD ENGINEERING

Design Note

Project St. Giles Circus
Subject Titanium Nitride PVD (Physical Vapour Deposition) coated stainless steel for cladding applications
Project no 032930
Date 8 June 2015

Revision	Description	Issued by	Date	Approved
00	For information	PP	08-06-2015	

Nomenclature	
BHFE	Buro Happold facade Engineering
TiN	Titanium nitride
PVD	Physical Vapour Deposition
PVDF	Poly-Vinylidene Fluoride
BHMA	Builders Hardware Manufacturers Association

1 Executive summary

This Design Note summarizes the findings of BHFE's research with regard to the applicability of Physical Vapour Deposition (PVD) coated Titanium nitride (TiN) stainless steel sheets as cladding elements for the St Giles project.

The research was based on information supplied by a series of TiN PVD manufacturers and relevant research papers. The key conclusions are listed below:

- There is a good track record of precedent applications up to 19 years old, which does support the use of this material for cladding applications. The strongest is its use as roofing elements in domes of Orthodox churches in the humid continental climates of Russia and Ukraine. These climates are characterised by large seasonal temperature differences, with warm to hot and often humid summers, cold winters and precipitation usually well distributed through the year.
- The research, however, revealed that there are limited available standards and test data giving guidance on the long-term performance of PVD TiN coated stainless steel for cladding applications. This could be explained from the fact that PVD TiN coated stainless steel is a relatively new material in the cladding industry. In the absence of PVD TiN coating specific standards alternative sources should be considered such as standards controlling performance of organic PVDF coating for cladding elements.
- The PVD TiN coating thickness greatly varies by application and manufacturer (see chapter 3: Manufacturers). Unless specific test data are provided by the manufacturer, it is recommended that Class 1 to AMS 2444 should be supplied.
- Stainless steel grade 1.4404 (formerly 316 weldable) to BS EN 10088-1 is the favoured metal substrate and is recommended due to its high resistance to corrosion, good surface quality and low maintenance requirements.
- Tests and precedents do not provide confidence in the use of this material at low level locations, where there is a higher risk of abrasion or damage.

2 General information

2.1 Titanium nitride coating

Titanium nitride is a ceramic material which is applied as a thin coating on titanium alloys, steel, carbide, and aluminium substrates to improve the substrate's surface properties. In most applications a coating of less than 5 µm is applied. The coating thickness is much dependent on the geometry of the substrate.

Figure 2-1 Titanium nitride powder is the base material used for the TiN PVD coating process

Titanium nitride gives a metallic gold colour to the substrate surface.

2.2 Titanium nitride coated steel

Titanium nitride coating is commercially being applied on machining steel to enhance its surface hardness and corrosion resistance and as a non-toxic coating for medical implants since the mid- 1980's.

Figure 2-2: Example of TiN coating applied on machine-grade steel drill. TiN coating gives a yellow-gold colour to the silver-coloured steel substrate *(source: www.phantomdrills.co.uk)*

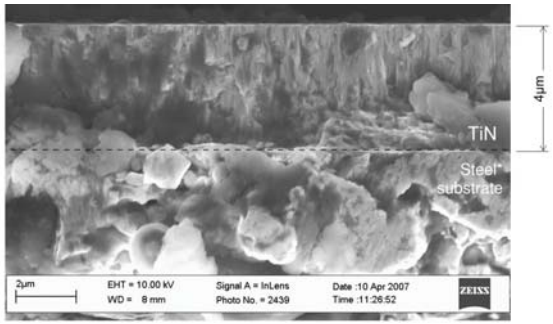


Figure 2-3 Magnified section showing TiN PVD coating deposited onto a steel substrate (in this case hot work steel, plasma nitride, grade X37CrMoV5-1) source: M. Polok-Rubiniec, 2008

2.3 Titanium nitride coated stainless steel

Due to its metallic gold appearance TiN coating is also being used for external use in roofing and cladding since the mid-1990's, based on information received by manufacturer LAD based in Ukraine.

Stainless steel grade 1.4404 to BS EN 10088-1 is the favoured metal substrate due to its high resistance to corrosion, good surface quality and low maintenance requirements.

The most common application is roofing sheets for orthodox churches in Russia and Ukraine.

Figure 2-4 Example- use of PVD TiN stainless steel sheets as roof shingles for church domes

2.4 PVD manufacturing process

PVD describes the atomic deposition processes of vacuum evaporation of sputter deposition or arc-vapour deposition. A material is vaporized in a chamber from a solid or liquid source and transported in the form of a vapour to the substrate where it condenses, forming a coating.

A vacuum chamber is necessary to avoid reaction of the vaporized material with air.

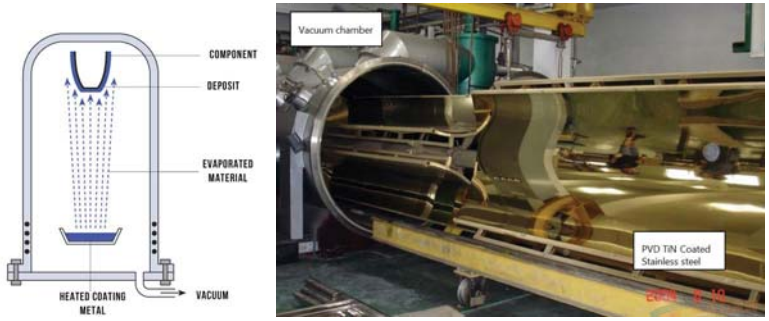


Figure 2-5 Schematic describing the sputter PVD process commonly used for decorative coating applications and Example of a PVD coating chamber with a TiN PVD coated stainless steel sheet (source: Cosmone.com, Dongguan Huicheng Vacuum Technology Co. China)

2.5 Properties

Typical physical properties of PVD TiN coatings as provided by BRYCOAT manufacturers (www.brycoat.com, USA) are presented in the table below:

Physical Properties of TiN Coatings	
Composition	TiN. > 99 % purity
Process	PVD Vacuum Deposited Coating
Appearance	Metallic Gold
Thickness	Ranges from 0.1 to 5.0 µm depending on application.
Hardness	Typical Hardness > 2000 kg/mm^2 Knoop or Vickers Microhardness. Values of 2500-3000 are typical. Equivalent to over 85 Rc.
Adhesion	The coating forms a metallurgical bond to the substrate that should not flake, blister, chip or peel. In fact, the coating is actually implanted slightly into the surface layer of the substrate. Adhesion is named to be superior to plating and other coating processes where mechanical adhesion occurs.
Adhesion, Scratch Adhesion Value	> 3.0 kgf on hard steel substrates
Toxicity	Non-toxic. Meets FDA guidelines and has been approved for use in numerous medical/surgical devices, including implants.
Temperature Resistance	Begins to oxidize at 600° C in air. More resistant in an inert atmosphere.
Melting Temperature	2950° C
Deposition Temperature	Standard process is 400° C
Chemical Resistance	Highly inert to acids, bases, solvents, caustic, etc.
Thermal Expansion Coefficient	9.4 x 10^{-6} /°C.
Thermal Conductivity	0.046 Cal/sec.-cm-°C.
Density	5.22 g/cm^3.

3 Manufacturers

3.1 List of typical manufacturers in EU

Company name	Location	Sector specialized in	Website
John Desmond	United Kingdom	Cladding	www.johndesmond.com
Wallwork Heat Treatment Ltd	United Kingdom	Tooling/Decorative applications	www.wallworkht.co.uk
Design Factory GmbH	Germany	Cladding	www.designfactory-cmb.de
INOX-COLOR GmbH & Co.KG	Germany	Cladding	www.inox-color.com
GHF inox	Germany	Cladding	www. ghf-inox.de
Fiko Titanium	Ukraine	Roofing	www.titanium-fiko.com.ua
LAD	Ukraine	Roofing	www.lad.ck.ua
Tekhnoprofil 2000	Russia	Roofing	www.t2000.ru
Titanium	Russia	Roofing	www.nitridtitan.com/
Song Ltd	Russia	Roofing	-

3.2 Manufacturers data

Manufacturers	INOX-COLOR GmbH & Co.KG	John Desmond	Design Factory GmbH	Fiko titanium
Coating thickness (µm)	0.5-0.9	1.5-3.0	0.3	2.0-6.0
	Quotes as per F+R discussion with INOX-COLOR	*Quotes given following a phone conversation with JD representative*	*Quotes given following a phone conversation with Design Factory de*	*Quotes as presented in company's website*
Plate thickness (mm)	2.0	1.2-5.0	0.8 – 5.0	0.22
Warranty (years)	12	*TBC*	7	*TBC*
Max panel dimensions (m)	1.2 x 4.0	-	2.0 x 6.0	0.5 x 2.0

4 Durability and colour stability

4.1.1 Info from FRENER+REIFER and INOX-COLOR

Cladding manufacturer FRENER+REIFER have liaised with INOX-COLOR GmbH & Co.KG manufacturers located in Germany, with regard to the long-term performance of PVD TiN coated stainless steel.

INOX-COLOR stated that they can give a 12 year warranty (minimum) on the PVD-TiN coating. Regarding colour stability INOX-COLOUR further state *''..For the colour we can guarantee a long durability of more than 12 years if the material will be handled in a proper way..'* clarifying that they would expect no deviations in colour and no deviations in 'mattness'.

4.1.2 Info from ZAHNER and JOHN DESMOND

Cladding manufacturer ZAHNER have raised the risk to of colour fading in desert environments, due to the constant abrasion of sand hitting the surface from wind.

JOHN DESMOND manufacturers recommend a thick coating of minimum 3 µm for application in such environments.

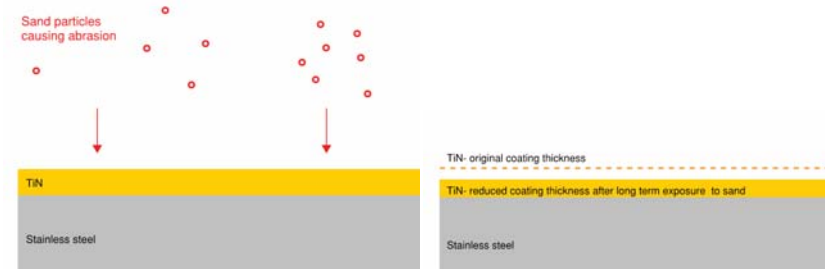


Figure 4-1 Diagram illustration the effect of colour fading of TiN PVD coated sheets before (left) and after (right) when exposed in desert environments.

4.1.3 Info from LAD

LAD manufacturers provide state that decorative and protective coatings retain their quality for over 50 years and refer to a test № ROSS UA.AYU31.NO7149 which was not available to BHFE at the time of this design note.

Figure 4-2 Declaration by LAD manufacturers, Ukraine stating that PVD TiN quality remains intact for 50 year.

4.1.4 Info from BHMA

The Builders Hardware Manufacturers Association (BHMA) is the trade association for North American manufacturers of commercial builders' hardware. BHMA is involved in standards, code and life safety regulations and other activities that specifically impact builders' hardware.

Required Performance of PVD Coatings according to BHMA Test (Ref ANSI/BHMA A156.18-1993 Test Procedures)			
Procedure	**Required for inorganic coatings**	**Required and achieved with TiN Test**	
Salt Spray	96 Hrs	1000 Hrs	ASTM B 117-90
Humidity resistance	240 Hrs	1000 Hrs	ASTM D 3359-78
Scratch Resistance (Pencil Hardness test)	4H	6H	BHMA A156.18
Perspiration	4 Cycles	4 Cycles	BHMA A156.18
UV Resistance (proposed accelerated test)	144 Hrs	500 Hrs	ASTM G 53-91
Taber Abrasion (proposed)	500 Cycles	1000 Cycles	ASM D 4060
MEK Rubs		100	ASTM D 4752
Color		CIE	lab

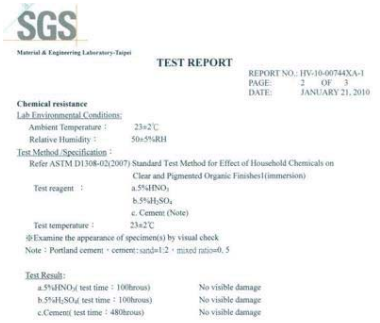
Figure 4-3 Coating performance specifications as required by the Builders Hardware Manufacturers Association, Inc. in ANSI/BHMA A 156.5-1992, intended for organic coatings, compared to required and achieved performance of vacuum deposited coatings.

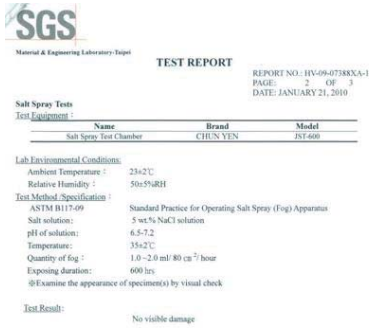
The salt spray, chemical resistance and UV resistance tests showed no visible damage, however the exposure times are lower that what is recommended (see chapter 5; UV resistance test is equivalent to Outdoor Weather exposure test).

4.1.5 Info from HWA Yang Stainless Steel Ind Corp

HWA Yang Stainless Steel Ind Corp have conducted a salt spray and a chemical resistance test to PVD TiN coating to ASTM B117-09 and ASTM D1308-2, respectively. The results showed no visible damage, however the exposure time are lower that what is recommended (see chapter 5)

Procedure	Reference standard	Result
Salt Spray	ASTM B117-09	No visible damage
Chemical resistance	ASTM D1308-2	No visible damage


SGS
Material & Engineering Laboratory-Taipei
TEST REPORT
REPORT NO.: HV-10-00744XA-1
PAGE: 2 OF 3
DATE: JANUARY 21, 2010
Chemical resistance
Lab Environmental Conditions:
Ambient Temperature : 23±2℃
Relative Humidity : 50±5%RH
Test Method /Specification :
Refer ASTM D1308-02(2007) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes1(immersion)
Test reagent : a.5%HNO_3
b.5%H_2SO_4
c. Cement (Note)
Test temperature : 23±2℃
※Examine the appearance of specimen(s) by visual check
Note : Portland cement : cement : sand=1:2 : mixed ratio=0. 5
Test Result :
a.5%HNO_3(test time : 100hrous) No visible damage
b.5%H_2SO_4(test time : 100hrous) No visible damage
c.Cement(test time : 480hrous) No visible damage


SGS
Material & Engineering Laboratory-Taipei
TEST REPORT
REPORT NO.: HV-09-07388XA-1
PAGE: 2 OF 3
DATE: JANUARY 21, 2010
Salt Spray Tests
Test Equipment :
Name Brand Model
Salt Spray Test Chamber CHUN YEN JST-600
Lab Environmental Conditions:
Ambient Temperature : 23±2℃
Relative Humidity : 50±5%RH
Test Method /Specification :
ASTM B117-09 Standard Practice for Operating Salt Spray (Fog) Apparatus
Salt solution : 5 wt.% NaCl solution
pH of solution : 6.5-7.2
Temperature : 35±2℃
Quantity of fog : 1.0 ~2.0 ml/ 80 cm^2/ hour
Exposing duration : 600 hrs
※Examine the appearance of specimen(s) by visual check
Test Result :
No visible damage

5 Recommended performance requirements

- AMS 2444: Coating, Titanium Nitride, Physical Vapor Deposition

This standard covers the requirements for the application and properties of a titanium nitride coating on metal parts applied by physical vapor deposition (PVD). This standard is developed by the Society of Automobile Engineers for PVD TiN coated parts for automotives, but usage is not limited to such applications and gives guidance on the minimum required thickness, quality control of product during manufacturing and acceptance, preproduction and periodic tests.

AMS 2444 standard does not provide guidance on the long-term performance for PVD TiN coating such as colour stability, humidity and abrasion resistance. In absence of such information, it is recommended that alternative standards related to cladding elements are referred to.

BHFE recommends reference to the AAMA 2605-11 standard for PVDF coatings.

- AAMA 2605-11: Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels

This standard defines long-term performance requirements for superior organic coatings on aluminum extrusions and panels. The relevant aspects are: Outdoor Weather exposure time, Gloss retention (after weathering), Erosion resistance (after resistance), colour quality after impact resistance, Humidity resistance, and abrasion resistance using the Falling Sand Abrasive Test.

A summary of the recommended requirements based on the aforementioned standards are listed in the table below:

Procedure	Reference standard	BHFE recommended requirements
Minimum thickness	AMS 2444	In absence of any other relevant standards or guidance, a minimum thickness of 1.27µm (Class 1) is recommended
Adhesion	AMS 2444	There shall be no visible evidence of coating separation from the basis metal when the following test is performed: Tape, one inch (25 mm) wide or wider, having adhesive strength of not less than 60 ounces per inch (0.66 N/mm) of width, shall be firmly applied to the coated area. It shall then be pulled manually from the coated area, at approximately 90 degrees to the coated surface, in one sharp movement. Visual inspection shall show no damage to the coated surface and no coating particles adhering to the tape.
Quality	AMS 2444	Minimum Class 1 recommended
Salt Spray*	AAMA 2605-11	4000 hr < 8 blisters, > 7 scribe
Outdoor Weather exposure time	AAMA 2605-11	10 years, South Florida
Gloss retention (after weathering)	AAMA 2605-11	10 years >= 50% retention
Erosion resistance (after resistance)	AAMA 2605-11	10 years <= 10% loss
Chemical resistance	AAMA 2605-11	No loss of adhesion, blistering or visually apparent change after exposure to muriatic acid, mortar, detergent, window cleaner and nitric acid
Impact resistance	AAMA 2605-11	No indent at initial test
Humidity resistance **	AAMA 2605-11	4000 hr at 100^0F& 100% humidity. No visually apparent change and 'few' blisters <size 8 as per ASTM 968
Abrasion resistance (Falling Sand Abrasive Test)	AAMA 2605-11 (to ASTM D 968)	Abrasion Coefficient > 40

**BHMA tested for 1000hrs – see chapter 4.1.4; HWA tested for 600hrs- see chapter 4.1.5*

*** BHMA tested for 1000hrs – see chapter 4.1.4; HWA tested for 100-480hsr depending on corrosion agent- see chapter 4.1.5*

6 Precedents

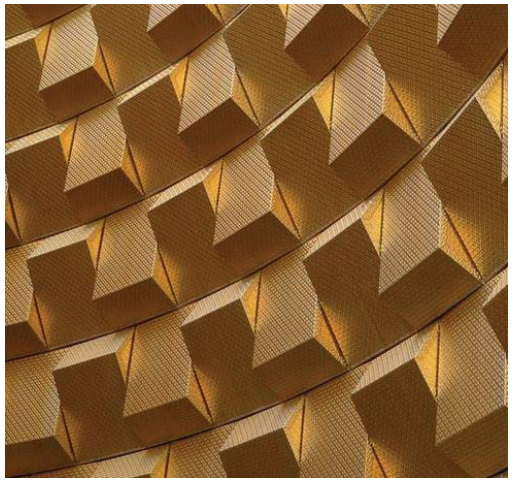
6.1 Cladding

6.1.1 Eaves of Luzhniki Olympic Stadion roof, Moscow, 1996

-PVD TiN supplier : TBC

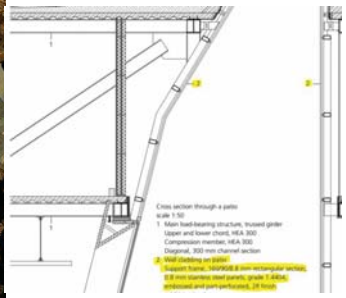
6.1.2 Vulcania, Hans Hollein, Vienna, 2002

- PVD TiN supplier : GHF inox
- Pattern-rolled and PVD TiN colored stainless steel cladding.



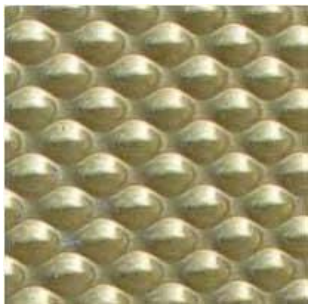
6.1.3 Chapel in the Edificio Forum, Herzog & de Meuron, Barcelona, 2004

- PVD TiN supplier : INOX-COLOR GmbH & Co.KG
- Coastal location
- Individually embossed and PVD TiN colored stainless steel cladding.



6.1.4 Grosser Burstah 44, Kleffel Papay Warncke Architekten, Hamburg, 2006

- PVD TiN supplier : Design factory GmbH
- Pattern-rolled and PVD TiN colored stainless steel cladding.



6.2 Roofing

6.2.1 Domes of the Cathedral of Christ the Saviour, Moscow, 2000

-PVD TiN supplier : Song Ltd

6.2.2 Dome of the Cathedral of the Epiphany, Nilov monastery, Ostashkov, 2007

-PVD TiN supplier : TBC

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7 Literature

- 'Comparison of the structure, properties and wear resistance of the TiN PVD coatings', M. Polok-Rubiniec*, L.A. Dobrzański, K. Lukaszkowicz, M. Adamiak, 2008
- 'Decorative Finishing Using PVD', Products Finishing, Brent Lee , Ph.D. from Vacuum Plating Technology Corporation, 1995
- AMS 2444 Coating, Titanium Nitride Physical Vapor Deposition
- ASTM B 117-90 Standard method of salt spray (fog) testing (corrosion test)
- ASTM D 3359-78 Standard Test Methods for Measuring Adhesion by Tape Test
- BHMA A156.18 American National Standard for Materials and Finishes
- ASTM G 53-91 Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Non-metallic Materials
- ASTM D 4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
- ASTM D 4752 Standard Practice for Measuring MEK (Methyl Ethyl Ketone) Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub
- ASTM D 3363 Standard Test Method for Film Hardness by Pencil Test

Materials: PVD Stainless steel

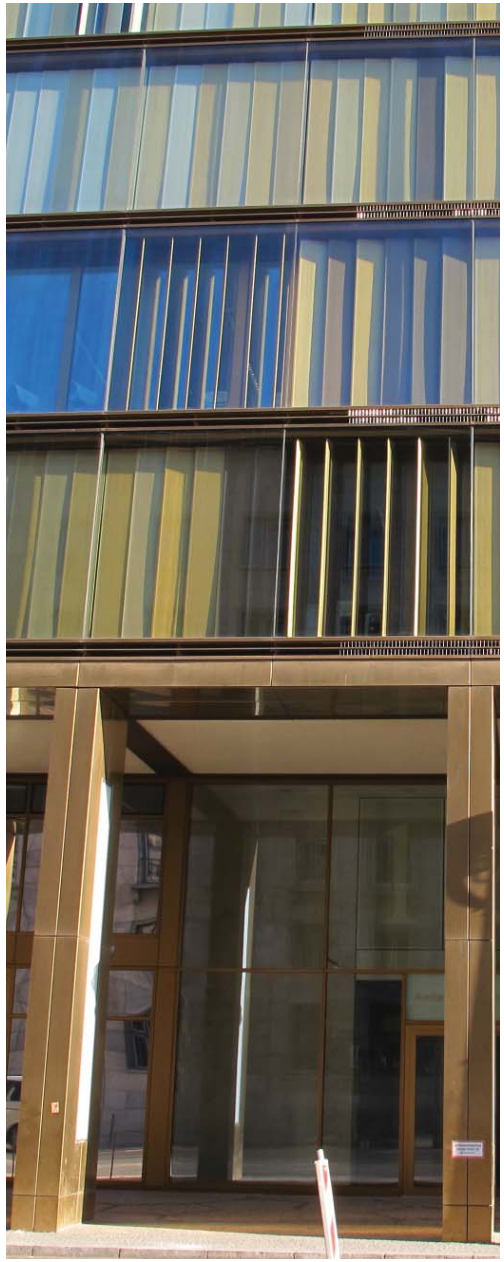
Berlin visit

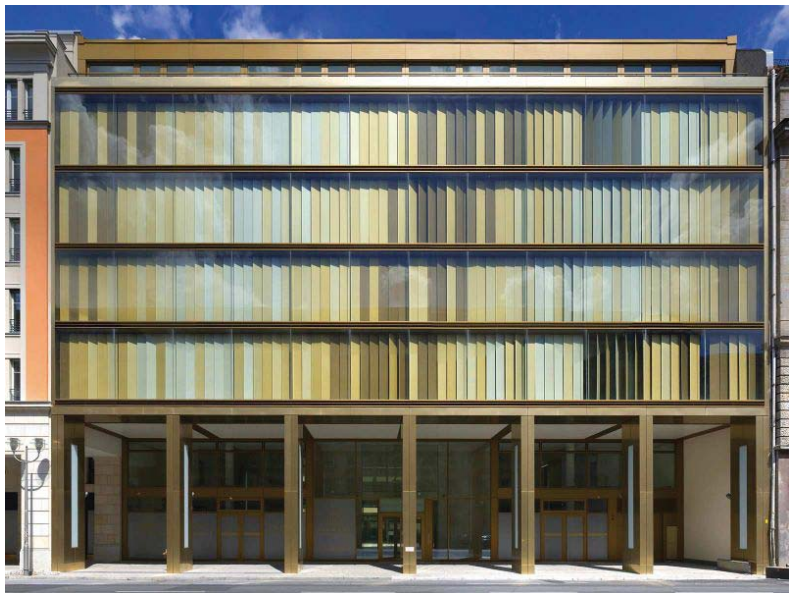
Orms visited 126 Leipziger Strasse, Berlin, with the St Giles facade contractor, to inspect the PVD coated stainless steel.

The building is a commercial project by Gruentuch Ernst Architekten and was completed in 2008.

The building has weathered well, despite having had two major construction sites in neighbouring properties since completion. The dust and debris created by these sites have cleaned off well and the material has retained it's quality.

The stainless steel at 126 Leipziger Strasse has a uni -directional grain, at St Giles we are proposing a vertical grain that has more interest and is less matt.



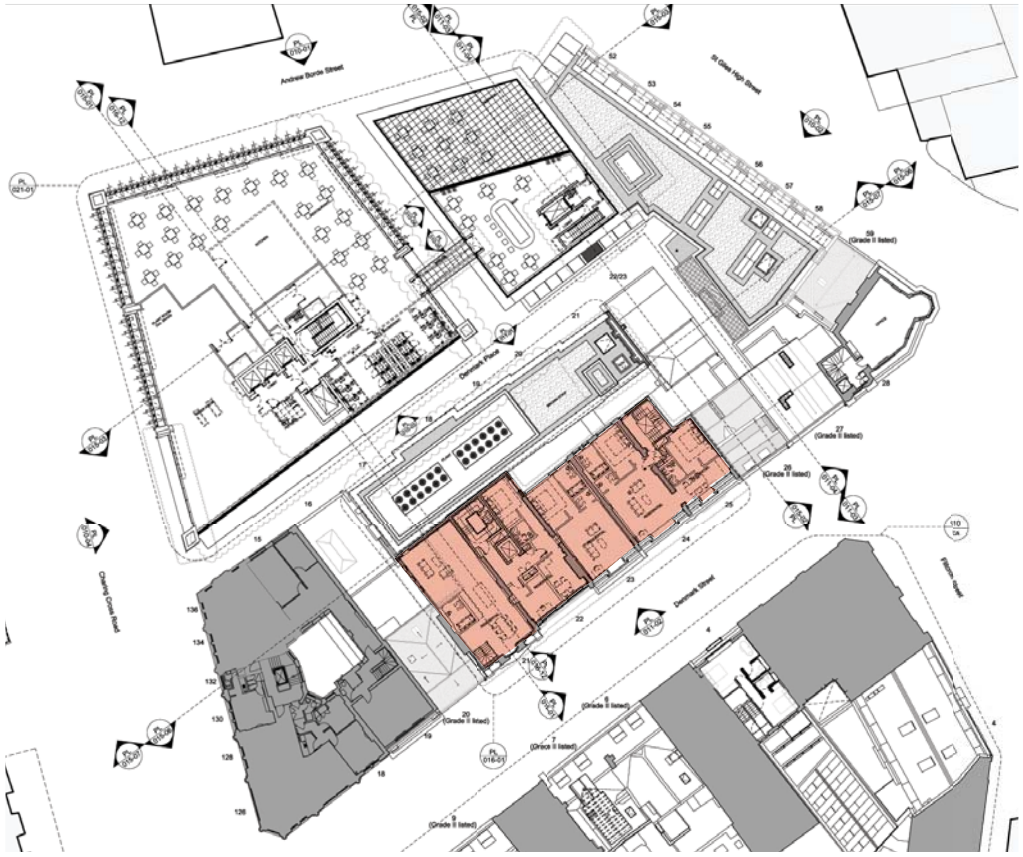


Zone 2 Residential

Lifetime Homes Compliance

As part of the MMA application we have reviewed the residential units and propose improvements to their internal layout, maximising living spaces, providing additional WC and bathroom facilities, and reducing unnecessary corridors where possible.

The revised layouts have been designed with consideration to Lifetime Homes requirements and we have aimed to ensure their compliance meets the criteria outlined for the consented scheme. The following pages present this compliance



Lifetime Homes Compliance

Nos. 21 - 25 Denmark Street

CRITERION 1

Parking (width or widening capability)

No additional parking is proposed within the proposed development as the scheme is car free in line with Camden's policy guidance

CRITERION 2

Approach to dwelling from parking (distance, gradients and widths)

No additional parking is proposed within the proposed development as the scheme is car free in line with Camden's policy guidance

CRITERION 3

Approach to all entrances

The approach to the communal entrances is from the public highway and is determined by the existing levels.

CRITERION 4

Entrances

Communal Entrances/Communal Doors

The properties have new entrances, once of which is within the covered arcade. A canopy will be provided to the rear of no.25, above the entrance door.

The thresholds into the cores to No. 22 & 25 will be re-graded to provide a less than 1:20 gradient to each core with level landings. The doors to each core will be retained and modified to suit the new levels –

Entry controls will be provided and the entrances will be well lit All internal communal doors have been designed to comply with LTH's requirements in terms of clear opening and nib size.

Internal Entrances

All units are accessed from communal lobbies. The entrance doors to each unit have been designed to comply with LTH's requirements in terms of clear opening and nib sizes.

CRITERION 5

Communal Stairs and Lifts

Communal Stairs

The new stair to No. 22 has been designed to comply with LTH's requirements

The stair to No. 25 is an existing stair – this stair has limited compliance with LTH's requirements.

It would be impracticable to fully achieve compliance as this would require full reconstruction of the existing stair/lift core

Communal Lifts

The new lift to No. 22 has been designed to comply with LTH's requirements.

The lift to No. 25 is an existing lift – this lift has limited compliance with LTH's requirements and does not provide access to all floors, however, it would be impracticable to fully achieve compliance as this would require full reconstruction of the stair/lift core

CRITERION 6

Internal doorways and hallways

All internal hallways and doors have been designed to comply with LTH's requirements

CRITERION 7

Circulation Space

WC Compartments and Bathrooms

WCs and bathrooms have been designed to comply as Criteria 10 & 14

Hallways and Landings within dwellings

Circulation widths and sizes have been designed to comply as Criterion 6

Living/Dining Areas

All living/dining areas have been designed to allow for furniture layouts which can achieve the required 1500mm diameter turning circle.

Kitchens

Kitchens have been designed to have a minimum clear width of 1200mm between units and any fixed obstruction opposite.

Bedrooms

All main bedrooms have been designed to allow for 750mm clear space around beds; secondary bedrooms allow for a minimum of 750mm to one side of the bed.

Lifetime Homes Compliance

Nos. 21 - 25 Denmark Street

CRITERION 8

Entrance level living space

All units, with the exception, of Unit 3 are single storey and therefore comply with LTH's requirements. Unit 3 is a two storey unit however is accessible via the communal lift from each level. The Fourth Floor entrance is defined as the entry level and therefore this unit complies with LTH's requirements.

CRITERION 9

Potential for entrance level bed-space

All units, with the exception of Unit 3, are single storey and therefore comply with LTH's requirements

Unit 3 does not have a permanent bedroom at entrance level (Third Floor), however the living

space is of adequate size to allow for a temporary screened bed space if required

CRITERION 10

Entrance level WC and shower drainage

All units, with the exception of Unit 3, have an accessible bathroom at entrance level in accordance with Criterion 14.

CRITERION 11

WC and bathroom walls

All units will be designed to have WC & bathroom walls capable of firm fixing and support for

adaptations

CRITERION 12

Stairs and potential through-floor lift in dwellings

All units are single storey with the exception of Unit 3. A number of units have a small change

in level due to the differing existing levels between Nos. 21, 22 and 23 Denmark Street. In each case, the units have potential for stair lift installation.

Unit 3 is a two storey dwelling. The stair to this unit has the potential for stair lift installation. A zone has been identified adjacent to the unit entrances to allow for potential future through-floor lift installation.

CRITERION 13

Potential for future fitting of hoists and bedroom/bathroom relationship

Structural upgrades will be designed to be capable of supporting single point hoists above all main

beds, baths and WCs.

In all dwellings, an accessible bathroom has been located close to a main bedroom. Where the bathroom/bedroom access would require passing through a habitable area, the bathrooms have been positioned adjacent to the bedroom allowing for a connecting full height 'knock-out panel'

CRITERION 14

Bathrooms

All units have an accessible bathroom and therefore comply with LTH's requirements

CRITERION 15

Glazing and window handle heights

All new-build elements have been designed to allow for glazing which starts no higher than

800mm above floor level. The majority of the elevations, however, are existing retained façades.

Typically the units here achieve the LTH's requirements, however in some instances do not. As

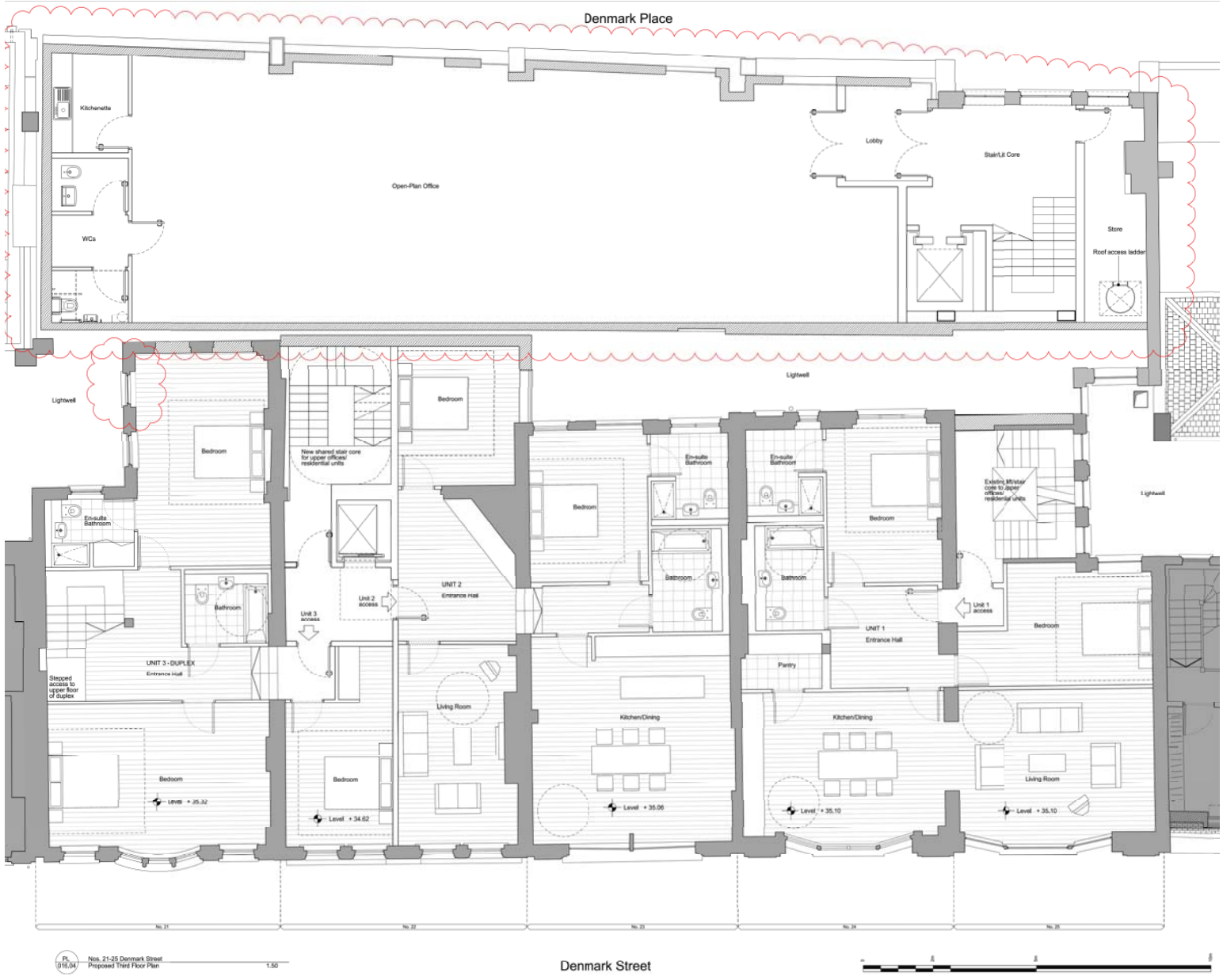
the buildings are within a Conservation Area it is not felt appropriate to alter the window openings to achieve compliance.

CRITERION 16

Location of service controls

All units will be designed to have regularly used service controls in LTH compliant locations

Consented
Third Floor



Proposed
Third Floor