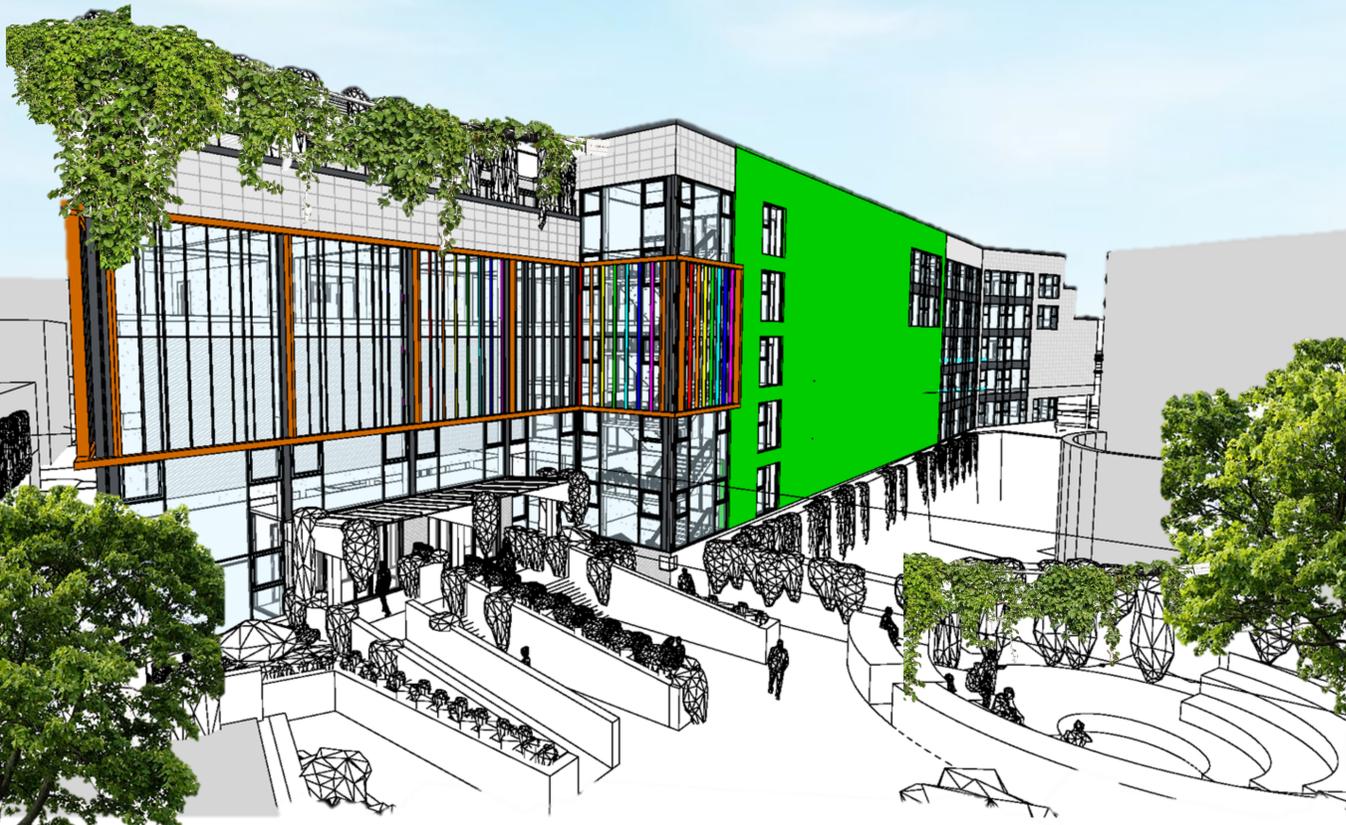
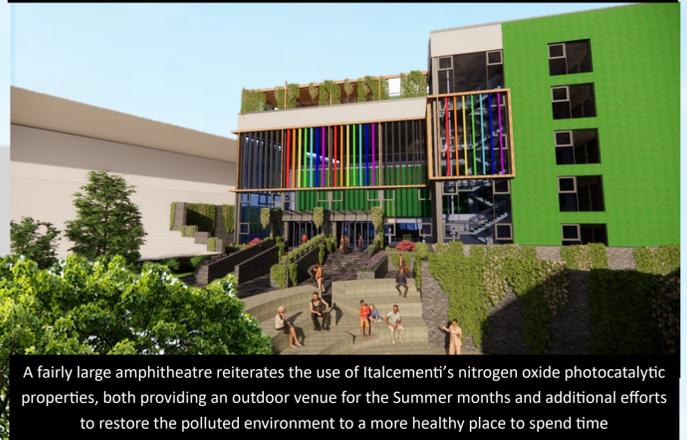


CARDIFF BAY ARTS CENTRE

An artistic education centre with theatrical entertainment and hospitality in the heart of Wales



Main entrance to the Arts centre can be obtained via the footpath within close proximity of The Senedd and a stones throw away from the waters of Cardiff Bay. The understory carpark is located off Britannia Quay to the North of the building via access to the first floor



A fairly large amphitheatre reiterates the use of Italcementi's nitrogen oxide photocatalytic properties, both providing an outdoor venue for the Summer months and additional efforts to restore the polluted environment to a more healthy place to spend time

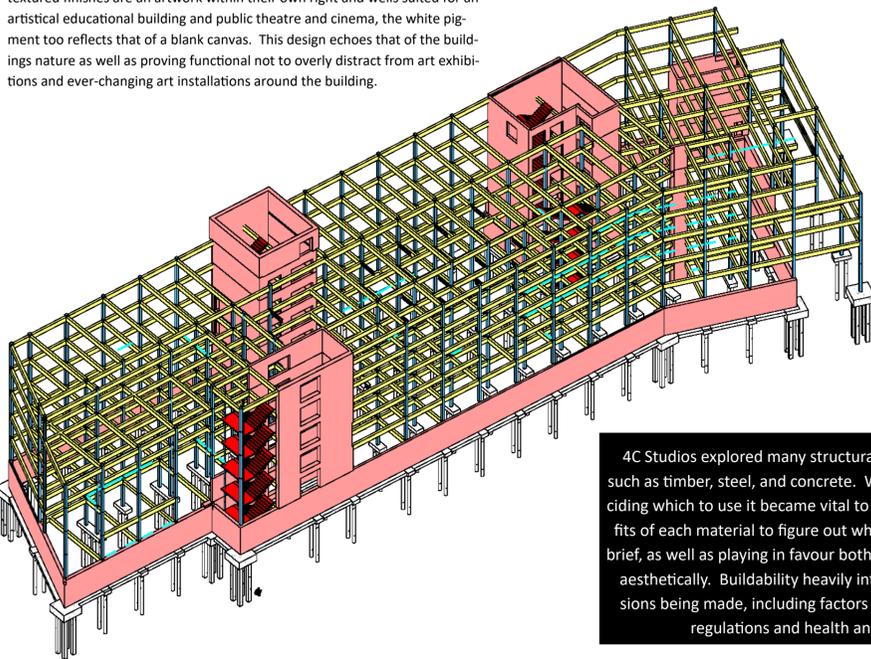


The secondary entrance is to the East end of the building adjacent to the entrance to the understory carpark. Italcementi cladding panels proudly cover the entire each surface of external walls in response to the on-looking smoggy industrial sector of Cardiff Bay

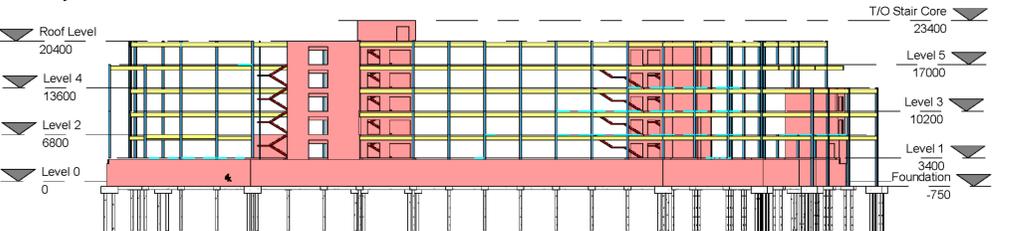
Research into its history revealed a great amount of information about the South Wales coal mining industry, a renowned fossil fuel empire that enables the growth of Cardiff Bay, Cardiff City Centre, and indeed the Welsh Valleys brimming with brave and hardworking coal miners and their families. Gaining additional knowledge on the history of our great Nation left a touching impression on 4C Studios, this gratefully inspired material and product selection for much of the Arts Centres physical elements and finishes.

The basis behind the idea the interior finishes is to pay homage to our Welsh culture and particularly that of the coal mining history, Welsh workmanship, and Welsh products. In addition to this, the Arts Centre holds an ethos also incorporating social challenges that continue to exist amongst Welsh society and the good people of the Welsh capital. Issues that we are all too familiar with such as systematic racism, anti-Semitism, poverty, and transphobia to name but a few. Cardiff City is a beacon of culture for the whole of the UK and not just Wales, with over 90 different languages hailing from across the World. 4C Studios adheres to the firm's ethos of inclusivity, diversity, and friendliness which too influenced the interior of finishes as well as the exterior.

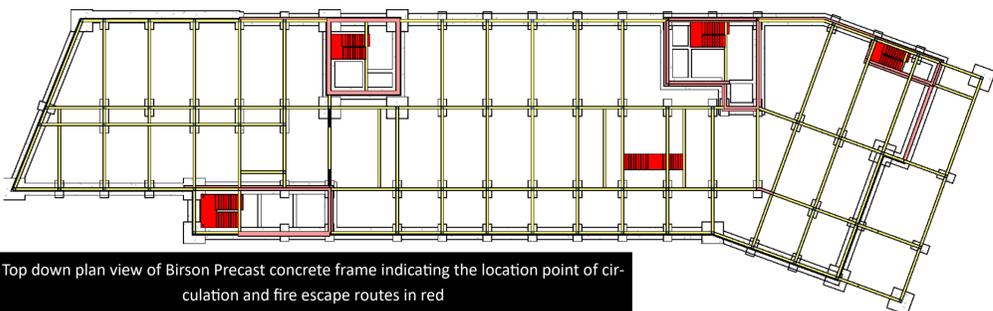
With a solid aesthetical influence from a variety of factors, the Arts centres appearance soon developed. The idea of openness and honesty within society reflects in the exposed structural concrete frame, precast concrete finish face wall panels, and polished concrete floors. Pigmentation of the concrete has been specified as 'Polar White' ensuring a bright environment with plenty of light reflecting off each surface, in addition to the dye two textured face finishes of the precast walls called 'Red River' for the 300mm concrete walls, and 'Brabant' for the 150mm. Red River is the cheaper of the two and relatively smooth as the finish face of the 300mm resides hidden in the car park and the protected fire escape stairwells. The Brabant textured finish is the more costly due to its more complex 3D geometry resembling the dry-stone wall structures found across Welsh farmland. These textured finishes are an artwork within their own right and wells suited for an artistic educational building and public theatre and cinema, the white pigment too reflects that of a blank canvas. This design echoes that of the buildings nature as well as proving functional not to overly distract from art exhibitions and ever-changing art installations around the building.



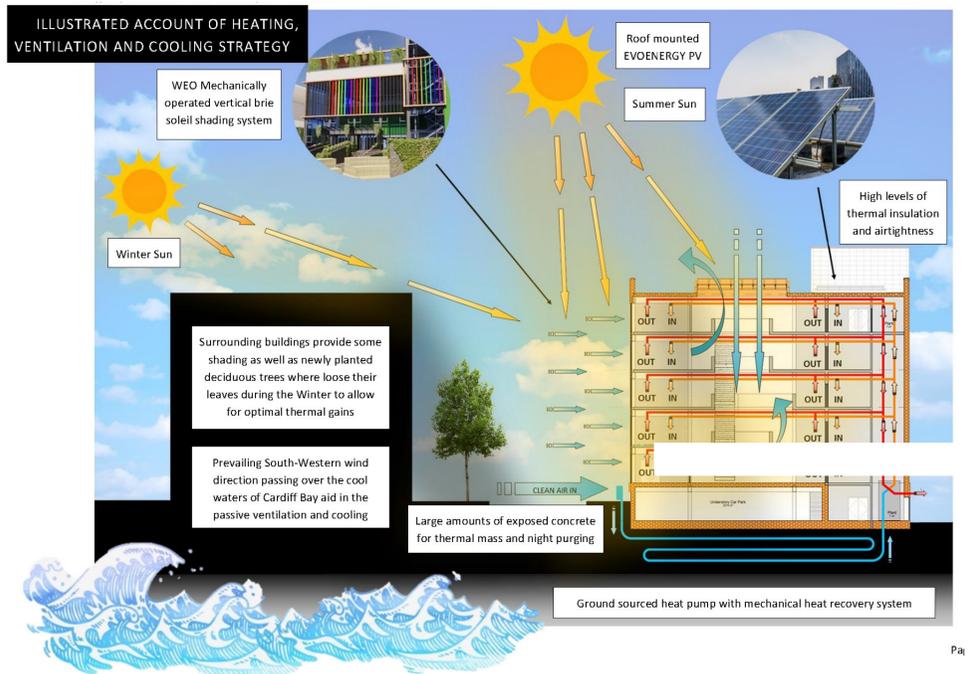
4C Studios explored many structural framing options such as timber, steel, and concrete. When it came to deciding which to use it became vital to weigh up the benefits of each material to figure out which best suited the brief, as well as playing in favour both environmentally as aesthetically. Buildability heavily influenced the decisions being made, including factors surrounding CDM regulations and health and safety



South elevation of the Bison Precast concrete frame system indicating that the building is less than 18m in height, 300mm thick precast concrete walls provide structural stability as well as evenly spaced vertical fire exits in accordance with Part B of the Welsh Building Regulations



Top down plan view of Bison Precast concrete frame indicating the location point of circulation and fire escape routes in red



ARTS CENTRE SITE PLAN FOR CARDIFF BAY



Welsh Birch sanded and oiled with several coats of Shellec Varnish line the openings of the walls made by the ALUK curtain walling as well as the 300mm thick banisters that guard the circulation atrium, indoor vegetation is planted in the top accordingly for maximum sunlight and optimal growth to replicate the cascading greenery of the external landscaping. A somewhat costly maintenance nightmare deemed worthwhile



Welsh Slate's Penryhn Heather Grey external wall is used to frame the entrance lobby just like it does the main the entrance and external landscaping, this further reflects the ethos revolving inclusivity and a welcoming attitude to everyone

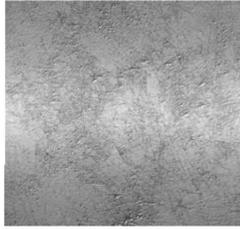


Bison Precast textured face finish 'Brabant' for the majority of the internal 150mm non-load bearing in fill panels with a 'Polar White' pigmentation reflecting classic dry-stone used across the Welsh countryside

Biotecture Living Wall illuminates the main entrance atrium reflecting off both the curtain walling opposite polished Ecoflor screed floor



Charred Welsh Larch from PermaChar is used to clad some parts of the ceiling such as the ground floor bar, adding depth to somewhat narrow longitudinal sections of the Art Centre compared its long length

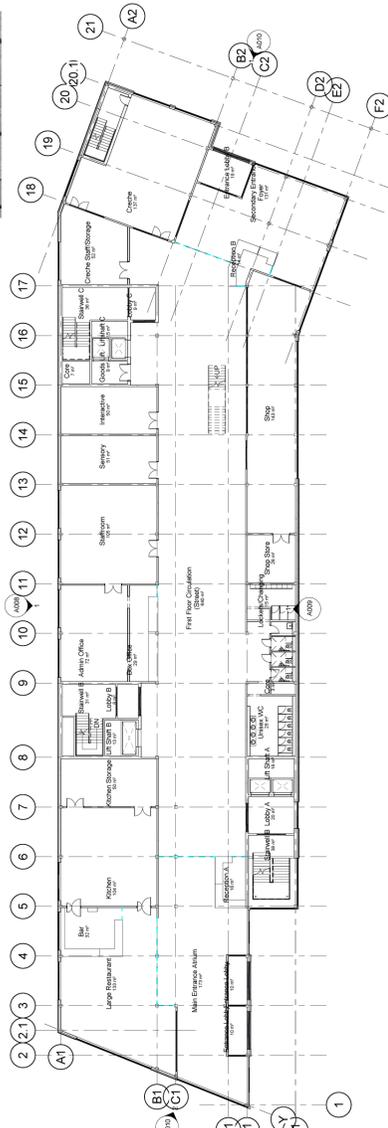


Polished Ecoflor screed with grainy textures add a luxurious taste of quality and artistry both aiding in the thermal mass of passive strategy of the building, and differentiating between the low cost yet smooth screed finish of the intermediate floors

7015 Slate Grey

Appropriate accent colour RAL 7015 Slate Grey used for the aluminium frames of the ALUK Curtain Walling, internal Planet Partitions frameless glazing, internal doors and frames, and skirting boards.

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The major feature to the Arts Centre is the Biotecture™ Living Wall system located on the South facing façade. A large amount of the budget had allocated to manufacturing and construction a gorgeous five story high green wall, a true head turner with the absolute certainty of brightening up an otherwise grey a gloomy area of Cardiff Bay. The green wall has many environmental benefits such as strengthening and encouraging biodiversity within the area, reducing local levels of carbon dioxide within the atmosphere, and hopefully improving the mental well being of those who gaze upon it. A smaller roof top terrace has been included to again accentuate the sustainable aspects of the entire Arts Centre, as well as providing further photo opportunities for visitors aiding free marketing.

100mm EcoTherm Insulation UK Ltd Eco-Cavity Partial Fill Cavity Wall Insulation

Fibre free rigid polyisocyanurate (PIR) insulation core with aluminium foil composite to both sides | Thermal conductivity 0.022W/m2K | Zero Ozone Depletion Potential (OZP) and low Global Warming Potential (GWP) Compressive strength 140 kPa when tested at 10% compression to BS EN 826:2013 | BBA 14/5157 | Fire classification: D-s2,d0 reaction to fire classification to BS EN 13501-1:2007 suitable for buildings with top story <18m

DuPont™ AirGuard A2 FR AVCL Fire Retardant Airtight Vapour Control Layer

Used in combination with Tyvek® Metallised 2060M Tape to seal joints, provides effective airtightness, vapour management and indoor air quality as well as exceptional fire safety benefits | Fire classification: A2-s1, d0 to EN 13501-1:2007+A1:2009

2.6mm RubberBond FleeceBack™ EPDM Single-ply Waterproofing System

Provides final waterproof layer roofing elements, ideal for suitable large-scale flat roofing, terraces and green roofs | Fire Classification: Class B in accordance with BS EN 13501-5:2016 | BBA 19/5669

DuPont™ Tyvek® UV Facade Breather Membrane Layer

Lightweight and flexible external breather membrane for rainscreen cladding and cavity walls. Used in combination with Tyvek® Metallised 2060M Tape to seal joints to be water resistant, vapour-permeable and windtight, long-term performance | Fire classification: Class E in accordance with EN 13501-1:2007 | BBA 90/2548

50mm Clear Residual Cavity with insect mesh

12mm Versa Panel Eco Backing Board

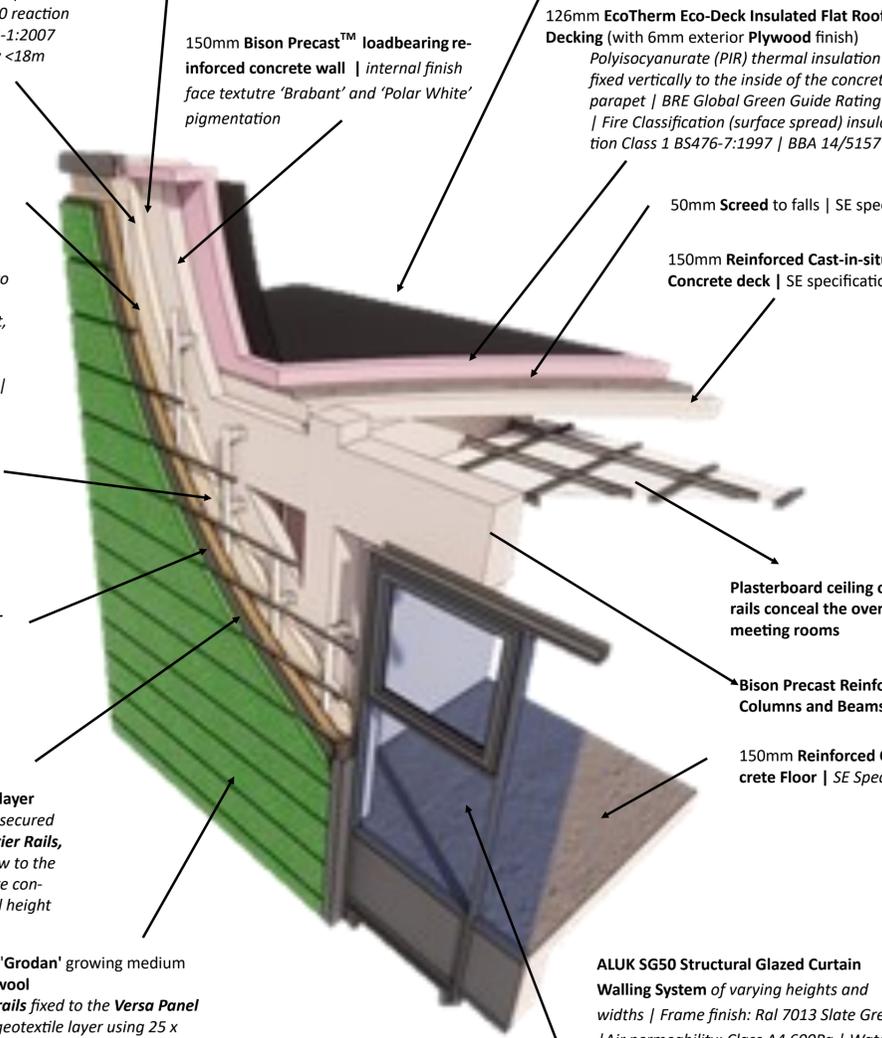
Waterproof cement fibre particle board fixed to NVELOPE NV1 Vertical Cladding System using T-60-40-2.2-3000 Rails, becomes the fixing layer for the Biotecture Living Wall modules | Fire classification: Class O in accordance with BS 467 Part 6.7 | EN 13501-1: B-s1,d0

8mm Nexton 508 Geotextile drainage layer

Rear drainage layer (void former) secured to Versa Panel with BioPanel Carrier Rails, this enables drainage water to flow to the rear of the panels so even moisture content can be maintained at full wall height

-62mm Biotecture™ Biotiles Modules 'Grodan' growing medium

made from Biotecture specified Rockwool supported by Biotecture carrier rails fixed to the Versa Panel Eco Backing Board through the geotextile layer using 25 x 4.2mm stainless steel Accuscrew at a maximum centre of 300mm. DuraDrip Irrigation risers feed the capillary breaks hidden inside the modules, RAL 7016 Slate Grey Flashing cover end risers and framing. Suitable living plants for 'Grodan' and Cardiff Bay environment that grow directly on the growing medium | Fire Classification: B-s3,d2 in accordance with BS EN 12501-1:2007 +A1:2009



126mm EcoTherm Eco-Deck Insulated Flat Roof Decking (with 6mm exterior Plywood finish)

Polyisocyanurate (PIR) thermal insulation fixed vertically to the inside of the concrete parapet | BRE Global Green Guide Rating A | Fire Classification (surface spread) insulation Class 1 BS476-7:1997 | BBA 14/5157

50mm Screed to falls | SE specification

150mm Reinforced Cast-in-situ Concrete deck | SE specification

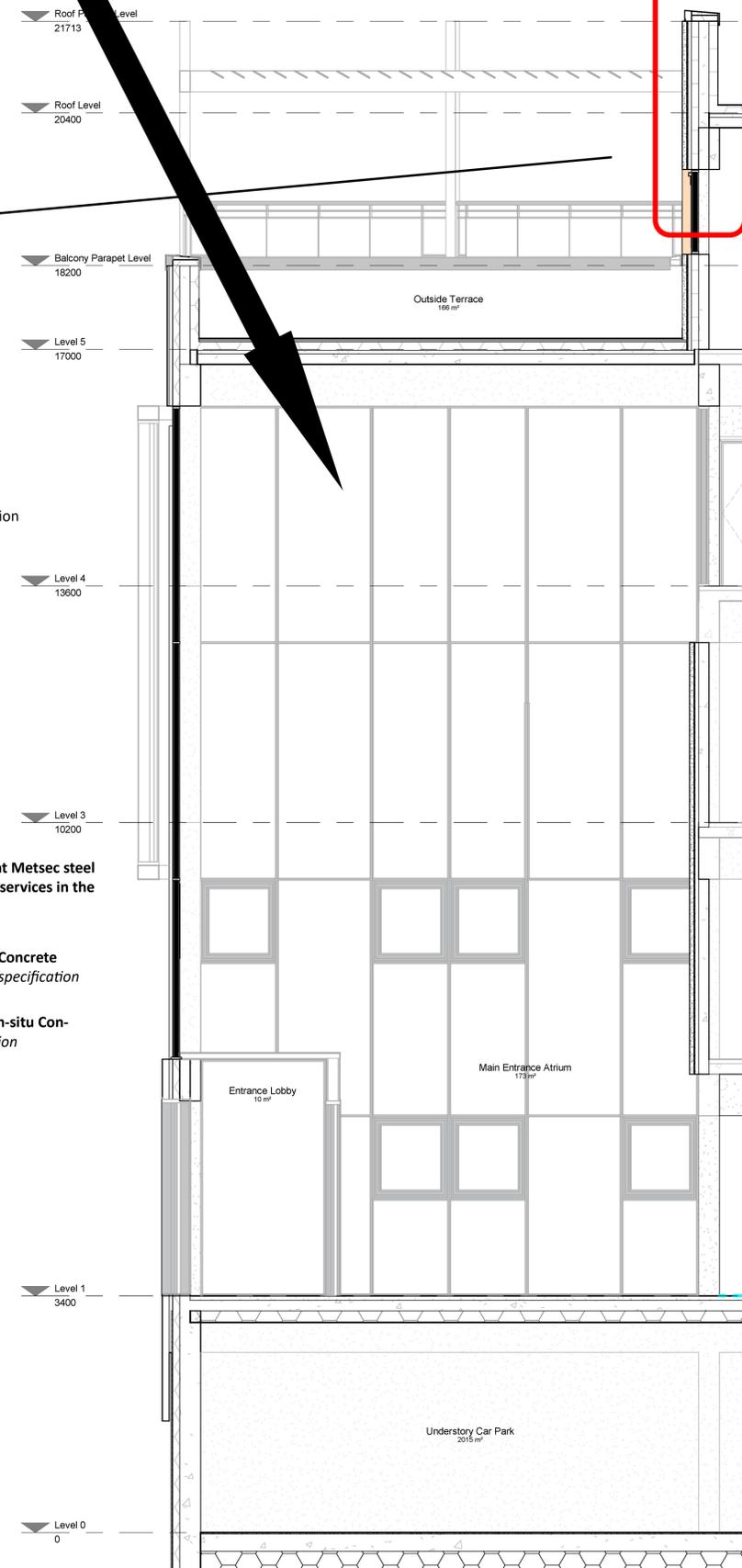
Plasterboard ceiling on light Metsec steel rails conceal the overhead services in the meeting rooms

Bison Precast Reinforced Concrete Columns and Beams | SE specification

150mm Reinforced Cast-in-situ Concrete Floor | SE Specification

ALUK SG50 Structural Glazed Curtain Walling System

of varying heights and widths | Frame finish: Ral 7013 Slate Grey | Air permeability: Class A4 600Pa | Water tightness: REI200 Pa | Wind resistance: 2400Pa | CWCT Certified: Sequence B | Acoustic performance: 44dB | Face drained | Double-glazed: 1.6 W/m²K | Glazing finish: Anti-solar glare and privacy tint | Fitted to manufactures specification



3D detail showcasing the discrete and well devised Biotecture Living Wall, parapet, and flat roof detail

ACHIEVES U-VALUE: 0.17W/m²K