



BESPOKE STAIRCASES & GLASSWORKS

THE HELICAL & SPIRAL COLLECTION · VOLUME 01

Helical & Spiral Stairs

Every tread turning on its own radius, the balustrade bent to follow it. The helical staircase, engineered as one continuous line from the first tread to the last.

DUBAI & GCC

CAWORKS.CO





FOUNDERS — EVGENY CHERNIKOV & ILJA ANDREJEVS



ABOUT CAWORKS

The people behind the precision.

CAworks is an architectural staircase company with dozens of helical and spiral staircase projects completed across the UAE and UK. We run a single, end-to-end service — concept, engineering, fabrication and installation, all handled in-house and signed off with you at every stage.

Built on the most advanced engineering approach on the market, our aim is straightforward: to be the most reliable helical staircase company in the UAE.

UAE · UK

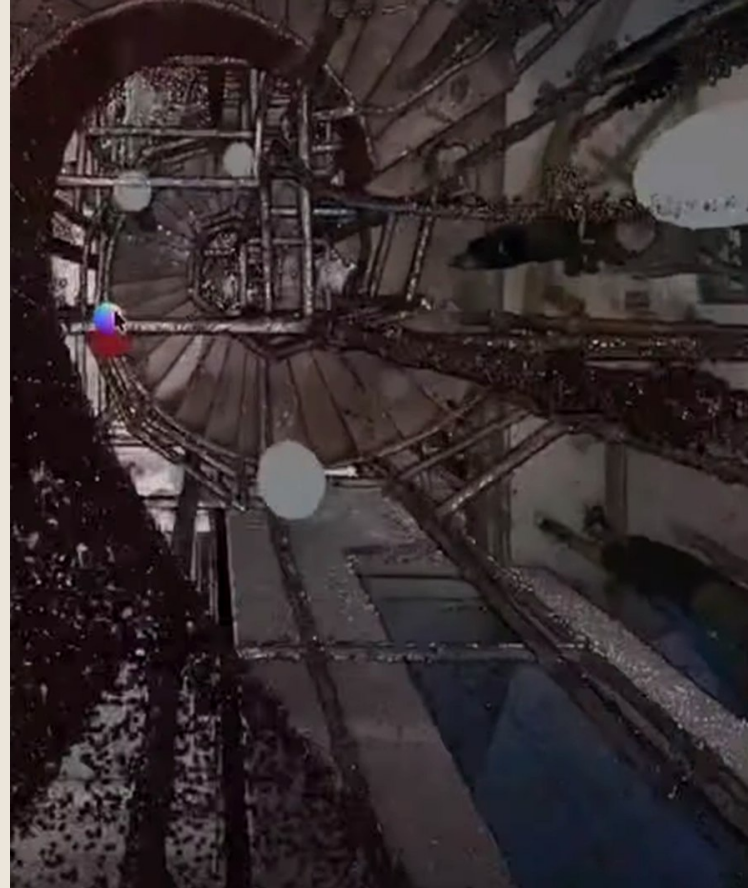
HELICAL & SPIRAL
STAIRCASES DELIVERED

End-to-end

DESIGNED & INSTALLED
IN-HOUSE

DUBAI & GCC

THE HELICAL & SPIRAL COLLECTION



360°

LASER CAPTURE

0.5mm

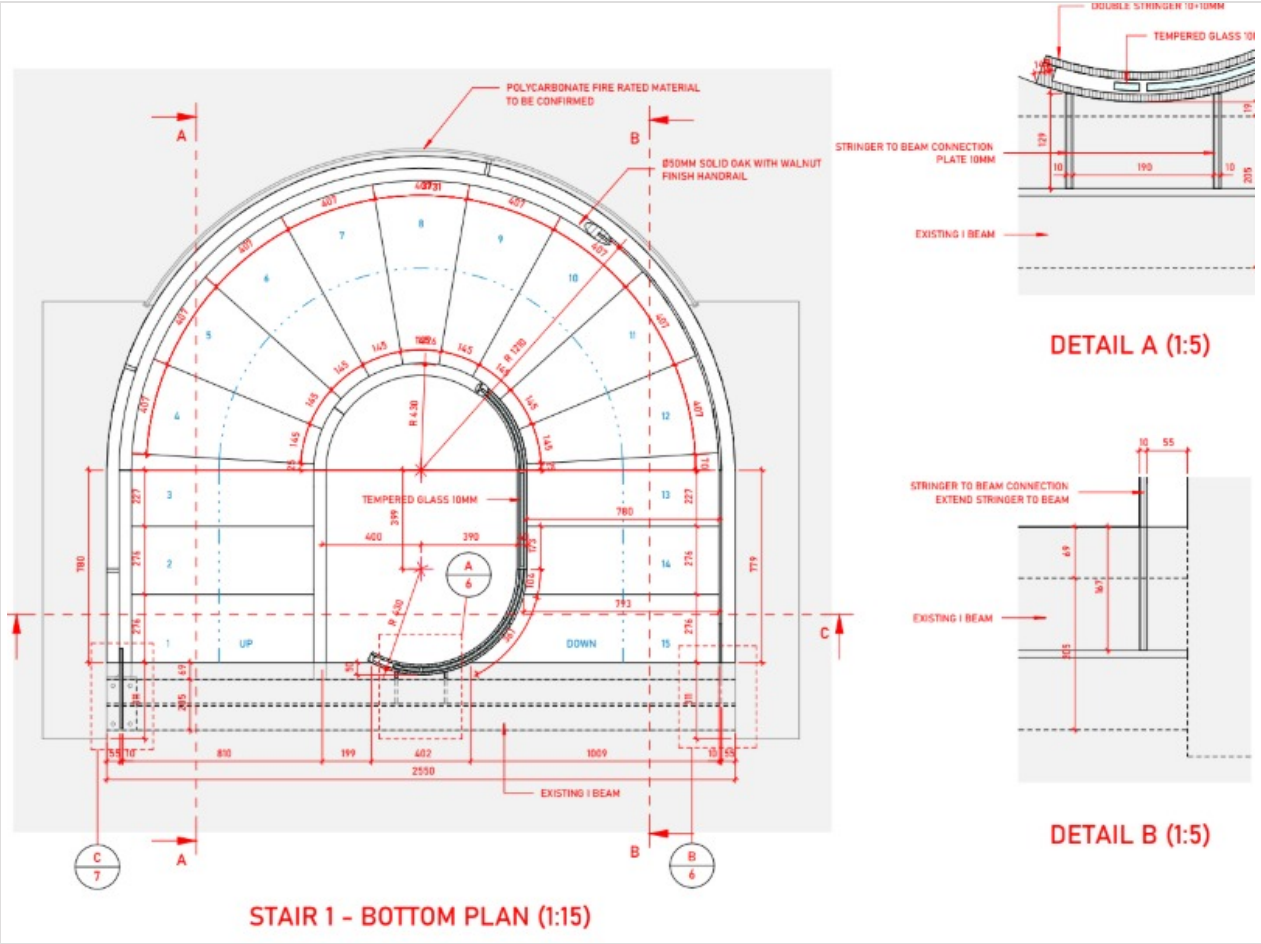
POINT-CLOUD PRECISION

THE CAWORKS METHOD — SURVEY

Every staircase begins as a point cloud.

Most staircase errors are born in the survey, not the workshop — a single wrong measurement becomes a flight that breaks regulation or simply won't fit. So we take it out of human hands: a 360° laser scan records the space as a dense cloud of points, every dimension resolved to within half a millimetre, and archived for good.

MEASURED, NEVER ESTIMATED

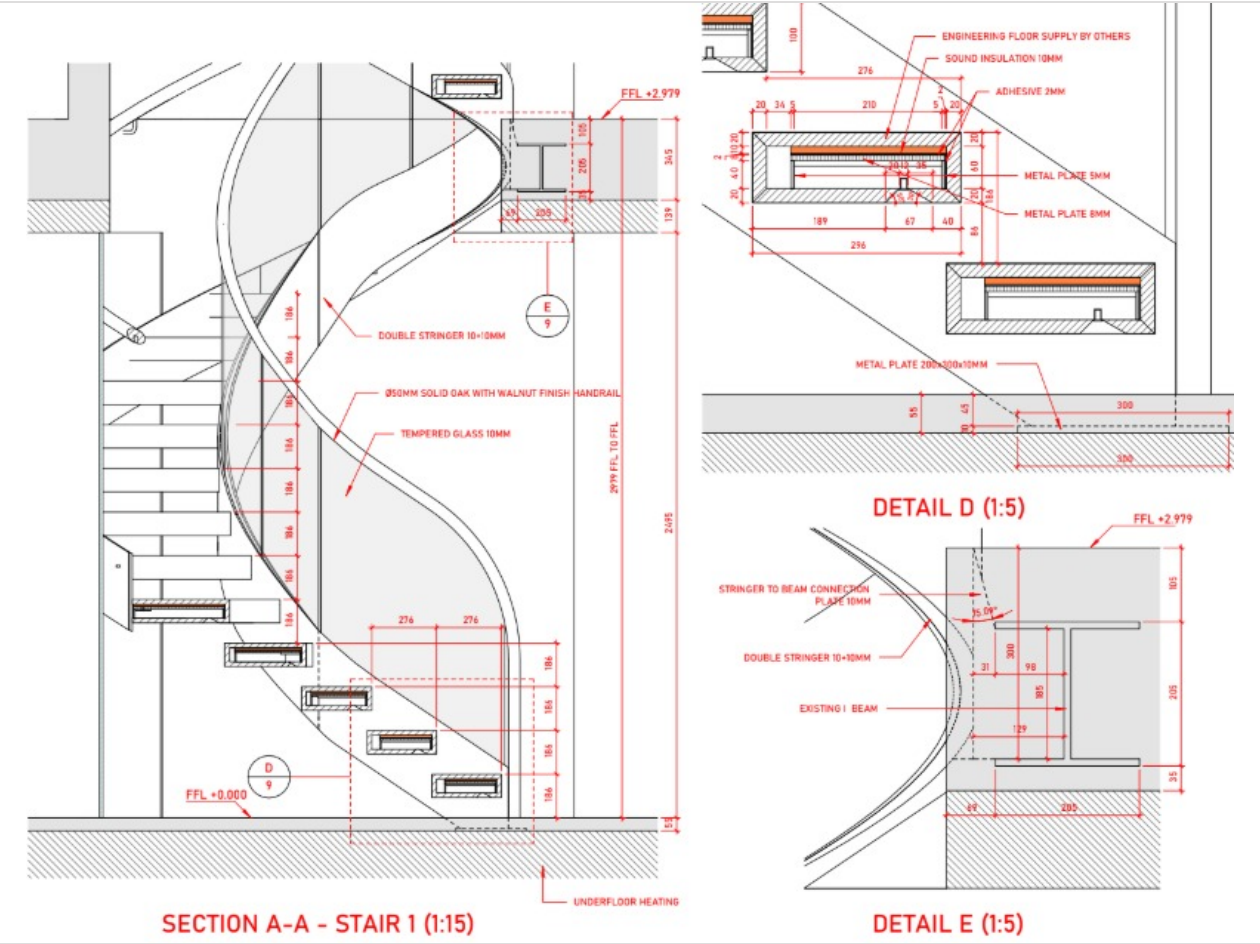


STAIR 1 · BOTTOM PLAN 1:15

THE CAWORKS METHOD — DESIGN & REGULATIONS

Every staircase is engineered to comply.

COMPLIANT BY DESIGN



SECTION A-A · CONNECTION DETAILS 1:5

As specialty staircase contractors, we prepare a bespoke technical design for every project — a full 3D model and detailed drawings developed to the building regulations from the first line. Every dimension is set to comply, and we issue the complete production drawings so any other fabricator can build straight from them.

3D 100%

MODEL & FULL DRAWINGS

TO BUILDING REGULATIONS



Every staircase is proven under load.

Stability is never assumed — it is simulated. Before anything is fabricated, the whole structure is modelled and put under load: every tread, fixing and decorative material accounted for, stress mapped against the steel's yield, and deflection driven as close to zero as the physics allow.

FEA

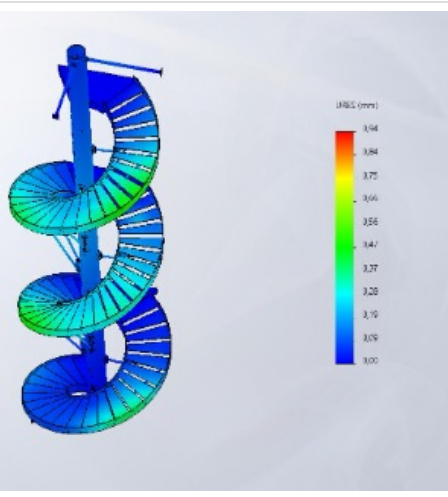
EVERY STRUCTURE,
EVERY LOAD

Minimal

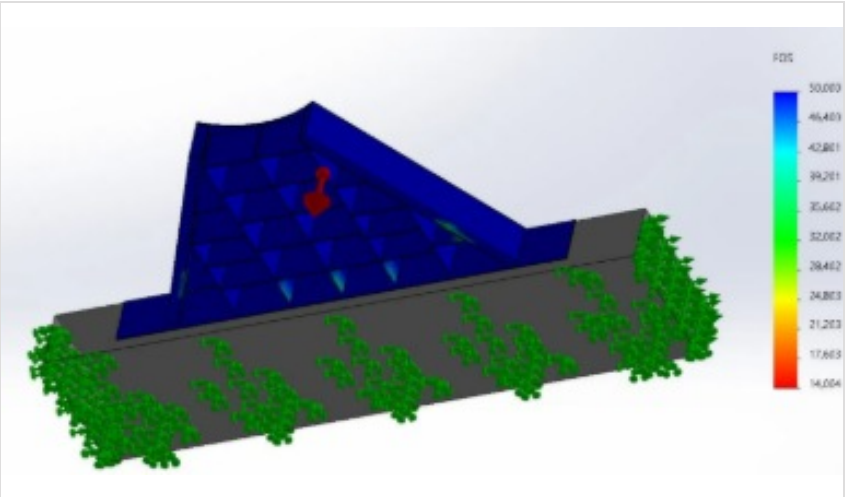
DEFLECTION
BY DESIGN

Study	Load case	σ max (MPa)	δ max (mm)	Min FoS	Status
Static 1	Dead load only, full assembly (3 flights)	43.04	0.94	6.39	PASS ✓
Static 2	Uniform 3000 N/m², full assembly (3 flights)	122.29	1.82	2.25	PASS ✓
Static 3	DL + 3000 N at edge, step v1	67.16	0.64	4.09	PASS ✓
Static 4	DL + 3000 N at edge, step v2	68.74	0.83	4.00	PASS ✓
Static 5	DL + 3000 N at edge, step v3	53.81	0.56	5.11	PASS ✓
Frequency 1	Modal analysis with DL	—	$f_1 = 10.08$ Hz	—	PASS ✓

STUDY RESULTS · SIX LOAD CASES, ALL PASSED



DISPLACEMENT · FULL FLIGHT



FACTOR OF SAFETY · TREAD UNDER 3000 N AT THE EDGE

Every part is cut to the drawing.

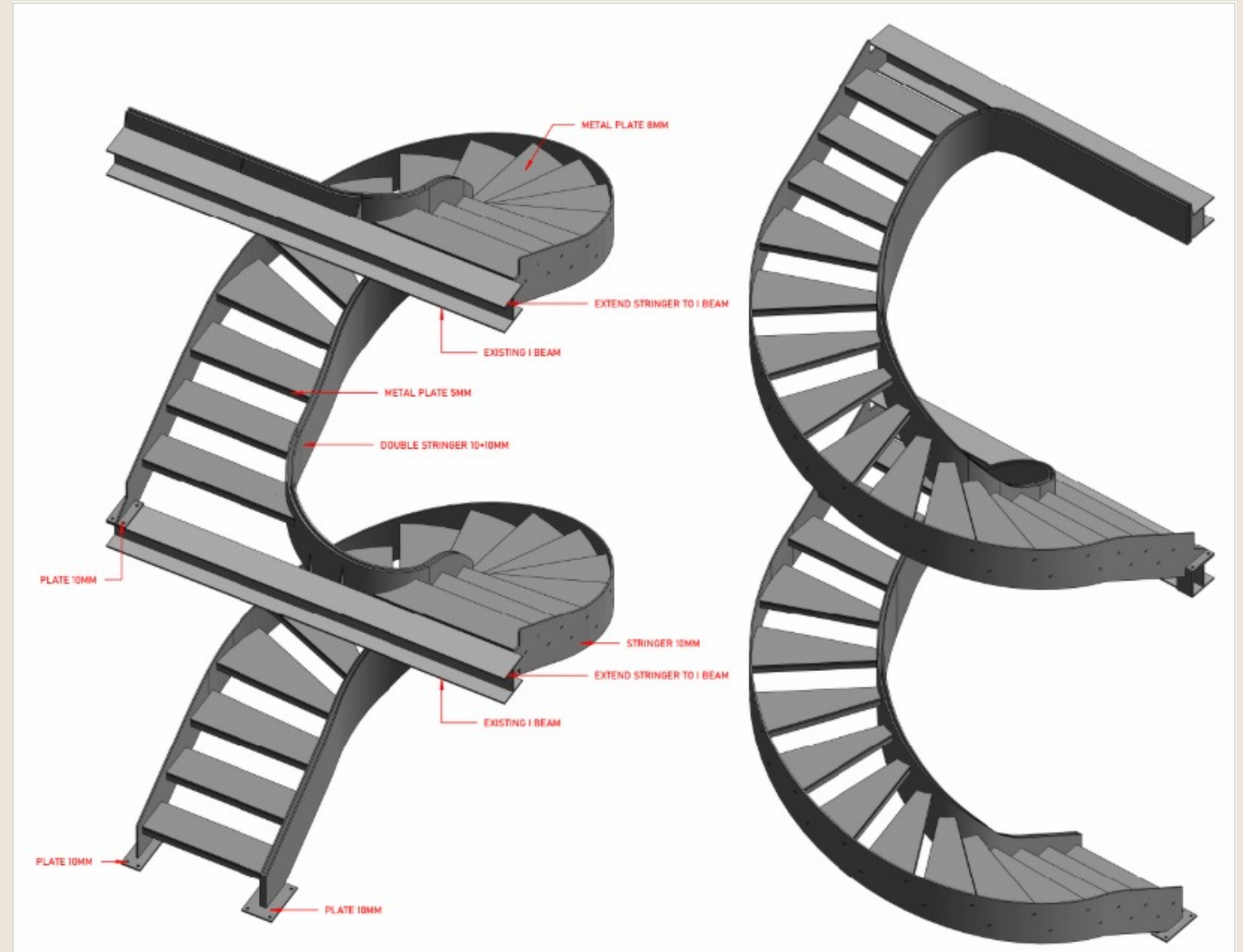
Every structure is engineered as a set of CNC cutting files — each plate, hole and thread machined to the drawing within a fraction of a millimetre. Components reach site ready to assemble: less welding in place, less room for error, and a faster, more reliable installation.

CNC Less

CUT FROM
THE 3D MODEL

WELDING
ON SITE

3D MODEL • STEEL SUB-STRUCTURE. DOUBLE STRINGER 10+10 MM, 10 MM STRINGER PLATES AND 5-8 MM PLATE THROUGHOUT, WITH THE STRINGERS EXTENDED TO PICK UP THE EXISTING I-BEAMS.



STEEL SUB-STRUCTURE • MODELLED IN FULL BEFORE CUTTING

Private Residence

A full-turn helical flight built around an open well — no central column, the whole rise carried on a curved steel stringer. Solid oak treads sit on the steel carcass, and the underside is closed to a continuous plastered soffit, so the stair reads as one solid ribbon turning through the double-height glazing. Curved laminated glass follows the outer radius the full way up.

TYPE
Helical · open well

BALUSTRADE
Curved glass, frameless

FLIGHT
Full turn, single rise

TREADS
Solid oak on steel





Office Development

A blackened steel helix standing free on an open floor plate. Twin curved stringers carry the treads between them, the outer one drawn as a single continuous ribbon from the slab to the floor above, with clear curved glass fixed outside it and no post anywhere along the run. On the level above, the same glass closes the stair void as a frameless drum — so the structure stays legible from every angle of the room.

TYPE

Helical · dual stringer

FLIGHT

Half turn, open riser

BALUSTRADE

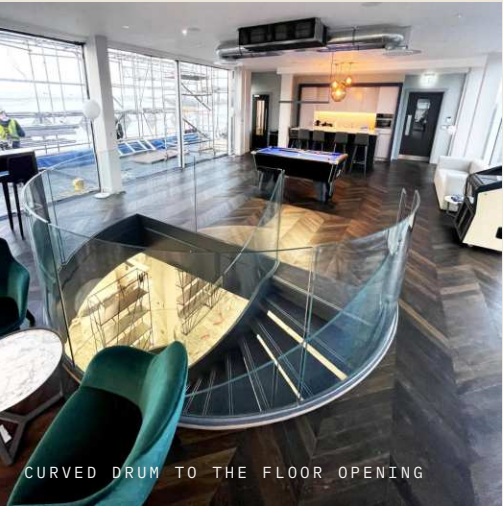
Curved glass, frameless

STRUCTURE

Blackened steel ribbon



THE FLIGHT FROM THE FLOOR PLATE



CURVED DRUM TO THE FLOOR OPENING

Private Residence

A curved flight in white marble, turning through a quarter as it climbs. Grey-tinted glass follows the outer radius from the splayed bottom step to the landing and carries straight on across the gallery above — one unbroken line of glass behind the chandelier. Standoff-fixed, with no post and no handrail: the tint reads almost black against the stone, and transparent from the stair itself.

TYPE

Helical · quarter turn

GLASS

Grey tint, curved & laminated

BALUSTRADE

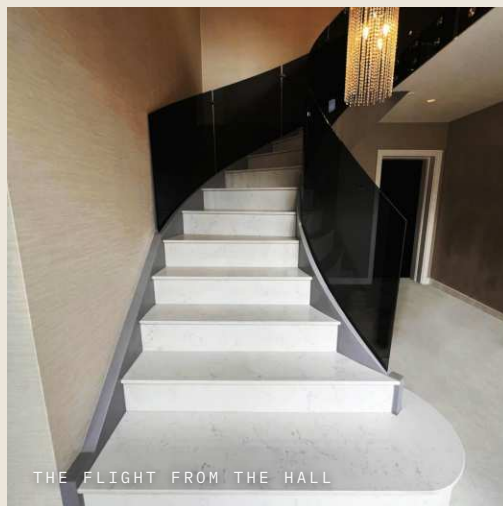
Frameless, standoff-fixed

TREADS

White marble, splayed foot



PANEL JOINTS & STANDOFF FIXINGS



THE FLIGHT FROM THE HALL





Private Residence

A compact spiral in blackened steel, open-riser the whole way round. Each tread is cut from thick plate and grooved along its length, so the flight reads as a fan of dark blades rather than a stack of steps. The balustrade is curved glass carried on polished standoffs beneath a slim handrail that turns with the stair, set against full-height glazing and the view beyond.

TYPE

Spiral · open riser

FLIGHT

Continuous turn

BALUSTRADE

Curved glass on standoffs

TREADS

Blackened steel plate, grooved



Private Residence

Bronze glass drawn as one continuous helix from the hall to the landing above, capped in a dark timber handrail that never breaks through the turn. The balustrade carries on past the foot of the flight to close a curved screen around the hall table, and a warm LED line washes the wall beneath the stringer the whole way up. At the head, the same glass turns an oval void beneath a circular rooflight.

TYPE

Helical · continuous sweep

GLASS

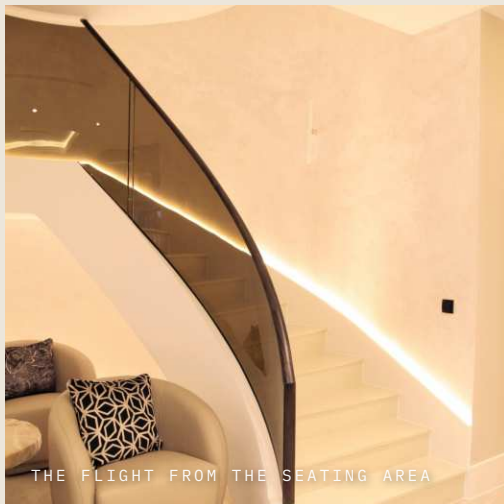
Bronze tint, curved & laminated

HANDRAIL

Timber, curved to the radius

LIGHTING

LED wash, under-stringer



THE FLIGHT FROM THE SEATING AREA



CURVED SCREEN CLOSING THE HALL





Private Residence

Clear glass around a stone spiral, formed tight enough to hold the full turn without a single upright. A slim black handrail is carried on the glass itself and runs unbroken from the hall to the top floor. The balustrade is specified clear precisely so the gilded blossom wall behind it reads straight through the glass — and above, the same line of glass turns the open well beneath the rooflight.

TYPE

Spiral · open well

HANDRAIL

Slim black, glass-mounted

GLASS

Clear, curved & laminated

TREADS

Stone, continuous winders



DOWN THE SPIRAL TO THE HALL



THE WELL, BENEATH THE ROOFLIGHT

Private Residence

No glass here. The flight is carried between two solid balustrades, each cut from plate in a single flowing scroll and rolled to the radius of the stair. The pattern is set out across the whole run rather than repeated panel by panel, so the ornament turns with the flight and never meets a joint square-on. Dark marble treads sit between the two.

TYPE

Helical · continuous

BALUSTRADE

Cut plate, solid

PATTERN

Scrollwork, set to the curve

TREADS

Dark marble



THE SWEEP TO THE LANDING ABOVE



DOWN THE FLIGHT, THROUGH THE CUT





[CAWORKS]

PROJECT 08 · HELICAL

Private Residence

A helical flight in stone, the soffit plastered to a continuous white ribbon that turns with the stair and carries on across the ceiling as one unbroken line of recessed LED. Clear curved glass follows the outer radius beneath a slim dark capping — left untinted so nothing interrupts the run of light, and frameless so nothing interrupts the curve.

TYPE

Helical · continuous

GLASS

Clear, curved & laminated

LIGHTING

Recessed LED, continuous

TREADS

Stone



THE LIGHT LINE ACROSS THE CEILING



CAPPING AND THE CONTINUOUS LED

DUBAI & GCC

HELICAL & SPIRAL STAIRCASES

Private Residence

A curved flight in stone — black treads over white risers — climbing to a gallery that runs the full oval of the void. Clear glass follows both, capped in a slim dark handrail that turns from the bottom step, up the flight and right around the landing without a single break. A full-height chandelier drops through the middle of the turn.

TYPE
Helical · flight & gallery

GLASS
Clear, curved & laminated

HANDRAIL
Dark capping, continuous

TREADS
Black stone, white risers



UP THROUGH THE TURN



THE HANDRAIL AROUND THE GALLERY





Private Residence

A spiral built almost entirely from steel and left raw. Treads, stringer and handrail are all cut from plate, bolted through and finished in a mill surface rather than paint. The outer stringer is rolled into one continuous ribbon the full height of the rise, and the handrail is drawn from the same steel, closing a narrow oval well at the centre of the turn.

TYPE

Spiral · open well

FLIGHT

Continuous turn, open riser

BALUSTRADE

Steel ribbon, rolled handrail

TREADS

Steel plate, bolted



THE FULL TURN, FROM DIRECTLY ABOVE



WALNUT SOFFIT & SHAPED HANDRAIL

Commercial Interior

A helical flight rising through a lounge floor, the outer stringer rolled from plate and finished in deep oxblood — the one piece of strong colour in the room, and the reason the stair reads as a piece of furniture rather than as circulation. Oak treads with rounded nosings sit inside it, and the soffit is closed and plastered so the underside turns as cleanly as the face.

TYPE
Helical · continuous

STRINGER
Rolled plate, oxblood finish

FLIGHT
Continuous turn, closed riser

TREADS
Oak, rounded nosing





Private Residence

A steel spiral threaded into an existing house to reach a new top floor. The flight turns on a single central column with open risers throughout, and the outer stringer is rolled into one continuous curve that carries up and closes the opening in the slab above. It sits directly beneath a rooflight, so the stair is lit from the top of the turn downwards.

TYPE

Spiral · centre column

FLIGHT

Continuous turn, open riser

STRUCTURE

Rolled steel stringer

TREADS

Steel plate



THE STRINGER CLOSING THE OPENING



THE FLIGHT FROM THE LANDING

Private Residence

A steel spiral turning through a double-height room on a single central column. Every tread is cantilevered straight off the column with no outer support, and each one is formed as a shallow pan — left open to take its finish once the floors go down. The flight climbs past the mezzanine and stops against full-height glazing, so the whole turn is read against daylight.

TYPE

Spiral · centre column

FLIGHT

Continuous turn, open riser

STRUCTURE

Cantilevered off the column

TREADS

Steel pan, finish to follow



THE TURN AGAINST THE GLAZING



TREAD PANS OFF THE COLUMN





Private Residence

Solid oak treads cantilevered off a single blackened steel stringer, splaying at the foot and turning at the head onto the landing above. Frameless glass runs the full rise on polished standoffs fixed straight through the tread ends — no posts, no frame, and open air beneath every step. The flight is set against exposed brick, so the oak reads warm against it.

TYPE

Helical · mono-stringer

BALUSTRADE

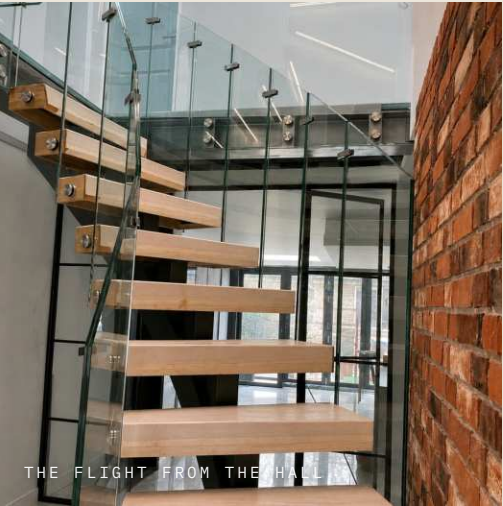
Frameless glass, standoff-fixed

FLIGHT

Quarter turn, splayed foot

TREADS

Solid oak



THE FLIGHT FROM THE HALL



CURVED STRINGER, OAK TREADS



BESPOKE STAIRCASES & GLASSWORKS

GET IN TOUCH

Dubai's helical stair experts

Helical and spiral staircases across Dubai & the GCC — every flight surveyed, engineered and installed in-house. Contact us today.

INSTAGRAM

[instagram.com/caworks.co](https://www.instagram.com/caworks.co)

WEBSITE

caworks.co

EMAIL

team@caworks.co

WHATSAPP

[+971 50 636 9524](https://wa.me/971506369524)

ILJA

[+971 58 586 4814](https://wa.me/971585864814)

EVGENY

[+971 54 575 9695](https://wa.me/971545759695)

DUBAI & GCC

THE HELICAL & SPIRAL COLLECTION • VOL 01