

General

1. Do not scale from the drawings.

2. These notes are to be read in conjunction with all other consultants drawings and specifications. In the event of a discrepancy the contractor should contact both SDS Ltd and the contract administrator prior to carrying out the works relating.

3. Where the specification notes conflict with notes on the drawing clarification should be sought from SDS Ltd.

4. The Contractor is to inform the Architect and Structural Engineer if the existing fabric, including foundations, is opened up and found to be inadequate, unsuitable to support the proposed works, or at variance from the details shown on the drawings.

5. Items noted on the drawings "to be confirmed on site" are to be exposed by the Contractor for inspection by the Structural Engineer at the earliest opportunity.

6. Do not cut any holes or chases through any structural members without first obtaining the written consent of the Structural Engineer.

7. The Contractor must check whether a CDM Coordinator/Principle Designer has been appointed. They must inform the Health and Safety Executive of the works by filling in and submitting an F10 form prior to starting work on site.

8. The Contractor must ensure that the Contract Administrator has agreed all necessary Party Wall notices prior to carrying out works under, on or adjacent to a Party Wall.

9. The Contractor is to ensure that the Building Control Officer and Structural Engineer are notified to carry out inspections of any structural work prior to covering up with finishes.

10. This specification and design uses Eurocodes which is cited in Building Regulations part A & is the current best practice. All Contractor design using loads from our design is to be similarly compliant with Eurocodes unless agreed otherwise in writing.

11. Due consideration should be give to the capacity of existing structures to carry material loadings. Wherever possible materials should be stored safely at ground floor level a safe distance away from excavations and existing underground structures such as existing basements, buried tanks etc.

Temporary Works

1. The Contractor is entirely responsible for the design, detailing, installation and maintenance of the temporary works. Temporary works and sequencing there of should be designed by a suitably qualified individual to ensure that the the buildings stability is maintained throughout the duration of the works from commencement to practical completion.

2. The contractor shall submit their full proposals for comment to SDS Ltd a minimum of 10 days prior to the commencement of any works. Proposals must include sequencing, drawings, and calculations to the relevant codes.

3. The contractor is to accept full responsibility for the stability of the building and any effected adjacent structures or infrastructure for the duration of the contract.

Materials and Workmanship

1. All building materials should conform to the relevant Eurocode and should be of suitable quality for their purpose. Unless specified no reclaimed materials shall be substituted for specified materials without certification and the express confirmation of both SDS Ltd and the Architect.

2. The architect is responsible for ensuring sufficient tolerances are allowed for in all elements of the buildings structure and fabric to ensure their buildability and function.

3. With reference to the above, in the absence of more stringent requirements required by the architect the following tolerances in measurement and set out should be observed:-

	Steel	Brick	Block	Timber	Insitu	Pre-cast
Wall Verticality		10mm	10mm	10mm	17mm	11mm
Column Verticality	6mm	10mm	10mm	10mm	12mm	10mm
Vertical position of floors				± 10mm	± 15mm	± 15mm
Vertical position of beams	± 20mm			± 20mm	± 22mm	± 23mm
Plan position	± 10mm	± 10mm	± 10mm	± 10mm	± 12mm	± 10mm
Flatness of floors (over a 3m straight edge)					5mm	5mm

Ground Works

1. Unless it has been included in the tender information it can be assumed that a site investigation has not been completed for these works. The contractor should allow for any site investigations required for spoil disposal and/or the design of any piles etc.

2. The contractor is solely responsible for the detection and location of below ground services. The contractor must complete and utilities and infrastructure searches required.

3. No excavation should be made deeper than an adjacent existing foundation within 3m without written permission from SDS.

4. The Contractor must ensure that any Party Wall awards are in place prior to completing any works relating to include excavations within 3m and 6m.

5. All footings shall be agreed with Building Control and SDS Ltd. Notice shall be given 24hours prior to pouring of footings. Should Building Control make recommendation which are contrary or differ from those indicated on SDS Ltds designs or specifications both SDS Ltd and the contract administrator should be informed before proceeding.

6. All foundations shall be cast on a natural bearing strata of good bearing properties. If a good foundation bearing is not obtained at the level shown, SDS is to be informed.

7. Excavations should not be left open longer than necessary. In clay, excavations should not be left open for more than 24hours.

8. Should the formation level not be as indicated on the drawings, or should there be variation in bearing formation SDS Ltd should be informed immediately.

9. Hardcore for filling shall consist of selected clean broken stone, concrete, hard sound brick, slag or other approved materials, and shall be chemically inert. The materials shall be broken down to a maximum 75mm gauge with a sufficient proportion of fines for thorough compaction. Hardcore shall be well consolidated by means of roller, vibrating plate or mechanical punner. Care shall be taken to ensure that no damage is caused to any foundations, walls or services.

10. Strip foundations have been designed based on a bearing capacity of 100KN/m2 or as indicated in the soil investigation.

11. Foundations are to be set out centrally to walls, columns, piers etc unless noted outer wise

Foundations in Clay

1. Foundations in clay should be formed in accordance with NHBC guidelines.

2. In the absence of testing it should be assumed that the clay is highly shrinkable.

3. A minimum void of 300mm should be allowed below beam and block floors.

4. Jablite clay master should be allowed for to the inner face of strip and pad foundations as well as ground beams and pile caps.

5. The depth of foundations should be verified against the recomendations of NHBC chapter 4.2 "building near trees".

Beam and Block floors

1. Where beam and block floors have been specified no substitution will be accepted without the express permission of SDS Ltd.

2. Beam and block flooring should be designed by the manufacturer. The design should be submitted to SDS for approval.

3. The beam and block floor should be set out with the proposed services in mind. This coordination should be confirmed with the architect and M&E consultant.

4. The beam and block should be installed to the manufacturers details accounting for any architectural requirements.

5. Pre cambered beams should be designed to ensure that the camber is lost such that minimum screeds can be achieved.

Masonry

1. Workmanship is to comply with the relevant Eurocodes to include BS EN 1996-1-1, 2 & 3. Brickwork to be to BS EN 772-3 & 7 and BS EN 771-1 compliant. Blockwork to be to BS 6073-2 compliant.

2. Do not use frozen materials or lay masonry when the ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising.

3. New brickwork above the damp proof course (d.p.c.) is to be minimum class 3 set in 1:2:5 (cement:limesand) mortar, unless noted otherwise on the drawings.

4. New blockwork is to be minimum strength 7.0 N/mm2 and of a medium density constructed in 1:1:5 (cement:limesand) mortar, unless noted otherwise on the drawings.

5. Brickwork and blockwork are to be laid properly bonded as agreed with the Architect and fully bonded into existing masonry. All junctions in structural walls are to be fully tooth bonded unless noted otherwise on the drawings.

6. All masonry below the d.p.c. is to be constructed in 1:3 (Cement:Sand with plasticiser) mortar with sulphate resisting cement.

7. New brickwork below the d.p.c. is to be minimum Class B engineering bricks.

8. New blockwork below the d.p.c. is to be specified as suitable for such (i.e. frost resistant etc) use by the manufacturer, and of minimum strength 7.0N/mm2.

9. Cavity wall ties shall be Ancon Staifix RT2 stainless steel ties (or similar equivalent) to BS EN 845-1:2003 spaced at 450mm centres vertically, 900mm centres horizontally staggered, and at 225mm centres vertically at 225mm from all openings, corners and reveals. Minimum embedment to be 62.5mm into each masonry leaf.

10. Wall ties elsewhere are to be, to BS EN 845-1:2003. Minimum embedment to be 62.5mm into each masonry leaf.

11. In dry hot weather, bricks are to be dampened before being laid.

12. Toothing of brickwork is not permitted, brickwork should be raked back from and around openings.

13. No more than sixteen courses shall be built in a day without prior permission of the Engineer.

14. Crack control brick reinforcement is to be provided over doors, over and under windows and at changes in profile (e.g. where the building steps from two storeys to one storey), as follows: 2 layers of Bekeart Bricktor in the two bed joint immediately adjacent to the opening. To extend 600mm beyond the opening on both sides and 600mm either side of the change in profile.

15. In the absence of manufactures instructions to the contrary, frogged shall be constructed with the frogs facing upwards.

16. Vertical movement joints are to be provided in brick and blockwork to prevent shrinkage cracking:-

Material	Joint width	Spacing
Clay brick	16mm	12m
Calcium silicate brick	10mm	7.5m
Concrete Block	10mm	6m

17. The above should be doubled in parapets. The first movement joint should be no more than half of the spacing noted above from a corner.

18. Movement joints to be formed with de-bonded sleeve stainless steel ties and compressible joint filler to the architects specification.

19. Steel columns, posts and proprietary windposts to be tied to internal block leaf within cavity walls using proprietary ties such as Acon hammer on ties fixed to steel in accordance with manufacturers specification at 300mm staggered vertical centres.

20. Proprietary wall starter systems such as Furfix or similar may be used to tie new masonry extensions to existing masonry in locations where approved by the Structural Engineer.

21. Use proprietary head restraints as detailed by Halfen or Ancon to tie tops of internal block walls to the underside of concrete floor slabs.

22. Where chimneys are removed, old flues are to be bricked up and toothed into the existing masonry.

Lintels

1. Pre-stressed concrete lintels to BS EN 845-2 by Naylor Ltd, Sizes and types as indicated on the drawings. End bearing lengths are to be at least 150mm for spans up to 1.5m, and 225mm for spans up to 2m, unless noted otherwise on the drawings.

2. Galvanized steel lintels are to be to BS EN 10346 by Catnic. Sizes and types as indicated on the drawings. End bearing lengths are to be at least 150mm for spans up to 1.5m, and 225mm for spans up to 2m, unless noted otherwise on the drawings.

Concrete

1. Materials and workmanship are to comply with BS EN 1992-1-1 and BS EN 13670.

2. Mass concrete foundations to be designated concrete FND 2.

3. Ground bearing slabs to be designated concrete C20/25 with mesh as noted on the drawings, cast on a well compacted hardcore sub-base.

4. All reinforced concrete not in contact with the ground to be designated concrete C28/35 to BS 8500 and BS EN 206-1 with CEM1 OPC to BS EN 197 and 20mm max aggregate.

5. All reinforced concrete in contact with the ground such as foundations or retaining walls to be constructed in designated concrete C28/35 using sulphate resistant cement and 20mm max aggregate to BS 8500 and BS EN 206-1.

6. The Contractor shall provide details of all admixtures to be used in the concrete and agree their use with the Engineer before any concrete is delivered to site.

7. Concrete for padstones is to be 2:3:6 (cement:fine sand:coarse sand) nominal mix, with OPC and 10mm max aggregate.

8. Ready mixed concrete must be obtained from a plant which holds a current Certificate of Accreditation under the Quality Scheme for Ready Mixed Concrete.

9. Site-mixed concrete may be used when agreed with the Engineer. An agreed pre-batched and bagged proprietary concrete must be used unless an alternative site batched concrete has been agreed with the Engineer.

10. Do not place concrete when the ambient air temperature is less than 5°C and take all necessary measures to ensure that the temperature of the placed concrete will not fall below 5°C for the specified curing period.

11. Concrete Cubes to be tested for compressive strength for all reinforced concrete elements. 3 samples per pour or per 50m3. One 7 day test, one 28 day test and one sample for future testing if required. All tests to be carried out by UKAS accredited laboratory or equivalent. Testing to BS EN 206-1, annex B and BS 8500-1, annex B. Results are to be submitted to the Engineer within 5 working days of test.

12. The Contractor is to provide suitable curing for all concrete elements to comply with the requirements of BS 8110-1:1997 table 6.1, or Eurocode Equivalent.

13. The minimum period before striking formwork shall be in accordance with BS 8110-1:1997 table 6.2, or Eurocode Equivalent.

14. Openings in concrete elements should be formed in the formwork in advance of casting. No chasing or drilling of concrete is permitted without the written permission from SDS Ltd.

15. Reinforcement shall be deformed bars to BS 4449:2005, grade B500, prefix H (or T) on drawings and schedules or mesh to BS 4483.

16. Concrete cover is to be as specified on the drawings. Reinforcement chairs and proprietary spacers are to be provided as necessary to maintain the specified cover. Broken bricks, tiles or other debris must not be used.

17. Unless noted otherwise on drawings, all reinforcement is to be lapped 40d (where d is diameter of the smaller bar).

18. All formwork is to be designed to ensure tolerance are met.

19. Concrete finish shall be Type A finish. "This finish is obtained by the use of properly designed formwork or moulds of timber, plywood, plastics, concrete or steel. Small blemishes caused by entrapped air or water may be expected, but the surface should be free from voids, honeycombing and other blemishes."

Timber

1. New timber in the works is to be selected structural timber not inferior to European Redwood/Whitewood grade C24 to BS EN 338:2009.

2. Warped or wained timbers should be discarded and not used in the build as structural timber.

3. All existing timber is to be inspected for signs of damage, decay or infestation at the beginning of the project by a specialist. Refer to specialist's report for all information in connection with timber treatment or replacement.

4. New timber in the works is to be vacuum impregnated with preservative to BS EN 1995-1-1 and BS EN 351-1 and the manufacturer's recommendations. Cut ends are to be thoroughly treated with brush applied coats of appropriate preservative before fixing. All preservatives are to be to the Architect's approval.

5. Timber shall be stored under cover, clear of the ground and protected from the weather.

6. Structural timbers may only be drilled or cut for services with the approval of the Structural Engineer.

7. Sizes of new structural timbers noted on the drawings are sawn basic sizes.

8. All proprietary joist hangers, straps, connectors etc to be provided by Simpson Strong-tie or Expamet, unless approved otherwise, and shall be fit for purpose.

9.All timber connectors, screws, nails, joist hangers, steel straps etc are to be galvanised or sherardised.

10. All proprietary timber metalwork are to be fixed in accordance with the manufacturer's recommendations.

11. All doubled or tripled up timbers shall be fixed together with M12 bolts or threaded rods at 600mm centres, using double toothplate connectors between timbers, and 50mm square steel washers (3mm thick).13. Noggins are to be spaced at 1/3 points, at the bearings, and at the position of joints in ply sheeting.

12. Wall plates for roofs are to be fixed in place using 1200mm long 30 x 2.5mm galvanised mild steel straps at maximum 1200mm centres with 100mm bob end. Holding down strap to be nailed to the top of the wall plate and to be screwed to the masonry in accordance with the manufactures details.

13. Lateral restraint straps to the perimeter of all floors, roofs and where otherwise noted on the drawings are to be minimum 700mm long 30 x 5mm galvanised mild steel straps at maximum 1200mm centres with 100mm bob end. Straps perpendicular to joists are to be fixed to the tops of three joists over solid blocking infill and notched in a maximum of 6mm. Straps parallel to joists are to be fixed to the side face of the joist. Straps to be fixed with a minimum of 3 (No.12) wood screws 50mm long.

14. Where sections of floor or roof are separated by a steel beam install 1250mm long 30 x 5mm straps at 1200mm c/c for continuity.

15. Where lateral restraint straps for floors are to be tied into existing 215mm thick (min) solid brick walls, cast bobbed end into a 225x100x150dp mass concrete anchor block into pocket and dry packed at top with 3:1 sharp sand cement well rammed in.

Project

122 Castelnau, SW13 9EU

Drawing Title:

Structural Specification - sheet 1 of 2

Job. No.	Sheet no.	Revision	
222083	1/2	Construction	
Scale	Date	Made by	Rev. no:
n/a	Jan 24	ED	C1

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Design
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Steelwork

1. The design, fabrication and erection of the structural steelwork is to be in accordance with the current version of BS EN 1993-1-1 and BS EN 1090-2 and the latest edition of the National Structural Steelwork Specification (NSSS and NSSS CE Marking version) for Building Construction, and all clauses, including appendices are deemed to be part of this specification.

2. All structural steel sections are to be Grade S355 (unless agreed otherwise or noted otherwise on the drawings) to the applicable code from the following list; BS 4-1:2005, BS EN 10210-2:2006, BS EN 10025-2:2004.

3. The steel connections are to be detailed as noted on the drawings. Where details are not provided they should be requested from SDS Ltd in advance of fabrication.

4. The steelwork fabricator is to visit site and take all necessary dimensions to enable the fabrication of the steelwork.

5. Shop fabrication drawings showing layout, connections and fixing details, and connection calculations where requested, are to be submitted to the Engineer and Architect for comment at least two weeks before any fabrication is carried out.

6. All bolts are to be grade 8.8 Black Bolts (unless noted otherwise on the drawings) to BS 4190. Designed steel to steel connections to use a minimum of 2No. M16 bolts unless noted otherwise in the details.

7. All welding is to comply with BS EN 1011 Parts 1 & 2. Site welding shall not be permitted except with the written approval of the Structural Engineer. Where permitted, all site welding to be 100% tested (unless agreed otherwise with Engineer) in accordance with the National Structural Steelwork Specification (NSSS). All site weld test reports to be submitted to the Structural Engineer at least 10 working days prior to the covering of the site welded areas with permanent finishes.

8. All welds are to be 6mm fillet welds or full strength butt welds unless noted otherwise on the drawings. Carry out additional weld testing in accordance with the National Structural Steelwork Specification for Building Construction on any critical welds specified by the Structural Engineer.

9. Ends of all steelwork built into brickwork are to be concrete encased with minimum 50mm cover.

10. Any buried steelwork should be wrapped in D49 mesh and concrete encased with minimum 75mm cover.

11. Where steel columns are located against existing masonry they are to be bolted to the masonry with M12 Hilti Hit Hy 70 fixings at 400mm centres staggered around the web.

12. All news steels below existing masonry walls should be located centrally.

13. Column steel baseplates to be grouted with five star grout for gaps less than 25mm. For gaps over 25mm use 1:1 sand cement mortar well packed in.

Steelwork Paint Systems for Corrosion and Fire Protection

1. All painting shall be carried out in accordance with BS EN ISO 12944, BS EN 1090-2 and the paint manufacturer's instructions. Paint systems as specified below are by Sherwin-Williams Protective & Marine Coatings (contact: 01204 556 457 or sales.uk@sherwin.com). Contractor to provide details of any alternative manufacturers and paint specifications for approval prior to fabrication).

For a warm, dry building with no risk of condensation on steelwork i.e. internal steelwork concealed and fire protected with plaster finishes:

- After preparation by blast cleaning to Sa 2½ to BS EN ISO 8501-1 (Welds/edges/areas with surface imperfections: To BS EN ISO 8501-3, preparation grade), all surfaces, which shall be dry, shall be painted with one coat of zinc phosphate primer (75 microns dry film thickness (dft) Sherwin-Williams Protective & Marine Coatings Epigrip C400V3). This coat should be applied in the works with any subsequent damage made good on site.

For steelwork within the perimeter wall of a building, such as within the inner leaf of a cavity wall but not in contact with the external leaf:

- After preparation by blast cleaning to Sa 2½ to BS EN ISO 8501-1 (Welds/edges/areas with surface imperfections: To BS EN ISO 8501-3, preparation grade), all surfaces, which shall be dry, shall be painted with one coat of zinc phosphate primer (125 microns dry film thickness (dft) Sherwin-Williams Protective & Marine Coatings Epigrip C400V3). This coat should be applied in the works with any subsequent damage made good on site.

For steelwork in contact with the external leaf:

- Apply locally to contact area, 400 microns dft of Sherwin-Williams Protective & Marine Coatings Epigrip M922 (shop applied spray) or 400 microns dft of Sherwin-Williams Protective & Marine Coatings Epigrip M922m (mastic version applied by brush on site).
- these paints can be applied directly to a blast cleaned substrate.

As an alternative to using a bituminous paint product to coat ends of steel beams in contact with external walls etc, use 2 coats of 125 microns dft of Sherwin-Williams Protective & Marine Coatings Epigrip L524, over 75 microns dft of Sherwin-Williams Protective & Marine Coatings Epigrip C400V3.

2. Fire protection to all steelwork to suit the Architect's details. Any structural steel elements not suitably protected by the Architect's finishes or to be left exposed in the permanent condition are to be protected using intumescent paint system and dft loading schedule as specified by Sherwin-Williams Protective & Marine Coatings to suit the steel section size, and level of fire protection required.

3. Where intumescent paint is applied, provide the Engineer and Architect with a copy of the intumescent loading schedule as specified by the supplier, and a certificate to confirm the actual dry film thickness measured. This can be carried out by an independent specialist or self-certified by the Contractor.

4. Where indicated on the drawings the steelwork and fixings shall be hot dipped galvanised to BS EN ISO 1461 in order to give a uniform zinc deposit of at least 100 microns.

5. Galvanised steelwork that is to be painted with a RAL colour finish should then be treated as follows:

- Flash/sweep blast using non-metallic abrasive within 20-30 microns typical or clean & degrease with Enviroguard W500, fresh water rinse & allow to dry before applying Leigh's L703 mordant wash.
- Apply one coat of primer - Sherwin-Williams Protective & Marine Coatings Epigrip K267 100 microns dft.
- Apply finish coat of Sherwin-Williams Protective & Marine Coatings Resistex C137V2 Special Finish, 50 micron dft.

6. Galvanised steelwork that is to be finished in a light or dark metallic grey (micaceous iron oxide):

- Flash/sweep blast using non-metallic abrasive within 20-30 microns typical or clean & degrease with Enviroguard W500, fresh water rinse & allow to dry before applying Leigh's L703 mordant wash.
- Apply one coat of primer - Sherwin-Williams Protective & Marine Coatings Epigrip K267 75 microns dft.
- Apply finish coat of Sherwin-Williams Protective & Marine Coatings Epigrip K267 75 microns dft.

7. Where steelwork is galvanised, in order to minimise problems with Liquid Metal Assisted Cracking (LMAC), the following restrictions should be adhered to for all connections designed by the Contractor:

- Partial end plates – Avoid: use full end plates or bolted cleat connections.
- Part depth stiffeners – Avoid: use full depth stiffeners welded with intermittent fillet welds.
- Use intermittent fillet welds for attachment of brackets.

Prior to erection or application of other coatings, all galvanised structural steelwork is to be visually inspected for cracks or indications of LMAC cracking. Inspection is to be carried out by a suitably qualified person trained and competent in visual inspection for LMAC. Where suspected LMAC defects are identified inform the Engineer immediately.

Underpinning and Retaining Walls

1. The contractor is responsible for ensuring the stability of the building during the process of underpinning and formation of retaining walls to include the design and specification of temporary works and sequence which are to be submitted to SDS Ltd for comment prior to any post-soft strip out works.

2. The agreed sequence should be adhered to. If alterations are intended to the method or sequence it should be resubmitted to SDS Ltd for further comment as required.

3. In accordance with the drawings underpinning should be completed in maximum 1000mm sections and in a traditional 5 stage sequence. Excavation of an adjacent pin should not commence prior to 48 hours after dry packing of the subsequent pin.

4. Before underpinning, projecting portions of the existing footings are to be carefully cut off as detailed and the underside of the footings are to be cleaned and hacked free of any dirt, soil or loose material.

5. The Engineer and Building Control Officer shall be given the opportunity of examining all excavations, prior to any underpinning or retaining walls being cast.

6. Unless noted otherwise on the drawings, mass concrete underpinning is to be constructed in concrete nominal 1:2:4 mix using sulphate resistant cement and 20mm max aggregate, or designated concrete GEN 2 (C20/25) in accordance with BS8500 and BS EN 206-1.

7. Unless noted otherwise on the drawings, reinforced concrete underpinning and retaining walls are to be constructed in designated concrete C28/35 using sulphate resistant cement and 20mm max aggregate in accordance with BS8500 and BS EN 206-1.

8. Cover to reinforced concrete in contact with the ground to be a minimum of 75mm unless noted otherwise.

9. Adjoining pins should be detailed as noted on the reinforcement drawings. The surface of the pin should be cleaned and scabbled to expose the aggregate.

10. The Contractor is to keep a record of the sequence and dimensions of the underpinning actually carried out, including details of excavation, casting concrete and pinning up for each section.

11. Holes and penetrations for services through underpins and retaining walls are to be set out and detailed by the Architect, including waterproofing details such as puddle flanges or hydrophilic strips, and installed prior to the pouring of concrete.

12. All agreements including monitoring and trigger levels and actions noted in the Party Wall agreement should be observed throughout the duration of the works.

Waterproofing

1. Waterproofing is the responsibility of others. SDS take no responsibility for the waterproofing of any part of the structure.

Project

122 Castelnau, SW13 9EU

Drawing Title:

Structural Specification - sheet 2 of 2

Job. No.	Sheet no.	Revision	
222083	2/2	Construction	
Scale	Date	Made by	Rev. no:
n/a	Jan 24	ED	C1



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