Spiral Cellars

TECHNICAL MANUAL

CONTENTS/ INTRODUCTION

> “Their attention to detail, precision, and absolute professionalism were second to none.”

This manual provides a comprehensive summary of technical details and guidance for professional advisors, engineers and contractors acting on behalf of Spiral Cellar customers.

It covers all key aspects of the cellar installation and the main cellar components, with detailed drawings and specifications.

Whilst every care has been taken to present this information accurately and in a helpful format, readers should contact Spiral Cellars for any further details or clarification that may be required or for circumstances that are not included here.

This manual will be updated periodically to address changes in legislation or best practice and to include new or updated features or components as they are introduced. Please check with Spiral Cellars to confirm this is the most recent version.

For further information, please contact:

Tel: 0845 241 2768
0203 761 6224

Email: info@spiralcellars.com

Spiral Cellars Ltd
Unit 4, Hardham Mill Business Park,
Pulborough
West Sussex
RH20 1LA

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WHY CUSTOMERS WANT A SPIRAL CELLAR IN THEIR HOME

Sales of fine wine are increasing year on year in the UK and wine has always played a part in signifying status and a cultured lifestyle, and this continues. Entertaining family and friends at home is all part of the modern lifestyle and people want their wine collection close at hand for easy access.

The modern home is often required to reflect the owner's style, personality and position in life so functional additions that also double up as design features are an obvious choice — a home wine cellar is a wow factor, a great party piece that also stores wine in the ideal conditions. At the same time homeowners are interested in value–added features for their home.

Another incentive to store wine — it is a less volatile investment area than other traditional avenues such as property. It is also free of Capital Gains Tax.

Owners of an underground wine cellar

- Go on holiday to wine regions and have the option of shipping home several cases to store in their cellar.
- Save on external warehousing and delivery costs, and find it much more convenient to have a full range at home and have more to spend on wine!
- Enjoy browsing their cellar after a long day at work and selecting a bottle to go with dinner.
- Use the additional storage space as a larder, and is very useful at Christmas.

Why a Spiral Cellar is a good choice

Unlike wine cabinets or climate controlled above ground rooms, an underground cellar does not need mechanical cooling. Therefore there is no risk of mechanical failure and risk to the wine. Equally no energy is consumed.

By going underground, space is created rather than absorbing a room or space that could have other uses.

Concrete as a material has its advantages; it is very efficient at retaining temperature — which compliments the slow change of ground temperature from summer to winter, and further reduces any temperature spikes. It's structural integrity — it is capable of taking the weight of the wine and stacked modules.

Wine is a living product

Its ability to change with time is what makes it so interesting, but it also means that if it's kept in the wrong conditions its quality can quickly be affected.

Temperature is the most critical aspect in storing wine

Store wine somewhere too hot and it ages quickly, rapidly losing its vibrancy and becoming tired and stale. The ideal temperature for wine is about 13°C but 5°C or so either side of this is acceptable. The key is that there are no sudden fluctuations — wine likes things to change slowly — so while a gradual warming and cooling between winter and summer is not a problem. Insulated by the ground, an underground wine cellar keeps wine at a steady temperature, allowing it to age gracefully.

Humidity

Wine bottles need to be kept horizontal and in a slightly damp atmosphere to prevent the corks drying out. If corks do dry out they shrink, allowing air into the bottle and oxidising the wine. The recommended relative humidity is around 70% or more.

Clean, dark and quiet

Wine doesn't like direct sunlight, noise or constant vibrations from, say, traffic.

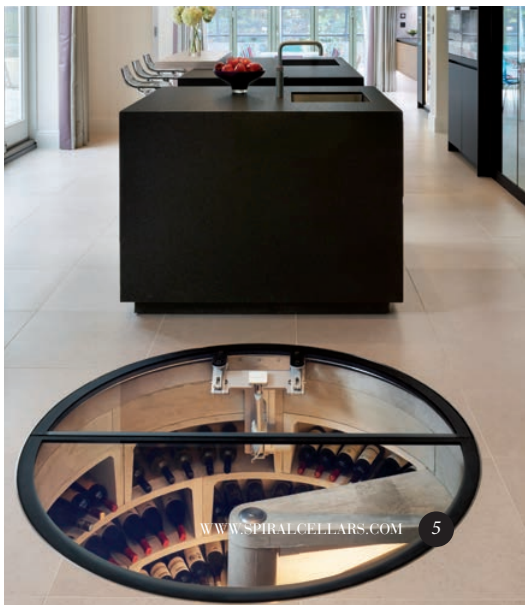
PRODUCT OVERVIEW

A Spiral Cellar is a watertight cylindrical concrete system sunk into the earth through the ground floor of a house. You do not need an existing cellar or basement.

It's designed to store wine at optimum humidity, temperature and darkness, and works by using the earth's natural attributes and a passive ventilation system. Spiral Cellars are not considered habitable spaces so planning permission isn't required.

KEY FACTS:

- It can be located in any ground floor room of a property.
- Planning permission is not usually required, just Building Regs.
- A Spiral Cellar requires no mechanical cooling and is maintenance free. Its position in the ground means the cellar remains at ideal temperatures and the simple passive–style ventilation system and concrete construction maintain a suitable humidity level.
- The external diameter of the excavation is 2300mm or 2500mm.
- There are depths from 2m to 3m, storing up to 1900 bottles.
- A Spiral Cellar can be installed in a high water table environment — our Butyl liner makes the cellar watertight.
- A common misconception is that the property needs to be underpinned or have piled foundations installed — this is not the case, see page 8.
- We have been trading for over 30 years in the UK and in that time we've installed over 3000 cellars.

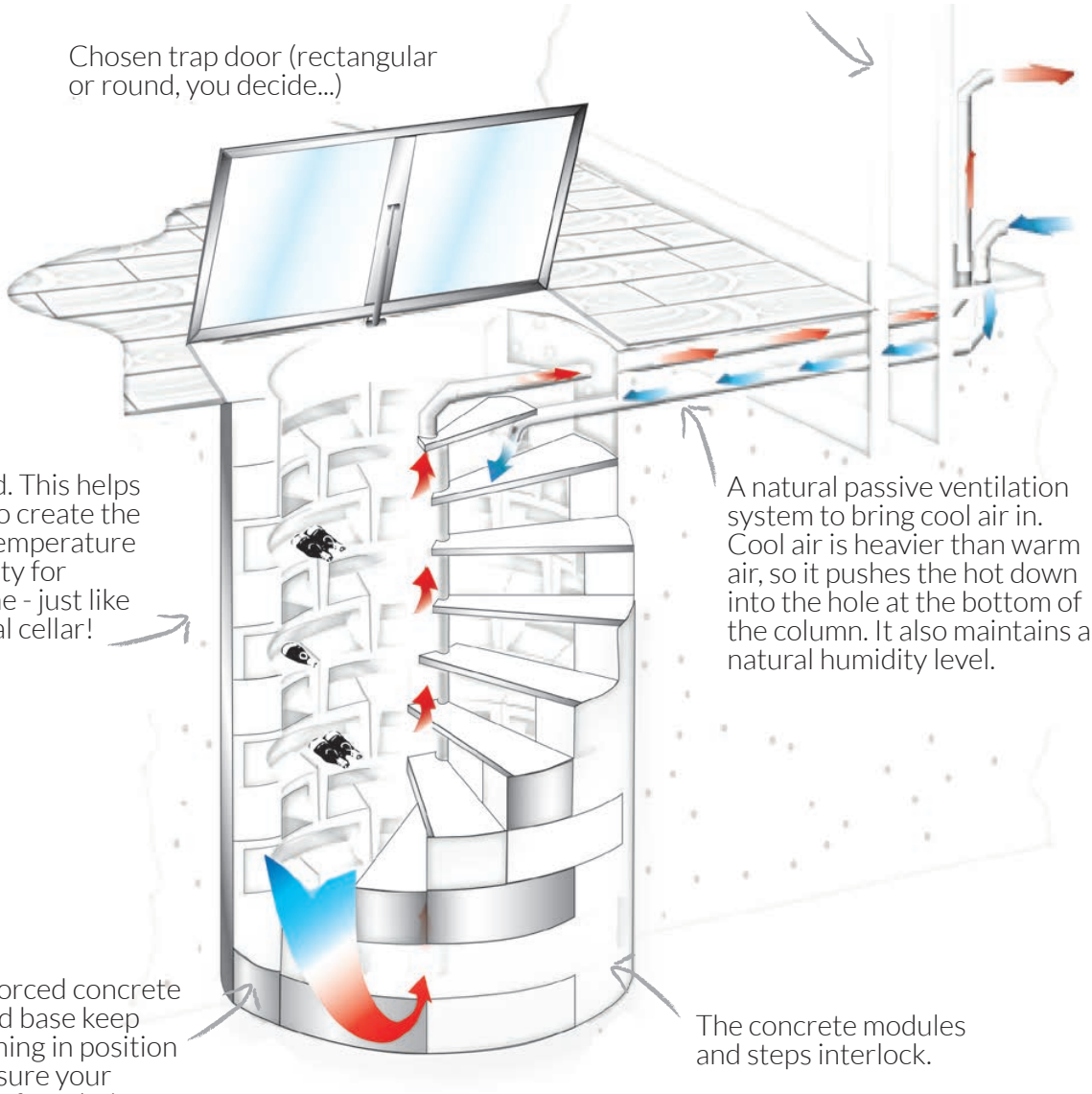


HOW THE CELLAR WORKS

Spiral Cellars are not considered habitable spaces so planning permission is not required.

We want the coolest air possible coming in as it gives your cellar the best chance of working at its optimum

Chosen trap door (rectangular or round, you decide...)



The ground. This helps the cellar to create the optimum temperature and humidity for storing wine - just like a traditional cellar!

A natural passive ventilation system to bring cool air in. Cool air is heavier than warm air, so it pushes the hot down into the hole at the bottom of the column. It also maintains a natural humidity level.

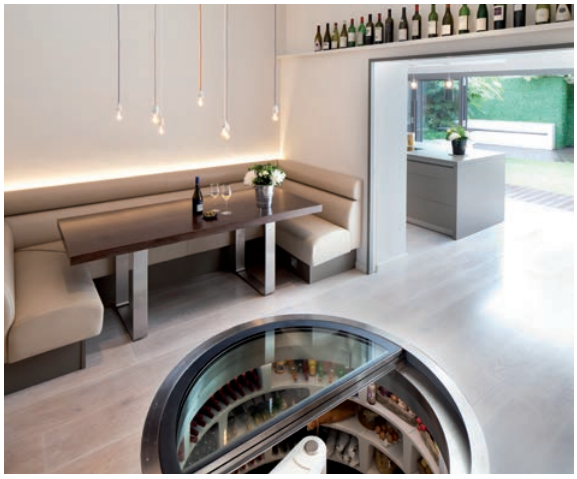
A reinforced concrete ring and base keep everything in position and ensure your existing foundations won't be affected.

The concrete modules and steps interlock.

Warm air

Cold air

A DESIGN GUIDANCE FOR ARCHITECTS



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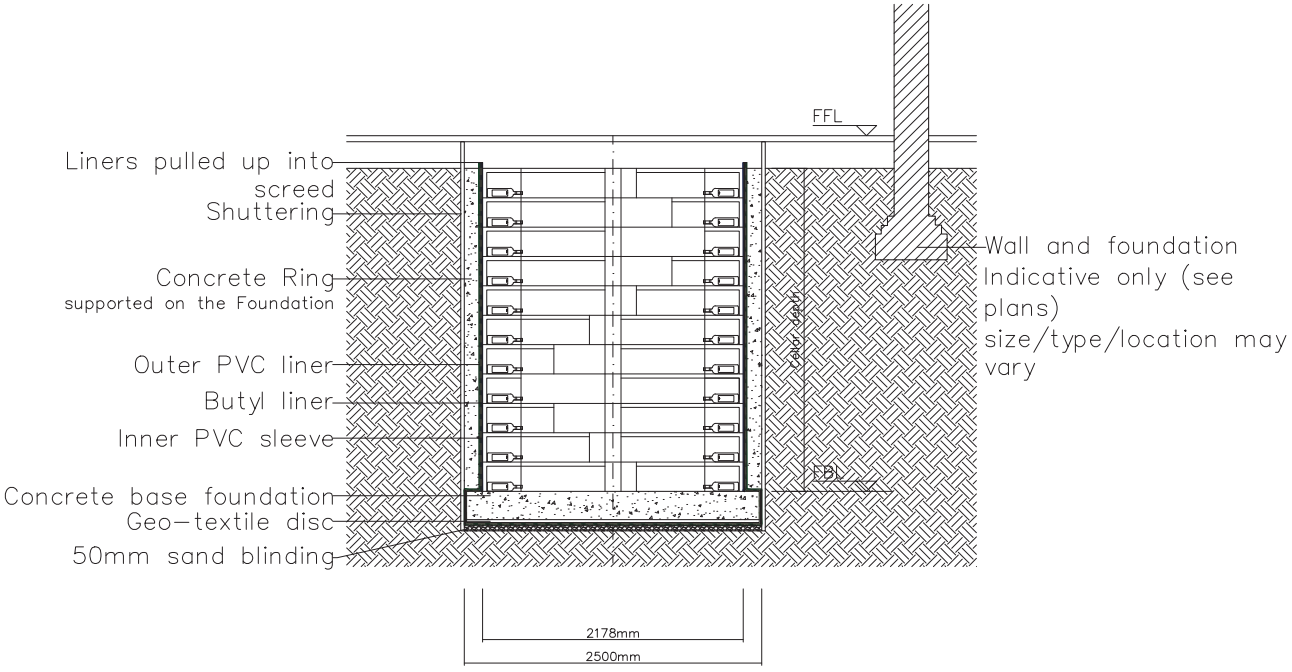
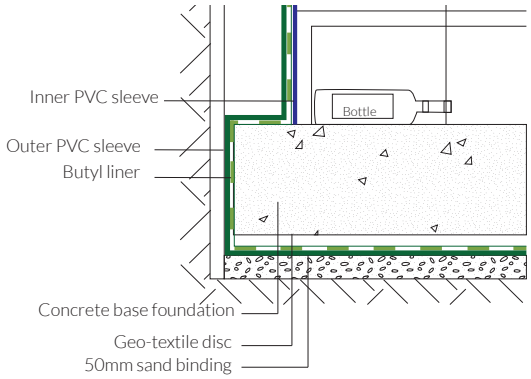
A1 COMPONENTS





A1i WATER PROOF LINER DETAIL

The Spiral Cellar is a water tight construction

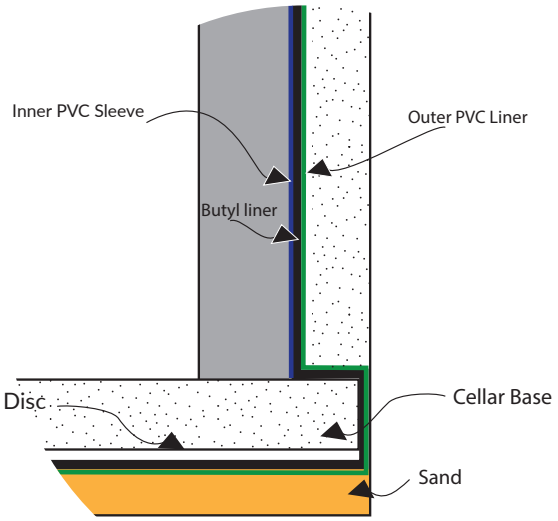
The construction of the Spiral Cellar includes a Butyl liner, which is protected from damage by a reinforced PVC outer liner and a reinforced PVC inner sleeve.

Butyl Rubber is the original geomembrane liner material used for water containtment in drought and war zones, as well as numerous prestigious tanking projects, reservoirs, roofing and decking solutions.

Spiral Cellars specify a 1.5mm thick Butyl, which is manufactured to cellar specific bag shape to fit the excavation perfectly.

Butyl has an extremely high tensile strength and can be stretched to up to 3.5 times before tearing.

The Butyl liner and PVC liner are factory vulcanised and seamed. Each liner is pressure tested as part of a rigorous quality control before being dispatched to each project.



Order of component installation

- Green/blue reinforced PVC liner
- Butyl liner
- Blue reinforced PVC sleeve

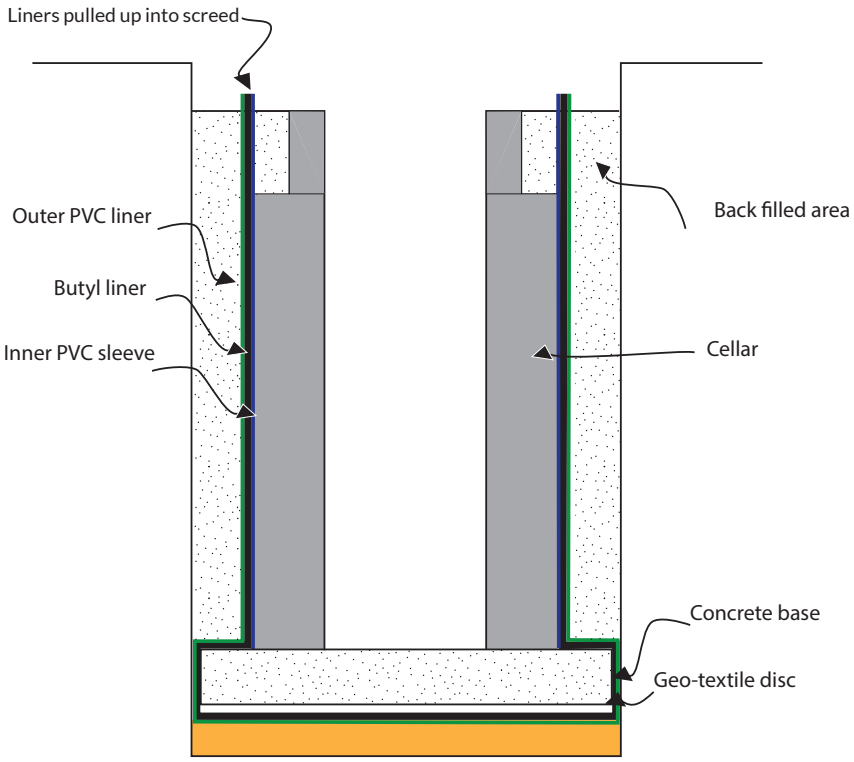


Illustration showing the position of liners and PVC protection sleeve

A1ii WATERPROOF BUTYL LINER PRODUCT SPECIFICATION

BUTYL LINER

BP landflex BR150 1.50mm Butyl Rubber

Typical Properties	Test Method	Specification (Typical Values)
Gauge (mm)		1.5 ± 10%
Tensile Strength (MPa)	BS 903 Part A2	10.0
Modulus at 300% (MPa)	BS 903 Part A2	7.0
Elongation at Break (%)	BS 903 Part A2	350
Tear Strength (N/mm)	BS 903 Part A3	40
Ozone Resistance 7 days/50pphm/30 °C	BS 903 Part A43	50% extension No cracks
Heat Aging (Retentions) 7 days @ 100 °C	BS ISO 188	8.0 MPa 250%
Flex Cracking	BS ISO 132	200.000 Cycles No cracks
Specific Gravity	BS 903 Part A1	1.24 +/- 0.03
Operating Temperature Range	BS903	-40 °C to + 130 °C

The information herein is based upon data obtained by the manufacturer and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data. This information is furnished upon the condition that the person receiving it shall evaluate its suitability for the specific application.

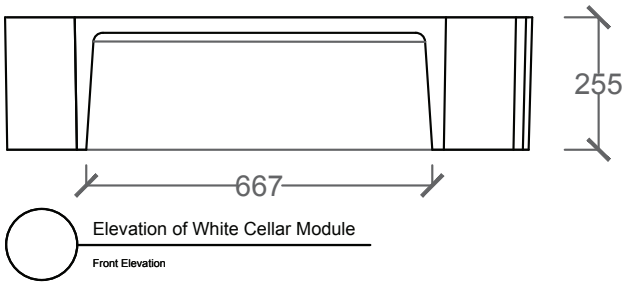
PROTECTIVE LINER

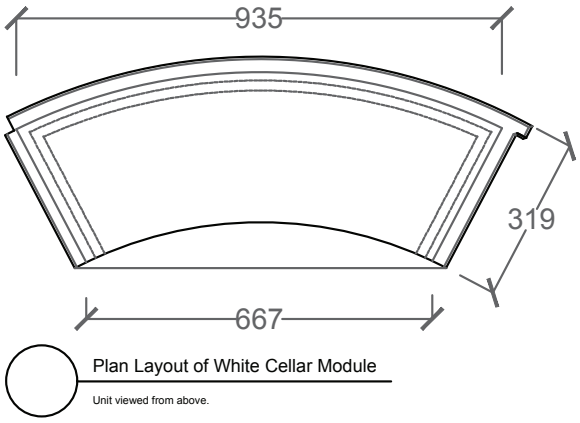
BP landflex PVC 610B/PVC 610G 610g/m² Reinforced PVC

Typical Properties	Test Method	Specification (Typical Values)
Width/Finish		150 / 205cm / Sateen
Colours available		Blue / Green
Base fabric		High tenacity polyester
Coating		Flexible plasticised PVC - both sides
Total weight	BS3424/5A	610g/m² +/- 25g/m²
Tensile Strength N/50mm (ave.)	BS3424/6B	Warp 2400 / Weft 2100
Tear Strength N (ave.)	BS3424/7B	Warp 500 / Weft 325
Coating adhesion N/50mm (ave.)	BS3424/9B	100

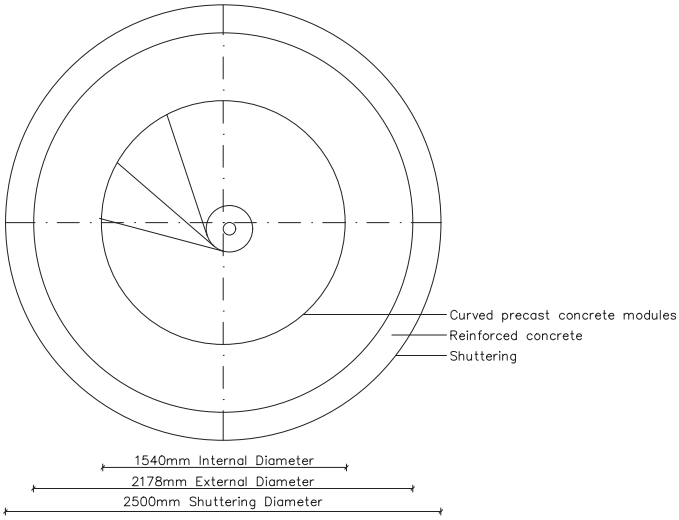
The information herein is based upon data obtained by the manufacturer and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data. This information is furnished upon the condition that the person receiving it shall evaluate its suitability for the specific application.

A2i WHITE SPIRAL CELLAR DIMENSIONS





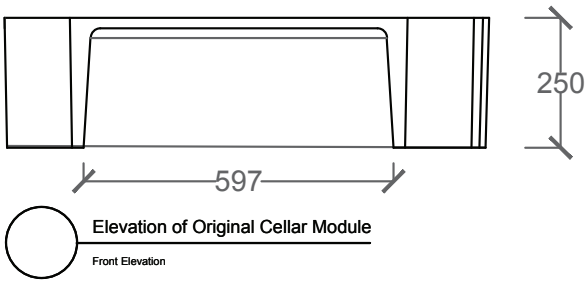
Each module has a solid back and an open side front.

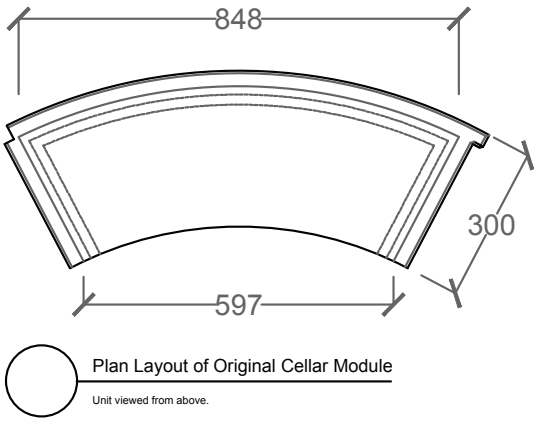


Cellar depth is measured from the FFL to top of cellar base slab

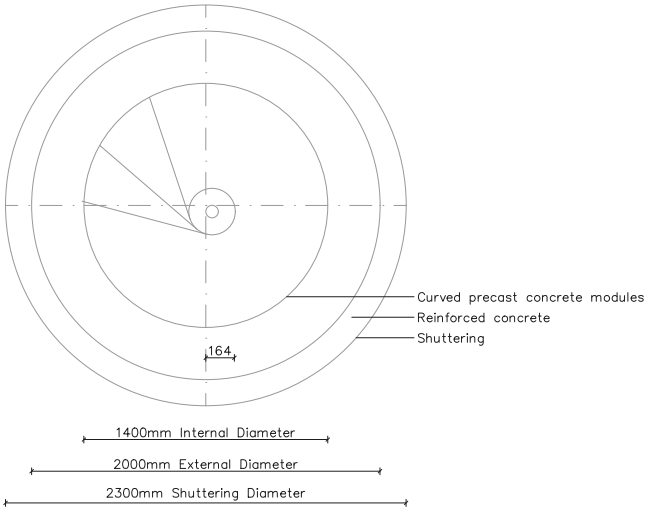
	2000mm depth	2500mm depth	3000mm depth
Number of bins	42	54	66
Maximum number of bottles	1130	1450	1780
Excavation depth	The excavation depth is determined by our structural calculations and confirmed by the Project Manager		
Internal diameter	1540mm	1540mm	1540mm
Cellar diameter	2178mm	2178mm	2178mm
Shuttering diameter	2500mm All diameters are +/- 10mm tolerance	2500mm	2500mm

A2ii ORIGINAL SPIRAL CELLAR DIMENSIONS





Each module has a solid back and an open side front.



Cellar depth is measured from the FFL to top of cellar base slab

	2000mm depth	2500mm depth	3000mm depth
Number of bins	42	54	66
Maximum number of bottles	1000	1250	1580
Excavation depth	The excavation depth is determined by our structural calculations and confirmed by the Project Manager		
Internal diameter	1400mm	1400mm	1400mm
Cellar diameter	2000mm	2000mm	2000mm
Shuttering diameter	2300mm All diameters are +/- 10mm tolerance	2300mm	2300mm

A3 BUILDING REGULATIONS, PLANNING PERMISSION & LISTED BUILDINGS

Building regulations

Building Regulations Approval is required when installing into a habitable space such as in the home or an attached garage. It is not required if the cellar is to be installed in most single detached garages or outbuildings.

Our consultant engineer will create the project specific calculations and prepare all information for the Building Regulations Approval application.

Spiral Cellars will manage the application for Building Regulations Approval.

The cellar is not a habitable space, therefore the cellar does not need to comply with Part K of Building Regulations, such as requirements for a handrail and the 'going' and 'rise' of the staircase treads.

Planning permission

Planning permission is not normally required.

Listed buildings

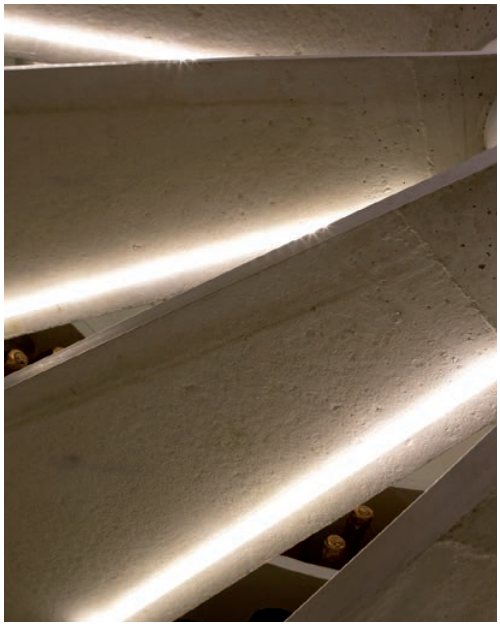
For listed properties a Listed Buildings Application will need to be made to the Local Authority for approval. It can take 8–10 weeks from the application being accepted until approval is received. Spiral Cellars can manage this application if required.

Building warrants for Scotland

Whilst the actual process from initial enquiry to final sign off is the same across the UK, we have a tailored solution for Scotland's Building Regulations. A Building Warrant is normally required for any structural changes to your property (extensions/demolition/alterations etc). The installation of a Spiral Cellar falls into this category.

Spiral Cellars will manage the whole process on your behalf, preparing structural calculations, submitting the application and managing any queries raised.

The lead time from submission to approval is typically 8–12 weeks. Spiral Cellars can manage this application if required.



A4 PARTY WALL AGREEMENTS

Party wall agreements are applicable to a Spiral Cellar installation if the excavation is planned to be within 3000mm of a neighbouring owner's building or structure. You must inform the adjoining owner or owners by serving a notice.

Party wall awards

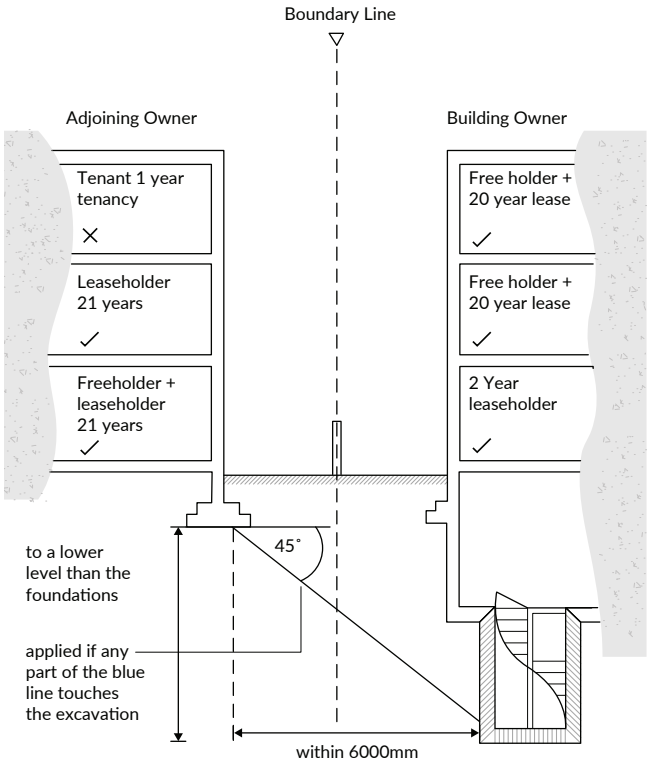
Party wall awards are applicable to a Spiral Cellar installation if the excavation is planned to be within 3000mm of a neighbouring owner's building or structure. This is a very straight forward process, and is not comparable to obtaining planning permission.

You must inform the adjoining owner or owners by serving a notice. The notice must state whether you propose to strengthen or safeguard the foundations of the building or structure belonging to the adjoining owner. Plans and sections showing this detail and the location and depth of the proposed Spiral Cellar are detailed in our engineer's structural package. This package should be included with your notice. Excavation or foundation and the location of any proposed building must also accompany the engineer's structural package.

The notice should be given at least one month before work starts. The neighbour has the right to request a Party Wall Award to be completed by a Party Wall Surveyor. The property owner for where the installation will be carried out is responsible for the cost of the award.

Spiral Cellars offers a service to arrange this agreement on your behalf.

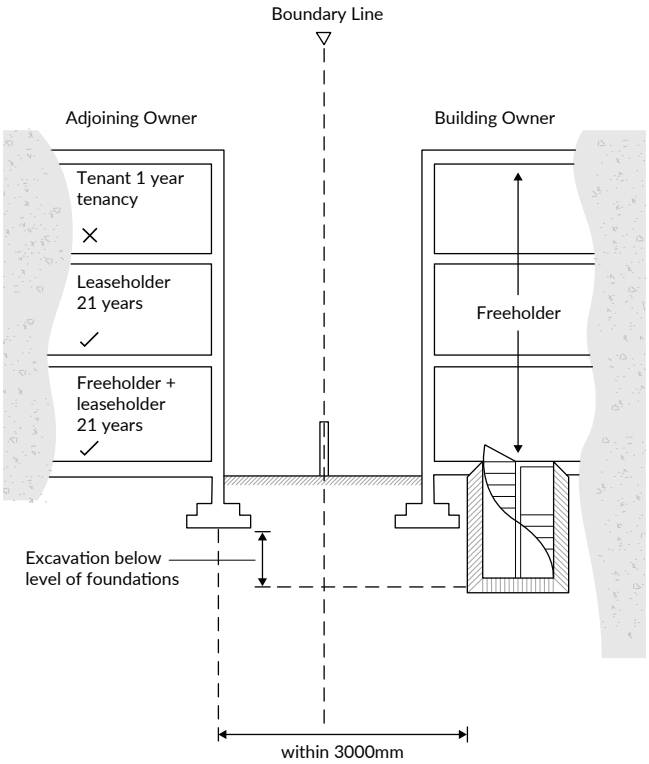
NOTICE OF ADJACENT EXCAVATION
SECTION OF THE PARTY WALL ACT 6(2)

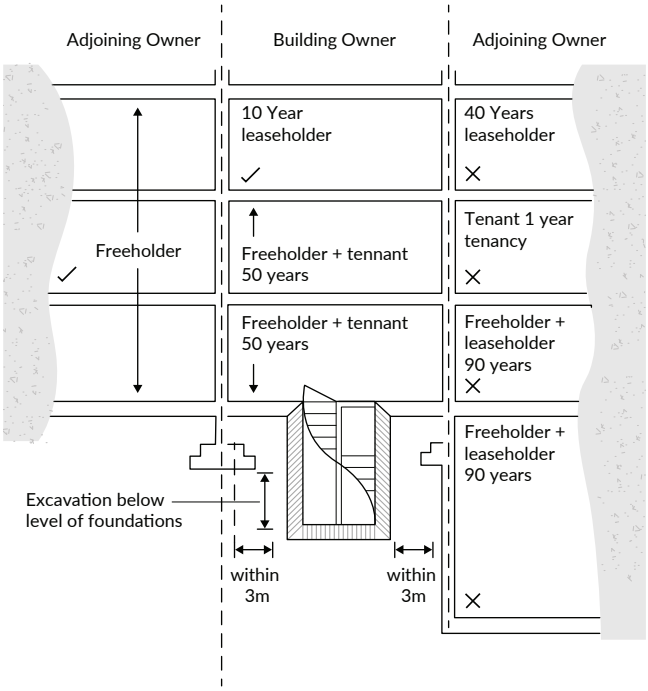


✓ Requires notice

✗ Does not require notice

NOTICE OF ADJACENT EXCAVATION SECTION OF THE PARTY WALL ACT 6(1)





✓ Requires notice

✗ Does not require notice

✓ Requires notice

✗ Does not require notice

A5 HEATING PIPES & UNDER FLOOR HEATING

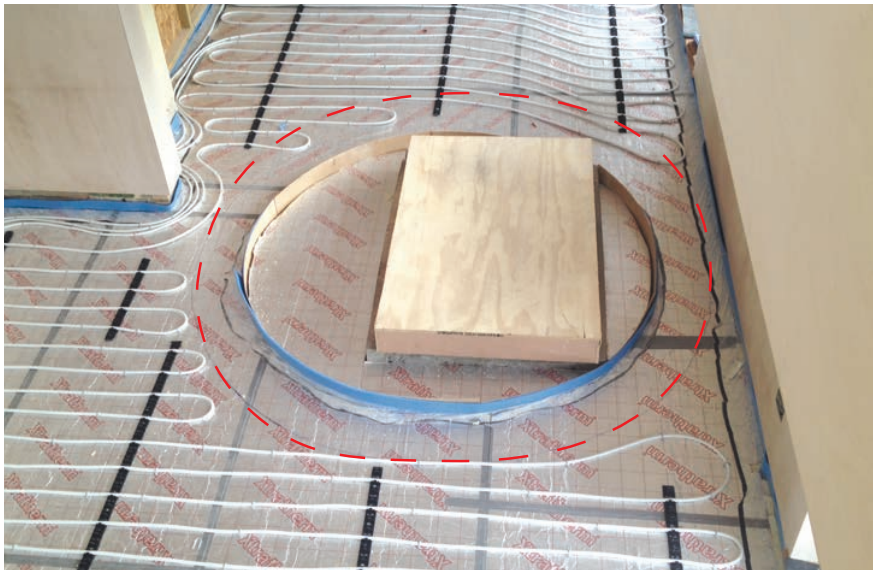
For your Spiral Cellar to perform efficiently, the under floor heating must be no less than 300mm from the outside edge of the Spiral Cellar excavation.

Ventilation pipes should be run under the floor construction. Where this is not possible, the under floor heating must be kept 300mm from the ventilation pipes.

NOTE

No other services such as hot water pipes to run across cellar area or vent pipe run.

UFH 300MM FROM EDGE OF SHUTTERING

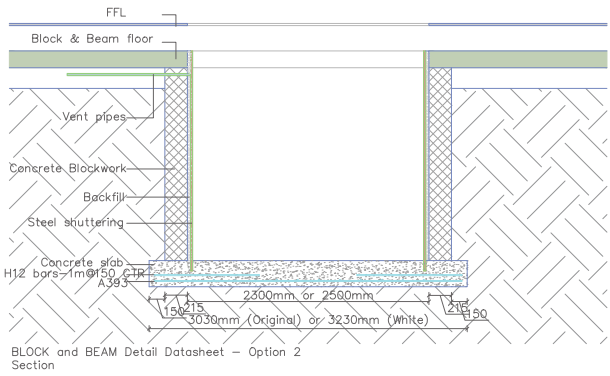


A6 STRUCTURAL IMPACT OF THE SPIRAL CELLAR

Reinforced concrete ring & base

The Spiral Cellar's reinforced concrete ring and base enables the Spiral Cellar to be located very closely and sometimes even up against the foundations. The reinforced concrete ring is designed to withstand surcharges from the footings and other forces, this prevents the need to specify under-pinning or deeper footings.

Reinforced polymer fibres, 'Strux', are mixed with cement to form a C30 reinforced concrete. The reinforced concrete base is cast on site once the liner system has been installed. The reinforced concrete ring is cast on site during the build-up on the concrete bins which form the Spiral Cellar wall.



BLOCK and BEAM Detail Datasheet – Option 2
Section

Structural calculations

Spiral Cellars consult with an independent engineering practice to produce a structural calculations package for each individual project. The calculations package will demonstrate and confirm that the Spiral Cellar location is achievable, without impacting the foundations.

The following types of loadings are key consideration when producing the structural calculations and confirming the Spiral Cellar location, reinforced concrete ring thickness and reinforced concrete base depth:

a. Foundations (planned/existing)

b. Soil surcharge, heave and shrinkage

c. Surcharge from vehicles

d. Ground water pressure

Shuttering and propping

During the excavation the Spiral Cellar's corrugated steel shuttering system must be installed. Each row is comprised of a number of curved sections, when bolted together they create a ring, forming the correct diameter for the chosen Spiral Cellar.

As the excavation commences, the ring of shuttering moves further down, the next ring should then be fitted on top. This process is continued until the excavation is completed, ensuring that the excavation is kept secure at all times.

Propping must be installed to protect the integrity of the excavation and surrounding structure. These guidelines have been designed and approved by our consultant engineers:

See propping guidelines on page 30.

A7 OUR STRUCTURAL ENGINEER'S METHODOLOGY

These notes outline a design method used by our consultant structural engineers to cover various scenarios, which can occur while installing a Spiral Cellar within close proximity to an existing structure.

Type of loadings

The Spiral Cellar, located below soil surface and in close distance to buildings, is subject to different types of surcharge loadings, which have to be resisted by the proposed concrete structure. The surcharge loads can be caused by:

Adjacent foundations of existing or proposed buildings

Spiral Cellars are usually placed in residential buildings where the footprint of the foundations is relatively small in relation to the cellar diameter. This means that in most cases there is going to be certain pressure from the foundations on the new underground structure.

The quick check if the cellar is subject to the foundation loads can be estimated from 45° load spread under the footing. In reality the resultant pressure from applied force to the surface of soil varies within depth and distance from applied force, and can be illustrated by Soil Pressure Bulbs.

Surcharge loads from soil

The purpose of structurally analysing of the Spiral Cellar ring is to calculate the highest bending moment under present surcharge loadings. The analysis shows that the bending moment can increase when uniform loadings (soil and water) are reduced and mainly foundation surcharge pressure is taken into account. In the calculations we have used active pressure coefficient Ka instead of passive pressure coefficient Ko to evaluate higher bending moment.

Surcharge live loads (vehicles etc.)

Depending on the location, the cellar can be subject to additional surcharge live loads applied to the ground bearing slab within the area where the cellar is located. The estimation of the vehicle load is transferred on to the cellar structure can be easily done by 45° load spread assumption.

Ground water pressure

In the scenario of a high water table in the specific location, the cellar structure can be subject to hydrostatic water pressure acting on the cellar walls and base. The main concern is the pressure acting on the base of the cellar, which can cause uplift of the structure; therefore the flotation check is essential and advised in every case.

Heave or shrinkage of cohesive soils

If the cellar is placed in the cohesive soil there could be potential risk of movement caused by heave or shrinkage occurring around the cellar structure. In cohesive soils the cellar should be kept independent from the floor structure e.g clay.

Design approach

The design approach has been modified in recent years from a traditional reinforced concrete structure to the structure reinforced with polymer fibres, without traditional steel bars. The aim of the design is to save time and cost during the construction process.

A7 OUR STRUCTURAL ENGINEER'S METHODOLOGY

The structure has been analysed as a circular model instead of a simplified retaining wall; this approach allowed for analysis of a structure very closely behaving as a real model. For this purpose finite element analysis software was used, where a three dimensional model was created. The following parameters were considered:

Structure

A Spiral Cellar is a retaining structure resisting surcharge loadings from the foundations, soil, and surface live loads. The circular shape of the structure with, more than 2000mm in diameter, gives huge stiffness and moment of inertia. The structure is cast from normal concrete reinforced with polymer fibres.

Material

Given the analysis results in various loading scenarios it was concluded that the required moment of resistance can be achieved with fibre reinforcement additive to the normal concrete. The new approach had been introduced purely because of the time and cost, which could be saved on standard installation of steel bars in circular structures. The fibre reinforcement has been available on the European market for a few years and has been widely used mostly in the design of ground bearing slabs, but the product has been tested for structural applications such as short beams or slabs.

For the design of the concrete structure the polymer fibres STRUX 90/40 have been used. For the structure, C30 normal concrete is used with mix design recommended by a manufacturer. In the case of contaminated soil the suggestion is to use 70% GGBS (Ground–granulated blast–furnace slag) instead and 30% Portland cement in the concrete mix.

Loadings

The shape of the structure means that the cellar under uniform load from soil, water or surface live loads becomes a compressive ring with uniform membrane stresses at certain depths of the ring. The ring, being made of concrete, can easily resist the compression occurring from the given forces. The design limits are given by bending moments along the perimeter of the cellar, which can be caused by variable surcharge loading from the adjacent foundations.

On top of the structural analysis the minimum sizing has to provide adequate dead weight against uplift forces which can occur. The dead weight of the cellar consists of the ring (150mm thick), the base slab (minimum 200mm thick) and internal concrete blocks used as wine storage shelves.

For the worst case design purpose the following assumptions were introduced:

- Pressure under foundation 150kN/m^2
- Minimum distance from the edge of the foundation to the face of the ring — 100mm
- Width of the foundation 600mm
- Distance from the wall to the centre of the cellar — 1400mm
- Foundation outstand — Bc = 0.1500mm
- Cellar depth 3000mm
- The one quarter of ring has been considered to calculate the loading on the ring surface

Analysis and results

Finite element analysis was used to calculate the resulting stresses in the structure under the varying load pattern. A 3D model of the circular structure has been created in FEA software where appropriate parameters for geometry, materials, supports and loadings have been assigned.

General results have been created for the different load case scenarios, from the analysis it was concluded that the worst situation occurs when there are two parallel walls situated on opposite sides of the cellar squeezing the ring.

In the situation of three or four walls around the cellar located at similar distances from the centre, the bending moment in the ring is reduced by the fact that the surrounding forces are at approximately similar magnitude, which brings the structure into compression.

The two following cases can be taken as an illustration for worst case scenarios in most of the situations:

Two parallel walls (2800mm apart)

a. 150kN/m^2 — assumed foundation pressure
b. 1400mm — distance to the centre
c. Analysis for all types of cellars

Two parallel walls (2800mm apart) + vehicles

a. 150kN/m^2 — assumed foundation pressure
b. 1400mm — distance to the centre
c. Analysis for all types of cellars

The following loading was included:

- Vertical stress from the foundation
- Soil surcharge loads
- Hydrostatic water pressure
- Vehicles surcharge loads

Design conclusions

- Due to the geometrical properties of the structure the surcharge forces acting on the cellar will cause mainly compression in the ring. The bending moment, which may occur along the perimeter, is minor in magnitude and any tensile stresses in the section can be resisted by polymer fibre reinforcement Strux 90/40.
- The bending moment in the base slab of the cellar due to water pressure can be resisted by polymer fibre reinforcement Strux 90/40.
- The main concern in the design of the cellar is the water uplift which has to be restrained by dead weight of the concrete base and concrete ring. The concrete structure has to be provided, even if the foundations lay beyond 45° influence line.

SAND AND GRAVEL (LOW RISK INVOLVED)

Standard construction as per the Spiral Cellars Ltd method statement and the suggested excavation procedure is illustrated on page 18.

SAND AND GRAVEL — HIGH WATER TABLE (MEDIUM RISK INVOLVED)

A high water table can cause certain difficulties during excavation and casting of the concrete structure. It is recommended to use an experienced contractor who is confident and can provide adequate equipment for such conditions.

It is suggested to use lower water content in the concrete mix and use a concrete plasticiser for better workability. It is recommended to contact a local concrete supplier for product specification.

SAND AND GRAVEL/BASEMENTS/HIGH WATER TABLE (HIGHER RISK INVOLVED)

For installations in basements a national guidance should be used to justify the water uplift in the calculations. British Standards require an assumption of 0.75 depth of the basement for the water table.

The weight of the cellar in these conditions is generally not satisfactory and the basement slab has to be used to provide adequate dead weight. The basement slab should be cast on top of the cellar ring. The proposed or existing basement slab should be justified by a Structural Engineer. Also, see notes in point 2.

STRUCTURE ON PILES AND COHESIVE SOILS (HIGH RISK INVOLVED)

With piled structures the main risk involves potential settlement of the cellar positioned in non load bearing strata.

Furthermore, in cohesive soils the risk of heave and shrinkage is present. An allowance for the possible movement has to be made.

A8 INSTALLATION OPTIONS

We offer two options, 'full' where we complete the excavation and installation or 'fit' where the contractor completes the excavation and we install the cellar.

EXCAVATION AND INSTALLATION (FULL)

We are able to undertake the full installation into existing buildings, even when the property is fully occupied. We can also carry out a full installation on refurbishment and new build projects if the contractor prefers not to do the excavation. We dig and remove the spoils by hand, and as such we are able to install in most ground floor rooms or basements regardless of construction build up.

The Original Spiral Cellar, takes between 5 and 6 working days. The White Spiral Cellar is more likely to take 8 working days. Access for materials and skip positions is considered carefully by Spiral Cellars at site survey stage.

The Spiral Cellars team will also organise skips for removal of waste, gain the necessary permits from your local authority, and supply all building materials, waterproof liner, Spiral Cellar modules, door and lighting.

INSTALLATION INTO A PREPARED EXCAVATION (FIT)

We recommend that any demolition work is undertaken, and once new foundations have been set, the circular hole for the cellar should be excavated. The contractors will probably already have a mechanical excavator on site, and the hole can be dug in less than one day, whilst site access is at its easiest.

NOTE

Excavation takes on average 3 days by hand or ¾ day with mechanical excavator.

3–5 days for the Spiral Cellars team to fit the cellar.

6 weeks later After Sales Visit and the cellar is ready to use.

The hole should be shuttered with our hole protection rings and the rest of the build programme can continue. The slab should be poured to the outside of the shuttering and the contractor will be required to provide an electric supply to the cellar and to fit two ventilation pipes (50mm UPVC pipes) within the floor construction to the nearest external wall. This will be agreed in advance by Spiral Cellars and guidance notes will be provided.

The Spiral Cellars team then supply, deliver and install the cellar. The construction method for the cellar involves: installing the Butyl liner, PVC bag and sleeve and casting the base, constructing the cellar modules, casting a reinforced concrete ring in–situ, if required.

The door and ventilation pipes are connected and the installation is complete. On a well prepared site, this process will take 3–5 days. The final electrical connection should be completed by the contractors' certified electrician, or Spiral Cellars' own electrician.

Scheduling

Spiral Cellars should be booked to install the cellar between first and second fix stage of the build. Our schedule is normally booked 4 weeks ahead. To re–schedule the installation date we require 28 days notice as per our Terms and Conditions.

A9 WHAT A CONTRACTOR WILL BE REQUIRED TO DO

The Fit Installation of a Spiral Cellar has a number of critical elements that must be executed as per our specification. These elements will be checked ahead of our attendance. Any variances will become chargeable.

1. The contractor should excavate a hole as per the structural calculations package, on average 2300–2500mm diameter and up to 3600mm deep (depending upon cellar size selected — the exact dimensions would be confirmed by Spiral Cellars once the engineering calculations have been prepared, which are project specific). Any larger excavation will result in additional backfill and incur additional costs to the client or contractor.

2. The hole should be protected with our steel shuttering rings. These will be delivered to site at one week's notice, prior to the excavation date. All fixings are supplied. See page 28.

3. ***Ventilation Pipes:*** Once the excavation is complete and made safe, it is critical that the preparation for the vent pipes is given consideration. 2 x 50mm internal diameter UPVC pipe with solvent welds must be installed in line with Spiral Cellars' designs. Where possible 90° bends must be minimised. At the external end the 50mm pipes can be terminated 100mm beyond the brickwork if they are contained within the cavity.

   If the vents are to be outside the external wall, the 2 x 50mm pipes can be terminated side by side and protected. The low level 'cold — in' pipe will be 525mm above hard landscape, the high level 'warm — out' pipe will be at 2025mm height, unless agreed differently at survey stage. All pipe ends to be taped up. Vents to be marked 'upper' & 'lower'. See page 35.

   Please note, the vent pipes must not have hot water pipes for radiators or under floor heating set over. The vent pipe run must be executed as per our specification. Services must be kept 300mm away from vent pipes.

4. ***Electrical Supply:*** The cellar requires a power supply for lighting and for the motorised door (if applicable). Electrical feeds to the cellar will need to be installed within the floor construction in conduit, with no junctions. Leave approximately 3500mm of cable within the cellar. Tape ends. Provide a 5Amp fused spur for cellar supply and to make final connections outside the cellar. See page 37.

5. ***Finished Floor Level Datum:*** A datum level mark on a wall (or similar) indicating Finished Floor Level (FFL) is to be provided within 3000mm of the cellar location on Day 1 of our installation — this cannot be changed thereafter.

6. The Project Manager will be in touch in the run up to the installation to agree a suitable start date for the installation and answer any queries that may arise. A pre–installation visit may be conducted to confirm the site and excavation are ready for our team's arrival. We will expect to be able to arrive at the site on the agreed date, remove the protection and fit the cellar, pour reinforced concrete ring, make final connections to the ventilation pipes and then finally fit the door. Any delays/incomplete works which cause the project to run beyond the scheduled programme will be charged in accordance with our terms and conditions.

   If there are any doubts concerning the installation procedure and requirements the contractor should contact the main office for direct referral to our Project Manager for technical guidance, or to arrange a site meeting.

7. We will expect good, clear, safe site access and an area for materials in line with the discussions and agreements at site survey stage.

   The Health and Safety Executive does not consider other teams working overhead or obstructing scaffold to be a safe working environment.

A10 OUR METHOD STATEMENT: HOW WE FIT A SPIRAL CELLAR

NOTE

The door must be left open for a minimum of two weeks to allow the cellar to dry out.

Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.

The door should remain protected until the After Sales Visit is complete.

1. The team will check site datum, in particular the finished floor level and that the hole is at the right depth and shape.

2. Upon completion of the excavation a heavy duty PVC liner and Butyl tanking liner will be fitted inside the shuttering. Both will be clamped/supported at the top of the hole, using scaffolding planks as a safe working platform, to keep the bags taut.

   A geotextile base disk will be laid in the base of the liner, and a further reinforced PVC sleeve will be installed into the liner.

3. A base slab of concrete, specified by the engineer, will be poured into the bags and left to set.

4. The modules are lowered into the bag via supports and one man will be at the bottom setting out/fitting the modules and step modules. The top ring is fitted just below finished floor level and one half of the ring is covered by soffit boards, unless a round glass door is specified.

5. The ring/void outside the bag is then back filled with wet concrete and Strux fibre reinforcement (refer to Strux engineering bulletin for Strux technical specification).

6. The plastic ventilation pipes are fitted. One length of pipe is fitted down the centre column and one pipe is fitted through a pre cast hole in the flat soffit board. Both pipes are then directed to the nominated outside wall (In a fit only project, the pipes are already channelled beneath floor level to this wall by the contractor).

   The pipes will rise up either on the inside or outside of the wall with any joints being solvent welded. The pipe will exit the wall via a hole prepared with a 55mm core drill. This is then sealed and made weather tight. One pipe will be raised to 525mm height and the other pipe will be raised to a minimum height of 2025mm. The pipes will be clipped to the wall and the open pipes will have rodent guard covers fitted.

7. Electric bulk head lights or LEDs will be fitted in the cellar. They will be linked and a switch fitted at the head of the cellar. A feed for connection to an existing ring main will be linked from a socket to the cellar light switch and all cabling will be routed in conduit underground. A fused spur may be fitted where applicable.

8. The door is fitted onto the open half side of the cellar. It is set on a 25mm bed of mortar and the finished detail inside is haunched to leave a smooth finish.

9. The door is tested for opening and closure.

10. Thereafter the floor area around the cellar is reconstructed as directed and in accordance with the order specification.

11. The site is then cleared of waste and cleaned/washed down as required.

12. All protective coverings are removed and disposed of. The sequence for point 5, 8, 9 differs for a round glass door.

The Spiral Cellars team leader will fill in a job completion form illustrating any differences to the pre order requirements, risk assessment variations, incidents/ accidents, snags required, difficulties, incomplete items or other. At stages through the construction process the Project Manager will have visited the site. We will have also requested that the Local Authority Building Inspector visits the site to ensure approval of the construction method.

A11 ORDERING & INSTALLATION TIMELINE

Fit Installation	Stage	Full Installation
Combination of Spiral Cellar package is discussed and agreed, an estimate is issued.	1	Combination of Spiral Cellar package is discussed and agreed, an estimate is issued.
If required Site Surveyor visits the property to confirm the Spiral Cellar location access, logistics and price.	2	Site Surveyor visits the property to confirm the Spiral Cellar location access, logistics and price.
10% deposit is paid to place the order and secure an installation date. Lead times can be up to 8 weeks.	3	10% deposit is paid to place the order and secure an installation date. Lead times can be up to 8 weeks.
Spiral Cellars instruct their engineers, structural calculations are prepared and the building regulations application is drafted.	4	Spiral Cellars instruct their engineers, structural calculations are prepared and the building regulations application is drafted.
Shuttering is delivered to site along with the confirmed site-specific excavation dimensions.	5	
Contractors prepares the hole.	6	
The excavation is completed. A Spiral Cellars Project Manager visits site to access the excavation and discuss the pending Spiral Cellars installation.	7	
80% payment due 14 days before installation date.	8	80% payment due 14 days before installation date.
The Spiral Cellar Installation takes place in 1 or 2 phases (dependant on site conditions and programme).	9	The Spiral Cellar Installation takes place in 1 or 2 phases (dependant on site conditions and programme).
The After Sales Visit (scheduled for 6-8 weeks post installation) takes place; additional extras such as treads are fitted at this point. The final 10% payment is due.	10	The After Sales Visit (scheduled for 6-8 weeks post installation) takes place; additional extras such as treads are fitted at this point. The final 10% payment is due.
5-year warranty is issued, which is effective from the date of practical completion.	11	5-year warranty is issued, which is effective from the date of practical completion.

A12 WARRANTY

All our fully–installed cellars come with a five year warranty. If during the first five years a cellar is found to be defective in any way, under normal use and service, we guarantee to repair or replace the cellar free of charge. Full information can be found within our Terms and Conditions.

What if something goes wrong in the future?

At Spiral Cellars we don't believe that our service finishes once the cellar is built. We will always give free advice on how to get the most out of the cellar, and should you have concerns over its functionality, we will visit once again to assess and remedy any problems.

What maintenance is necessary on my part?

Moving parts of doors might occasionally need oiling. The cellar may also need vacuuming and vents checking from time to time.

B
CONSTRUCTION GUIDANCE FOR CONTRACTORS

1 How to excavate the hole and install the steel shuttering rings 30
2 How to install temporary propping 32
3 How to prepare the hole with block & beam construction 33
4 How to install the ventilation pipes 36
5 Details of electrical supply required 39
6 How the waterproof liner can be integrated with tanking systems 40
7 How to reconstruct the concrete slab around the cellar 41
8 How to reconstruct the concrete slab around the cellar in a basement 42
9 How to reconstruct the existing block and beam floor around the cellar 43
10 How to reconstruct a raft floor around the cellar 44
11 How to reconstruct a timber suspended floor around the cellar 45

B1 HOW TO EXCAVATE THE HOLE AND INSTALL THE STEEL SHUTTERING RINGS

Where the 'Fit only' option for the installation of the Spiral Cellar has been selected, the contractor is required to prepare several elements on site prior to the installation of the cellar:

1. Excavation of the hole for the Spiral Cellar and insertion of steel shuttering rings.

2. Installation of temporary propping. Spiral Cellars will not fit a cellar into an unsupported excavation.

3. Installation of ventilation pipes.

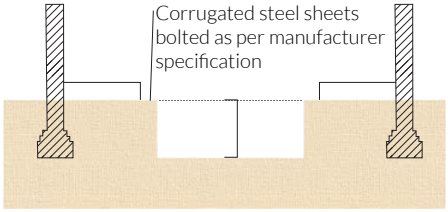
4. Installation of electrical supply.

The Finished Floor Level (FFL) and Datum Grid line must be provided within 3000mm of the cellar. This FFL must be established before the hole for the cellar is dug.

5. Establish the proposed cellar location in accordance with the site location plan. The levels must be taken from the Finished Floor Level. Refer to our engineering calculations supplied for the exact depth of excavation.

6. Mark out excavation with chalk/spray paint to required diameter.

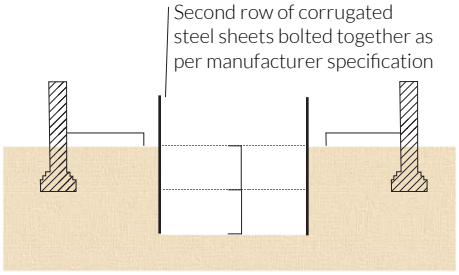
7. Excavate down to 700mm (whilst using a mechanical excavator it may not be possible to exactly shape the hole below 1000mm deep, every effort should be made to do so to accommodate the shuttering) see below.



8. Five pre–drilled steel panels bolt together to form a complete ring of effective height of 750mm.

9. Fix together one complete shuttering ring using fixings supplied in ALL of the holes in the shuttering. All bolts to be installed with the heads facing INSIDE the shuttering, and the nuts on the OUTSIDE against the earth.

10. Lower the shuttering into the excavation and prop under the shuttering so that the top row of fixing holes are still above. See below ground level.



NOTE

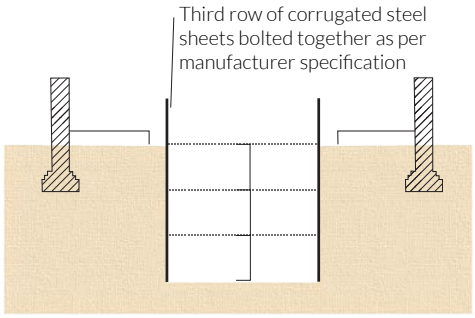
Do not install a concrete base into the excavated hole. Spiral Cellars will do this as part of our installation.

Do not excavate the hole until calculations have been supplied.

11. Dig another 700mm, leaving some of the soil under the shuttering to support.

12. Fix another complete ring and offer it to the top of the first ring, overlapping, and bolt together.

13. Lower down to the bottom of the excavation. See diagram below.



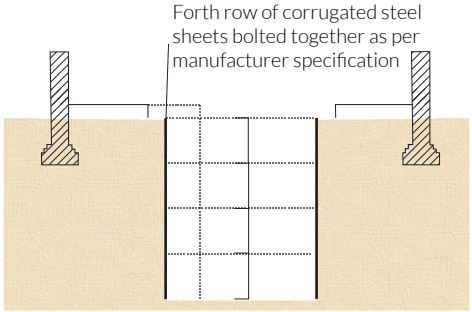
14. Fix another ring together.

15. Attach straps or ropes to the top of the shuttering through the fixing holes.

16. Dig out the soil holding the shuttering in place.

17. Lower the shuttering ensuring that it is perpendicular (plumb).

18. Repeat steps 5–9, digging 700mm at a time until required depth is achieved. See diagram below.



19. Backfill to the external side of the shuttering when complete, using a slurry mix.

20. If there is groundwater present in the excavation, it will be necessary for a 300mm diameter pipe to be installed vertically down the outside of the rings to 300mm below the full depth. This is to give width access for a submersible pump to remove water from the excavation during the construction.

21. The top of shuttering should be set to the top of base slab/block and beam level, or advised by Spiral Cellars. If the excavation is through a timber suspended floor, then the top of the steel shuttering is to be set at just under the timber floor structure itself.

22. Do not install a concrete base into the excavated hole. Spiral Cellars will do this as part of our installation.

An additional charge will be made if further excavation to the correct depth is required. This charge will be made without prior notification to the client, as per our terms and conditions.

Milton Rings

An alternative to the steel shuttering panel earth support system supplied by Spiral Cellars is to install precast concrete 'Milton' Rings (or similar supplier). The Milton Rings are not supplied or installed by Spiral Cellars. The rings usually sit on a concrete slab. Note that a 2400mm diameter ring x 500mm deep weighs approx 1.05 tonne.

The step irons need to be cut off. If this method is selected please contact us for advice on the minimum internal diameter of the rings — generally a 2400mm internal diameter ring is required for Original Spiral Cellars and 2700mm internal diameter for White Spiral Cellars, but we need to confirm the details for each particular job. Please consider cost, delivery and plant required for Milton rings, in addition to access issues on your site.

B2 HOW TO INSTALL TEMPORARY PROPPING

DIAGRAM 1

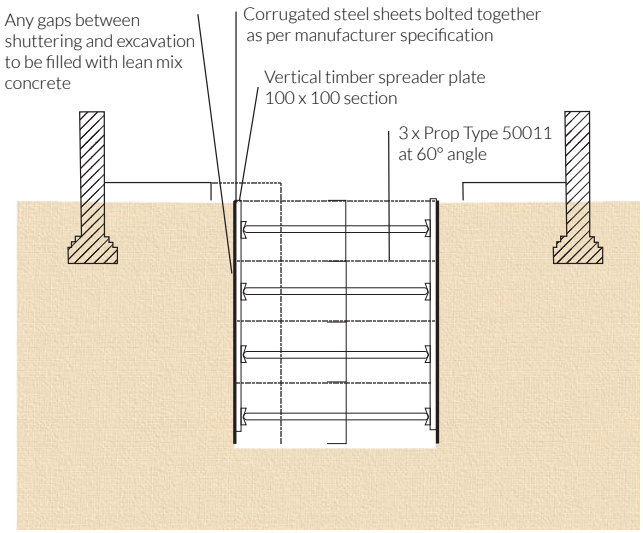
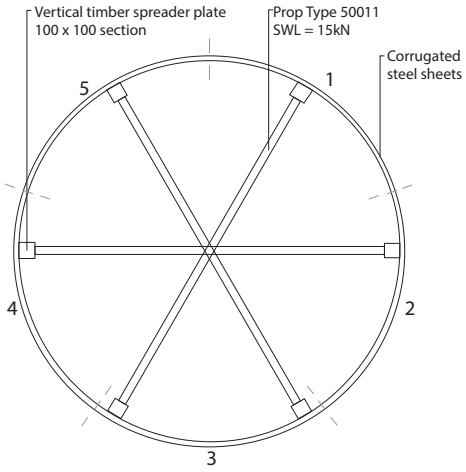


DIAGRAM 2



If an excavation is to be left for more than 7 days before the cellar is installed, it is necessary to prop the hole securely.

The steel shuttering should be propped with 3 x 50011 Type Props as per Diagram 2.

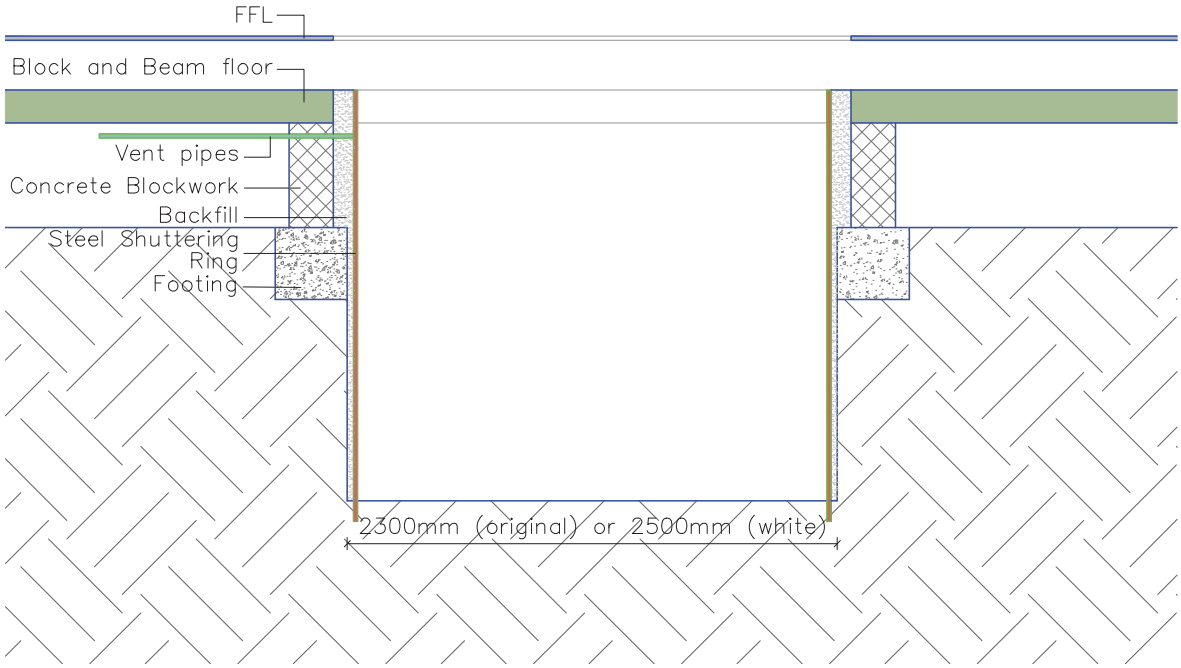
Details of components	10/3" Corrugated steel sheets 0.9mm 5 x 0.7500mm x 1300mm panels, numbered 1–5
Moment of resistance	0.64kNm
Moment of Inertia	4.23cm^4
Working stress	143 N/mm^2
Calculated moment	M=0.35kNm

B3 HOW TO PREPARE THE HOLE WITH BLOCK & BEAM CONSTRUCTION

To accommodate the cellar in a new build scenario with a block and beam arrangement, an aperture of 2400mm x 2400mm or 2600mm x 2600mm is required.

The best solution is to build a sleeper wall to support the cut beam. The 'box' created in the B&B system must be large enough to accommodate the shuttering system, which is 2300mm or 2500mm diameter. The shuttering is taken to the top of the beam level.

For structural integrity, the void between the shuttering and the block work box needs to be filled. Ensure that the temporary propping is installed before concrete backfilled is started as per page 29.



OPTION 1. DWARF WALL

1. Contractor to excavate the cellar hole to the depth and diameter required by Spiral Cellars.

2. Contractor to construct the steel shuttering rings to the depth and diameter required.

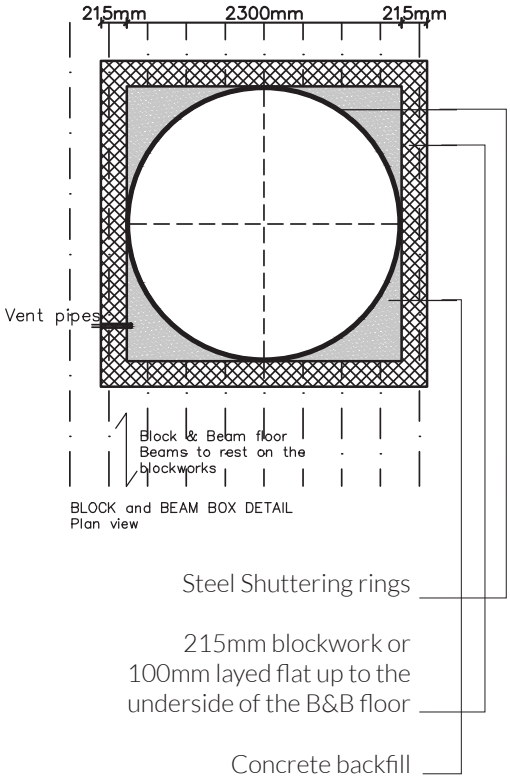
3. Contractor to then build 100mm block work layed flat or use 215mm solid block work up to the underside of the block and beam. This will form a square around the cellar shuttering rings. See plan view of block and beam box detail, diagram 2.

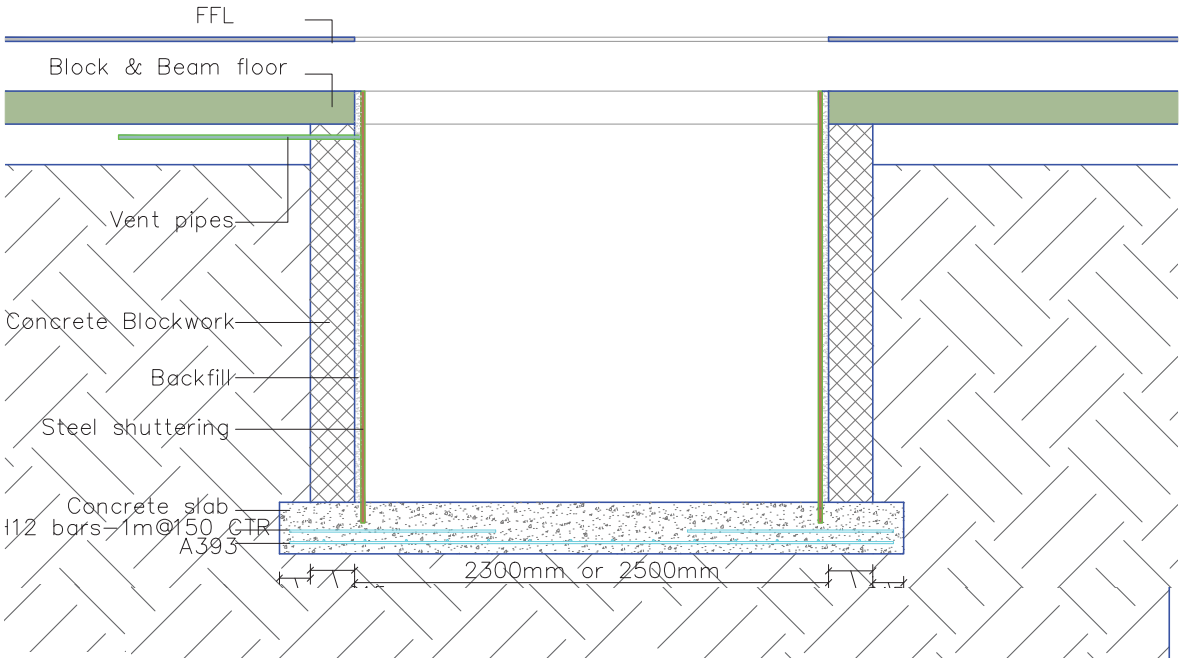
4. Back fill between the steel rings and the inside of the block work to the top of the block and beam floor. Vent pipes will also need to be placed in this area, diagram 1.

5. Sit the new block and beam floor on the block work around the cellar.

6. Lay the normal required damp proof membrane and insulation and then concrete to the top of the block and beam floor between the steel rings and the inside of the block work.

Contractor to construct a footing around the cellar diameter area (depth is subject to engineer's calculations).





OPTION 2

1. Contractor to pour a concrete slab. Top of slab to be determined by Spiral Cellars structural engineers.

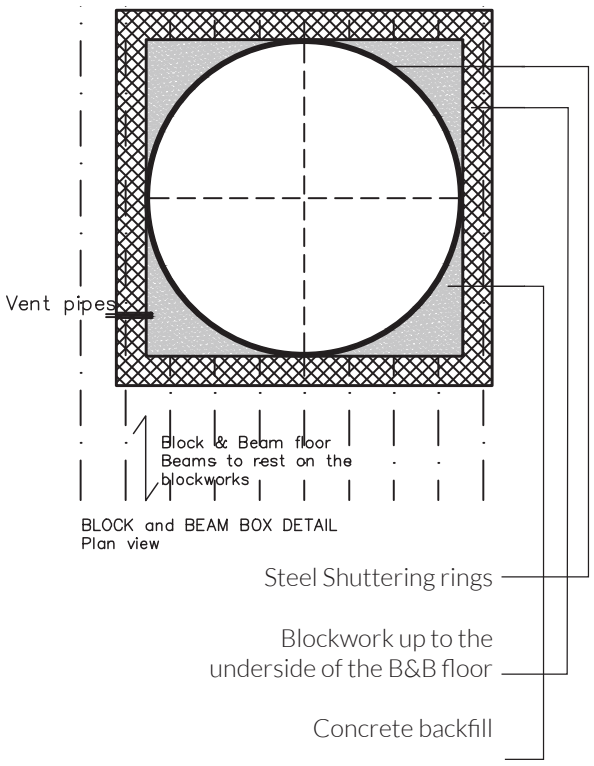
2. Contractor to construct the steel shuttering rings on top of the slab, to the depth and diameter required.

3. Contractor to then build block work layed flat or use solid block work up to the underside of the block and beam. This will form a square around the cellar shuttering rings. See plan view of block & beam box detail.

4. Back fill between the steel rings and the inside of the block work to the top of the block and beam floor. Vent pipes will also need to be placed in this area. See diagram above.

5. Sit the new block and beam floor on the block work around the cellar.

6. Lay the normal required damp proof membrane,insulation and then concrete to the top of the block and beam floor between the steel rings and the inside of the block work.

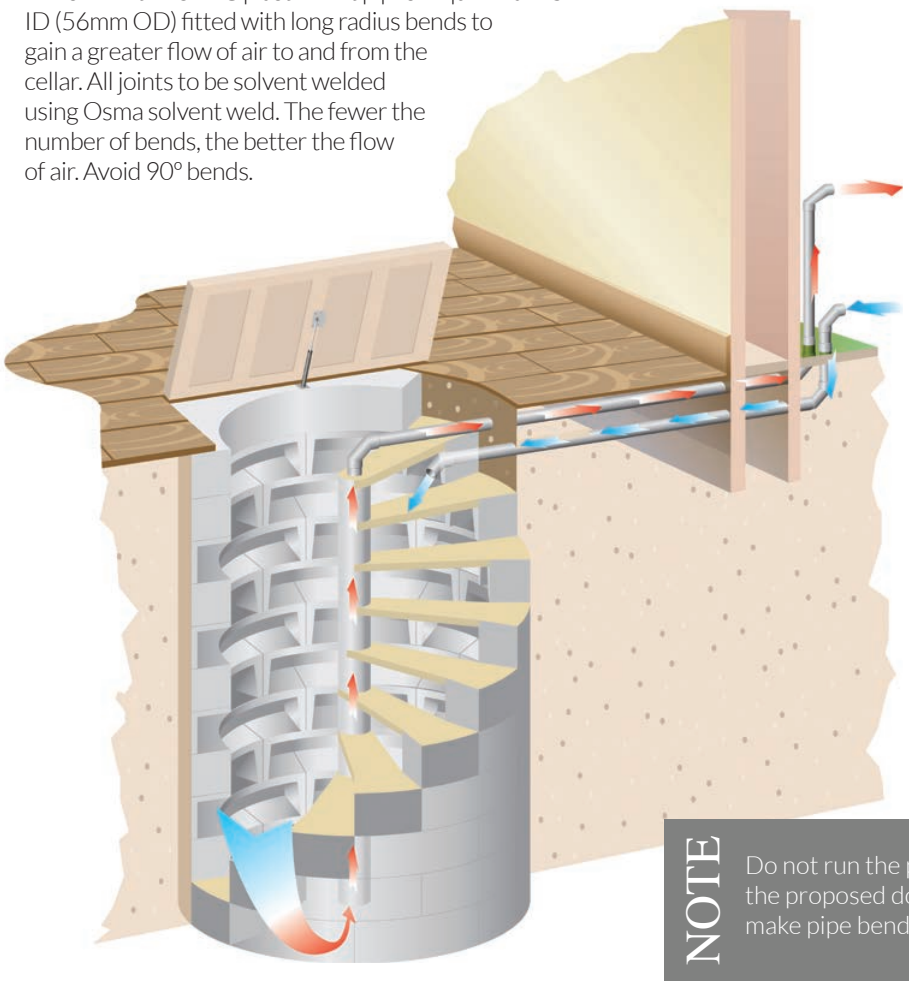


B4 HOW TO INSTALL THE VENTILATION PIPES

The pipes can be fed through the cavity in a new build construction and exit the wall with rodent grill. Where they cannot be fed through the cavity, pipes will be directed to the outside wall, and both feed up outside the wall. The differential height of the vent pipes causes warm air to be sucked out through the top pipe and hence cold air flows in through the bottom pipe displacing the warm air. The positioning of the vent pipes is crucial to ensure an efficient cellar.

There are two ventilation pipes required to enter the cellar, which will run within the floor construction or below a block & beam floor.

- The size of the UPVC plastic vent pipes required are 50mm ID (56mm OD) fitted with long radius bends to gain a greater flow of air to and from the cellar. All joints to be solvent welded using Osma solvent weld. The fewer the number of bends, the better the flow of air. Avoid 90° bends.



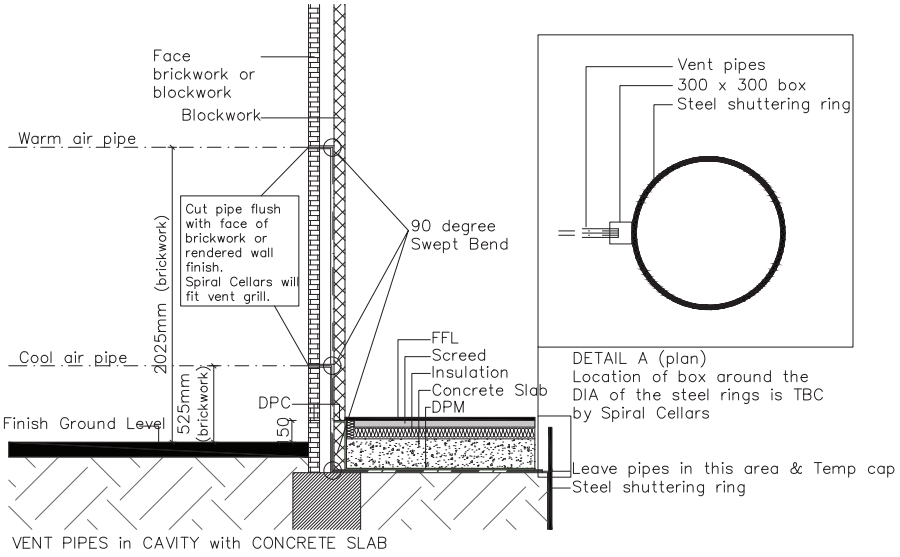
- To enable the slab to be poured prior to the cellar installation a soft box, 400mm x 400mm plywood, should be fitted to the edge of the shuttering.
- The ventilation pipes should temporarily terminate within the soft box, allowing the slab to be poured up to the shuttering and soft box. Once the cellar is installed the ventilation pipes will be run from the soft box into the cellar by the Spiral Cellars' Installation team.
- The run of pipes should be no more than 5000mm if possible, with minimal bends to ensure the cellar performs efficiently.
- Both pipes to be run parallel, in tandem with a 50mm gap between the two pipes.
- One pipe is nominated as the warm pipe, the other as the cold pipe — as shown in the diagram opposite.
- Both pipes will be set in a channel cut out of the floor in a solid base or below the block & beam floor. Refer to the Under Floor Heating details on page 16.

WITHIN CAVITY WALL

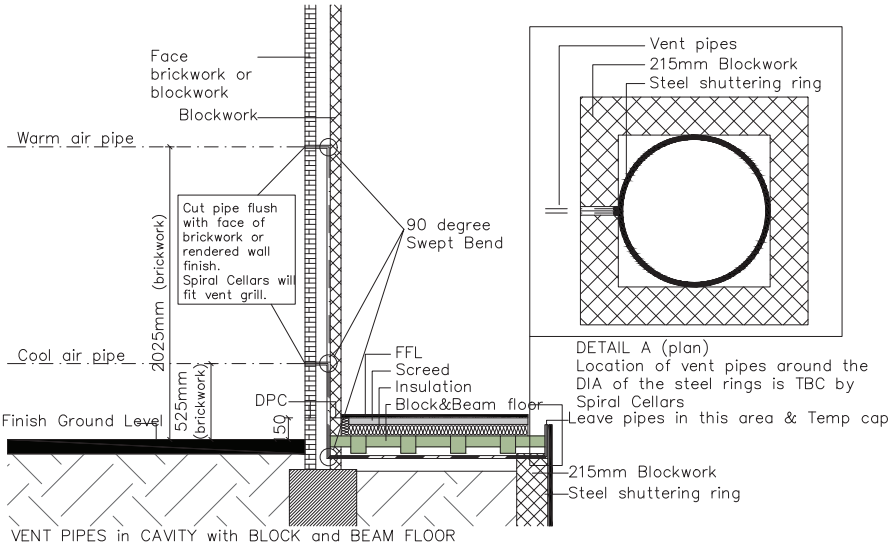
- The pipes should now be extended up within new cavity wall and turned through 90° to exit out flush with the external wall face. Lower vent to exit at 525mm above external ground level, upper vent to be 2025mm above external ground level.

NOTE Do not run the pipes across or into the area where the proposed door opening is planned. If necessary make pipe bends around the cellar.

CONCRETE SLAB



BLOCK & BEAM



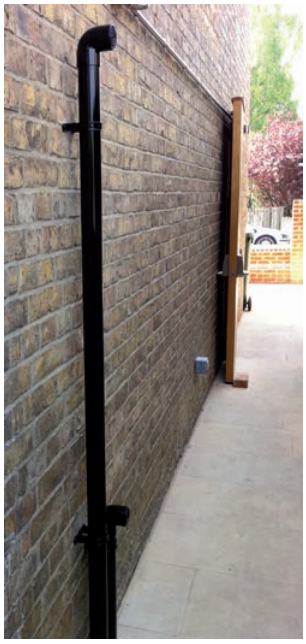
B4 HOW TO INSTALL THE VENTILATION PIPES

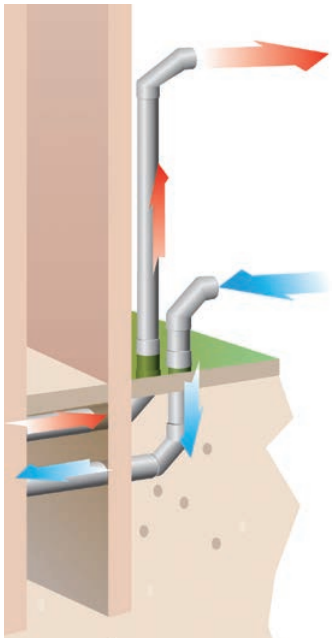
NOTE

Before the cellar is installed, access should be created to allow the ventilation pipes to be fed through the shuttering (using a core drill piece suitable for cutting steel) to create two openings for each pipe.

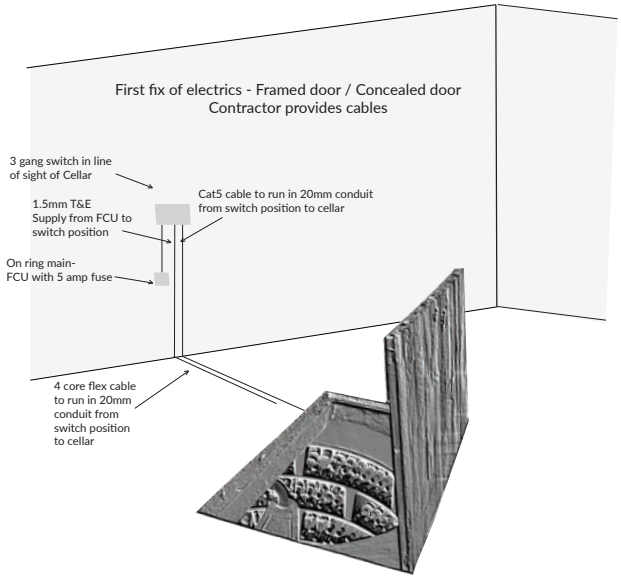
EXTERNAL

- Using a dry 60mm diamond core bit, create holes to allow each pipe to exit through to the outside of the North or shaded East facing wall.
- The cold air vent pipe will then bend up the outside wall to a height of 525mm from ground level to be fixed to the wall with pipe brackets.
- The top of the pipe will require a 90° bend with a rodent grill fitted.
- The warm air vent pipe will then bend up the outside wall to a height of 2025mm from ground level to be fixed to the wall with pipe brackets.
- The top of the pipe will require a 90° bend with a rodent grill fitted.
- Use a mastic waterproof seal around the pipes when they exit through the wall.





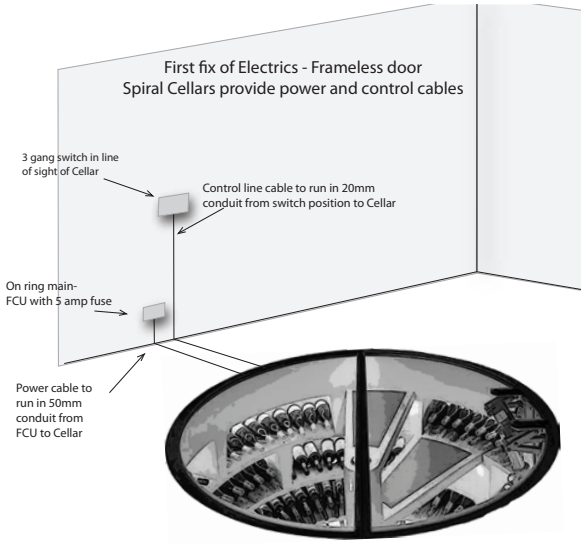
B5 DETAILS OF ELECTRICAL SUPPLY REQUIRED



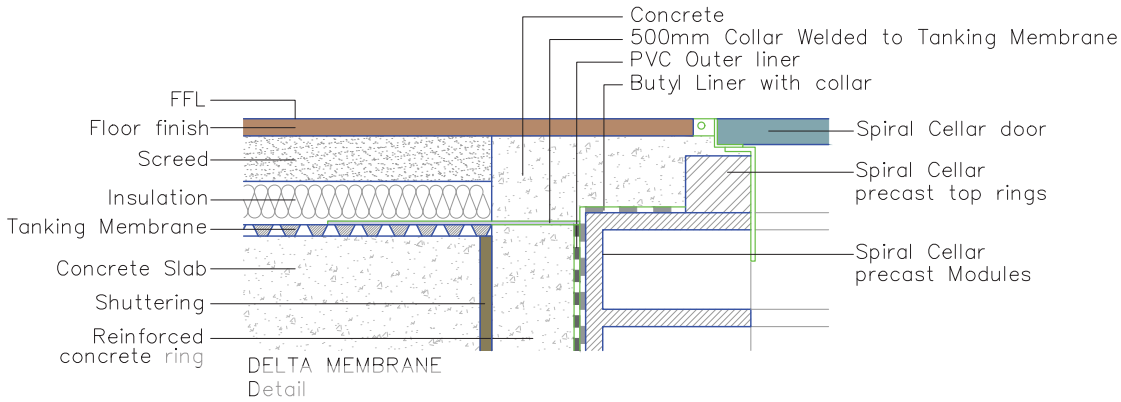
A 5Amp supply is to be made available on the nearest wall, with sufficient lengths of the appropriate cables to reach the cellar position. These electrical feeds to the cellar will need to be installed within the floor construction in conduit with no junctions.

A switch for the light and, if necessary, a rocker switch for the motorised door will be required. Spiral Cellars will supply standard switches, but these can be changed by the client's electrician as required.

See electrics section (page 85) at the end of this manual for wiring of lights, and motorised doors.



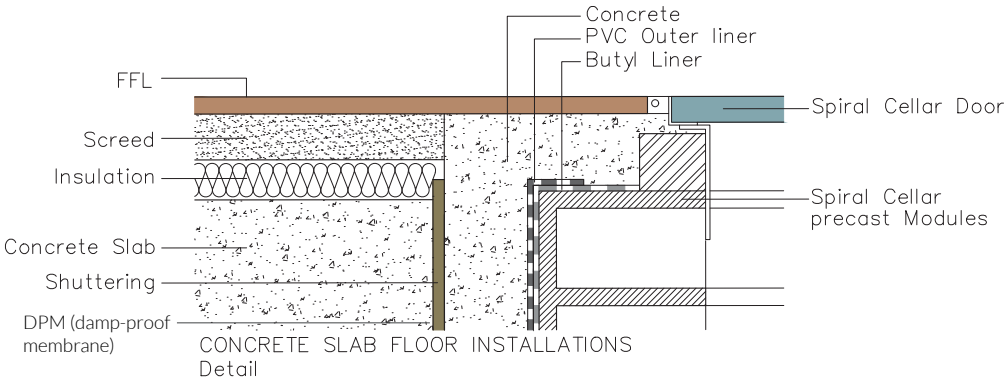
B6 HOW THE WATERPROOF LINER CAN BE INTEGRATED WITH TANKING SYSTEMS



In new build scenarios the Butyl liner of the cellar ***can be*** supplied with a collar which ***should be*** integrated into the tanking membrane by the contractor or specialist installer.

In basements the Butyl liner ***will always be*** supplied with a collar which ***must be*** integrated into the tanking membrane by the contractor or specialist installer.

B7 HOW TO RECONSTRUCT THE CONCRETE SLAB AROUND THE CELLAR



The steel shuttering installed by the contractor will need to be trimmed to either the top of the proposed concrete slab or screed, depending on your schedule of works and at what stage the cellar is due to be installed.

Once the cellar has been installed, Spiral Cellars will pour a concrete slab or screed over the top of the cellar to meet the edge of the concrete slab or screed layed by the contractor. If the contractor has not completed either the slab or screed at the time of install, then the contractor can pour their screed all the way up to the edge of the door concrete haunching box.

This should be discussed with your Spiral Cellars Project Manager.

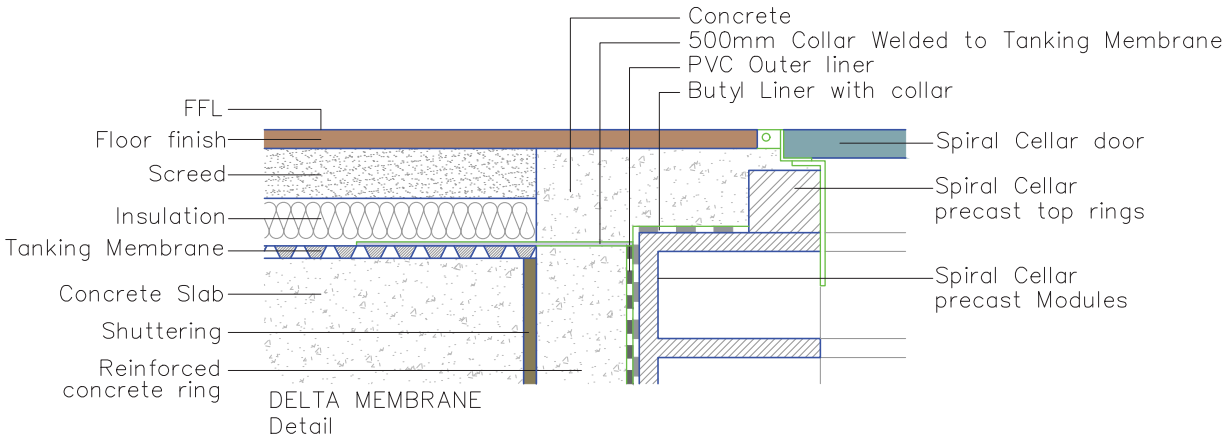
B8 HOW TO RECONSTRUCT THE CONCRETE SLAB AROUND THE CELLAR IN A BASEMENT

Installations in basements can be subject to a high water table.

The steel shuttering installed by the contractor will need to be trimmed to the top of the proposed concrete slab.

NOTE

In this scenario the cellar must be installed before the screed is completed around the door, allowing the butyl liner collar to be connected to the tanking system by the contractor or specialist installer.

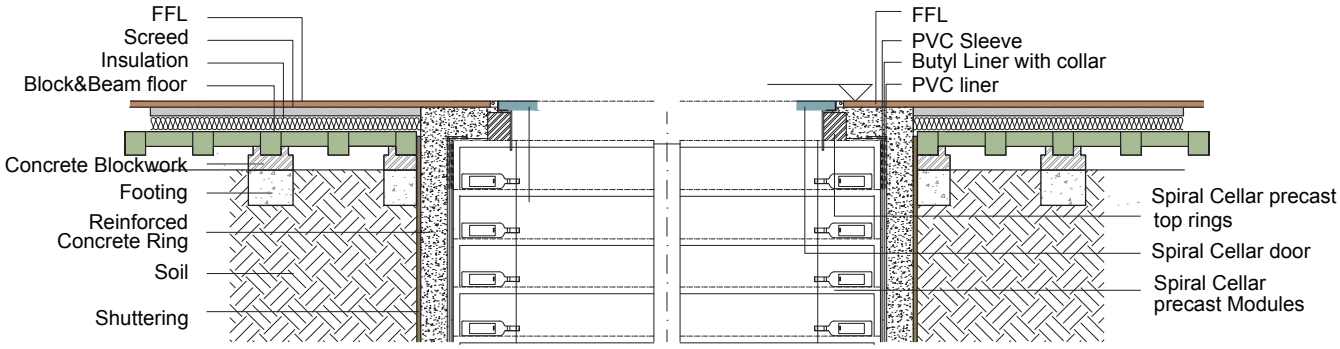


B9 HOW TO RECONSTRUCT THE EXISTING BLOCK AND BEAM FLOOR AROUND THE CELLAR

This detail is only to be completed by Spiral Cellars.

This is the detail for the retrospective installation of a cellar into an existing block and beam construction.

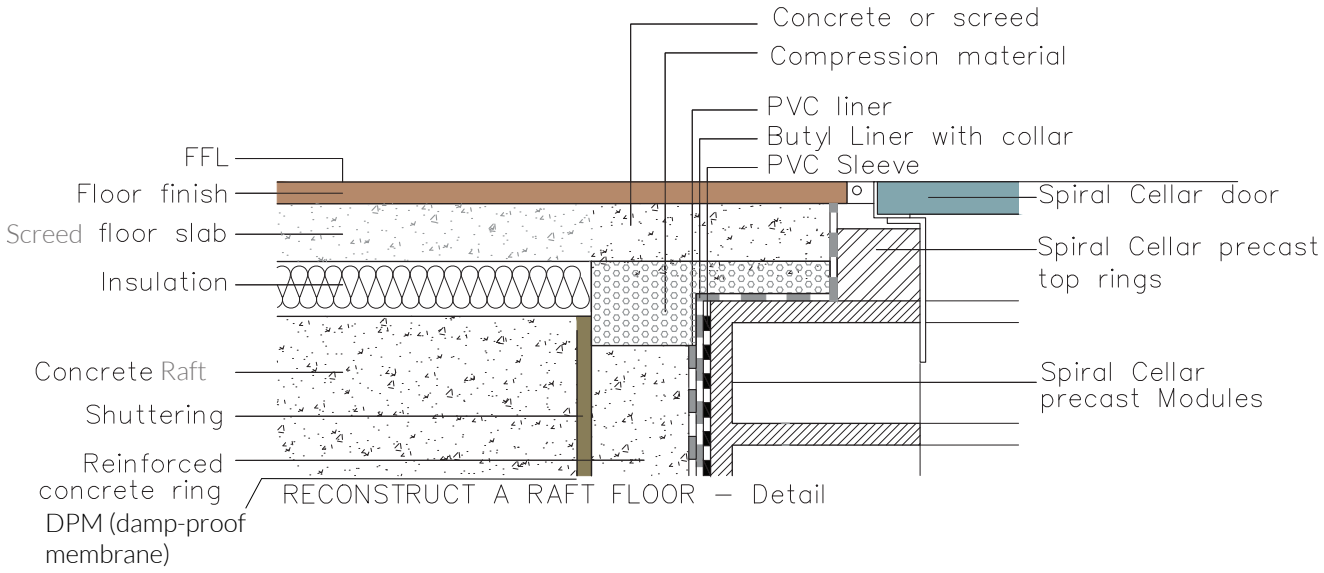
In most situations, the existing floor can be supported on top of a concrete foundation cast at the top of the ring.



B10 HOW TO RECONSTRUCT A RAFT FLOOR AROUND THE CELLAR

A raft slab above the cellar should be kept independent to avoid potential movement if shrinkage occurs.

Also, in very small buildings there is a risk that the whole above ground structure can be lifted and care should be taken to divide the cellar ring from the concrete slab with a compressible material.



B11 HOW TO RECONSTRUCT A TIMBER SUSPENDED FLOOR AROUND THE CELLAR

The steel shuttering installed by the contractor will need to be trimmed to the underside of the timber joists.

Once the Spiral Cellar has been installed, the contractor will need to construct the suspended timber floor.

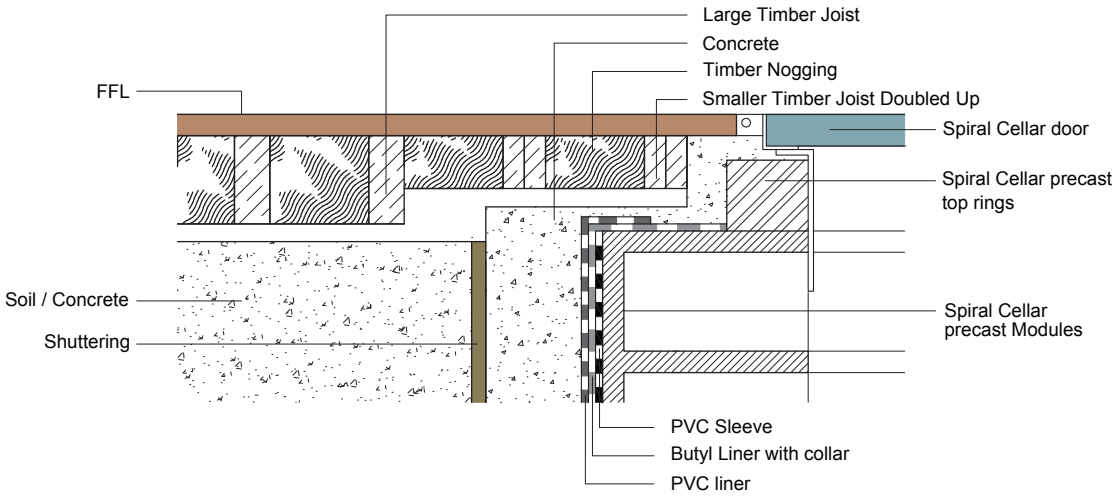
Suspended timber flooring should be laid once the concreting around the cellar has fully dried out. Timing for this may vary, according to local site/climate conditions.

The timber joists will need to be trimmed around the door concrete haunching box. The joists must be supported by using timber floor hangers, double trimmed and bolted on the longest length.

The thickness of the joists passing over the closed section of the cellar will be determined by the overall finished floor depth (taken from joist to finished floor level). Please discuss this with your Spiral Cellars Project Manager prior to installation.

Once the joists have been installed and fixed correctly, the timber floor planks can be laid.

*NB : Joist Hangers must be used.



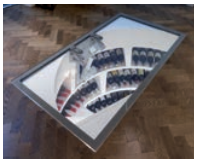
C
DOOR DETAILS

1 Standard 50
2 Reinforced for garages 54
3 Concealed (timber) 58
4 Concealed (standard tiles) 62
5 Concealed (heavy tiles) 66
6 Rectangular glass 70
7 Half round glass 74
8 Round glass 78
9 Retractable round glass 82

C CELLAR DOOR DETAILS

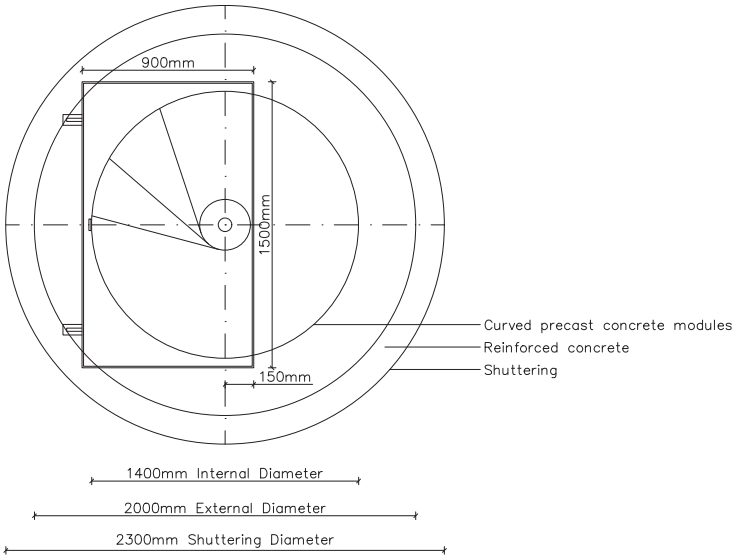
DOOR	STYLE	DIMENSIONS	RECESSED	DEPTH OF RECESS	OPENING MECHANISM	PAGE
Standard Door 	Timber	L: 1500mm W: 900mm H: 50mm	No	N/A	Manual - gas strut arm	48
Reinforced Door 	Timber	L: 1500mm W: 900mm H: 50mm	No	N/A	Manual - gas strut arm	52
Concealed Door 	Timber	L: 1500mm W: 900mm H: 68mm	Yes	18mm for timber, laminate and engineered wood floors	Motorised	56
	Standard Tiles	L: 1500mm W: 900mm H: 56mm	Yes	17mm for tiles up to 12mm thick	Motorised	60
	Heavy Tiles	L: 1500mm W: 900mm H: 70mm	Yes	25mm for tiles up to 20mm thick	Motorised	64

C CELLAR DOOR DETAILS

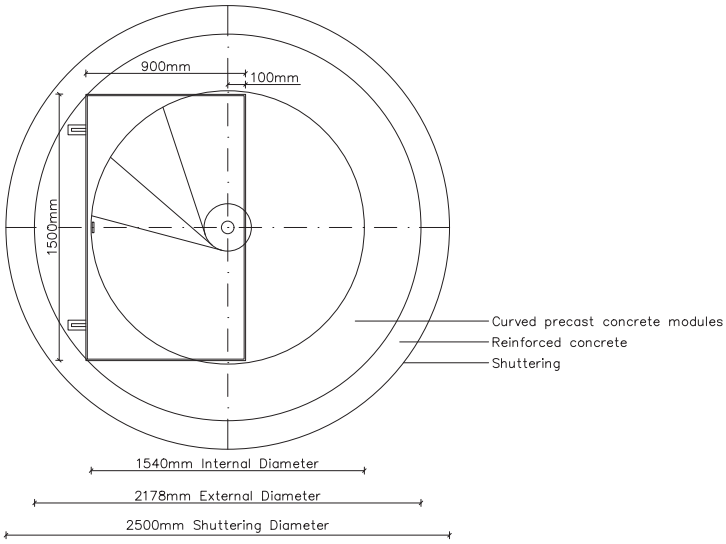
DOOR	STYLE	DIMENSIONS	RECESSED	DEPTH OF RECESS	OPENING MECHANISM	PAGE
Rectangular Door 	Glass	L: 1584mm W: 892mm	No	N/A	Motorised	68
Half Round Door 	Glass	Original: L: 1460mm W: 892mm White: L: 1584mm W: 892mm	No	N/A	Motorised	72
Hinged Round Door 	Glass	Original: L: 1460mm W: 892mm White: L: 1584mm W: 892mm	No	N/A	Motorised	76
Retractable Round Door 	Glass	L: 1826mm	No	N/A	Motorised	80

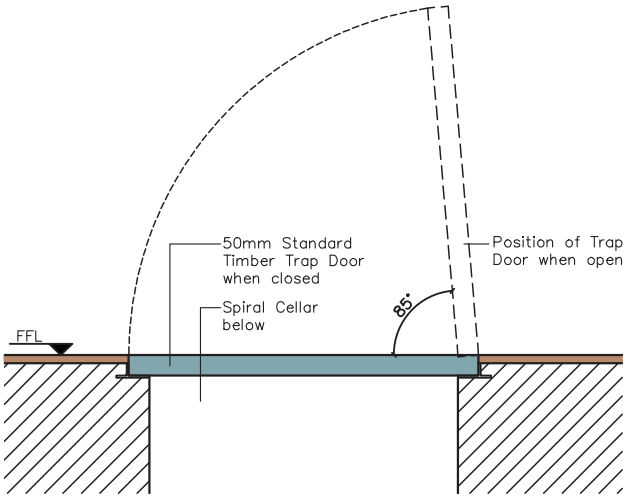
C1 STANDARD DOOR

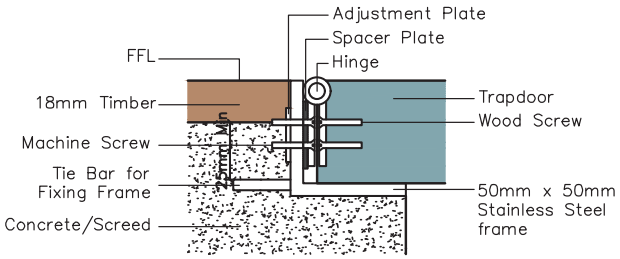
ORIGINAL SPIRAL CELLAR



WHITE SPIRAL CELLAR







Laying flooring around a Standard Door

1. The flooring is to be set parallel to the door.

2. Flooring should be laid once the screed has fully dried out. Timing for this may vary, according to local site/ climate conditions.

3. When laying your flooring, please ensure that the floor is level with the top of the frame.

4. Carpet up to 10mm thick can be laid over the four panelled wooden standard door, in the same manner that the carpet is fitted to the floorboards.

5. If required, a slim metal or timber bead can be fitted to keep the carpet edge in place and prevent fraying. Alternatively it can be loose–laid and covered with a rug.

C1 STANDARD DOOR

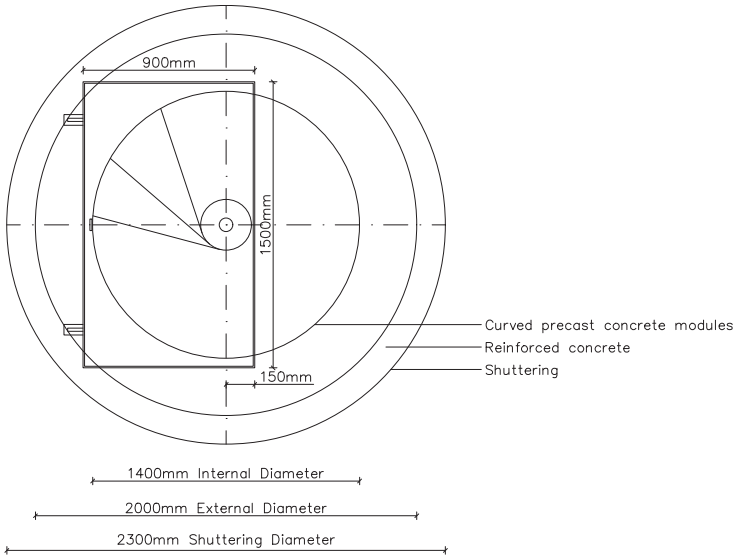
	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
Length	1500mm	1500mm
Width	900mm	900mm
Height (from underside of frame to top of hinge block)	50mm	50mm
Internal opening	1400mm x 800mm	1400mm x 800mm
Materials	Stainless steel, satin finish	Stainless steel, satin finish
DOOR		
Recess	None	None
Materials of door and pan	Pine timber door with four 18mm plywood panels, finished with two layers of 30% polyurethane lacquer	
Hinges	3 butt hinges set 3mm above the frame	
Lifting mechanism	A manual gas strut arm (820N) is fixed from the stainless steel back plate to the centre steel trim of the door	
Handle	75mm x 75mm Squash court handle finished in brushed stainless steel	
Locking mechanism	5 lever mortice lock supplied, BS rated	

C1 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

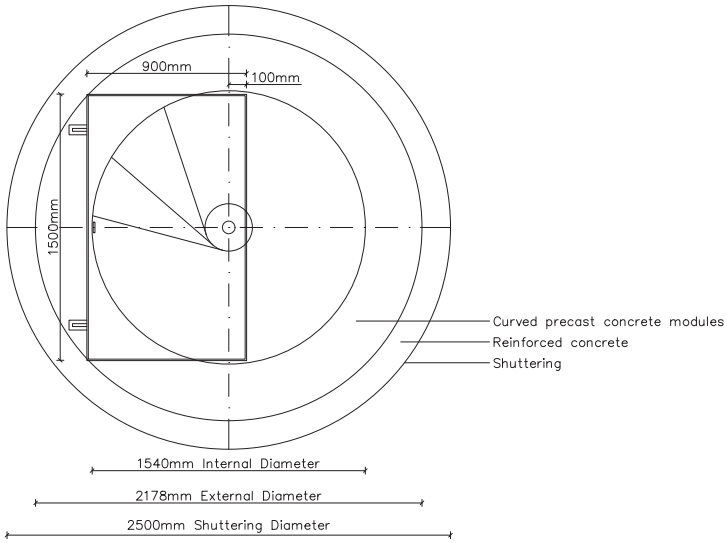
- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

C2 REINFORCED DOOR

ORIGINAL SPIRAL CELLAR

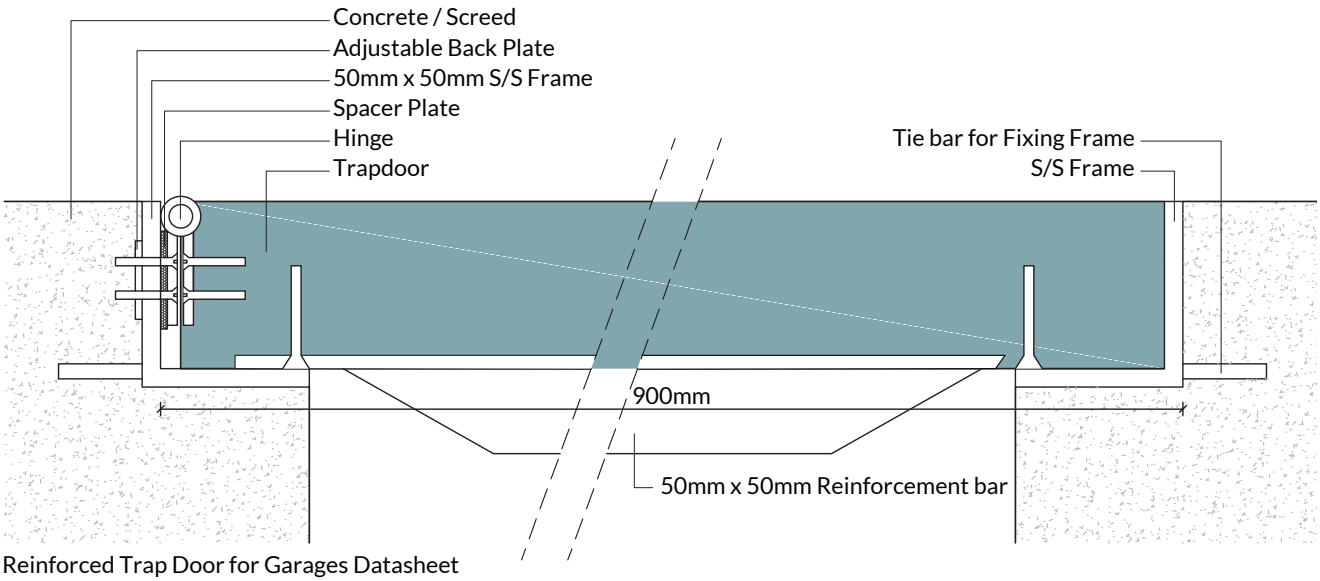


WHITE SPIRAL CELLAR



	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
Length	1500mm	1500mm
Width	900mm	900mm
Height (from underside of the frame to top of hinge block)	50mm	50mm
Internal opening	1400mm x 800mm	1400mm x 800mm
Materials	Stainless steel, satin finish	Stainless steel, satin finish
DOOR		
Recess	None	None
Reinforcement	3 x steel reinforcement bars fitted to the underside of the door. Designed to take the load of a vehicle	
Materials of door/ Door pan	Pine timber doors with four 18mm plywood panels, finished with two layers of 30% polyurethane lacquer	
Hinges	3 butt hinges set 3mm above the frame	
Lifting mechanism	A manual gas strut arm (1200N) is fixed from the stainless steel back plate to the centre steel trim of the door	
Handle	75mm x 75mm Squash court handles finished in brushed stainless steel	
Locking mechanism	5 lever mortice lock supplied, BS rated	

C2 POST-INSTALLATION: REINFORCED DOOR (GARAGE)



Reinforced Trap Door for Garages Datasheet

Laying flooring around a reinforced door

1. Ensure the concrete/screed is finished level with top of the stainless steel frame.
2. Protect the timber door and frame before concreting/ screeding around the door.
3. The door protection sheet must not be removed at any time.
4. The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re–positioned back over the door.
5. Contractors must not store any materials, substances or tools on top of the protection box.
6. Do not stand or sit on the protection box.
7. To prevent damage, due care and attention to the area around the door must be given.
8. Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

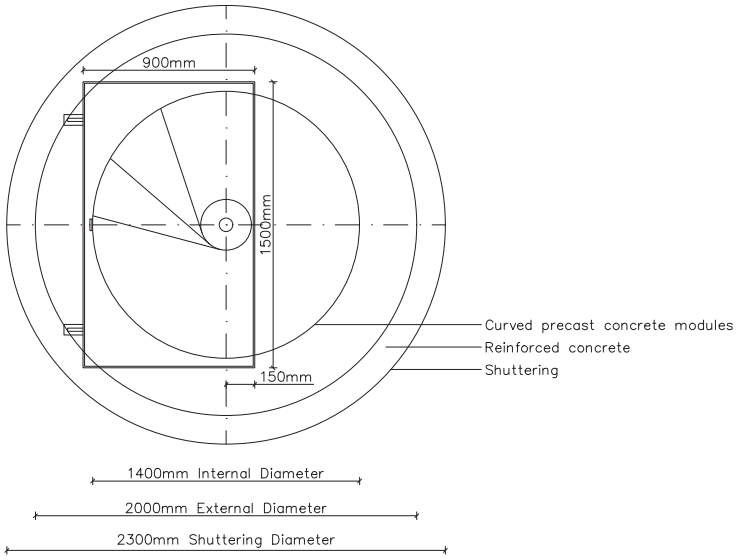
C2 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

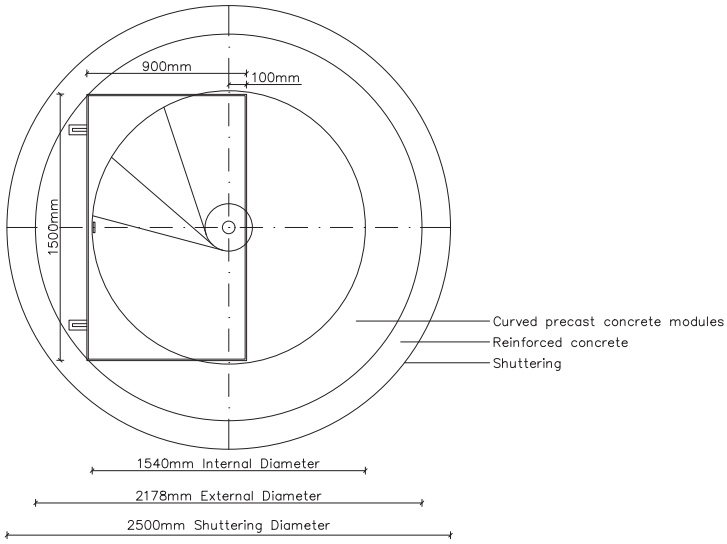
C3 CONCEALED DOOR (TIMBER)

Suitable for installations with timber, engineered timber or laminates and carpet flooring

ORIGINAL SPIRAL CELLAR



WHITE SPIRAL CELLAR



	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
Length	1500mm	1500mm
Width	900mm	900mm
Height (from underside of frame to top of hinge block)	68mm	68mm
Internal opening	1400mm x 800mm	1400mm x 800mm
Materials	Stainless steel, satin finish	Stainless steel, satin finish
DOOR		
Recess	18mm recess designed for timber, laminate and engineered wood floors Spiral Cellars will set the hinges of the door to the FFL agreed during installation	
Materials of door and pan	Pine timber doors with four 18mm plywood panels, finished with two layers of 30% polyurethane lacquer	
Hinges	3 butt hinges set 18mm above the top of the stainless steel frame	
Lifting mechanism	Linak actuator motor 24V with a thrust of up to 2000N Motor is fixed to a stainless steel back plate, onto top rings of cellar, and connected to a control box which sits within a top cellar module. Arm of motor is fixed through two holes to centre steel trim of door. Two recessed hex head machine screws hold the arm in place. Removal of these two screws (from the topside of door) will release the motor arm in case of failure A manual gas strut arm is also fixed from stainless steel back plate to centre steel trim of door. Door takes approximately 30 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from 5°C to 40°C Motor has protection class IPX5 Motor approved to: EN 60601	
Operational safety features	Emergency door release switch inside the cellar	

C3 LAYING FLOORING: CONCEALED DOOR

INSTALLATION

Laying Flooring Around a Concealed Door

The floor is to be set parallel to the door. Flooring should be laid once the screed has fully dried out. Timing for this may vary, according to local site/climate conditions. When laying timber floor, please ensure that the timber is level with the top of the hinges. The flooring must not be higher than the hinge, as this will cause the door to bind on the hinge–side when opened back to 85°.

To ensure that the gap between the timber on the door and the timber flooring laid on the screed is as tight as possible, the timber flooring will need to be rebated over the stainless steel frame and around the door hinges (as shown in the diagram). A cut out should be made for the hinges. The flooring behind the hinges on the frame side will need a chamfered edge to prevent the door from binding.

When affixing the flooring to the top of the recessed door, it can either be glued or secret nailed.

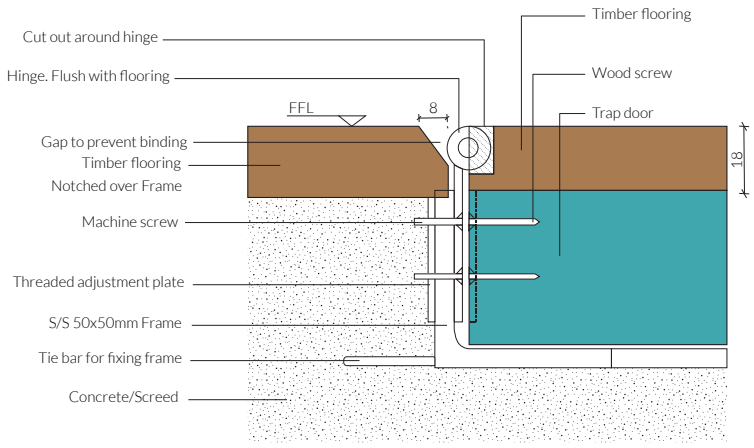
The door can be left with the edge of the flooring visible and stained when the door is in the open position or you can picture frame the timber floor if you prefer.

Fitting Carpet onto a Recessed Concealed Door, with an Edge Bead

If required a timber or metal edge bead can be fitted. The hinges are set at 18mm higher than the door, with finished floor level (FFL) set to the top of the hinges.

Fitting Instructions:

- Check the thickness of underlay and carpet to determine the correct build up from the door to top of hinge — this will determine the thickness of the bead.
- Fit the timber outer edge level bead to the top of the hinges and around the frame of the door.
- Ensure an adequate gap is left around all four sides of the door, to allow it to open cleanly.
- Check door operation throughout the works.



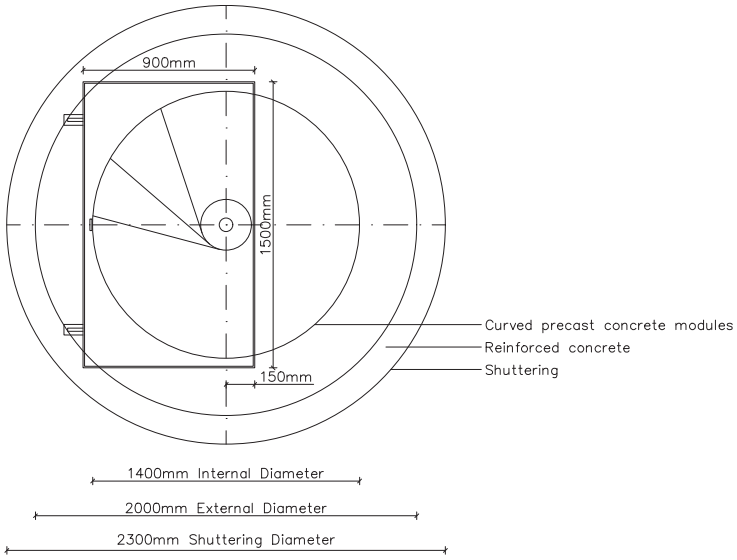
C3 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

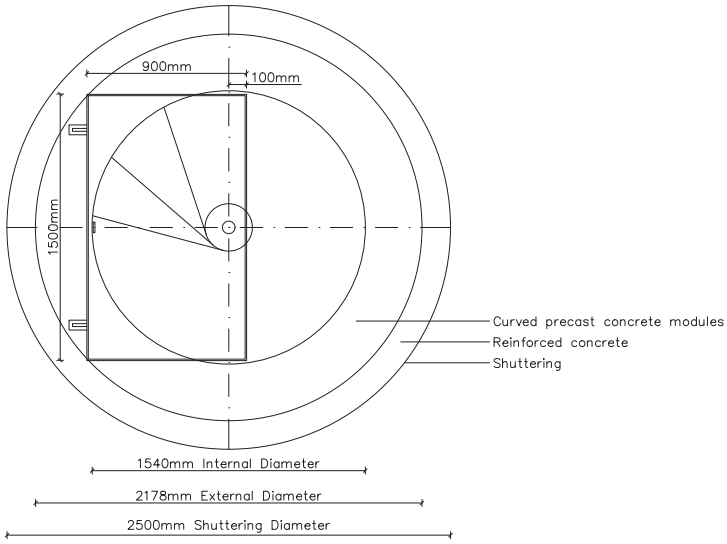
C4 CONCEALED DOOR (STANDARD TILES)

Suitable for installations with tiled flooring up to 12mm thick

ORIGINAL SPIRAL CELLAR

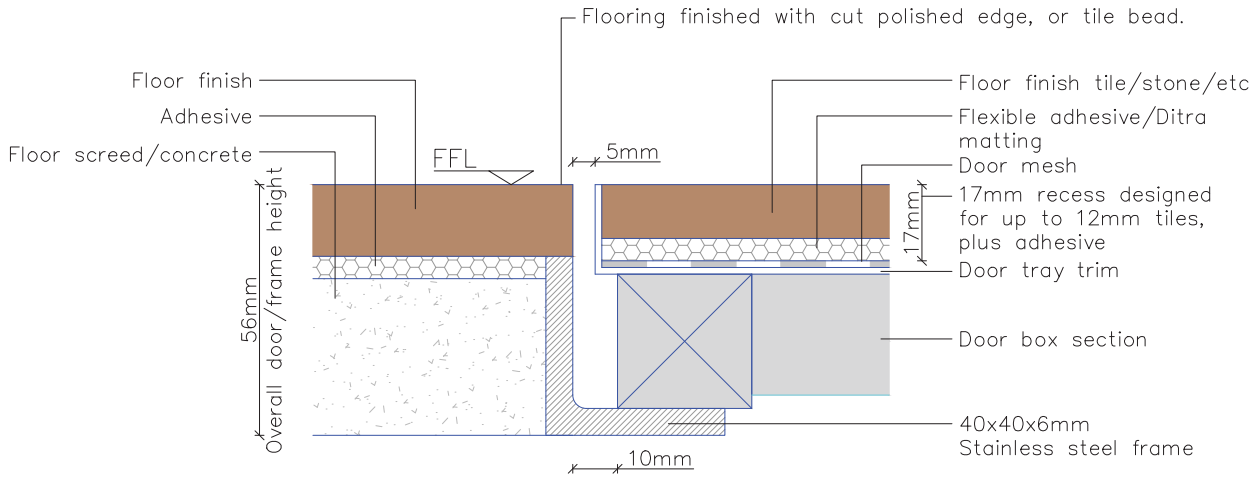


WHITE SPIRAL CELLAR



	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
Length	1500mm	1500mm
Width	900mm	900mm
Height (from underside of frame to top of hinge block)	56mm	56mm
Internal opening	1420mm x 820mm	1420mm x 820mm
Materials	Stainless steel, satin finish	Stainless steel, satin finish
DOOR		
Recess	17mm recess designed for up to 12mm tiles, plus adhesive Tiles should be laid inside the frame of the door panel, and up to the internal edge of the outer frame. A cut out should be made around the hinges and tiles to be laid to the level of the top of the hinge Spiral Cellars will set the hinges of the door to the FFL given during the installation	
Materials of door / door pan	Reinforced sheet metal Stainless steel	
Hinges	2 hinge plates set level with top of frame, 60mm deep 16mm bronze pivot pin inserted through the hinge plate	
Weight	90 kg approx	
Lifting mechanism	Linak actuator motor 24V with a thrust of up to 2000N Motor is fixed to a stainless steel back plate, onto top rings of cellar, and connected to a control box which sits within a top cellar module. Arm of motor is fixed through two holes to centre steel trim of door. Two recessed hex head machine screws hold the arm in place. Removal of these two screws (from the topside of door) will release the motor arm in case of failure A manual gas strut arm is also fixed from stainless steel back plate to centre steel trim of door. Door takes approximately 30 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from 5°C to 40°C Motor has protection class IPX5 Motor approved to: EN 60601-1/UL 60601-1 in connection with CB8, CB12, CB14, CB18 AND CBJ	
Locking mechanism	A retractive switch and key operated isolation switch are located in line of sight of the cellar	
Operational safety features	Emergency door release switch inside the cellar	

C4 LAYING FLOORING: CONCEALED DOOR



FLOORING INSTRUCTIONS

1. Flooring should be laid once the screed has fully dried out. Timings for this may vary according to local site/ climate conditions.

2. The door will be set to the confirmed finish floor level.

3. Please ensure the flooring is set parallel to the cellar door. Spiral Cellar's Project Manager will set the door parallel to the confirmed grid line.

4. When laying the flooring, please ensure that the top of the floor finish is level with the top of the door hinges. This includes the flooring laid inside the door tray.

5. A flexible tile adhesive should be used when laying the floor finish in the door tray and Ditra matting.

6. Please ensure that the hex head machine screws are left exposed on the top of the cellar door and are not covered by the tiles or grout. These bolts are required to access the cellar in the event of a motor failure.

7. The floor finish around the outside of the door frame will need to be finished in line with the internal edge of the door frame. The floor finish may need to be rebated to pass over the frame edge depending on the overall floor finish thickness.

8. There are two options regarding the finishing of the door tile edge around the door frame:

   Floor finish to be left with cut edge on show internally when door is open. The cut edge can be polished and stained to match if necessary. This option gives the door a more discreet look when in the closed position. Keep in mind the door is only open for a very short period of time during it's lifetime.

   A tile beading edge or similar can be installed to the edge of the floor finish to hide the cut floor finish edge. Please ensure an adequate gap is left between the tile bead and door trim to prevent the two catching when the door is opening and closing.

The floor finish inside the door tray can be finished up against the door trim and level with the door hinges.

IMPORTANT

Please ensure that the motor fixing bolts are left exposed level with the top of the door, and are not covered by the tiles or grout. These bolts are required to access the cellar in the event of a motor failure.

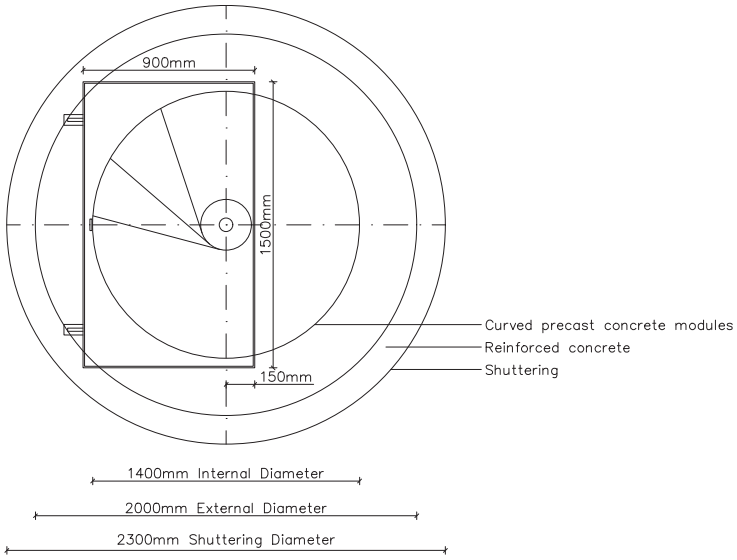
C4 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

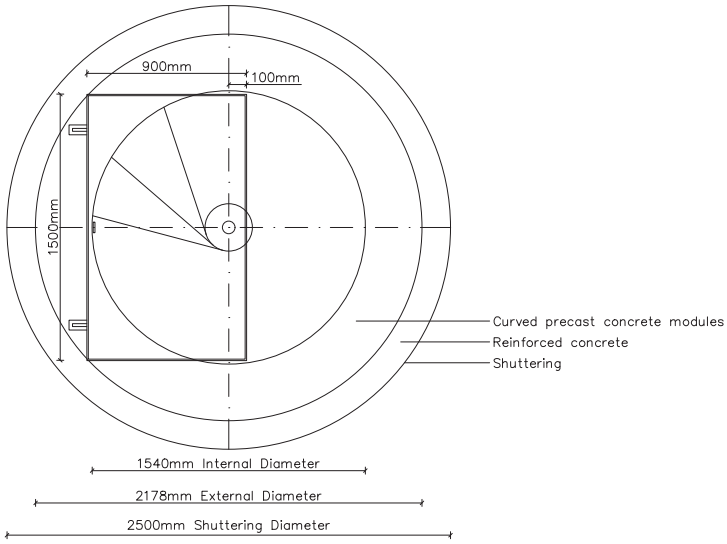
C5 CONCEALED DOOR (HEAVY TILES)

Suitable for installations with tiles between 12mm and 20mm

ORIGINAL SPIRAL CELLAR



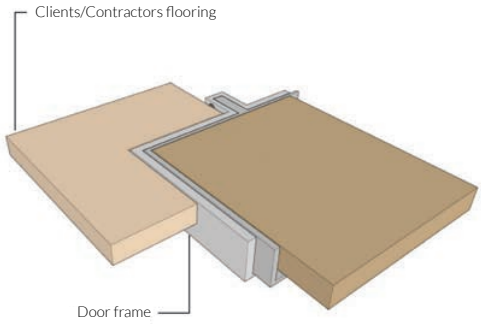
WHITE SPIRAL CELLAR

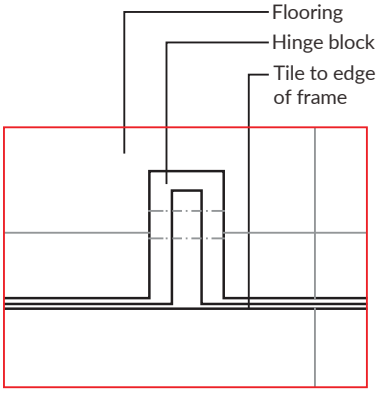


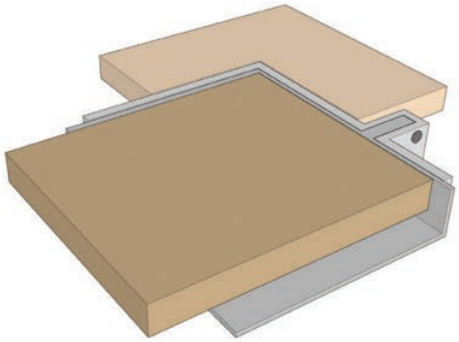
	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
Length	1500mm	1500mm
Width	900mm	900mm
Height (from underside of frame to top of hinge block)	70mm	70mm
Internal opening	1360mm x 760mm	1360mm x 760mm
Materials	Stainless steel, satin finish to 240 grit	Stainless steel, satin finish to 240 grit
DOOR		
Recess	25mm recess designed for up to 20mm tiles plus adhesive Tiles should be laid inside the frame of the door panel and up to the internal edge of the outer frame. A cut out should be made around the hinges and tiles to be laid to the level of the top of the hinge Spiral Cellars will set the hinges of the door to the FFL given during the installation	
Materials of door / door pan	Reinforced sheet metal Stainless steel	
Hinges	2x hinge plates set 2–3mm higher than the top of frame 16mm bronze pivot pin inserted through the hinge plate From outside of stainless steel trim to back edge of hinge block = 70mm	
Weight	190 kg approx	
Lifting mechanism	Linak actuator motor 24V with a thrust of up to 2000N Motor is fixed to a stainless steel back plate onto the top rings of cellar and connected to a control box, which sits within a top cellar module Arm of motor is fixed through two holes to the centre steel trim of door. 4x recessed hex head machine screws hold the arm in place. Removal of these two screws (from the topside of door) will release the motor arm in case of failure A manual gas strut arm is also fixed from stainless steel back plate to centre steel trim of door	Door takes approximately 30 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from 5°C to 40°C Motor has protection class IPX5 Motor approved to: EN 60601-1/UL 60601-1 in connection with CB8, CB12, CB14, CB18 and CBJ
Locking mechanism	A retractive switch and key operated isolation switch are located in line of sight of the cellar	
Operational safety features	Emergency door release switch inside the cellar	

C5 LAYING FLOORING: CONCEALED DOOR FOR 12mm-20mm TILES

1. The floor is to be set parallel to the door.
2. Flooring should be laid once the screed has fully dried out. Timing for this may vary, according to local site/ climate conditions.
3. When laying a tiled floor, please ensure that the tiles are level with the top of the hinges. A flexible tile adhesive should be used inside the door tray and Ditra matting.
4. Please ensure that the hex head machine screws are left exposed on the top of the door and are not covered by the tiles or grout. These bolts are required to access the cellar in the event of a motor failure.



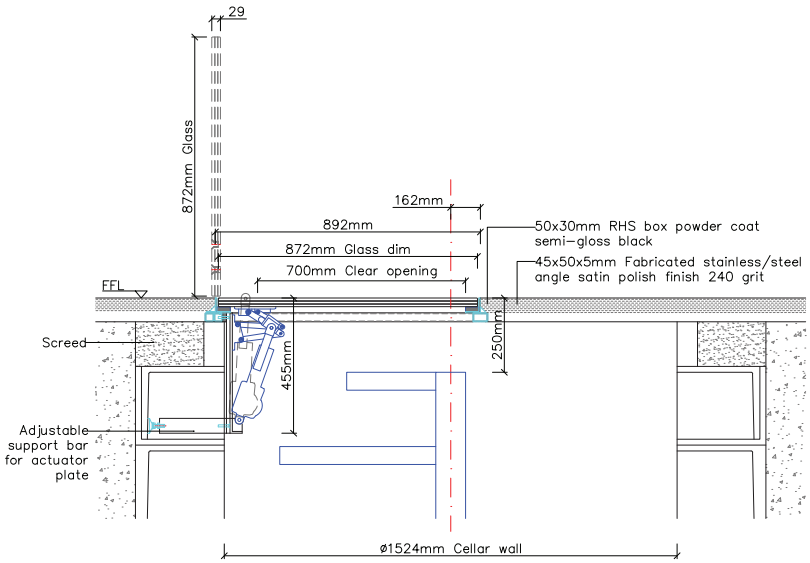




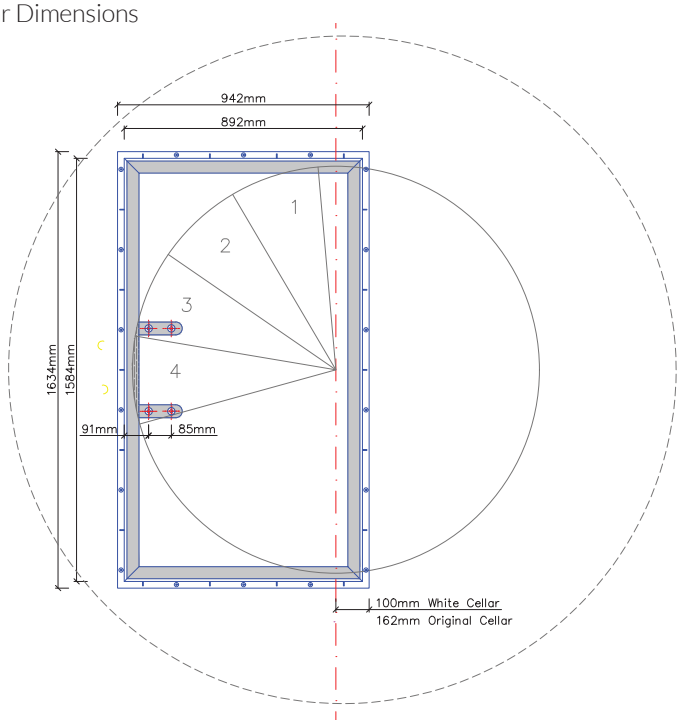
C5 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.

C6 RECTANGULAR GLASS DOOR



Original and White Spiral Cellar Dimensions



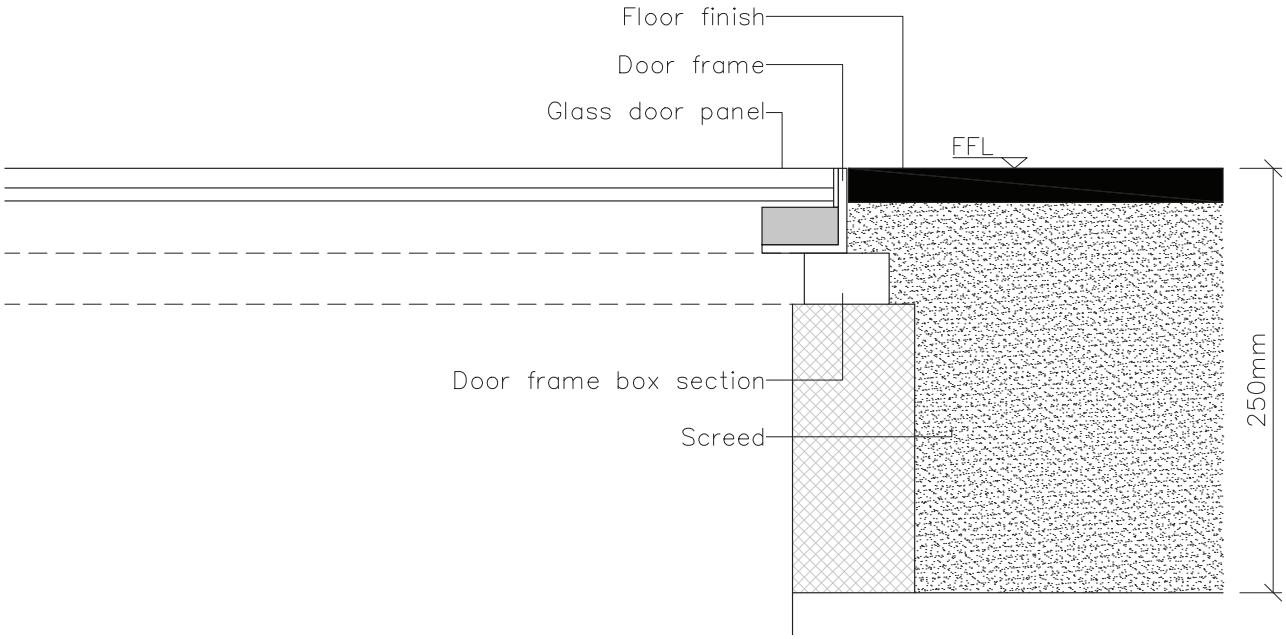
	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
External frame length	1584mm	1584mm
External frame width	892mm	892mm
Frame dimensions	50mm x 50mm x 5mm	50mm x 50mm x 5mm
Materials	Stainless steel angle satin finish to 240 grit	Stainless steel angle satin finish to 240 grit
DOOR		
Glass specification	1 layer of 10mm toughened glass 2 layers of 8mm strengthened glass 2 layers of 1.5mm EVA laminate between panels Door U value is approx 5.3 - 5.6 W/m²k Total glass thickness 29mm All edges ground and polished.	
External Door Length	1564mm	1564mm
External Door Width	872mm	872mm
Hinges	Internal bespoke silver anodised aluminium hinges	
Weight:		
Individual glass door panel	98.5 kgs	98.5 kgs
Complete assembled unit	158.5 kgs	158.5 kgs
Lifting mechanism	Actuator motor 24V with a thrust of up to 5000N Actuator motor is fixed to a mild steel back plate, which is connected to the door frame. The control box for the actuator motor sits within a top cellar module Arm of motor is fixed directly to the door hinge. 4x recessed hex head machine screws connect the hinges to the glass opening panel. Removal of these four screws (from the topside of the glass panel) will enable the glass panel to be lifted manually. It is recommended that the removal of the hinge from the glass panel is only to be carried out by a Spiral Cellars member of staff Door takes approximately 20 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from –25°C to 65°C Motor has protection class IP66 Motor approved to: EN 606011/UL 606011 in connection with CB8, CB12, CB14, CB18 and CBJ Door is operated by switch on the nearest wall in line of sight of the cellar	
Operational safety features	A retractive switch and key operated isolation switch are located in line of sight of the cellar. Key operated isolation switch is provided. Emergency door release switch inside the cellar	

C6 LAYING FLOORING: GLASS DOOR

1. The floor is to be set parallel to the door.

2. Flooring should be laid once the screed has fully dried out. Timing for this may vary according to local site/ climate conditions.

3. Flooring to be finished flush with the top of the frame. The flooring MUST NOT finish below or above the frame height.

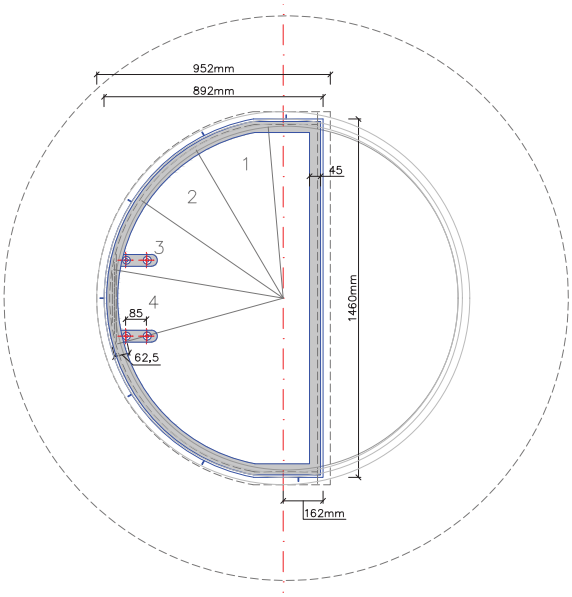


C6 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

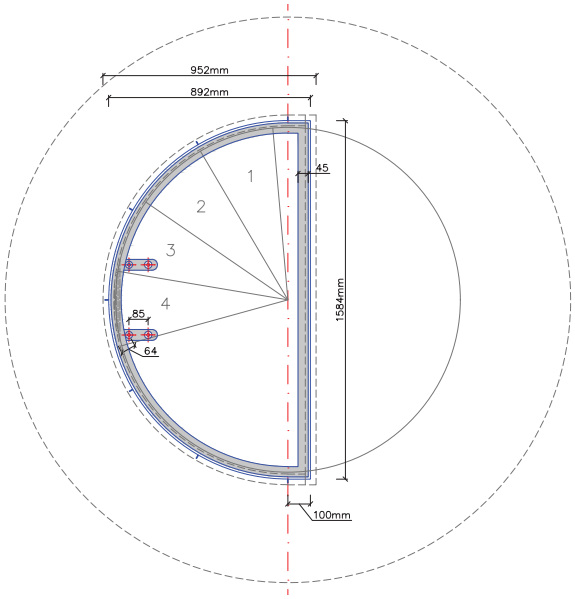
- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.
- Only Spiral Cellars Staff are permitted to enter the cellar whilst the door is still protected.

C7 HALF-ROUND GLASS DOOR

Original Spiral Cellar setting out drawing



White Spiral Cellar setting out drawing



	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
External frame diameter	1460mm	1584mm
External frame radius	892mm	892mm
Frame dimensions	50mm x 50mm x 5mm	50mm x 50mm x 5mm
Materials	Stainless steel angle satin finish to 240 grit	Stainless steel angle satin finish to 240 grit
DOOR		
Glass specification	1 layer of 10mm toughened glass 2 layers of 8mm strengthened glass 2 layers of 1.5mm EVA laminate between panels Total glass thickness 29mm All edges ground and polished.	
External Door Length	1440mm	1564mm
External Door Width	872mm	872mm
Hinges	Internal bespoke silver anodised aluminium hinge	
Weight:		
Individual glass door panel	68 kgs	78 kgs
Complete assembled unit	128 kgs	138 kgs
Lifting mechanism	Actuator motor 24V with a thrust of up to 5000N Actuator motor is fixed to a mild steel back plate, which is connected to the door frame. The control box for the actuator motor sits within a top cellar module. Arm of motor is fixed directly to the door hinges. 4x recessed hex head machine screws connect the hinges to the glass opening panel. Removal of these four screws (from the topside of the glass panel) will enable the glass panel to be lifted manually. It is recommended that the removal of the hinges from the glass panel is only to be carried out by a Spiral Cellars member of staff. Door takes approximately 20 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from –25°C to 65°C Motor has protection class IP66 Motor approved to: EN 606011/UL 606011 in connection with CB8, CB12, CB14, CB18 and CBJ Door is operated by switch on the nearest wall in line of sight of the cellar	
Operational safety features	A retractive switch and key operated isolation switch are located in line of sight of the cellar. Key operated isolation switch is provided. Emergency door release switch inside the cellar	

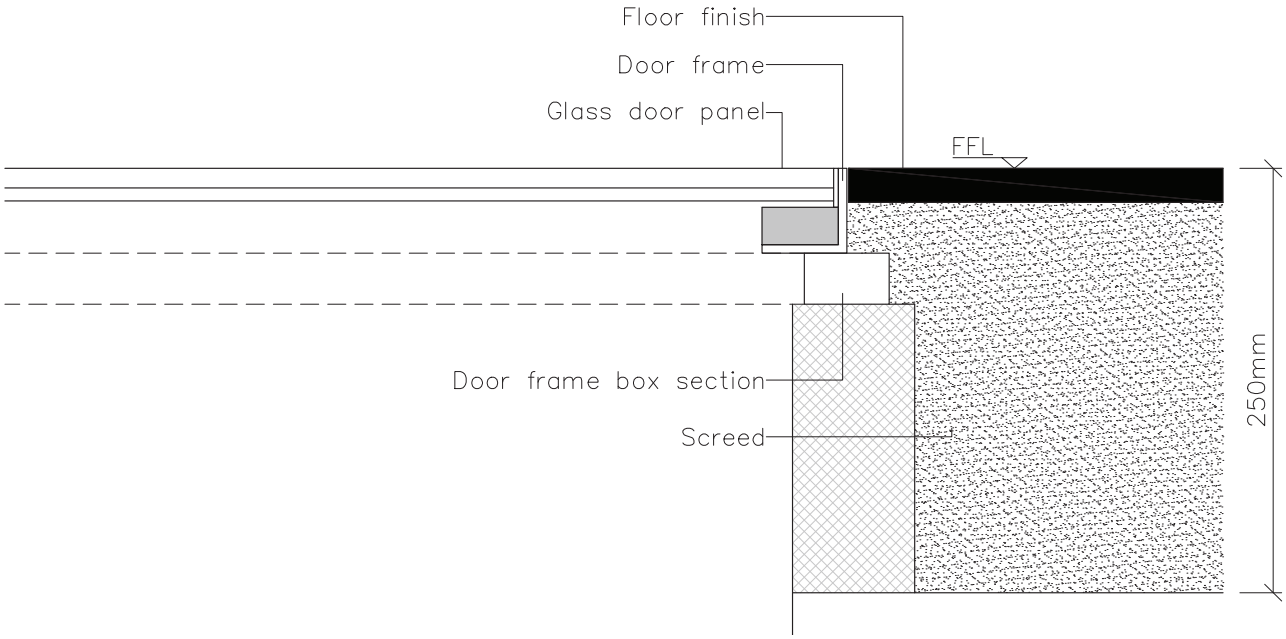
C7 LAYING FLOORING: HALF-ROUND GLASS DOOR

INSTALLATION

1. The floor is to be set parallel to the door.

2. Flooring should be laid once the screed has fully dried out. Timing for this may vary according to local site/ climate conditions.

3. Flooring to be finished flush with the top of the frame. The flooring ***must not*** finish below or above the frame height.

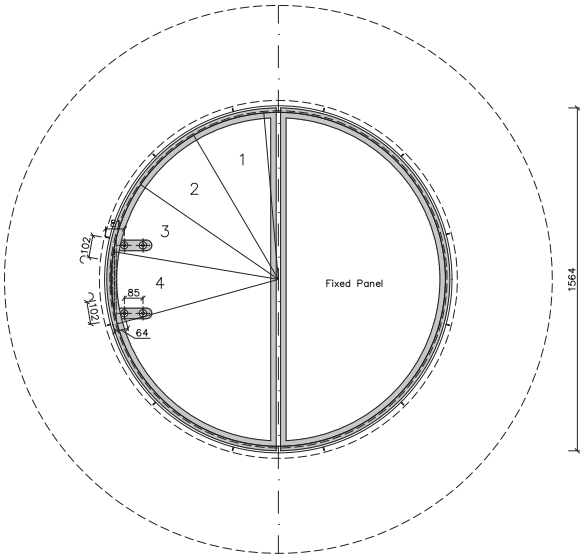


C7 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

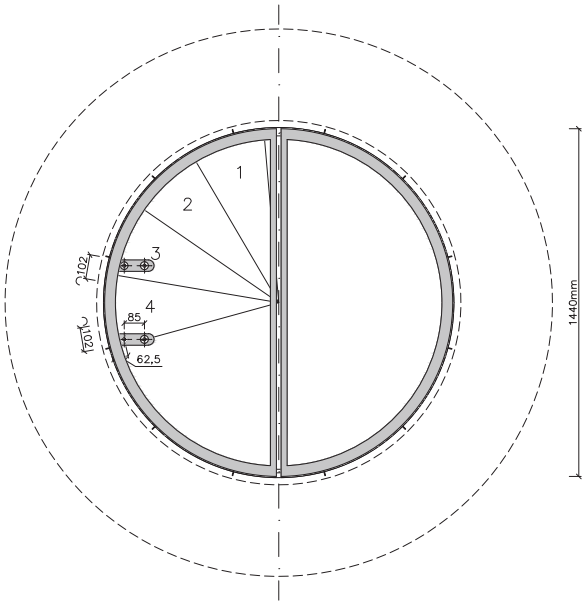
- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.
- Only Spiral Cellars Staff are permitted to enter the cellar whilst the door is still protected.

C8 ROUND GLASS DOOR

White Spiral Cellar setting out drawing



Original Spiral Cellar setting out drawing



	ORIGINAL SPIRAL CELLAR	WHITE SPIRAL CELLAR
FRAME		
External frame diameter	1460mm	1584mm
Frame dimensions	50mm x 50mm x 5mm	50mm x 50mm x 5mm
Materials	Stainless steel angle satin finish to 240 grit	Stainless steel angle satin finish to 240 grit
DOOR		
Glass specification	1 layer of 10mm toughened glass 2 layers of 8mm strengthened glass 2 layers of 1.5mm EVA laminate between panels Total glass thickness 29mm All edges ground and polished.	
External door diameter	1440mm	1564mm
Configuration	One fixed half round, one opening half round	
Hinges	Internal bespoke silver anodised aluminium hinges	
Weight:		
Individual glass panel	68 kgs	78 kgs
Complete assembled unit	196 kgs	216 kgs
Lifting mechanism	Actuator motor 24V with a thrust of up to 5000N Actuator motor is fixed to a mild steel back plate, which is connected to the door frame. The control box for the actuator motor sits within a top cellar module. Arm of motor is fixed directly to the door hinges. 4x recessed hex head machine screws connect the hinges to the glass opening panel. Removal of these four screws (from the topside of the glass panel) will enable the glass panel to be lifted manually. It is recommended that the removal of the hinges from the glass panel is only to be carried out by a Spiral Cellars member of staff. Door takes approximately 20 seconds to open to 85° maximum Duty cycle: 2 minutes continuous use followed by 18 idle minutes Ambient operating temperature of motor: from –25°C to 65°C Motor has protection class IP66 Motor approved to: EN 606011/UL 606011 in connection with CB8, CB12, CB14, CB18 and CBJ Door is operated by switch on the nearest wall in line of sight of the cellar	
Operational safety features	A retractive switch and key operated isolation switch are located in line of sight of the cellar. Key operated isolation switch is provided. Emergency door release switch inside the cellar	

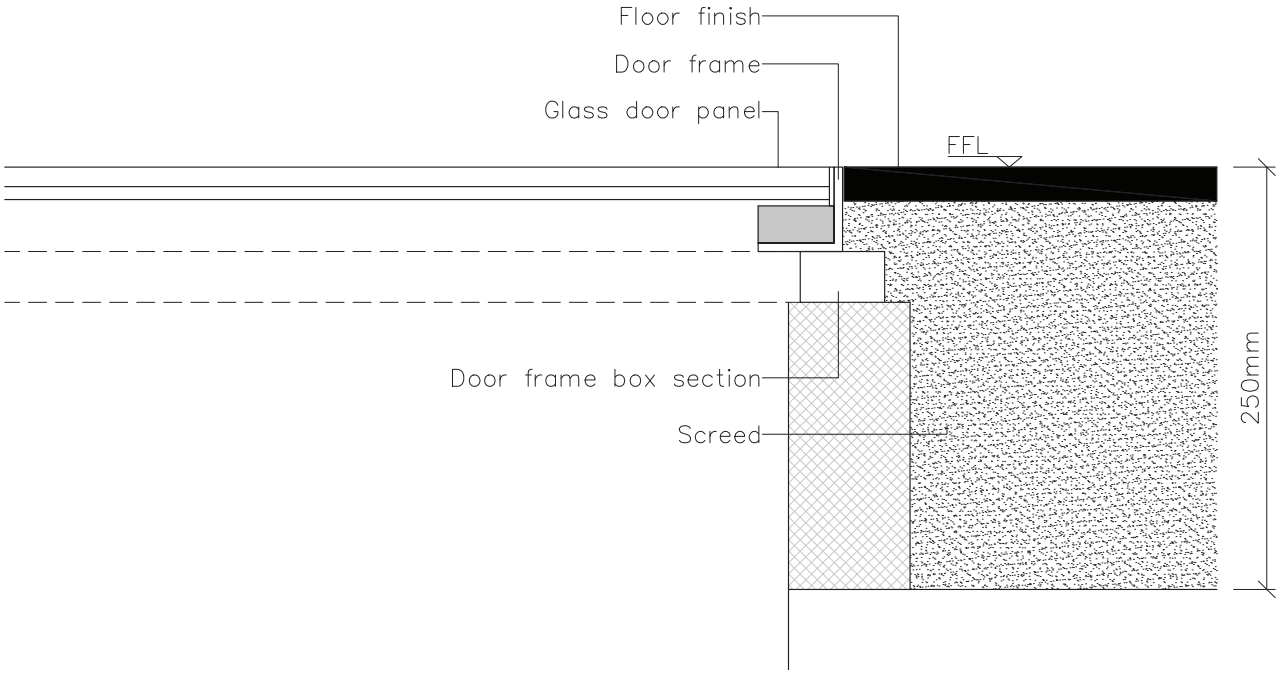
C8 LAYING FLOORING: ROUND GLASS DOOR

INSTALLATION

1. The floor is to be set parallel to the door.

2. Flooring should be laid once the screed has fully dried out. Timing for this may vary according to local site/ climate conditions.

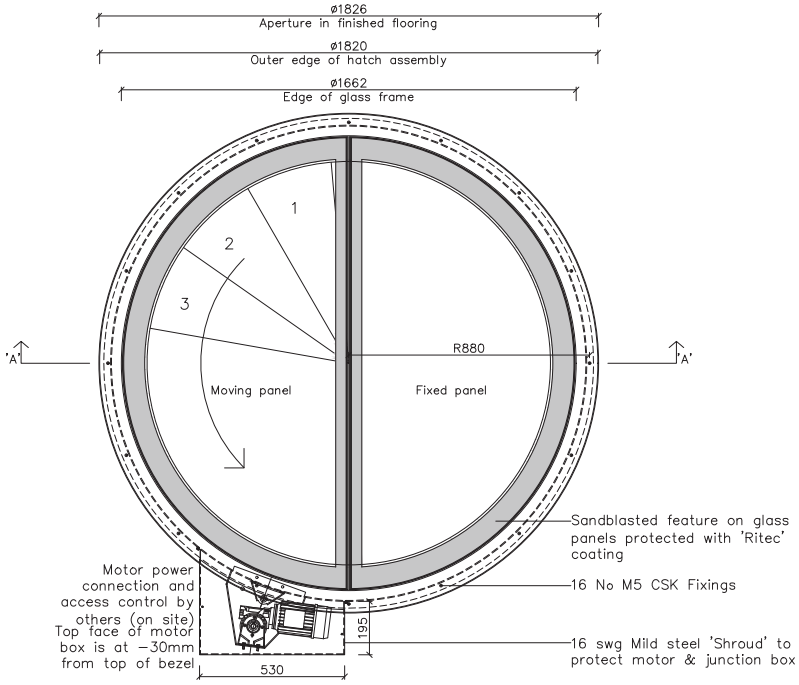
3. Flooring to be finished flush with the top of the frame. The flooring MUST NOT finish below or above the frame height.



C8 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.
- Only Spiral Cellars Staff are permitted to enter the cellar whilst the door is still protected.

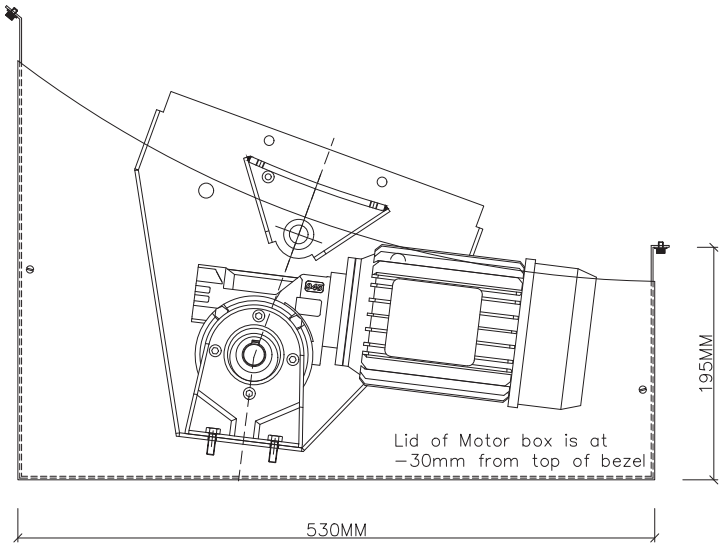
C9 RETRACTABLE ROUND GLASS DOOR

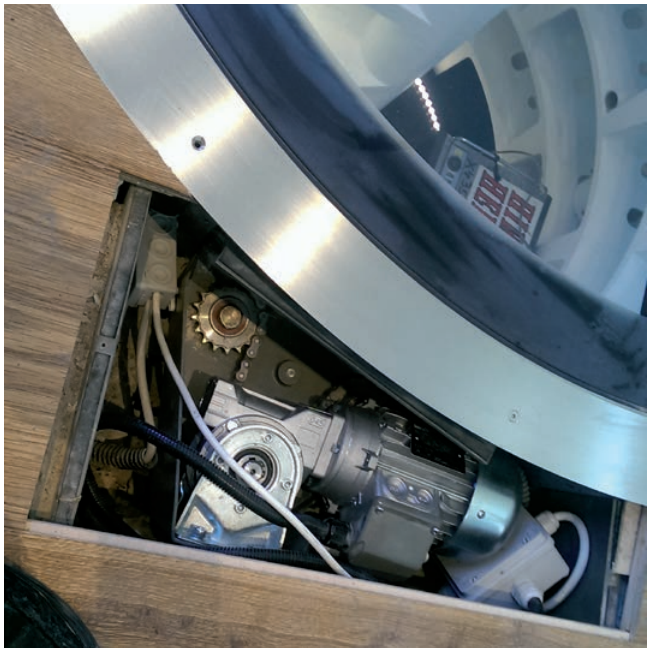


WHITE SPIRAL CELLAR ONLY

FRAME	
Trim diameter	1826mm stainless steel flat bezel/ chamfered edge — fitted after finished floor has been laid
Internal opening	
Height (from underside of frame to top of stainless steel bezel)	233mm
Materials	Stainless steel, satin finish An internal shroud in stainless steel lines the internal diameter of the cellar, concealing all door fixing points
DOOR	
Materials	Low iron toughened glass, 3 ply toughened glass, 32mm with sandblasted edge feature
Configuration	One fixed half round, one opening half round. The door is built to open in an anti–clockwise direction (the cellar steps will also be set in an ANTI–CLOCKWISE direction) Features a discreet hatch outside the cellar within the floor finish, to access the motor for maintenance
Opening mechanism	Door powered by A100/120V–220/240V AC Single phase, 50Hz 380/440 AC BS500 Part 11 rating Motor is fitted to side of door, accessible from a access hatch to be created within floor finish. Motor can be isolated at this point
Locking mechanism	A retractive switch and key operated isolation switch are located in line of sight of the cellar
Operational safety features	Emergency door release switch inside the cellar

C9 MAINTENANCE HATCH FOR THE RETRACTABLE ROUND GLASS DOOR





C9 LAYING FLOORING: RETRACTABLE ROUND GLASS DOOR

INSTALLATION

1. Flooring should be laid once the screed has fully dried out. Timing for this may vary according to local site/ climate conditions.

2. The door will be set to the confirmed finish floor level.

3. Please ensure the flooring is set parallel to the cellar door. Spiral Cellars' Project Manager will set the door parallel to the confirmed grid line.

4. The door bezel (trim) can be installed following two different methods. The bezel detail will be confirmed by the Spiral Cellars Project Manager during the pre–installation visit, and will be ordered in advance.

5. The flooring around the external motor box will need to be cut to provide access to the motor box compartment in the case of a motor failure. The flooring will also need to be installed on the motor box lid.

6. Attach a ply board flooring to the motor box lid before installing the floor finish on top.

7. The flooring joint gap around the motor box will need to be filled with a flexible sealant: this allows the motor box compartment to be easily accessed (please see diagram showing motor box details).

DIAGRAM 1

Laying flooring around the retractable door (Bezel finished, flush with FFL)

Top of bezel installed at FFL. The bezel is finished with a square edge for the contractor to finish the floor up to. Contractor may need to allow for an expansion gap between floor finish and bezel. A flooring specialist will advise how to finish expansion gap.

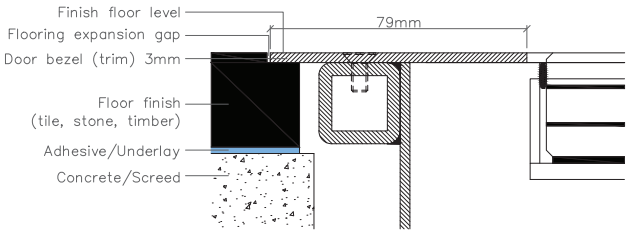
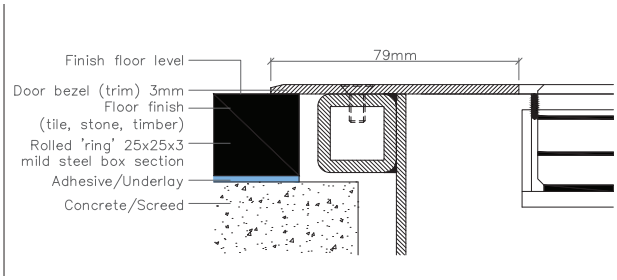


DIAGRAM 2

Laying flooring around the retractable door (Bezel finished, above FFL)

Floor finish installed to touch underside of bezel. Bezel sits 3mm above FFL and is finished with a chamfered edge, preventing a trip hazard and hiding the finished floor cut edge.



C9 HOW TO PROTECT THE CELLAR AND DOOR POST-INSTALLATION

- The door must be propped open underneath a protection box for approximately 6 weeks to allow the cellar to dry out.
- The door protection sheet must not be removed at any time.
- The timber protection box over the door may only be removed when laying the finished floor material. Once the floor material has been completed the protection box must be re-positioned back over the door.
- Contractors must not store any materials, substances or tools on top of the protection box.
- Do not stand or sit on the protection box.
- Do not allow rubbish and site debris to fall into the cellar — this increases the risk of the cellar being damaged.
- If there is under floor heating in the same room, then no under floor heating pipes or matting are to be laid within the 'circular area of excavation plus 300mm all round'. Vent pipes are to be fully wrapped and insulated if shallow, or may have to run under the slab. No other services such as hot water pipes are to run across the cellar area or vent pipe run.
- The door should remain protected until the After Sales Visit is complete. We will require the client or contractor to sign to confirm the condition of the door.
- Approximately 6–8 weeks after the completion of the cellar or when all building works are complete, we will carry out an After Sales Visit. The cellar will be checked in terms of its performance; (humidity and temperature levels). Any extras such as step coverings will be fitted if these have been ordered. Then once signed off, the cellar will be ready to stock.
- If there are any doubts concerning the installation procedure and requirements you should contact your Project Manager for technical guidance, or to arrange a site meeting.
- To prevent damage, due care and attention to the area around the door must be given.
- Failure to adhere to the above instructions can lead to damage of the door/mechanism and can incur further costs.
- Only Spiral Cellars Staff are permitted to enter the cellar whilst the door is still protected.
- The metal cover plate over the motor housing unit must remain in place at all time before and after the electrical connection has taken place.

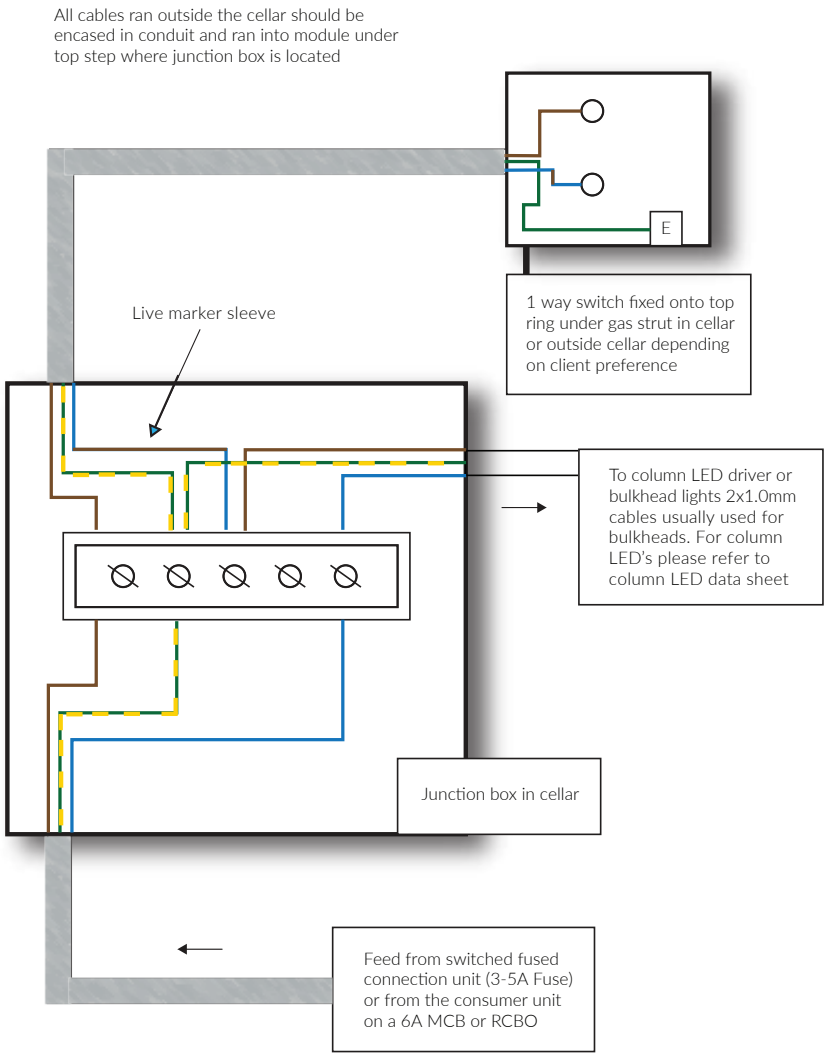
D
LIGHTING & ELECTRICALS

1 Standard & reinforced doors 88
2 Concealed doors 89
3 Concealed door (timber) 90
4 Glass & external doors 91
5 Cellar equipment set out 92
6 Connections for column LEDs and bulk head lights 93
7 Connection of loom for strip led lighting 94
8 Retractable doorswitch connections 95
9 Lighting preparation for LEDs 96

D1 CELLAR WIRING: STANDARD & REINFORCED DOORS

DIAGRAM 1 - INSIDE

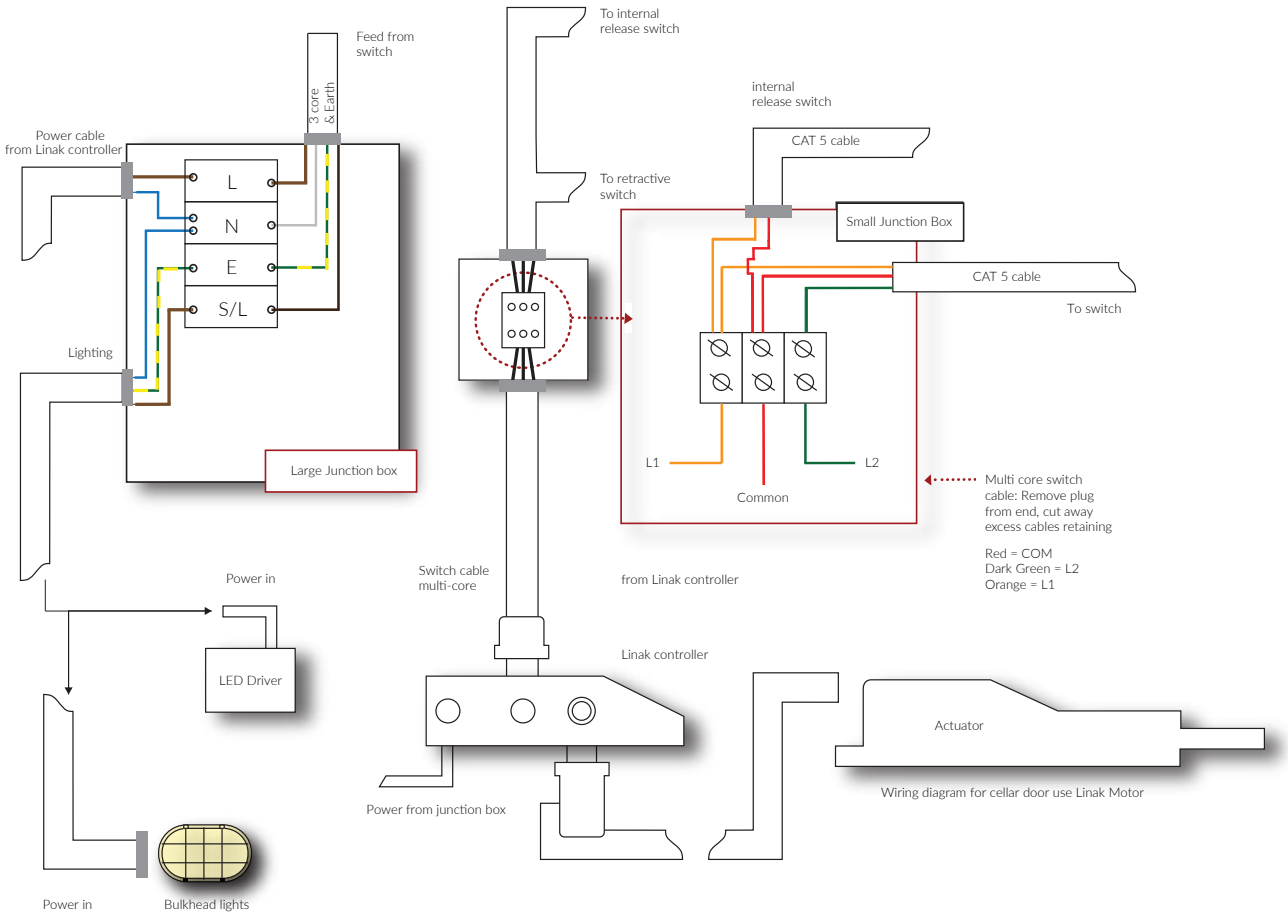
Inside cellar wiring for standard door and reinforced door (garage)



D2 CELLAR WIRING: CONCEALED DOORS

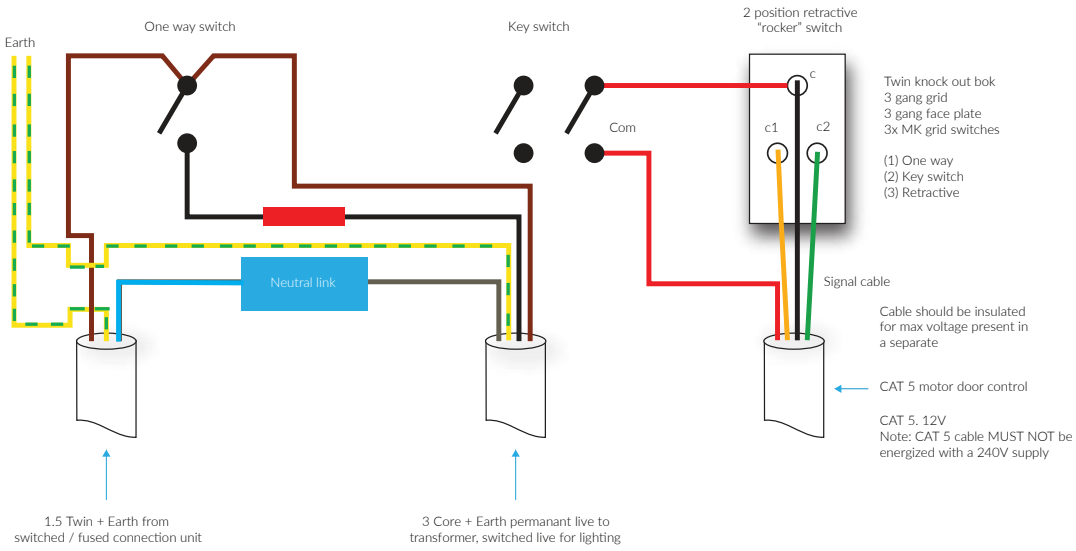
DIAGRAM 1 - INSIDE

Wiring for Concealed door & heavy duty concealed door



D3 CELLAR WIRING: RECESSED CONCEALED DOOR (TIMBER)

Wiring for outside the cellar

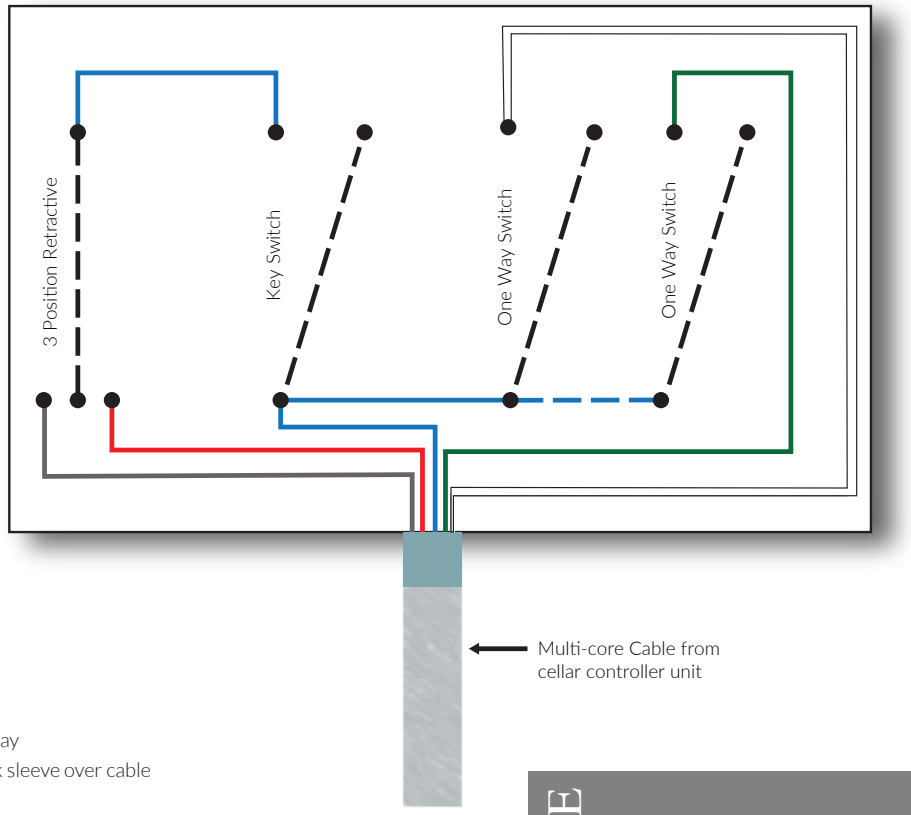


D4 CELLAR WIRING: GLASS & EXTERNAL DOORS

CONTROL BOX DETAILS AND EQUIPMENT SCHEDULE

- All glass doors (except retractable doors)

SWITCH CONTROLS DIAGRAM



KEY

Grey	Close relay (put back sleeve over cable screen)
Red	Open relay
Blue	24VDC com
Green	230VAC output relay
White	24 VDC output relay

NOTE Only one of green or white will be used depending on lighting configuration

D5 CELLAR EQUIPMENT SET OUT

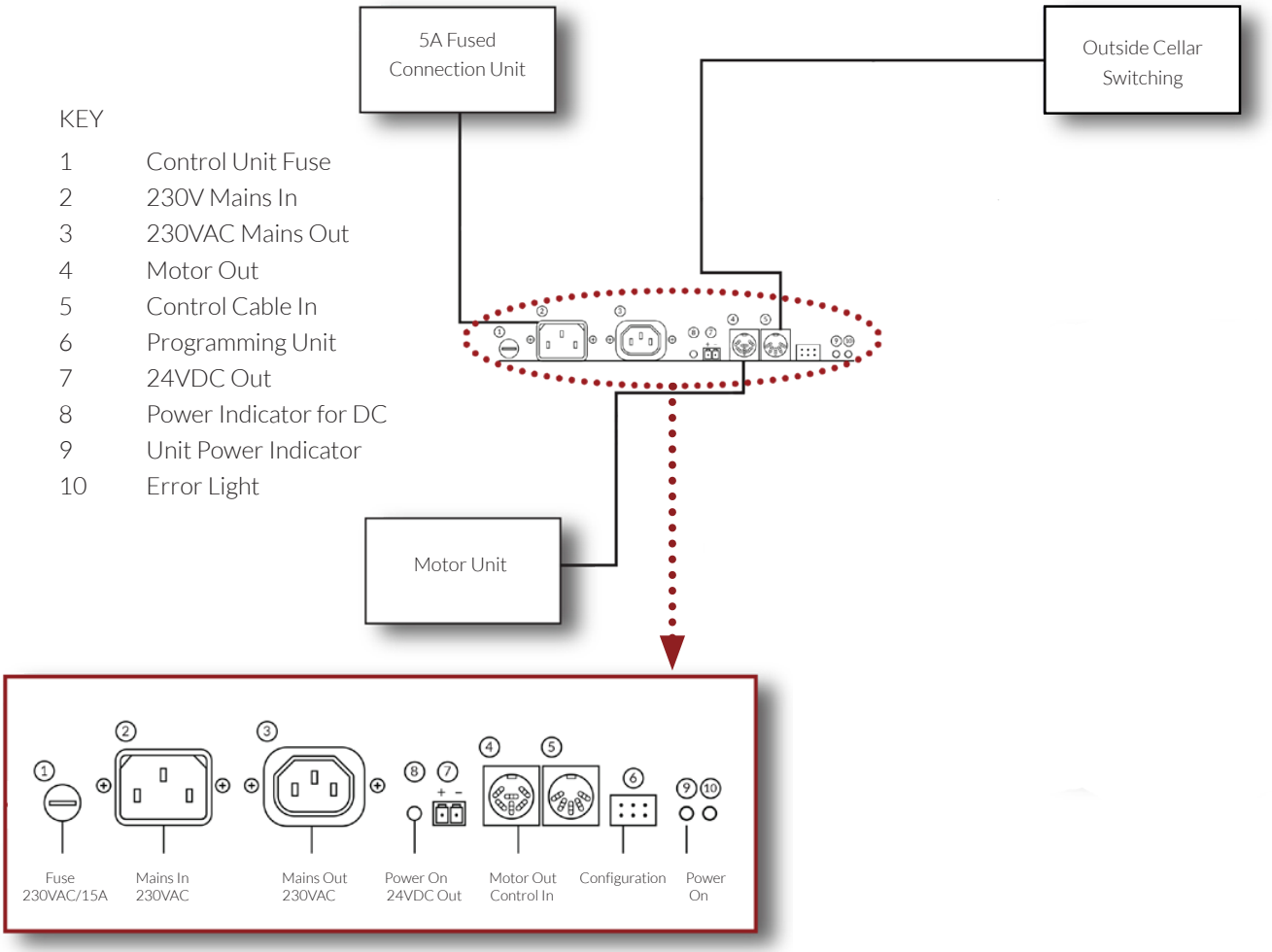
CONTROL BOX DETAILS AND EQUIPMENT SCHEDULE

- All glass doors (except retractable doors)
- External door (but omit pir detector)

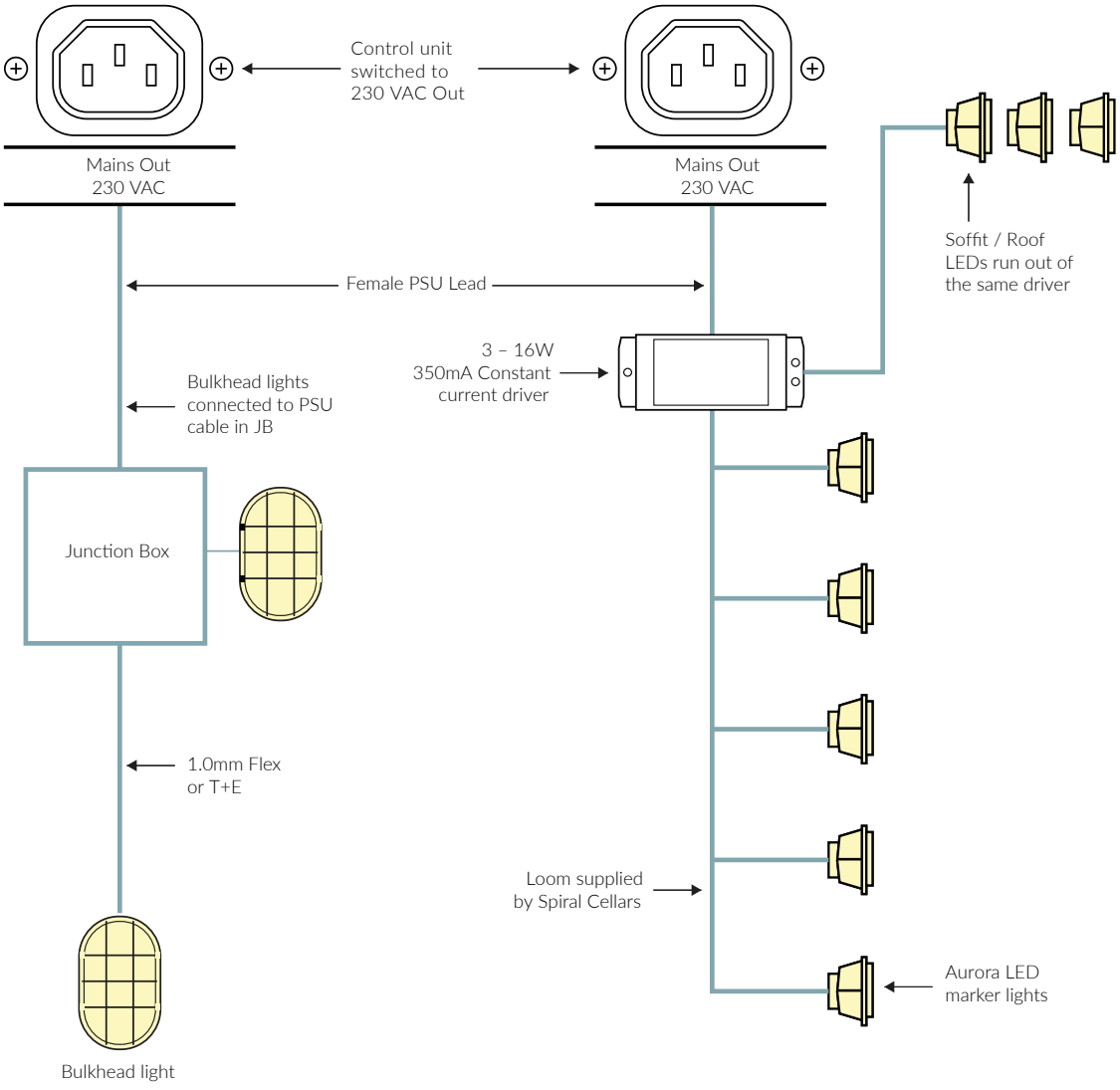
CELLAR EQUIPMENT SET OUT

KEY

1	Control Unit Fuse
2	230V Mains In
3	230VAC Mains Out
4	Motor Out
5	Control Cable In
6	Programming Unit
7	24VDC Out
8	Power Indicator for DC
9	Unit Power Indicator
10	Error Light

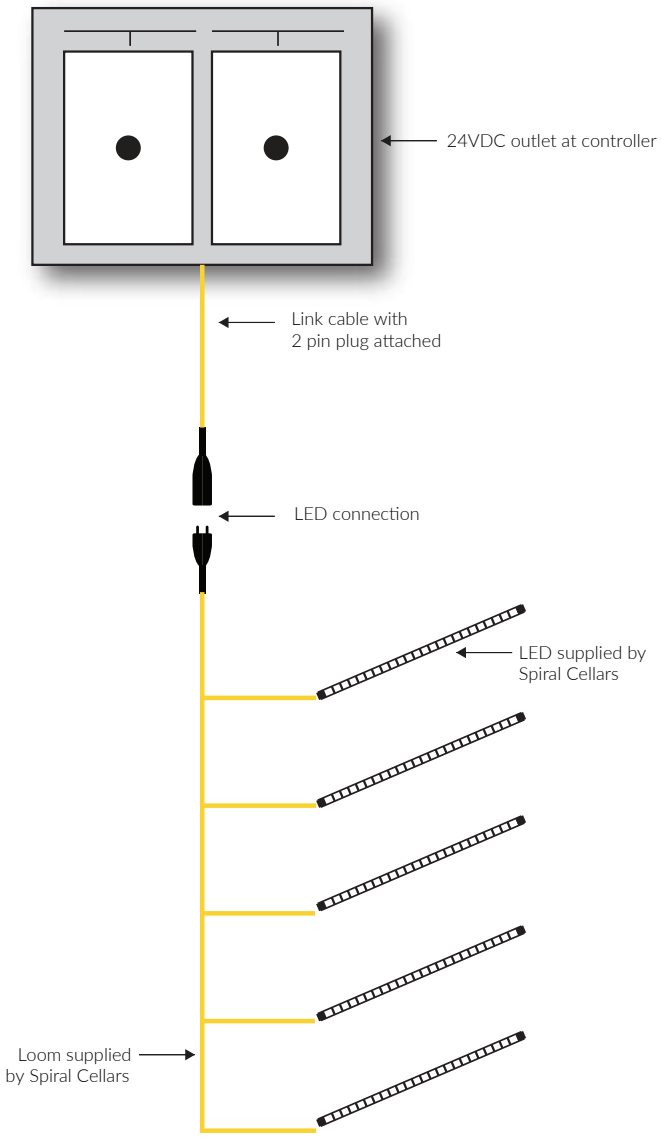


D6 CONNECTIONS FOR COLUMN LEDS & BULK HEAD LIGHTS

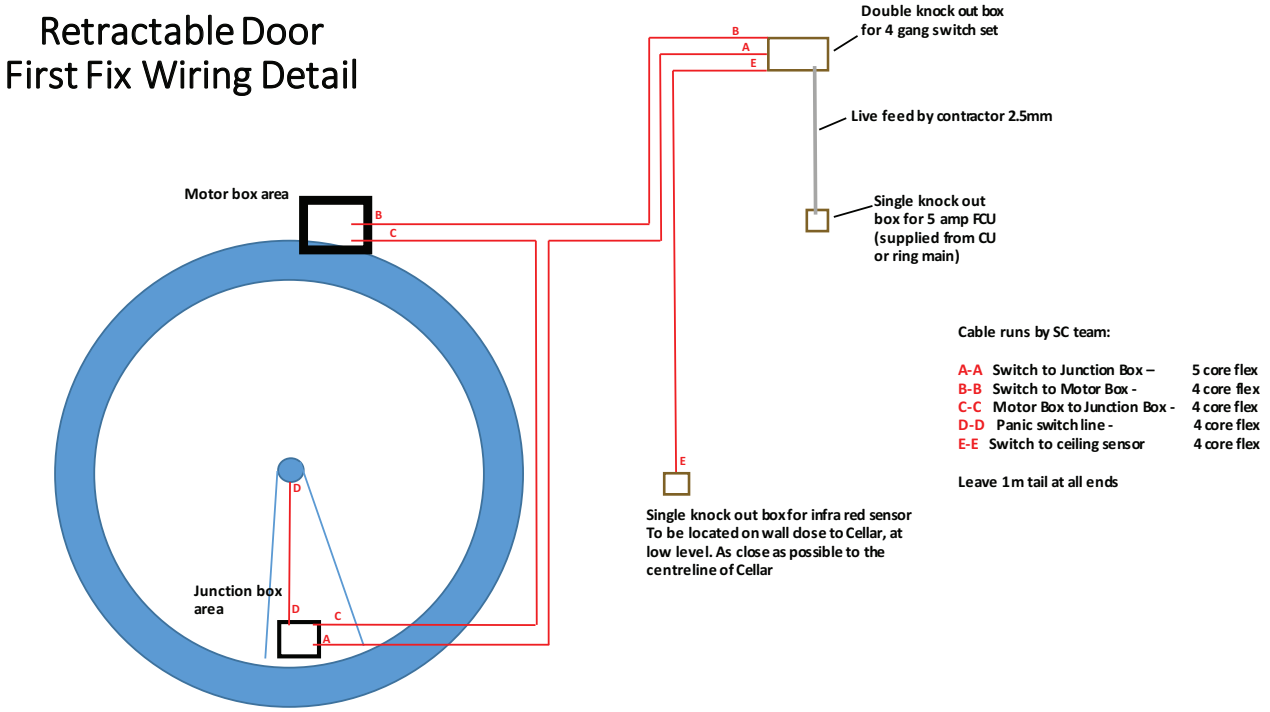


D7 CONNECTION OF LOOM FOR STRIP LED LIGHTING

24V STRIP LED



D8 RETRACTABLE DOOR SWITCH CONNECTIONS



D9 LIGHTING PREPARATION FOR LEDS

NOTE

Please refer to electrical diagrams from page 86.

As standard there are two lights in our cellars, one on the 'ceiling' and one at the foot of the spine. We use exterior grade bulk head lights, with 40 watt bulbs in a chrome finish. There is a manual switch to operate the light. We offer an upgrade LED option for the Original and White Spiral Cellars.

The White Spiral Cellar system incorporates a circular ring in the floor of the cellar, a strip under each step and the ceiling soffit.

Column LEDs are also available to fit in both the Original and White Spiral Cellars.

1. The LED Lighting options require a pre–drilled hole to allow cables to be fed through from the central column to the relevant position for each step.

   For LED Strip lights the hole will be 20mm and for the Spot (Marker) LED the hole will be 25mm. The position of the holes for the Spot LEDS will depend upon the direction of the steps, clockwise or anti clockwise. Please see the photographs to identify these positions.

2. The cellar wiring requires a fused connection unit with a 5A or 6A fuse or a direct feed from a consumer unit with an RCD protected 6A MCB or a 6A RCBO.

3. Cabling requirements for the cellar supply are 1 x 1.5mm 3 core and earth cable and a CAT5 cable.

4. The cables need to be run in conduit from the module under the first step inside the cellar and then out to the switching position outside the cellar.

5. The feed cable from the fused connection unit or consumer unit also needs to be run to the switching position.

6. The column LED loom must be installed in the central cellar column with the ends fed out through each of the pre–drilled holes. The remaining cable must then pass through the vent pipe under the top step and come out of a small cut in the pipe, then into the under step module with the other cables.

7. The column LED marker lights can then be solder or crimp connected to each loop in the loom where it exits the column, and then adequately heat shrink covered before being placed in the column and twisted to lock in on spring clips.

8. The soffit strip LED cable must run from the step support module and through to the soffit channel, ensuring the male end is at the soffit. The LED back strip should be cut to the length needed and stuck in place before the LED strip can be fitted.

9. All the connections for the junction box in the cellar and at the switching position can be seen on the Electrical Diagrams datasheet.

Spiral Cellars

0845 241 2768 info@spiralcellars.com
Spiral Cellars Ltd., 4 Hardham Mill Business Park, Hardham, Pulborough, West Sussex RH20 1LA

www.spiralcellars.com