

16<sup>th</sup> October 2023

REF: ACA211112 231016

## ENGINEERING EVALUATION CERTIFICATE:

**SPIRALWORKS 1300/12, 1500/14, 1800/16, 1900/16,  
NCC 2022, BCA Volumes One & Two, Class 1,2,3,4&10 buildings.**

**This certificate is issued by:** Acronem Consulting Australia Pty Ltd

**This certificate is issued to:** Spiralworks Pty Ltd,  
54 Frankston Gardens Drive,  
Carrum Downs, VIC, 3201, Australia  
[info@spiralstairs.com.au](mailto:info@spiralstairs.com.au)

**This certificate is issued in relation to the proposed building work at:** N/A

### Nature of proposed building work:

Construction of a \*new building/\*extension/\*alteration

Version of BCA applicable to certificate – NCC 2022, BCA Volumes One & Two

### Building classification:

Part of building: Internal private stair in a sole-occupancy unit of BCA Classification Class 2, 3 or 4 building.

Part of building: Enclosed stairway or an external stairway of BCA Classification Class 1 or 10 building.

### Prescribed class of building work for which this certificate is issued:

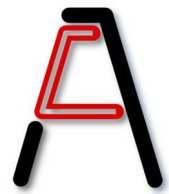
Design or part of the design of building work relating to \*Structural matter

### Documents setting out the design certified by this certificate:

Document:	Date:	Type:	Pages:	Prepared by:
<i>Spiralworks Installation Brochure</i>	undated	Installation Brochure (attached)	8	Spiralworks
Spiralworks Information Fact Sheet 1300/12	2007	Information Fact Sheet (attached)	2	Spiralworks
Spiralworks Information Fact Sheet 1500/14	2007	Information Fact Sheet (attached)	2	Spiralworks
Spiralworks Information Fact Sheet 1800/16	2007	Information Fact Sheet (attached)	2	Spiralworks
Spiralworks Information Fact Sheet 1900/16	2007	Information Fact Sheet (attached)	2	Spiralworks

### Performance solution:

This certificate describes the basis of a Performance Solution that must address Performance Requirements & Deemed-to-Satisfy provisions relevant to stairways in buildings.



Performance Requirement(s) & Deemed-to-Satisfy Provision(s)	
B1P1, D1P2, D1P3	<ul style="list-style-type: none"> <li>- regarding the structural performance; and,</li> <li>- safe movement within; and,</li> <li>- a fall prevention barrier of;</li> </ul> an internal private stair in a sole-occupancy unit of BCA Classification Class 2, 3 or 4 building.
H1P1, H5P1, H5P2	<ul style="list-style-type: none"> <li>- regarding the structural performance; and,</li> <li>- movement within; and,</li> <li>- a fall prevention barrier of;</li> </ul> an enclosed stairway or an external stairway of BCA Classification Class 1 or 10 building.
<b>Engineering Report supporting this design:</b>	
<p><i>[details the registered building practitioner uses or relies on in determining that the performance solution complies with the performance requirements —</i></p> <p><i>(i)the assessment method or methods;</i> Evidence of Suitability, Expert Judgement</p> <p><i>(ii)the details of any expert judgement;</i> Neil McKenzie &amp; Associates, Ref: 18-038, September 19, 2018, Re: Spiralworks Pty Ltd Certificate of Compliance Acronem Consulting Australia, March 28, 2018, RE: Spiralworks Steel Spiral Stair Systems 1300/12, 1500/14, 1800/16, 1900/16. Acronem Consulting Australia, 26/2/18, Spiralworks Spiral Stairs, Geometry Appraisal Neil McKenzie &amp; Assoc., Regulation 1507: Certificate of Compliance – Design, 23/2/18 Neil McKenzie &amp; Assoc., Compliance Certificate for Building Design or Specification, 21/2/18 CSIRO Appraisals, Technical Assessment 336, Spiralworks, December 2007</p> <p><i>(iii)the details of any tests or calculations;</i> Neil McKenzie &amp; Associates, 18-038, 21/02/18, Calculations, 28pp. 2018ATTAR Report 16/10569.1, 15 September 2016, Slip Resistance ATTAR Report 16/10569.2, 15 September 2016, Slip Resistance CSIRO Report Number 4043s, 29 August 2007, Slip Resistance Spiralworks, 13<sup>th</sup> November 2018 (Galvanising, Bolting, Plastic Extrusions)</p> <p><i>(iv)the details of any standards or other information.]</i> Documents setting out the design as referenced above and attached.</p>	

The design certified by this certificate forms the foundation of a performance solution that, via a performance-based design brief (PBDB), must demonstrate compliance with the National Construction Code.

I certify this design will comply with the NCC requirements specified in this certificate provided it is used, designed, installed and maintained in accordance with the instructions, limitations, conditions and validity requirements of the referenced documentation.

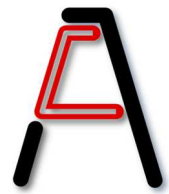
I believe that I hold the required skills, experience and knowledge to issue this certificate and can demonstrate this if requested to do so.

**Engineer:** Cameron Chick BE(Hons), Ph.D, GC.Com.(Mktg), M.AIRAH, RPEQ

REGISTERED PROFESSIONAL ENGINEER - QLD. (STRUCTURAL): 15370, VIC. (CIVIL): PE0000967

Date of issue of certificate: 16/10/2023

Signature:



## ATTACHMENTS:

### BOLT LIST

- T - Bolt landing to opening
- H - Bolt top riser to landing
- E - Bolt base plate to floor
- S - Baluster post to tread
- P - Baluster block to tread
- I - Allthread nuts to bolt down tread
- R - Allthread joiners
- A - Bolt timber treads to steel treads
- L - Bolt front newel post to floor
- W - Top baluster post to landing
- O - Bolt stair handrail to baluster posts
- R - Fix spacer bracket between top baluster post connected to landing and floor landing handrail
- K - Bolt landing handrail together
- (S) - Bolt landing handrails to floor

\* Letters on packaging correspond with **Bolt List**



### INSTALLATION BROCHURE



Phone: 1300 137 392 Mobile: 0417 149 637 [www.spiralstairs.com.au](http://www.spiralstairs.com.au)



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- (1)  
Bolt landing to existing floor opening.  
Clamp top riser pipe to landing.



- (13)  
Place newel post on round disc and bolt down using threaded hole.

- (2)  
Plumb line down from centre of top riser pipe to centre of base plate then bolt to floor.



- (14)  
Connect landing handrails to threaded fixings in posts.

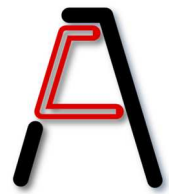


- (3)  
Place cover plate over base plate.



- (15)  
Screw fix landing handrail to floor.

YOUR STAIR IS NOW COMPLETE

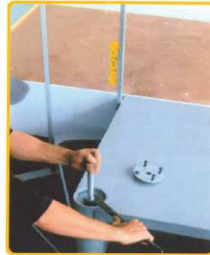


(10)  
Cut handrail to length then fit end caps top and bottom.



(4)  
Bolt allthread to bottom tread which has three grub screws inserted, then place over base plate. Pack under end of tread to level. Tighten up grub screws.

(11)  
Fixing of top newel post. Tighten nut on top riser.



(5)  
Bolt main baluster post to tread. Align by eye with centre column for plumb, and tighten bolts on baluster.



(12)  
Place round disc with threaded holes on top riser and fasten down with nut.



(6)  
Tighten down centre column nut on all treads as you install them after main baluster is bolted tight.



(7)  
Bolt all treads and main balusters on stair then connect top riser pipe to landing.



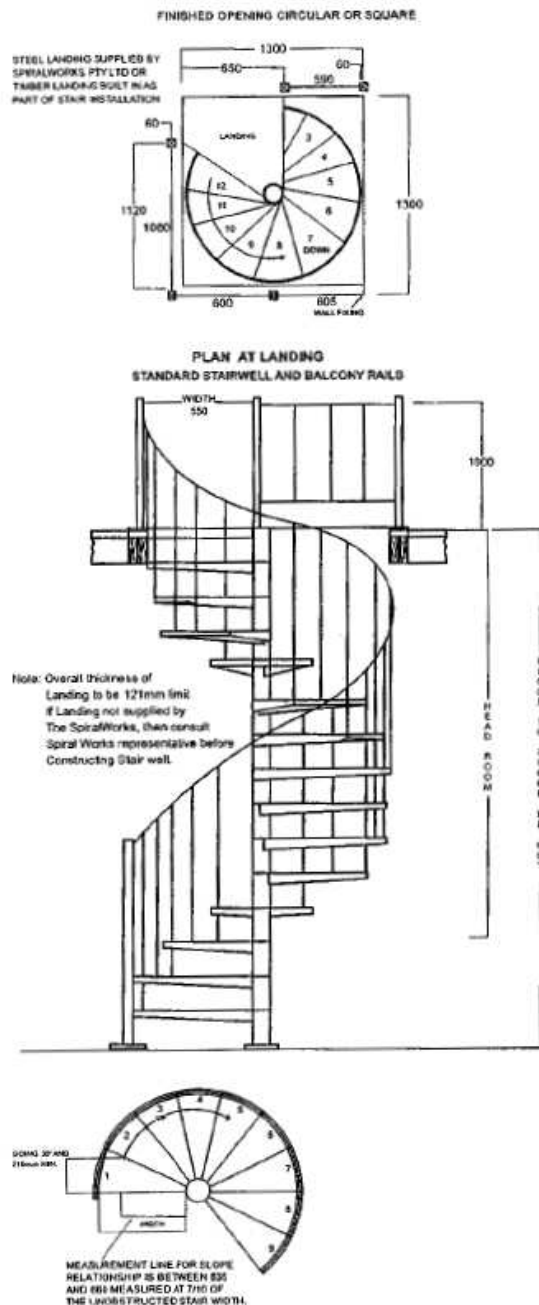
(9)  
Add middle balusters to stair. Again using centre column as plumb guide. Screw fix balusters to handrail.  
*Leave off front baluster to floor and top baluster to landing*

(8)  
Screw fix handrail to main balusters.



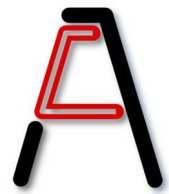
When all balusters are connected to handrail, Stair may have to be rotated to final fixing position, to do this loosen nut on top riser and loosen grub screws on bottom tread. Push stair by hand to correct position. Install top baluster post and connect to landing, you may have to drill bolt hole in landing for baluster. Plumb baluster to level, then tighten down allthread nut on top riser, then tighten grub screws on bottom tread. Stair is now fixed in position. Add bottom newel post. Bolt to tread and fix to floor.





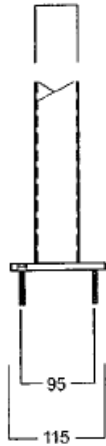
**Kit Form**  
The stair & handrail are kit - form. There is no welding, cutting or grinding required. This allows for easy installation on any finished floor surface.  
This system is covered by Registered Design No's: 157138 & 150823 & may not be manufactured or copied, without the written consent of The Spiral Works Pty Ltd.

## Page 5 of 12

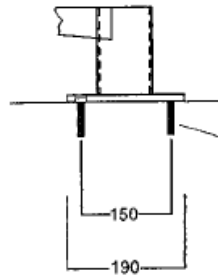


## DETAILS OF FIXING

50 SQ X 1.6 SHS



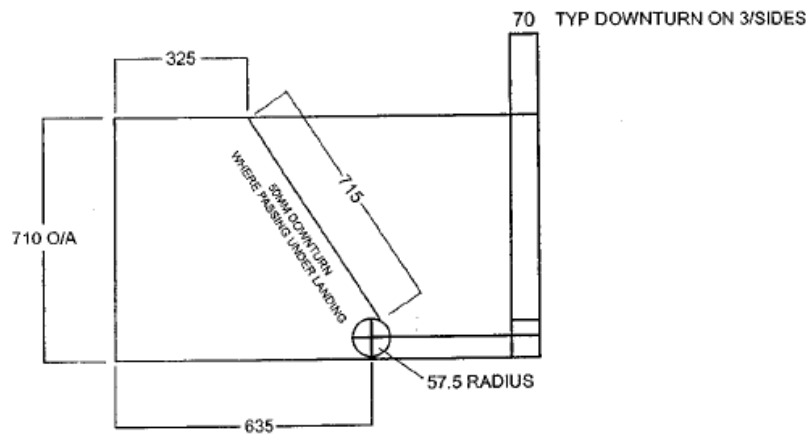
4 No. C'SK. SCREWBOLTS 75 X 8MM  
DRILL 8mm HOLE FOR MASONARY  
DRILL 7MM HOLE FOR TIMBER



4 No. C'SK. SCREWBOLTS 75 X 8MM  
on 150mm PCD  
DRILL 8mm HOLE FOR MASONARY  
DRILL 7MM HOLE FOR TIMBER

BASE PLATE

HANDRAIL POST BASE



LANDING DETAIL

## EXAMPLES ONLY OF SETOUT - WE BUILD TO SUIT

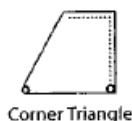
1300 Diameter

208mm to 220mm Riser 12 Treads to Circle at 30'

	2640	2860	3080	3300	3520	3740	3960	4180	4400	4620	4840
Floor to Floor Height	12	13	14	15	16	17	18	19	20	21	22
Number of Risers	11	12	13	14	15	16	17	18	19	20	21
Number of Treads	330	360	390	420	450	480	510	540	570	600	630
Going											
12 Steps to Circle at 30'											

Landing Examples

— Dotted line denotes fixing face



Corner Triangle



Balcony Triangle

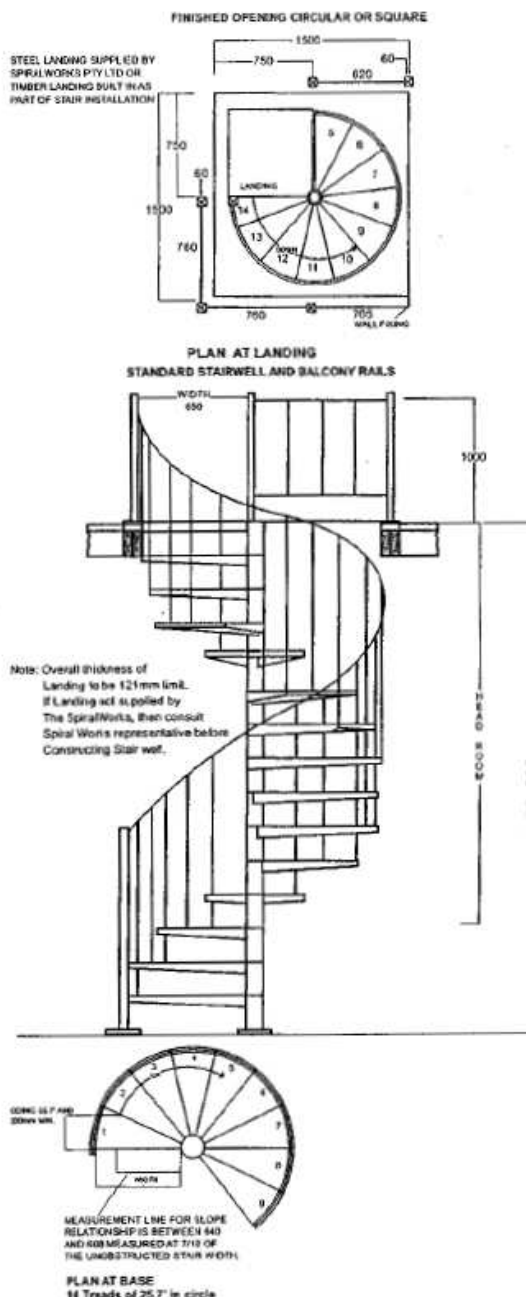
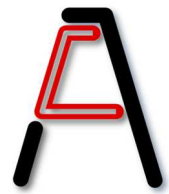


Round Triangle



AUSTRALIAN LEADING SPIRAL DESIGNERS

## INFORMATION FACT SHEET 1300 / 12 SPIRAL STAIRS



## CONSTRUCTION SPECIFICATIONS

### Stair Components

Centre Column 114.3 O.D X 4.3 mild steel pipe.

### Steel Treads

4mm mild steel plate.

Laser cut & folded to uniform size with rubber tread overlays as standard.

### Stair Handrail

Handrail 32mm round, unbroken PVC.

Balusters 19x1.6 square tubing with a maximum spacing of 125 Handrail posts, top & bottom 50x50x1.6 SHS continuous & uninterrupted handrail is provided on one side of stair with a minimum height above the tread nosing of 865mm.

### Balcony Railing

End posts 50x50 1.6SHS.

Top rail 32mm round mild steel.

Bottom rail & fills 19x1.6 square tubing.

Balcony rails are at a minimum height of 1000 above floor. Balusters are spaced with maximum gap of 125mm.

### Treads

Are uniform in shape & size. Risers are uniform in height & vary between 205 - 220 according to site measurement width of stairs, tread free of obstruction 625.

### Stair Geometry

Stair has risers between 205 - 220 14 steps to circle at 25.7 degrees.

The going measured at 7/10ths of clear width is 210 minimum.

The slope relationship is between 640 & 660.

Stair can be erected clockwise or anti clockwise and is mechanically joined on site.

### Headroom

Using standard landing with timber top 75mm thick with every 205 riser, clear headroom is 2080.

Every 1mm added to riser, adds 12mm to headroom.

### Kit Form

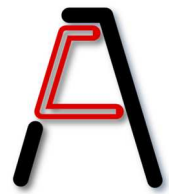
The stair & handrail are kit - form. There is no welding, cutting or grinding required. This allows for easy installation on any finished floor surface.

This system is covered by Registered Design No's: 157138 & 150823 & may not be manufactured or copied, without the written consent of The Spiral Works Pty Ltd.

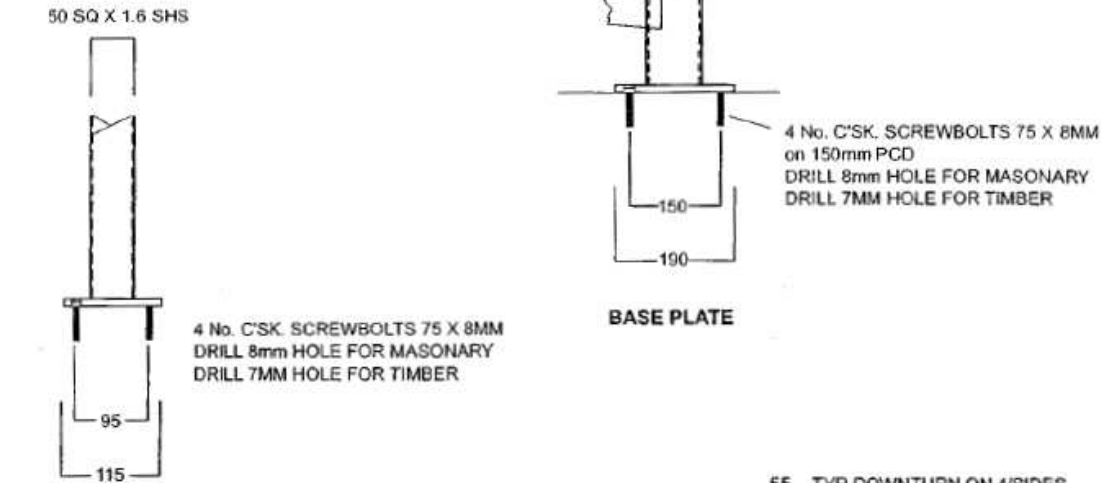
## INFORMATION FACT SHEET

### 1500 / 14 SPIRAL STAIRS

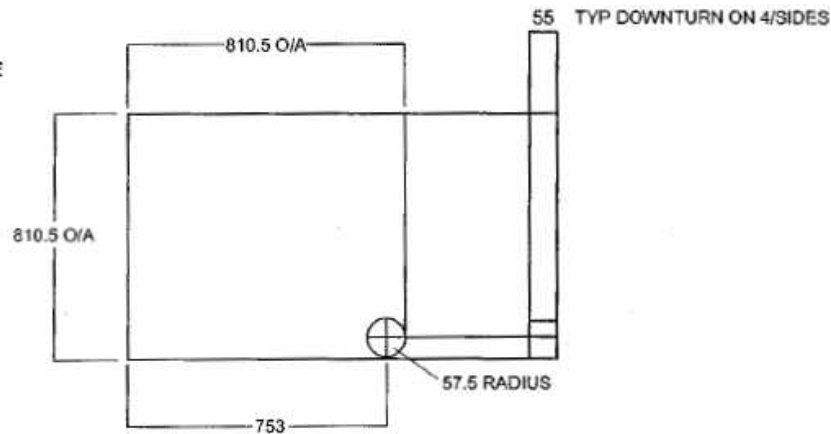
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 ® Registered Design Nos: 157138 & 105823  
 \*Stairs Comply with BCA \*All states & Territories



## DETAILS OF FIXING



## HANDRAIL POST BASE



## LANDING DETAIL

### EXAMPLES ONLY OF SETOUT - WE BUILD TO SUIT

1500 Diameter

208mm to 220mm Riser 14 Treads to Circle at 25.7'

Floor to Floor Height	2640	2860	3080	3300	3520	3740	3960	4180	4400	4620	4840
Number of Risers	12	13	14	15	16	17	18	19	20	21	22
Number of Treads	11	12	13	14	15	16	17	18	19	20	21
Going	282	308	334	360	385	411	437	463	488	514	540

14 Steps to Circle at 25.7'

### Landing Examples

----- Dotted line denotes fixing face



Corner square



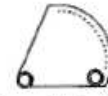
Corner Triangle



Balcony Triangle



Cantilever



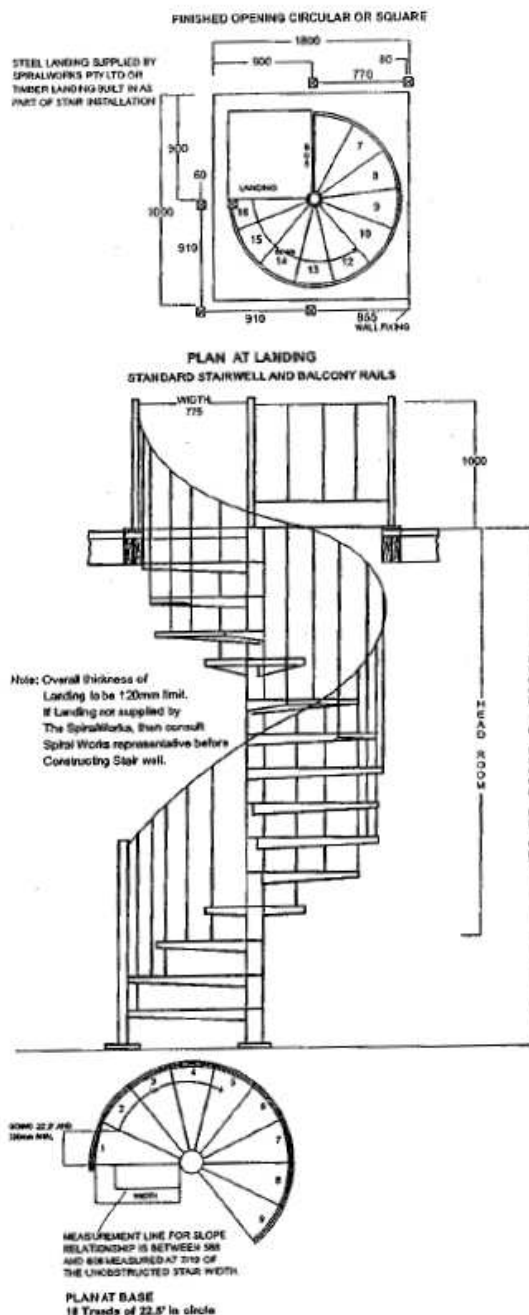
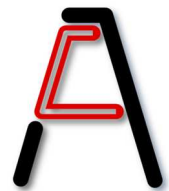
Round Triangle



## INFORMATION FACT SHEET 1500 / 14 SPIRAL STAIRS

AUSTRALIAN LEADING SPIRAL DESIGNERS





## CONSTRUCTION SPECIFICATIONS

### Stair Components

Centre Column 114.3 O.D X 4.3 mild steel pipe

### Steel Treads

4mm mild steel plate  
Laser cut & folded to uniform size with 35mm timber tread overlays as standard.

### Stair Handrail

Handrail 32mm round, unbroken PVC.  
Balusters 19x1.6 square tubing with a maximum spacing of 125 Handrail posts, top & bottom 50x50x1.6 SHS continuous & uninterrupted handrail is provided on one side of stair with a minimum height above the tread nosing of 865mm.

### Balcony Railing

End posts 50x50 1.6SHS  
Top rail 32mm round mild steel  
Bottom rail & fills 19x1.6 square tubing  
Balcony rails are at a minimum height of 1000 above floor  
Balusters are spaced with maximum gap of 125mm.

### Treads

Are uniform in shape & size. Risers are uniform in height & vary between 183 - 195 according to site measurement width of stairs, tread free of obstruction 760.

### Stair Geometry

Stair has risers between 183 - 195 16 steps to circle at 22.5 degrees.  
The going measured at 7/10ths of clear width is 210 minimum.  
The slope relationship is between 588 & 608  
Stair can be erected clockwise or anti clockwise and is mechanically joined on site.

### Headroom

Using standard landing with timber top 75mm thick with every 183 riser, clear headroom is 2060.  
Every 1mm added to riser, adds 12mm to headroom.

### Painting

Powder coated choice of 36 colours

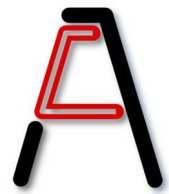
### Kit Form

The stair & handrail are kit - form. There is no welding, cutting or grinding required. This allows for easy installation on any finished floor surface.  
This system is covered by Registered Design No: 150823 & may not be manufactured or copied, without the written consent of The Spiral Works Pty Ltd.

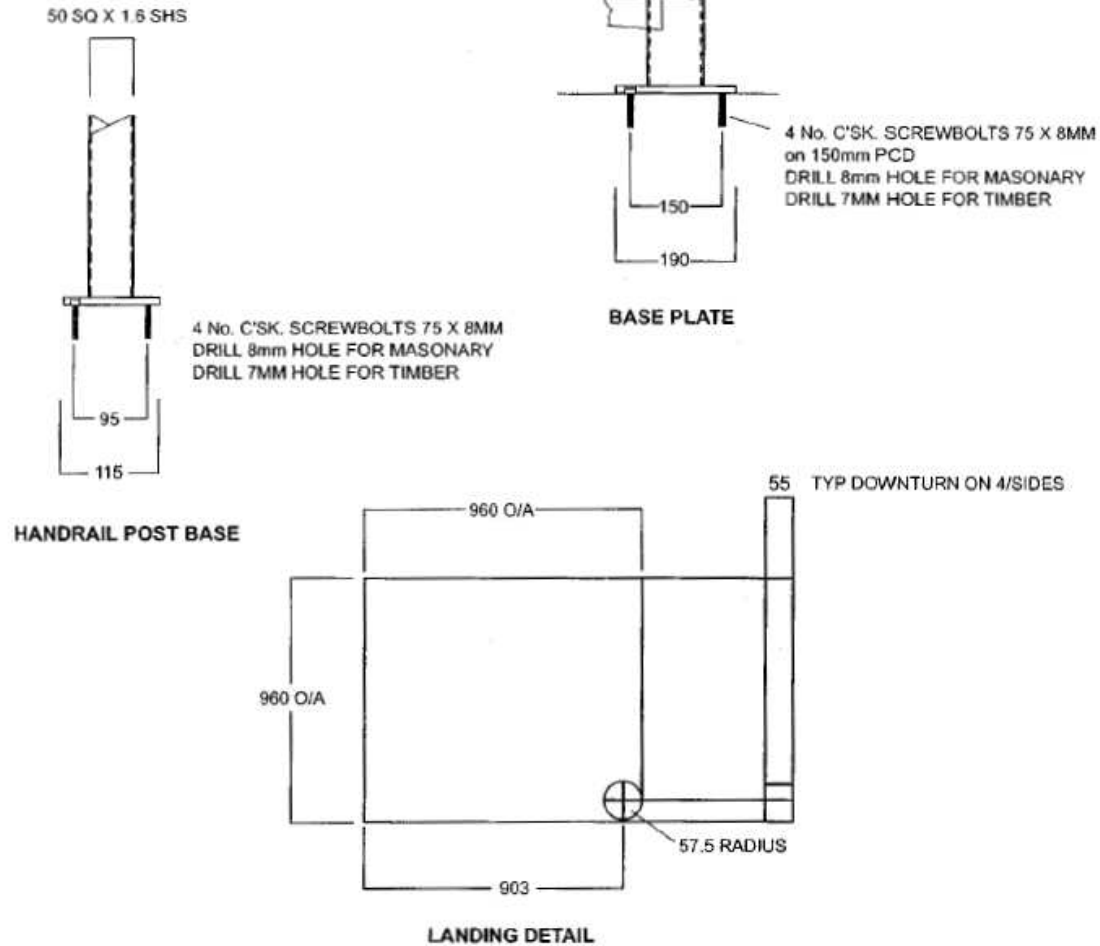
## INFORMATION FACT SHEET

### 1800 / 16 SPIRAL STAIRS

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® Registered Design Nos: 157138 & 105823  
\*Stairs Comply with BCA \*All states & Territories



## DETAILS OF FIXING



## EXAMPLES ONLY OF SETOUT - WE BUILD TO SUIT

1800 Diameter

	2320	2510	2700	2890	3080	3270	3460	3650	3840	4030	4220
Floor to Floor Height	2320	2510	2700	2890	3080	3270	3460	3650	3840	4030	4220
Number of Risers	12	13	14	15	16	17	18	19	20	21	22
Number of Treads	11	12	13	14	15	16	17	18	19	20	21
Going	247	270	292	315	337	360	382	405	427	450	472

16 Steps to Circle at 22.5'

## Landing Examples

— Dotted line denotes fixing face



Corner square



Corner Triangle



Balcony Triangle



Cantilever

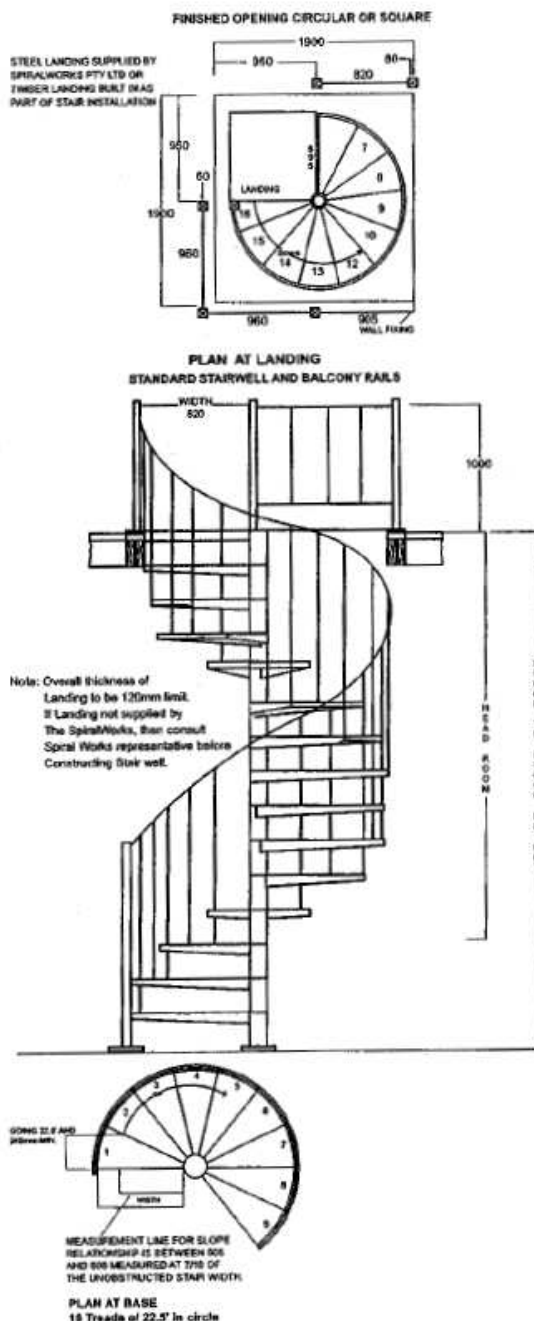
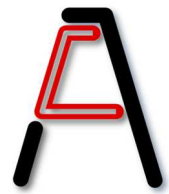


Round Triangle



## INFORMATION FACT SHEET 1800 / 16 SPIRAL STAIRS

AUSTRALIAN LEADING SPIRAL DESIGNERS



## CONSTRUCTION SPECIFICATIONS

### Stair Components

Centre Column 114.3 O.D X 4.3 mild steel pipe

### Steel Treads

4mm mild steel plate  
Laser cut & folded to uniform size with 35mm timber tread overlays as standard.

### Stair Handrail

Handrail 32mm round, unbroken PVC.  
Balusters 19x1.6 square tubing with a maximum spacing of 125 Handrail posts, top & bottom 50x50x1.6 SHS continuous & uninterrupted handrail is provided on one side of stair with a minimum height above the tread nosing of 865mm.

### Balcony Railing

End posts 50x50 1.6SHS  
Top rail 32mm round mild steel  
Bottom rail & infills 19x1.6 square tubing  
Balcony rails are at a minimum height of 1000 above floor  
Balusters are spaced with maximum gap of 125mm.

### Treads

Are uniform in shape & size. Risers are uniform in height & vary between 183 - 195 according to site measurement  
width of stairs, tread free of obstruction 820.

### Stair Geometry

Stair has risers between 183 - 195 16 steps to circle at 22.5 degrees.  
The going measured at 7/10ths of clear width is 210 minimum.  
The slope relationship is between 605 & 625  
Stair can be erected clockwise or anti clockwise and is mechanically joined on site.

### Headroom

Using standard landing with timber top 75mm thick with every 183 riser, clear headroom is 2060.  
Every 1mm added to riser, adds 12mm to headroom.

### Painting

Powder coated choice of 36 colours.

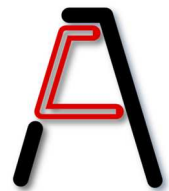
### Kit Form

The stair & handrail are kit - form. There is no welding, cutting or grinding required. This allows for easy installation on any finished floor surface.  
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## INFORMATION FACT SHEET

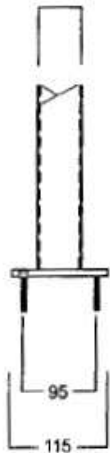
### 1900 / 16 SPIRAL STAIRS

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\*Stairs Comply with BCA \*All states & Territories



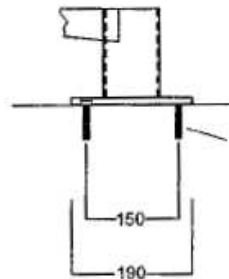
## DETAILS OF FIXING

50 SQ X 1.6 SHS



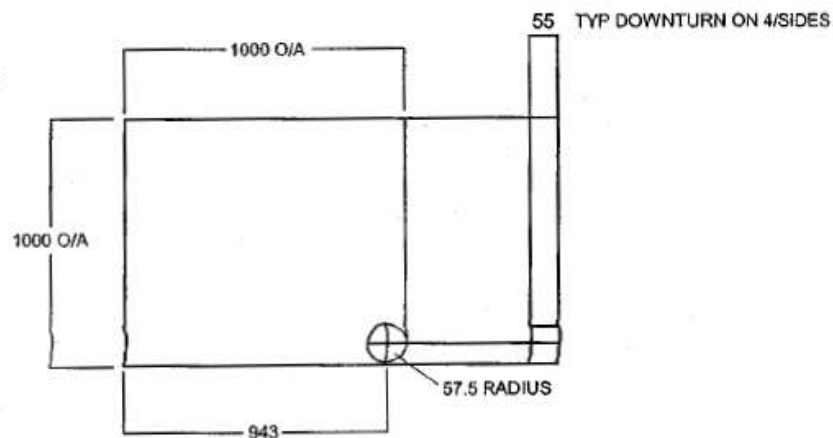
4 No. C'SK. SCREWBOLTS 75 X 8MM  
DRILL 8mm HOLE FOR MASONARY  
DRILL 7MM HOLE FOR TIMBER

HANDRAIL POST BASE



4 No. C'SK. SCREWBOLTS 75 X 8MM  
on 150mm PCD  
DRILL 8mm HOLE FOR MASONARY  
DRILL 7MM HOLE FOR TIMBER

BASE PLATE



LANDING DETAIL

## EXAMPLES ONLY OF SETOUT - WE BUILD TO SUIT

1880 Diameter

178mm to 190mm Riser 16 Treads to Circle at 22.5'

Floor to Floor Height	2280	2470	2660	2850	3040	3230	3420	3610	3800	3990	4180
Number of Risers	12	13	14	15	16	17	18	19	20	21	22
Number of Treads	11	12	13	14	15	16	17	18	19	20	21
Going	247	270	292	315	337	360	382	405	427	450	472

16 Steps to Circle at 22.5'

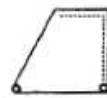


Landing Examples

— Dotted line denotes fixing face



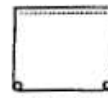
Corner square



Corner Triangle



Balcony Triangle



Cantilever



Round Triangle



## INFORMATION FACT SHEET 1900 / 16 SPIRAL STAIRS

AUSTRALIAN LEADING SPIRAL DESIGNERS