



Living Willow Structures

Introduction

There are many different types of structure that can be created using living willow, the limit is your or someone else's imagination. A simple potted structure such as a Harlequin Tree or Teepee can provide a great feature on a patio, or a more complex project such as a maze, or a series of domes interconnected with tunnels, can provide a playground for kids of all ages (even those over 21!)

A structure can provide a cool shaded area for a cup of tea or a Pimms during the summer, act as a wind break as well as providing a habitat for a number of insects and small mammals, which can then provide food sources for bats and birds.

Your choice of structure should be influenced by a number of different factors, which should be taken into account during your planning process.

Materials for your Living Willow Structure

Willow cutting and planting times are between November and March whilst the plant is dormant.

Ideally willow should be left on the stool until needed, this is not always possible so once cut should be stored with the but ends in water.

When cutting the stem from the stool, cut as close to the base as possible and at an angle to allow rain water to run off.

Many willows are usable for structure work, our suggested variety is *Salix Viminalis*.

A good website for this information is

<http://www.eastbridgewillows.com/main.php?content=willows>

How Much Willow Will be needed.

Attached is a simple chart to help you work out how much willow you will need, as well as a couple of diagrams to assist you with marking out where the uprights for domes and circles would need to be placed

Planning for your Living Willow Structure

Things to look out for when planning for your living willow structure.

- **Surroundings** – Willow roots can travel a good distance in search of water, do not plant too close to buildings or drains as they may cause damage.

- **Light Levels** – Although willow can deal with a bit of shade it will hinder its growth. The best location should have full light

- **Soil type** – Willow can tolerate most soils but struggles if it's too dry in particular Clay type soils during dry spells.

- **Water Levels:**

- **Weeds** – Newly planted willow rods do not deal well with competition, the use of a weed suppression mat and bark chips around the base will help keep the weeds away and retain moisture in the ground.

- **Other Flora and Fauna:** make sure the area you choose does not already have other plants that may out compete for food and moisture or growth, such as Himalayan Balsam or Brambles. Also make sure that the area you intend to use is not protected or the habitat for sensitive plants such as wild orchids. Deer and Rabbits can cause significant damage to new shoots or bark strip stems so be aware of the Fauna in the area.

- **Expansion:** As your new pride and joy grows successfully you may wish to add further structures. Consider if there would be space to expand your structure by adding tunnels, domes, fence lines etc.

Who will use the structure: Consider who are your intended users of the structure, children, adults, the elderly, wheelchair users, the general public. There may be some unexpected users such as Wasps and Bees, In late summer willow aphids may affect plants, they can be spotted by the stems becoming sticky and sooty mould developing, be warned wasps are attracted to this sticky honeydew, control the aphids with a control spray available from any garden centre and this will avoid wasp issues. Fungal diseases can also affect the willow which again can be sorted with sprays available from garden centres.

•**Underground and above ground Services:** Check for pipes,cables drains or other hidden services or substrates such as old paving or foundations. Overhead electrical or telephone cables should be identified, remember the willow will grow quickly and will gain height well above the dome of arch height that you build.

•**Access:** Is there easy access for you to transport the materials to where you intend to build the structure, as well as access to undertake the future maintenance as the structure grows.

Setting out and Planting your willow structure

Having found a suitable spot to plant your structure you will need to set out the shape and size which you can do in a number of different ways.

•Mark out however you like using sand/spray paint/ sticks and string.

•Dig out the top layer of turf and lay weed suppression matting.

•Before planting your willow stem cut the end 3 inches off the butt end of your rod to create a fresh wound allowing the plant to take on water.

•If the soil is loose enough push your rods in to the ground 6 - 10 inches (150mm-250mm) deep, if not use a spike or spade to create a hole, firming the ground back down around your planted rod.

•When tying rods together use a material that will allow growth and expansion to avoid choking the stems, after a while the stems start to bond together and the ties can be removed. Biodegradable ties would be best as they rot away over time.

•Finish by applying a layer of bark chip or mulch to the base

Maintaining your willow structure

As willow can grow up to 14ft in a season it is important to keep it maintained, new shoots will grow from all over your new structure, try to weave them back in to the structure to add strength and fill gaps, cut off troublesome shoots and re-plant them around the base.

When weaving in new growth try to avoid kinking the stems and have them facing as upward as possible as the sap will not rise and the stem will die.

Willow is a very thirsty plant, make sure to keep it well watered in its first year especially in dry soils and warm periods and every summer after.

The amount of watering will be dependent upon the type of soil. The more free draining the soil the greater the amount of watering that will be required.

It is possible that a few stems may not survive after planting, after the first year or two use some of the harvested willow stems from your structure to replace the dead ones.

Make regular checks on the ties you have used to make sure that they are not causing any restriction of growth in the stems. Loosen or replace where required.

Keep the base of the stems clear of other growth, such as grass or other "weeds", this will help to provide the stems with enough light, water and nutrients for them to establish and grow.

Do not use a strimmer to clear the grass etc as this may damage the bark layer of the stems.

Remove buds or side shoots where you do not wish to growth to exist.

Cut back any unwanted growth during the autumn period once the leaves have dropped.

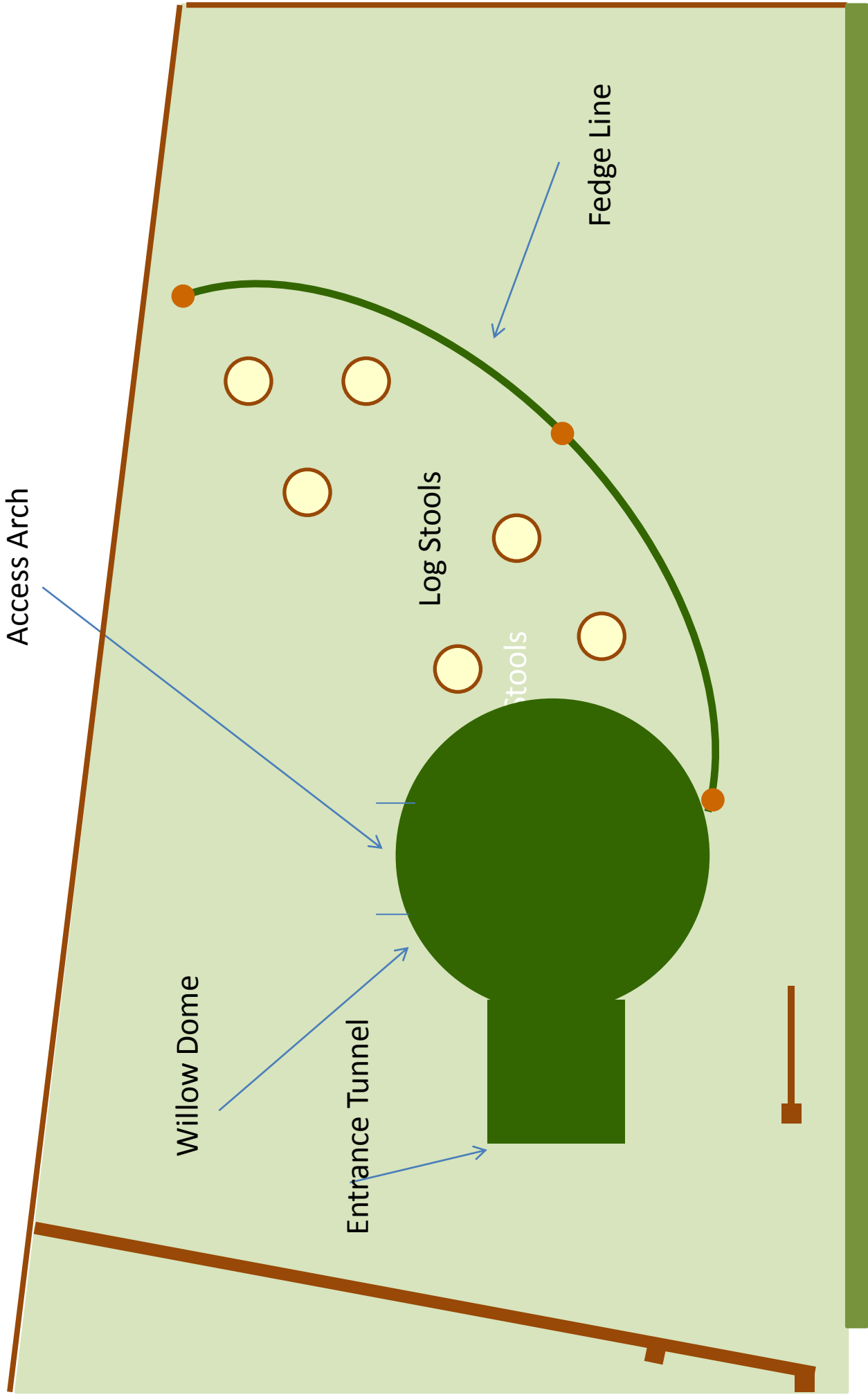
Materials Requirements and considerations

Below is a chart which provides a summary of the materials that you will need to consider when planning your living willow structure.

Willow Cutting List					
Dome	QTY	Tunnel	QTY	Fedge	QTY
3000mm Uprights	24	2500mm uprights	10	Posts 1800mm	4
2500mm Weavers	30	2000mm weavers	6	2500mm weavers	12
2000mm Fedge Rods	100	1.800mm Fedge rods	30	1800mm Fedge Rods	100
Sundry Items					
Items			Amount	Unit Cost	Total
2000mm Weed Suppression Matting			m	£/m	£
Matting Pegs			20		£
Wood/Bark Chippings			Per m ³	£	£
Jute Tie Large Ball			1	£	£
				Sub Total	£
Man Hours			hours	£	£
				Total	

Diameter in Metre's	Circumference in Metre's	Number of Uprights
2	6.28	18
2.5	7.85	24
3	9.42	28
3.5	10.99	32
4	12.56	36
4.5	14.13	42
5	15.70	48

Plan View



Access Arch

Willow Dome

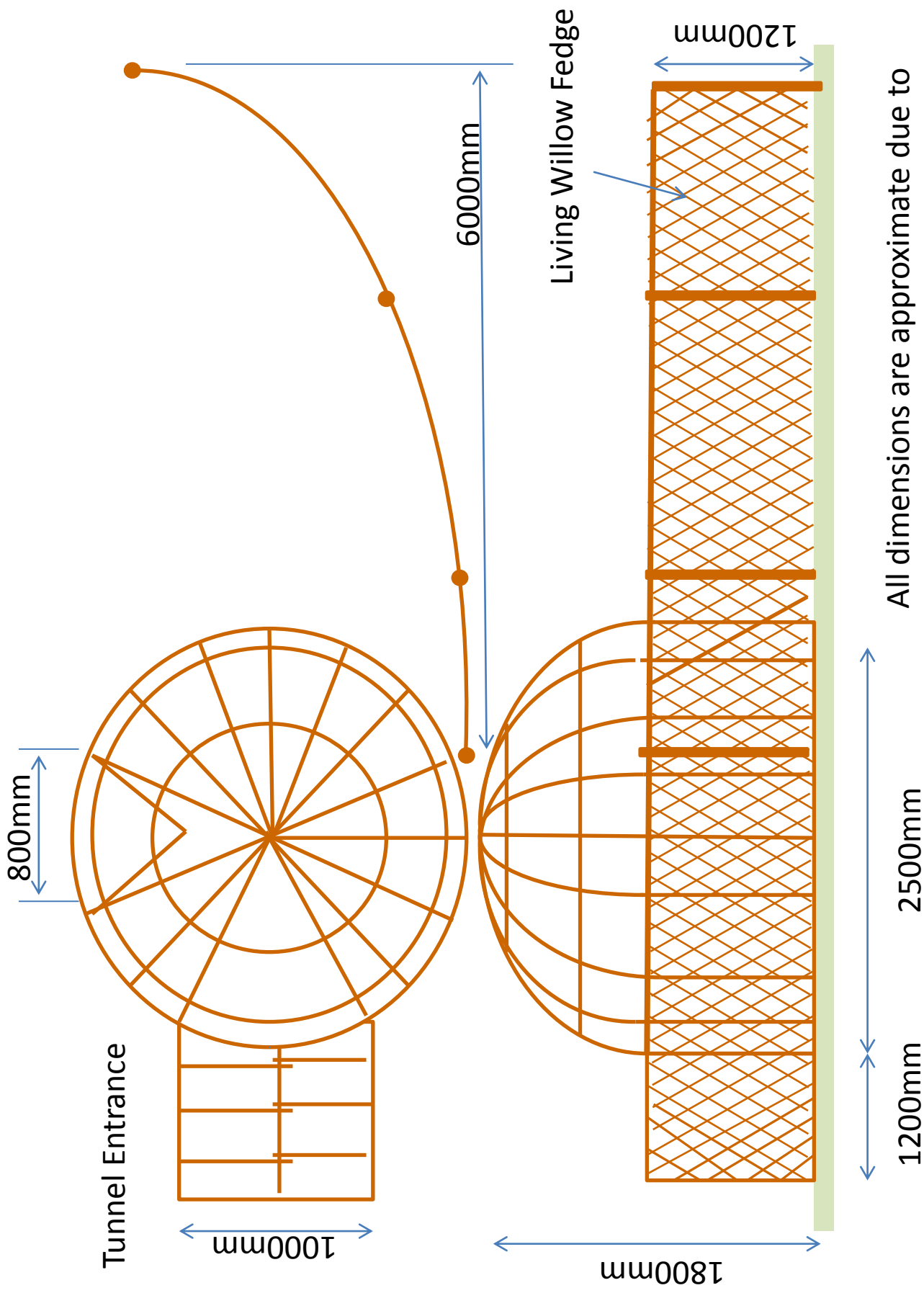
Entrance Tunnel

Log Stools

Stools

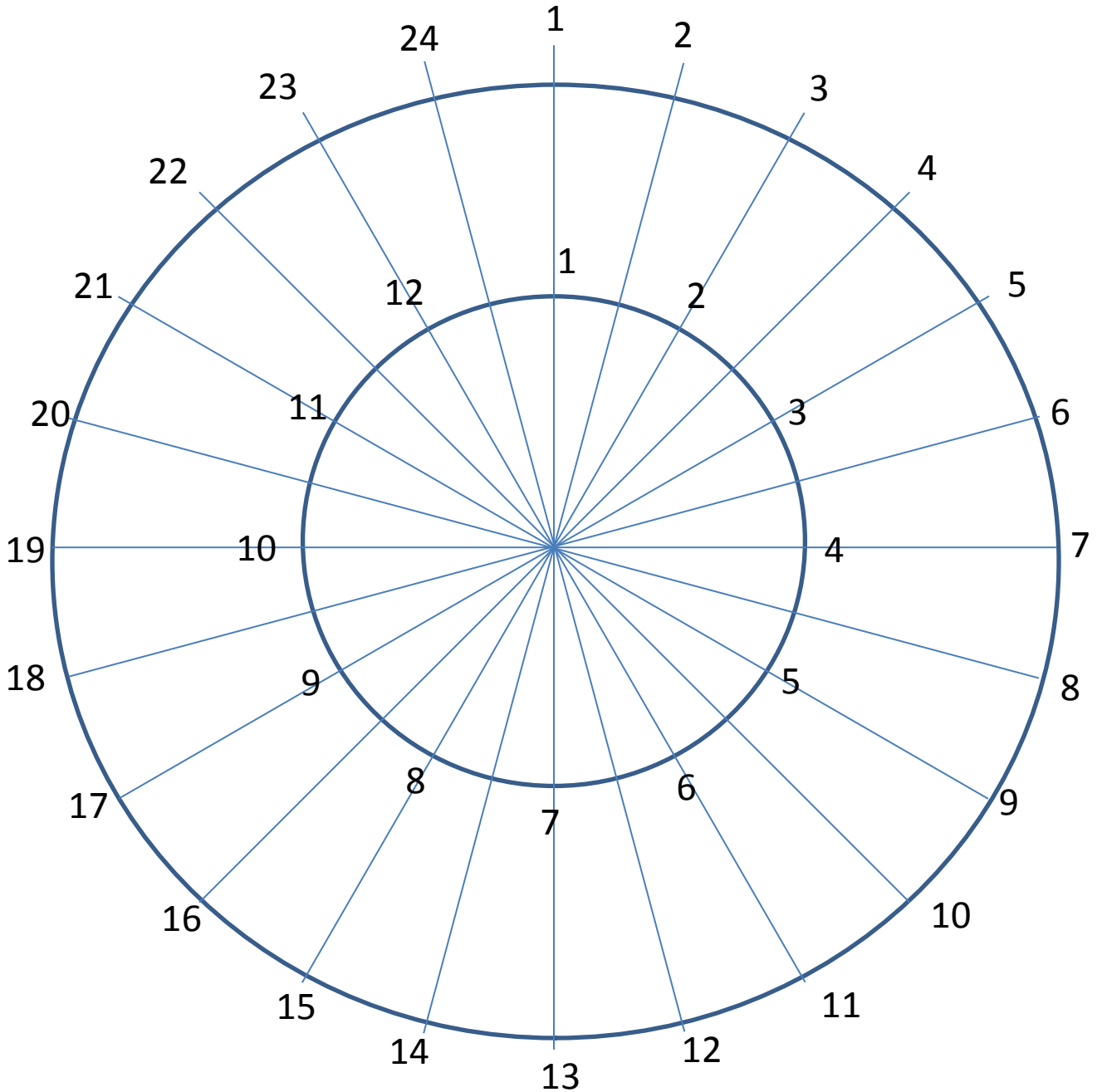
Fedge Line





All dimensions are approximate due to the nature of the natural materials used

Setting out diagram for 12 and 24 upright dome or circle



Setting out Diagram for 18 and 36 upright dome or circle

