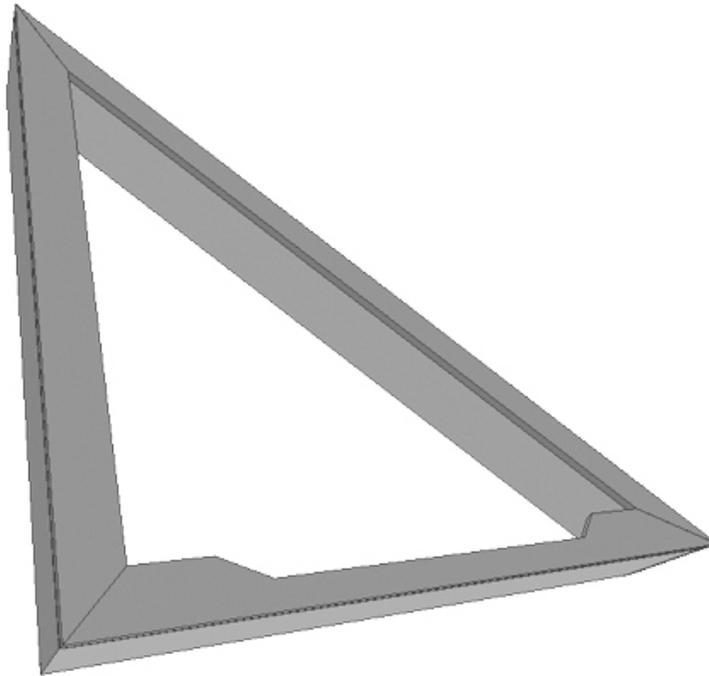




POD CONVERSION TRIANGLES



**Proprietary and Confidential
Version 3.0**

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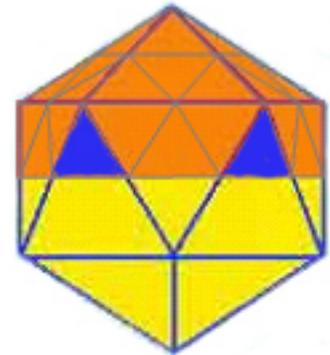


Conversion triangles may be installed in both IcoPods and DecaPods. For simplicity of presentation the remainder of this document focuses on their installation in a DecaPod.

Removing Triangles from a DecaPod

For some applications it may be useful to remove one or more of the triangles of a DecaPod so that the entire triangular area typically walled off by the removed triangle is open. For example you may want to create an “open air” pavilion with several triangular “walk through” entrances.

If you want to remove a triangle, it is essential that it is replaced by some sort of framed triangular structure, a **DecaPod Conversion Triangle (DCT)** that retains the structural integrity initially supplied by the removed triangle.



No More than 5 Triangles Should be Removed

The DecaPod derives its structural stability from its “half-icosahedron” structure. In the image above, an orange DecaPod has been superimposed upon a full icosahedron sphere. If the structural integrity of the icosahedron is disturbed, the Pod will be weakened.

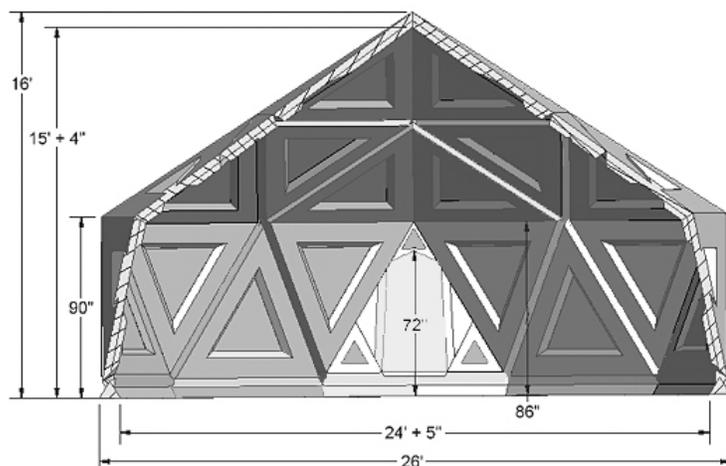
Icosa Village strongly recommends that no more than five triangles be removed from a DecaPod. In addition, the only triangles that may be removed are those with neighbors that abut them at an angle. Two such triangles are illustrated in blue in the above diagram.

DecaPod Conversion Triangles (DCTs) Replace DecaPod Triangle “Doughnuts”

If you remove triangles from the structure, you must replace them with a frame that serves two purposes;

- Provide the same structural support as the removed triangular wall section.
- Provide a barrier that protects the open walls of the neighboring triangles and the Base-Ring/Base-Saddle assembly below

Deca Pod Cut Away





the removed triangle from both the weather, and from damage due to traffic passing through the area of the removed triangle. It is particularly important that the Base-Ring/Base-Saddle assembly not sustain damage.

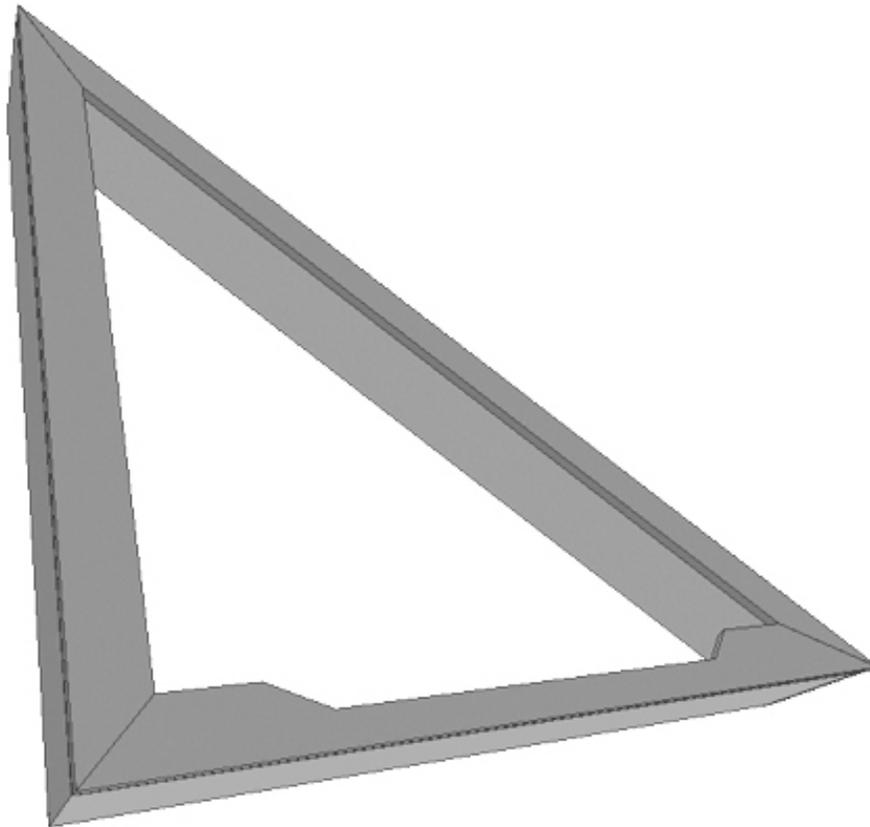
Consult a Professional Builder

The following information is provided to specify the necessary design parameters that must be met in order that the DecaPod Conversion Triangle (DCT) exactly fits in the area vacated by the triangular wall component that it replaces.

Warning: Icosa Village, Inc., makes no claims or warranties whatsoever about the completeness or the appropriateness of these design suggestions for your DecaPod Conversion Triangle.

We recommend that you consult a professional builder for advice. You are responsible for ensuring that any and all applicable building codes and or regulations are properly followed, and that the structure you build is sound and complete.

One Implementation of a DecaPod Conversion Triangle (DCT)



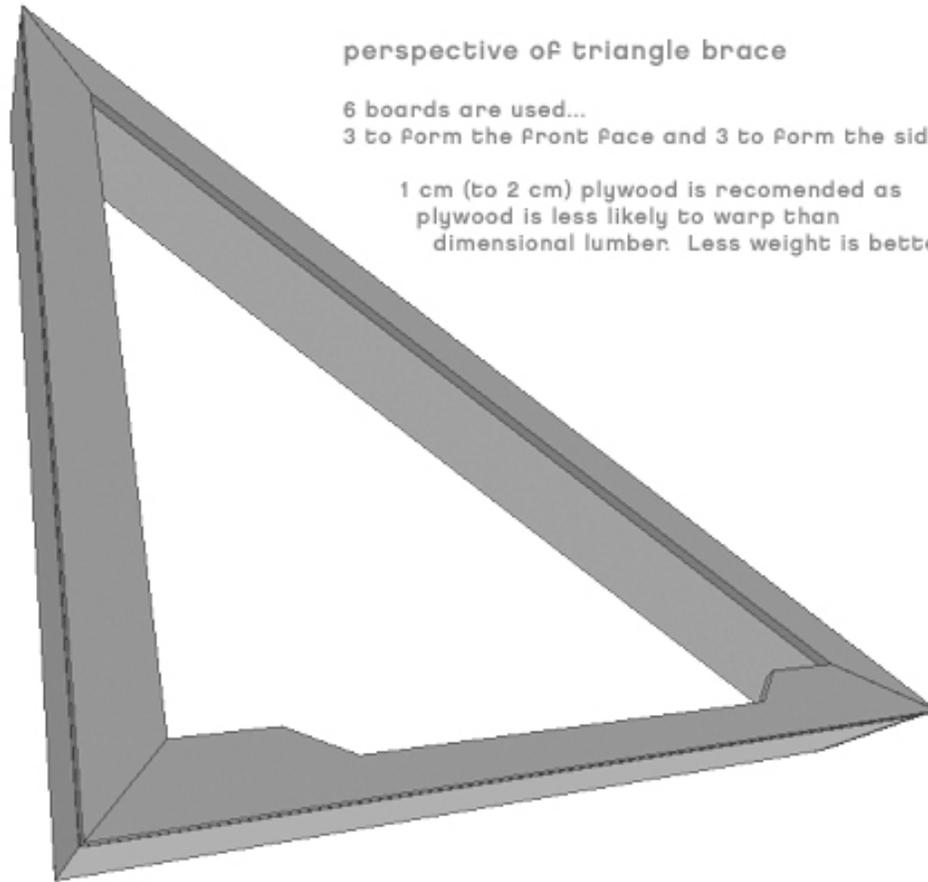
The 3-D image above shows one implementation of a DCT. The design specs for this implementation are presented in the next section.



DecaPod Conversion Triangle Specifications

3-D Image of the DCT

DCT Specification Details



perspective of triangle brace

6 boards are used...
3 to Form the Front Face and 3 to Form the sides.

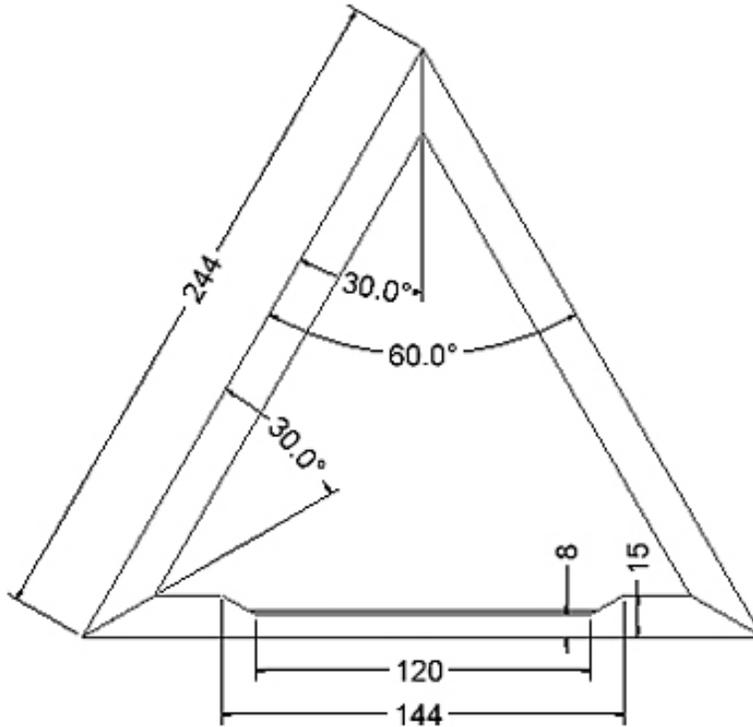
1 cm (to 2 cm) plywood is recommended as
plywood is less likely to warp than
dimensional lumber. Less weight is better.

The next page provides 2-D details of the DCT shown above in 3-D.

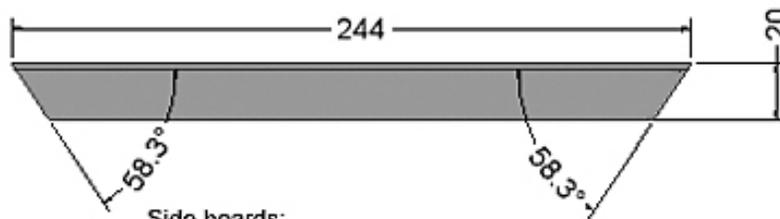


Deca pod triangle brace
measurements in cm.

Use plywood no heavier than 2cm.
Glue up construction and paint white.
During installation, a bead of white caulk must
be placed around the outer edge of this
frame where the wood meets the pod material.



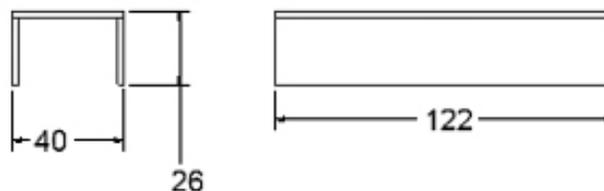
Outside edges of triangle must bevel inwards at 69 degrees



Side boards:
Must have long edge bevelled at 69 degrees
Must have end edges bevelled at 30 degrees

A 20 to 22cm wide board will be fine as a starting dimension for the width of the sideboard.
Beveling the edges will make it slightly narrower.

Example showing minimum clearance for triangle "walk through" threshold





The plans on the previous page provide the necessary specifications for this design of the DCT. The implementation of these specifications is up to you.

The three diagrams in the specifications on the previous page illustrate top to bottom

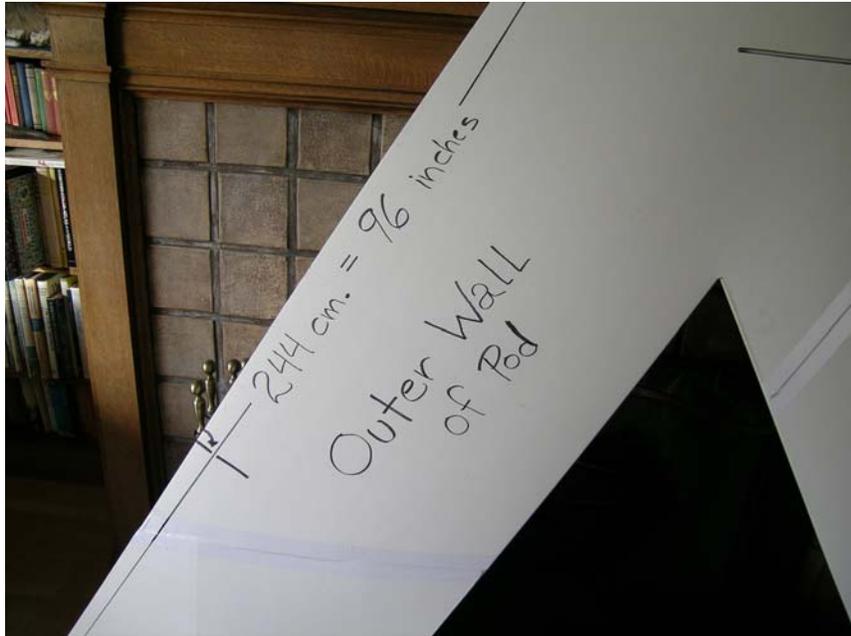
- The Outside Face of the DCT (which is an equilateral triangle 96" (244 cm) on a side).
- One of the three identical side faces of the DCT between the outside wall of the Pod (at the top of the center diagram) and the inside wall of the Pod (at the bottom of the center diagram.) Note that this center diagram is shown along the plane of the 69° angled bevel from the outside wall to the inside wall.
- Two diagrams illustrating the minimum dimensions of a box that must be constructed to protect the Base-Ring / Base-Saddle parts that lie directly below the bottom edge of the DCT.

DecaPod Wall Triangle Review

Since the DecaPod Conversion Triangle replaces a standard Pod wall triangle, it may be useful to review the shape of the triangle it replaces.



All of the DecaPod wall triangles are equilateral. The outside edges of the triangle



measure 96" (244 cm.) along each edge. They resemble 6"-thick triangular "doughnuts" with a triangular hole in their center.

The inside edges of the triangles are smaller since they form the inside wall of the Pod approximately 6" inside the outside edge of the triangle. They are **approximately** 88" (223.5 cm.) along each edge



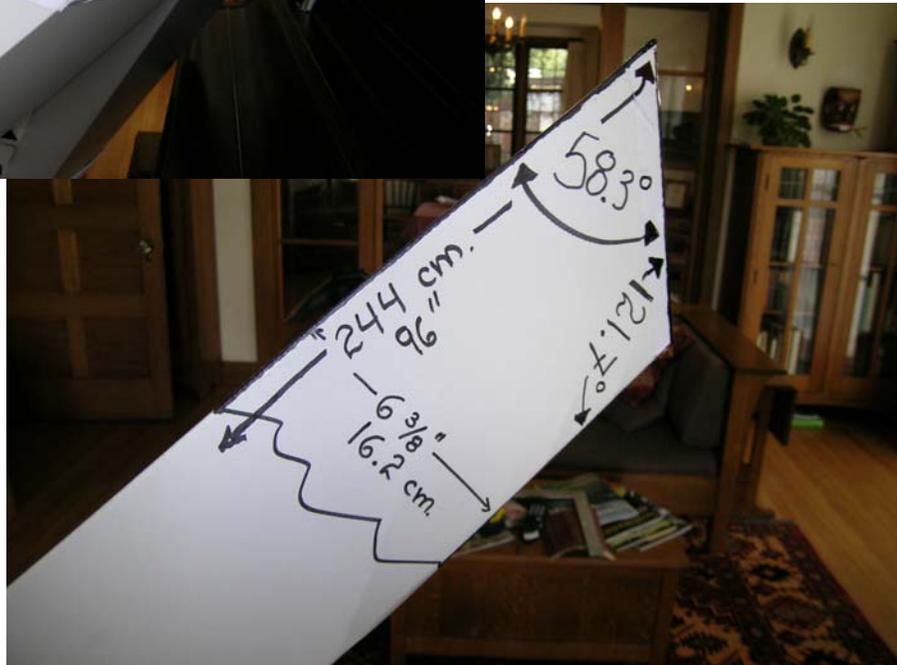


The inside wall of the triangle (and the Pod) is 6" (15.24 cm) inside the outside wall of the triangle. But because the two walls are roughly spherical, the inside wall can be thought of as a lying roughly along sphere with a radius 6" less than the sphere of the



outside wall. Thus the edges that create the 6" (15.24 cm) thickness of each of these triangular "doughnuts" are not perpendicular to the inside and outside edges, but actually bevel

in at a 69° angle from the outside wall so that the edges of the neighboring triangles abut. This bevel gives these narrow edges of the triangular "doughnut" a width of approximately 6





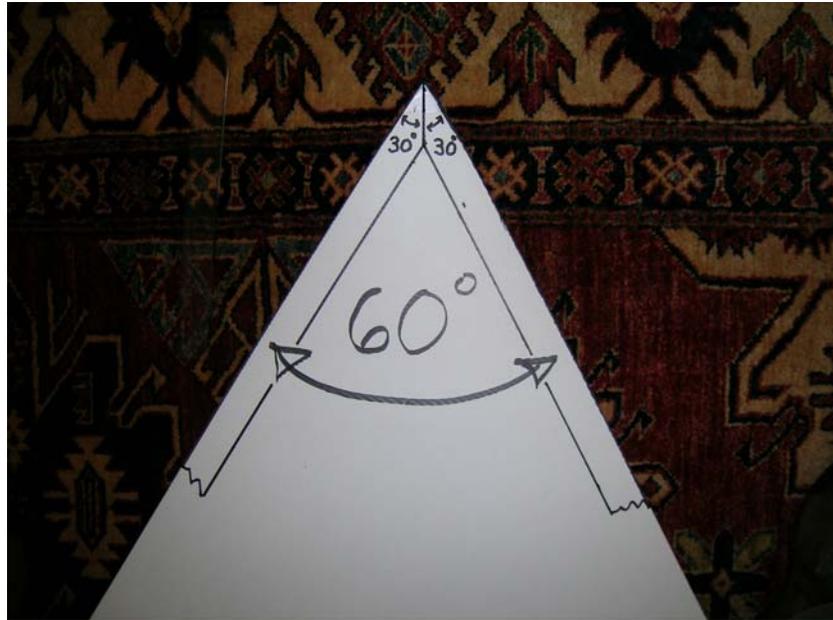
3/8" (16.2 cm.)

Because of the concentric and spherical nature of the outside and inside edge of each of the triangular doughnuts, the three vertices of the triangular doughnuts also bevel in from the outside edge at an angle of 58.3° when measured along the plane of the narrow edges of the triangular doughnut. At the inside edge this bevel is 121.7° .

Superimposing a DCT on a DecaPod Triangle

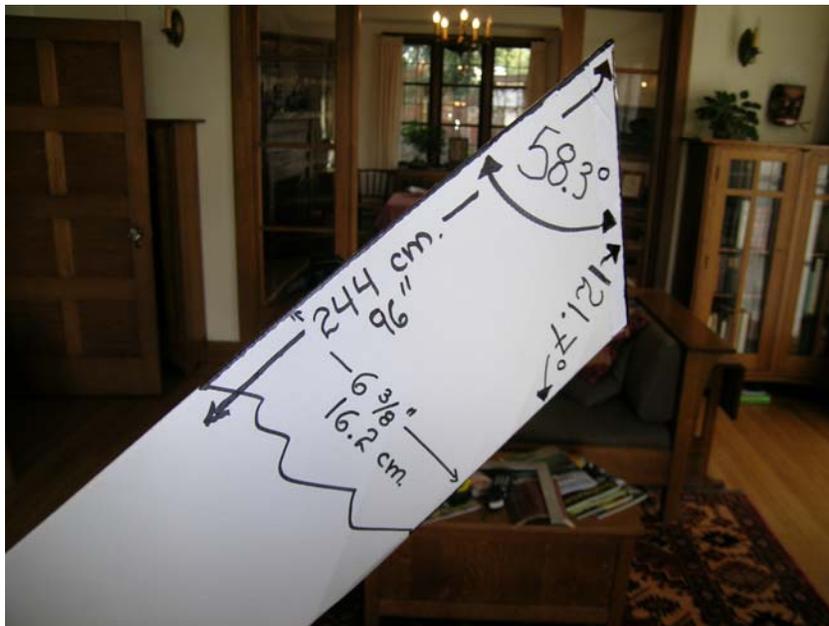
In this section the three identical side panels of the DCT are superimposed on the DecaPod triangle.

The boards connect together so that each one lays along the plane of one of the 69° beveled narrow sides of the triangular "doughnut". The image at the right shows the upper portions of two of these boards butting against each other along 30° angle-cut edges.



Laid flat each of these

three boards is cut to the dimensions specified in the middle diagram of the preceding

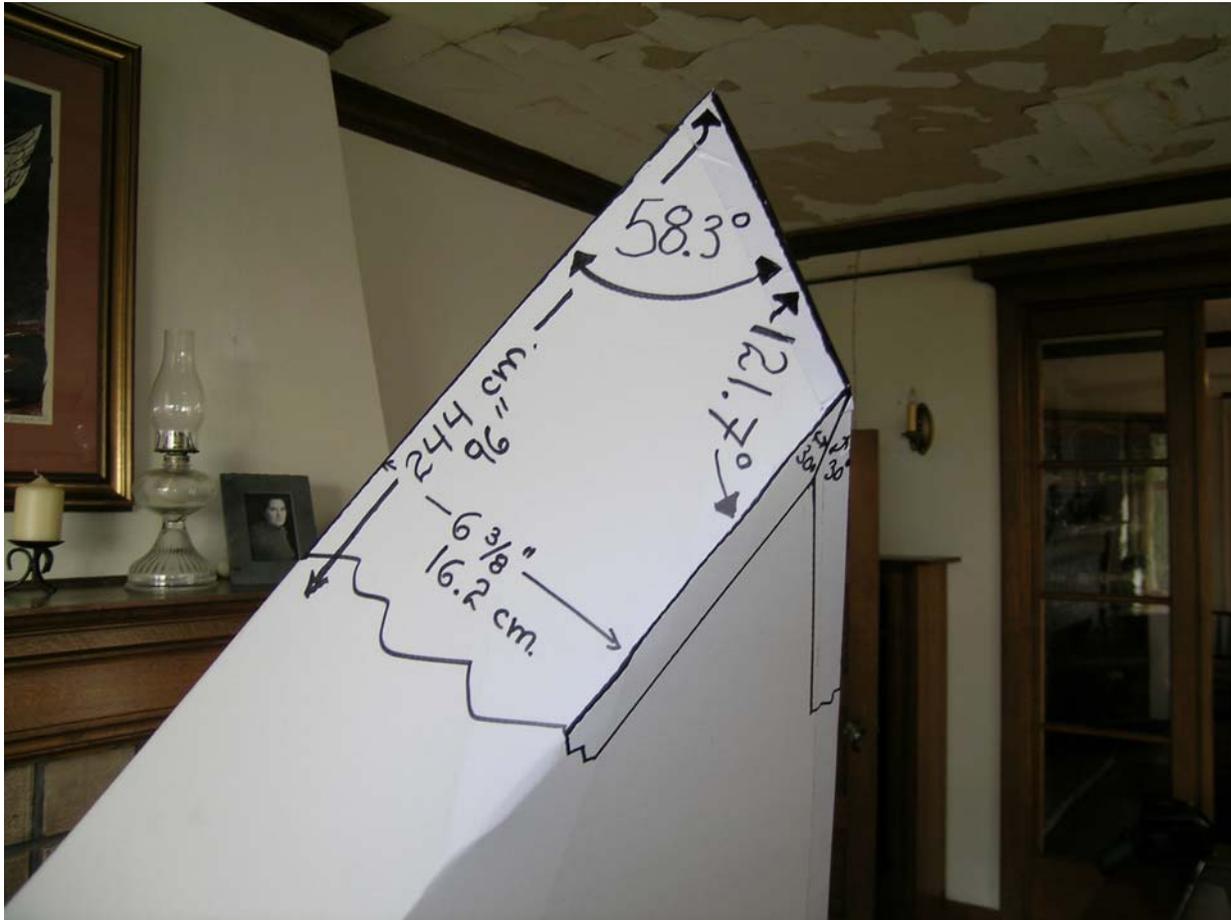


page. The image below left shows one end of the board superimposed on the beveled edge of a triangular "doughnut". Note that the board must be at least $6 \frac{3}{8}$ " (16.2 cm) wide. (The design specs in the previous section show them about 20 cm wide.) Make sure that the outer wall edge is exactly 96" (244 cm) long and that the angles are correct.

The image at the top of the next page shows two



of the boards connected together when viewed from the inside of the triangular doughnut.



Protect the Base-Ring / Base-Saddle Assembly

Once you have build your DecaPod Conversion Triangle (DCT) build a protective box that fits over the bottom of your DCT and extends down on each side to protect the Base-Ring / Base-Saddle assembly that supports the DCT. The necessary internal dimensions of this protective box are shown in the design specifications.

Installing the DecaPod Conversion Triangle (DCT)

Using high-quality glue (e.g. "liquid nails), each of the DCTs can be installed on top of the DecaPod Base-Saddle part below it and to the two neighboring triangles to each side of it. The connecting seams should also be taped as with any normal triangle.

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