# **Column Plan**

This page is every step needed to figure out your column plan. Use blank paper for your calculations.

1. Record the area of your roof from lesson 1. Label it Roof Area.
2. Record the pounds per square foot for the ground snow load
3. The roof snow load is lower than the ground snow load. Multiply the snow load by 0.7
4. Consider the factors on the load adjustment factors handout. Select the appropriate factors for your structure. Multiply the snow load by these factors. Label this number Modified Snow Load.
5. The live load (anything temporarily on the roof, such as people) is 20 psf. Record the live load.
6. Compare the live load and the final snow load. Choose the number that is larger. Label this number Roof Loading Factor.
7. The dead load (the weight of the roof itself) is 15 psf. Record the dead load.
8. Add the dead load to the roof loading factor. Label this Total Roof Load.
9. Divide your Roof Area (recorded above) by 144. Label this Model Area.
10. Multiply Total Roof Load by your Model Area. Label this number Total Model Roof Force.
11. Divide Total Model Roof Force by the number of columns you want to have in your structure. Label this Force Per Column.
12. Use the Balsa Book to determine which kind of wood to use. To use the table, find the part that goes with your ceiling height, and has a maximum safe load that is greater than or equal to your Force Per Column.
13. If there is not a strong enough balsa size available, chose a larger number of columns, and recalculate your Force Per Column.
14. Draw a footprint of your building on the another page. Draw your columns on the plan where they will go. Label their size.