

Breadth Analysis – Structural and Construction Costs:

The first breadth topic will deal with the structural system of the building. The CSUF is supported by steel columns of varying sizes. If the building did not have a green roof, I predict that smaller columns could be used or perhaps less columns. If smaller columns could be used, the first costs of the structural system would be reduced. If the amount of columns could be reduced, there would be a cost benefit, and the amount of useable area throughout the building would be increased. However, the architecture of the building might change if the columns become differently spaced. If that is the case, this area of savings would have to be ignored, because there would be no way in analyzing the benefits for a building with a completely different layout.

As mentioned above, the required size of the beams will be dependant on the area and depth of the green roof. Therefore, when looking at the benefits by increasing the size of the green roof up to 90%, the size of the beams will also be taken into account.

The second breadth topic will deal with the cost benefits created by a differently sized green roof. By reducing the size of the green roof, the cost should drop. A few factors that will be looked at include the costs of the structural systems, the first costs, construction costs, and time costs.

The costs for the structural system should be easily calculated because the steel columns will be reduced in size, and that's about it. The buildings first costs will be calculated by determining how much less soil and green roof components are needed with the smaller systems. The construction costs may be a little harder to calculate, but they should be reduced because it should be much easier to install a normal flat roof compared to a green roof. This reduced installation time may also be able to effect the overall schedule of the building, perhaps allowing a faster build time. Maintenance costs may be another factor looked at.