

Under “Under 1 Green Roof”: Analyzing the Rhetoric of Civil Engineers

June, 2009 - Daniel Sullivan

The purpose of the article “Under 1 Green Roof” is to examine the components and design of the newly constructed California Academy of Sciences building. The building was designed to be as sustainable and energy efficient (close to zero emissions) as possible, while still maintaining a high level of aesthetic value. The museum has been called the “greenest museum in the world because of its undulating, 2.5 acre (1 ha) vegetated roof, its emphasis on environmental sustainability, and its energy saving technologies” (47). The author of the article, Robert L. Reid, chose to include numerous pictures to accompany the text, an indication that he is attempting to grasp a wider range of readers. The relatively simple language used along with the aid of pictures and diagrams suggests that the article was written for the masses, as an informative piece to educate individuals on strides being made towards sustainable living through environmentally friendly buildings.

Almost every page of the 12 page article includes a picture or illustration of the building and its infrastructure. The building is the largest public building in the world (at 410,000 sq ft) to receive a platinum certification from the U.S Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System. The author begins his narrative by reviewing the construction process, including the overall cost (\$484 million), and the 9 year design and construction time. Reid also chooses to include, briefly, information about the firms that took the designs and constructed them. This displays his appreciation for their work, and acknowledges the companies, while maintaining a professional perspective and not over-advertising. After covering the history of the building, and the recent success it has enjoyed after construction finished in September of 2008, the author continues by explaining the benefits of the design of the new building. Reid continues to speak in a very general and non-technical lingo as to allow non-civil engineers the opportunity to understand the basic benefits of the building. For example, he compares the building to a four legged table, “...albeit a tabletop that is supported by spread footings that can rock back and forth to dissipate the seismic forces in the event of a significant earthquake...” (49).

As the article continues, more technical aspects are integrated into the text, such as the types of beams used in the design of the undulating roof structure, and the size of the concrete columns that act as the table legs. However, the technical details are kept to a minimum, and Reid quickly continues on to discuss the properties and practical purposes of a vegetated roof system. The article is littered with numerical references, such as heights and distances of structural pieces as a reference for readers. Readers do not need to have a technical background to understand the numerical values used; by giving the dimensions of certain components, the author is allowing the readers to grasp an understanding of the magnitude of the structures' parts. As an example, Reid states that the “...rooftop hills are blanketed with 50,000 biodegradable coconut husks trays containing 6 in. (152 mm) of soil to nurture 1.7 million native California plants” (51). To make understanding easier, Reid includes pictures of the structures he is writing about, such that a confused reader can reference the visuals and perhaps integrate the text with the picture in order to develop a better understanding of the works. Cross sectional views are accompanied by overhead and plan views in order to allow the reader to form a three dimensional figure in their mind. The references from additional Professional Engineers (P.E.'s) within the article substantiate the legitimacy of the building, and the author's analysis of it. The last paragraph of the manuscript is used to display the project credits, so that the creators of the building have some recognition of their work. Since there are upwards of 10 different companies that contributed in some way to the building, the author felt it was important to acknowledge each firm briefly.

Works Cited:

- 1) Reid, Robert L. "Under One Green Roof." *Civil Engineering* (08857024) 79.3 (Mar. 2009): 46-57. [Academic Search Premier](http://0-search.ebscohost.com.ilsprod.lib.neu.edu/login.aspx?direct=true&db=aph&AN=36888047&site=ehost-live). EBSCO. Northeastern University Library, Boston, MA. 12 May 2009 <<http://0-search.ebscohost.com.ilsprod.lib.neu.edu/login.aspx?direct=true&db=aph&AN=36888047&site=ehost-live>>.