

Project Proposal

Temporary Installation of 3D LED Cube at 29th and R Street Light Rail Station

Chris Biddle 02/24/2018

Purpose of Document

This document is intended for managers and staff involved in decisions associated with Midtown Association's initiative to install design-driven LED lighting options for the 29th and R Street Light Rail Station in Sacramento. It is also intended for those generally involved in placemaking of LED art within the City of Sacramento.

Background

On 02/24/2017, I met with Hannah Gugino, Placemaking Manager for Midtown Association, and Gina Lujan, Founder and CEO of HackerLab, to discuss creative, design-driven LED lighting options for the 29th and R Street Light Rail Station, a placemaking initiative led by Midtown Association. With the help of resources from HackerLab, I proposed the installation of my 3D LED cube display at the station as a temporary measure while a more long-term solution could be sought. The purpose of this document is to describe the proposal in more detail: the product, benefits of carrying out the proposal, requirements and constraints.

Product

The product I am proposing to place on display is an **interactive 3D LED cube**. The cube, in its current form, can best be illustrated by directing you to the following links to my website:

<http://light23.com>

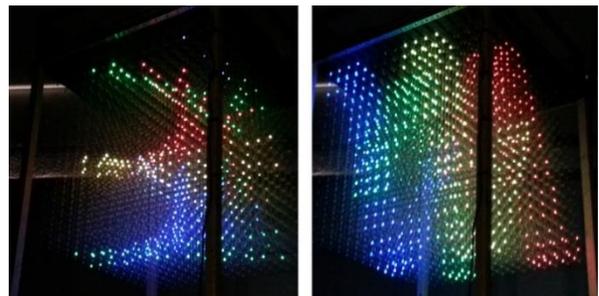
<http://light23.com/products/3dledweb/>

<http://light23.com/media>

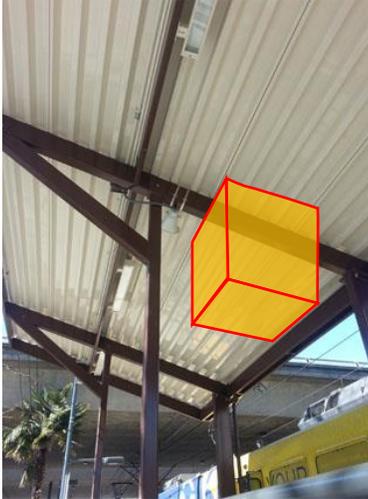
Below is a photo of the cube (note that this is not the final intended design if installed at the Light Rail station):



- The cube and framework stand 6'-10" tall. It is 36" wide by 36" deep.
- It weighs 60 pounds.
- The upper portion of the cube detaches from the framework, allowing it to hang from a truss like a chandelier.
- The power requirements are not high, using a standard 110 volt AC outlet and drawing no more than 4 amps.



With some alterations to the current design, I identified three possible installation locations for the cube at the station, although these are not necessarily the only possibilities:



Option 1: Hanging from the station roof.

- Most aesthetically appealing option.
- Cube could hang using two chains arranged in an upside down “V”. This has been done before at other locations and is very sturdy.
- Truss appears to be made of steel which is more than strong enough to support the cube.
- Installation could be facilitated with a scissor lift.
- * Estimated cost of installation, including materials and labor: \$600.



Option 2: Attached above the signboard stand.

- A secure and weatherproof steel framework could be built that would attach to the top of the existing signboard stand, supporting the cube.
- Slightly safer than Option 1, since it eliminates the risk of the cube falling on top of someone (note, however, that risk of the cube doing so in Option 1 would be zero if properly installed).
- * Estimated cost of installation, including materials and labor: \$1,200.



Option 3: Standing on the ground.

- A secure and weatherproof structure could be built that would anchor to the ground and support the cube.
- The aesthetic appeal of this option is that it would help to fill in one of the many barren areas between the shrubbery and walkways.
- The structure could perhaps be a permanent fixture for the station, and be used to support other temporary art pieces, not just the cube.
- * Estimated cost of installation, including materials and labor: > \$1,800.

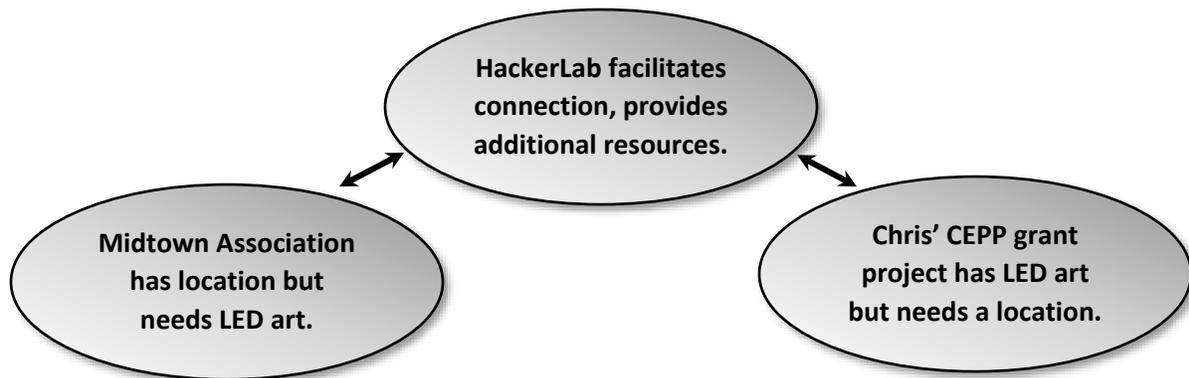
* Costs are **very broad estimates** and reflect materials and labor for installation only.

Benefits

Available funding. For the 2018 calendar year, the LED cube is to be dedicated to the City of Sacramento's Creative Economy Pilot Project (CEPP). I have been awarded a CEPP \$5,000 microgrant with the project title "3D LED Cube Interactive". The Light Rail station's location and the budget allocations promised under the grant should allow me to cover much of the costs of installing this cube at the station using the grant funds.

Helps fulfill the pilot project needs. While long term goals for providing more permanent LED lighting installations are being planned for the station, I understand that one of Midtown Association's short term goals is to deploy temporary pilot LED lighting projects. The installation of this cube would help fulfill that short term goal.

Model for successful collaboration. The success of this project would provide an ideal model for how collaboration between local groups can lead to the fulfillment of multiple project and program needs as shown:



Multi-purpose and interactive. There are very few volumetric light sculptures that contain so many individually controllable LEDs within the confines of 16 cubic feet. This allows the cube to render an almost infinite variety of animation patterns, **including lettering**. Therefore, in addition to serving as a decorative item, it could also scroll informative messages. The grant funding also provides for the development of an interactive component to the cube to further attract the public. The initial proposal was for a 3D pong game, but the CEPP grant will likely allow us to tailor the interactivity to something more suitable for the station.

Other benefits. Several benefits of having design-driven LED lighting at the station were indicated on the meeting agenda, many of which could be satisfied by this project, including:

- Enhancing the perception of space to one where the public feels safe and welcome
- Transforming a pass-through space to a vibrant destination
- Bridging the gateway between the Midtown and the Alhambra Corridor
- Building community, enhancing the "you are here" element, and increasing our community's sense of pride

Requirements and Constraints

Preferred 2018 deployment. The CEPP grant does require that the awarded funds be expended within the 2018 calendar year. Therefore, if the grant funds are to be used for this purpose, the project should be deployed within 2018.

Subdued lighting. The cube will be most effective at night with subdued ambient lighting. It will not show during the day unless it is enclosed in a well shaded area. It will not show at all in direct sunlight.

Power. The cube will require a standard 110-volt AC power source, but the amperage requirements are low. No more than 4 amps is needed.

Preferred mild weather conditions. Unless the cube is indoors or enclosed in a strong, weatherproof casing, it would only be able to endure light winds and dampness. It would not endure continued exposure to direct sunlight in the summer, or harsh winter storm winds and rain. The ideal time to install and run the cube, therefore, might be during the late summer or early fall of 2018, for a period of one to three months, at the locations previously specified.

Access for Periodic Maintenance. If the cube is to be deployed for more than one or two months, I would recommend being granted access to the cube for repairs, cleaning, and maintenance. LED lamps can run for a very long time. However, when they do burn out, a condition called “ghosting” can occur, whereby adjacent LEDs remain on, leading to an unsightly appearance. The LED, therefore, should be replaced.

Other Considerations

At this point, all indications are that I will be receiving the CEPP grant check by the end of February or the first week in March. It must be noted, however, that I do not actually have the funds yet. The ability for my CEPP grant to provide any funding for this project is contingent on my receiving the check.

During the meeting, we also discussed other topics that could influence the decision for moving forward on this proposal, most notably two things:

- We had discussed projection lighting as another low cost and viable option for a short-term pilot project for the station. Pursuing this may or may not influence the deployment of the LED cube for the station, depending on the need to redirect costs and available resources.
- Hanna had indicated that there may be other, possibly more suitable, locations for the LED cube that fall under some of her placemaking initiatives, including interior locations. An interior location for the cube would clearly be preferred from the standpoint of security and safety for the cube, so I am open to the idea of deploying the cube elsewhere if it helps Midtown Association, HackerLab, and the City. It should be noted, however, that the CEPP grant requires that the interior location be publicly accessible.

Please do not hesitate to contact me with any questions or concerns about this proposal. Thanks.

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