

San Jose Downtown Comprehensive Lighting Plan

Strategic Plan for Night-time Activation Final Report



December 09, 2022

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Introduction

Introduction

Goal

The overarching goal of this “Comprehensive Lighting Plan” is to inform the stakeholders of the strategic plan for night-time activation through the use of short term and long term for lighting interventions. The lighting night-time activation plan can be summarized as creating opportunities that support growth and diversity of the night-time economy as well as improving quality of life of urban citizens during the evening.

This report is to be read in conjunction with the “Technical Lighting Assessment” report for additional information on the existing conditions in the selected areas. The Community Engagement phase has also been incorporated into this document in order to provide insight for similar future community outreach programmes.

Context

San Jose Downtown is a prominent hub with cultural and economic vitality for both San Jose City and Silicon Valley with walkable, bike-friendly and people-centric planning strategies as well as historical and civil landmarks. The downtown area offers a variety activities creating a unique pedestrian experience.



Image 2 -Site Context Images

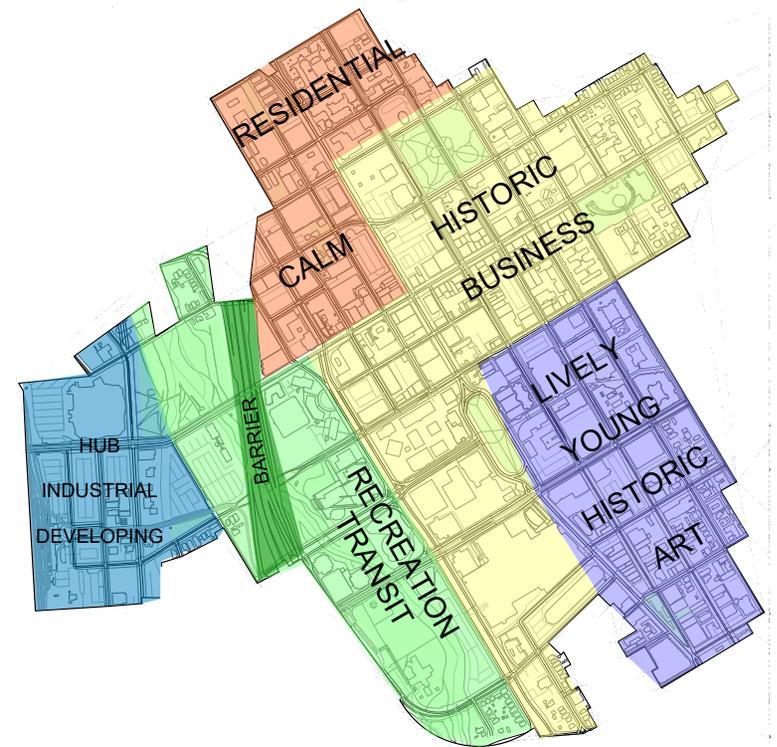
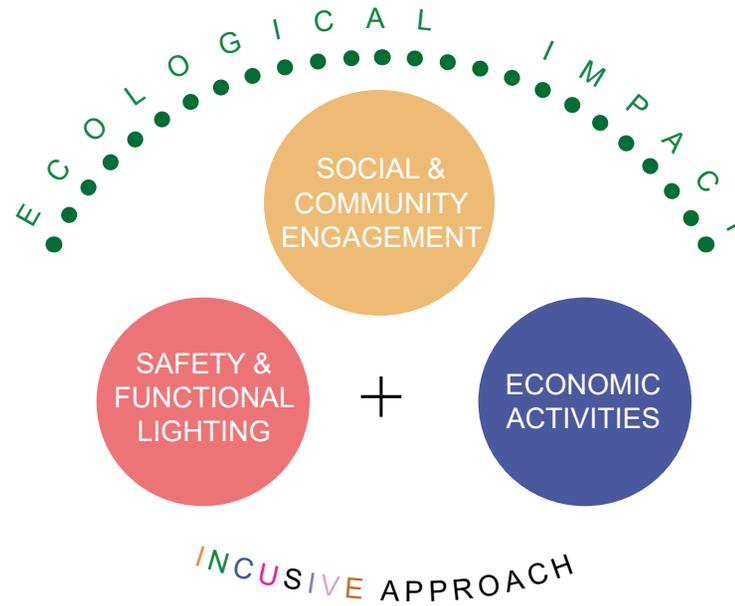


Figure 1 -Scope Area Existing Context Diagram

As new developments rise in Downtown San Jose, the night-time pedestrian experience is being reactivated. The time that visitors and residents can benefit from various activities is extended including more night-time. The expansion of safe pedestrian circulation areas connecting downtown together is therefore needed.

Design Drivers

Approach



The design approach for this Plan will focus on three main drivers: safety & functional, social & community engagement and economic activities. Functional lighting will be the main pillar for achieving safety and wayfinding. Social drivers will be another key driver to improve the belonging feeling within the community. Economic activities will be the third key driver for ensuring the future economic vitality around downtown.

Safety & Functional

This Plan will reference to City of San Jose and Downtown guidelines as well as California Energy codes for the functional lighting which include but are not limited to lighting of public streets, pedestrian walkways and other special lighting to improve night-time identity of the area. These codes and guidelines are considered as high level masterplans that are aligned with City and State strategies and therefore constrain and guide all other lighting plans. The following pages list the local codes & guidelines.

Safety is also considered as a base layer and is a design layer that is more comprehensive than what codes and standards often require. Therefore the Plan will prioritize identifying safety issues and recommend methods to improve safety perception.

Social & Community Engagement

Considering spacial characteristics together with user specific needs is a key design approach to create ownership within the community. Collecting information about user specific needs can be done through community outreach as well as public and private data collection. An example of Community Engagement completed as part of this project will be further explained in the following section.

The lighting plan approach aims to protect the unique characteristic of the neighborhoods and help create new connections by removing barriers in transition locations and improving wayfinding at night. This approach will also help identifying short and long term goals and opportunities for night-time re-activation.

Economic Activities

The strategic plan will refer to activities that can support temporary and permanent lighting installations. The selected reference examples expanded upon the following pages contribute in various ways to economic development from modest light-art interventions to light festivals. These activities, where lighting will be a medium or main focus, have strong potential and can help renew interest in downtown, restore civic pride, promote dwelling and increase revenue.

Ecological & Inclusive

The Plan will briefly touch the ecological and equitable approach in the following pages. While equity is part of safety and community as well as time control, ecological approach is about light pollution mitigation methods.

Safety & Functional

Functional Lighting for streets and sidewalks is to be per San Jose City and Downtown Guidelines. The street lighting including roadway and pedestrian walkway lighting is not part of this Activation Plan's scope, therefore this report will not provide recommendations or alterations to the existing functional lighting.

Where additional pole structures are recommended for the activation lighting purposes (not functional lighting), San Jose City Department of Transportation and other related authorities responsible with installation and maintenance will review the feasibility and applicability of the additions.

MAP 2: DOWNTOWN GUIDE STREETS

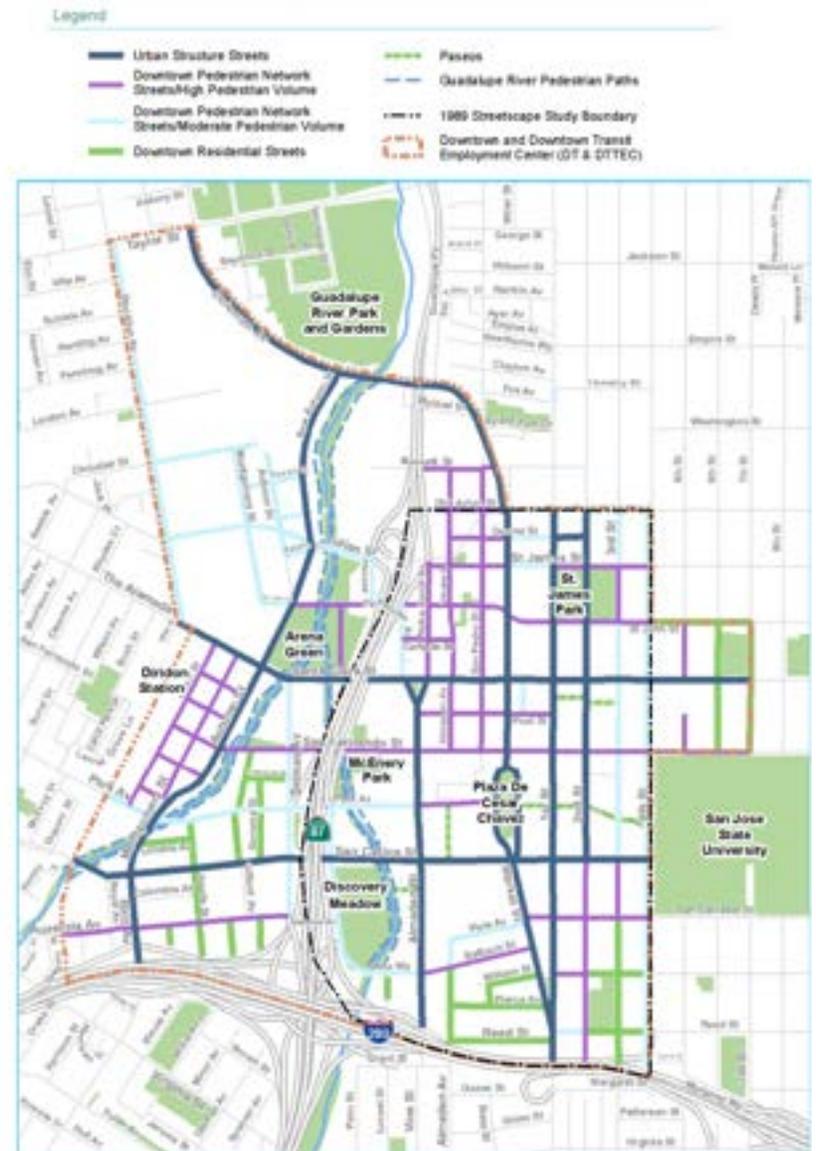


Figure 4 - Downtown Streetlight Guide -
Source: <https://www.sanjoseca.gov/home/showpublisheddocument/32537/636732476288800000>

Safety & Functional

The following are the current guidelines to be followed for the street lighting in downtown:

- Downtown Streetlight Guide - 2003
 - Amendment #1 To The City Of San José Public Streetlight Design Guide – Jan 2017
 - Interim Standards for Broad-Spectrum (White) Light for Private Development City of San Jose – Aug 30.2011
- California Energy Code (CEC) – 2016 (Title 24)
- Illuminating Engineering Society of North America (IESNA), The Lighting Handbook, 10th Edition, 2011.

MAP 3: RECOMMENDED HISTORIC PEDESTRIAN LIGHT FIXTURES



LIGHT FIXTURE TYPES: LH1

Employment or transit stops (Type LH1) with 4' or more overhang is shown.
Recommended luminaires (LH1) for Buildings (uplight shown shown)
Urban Structures & Downtown Pedestrian Network: High Pedestrian Volume streets: 84-05-04
Downtown Pedestrian Network: Moderate Pedestrian Volume, and Downtown Residential: 83-05-01



LIGHT FIXTURE TYPES: LH2 AND LH3A

Where LH2 or LH3A fixtures are to be used in streets, which is particularly, at urban use corridors, LH2 is used, at urban use hubs.



LIGHT FIXTURE TYPES: LH1 AND LH3

Street Street Street: LH1 and LH3 are used side roads in places. (LH1 is LH2 and LH3 for historic information)



Figure 5 - Downtown Streetlight Guide - Source: <https://www.sanjoseca.gov/home/showpublisheddocument/32537/636732476288800000>

Safety & Functional Special Lighting

The Plan will also refer to San Jose City and Downtown Design Guidelines which provides a baseline for feature (defined as special lighting in the guideline) lighting on facades at certain locations and corridors in the Downtown area. These guidelines recommend adding accent lighting for building facades at podium and skyline levels and at strategically determined junctions and corridors.

This Plan will align with these strategies especially in overlapping locations such as St James Park and SoFA south entrance on Market St since these are considered as part of the lighting strategies for the new development facades.

- San Jose Downtown Design Guidelines and Standards, May 2019
- San Jose Downtown Historic Design Guidelines Draft, 2004
- Downtown San Jose Historic District Design Guidelines, November 2003
- St. James Square Historic District Design Guidelines, October 1989



Figure 6 -Downtown Podium Level and Pedestrian Level Lighting Framework Plan

Source: <https://www.sanjoseca.gov/home/showpublisheddocument/38781/637268875547770000>



Figure 7 -Diridon Podium Level and Pedestrian Level Lighting Framework Plan

Source: <https://www.sanjoseca.gov/home/showpublisheddocument/74711/637596294579770000>

Safety & Functional

Design for Safety

Design for Safe & Functional Lighting is one of the core strategic elements for night-time activation. Without pedestrians focused safety design on the ground level, other activation strategies might not be successful.

Based on latest OECD (The Organization for Economic Cooperation and Development) study only 67% of general population feel safe when walking alone at night and only 66% of women feel safe compared to 82% of men. Surveys like this show that different results are revealed when a thorough assessment is conducted between genders and various community types.

There are considerable negative social and economic consequences if people don't feel safe enough to move around alone at night which influence whether people avoid a certain part of the downtown, feel comfortable using social amenities like public transport, or even leave their house after dark at all.



Image 8 - Left: NVA Workshop in Australia © Arup

Image 9 - Next page:NVA Technical Assessment Image © Arup



Brighter

≠

Safer

Safety & Functional

Design for Safety

A Night-Time Equity & Vulnerability Assessment (NVA), not part of this scope, is recommended before proceeding to the design phase.

The NVA is a mixed method, qualitative and quantitative evidence based methodology used to assess existing conditions in order to provide evidence of successful implementation, and recommendations for improvement.

The goal of the assessment is to provide owners and operators of the project area with the necessary information that allows them to engage with concepts of pedestrian safety, place-making and equal access after dark, reflect on possible lighting vulnerabilities, assess the risks involved, and act to mitigate and reduce the risk to the public.

The study comprises of a detailed explanation of the rationale and assessment framework and presents the findings of the NVA consisting of three assessment components:

Part A: Contextual Element Assessment

Part B: Physical Site Characteristic Assessment

Part C: Technical Lighting Assessment

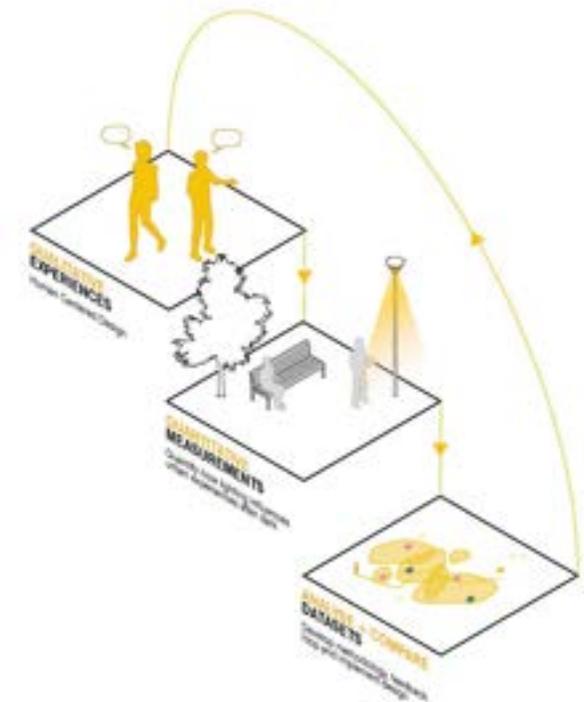


Figure 10 -NVA Methodology

Social & Community Engagement

Opportunities through Assessment Locations

As part of the technical assessment phase ten (10) locations (shown with yellow circles on the right) have been identified as typical measurement areas due to their different urban functionality and characteristic as well as to their unique lighting issues/opportunities. The selection of these locations is based on a simple grouping of similar properties and does not imply that other areas within the downtown are less important for further assessment and detailed design study. The identified locations are considered as typical, therefore the engagement and intervention recommendations described in the following pages could be applicable to areas with similar characteristics and functions.

For the purpose of this study Location 2 (highlighted with red on the right) has been selected for community engagement.

In the following pages the use and activity types have been listed as well as opportunities identified during technical assessments, stakeholder meetings and community engagement feedback.



Figure 11 - Selected Sites Overview

©Arup

Social & Community Engagement

Opportunities through Assessment Locations

#	Location Name	Types of Activity	Opportunities	Priority*
1	SAP Center Plaza & Barack Obama Boulevard	Entertainment, recreation, park activities	Re-direct pedestrian flow to alternative route on busy nights SAP facade as information board - Interaction through media and art Vacancy re-purposing in parking spaces and vacant building on Santa Clara St. Artist collaboration in park entrances - improve connections to park	
2	W St John & Guadalupe Parkway Underpass	Bike & pedestrian transit, arts&culture	Connection to Little Italy, San Pedro Market & SAP plaza Safety perception improvement Mural art highlight on W St John St. Artist collaboration	X
3	W St John St & Third St (St James Park corner)	Historic district, park related activities	Safety perception improvement Accentuating heritage/landmark facades	X
4	City Hall & N 5th St	Gathering, public art experience, transit	Ground level activation through vacant store facades City Hall plaza re-activation Improving connections to north of downtown and to San Jose University	X
5	Fountain Alley	Historic/heritage connection, gathering, food related activities, entertainment	New retail development Safety perception improvement in the adjacent parking lot Connection to 1st and 2nd Street Facades - Historic/heritage connection	
6	Plaza de San Antonio	Arts & culture, Bike & pedestrian transit, gathering	Interaction through media and art Attraction for theatre facade and plaza Connection to 1st and 2nd Street Facades - Historic/heritage connection	
7	S First & San Carlos	Retail, 1st Friday, transit hub	Ground level activation through vacant store facades Interaction through media and art Connection to 1st and 2nd Street Facades - Historic/heritage connection	
8	S First & S Market St near Parque de los Pobladores	Arts & culture, dogpark, gathering	Artwork and facades as wayfinding elements to entrance to SoFA and downtown biking related activities	X
9	Circle of Palms & Plaza de Cesar Chavez	Arts & culture, plaza, active gathering	Water feature lighting, Food market at nighttime Biking related activities	
10	N San Pedro Street and Market	Food related activities, entertainment	Parking lot facades on N San Pedro and San Pedro Market Artist collaboration	

* Immediate attention recommended for the location and their surrounding/ adjacent areas. Refer to design concepts for lighting activation recommendation. The intervention might be considered either short or long term depending on the area covered, planning approvals and implementation of macro level strategies.

Social & Community Engagement

Planning & Preparation

For the community engagement workshop, the underpass on W St John Street under Highway 87 was used (Location: 98 N Almaden Blvd, San Jose, CA 95110). The workshop was performed on October, 3, 2022 between 7pm and 9PM pacific time with the following attendees:

- Nicolas Abreu, Ronnie Catipon - Adobe
- Gary Dillabough - Real estate / developer
- Jeff Arriaga- Real estate / developer
- Robert Lindo - Casino manager
- Indu Chakravarthy - Architect
- Pat Anderson - HOA rep / resident
- Cheri Lewis - resident
- Mark Lewis - resident
- Carman Gaines - artist
- Hannah - EagleTech (security company)
- SJDA Team
- Arup Team

For the event, the Arup and SJDA team prepared three stages to talk about different lighting topics including materiality, colors, projections and decorative elements. Various exterior lighting fixtures were procured and installed to explain different lighting effects that could be applied for night-time activation.



Figure 12 - Assessment Locations Keymap

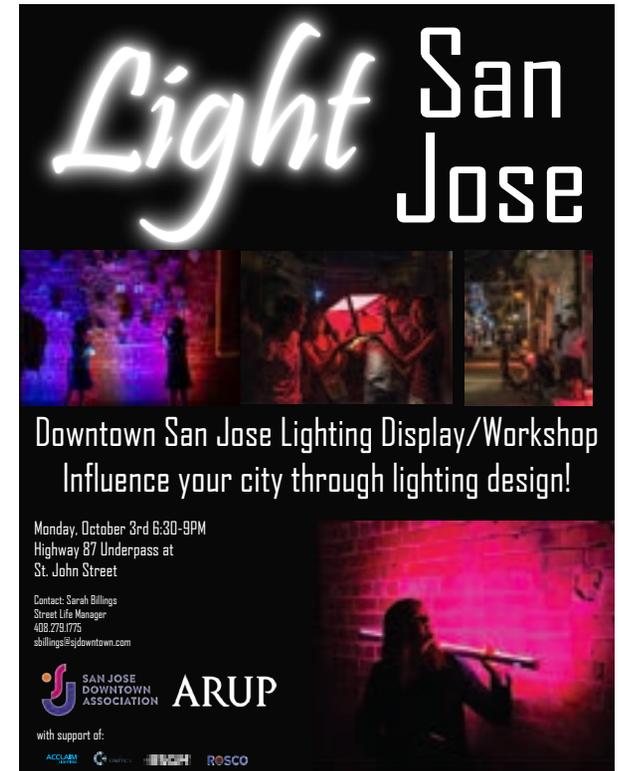


Image 13 - Community Engagement Poster

Social & Community Engagement

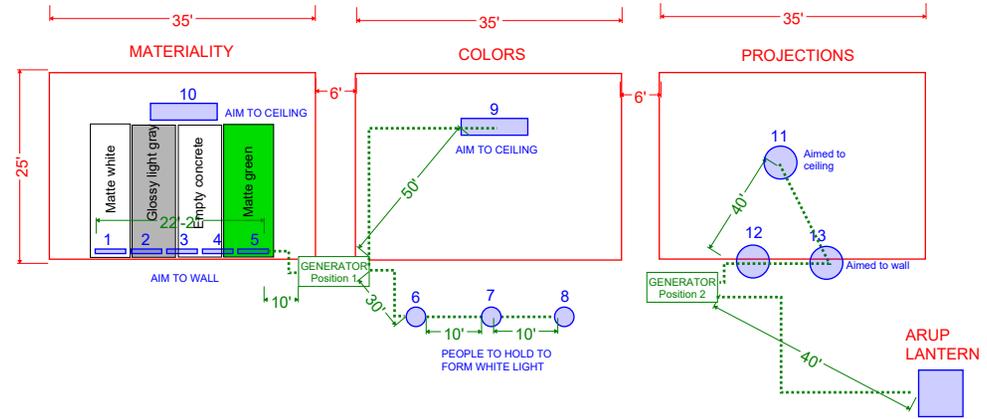
What did we talk about?

Materiality

- The group talked about different background materials, surface colors and how lighting interacts and affects the perception of our surroundings;
- Discussion about functional lighting, safety perception and underpass experiences;
- Arup team briefly described lighting color temperature and differences between warm white and cool white lighting.

Colors

- Showed one fixture illuminating underside of underpass and 3 spot fixtures (red, green, blue) creating a cool white;
- Explained how RGB creates white light;
- Discussed how color can add an additional layer of visual interest to a space;
- Talked about symbolic characteristic of colored light and how to connect with Underpass neighborhoods.



Manufacturer	Product	Image	Lumen output	Watt	CCT/Color	Beam	Accessories	Control Units
1 Color Kinetics	423-000002-18 - 4ft		2188	74	RGBA	30x60	Jumper and lead cables	
2 Color Kinetics	423-000002-16 - 4ft		2188	74	RGBA	10x60	Jumper and lead cables	
3 Color Kinetics	423-000002-18 - 4ft		2188	74	RGBA	30x60	Jumper and lead cables	i-Player in demo box with cables
4 Color Kinetics	423-000002-16 - 4ft		2188	74	RGBA	10x60	Jumper and lead cables	
5 Color Kinetics	423-000002-18 - 4ft		2188	74	RGBA	30x60	Jumper and lead cables	
6 ETC	D40XTs in Lustr array - 7410A1005-0X (BLACK)		2156	110	RGBAWCI	try wide oval spread lens	Lenses in ziploc	EchoTouch Controller with PS
7 ETC	D40XTs in Lustr array - 7410A1005-0X (BLACK)		2156	110	RGBAWCI	try wide oval spread lens	Lenses in ziploc	EchoTouch Controller with PS
8 ETC	D40XTs in Lustr array - 7410A1005-0X (SILVER)		2156	110	RGBAWCI	10 (40 spread lens)	Lenses in ziploc	EchoTouch Controller with PS
9 SGM	P-2		8727	236	RGBW 2000K - 10000K			EchoTouch Controller with PS
10 SGM	S4		7265	190	2000K - 10000K	9deg-52deg	Barn doors and cables in demo kit	EchoTouch Controller with PS
11 Rosco	X-Effects LED Projector 5500K - 21001741CW/WHO demo kit		3000	90	5500K	4 lens option - use 30deg		
12 Rosco	Image Spot DEMO-29600004 - 213567, 213581		800	90	5500K		Use gels	
13 Rosco	Image Spot DEMO-29600004 - 213567, 213581		800	90	5500K		Use gels	

Figure 14 - Community Engagement Lighting Layout and Fixture Schedule

Social & Community Engagement

What did we talk about?

Projections

- Showed 3 gobo fixtures with different gobo patterns and talked about how it can easily change attractiveness of a space;
- Discussed the ability of projections to be more temporary than permanent;
- Low resolution vs high resolution through projections or media screens. Does downtown need more digital interaction or bring nature to the City.

Decorative & Face illumination

- Showed a pedestrian walkway fixture and talked about previous community engagement projects that involved decoration of the fixture with kids and community members;
- Talked about scale, color rendering and face illumination and how it helps with improving safety perception.

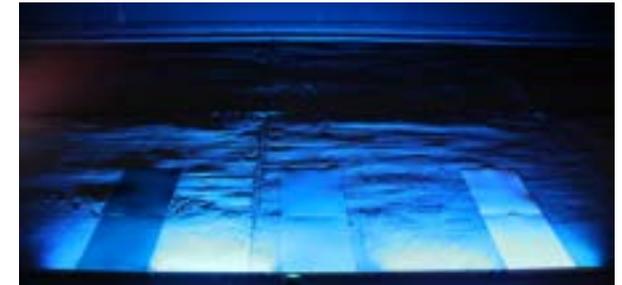


Image 15 - Workshop Images

Social & Community Engagement

Take Aways / Comments



Image 17 - Group Conversation with Community

Following each introduction, attendees shared their personal and professional opinions along with observations about lighting at night and their experiences of Downtown San Jose or similar urban environments. Some of the feedbacks can be summarized as follows:

- Would like to implement something with a big effect not mediocre for Downtown San Jose;
- Even re-painting a facade have great impact, example from a building facade re-painting and its impact on changing the safety perception;
- Downtown have applied some solutions but they are disconnected, do not have continuity;
- Some participants are interested in lighting reflecting the nature in dwelling areas. Projections or similar could be differentiated to bring nature into downtown;
- Safety is very important for residents. People circulate in a small circle and don't go outside of a certain perimeter at night;
- Would like to safely walk around in streets other than busy downtown areas;
- Using data and other technologies in creative way could be applied;

- Use light as a gateway to various parts of the city;
- Lighting should be inviting and welcoming;
- Want to see various lighting techniques rather than just one;
- Use light to give the city new energy.

CARDS

At the end of the engagement participants were asked to provide feedback about their preferences to the following cards.



Image 16 - Feedback Board

Social & Community Engagement

Take Aways / Comments

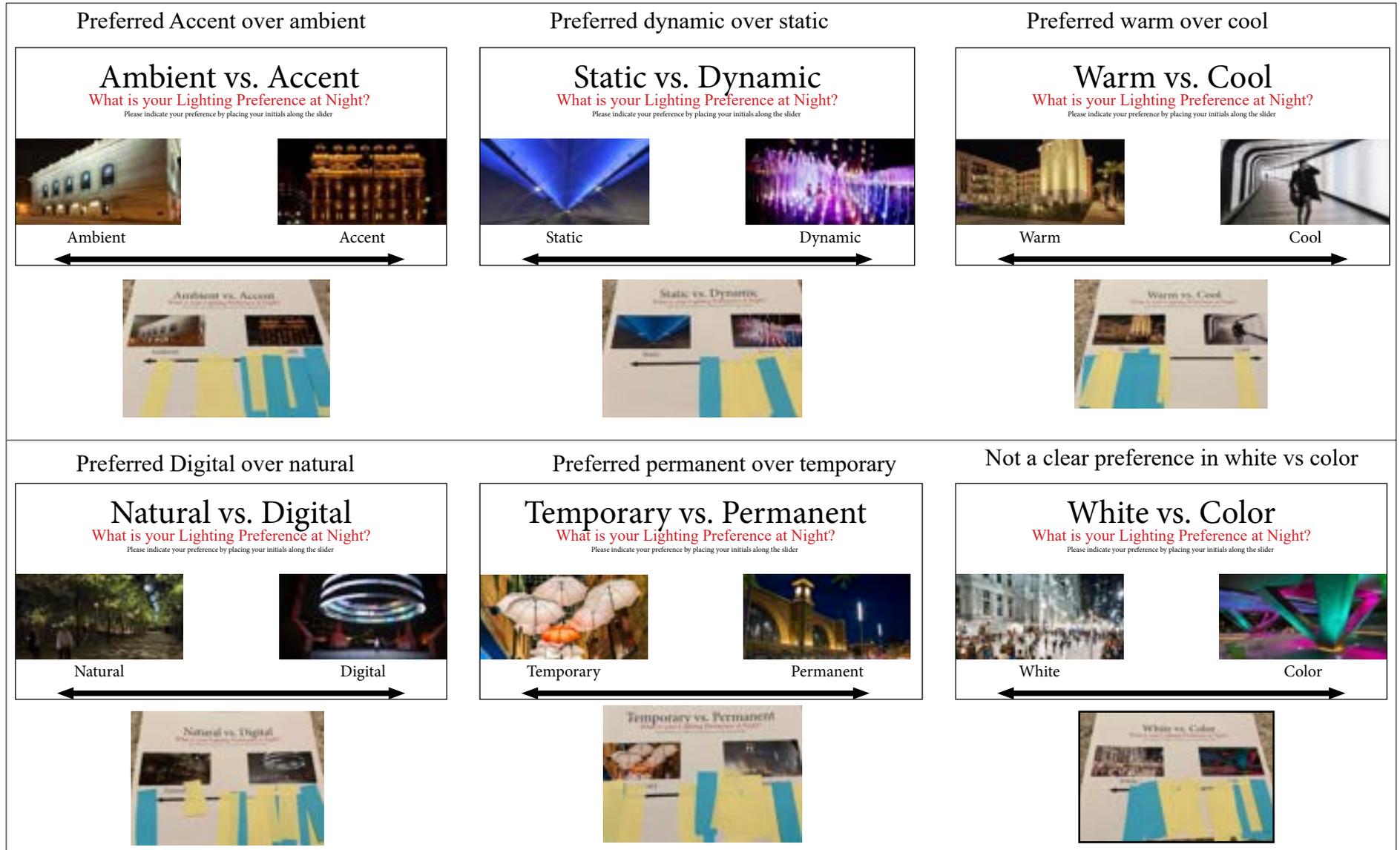


Figure 18 - Community Engagement Lighting Cards & Feedback

Inclusive Approach

Including different views and perspectives with regular intervals is crucial for designing for the public, especially for night-time environments. The Activation Plan recommends the following action items for inclusive design approach:

- Close collaboration with City of San Jose planning teams to align strategies around inclusive design;
- Community engagement workshops around equitable and inclusive spaces;
- Data driven approach recommended through collection of surveys, night-time pedestrian flow analysis, crime and incident data;
- Collaborate and create partnerships with universities or other authorities in order to collect data.

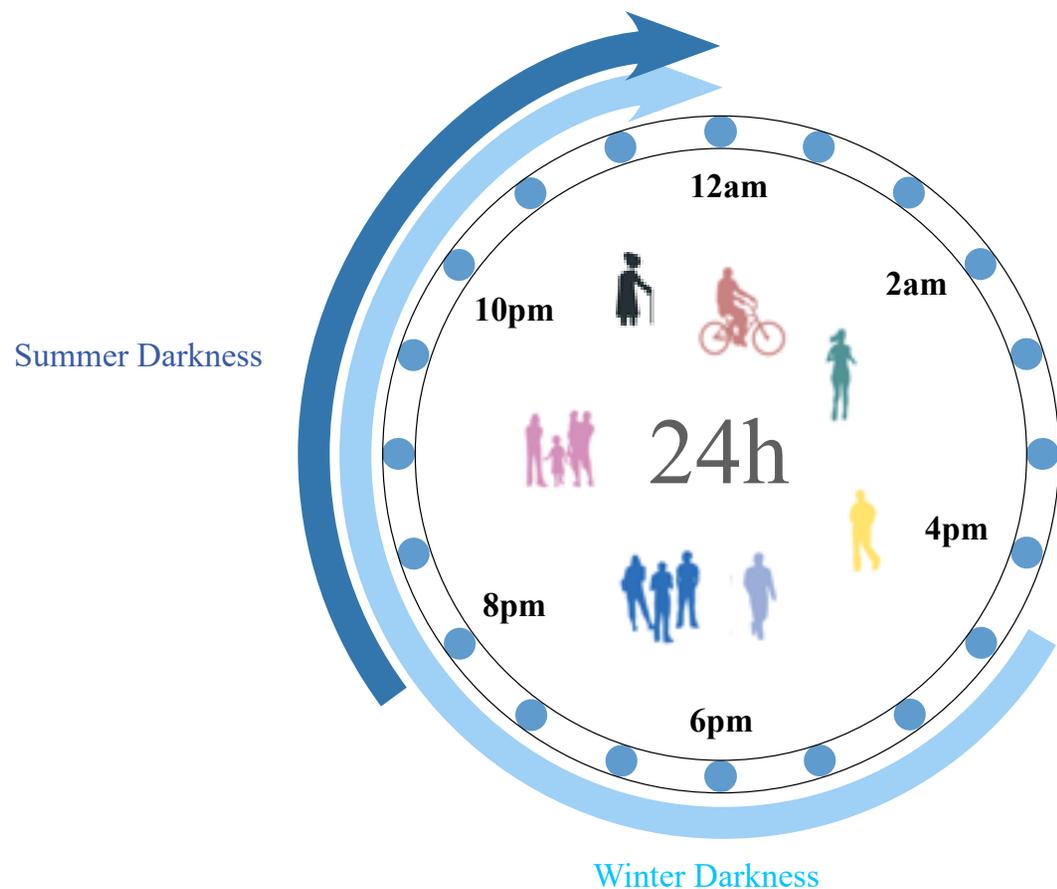


Figure 19 - Time spent traveling or participating in social and/or economic activities

Ecological Approach

Light pollution is reckoned to be growing at about 2% per year across the developing world. Increasing light pollution produces change in ways analogous to climate change, causing fundamental damage to flora, fauna and ecosystems.

The effects of light pollution is not only limited to rural areas but should be also considered in urban centers such as downtown areas. The Lighting Activation Plan aims to provide high level recommendations to minimize light pollution and trespass as well as working with an ecologist to define risk before applying a design concept in a specific location.

While light pollution might have negative effects on specific flora and fauna, the light trespass is an important design parameter to consider especially in residential areas.

Some of the light pollution mitigation techniques can be summarized as shown on Figure 17: techniques more easily and widely applicable from top to down.

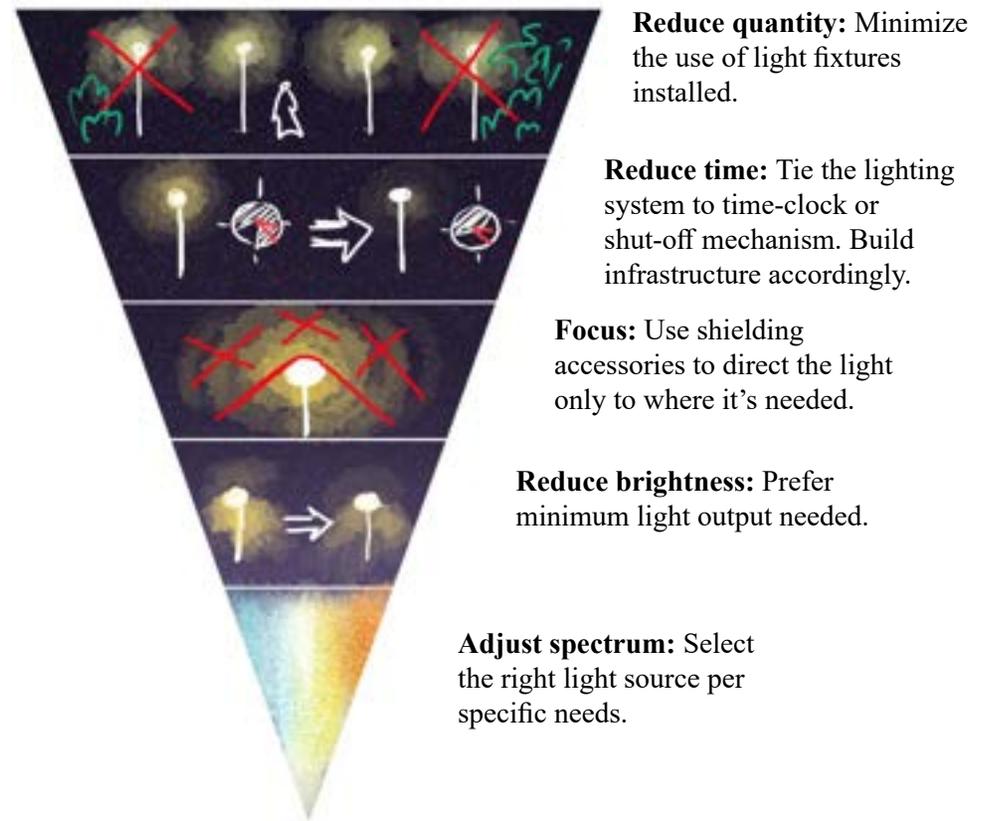


Figure 20 - Light Pollution Mitigation Hierarchy © ARUP

Ecological Approach

International Dark-Sky Association Principles that are applicable to this Lighting Activation Plan are:

LOW LIGHT LEVELS:

Using the lowest light level possible and being mindful of architectural and landscape surface conditions will help with reducing the brightness perception of the additional lighting.

CONTROLLED LIGHT

New installations should have active controls to reduce illumination levels or extinguish lighting completely based on time of day or occupancy. Such controls are currently underutilized in outdoor lighting and can substantially reduce light pollution and save energy. Energy conservation codes are increasingly calling for active controls.

TARGETED LIGHT

To reduce skyglow, glare, spill light, and over-lighting, indoor and outdoor lighting should contain and minimize the emission of light beyond the intended target. Light emitted towards or above the horizon can have extraordinarily high environmental impacts.

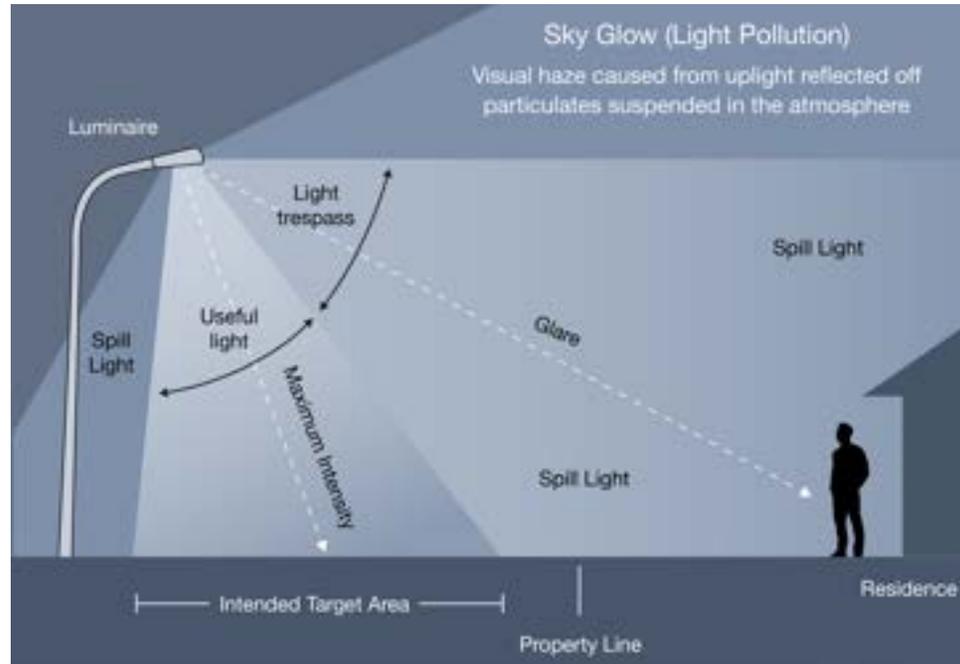


Figure 21 -Dark Sky Friendly Lighting (source: <https://evluma.com/dark-sky-friendly-lighting/>)

SPECTRUM/COLOR

The spectral content, or color, of light should be limited to only what is necessary for the task. Because of the disproportionate impact on the nighttime environment, particular attention should be paid to reducing the total emissions of short-wavelength or “blue” light through light source spectrum management.

Design Concept

Design Concept

Re-Connect

The Lighting Activation Plan design strategy is to use lighting techniques and technologies to re-establish the connection between people, architecture and engagement activities related to night-time urban context.

Re-focusing the visual attention to vertical surfaces such as historical facades, facades on important crossings and corridors, as well as single pieces of artwork located throughout the downtown area will allow an immersive experience for visitors at night-time. Identifying and illuminating key vertical surfaces as well as keeping consistency in certain corridors will help with both wayfinding and guiding visitors to interactive moments and activities.

The lighting interventions can truly activate a space by motivating people to participate in an engagement either through creating momentary experiences or longer term interactions.

The following page summarizes the elements that can be part of this strategy categorized under:

- Engagement Activities
- Focus Surfaces
- Interaction Methods

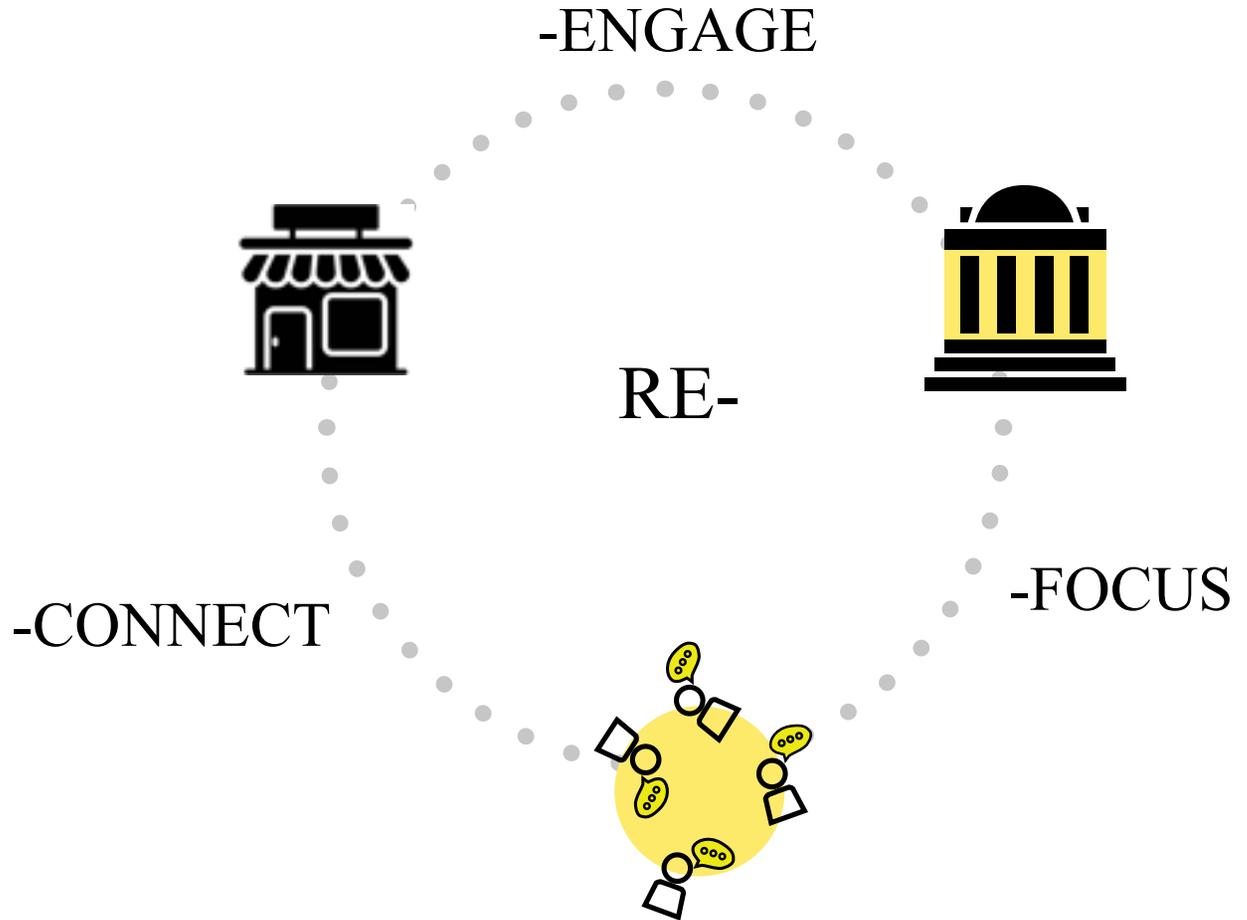


Figure 22 - Re-Connect Conceptual Diagram

Design Concept



ACCENTUATE ARCHITECTURE

As part of re-focus strategy feature building facades, landmarks or vertical surfaces with artistic, civic and historic value will be used to create connections between peripheries and active neighborhoods.

This strategy aims to align with “special lighting” approach of Downtown planning guidelines and add visibility to the existing and/or temporary structures as well as new developments.



ENHANCE NIGHT-TIME ECONOMY ACTIVITIES

As part of re-engage strategy the Activation Plan will recommend example engagement activities that will support connection between communities and their night-time environment and revitalize the night-time economy.

Collaboration with planning consultants, community members and public authorities is recommended to investigate all the potential economic activities that can be connected with lighting.



Image 23 - Design Concept Precedent Images

CREATE INTERACTION THROUGH ARTS & HERITAGE

As part of re-connect strategy arts & culture and heritage will be highlighted and emphasized with lighting. The idea behind this strategy is to use the light as an art element that can work as a bridge between people and their stories, between Downtown and its unique cultural history and so on.

Lighting can bring together different elements of design and technology such as sound, tactile, story-telling

Design Concept

Re-Engage

Night-time economic activities including but not limited to the ones specific to San Jose are listed below in order to provide example activities for lighting interventions. This way lighting can be used to support existing and new collaborations between local authorities, educational institutions and developers, offering cost-effective solutions that can ensure a quick wins to make improvements.

Light festivals are a good example of large scale cost-effective mechanisms (relative to return of investment) that support local economy, particularly during seasonal ‘slumps’ and the winter periods, promoting the night-time economy on a temporary basis. These events can be particularly efficient in downtowns with a developed tourist industry like San Jose Downtown.

Example Night-Time Activation Activities:

- Art& culture: concerts, fashion shows, crafts, performing arts, cinema, literary, photography, fairs;
- Outdoor commercial activities: open night-time marketplaces, First Friday events, Little Italy Events, San Pedro Market, Christmas Markets, Gordon Biersch Night Market;
- Social gathering activities: private events at public parks, dog parks and playgrounds, charity events;
- Seasonal cultural celebrations: Lantern festivals, Diwali celebrations, Halloween, Dia de Los Muertos;
- Festivals: Existing and City-wide Light Festivals;
- Outdoor sport activities: night-time biking events, ice-skating, night nation run event.

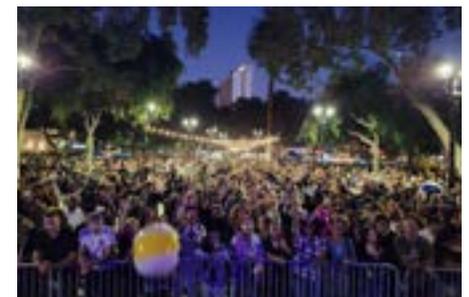


Image 24 - Night-time Activities Precedent Images

Design Concept

Re-Focus

Using facade lighting and re-imagining key vertical surfaces as canvases to re-activate the night-time perspectives. Application of static light for historic buildings and corridors and projected lights and colors on under-used urban attraction surfaces. Different lighting design methods for re-focus strategy are shown below as a reference for future design work. One consistent lighting method might be more efficient than combining several methods in the same area.

Use of modular systems to create patterns and enhance character of the space



Accompany passengers on the journey



Use of contrast and colors where only is necessary to re-focus attention



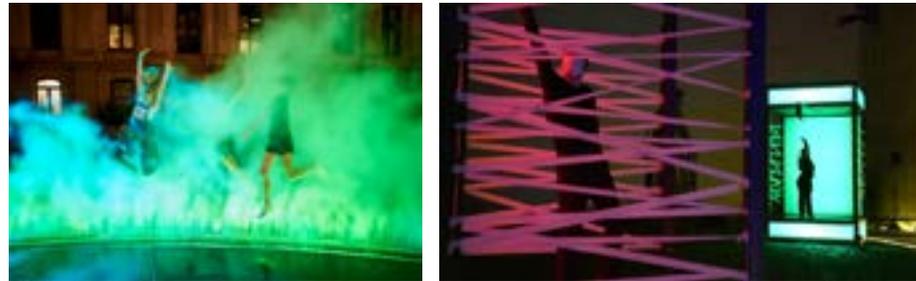
Image 25 - Re-focus Strategy Precedent Images

Design Concept

Re-Connect

Lighting will help to create the connection between the activity and vertical accentuation through use of patterns, transparency and colors to create a unique journey and experience for night-time visitors. Lighting will aim to create emotions and moments of awareness

Curiosity & Discovery: Setting up small interventions to create interest and expectation. Self-impression and group activity focused interventions.



Relaxation: Social gatherings and dwelling moments are as important as excitement. Lighting can support relaxation moments in greenery, plazas or gathering areas.



Awareness: Story-telling through an art installation & using art and media as additional attraction



Image 26 - Re-focus Strategy Precedent Images

Design Development

Layers

Existing

In order to identify the connections through key vertical surfaces and the activity locations, the Technical Assessment results (previously issued as part of this project), data gathered from San Jose Downtown Association and San Jose City Downtown lighting guidelines and open GIS portal has been overlaid as shown on the right. The information shown on this map aims to provide only a schematic input for design development and is subject to change due to the dynamic nature of planning and construction of downtown.

Each layer listed in legend below has been evaluated to identify the existing gaps and connections and potential future lighting improvement routes and arrival moments for night-time activation at pedestrian level. The following pages will describe more in detail the lighting design intent and connections between these layers.

Legend*

- | | | | |
|---|-----------------------------|---|-------------------------|
|  | Arts & Culture |  | Image Defining Frontage |
|  | Landscape areas |  | Lighting Corridors |
|  | Landscape walkways |  | Lighting Gateways |
|  | Landmarks |  | Vacancies |
|  | Areas with low light levels | | |
|  | Biking Routes | | |
|  | New Development | | |



*Layer colors are schematic and do not represent the actual lighting colors or light levels

Figure 27 -Site Overview - Existing Layers

Layers

Feature (Special) Lighting for Podium Level Facades

Per San Jose Downtown and Diridon Station Area Design Guidelines and Standards the facades of buildings in the following layers are planned to provide a placemaking quality that will help to create safe and attractive spaces for pedestrians.

In addition to street lighting and other pedestrian scale walkway lighting, these layers identify the hierarchies between main and secondary streets and walkways in order to increase legibility of downtown at night. The layers identified in the following pages will take into consideration this hierarchy that can be applied to any vertical surface either existing or part of a future development including building facades, murals, sculptures, landscape and artwork.

Legend*

-  Image-Defining Frontage
-  Enhanced Lighting Corridor
-  Lighting Gateway

*Layer colors are schematic and do not represent the actual lighting colors or light levels



Figure 29 -Site Overview - Special Lighting Map
(Based on San Jose Downtown Guidelines)

Layers

Historic & Landmark

This layer will take into consideration heritage and landmark facades that are part of an area or building deemed as historic and /or of civil architecture importance.

Depending on the facade properties and colors the lighting effect could either be a soft glow or dramatic effect using various lighting techniques. It is recommended to use dominantly warm color temperature (2400K-2700K) with cooler color temperature use in landscape or specific material accent in order to create a balance for visual attraction.

Static white lighting is recommended in this layer with different correlated color temperature (2200K-4500K) and brightness level use to accentuate unique architectural features.

Legend*

-  Recommended Landmark Lighting
-  Recommended Heritage Pathway

*Layer colors are schematic and do not represent the actual lighting colors or light levels



Figure 30 -Site Overview - Historic Pathways

Layers

Urban Parks & Greenery

Urban parks and green plazas are considered important dwelling and social activity locations for many pedestrians at night-time. Safe and functional approach should be prioritized in these areas for safe dwelling and circulation.

The palm trees and feature trees in these parks such as the ones in Almaden Boulevard form a regular pattern recognizable from different perspectives throughout downtown. In following pages some concepts will touch base on lighting techniques for these type locations where trees can be used as vertical attraction urban elements.

Legend*

 Park & Recreation Areas

 Green Walkways

*Layer colors are schematic and do not represent the actual lighting colors or light levels

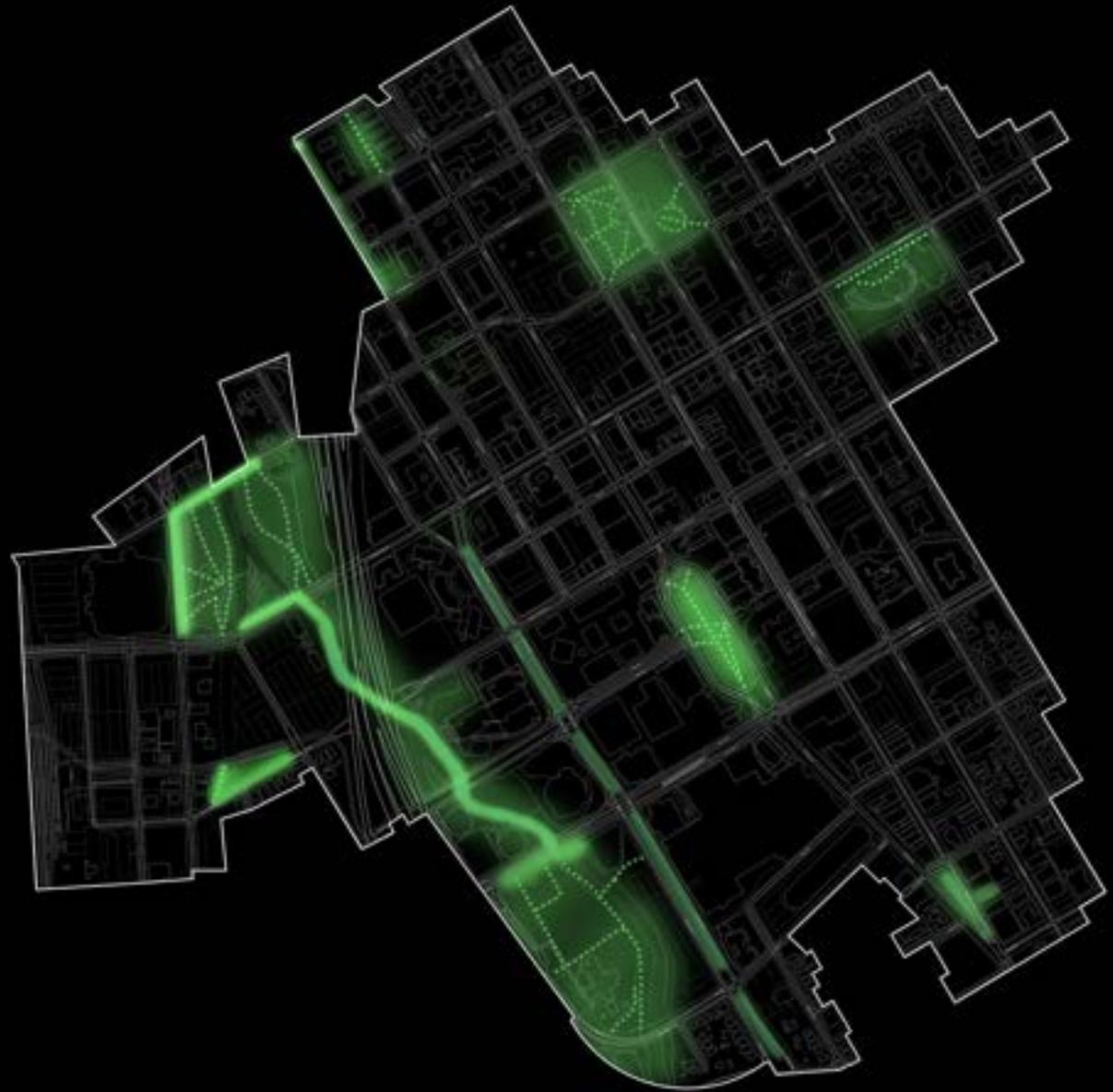


Figure 31 -Site Overview - Landscape Layer

Layers

Vacancies & New Developments

These two layers are grouped together due to their temporary nature and similar activation strategy. While vacancies are mostly located at ground floor and lighting strategy refer to interior lighting, the new developments are mostly multi-story buildings changing both ground floor and the skyline of downtown. The lighting strategy for this layer can be divided into three categories:

- Temporary interior lighting at stores changing ownership for ground floor activation;
- Temporary outdoor lighting of new developments such as temporary outdoor light art installations;
- Temporary outdoor lighting around construction site.

Legend*

-  Vacant store/building
-  New Development



*Layer colors are schematic and do not represent the actual lighting colors or light levels

Figure 32 -Site Overview - Vacancies and Developments

Layers

Art & Culture and Event Locations

Existing and future museums, art galleries, theatre and performance art venues, cultural centers, sports&recreation venues as well as venues hosting temporary art installations and cultural activities are part of this layer. The facades of the architecture, sculpture and structures as well as plazas in front of these venues can be part of lighting scheme for night-time activation.



Legend*

-  Existing and Possible Event Locations
-  Arts & Culture Venues and Plazas

*Layer colors are schematic and do not represent the actual lighting colors or light levels

Figure 33 -Site Overview - Potential Arts & Culture Activity Locations

Layers

Data & Technology

SOUND & LIGHTING

Lighting and sound can create an immersive experience for people to enjoy. As part of the “surprise” and “awareness” elements, these case studies are examples for achieving memorable arrival moments.

Through light, sound, and structure, Timber Aurora captures the dynamic, yet fluid movements and sounds of waves while projecting the colors of an aurora – redefining what we expect of urban furniture.

Using recordings from the past and present and sonifying data sets from the local area really provide a subconscious sense of the soul of Sydney. Being able to tie all of those elements together with an imagination of the future city soundscape represents how we can re-imagine the way our cities sound.

Commissioned to greet visitors at the newly opened Planet Word Museum in Washington DC, Speaking Willow is a 18-foot-tall electronic tree that is animated by lighting and audio recordings in different languages.



Image 34 -Vivid Sydney - <https://www.arup.com/news-and-events/the-lights-and-sounds-of-timber-aurora-at-vivid-sydney-2019>



Image 35 -Tidal at Vivid - <https://www.arup.com/news-and-events/tidal-at-vivid>

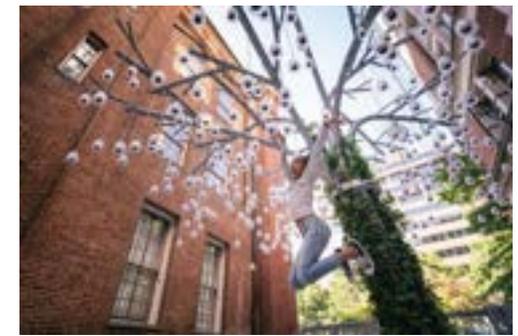


Image 36 -Speaking Willow - <https://www.uapcompany.com/projects/speaking-willow>

Layers

Data & Technology

MEDIA MESH AND SCREEN

Media facades comes in many forms, some are very simple and may comprise an array of colored light points to offer a presentation of color changing light patterns.

Today, media facades are more commonly found in large cities and enable their host buildings to change appearance by night, respond to multiple external stimuli, interact with the public and feature Internet connectivity. The opportunities for a media facade may come to light in a number of guises. For the purposes of this plan, media facades are shown as an example for creating attractive interaction for ground floor activation.

Depending on the size and resolution the implementation might be costly therefore media screens tend to be installed permanently rather than temporarily. For this purpose the plan will refer to simple and low resolution media content that can be carried with its own structure. The effect can be enlarged via use of simple translucent diffusers.

The visibility and the effect depends on the positioning of the media content and the contrast against its surrounding brightness levels. For this purpose there are different tools to analyze the context such as luminance mapping (using HDR imaging technique) to better inform the design for the media screens.

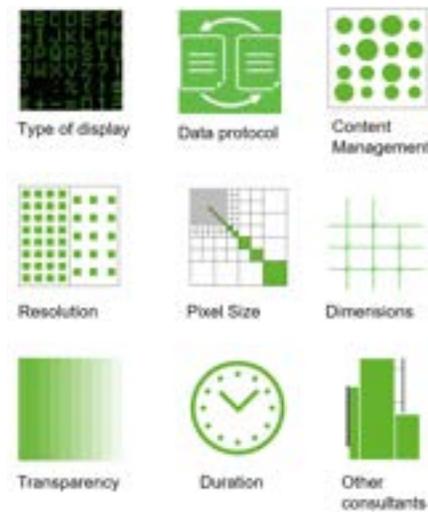


Image 37 -Media Screen Performance Criteria ©Arup



Image 38 - GreenPix Zero Energy Media Wall, Xicui, Beijing © Zhou Ruogu Architecture Photography

Added Value:

- Enhance Building's Character
- Interact with People
- Create unforgettable experience
- Enhance Commercial Success

Layers

Data & Technology

SENSOR USE & CONTROLS

Depending on the lighting design intent and complexity, various additional equipments might be necessary to control the light levels and dynamic effects at night-time. In context of this Activation Plan it is recommended to use DMX control system (also know as DMX512 or Digital Multiplex) which is a standard for digital communication networks that are commonly used to control color-changing lighting and other lighting effects. In addition to this type of control system two type of sensors are also recommended: time & occupancy. These sensor devices are commonly used as lighting control triggers for night-time dynamic lighting. Together with smart LED fixture drivers and microcontrollers these sensors can manage to dim down and raise up the light based on schedule time and/or occupancy. A schematic example is shown on the right: during peak time of night with high pedestrian participation the night-time activation lights can remain dynamic and bright and after a certain hour and/or low pedestrian participation will dim down or shut-off the lights.

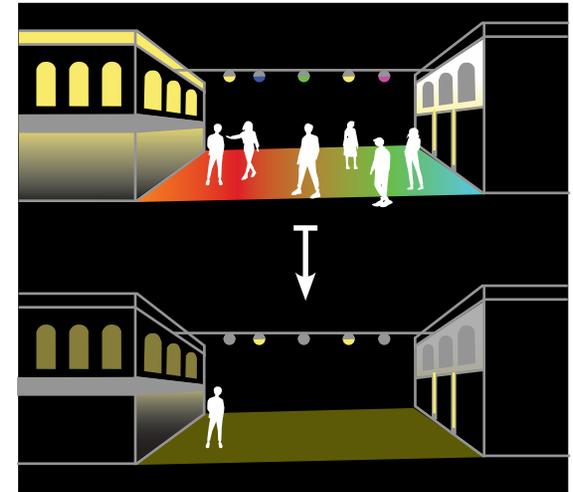


Figure 41 - Occupancy and time control diagram

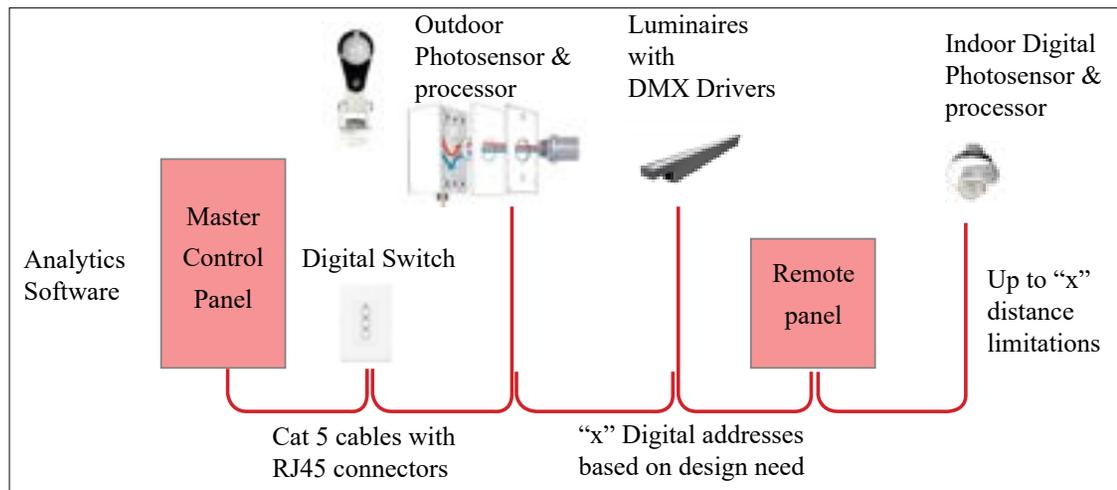


Figure 39 -Schematic Control Diagram with Exterior & Interior Sensors



Figure 40 - Control manufacturers that can provide sensor and/or dynamic lighting control equipments

Concept Overlay by Area

St James Park & Heritage Walk

Highway 87 Underpass at W St John Street & Removing Barriers

Barack Obama Boulevard & Re-orientation

N 5th Street & Vacant Store Activation

1st, 2nd & 3rd Streets & Activation Corridors

1st & Market Street - SoFA Entrance

SJ Museum of Art Plaza near Plaza de Cesar Chavez

Concept Overlay by Area

The concepts shown in the following pages are examples that have been applied to specific areas but are not prescriptive and can be modified to meet the needs of the overall project area as needed.

Each concept overlay includes a user group, activity type, journey or experience, and a desired interaction type bringing together different parameters of design and existing or new layers. Different combination of these parameters and layers could be applied in a similar way to other areas of downtown to create new connections and interaction between people and spaces.

Each of the locations used in concept examples are to be considered together with their larger context since the night-time experience is not limited to a street or block but it's connected to a larger perimeter. Therefore in some concept examples there are recommendations at planning level which will need to be further investigated and confirmed with City and Downtown Planning authorities.

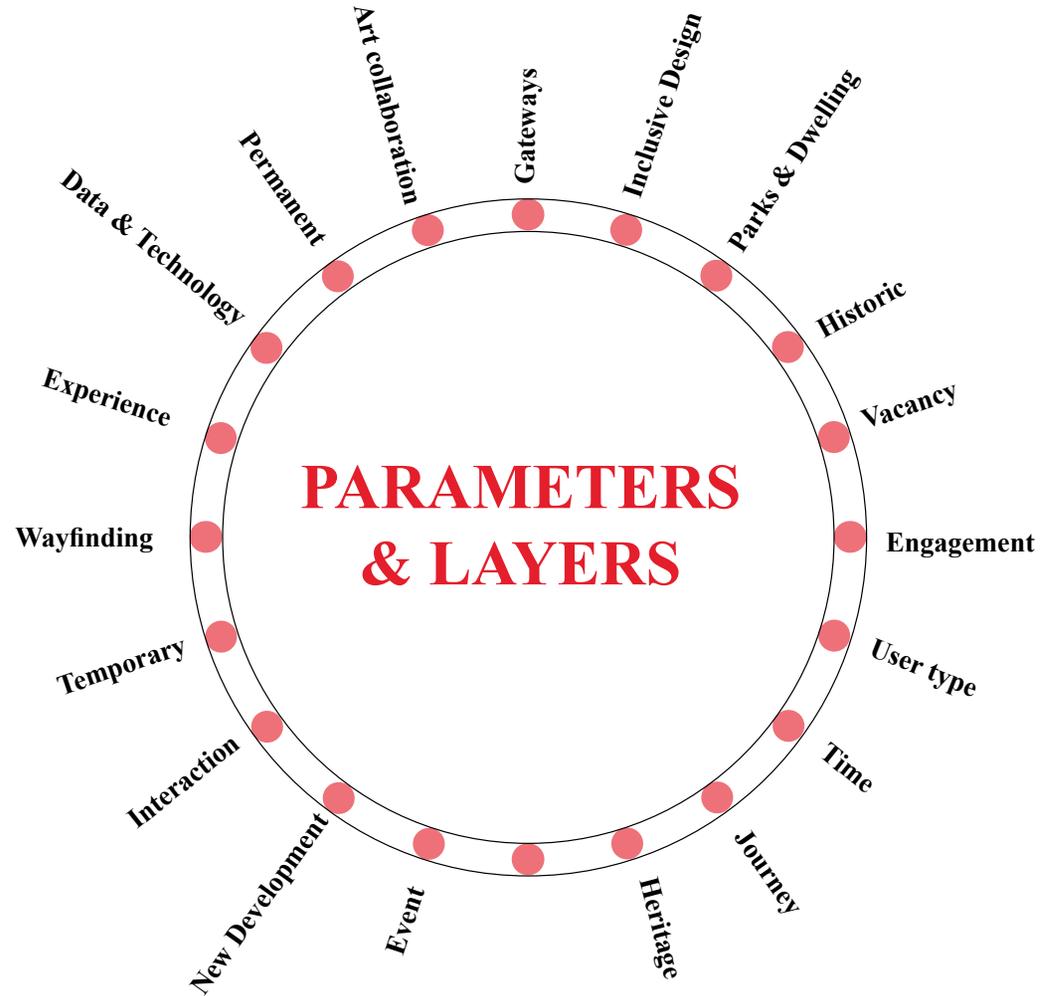


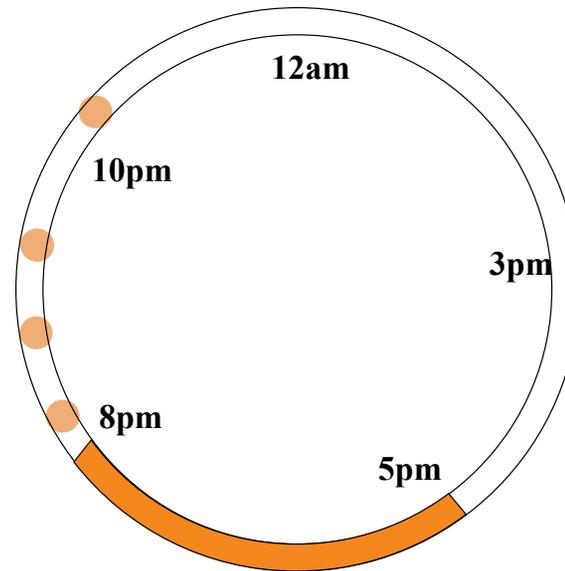
Figure 42 - Parameters & Layers Diagram

St James Park & Heritage Walk

Area 1 Concept

St. James Park and its surrounding plaza has been identified as a key location for night-time activation due to its landmark buildings facing the plaza, the historic value of the area and the importance of safety for creating dwelling and social gathering areas for residents and other users.

Based on technical assessment the lighting levels are very low inside the Park making the circulation in this area less comfortable at night. Therefore the goal of the lighting design recommendation in this area will be to enhance the perception of safety as well as to highlight key landmark facades through different techniques.



User:

Tourist / Visitor / Residents

Activity:

Historic Tour

Journey:

Exploration of heritage

Interaction:

Architectural Facade Accent

Figure 43 - St James Park & Heritage Walk Concept Layers Diagram

St James Park & Heritage Walk

Concept Overview

St James Park neighborhood is one of the areas in the recommended historic route layer due to its heritage value with its architecture and urban sculptures located in the area. Lighting concept therefore will aim to accentuate these landmarks with facade and art lighting techniques. The facade lighting of the perimeter landmarks such as the ones listed below is recommended either via temporary art installations or permanent feature facade lighting design and installation. Lighting the perimeter of the plaza will also help with improving safety perception for pedestrians by increasing the vertical illuminance at the boundaries of the space within field of view. Temporary lighting installations are recommended until future re-design and construction in the Park including Levitt Pavilion addition.

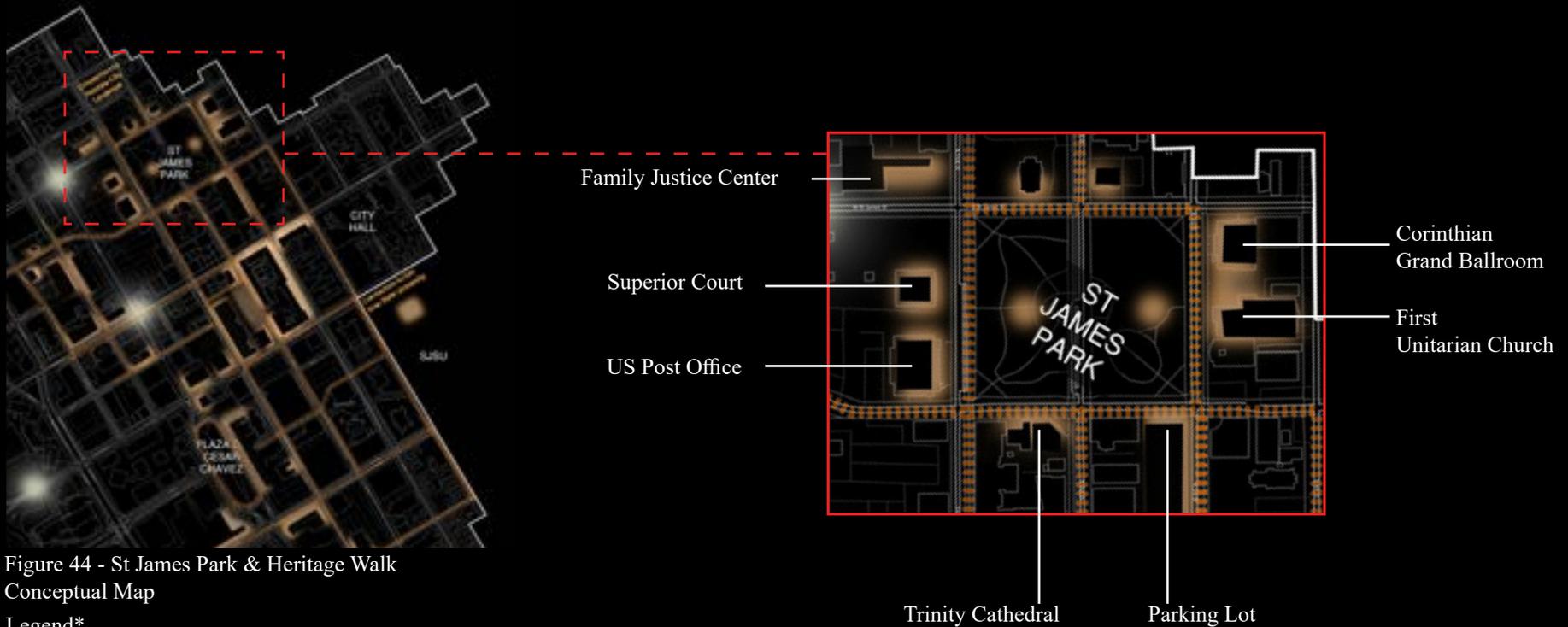


Figure 44 - St James Park & Heritage Walk Conceptual Map

Legend*

- Existing and Recommended Landmark Lighting
- Recommended heritage pathway

* The map colors do not represent the actual recommended lighting colors or light levels.

St James Park & Heritage Walk



Figure 46 - Concept Rendering

The illuminance level on the facades is dependent on what level of accent lighting (hierarchy of attraction) is desired.

In the case of these heritage facades around St James Park, the ‘visual task’ is the pedestrian walkway. This will follow the predetermined guidelines for illuminance levels at night.

The focal-point is the heritage facade and its reflectance will determine the illuminance ratio recommendation. In this specific context a moderate feature lighting focus is recommended which can be achieved with different lighting techniques.

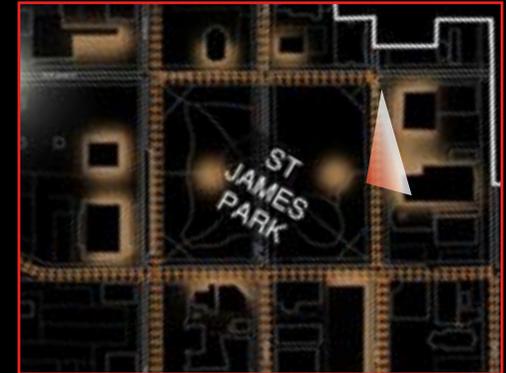


Figure 45 - Concept Keymap

Example of a heritage landmark facade lighting in “Image-Defining-Frontage” area. Cool and warm white color temperatures can be used to create depth as well as accent lighting on each type of vertical facade element such as columns, arches, windows or other facade elements unique to each heritage building.

Attraction	Role	Focal-point Reflectance	Illuminance Ratio Focal-point:Task
Strong	Dominant	≥50% <50%	~20:1 ~40:1
	Dramatic	≥50% <50%	~10:1 ~20:1
Moderate	Feature	≥50% <50%	~5:1 ~10:1
Soft	Visual Edge	≥50% <50%	~2:1 ~5:1
Subtle	Visual Relief	≥50% <50%	~1:1 ~2:1

Figure 47 - Accent Lighting Contrast Recommendation - Based on IES Handbook 10th Edition

St James Park & Heritage Walk

LOW BUDGET / TEMPORARY

Artist collaboration is recommended for these type of installations either as part of festivals or separately organized. Engagement of current and future building owners will be necessary. Temporary and dynamic installations around St James Park are recommended as pilot studies especially during the design and construction of St James Park Revitalization project in order to support safety perception and attraction in the area.



Image 48 - Precedent Image: Lang-Baumann, NuitBlanche, Paris

HIGH BUDGET / PERMANENT

Most of the heritage buildings around St James Park have either limited or no occupancy at night-time like post office, Trinity Church and parking garage which creates an opportunity to enhance the architecture in long term. Lighting at these facades shall be consistent but enhance unique architectural features and textures of each building. Existing facade lighting of the Court buildings shall be considered during detailed design process.



Image 49 - Precedent Image: White House at night

St James Park & Heritage Walk

Lighting Equipments - Typical

High Budget / Permanent

Image	Manufacturer	Model	QTY
	Targetti	Kepler Mini Wall Wash 6" RGBW	16
	i-Guzzini	Trcik 180	12
	Lumenpulse	Lumenfacade Inground Dyanmic White	20
	Lumenpulse	Lumenbeam small RGB - LBM 277 RGB S BRZ DMX/RDM UL 3FT + CBX-ST-DMX-RDM + DMX Controller	4
	Pharos	Pharos Control System	1

Figure 50 - Lighting Equipment List for Permanent Facade Lighting

Lighting Material Budget Estimate for One Building Facade*:
US \$80,000 - \$120,000

Construction Period **: 4-8 months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

** Construction period assumptions are for high level information only and cannot be considered as final estimates. The overall time depends on procurement lead times, bidding durations, contractor availability and other unforeseen conditions. These estimates should not be part of any budget program and should be reviewed and confirmed by a qualified Cost Consultant and Contractor.



Image 52 - High Budget Concept



Figure 51 - Recommended third party engagement for detailed design

Warm and Cool Color Temperature

Color temperature (Correlated Color Temperature, or CCT) is essentially a gauge of how yellow or blue the color of light emitted from a light source appears. It's measured in the Kelvin unit and is most commonly found between 2200 Kelvin degrees and 5000 Kelvin degrees in facade lighting applications.



Different facade materials and colors are one of the main factors when selecting the right CCT of a light source. While in most historic facades the warm tones of the stone can be emphasized better with warmer CCT, the iconic white stone or marble is better represented in cooler CCT. The facade lighting could also be from interiors if the building has a dominant glazing or translucent facade and therefore reflecting the hues of the glaze material

Cool Color Temperature
Facade Lighting



Warm Color
Temperature Facade
Lighting



Warm & Cool Color
tones mixed in
landscape and facade



Image 53 - Precedent Images

Highway 87 Underpass at W St John Street & Removing Barriers

Area 2

As one of the underpasses underneath the Highway 87 that separates Downtown West area from the centre of Downtown, this location has been chosen as a typical lighting intervention example for removing a physical barrier. During conversations with the community members and residents the unsafe feeling of the underpass and using this corridor as a potential lighting improvement area was discussed. The adjacency of the underpass to Little Italy and local businesses as well as its connectivity function to streets opening to San Pedro Market and to SAP Center makes this area a great case study.

The technical assessment in this area provided more input on the current low vertical illuminance levels especially near side walls and high contrasts between floor, wall and ceiling surfaces resulting in dark spots and weak facial recognition in the underpass. In addition to that it was noticed that the entrance and exits are not accentuated due to high horizontal illuminance on the ground level of the underpass compared to streets opening to the underpass.

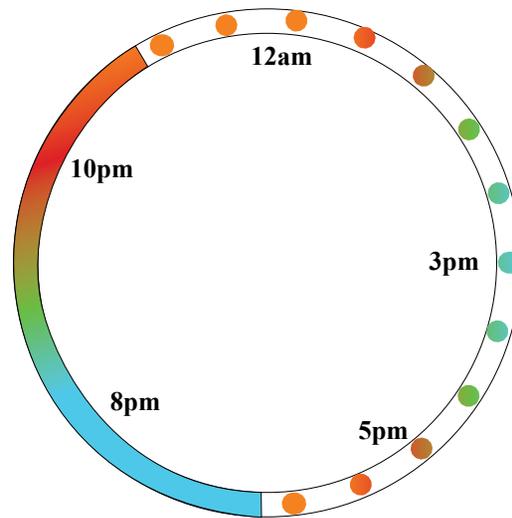


Figure 54 - Underpass Concept Layers Diagram

User:

SAP Visitors

Little Italy Community

San Pablo Market Visitors

Activity:

Sports & Recreation

Open Market

Journey:

Surprise

Transition

Playful

Interaction:

Colors

Projection

Highway 87 Underpass at W St John Street & Removing Barriers

Re-use of underpass to re-connect social hubs

The lighting concept for this area is to use the underpass' walls and ceilings as blank canvases and introduce projections and color changing lighting with the use of symbolic colors and patterns reflecting the connection to neighboring districts such as Little Italy, San Pedro Market Square and SAP Center.



Little Italy Sign



Underpass - Existing Night-time Photo



San Pedro Market & Square



Italian Cultural Center & Museum



SAP Center - Hockey game

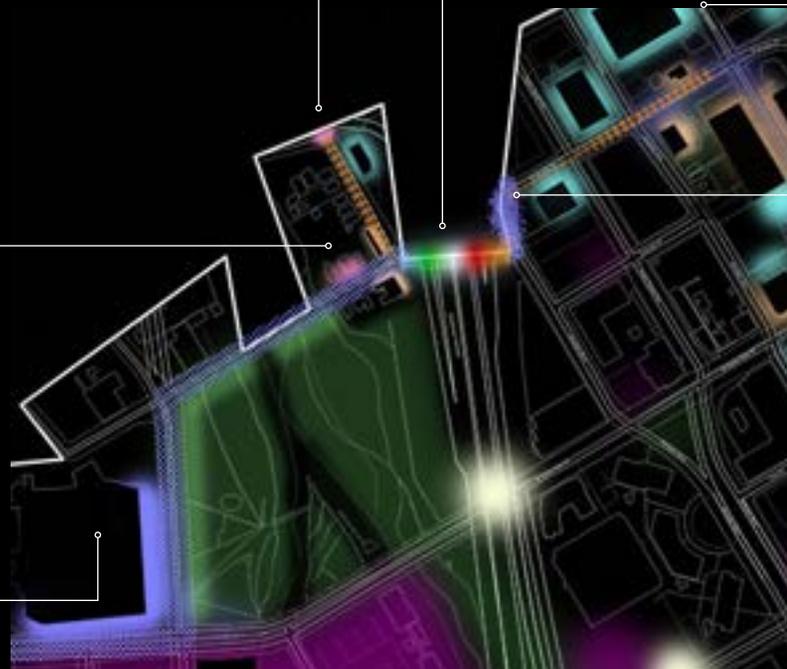


Figure 55 - Underpass Conceptual Map



Mural on W St John Street

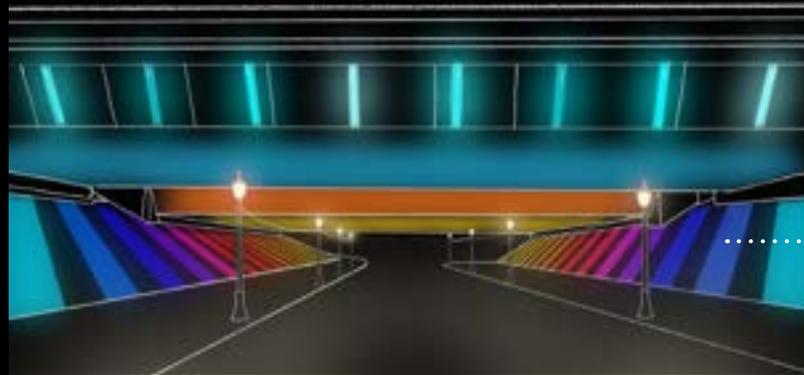
Legend

- Existing and Possible Event Locations
- Vacant store/building
- Parks & Recreation
- New Development
- Arts & Culture
- Lighting Gateway

Highway 87 Underpass at W St John Street & Removing Barriers

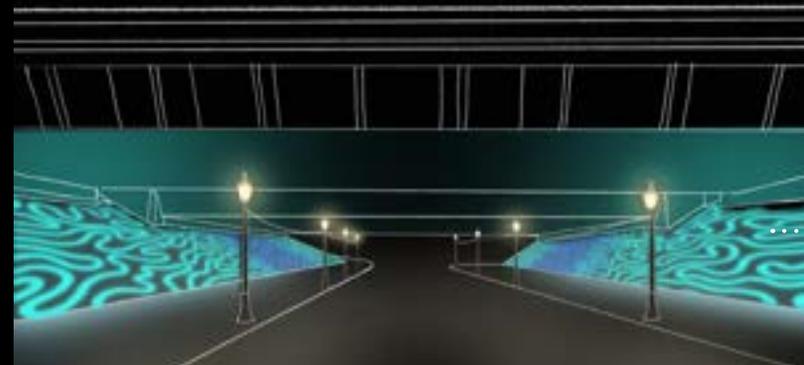
Concept Options

Transition



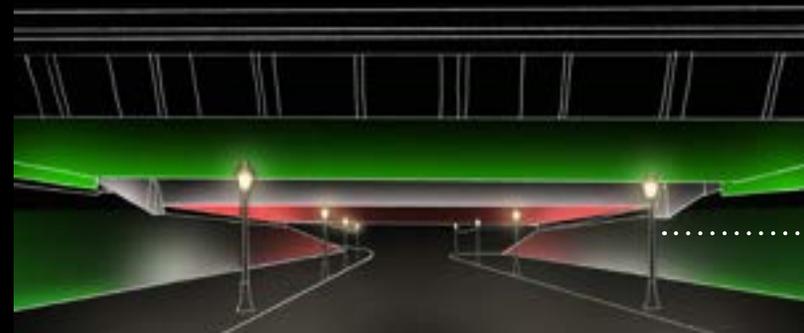
Saturated colors graze and wash lights on wall and ceilings

Game night



Graphic projections on vertical surfaces

Italian Festival



Symbolic color use in floodlighting during special occasions

Figure 56 - Underpass Concept Renderings

COLORED URBAN CORRIDOR



PROJECT ON LIGHT CANVAS



EMPHASIZE THE ENTRANCES



Image 57 -Precedent Images

Highway 87 Underpass at W St John Street & Removing Barriers

Lighting Equipments - Typical

Game Night Design

Image	Manufacturer	Model	QTY
	ROSCO	X-Effects LED Projector 5500K - 21001741CWHO demo kit W/ Custom Gobo (3 type) + colored gels (2 type)	10
	BEGA	Aluminum pole between 14 - 24ft	10
	ETC	ECHOTOUCH Control Module	1
	ETC	Integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Figure 58 - Game Night Design Equipment List

Lighting Material Budget Estimate*: US \$80,000 - \$120,000

Construction Period **: 6-9 months

Festival Design

Image	Manufacturer	Model	QTY
	Lumenpulse	Lumenfacade surface Color Changing	200
	ETC	ECHOTOUCH Control Module	1
	ETC	Integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Figure 59 - Festival Design Equipment List

Lighting Material Budget Estimate*: US \$400,000 - 600,000

Construction Period **: 4-8months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

** Construction period assumptions are for high level information only and cannot be considered as final estimates. The overall time depends on procurement lead times, bidding durations, contractor availability and other unforeseen conditions. These estimates should not be part of any budget program and should be reviewed and confirmed by a qualified Cost Consultant and Contractor.

Barack Obama Boulevard & Re-orientation

Area 3

SAP Center and the intersection of Santa Clara with Barack Obama Boulevard is one of the recommended lighting intervention locations for night-time activation due its high visibility as it is located on one of the entrance/exit routes of downtown as well as its highly utilized pedestrian use during event days.

Considering the community feedback about high pedestrian flow occupying the roadway on event days and desire to increase popularity of the Little Italy neighborhood, it is recommended to re-activate Barack Obama Boulevard at night.

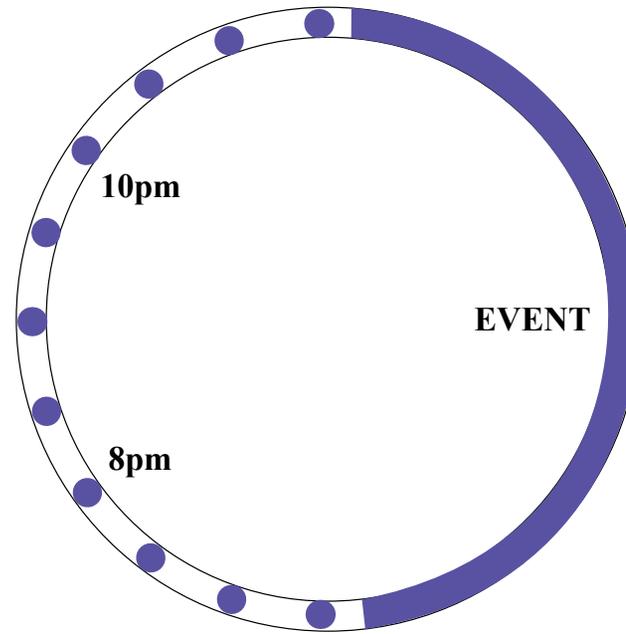


Figure 60 - Barack Obama Boulevard
Concept Layers Diagram

User:

SAP Visitors
Arena Green Park User

Activity:

Sports & Recreation
Gathering activities
Dwelling
Arts & Culture

Journey:

Accompany
Ensure Comfort
Inform

Interaction:

Lit patterns for wayfinding
Media Screen

Barack Obama Boulevard & Re-orientation Concept Overview

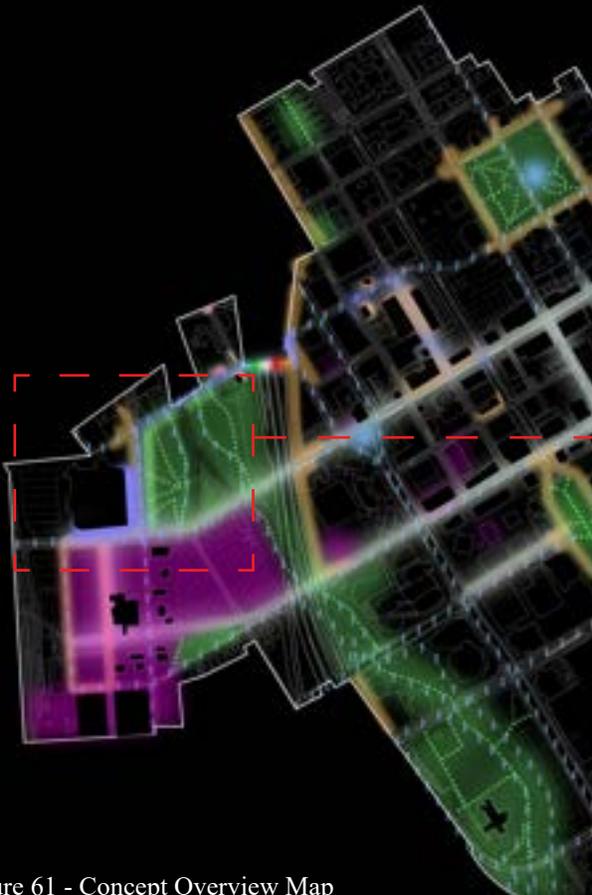


Figure 61 - Concept Overview Map

Legend

-  Image-Defining Frontage
-  Park & Recreation Areas
-  Green Walkways
-  Existing and Possible Event Locations
-  Biking Routes

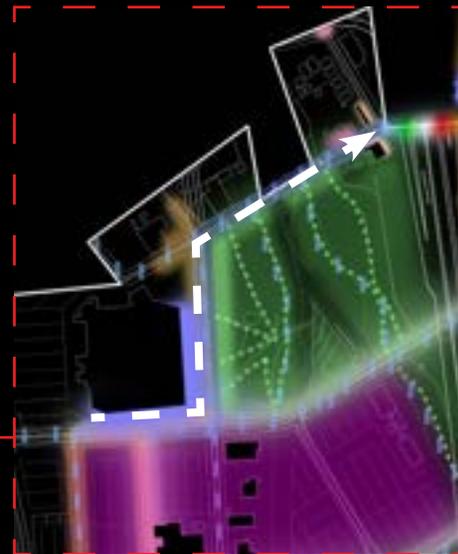


Figure 62 - Enlarged Concept Overview Map

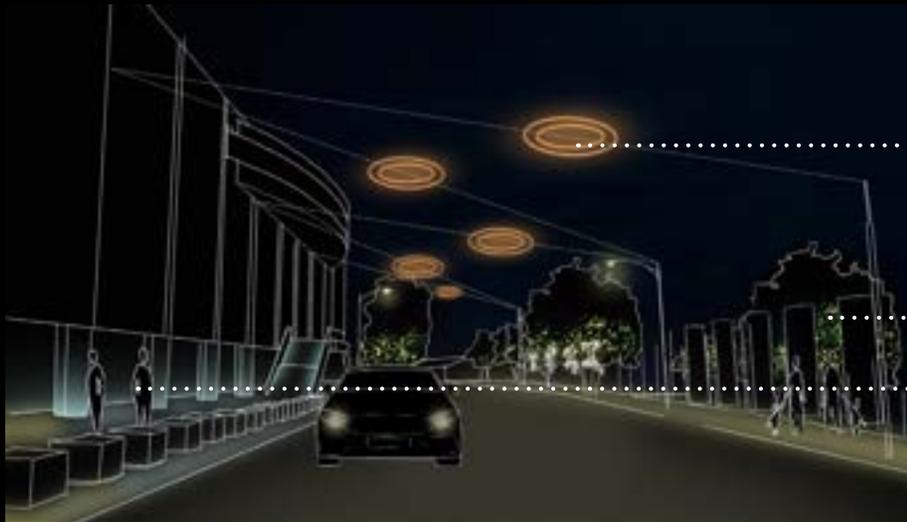
The white dashed line on the left enlarged map shows the recommended re-orienting of pedestrian flow with the following lighting methods:

- Illuminate / create attraction at destination within the field of view;
- Add visual aids on adjacent vertical surfaces to accompany the journey;
- Keep landscape and other perimeter vertical surfaces visible inside the park (provide minimal illumination at big dark corners that might affect safety perception).

Barack Obama Boulevard & Re-orientation

Concept Options

Re-Orient

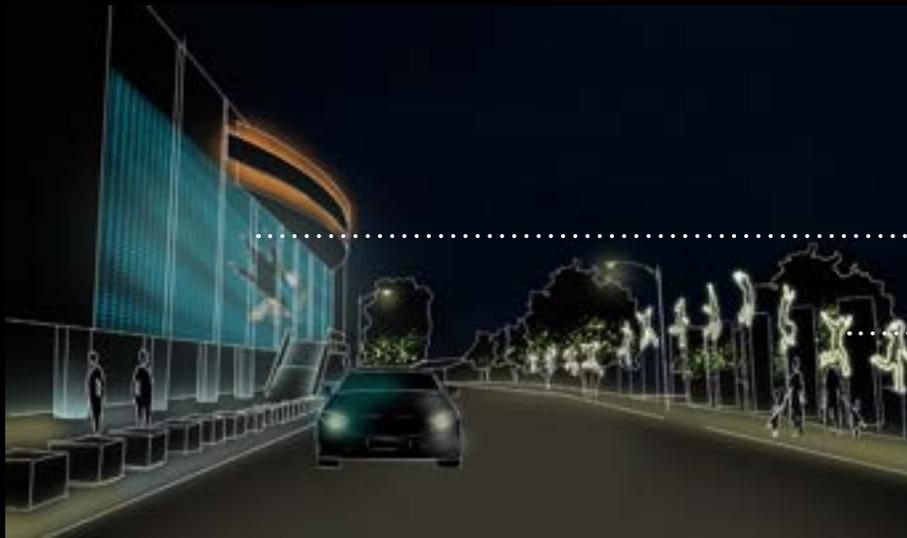


Catenary lighting

Greenery highlight to reinforce safe perception

Reinforce ground level lighting of SAP Center

Inform & activate

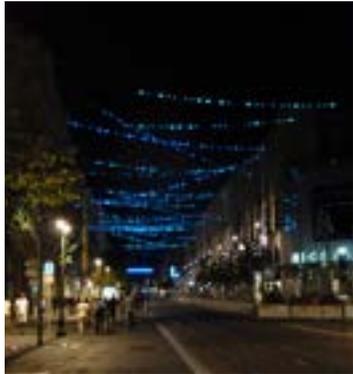


Additional facade lighting and media facade on SAP Center east and south facades

Temporary artwork along park border

Figure 63 - Concept Renderings

LIGHTING AS WAYFINDING
ELEMENT



FLOW OF INFORMATION
ALONG THE JOURNEY



GREEN PERIMETER HIGHLIGHT



Image 64 -Precedent Images

Barack Obama Boulevard & Re-orientation

Lighting Equipments - Typical

Re-Orient Design

Image	Manufacturer	Model	QTY
	ROSCO	X-Effects LED Projector 5500K - 21001741CWHO demo kit W/ Custom Gobo (3 type) + colored gels (2 type)	10
	BEGA	Aluminum pole between 14 - 24ft	10
	ETC	ECHOTOUCH Control Module	1
	ETC	Integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Figure 65 - Re-Orient Lighting Equipment List

Lighting Material Budget Estimate*: US \$125,000 - \$160,000

Construction Period **: 4-8 months

Inform Design

Image	Manufacturer	Model	QTY
	Q Tran	IQ67-27-FLS-80-3_3 - Side bend flexible linear fixture with remote driver	400
	Traxon	Allegro Dot RGBW + back structure + control modules	7700
	Targetti	Keplero Mini Wall Wash 6" RGBW	24
	BK lighting	DE-LED-TR-x99-FL-RAL-12-A-010-277	14
	Pharos	Pharos DMX Control System	1



Figure 66 - Inform Concept Lighting Equipment List

Lighting Material Budget Estimate (without art installations)*: US \$1M-\$1.25M

Construction Period **: 6-10 months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

** Construction period assumptions are for high level information only and cannot be considered as final estimates. The overall time depends on procurement lead times, bidding durations, contractor availability and other unforeseen conditions. These estimates should not be part of any budget program and should be reviewed and confirmed by a qualified Cost Consultant and Contractor.

Wayfinding Strategies

Adding accent lighting on an existing vertical surface or creating a lit surface within field of view of a pedestrian helps creating visual attraction at night-time that can be useful for wayfinding. By adjusting the vertical contrast levels in certain directions it is possible to re-orient attraction. In order to do so, identifying key vertical surfaces at night-time is recommended as part of the activation strategy. Some examples to highlight are:

- Existing murals or potential future graphic artwork;
- Facade reveals, features on edges or corners;
- Crowns and canopies of facades on important intersections.

Some location recommendations for this strategy can be listed as (but not limited to):

- Artwork or building facades on Market and First Street intersection;
- Mural on underpass entrance on W St John Street;
- Parking lot round corner facade on W St John and N San Pedro Street intersection;
- On building facades of intersection of First, Second and Third Street with San Fernando, San Carlos and San Salvador Streets,
- On intersection of Woz Way and San Carlos and along Woz Way next to Discovery Meadow;
- On Almaden Blvd and Balbach St intersection;
- On W St John Street and Barack Obama Boulevard intersection;
- Artwork on 5th Street and City Hall facade.

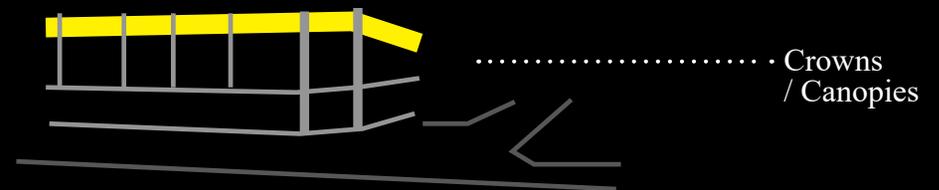
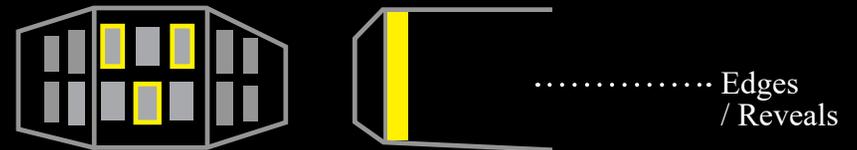
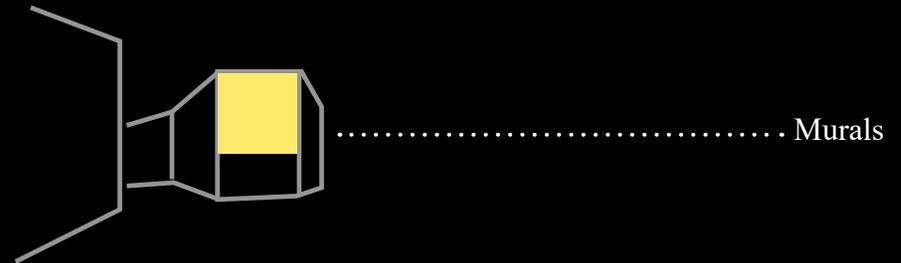


Figure 67 - Wayfinding Strategy Diagrams

N 5th Street & Vacant Store Activation Area 4

The City Hall and the streets opening to its plaza are considered potential activation corridors in order to enlarge safe and comfortable circulation perimeter in the neighborhood. The current lighting installation in front of the City Hall Plaza is a good art installation example for night-time activation but the surrounding area feels dark due to very low horizontal and vertical light levels on the inner plaza in front of the City Hall and across the street.

The City Hall is connected to St James Park and surrounding residential area as well as to San Jose State University through 4th and 5th Streets therefore lighting installations on these streets are recommended to reinforce the entrance to this Plaza.

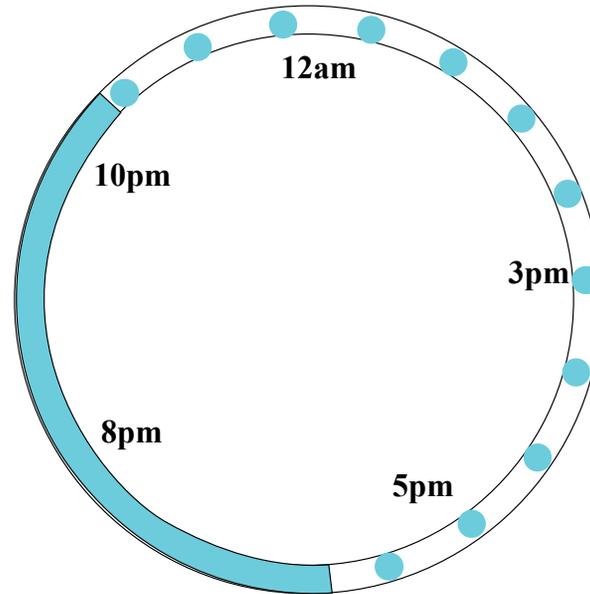


Figure 68 - N 5th Street Concept
Layers Diagram

User:

Students

Residents

City Hall Visitors

Activity:

Arts & Culture

Playful & interactive

Journey:

Expectation

Awareness

Transition

Interaction:

Empty storefront interior lighting

Colors

Patterns

Media Screen

N 5th Street & Vacant Store Activation

Concept Overview

Vacant stores and new development areas are empty canvases which can be used as part of the urban night-time activation. Either interiors of a store occupying ground floor of a mix development or an entire lot waiting for construction located at key locations can be used for a temporary lighting installation.

The vacancies on streets opening to main landmarks and civic buildings such as City Hall are selected for this concept due to ambient light levels drop around City Hall plaza. Through different interior and facade lighting techniques these vertical surfaces can create attraction and surprise points especially if used on both side of the streets and boulevards.

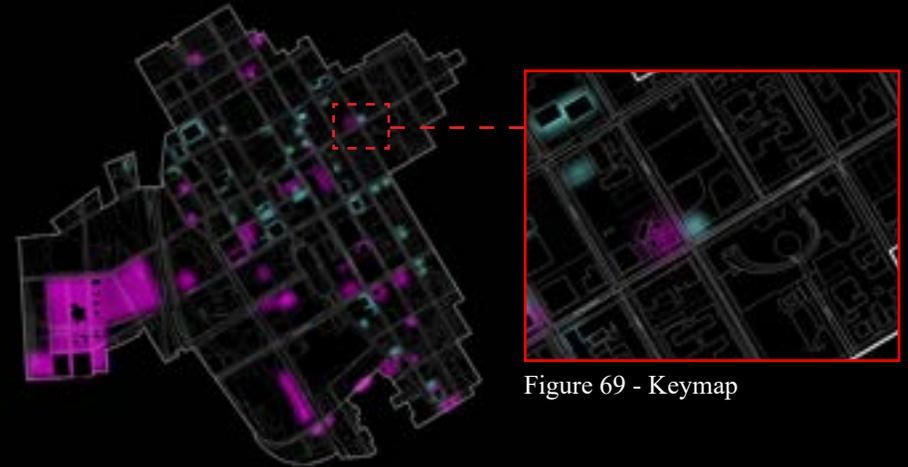


Figure 69 - Keymap



Figure 70 - Concept Rendering

Low resolution media mesh screen on vacant corner facade (interior or exterior)

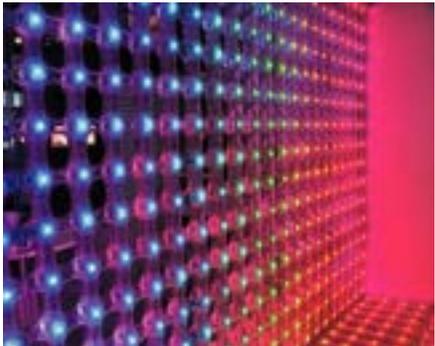
Illuminated art piece in the interiors

Accent lighting for totems in exterior

REVITALIZE EMPTY STOREFRONT
THROUGH COLORS



MEDIA SCREEN & MODULAR LIGHTING



TEMPORARY LIGHTING STRUCTURE



Image 71 -Precedent Images

N 5th Street & Vacant Store Activation

Lighting Equipments - Typical

Low Budget Design

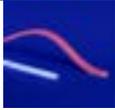
Image	Manufacturer	Model	QTY
	We-ef	ETC110-3 LED - 185-2777	8
	Q Tran	RGBW flexible linear fixture with remote driver	400
	Rosco Gels	Gels in choice of colours	1
	Pharos	Pharos DMX Control System	1



Figure 72 - Low Budget Equipment List

Lighting Material Budget Estimate for one vacant store of single height and approximately 1000sqft*: US \$40,000 - \$80,000

Construction Period **: 3-6 months

High End Design

Image	Manufacturer	Model	QTY
	We-ef	ETC110-3 LED - 185-2777	8
	Traxon	Allegro Dot RGBW + back structure + control modules	4000
	Pharos	Pharos DMX Control System	1



Figure 73 - High Budget Equipment List

Lighting Material Budget Estimate for one vacant store of single height and approximately 1000sqft*: US \$400,000 - \$500,000

Construction Period **: 4-8months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

** Construction period assumptions are for high level information only and cannot be considered as final estimates. The overall time depends on procurement lead times, bidding durations, contractor availability and other unforeseen conditions. These estimates should not be part of any budget program and should be reviewed and confirmed by a qualified Cost Consultant and Contractor.

1st, 2nd & 3rd Streets & Activation Corridors

Area 5

The streets such as 1st, 2nd and 3rd Streets with similar scale and architectural features help to provide a unified look during the day. For keeping the continuity at night-time it is recommended to plan for facade lighting on applicable buildings on the path. The arrival moments are considered to be the end of the pathway where there is either a lighting attraction or intersection with an important road or paseo.

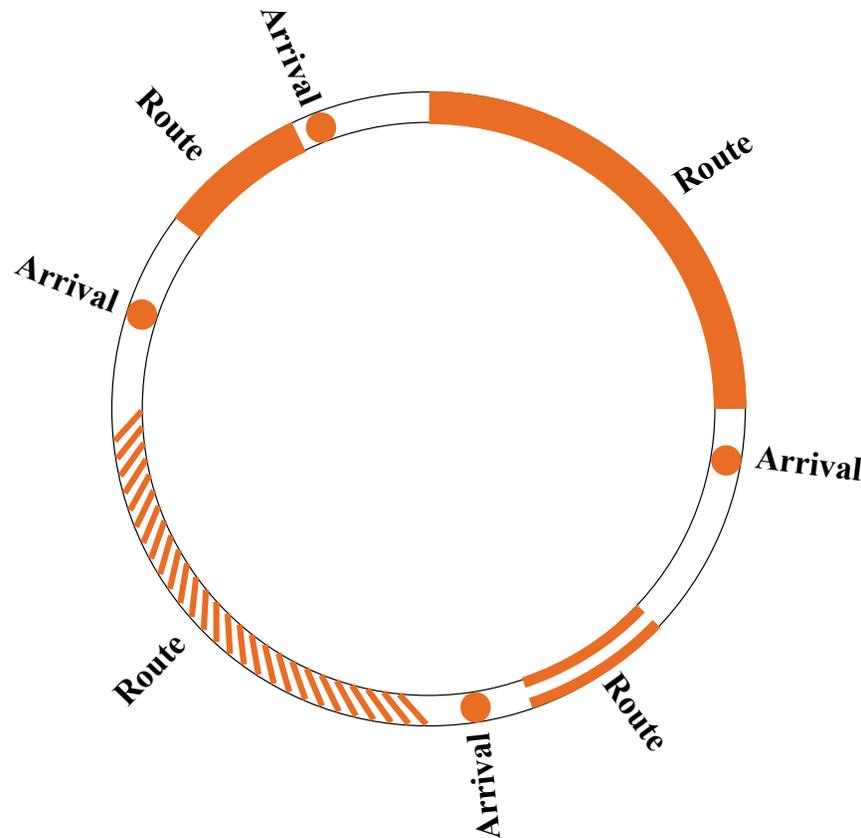


Figure 74 - 1st, 2nd, and 3rd Concept Layers Diagram

User:

Students
Workers
Visitors

Activity:

Art & Culture
Sports & Recreation
Retail
Shows / Parades

Journey:

Accompany
Consistency
Surprise

Interaction:

Facades
Multisensory
Art

1st, 2nd & 3rd Streets & Activation Corridors

Concept Overview

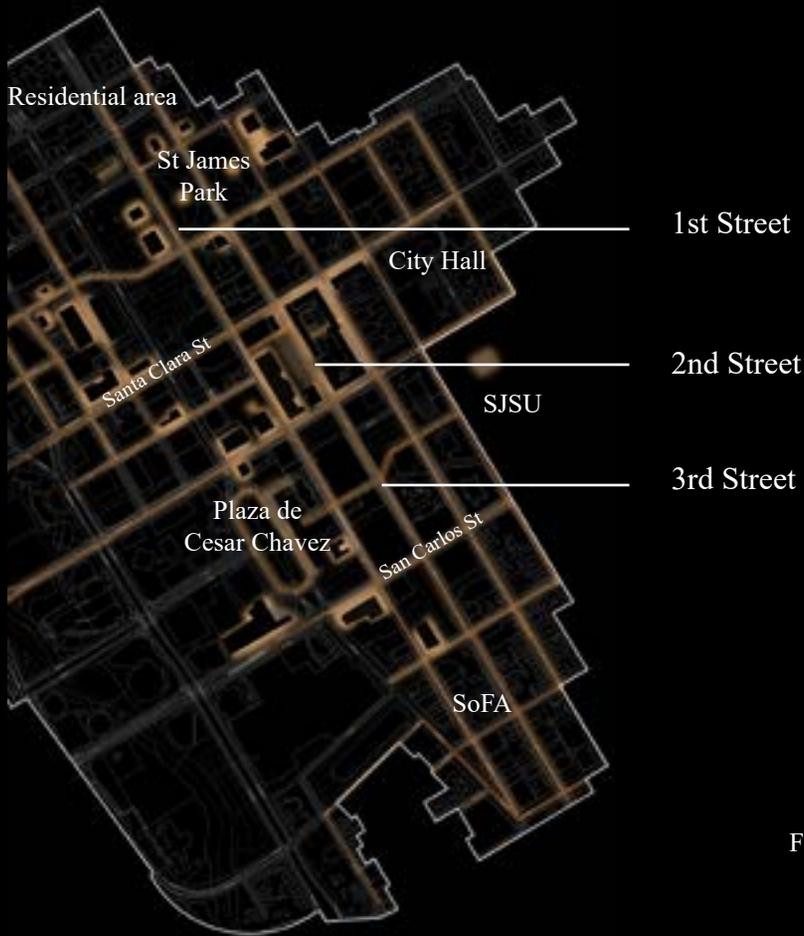


Figure 75 - Concept Overview Map

Layers*

- Facades & Artwork - Historical, civic or architectural highlight
- Recommended historic route

*Layer colors are schematic and do not represent the actual lighting colors or light levels



Figure 76 - Existing Site Conditions

1st, 2nd and 3rd Streets are important corridors connecting the residential area with St James Park, Santa Clara St and SoFA on the north-south axis of downtown. The existence of various facades with historical and/or architectural importance and the tram line, especially between St James St and San Carlos St makes these corridors part of a sight-seeing tour at night-time as well as daytime.

Similar street section has been observed with consistent street width, facade height and tree layout on these corridors which creates a consistent vertical boundary and scale during daytime. The view at night-time is often limited in between omni-directional street lighting and the facades on the field of view disappear behind trees losing visibility and readability at night-time. The facades are mostly illuminated with lighting spill from streetlights, losing their true colors and attraction.

In order to activate these corridors and connect north and south axis of downtown it is recommended using the facades for creating attraction at night-time. The slight changes and interruption on the continuity will help with wayfinding and identify routes of escape improving safety feeling.

The two concepts shown in the following pages are on the Paseo's or alleys opening to one of these corridors.

1st, 2nd & 3rd Streets & Activation Corridors

Facade Lighting Strategies

To emphasize the architectural features and provide consistent experience while passing through these corridors, the following lighting strategies are recommended:

Upper level
wallgraze/wallwash

Consistent ground level
lighting pattern



Architectural
feature accent



Crown / upper level
accent in key corners /
skyline view



Image 77 -Precedent Images

1st, 2nd & 3rd Streets & Activation Corridors Concepts

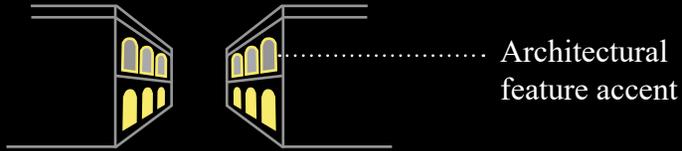


Image 78 - Activation Corridor Conceptual Renderings

1st, 2nd & 3rd Streets & Activation Corridors

Facade Lighting Strategies

In order to emphasize the facades it's important to apply light spill limiting accessories on some pole and building mounted fixtures. These accessories can be either mounted on the exterior side of the luminaire (mostly applicable to cobra head streetlight fixtures) or attached to the light source module inside the globe (mostly

applicable to globe head omnidirectional streetlight fixtures). This technique together with dimming capability will allow the additional facade lighting applications to be noticeable without compromising the functional lighting necessary for safe circulations of cars and pedestrians.

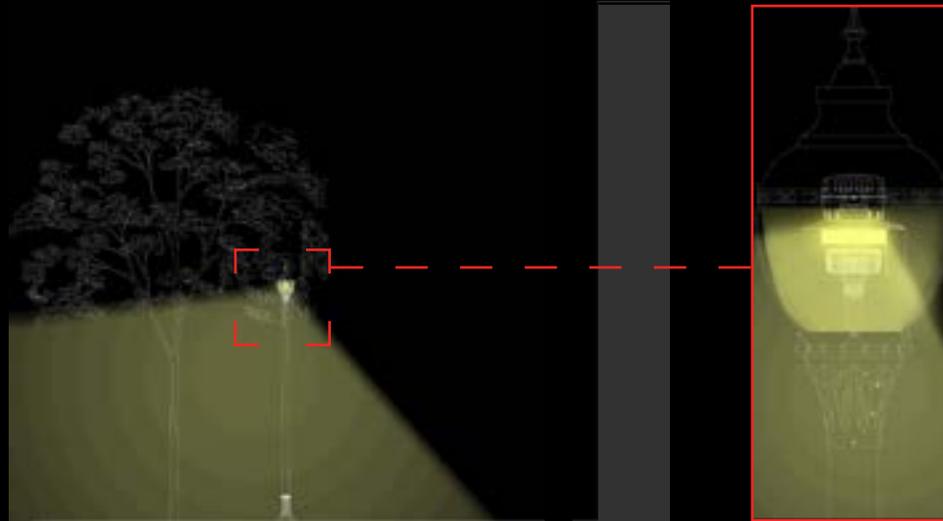
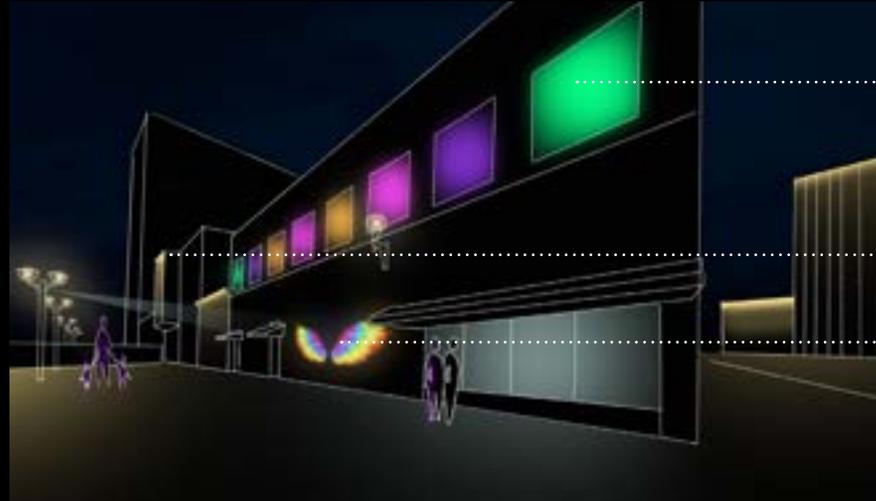


Figure 81 -Shield applied to light source module

1st, 2nd & 3rd Streets & Activation Corridors

Fountain Alley Concept

Selfie Moment



Colored diffuse lighting from interiors

Building facade features accent lighting

Lighting projection(s) on facade

Image 82 - Fountain Alley Concept Option 1

Multi-sensory experience



Art & lighting collaboration on a catenary or suspended system

Image 83 - Fountain Alley Concept Option 2

STAGE CREATION AND SELFIE MOMENTS



CREATE AND PROJECT CONTENT ON EMPTY CANVASES



EMPHASIZE THE ARTWORK OR ARCHITECTURE



Image 84 -Precedent Images

Pilot Area: Fountain Alley

Lighting Equipments - Typical

Low Budget Design

Image	Manufacturer	Model	QTY
	ROSCO	X-Effects LED Projector 5500K - 21001741CWHO demo kit W/ Custom Gobo (3 type) + colored gels (2 type)	3
	BEGA	Aluminum pole between 14 - 24ft	3
	BARBICAN	HPC Solo Straight 360 view - RGBW with DMX driver	8(3ft)
	LUMENPULSE	Lumenfacade Nano with low voltage control box and power&data cables	10
	ETC	ECHOTOUCH Control Module	1
	ETC	Control with ultrasonic rangefinder, microcontroller, contact closure motion sensor, integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Lighting Material Budget Estimate*:
US\$ 35,000 - \$55,000

Construction Period **: 3-6 months

Figure 85 - Low Budget Equipment List

High End Design

Image	Manufacturer	Model	QTY
	BEGA	Aluminum pole between 14 - 24ft	6
	Tivoli	Litesphere 2.0 with RGBW and DMX control	80
	ETC	ECHOTOUCH Control Module	1
	ETC	Control with ultrasonic rangefinder, microcontroller, contact closure motion sensor, integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Lighting Material Budget Estimate*:
US\$ 55,000 - \$75,000

Construction Period **: 4-8months

Figure 86 - High Budget Equipment List



* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/ engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

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1st, 2nd & 3rd Streets & Activation Corridors

First & San Carlos Street

Transition



Image 87 - First & San Carlos Street Concept Rendering

CREATE AWARENESS



EMPHASIZE ARRIVALS



HIGHLIGHT UNIQUE ACTIVITIES



Image 88 -Precedent Images

1st, 2nd & 3rd Streets & Activation Corridors

Lighting Equipments - Typical

Transition Design

Image	Manufacturer	Model	QTY
	Q Tran	IQ67-27-FLS-80-3_3 - Side bend flexible linear fixture with remote driver	60
	Q Tran	KURV-RGBW-HE-PPS-LP-FT-WET-RGBW-27-SO-ENC-TL-XX-BW-BW-N/A- PERDWG + DMX driver QZ-96W-UNV-24V-DMX-4CH-WH	700
	Ronstan	Custom LED - catenary letters	1
	Targetti	Keplero Mini Wall Wash 6" RGBW	16
	ETC	ECHOTOUCH Control Module	1
	ETC	Integrated real-time clock, digital inputs, input connectors, RS-232 interface, programming interface, DIN rail	1
	ETC	3 days of programming	1



Figure 89 - Transition Equipment List

Lighting Material Budget Estimate*: US \$350,000- \$600,000

Construction Period **: 6-9 months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

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1st & Market Street & Museum of Art Plaza

Areas 6&7

As part of the event locations (recommended event locations layer) around arts & culture buildings the 1st Street & Market Street (SoFA entrance from south of Downtown) and Museum of Art Plaza near Plaza de Cesar Chavez has been selected. Both of these plazas have mix use urban park areas nearby, connecting the circulation routes with facades of arts & culture.

The junction point at 1st & Market Street entrance represents both entrance to SoFA but also presents a first perspective to Downtown area for people transitioning from the other side of Sinclair Freeway. For lighting concepts the facades on the east side of First Street near Parque De Los Pobladores and the facades on the west side of S Market Street will be used as well as the Park in the middle. This area can represent a milestone location at night-time.

Museum of Modern Art plaza is another example of temporary event location that could also be transformed to a simple gathering area in other times. The concept will highlight the permanent condition with facade & art sculpture lighting as well as suggestions for temporary lighting in the plaza.

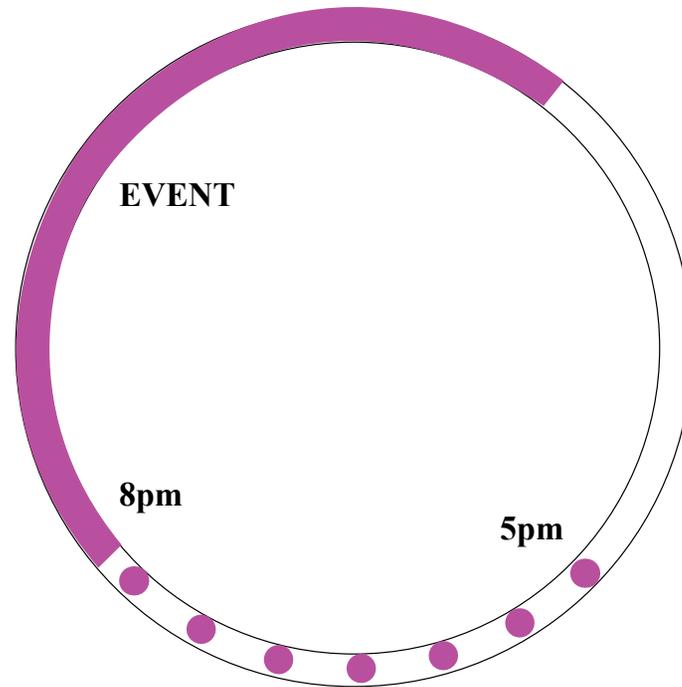


Figure 90 - 1st and Market Street and Museum of Art Plaza

User:

Arts & Culture Visitors
SoFA visitors

Activity:

Arts & Culture
Park activities
Gathering & Dwelling
Transit to main streets

Journey:

Accompany
Identity
Surprise

Interaction:

Regular patterns
Color
Art highlight

1st & Market Street - SoFA Entrance

Re-Identify

Figure 91 - 1st & Market Street Concept Rendering



Modular linear static white lighting for emphasizing the entrance to SoFA, similar style with arts & culture facades

Lit Art sculpture visible from both streets. Color and brightness to be adjusted to have dramatic contrast against the surrounding vertical surfaces at night-time

Modular linear colored lighting on art and culture venue / street section



1st & Market Street - SoFA Entrance

Lighting Equipments - Typical

Re-Identify Design

Image	Manufacturer	Model	QTY
	Traxon	Media Tube Go Dynamic White	60
	Traxon	Media Tube Go RGBW	60
	BK lighting	DE-LED-TR-x99-FL-RAL-12-A-010-277	30
	iGuzzini	Albero LED	1
	Lumepulse	Color-changing LED ingrade uplight	4
	ETC	ECHOTOUCH Control Module	1
	ETC	Control with ultrasonic rangefinder, microcontroller, contact closure motion sensor, integrated real-time clock, digital inputs, input connectors, RS-232 interface, programmin interface, DIN rail	1
	ETC	3 days of programming	1



Figure 92 - Re-Identify Equipment List

Lighting Material Budget Estimate*: US \$80,000 - \$150,000

Construction Period **: 6-8 months

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

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San Jose Museum of Art near Plaza de Cesar Chavez

Museum Plaza



Image 94 - Concept Image

Artwork accent lighting especially of the Cesar Chavez Plaza direction

Create an urban landscape with lighting where people can dwell an spend time underneath



Image 93 - Keymap

Canopy lighting of the Palms for attracting attention from a distance

LIGHT ART PIECES



USE PLAZAS FOR PLAYFUL EXPERIENCES



USE KEY PLAZAS TO INSTALL ART & MEDIA



Image 95 -Precedent Images

San Jose Museum of Art near Plaza de Cesar Chavez

Lighting Equipments - Typical

Museum Plaza

Image	Manufacturer	Model	QTY
	Rosco	X-Effects LED Projector 5500K - 21001741CWHO W/ Custom Gobo (3 type) + colored gels (2 type)	6
	BEGA	Aluminum pole between 14 - 24ft	4
	Targetti	Keplero Mini Wall Wash 6" RGBW	16
	Q Tran	IQ67-27-FLS-80-3_3 - Side bend flexible linear fixture with remote driver	200
	Ronstan	Circular catenary lighting	8
	Viabizzuno	Palo b	100
	LUMENPULSE	Color-changing LED ingrade uplight	4
	BK lighting	DE-LED-TR-x99-FL-RAL-12-A-010-277	20
	ETC	Mosaic Control	1



Figure 97 -Recommended third party engagement for detailed design

* Lighting material estimate only without tax, shipment, structural base, escalation or contractor markup. Power or control wiring or additional control components are not included. All construction costs including labor, contingency, other consultant/ engineering costs and installation costs are excluded. Budget estimates are approximate and are subject to change with design development and construction phases. It is recommended to evaluate all cost estimations with a cost consultant for final budget estimations.

** Construction period assumptions are for high level information only and cannot be considered as final estimates. The overall time depends on procurement lead times, bidding durations, contractor availability and other unforeseen conditions. These estimates should not be part of any budget program and should be reviewed and confirmed by a qualified Cost Consultant and Contractor.

Figure 96 - Museum Plaza Equipment List

Lighting Material Budget Estimate*: US \$100,000 - \$150,000

Construction Period **: 6-12 months

Recommended Manufacturers

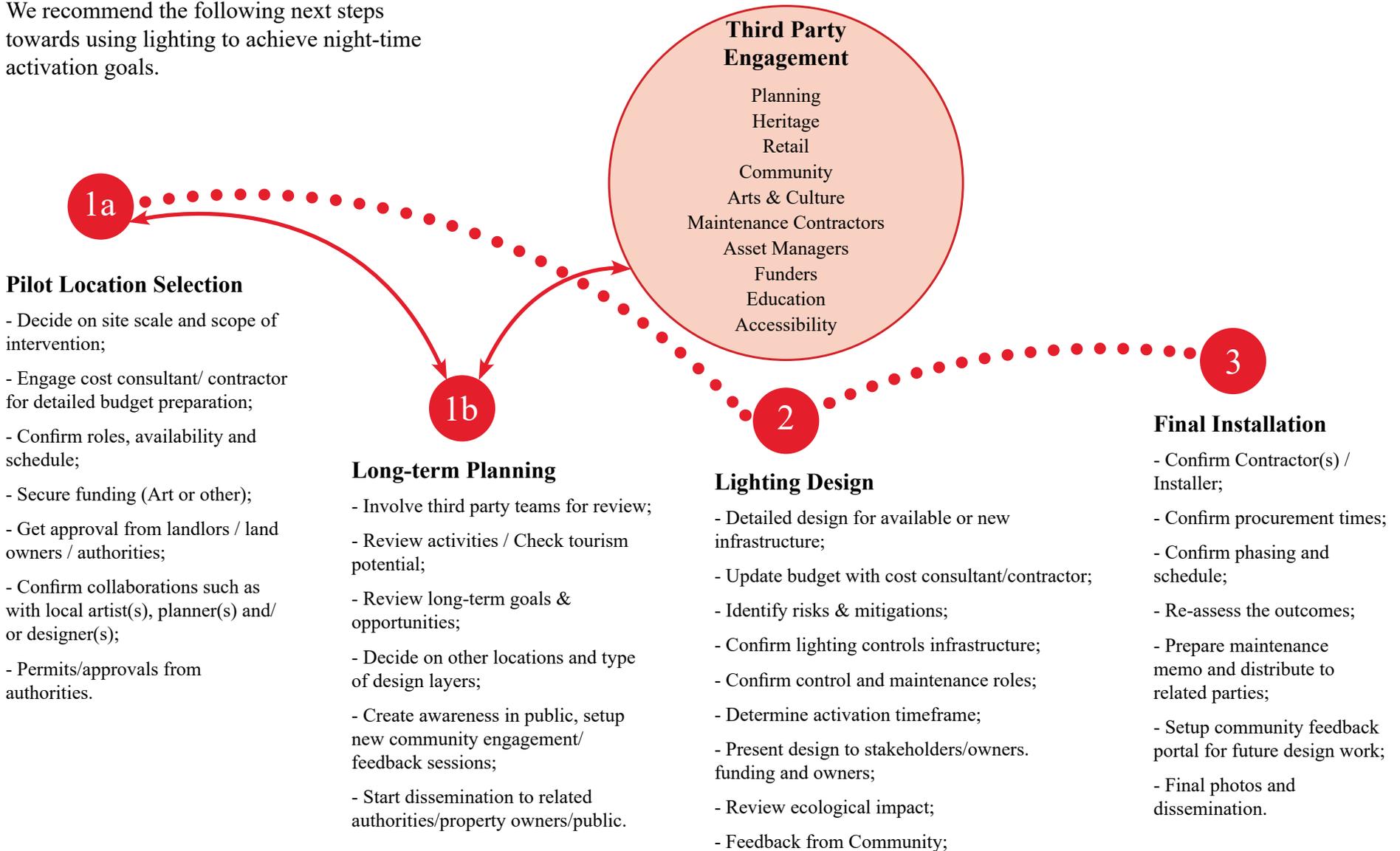
Manufacturer	Type	Representative	Contact
Barbican	Fixture	CAL Lighting	https://cal.lighting/about-cal/
Bega	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
BK lighting	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
Griven	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
Hess	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
i-Guzzini	Fixture	Lighting Systems	https://ltgsys.com/about-us/contact
Lumenpulse	Fixture	Lighting Systems	https://ltgsys.com/about-us/contact
MP Lighting	Fixture	Lighting Systems	https://ltgsys.com/about-us/contact
Q Tran	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
Ronstan	Fixture	-	atrowbridge@ronstan.us
Rosco	Fixture	Wunder Lighting	https://www.wunderlc.com/about-us
Selux	Fixture	16500	https://16500.com/contact-us/
Structura	Fixture	CAL Lighting	https://cal.lighting/about-cal/
Targetti	Fixture	16500	https://16500.com/contact-us/
Tivoli	Fixture	Associated Lighting Representatives	https://www.alrinc.com/team
Traxon	Fixture	CAL Lighting	https://cal.lighting/about-cal/
Viabizzuno	Fixture	-	s.lattanzio@viabizzuno.com
We-ef	Fixture	CAL Lighting	https://cal.lighting/about-cal/
ETC	Controls	Wunder Lighting	https://www.wunderlc.com/about-us
Pharos	Controls		
Legrand	Controls	Associated Lighting Representatives	https://www.alrinc.com/team
Casambi	Controls	-	us.support@casambi.com
Acuity Brands	Controls	16500	https://16500.com/contact-us/
Interactive Technologies	Controls	-	sales@interactive-online.com

Figure 98 - Recommended luminaire and lighting control manufacturers

Next Steps

Next Steps

We recommend the following next steps towards using lighting to achieve night-time activation goals.



Contact

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