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Fifth District

March 1, 2005

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

**APPROVE AND CERTIFY ADDENDUM NO. 3 (AS AMENDED) TO THE
FINAL ENVIRONMENTAL IMPACT REPORT FOR THE
BUNKER HILL URBAN RENEWAL PROJECT,
PARCEL K, Q, AND W-2
(WALT DISNEY CONCERT HALL)
(First District - 3-Vote Matter)**

IT IS RECOMMENDED THAT YOUR BOARD:

1. Consider and approve Addendum No. 3 (As Amended) to the Final Environmental Impact Report (EIR) (Attachment A) in accordance with the California Environmental Quality Act for the Bunker Hill Urban Renewal Project, Parcel K, Q, and W-2 (Walt Disney Concert Hall Project) and find that implementation of the minor revision to the project described in Addendum No. 3 (As Amended) will not result in new or substantially more adverse significant impacts on the environment than those discussed in the EIR and the Addendum (As Amended) reflects the County's independent judgment and analysis.
2. Instruct the Chief Administrative Office to work with the Music Center and California Institute of the Arts (Cal Arts) to implement the permanent solution as identified in the attached Addendum No. 3 (As Amended) to the Final EIR.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTIONS

Approval of the recommended actions will document and implement minor revisions to the surface treatment on selected façade areas of the Walt Disney Concert Hall Founder's Room and the Cal Arts Theater Marquee.

Background

In 1991, your Board approved the Final Environmental Impact Report (EIR) and related documents for the Parcels K, Q, and W-2 of the Bunker Hill Urban Renewal Project and the Walt Disney Concert Hall Project (Project). The Project was further refined and analyzed in Addenda No. 1 and 2 adopted by your Board in 1996 and 1999 respectively. The Final EIR anticipated the use of a brushed stainless steel material on the entire façade of the Project. Based on glare analyses performed as part of the Final EIR and Addendum No. 2 to the Final EIR, it was concluded that the use of brushed stainless steel would not result in significant impacts related to a new substantial source of daytime glare. During Project development, the Founder's Room façade and the CalArts Theater Marquee were constructed using polished rather than brushed stainless steel.

In June 2003, during completion of the Walt Disney Concert Hall, it became apparent that the reflection of sunlight off the Concert Hall Founder's Room and Cal Arts Marquee caused uncomfortable glare levels and temperature increases. This glare resulted from reflection off the polished stainless steel.

In July 2003, the County retained the services of Sapphos Environmental, Inc., and their sub-consultant, Schiler and Associates to work in cooperation with Frank O. Gehry and Associates, project architects, to identify solutions that reduced glare from selected surfaces of the Founder's Room and the Cal Arts Theater Marquee to a level consistent with the glare analysis contained in the Final EIR and Addendum No. 2 to the Final EIR prepared by the County in 1999. In addition, the study analyzed the glare associated with the four intersections proximate to the Concert Hall to determine the presence of reflections that could affect vehicular and pedestrian traffic. An initial assessment resulted in an interim solution of a grey mesh fabric being placed over selected areas of the Founder's Room that generate glare and radiant heat in excess of the allowable levels specified in the EIR.

Recommended Permanent Solution

In order to identify options for a permanent solution, the sub-consultant developed a multi-dimensional simulation model of the levels and characteristics of the glare off the Concert Hall exterior surfaces throughout the year. The model analyzed the data in the context of three levels of glare that are generally recognized and defined as:

- veiling reflections which refers to glare that is objectionable primarily because it obscures desired information;
- discomfort glare which refers to glare that is found objectionable by the viewer but does not cause any physical damage; and
- disability glare which ranges from causing temporary incapacity to permanent eye damage

The model and analysis concluded that the Concert Hall exterior was producing a discomfort glare sufficient to require revisions to selected areas of the finished surface to reduce the glare to the levels analyzed in the EIR.

Proposed Environmental Addendum

Addendum No. 3 (As Amended) to the Final EIR describes and analyzes a permanent solution consisting of handheld sanding techniques applied to selected panels much like the primary finish of the main concert hall. It is anticipated that the sanding will be implemented over a four to six week period and be completed by June 2005. The work will be done under separate contracts by the Music Center and Cal Arts.

Implementation of Strategic Plan Goal

Your Board's approval of Addendum No. 3 (As Amended) to the Final EIR will strengthen the County's fiscal responsibility through managing effectively the resources we have and investing in public infrastructure.

FISCAL IMPACT/FINANCING

The proposed permanent solution related to the glare and radiant heat resulting from the polished exterior stainless steel panels of the Founder's Room is estimated to cost \$90,000. The Founder's Room permanent solution will be implemented and funded by the Music Center.

The Cal Arts Theater Marquee solution will be implemented and funded by the California Institute of the Arts.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Addendum No. 3 (As Amended) to the Final EIR authorizes specified modifications to selected facades of the Founder's Room and the CalArts Theater Marquee. Addendum No. 3 (As Amended) to the Final EIR materials which constitute the record of proceedings upon which the County will rely in the decision making process are on file at the County of Los Angeles Chief Administrative Office, 500 West Temple Street, Los Angeles, CA 90012.

Honorable Board of Supervisors
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CONTRACTING PROCESS

Not Applicable.

IMPACT ON CURRENT SERVICES

Not Applicable.

NEGATIVE DECLARATION/ENVIRONMENTAL IMPACT REPORT

Addendum No. 3 (As Amended) to the Final EIR concludes that the modifications to the selected surfaces necessary to reduce the level of glare to that anticipated by the Final EIR and Addendum No. 2 to the Final EIR are minor, and that none of the conditions described in Section 15162 of the State of California Environmental Quality Act Guidelines are applicable, and that implementation of the modifications would not result in new or substantially more adverse significant impacts to the environment than those discussed in the Final EIR.

CONCLUSION

It is requested that the Executive Officer-Clerk of the Board return conformed copies of the Board's action to County Counsel (1 copy) and the Chief Administrative Office Capital Projects Division (4 copies) for distribution.

Respectfully submitted,



DAVID E. JANSSEN
Chief Administrative Officer

DEJ:JSE
DJT:DKM:mdc

Attachment (1)

c: County Counsel
Music Center
California Institute of the Arts

*Addendum No. 3 (As Amended) to the Final Environmental Impact Report
Parcels K, Q, and W-2, Bunker Hill Urban Renewal Project
(Walt Disney Concert Hall)
State Clearinghouse Number 87032506*



*Prepared for:
County of Los Angeles
Chief Administrative Office
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*Prepared by:
Sapphos Environmental, Inc.
133 Martin Alley
Pasadena, CA 91105*

February 2, 2005

AMENDMENT TO ADDENDUM NO. 3 TO THE FINAL EIR

A.1 INTRODUCTION

The County of Los Angeles Chief Administrative Office (CAO) prepared this Amendment to Addendum No. 3 to the Final Environmental Impact Report (EIR) for Parcels K, Q, and W-2 of the Bunker Hill Urban Renewal Project to assess the potential for changes in the method used for surface treatment to substantially alter the assessment of environmental impacts. The CAO retained the services of Sapphos Environmental, Inc. and their subconsultant, Schiler and Associates, to work in cooperation with Gehry and Associates to analyze methods for reducing glare from selected surfaces of the Founder's Room and CalArts Theater Marquee to the level specified in the Final EIR. The environmental analysis undertaken in Addendum No. 3 to the Final EIR was based on mobilizing heavy equipment within the footprint of the Walt Disney Concert Hall and sandblasting selected surfaces of the Founder's Room and CalArts Theater Marquee. Subsequent to the completion of the environmental analysis, Gehry and Associates requested the evaluation of an alternate method of treating the selected surfaces with handheld sanders, rather than sandblasting. Schiler and Associates determined that handheld sanding would be equivalent to or slightly better than the sandblasted surface originally considered in Addendum No. 3 to the Final EIR. In addition, the proposed sanded surface is aesthetically more pleasing and less expensive.

A.2 BACKGROUND

The Community Redevelopment Agency of the City of Los Angeles (CRA) and the County of Los Angeles (County) certified the Final EIR for Parcels K, Q, and W-2 of the Bunker Hill Urban Renewal Project and approved the project.^{1,2,3} The project was further refined and analyzed in Addendum No.1

¹ County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles. 1991. *Final Environmental Impact Report, Findings of Fact, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations for the First Street Properties Project, Development Parcels K, Q, and W-2*. Prepared by: Michael Brandman Associates, 15901 Red Hill Avenue, Suite 200, Tustin, CA 92780. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

² County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles. 1991.

³ County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles. 1991.

to the Final EIR,^{4,5} which was adopted by the County Board of Supervisors in 1996, and again in Addendum No. 2 to the Final EIR,⁶ which was adopted by the County Board of Supervisors in 1999.

The Final EIR anticipated the use of a brushed stainless steel material on the entire facade of the Walt Disney Concert Hall. Based on glare analyses performed as part of the Final EIR⁷ and Addendum No. 2 to the Final EIR,⁸ the County concluded that the use of brushed stainless steel would not result in significant impacts to aesthetics related to a new substantial source of daytime glare.

During project development, the facades of the Founder's Room facade and CalArts Theater Marquee were constructed using polished stainless steel. The County and Walt Disney Concert Hall I, Inc. received feedback from the tenants of the Promenade Towers, located immediately to the northwest of Walt Disney Concert Hall, that reflections of sunlight off the Founder's Room in the afternoon hours were causing uncomfortable glare levels and temperature increases inside the units on the southeast side of the apartment complex.⁹

The CAO retained the services of Sapphos Environmental, Inc. to prepare Addendum No. 3 to the Final EIR to identify reflective surfaces and recommend measures to reduce glare to the level recommended by the Final EIR and Addendum No. 2 to the Final EIR. The Disney Hall Glare Study¹⁰ undertaken in support of Addendum No. 3 to the Final EIR demonstrates the technological engineering and social feasibility of an interim and permanent solution. The placement of a gray mesh outdoor fabric on surfaces that caused focused reflection was identified as a feasible interim solution and was implemented by the County in October 2003. Brushing the stainless steel through sandblasting or a comparable mechanism was identified as a feasible solution for permanent treatment of the surfaces causing focused reflection. This treatment was determined to provide the same level of glare recommended by the Final EIR and Addendum No. 2 to the Final EIR.

⁴ County of Los Angeles. August 1996. *Addendum No. 1 to the Final Environmental Impact Report for the First Street Properties Project County Parking Lots 16, 17, and 26 Bunker Hill Urban Renewal Project Parcels K, Q, and W2*. Prepared by: County of Los Angeles Chief Administrative Office, 754 Kenneth Hahn Hall of Administration, Los Angeles, CA 90012. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

⁵ County of Los Angeles. 5 August 1996. Letter to Honorable Board of Supervisors, County of Los Angeles, 383 Kenneth Hahn Hall of Administration 500 West Temple Street, Los Angeles, CA 90012. Subject: Approval of Addendum to the Final Environmental Impact Report for the First Street Properties Project and Adoption of the Parking Management and Monitoring Program for the First Street Properties Project (Supervisorial District 1). Prepared by: Interim Chief Administrative Officer, County of Los Angeles. Prepared for: County of Los Angeles Board of Supervisors.

⁶ County of Los Angeles. 14 June 1999. *Addendum No. 2 to the Final Environmental Impact Report for the First Street Properties Project Bunker Hill Urban Renewal Project, Parcels K, Q, and W-2*. Prepared by: County of Los Angeles Department of Public Works, 900 South Fremont Avenue, Alhambra, CA 91803-1331. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

⁷ County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles. 1991.

⁸ County of Los Angeles. 14 June 1999.

⁹ Adams & Au Coin, LLP Attorneys at Law. 2 July 2003. Letter to Walt Disney Concert Hall I, Inc. (Jack Burnell, President and COO), Re: Promenade Owners Association. 2566 Overland Avenue, Suite 730, Los Angeles, CA 90064.

¹⁰ Schiler and Associates. 2004. *Disney Hall Glare Study*. Contact: Schiler and Associates, 1677 East Mountain Street, Pasadena, CA 91104.

Prior to consideration of Addendum No. 3 to the Final EIR by the County Board of Supervisors, Gehry and Associates identified handheld sanding techniques as an equally effective method of treatment. The process of sandblasting the surfaces could present several difficulties in terms of the equipment, and especially, the process. Safe equipment access to some of the higher curved surfaces on the Founder's Room could be difficult. The spent abrasive was required to be controlled and collected. The slightest breeze could cause dispersion into areas occupied concurrently by the public. Sealing off the work area and/or the public spaces could be complicated by the convoluted nature of the building; although this is possible, it would be expensive. As a result, Gehry and Associates discovered alternatives by using handheld sanding techniques that would be less expensive but comparable in outcome.

This Amendment to Addendum No. 3 to the Final EIR provides a description of the technical analysis performed to consider the effectiveness of surface treatment with handheld sanders and the potential for the alternative method to substantially alter the environmental analysis. The analysis of the effectiveness of the alternative treatment method to reduce glare was qualitatively and quantitatively evaluated by Schiler and Associates.¹¹

A.3 ANALYSIS OF ALTERNATE SURFACE TREATMENT AND RESULTS

A.3.1 Scope

Alternate methods for treating selected surfaces of the Founder's Room and CalArts Theater Marquee were evaluated. As indicated in the Disney Hall Glare Study, the polished stainless steel surfaces of the Founder's Room and CalArts Theater Marquee require treatment to reduce glare experienced in selected residential units within the Promenade Towers. Through simulation modeling, the surfaces requiring treatment have been illustrated in Addendum No. 1 to the Disney Hall Glare Study. The original Disney Hall Glare Study was amended to include an evaluation of potential alternative methods of treating the polished stainless steel to reduce glare. Five possible methods of handheld sanding for treating selected surfaces of the Founder's Room and the CalArts Theater Marquee were considered. The methods were reviewed by Schiler and Associates, and the results of the implementation of these methods were discussed with representatives of Gehry and Associates in order to determine the most cost-efficient and safe method.

A.3.2 Treatment Methods

Six methods of handheld sanding were physically tested and analyzed using either orbital or vibration motions with 100 or 220 grit, or a combination of the two:

1. Vibration sanding with 220 grit
2. Orbital sanding with 220 grit
3. Vibration sanding with 100 grit
4. Orbital sanding with 100 grit
5. Combined vibration sanding at 100 grit followed by orbital sanding at 100 grit (or coarser)
6. Combined vibration sanding at 220 grit followed by orbital sanding at 220 grit

¹¹ Schiler and Associates. 14 January 2005. *Disney Hall Glare Study Amendment No. 1: Alternate Surface Treatment*. Contact: Schiler and Associates, 1677 East Mountain Street, Pasadena, CA 91104.

Vibration Sanding with 220 Grit

Vibration sanding was tested with 220 grit. The results of testing demonstrated that this method reduces the glare only slightly but reduces the specularity substantially (94–98 percent). This method resulted in defocusing the reflected direct beam sunlight. The resulting surface was uniform, and the resultant grain of the surface was similar to that of the brushed stainless steel found on the rest of the Walt Disney Concert Hall. There were no spots on the surface that were more specular than the rest of the building surfaces.

Orbital Sanding with 220 Grit

Orbital sanding was tested with 220 grit. The results of testing demonstrated that this method reduces the glare only slightly but reduces the specularity substantially (83–96 percent). This method resulted in defocusing the reflected direct beam sunlight. The resulting surface was not uniform and had a faint pattern to the surface texture, with some areas strongly affected and some areas specular. The method was as safe as the vibration sanding but was aesthetically more effective than uniform vibration sanding.

Combined Vibration Sanding at 220 Grit followed by Orbital Sanding at 220 Grit

A combination of vibration sanding and orbital sanding was tested as a treatment method. Vibration sanding at 220 grit was used first to produce a uniform surface with no specularity. This method would require care on the part of the equipment operator. Orbital sanding at 220 grit was applied over the first method, which resulted in the depth and sparkle inherent in the orbital sanding. Parts of the surface that were not disturbed retained the safety of the vibration sanding. The combined method provided both the safety of the vibration sanding and the aesthetic depth and pattern produced by orbital sanding. The resultant surface was sparkled, without focusing any direct beam sunlight. The testing concluded that the combined procedure was aesthetically feasible and less expensive than the sandblasting technique originally considered in Addendum No. 3 to the Final EIR.

Vibration Sanding with 100 Grit

Vibration sanding was tested with 100 grit. The results of testing demonstrated that this method reduces the glare only slightly but reduces the specularity substantially (96–97 percent). This method resulted in defocusing the reflected direct beam sunlight. The resulting surface was uniform but more sparkled than the surface resulting from vibration sanding with 220 grit. This method resulted in surfaces that were more grainy and produced more individual reflections from minute disturbances inherent in the rougher surface. There was no portion of the surface that was more dangerous than the rest.

Orbital Sanding with 100 Grit

Orbital sanding was tested with 100 grit. The results of testing demonstrated that this method reduces the glare only slightly but reduces the specularity substantially (94–97 percent). This method resulted in defocusing the reflected direct beam sunlight. The resulting surface was not entirely uniform, and it had a strong pattern in the texture, with some areas strongly affected and some areas specular. The method was not as safe as vibration sanding. This method gave the surface an appearance of “depth,” which comes from increased graininess and the individual reflections from the minute disturbances inherent in the rougher surface. This solution was aesthetically more effective than the uniform vibration sanding.

Combined Vibration Sanding at 100 Grit followed by Orbital Sanding at 100 Grit (or Coarser)

A combination of vibration sanding and orbital sanding was tested as a treatment method. Vibration sanding at 100 grit was used first to produce a uniform surface with no specularly. This method would require care on the part of the equipment operator. Orbital sanding at 100 grit was applied over the first method, which resulted in the depth and sparkle inherent in the orbital sanding. Parts of the surface that were not disturbed retained the safety of the vibration sanding. The orbital sanding could be done with an even coarser grit. The combined method provided both the safety of the vibration sanding and the aesthetic depth and pattern produced by orbital sanding. The resultant surface was sparkled, without focusing any direct beam sunlight. The testing concluded that the combined procedure was aesthetically feasible and less expensive than the sandblasting technique originally considered in Addendum No. 3 to the Final EIR.

A.3.3 Long-Term Impact of Weathering on Selected Panels

There were no tests performed to predict any change in the long-term behavior of the stainless steel after surface treatment. There could be some degradation in the weathering performance of the stainless steel, but this would only decrease reflectance and specularly, resulting in a lower likelihood of glare. It would also have been inherent in any sandblasting treatment.

A.3.4 Results

The combined vibration sanding at 220 grit followed by orbital sanding at 220 grit was aesthetically preferable because it was as effective as and less expensive than the sandblasting treatment originally considered in Addendum No. 3 to the Final EIR. Therefore, the environmental analysis contained in Addendum No. 3 to the Final EIR was reconsidered in light of the potential use of handheld sanders to treat selected surfaces of the Founder's Room and CalArts Theater Marquee.

A.4 COMPARATIVE ENVIRONMENTAL ANALYSIS

A.4.1 Land Use and Zoning

Testing of the handheld sanding treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee indicates that all staging would be completed within the footprint of the Walt Disney Concert Hall. Site testing conducted by Gehry and Associates demonstrated that the handheld sanding method would be expected to minimize disruption to ongoing operations and maintenance activities at the Walt Disney Concert Hall. The environmental consequences to the land use and planning from handheld sanding would remain the same as specified in the Final EIR and Addendum No. 2 to the Final EIR.

A.4.2 Transportation

As with sandblasting, the equipment required to support treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would be staged within the footprint of the Walt Disney Concert Hall. Therefore, there would be no impacts to traffic and circulation beyond those identified in the Final EIR and Addendum No. 2 to the Final EIR. Consistent with the analysis of sandblasting in Addendum No. 3 to the Final EIR, the use of handheld sanders would not impact traffic or circulation.

A.4.3 Air Quality

As with sandblasting, the emissions from treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would not exceed or substantially increase the levels of construction emissions analyzed in the Final EIR and Addendum No. 2 to the Final EIR. The analysis of the alternative treatment methods demonstrated that the use of handheld sanders would minimize the dust and allow the dust to be contained in the immediate vicinity of the work area. Therefore, the effects of handheld sanding on air quality would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.4 Public Services and Utilities

As with sandblasting, the equipment used to treat selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would be located within a secured area of the Walt Disney Concert Hall. Therefore, there would be no impacts to public services and utilities beyond those identified in the Final EIR and Addendum No. 2 to the Final EIR. Therefore, the effects of handheld sanding on public services and utilities would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.5 Energy Conservation

As with sandblasting, the energy consumption for treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would not exceed or substantially increase the levels of consumption of electricity and vehicular gasoline analyzed in the Final EIR and Addendum No. 2 to the Final EIR. The analysis of the alternative treatment methods demonstrated that the manual method of handheld sanding would minimize the use of electricity and vehicular gasoline and allow energy conservation. Therefore, the effects of handheld sanding on energy conservation would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.6 View Analysis

As with sandblasting, the treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would reduce glare to the level specified in the Final EIR and Addendum No. 2 to the Final EIR. Site testing conducted by Gehry and Associates demonstrated that the handheld sanded surface would be equivalent to or slightly better than the sandblasted surface. Therefore, the effects of handheld sanding on view, light, and glare would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.7 Shade and Shadow

As with sandblasting, the treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would not affect the geometry or massing of the Walt Disney Concert Hall and would not exceed or substantially increase the shade and shadows cast onto surrounding areas analyzed in the Final EIR and Addendum No. 2 to the Final EIR. Site testing conducted by Gehry and Associates demonstrated that the shade and shadow resulting from handheld sanding would be equivalent to the shade and shadow resulting from sandblasting. Therefore, the effects of handheld sanding on shade and shadow would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.8 Noise

As with sandblasting, the noise levels from treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would not exceed or substantially increase the levels of construction noise analyzed in the Final EIR and Addendum No. 2 to the Final EIR. The analysis of the alternative treatment methods demonstrated that the use of handheld sanders would be expected to minimize the noise and disruption to ongoing operations and maintenance activities at the Walt Disney Concert Hall. Therefore, the effects of handheld sanding on noise would not differ significantly from that analyzed in Addendum No. 3 to the Final EIR.

A.4.9 Socioeconomic

As with sandblasting, the treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would not induce socioeconomic growth or involve construction of any new infrastructure. Therefore, there would be no impacts to socioeconomics beyond those identified in the Final EIR and Addendum No. 2 to the Final EIR. Consistent with the analysis of sandblasting in Addendum No. 3 to the Final EIR, the use of handheld sanders would not impact socioeconomics.

A.5 CONCLUSIONS

The treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee with handheld sanders would result in surfaces that are equivalent to or slightly better than the sandblasted surfaces originally considered in Addendum No. 3 to the Final EIR. A review of the combined use of vibration sanding and orbital sanding indicates that the treatment of selected surfaces of the Founder's Room and CalArts Theater Marquee would not result in new significant impacts or substantially more adverse impacts than those addresses in the Final EIR or subsequent Addendum Nos. 1, 2, and 3 to the Final EIR.

*Addendum No. 3 to the Final Environmental Impact Report
Parcels K, Q, and W-2, Bunker Hill Urban Renewal Project
(Walt Disney Concert Hall)
State Clearinghouse Number 87032506*



*Prepared for:
County of Los Angeles
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August 23, 2004

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APPENDIX

- A. DISNEY HALL GLARE STUDY, AMENDMENT NO. 1: ALTERNATE SURFACE TREATMENT
- B. DISNEY HALL GLARE STUDY

SECTION 1.0 INTRODUCTION

The County of Los Angeles Chief Administrative Office prepared this Addendum No. 3 to the Final Environmental Impact Report (EIR) for Parcels K, Q, and W-2 of the Bunker Hill Urban Renewal Project to address minor revisions to surface treatment on selected areas of the facades of the Founder's Room and the CalArts Theater Marquee of the Walt Disney Concert Hall. The Promenade Owners Association notified Walt Disney Concert Hall I, Inc. of their concerns related to glare and heat from these surfaces shortly after construction of the Walt Disney Concert Hall.¹ The County of Los Angeles (County) retained the services of Sapphos Environmental, Inc. and their subconsultant, Schiler and Associates, to work in cooperation with Frank O. Gehry and Associates, project architects, to define solutions to reduce glare from selected surfaces of the Founder's Room and the CalArts Theater Marquee to a level consistent with the glare analysis contained in the Final EIR and Addendum No. 2 to the Final EIR. An earlier Addendum No. 1 to the Final EIR primarily addressed the configuration of parking.

The California Environmental Quality Act (Public Resources Code, Division 13, §21002.1) requires that an EIR be prepared for projects that may have a significant effect on the environment. If changes to a project, which are not considered substantial (CEQA Guidelines §15162), are necessary after an EIR has been certified, the California Environmental Quality Act (CEQA) provides that an addendum to the EIR may be prepared documenting the minor technical changes or additions to the project (CEQA Guidelines §151624(a)).

1.1 BACKGROUND

In 1991, the County and the Community Redevelopment Agency of the City of Los Angeles (CRA) certified the Final EIR for Parcels K, Q, and W-2 of the Bunker Hill Urban Renewal Project and approved the project.^{2,3,4} The approved project was further refined and analyzed in Addendum No. 1

¹ Adams & Au Coin, LLP Attorneys at Law, 2 July 2003. Letter to Walt Disney Concert Hall I, Inc. (Jack Burnell, President and COO), Re: Promenade Owners Association. Contact: 2566 Overland Avenue, Suite 730, Los Angeles, CA 90064.

² County of Los Angeles and Community Redevelopment Agency, 1991. Final Environmental Impact Report, Findings of Fact, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations for the First Street Properties Project, Development Parcels K, Q, and W-2. Prepared by: Michael Brandman Associates, 15901 Red Hill Avenue, Suite 200, Tustin, CA 92780. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

³ County of Los Angeles and Community Redevelopment Agency, 1991.

⁴ County of Los Angeles and Community Redevelopment Agency, 1991.

to the Final EIR,^{5,6} adopted by the County Board of Supervisors in 1996 and again in Addendum No. 2 to the Final EIR,⁷ adopted by the County Board of Supervisors in 1999.

The Final EIR anticipated the use of a brushed stainless steel material on the entire facade of the Walt Disney Concert Hall. Based on glare analyses performed as part of the Final EIR⁸ and Addendum No. 2 to the Final EIR, the County concluded that the use of brushed stainless steel would not result in significant impacts to aesthetics related to a new substantial source of daytime glare.

During project development, the Founder's Room facade and the CalArts Theater Marquee were constructed using polished stainless steel. In July 2003, the County and Walt Disney Concert Hall I, Inc. received feedback from the tenants of the Promenade Towers, located immediately to the northwest of Walt Disney Concert Hall, that reflections of sunlight off the Founder's Room in the afternoon hours were causing uncomfortable glare levels and temperature increases inside the units on the southeast side of the apartment complex⁹ (Figure 1.1-1, *Glare Reflections on Promenade Towers*). The County performed glare analyses on the Founder's Room facade and the Hope Street and Second Street elevations. An analysis of radiant heat gain was performed in the street area in front of the CalArts Theater Marquee. As a result of the glare study, the County placed a gray mesh fabric over the identified sources of glare and radiant heat as an interim solution and recommended brushing selected surfaces (comparable to the primary finish of the main concert hall) or applying a permanent film as permanent solutions. The County has determined that the modifications to the selected surfaces necessary to reduce the level of glare to that anticipated by the Final EIR and Addendum No. 2 to the Final EIR are minor and that none of the conditions described in Section 15164 fo the State CEQA Guidelines are applicable; these recommendations are the subject of this Addendum No. 3 to the Final EIR.

⁵ County of Los Angeles, August 1996. Addendum No. 1 to the Final Environmental Impact Report for the First Street Properties Project County Parking Lots 16, 17, and 26 Bunker Hill Urban Renewal Project Parcels K, Q, and W2. Prepared by: County of Los Angeles Chief Administrative Office, 754 Kenneth Hahn Hall of Administration, Los Angeles, CA 90012. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

⁶ County of Los Angeles, 5 August 1996. Letter to Honorable Board of Supervisors, County of Los Angeles, 383 Kenneth Hahn Hall of Administration 500 West Temple Street, Los Angeles, CA 90012. Subject: Approval of Addendum to the Final Environmental Impact Report for the First Street Properties Project and Adoption of the Parking Management and Monitoring Program for the First Street Properties Project (Supervisory District 1). Prepared by: Interim Chief Administrative Officer, County of Los Angeles. Prepared for: County of Los Angeles Board of Supervisors.

⁷ County of Los Angeles, 14 June 1999. Addendum No. 2 to the Final Environmental Impact Report for the First Street Properties Project Bunker Hill Urban Renewal Project, Parcels K, Q, and W-2. Prepared by: County of Los Angeles Department of Public Works, 900 South Fremont Avenue, Alhambra, CA 91803-1331. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

⁸ County of Los Angeles and Community Redevelopment Agency, 1991.

⁹ Adams & Au Coin, LLP Attorneys at Law, 2 July 2003.



SOURCE: Schiler and Associates



FIGURE 1.1-1
Glare Reflections on Promenade Towers

1.1.1 1991 Certification of Final EIR

In the Final EIR for the Bunker Hill Urban Renewal Project Area, which was certified in 1973, expansion of cultural facilities on the proposed Walt Disney Concert Hall site was contemplated. From 1986 through 1991, the County and the CRA circulated three subsequent site-specific Draft EIRs for the proposed development of Parcels K, Q, and W-2. These Draft EIRs were revised in response to information and comments received and revisions to the project description. In 1991, the County Board of Supervisors and the CRA certified the Final EIR for Parcels K, Q, and W-2 Bunker Hill Urban Renewal Project and approved the project.^{10,11,12} A summary of the anticipated area of development is provided in Table 1.1.1-1, *1991 Approved Project Development Summary*.

**TABLE 1.1.1-1
1991 APPROVED PROJECT DEVELOPMENT SUMMARY**

Parcel (Area)	Use	Net Floor Area	Floor Area Ratio ^a
K (± 158,273 square feet)	Concert Halls (3,500 seats) Office (19,100 square feet) ^b Ballroom(s) (22,500 square feet) ^b Meeting Rooms (5,960 square feet) ^b Gift Shop Retail Restaurant	NA	NA ^c
	400-Room Hotel (321,200 square feet) ^b Retail (50,000 square feet) ^b Office (8,800 square feet) ^b 41 ± Floors	380,000 square feet ^b	2.40:1
Q (± 160,871 square feet)	Commercial Office(1,335,755 square feet) ^b Retail (50,000 square feet) ^b 65 ± Floors	1,385,755 square feet ^b	8.6:1
W-2 (± 87,816 square feet)	Existing Parking Facilities (No New Development Proposed)	0	0

^a FAR (Floor Area Ratio) is the net square footage of a building divided by the total buildable area of the site.

^b Approximate square footage defined for the purpose of completing the environmental analysis

^c The Walt Disney Concert Hall facilities are exempt from FAR requirements.

Prior to certification of the Final EIR, the CRA and the County circulated three versions of the Draft EIR for the project. The first version of the Draft EIR was circulated in February 1988. A second version of the Draft EIR was circulated in March 1989. A Revised Draft EIR that updated information provided in the earlier version was circulated in May 1990. The May 1990 version included a refined project description and incorporated and evaluated the more specifically defined development elements of the Walt Disney Concert Hall facilities and its related functions on Parcel K. The Final EIR consisted of the Draft EIR (including comments and responses to the March 1989 Draft EIR as an attachment) and

¹⁰ County of Los Angeles and Community Redevelopment Agency, 1991.

¹¹ County of Los Angeles and Community Redevelopment Agency, 1991.

¹² County of Los Angeles and Community Redevelopment Agency, 1991.

letters of comment, a complete transcript of testimony at the public hearing on the Draft EIR, and responses to those comments on the Draft EIR.

1.1.2 Adoption of Addendum No. 1 to the Final EIR

The approved project was further refined and analyzed in Addendum No. 1 to the Final EIR,^{13,14} adopted by the County Board of Supervisors in 1996.

As discussed in Addendum No. 1 to the Final EIR, construction of the Walt Disney Concert Hall and 400-room hotel was postponed, pending additional funding from Walt Disney Concert Hall benefactors and an increase in the demand for commercial office and hotel space in the area. Following certification of the Final EIR, the County determined that there were no parties immediately interested in development of the office or hotel elements of the approved project. In addition, construction of the Walt Disney Concert Hall element, originally envisioned as the first phase, was delayed. The need to secure additional funding led to the formation of a non-profit organization. The County Board of Supervisors considered Addendum No. 1 to the Final EIR for the First Street Properties Project and adopted the Parking Management and Monitoring Program for the First Street Properties Project. Addendum No. 1 to the Final EIR addressed the following changes to the Final EIR project description:

- Postponement of the construction of the Walt Disney Concert Hall, 400-room hotel, and 65-story office building on Parcels K and Q
- The anticipated construction of the Walt Disney Concert Hall, 400-room hotel, and the 65-story office building to occur in separate phases over a period of years
- A reduction in the project's total on-site parking supply from 4,958 spaces, as originally contemplated in the Final EIR, to 4,234 spaces as a result of a fewer number of parking spaces actually constructed in the Walt Disney Concert Hall garage (2,334 spaces rather than 3,057 spaces).

Addendum No. 1 to the Final EIR defined the project as subsequently approved by the County Board of Supervisors to reflect a construction program in four separate phases:

- Phase I – Walt Disney Concert Hall garage, which was completed and placed in operation in April 1996 with 2,334 spaces
- Phase II – Walt Disney Concert Hall with related office and retail space on Parcel K
- Phase III – The 400-room hotel with related commercial office, retail, and restaurant space on Parcel K
- Phase IV – The 65-story commercial office building with subsurface parking and related retail space on the southern portion of Parcel Q

As documented in Addendum No. 1 to the Final EIR, the Walt Disney Concert Hall garage was designed for 724 fewer spaces than analyzed in the approved project. The reduction from 4,958 spaces identified for Parcels K, Q, and W-2 in the Final EIR to 4,234 spaces represented a 14.6 percent

¹³ County of Los Angeles, August 1996.

¹⁴ County of Los Angeles, 5 August 1996.

reduction in parking from the approved project, as described in Table 1.1.2-1, *1996 Approved Parking Allocation Summary*.

**TABLE 1.1.2-1
1996 APPROVED PARKING ALLOCATION SUMMARY**

Parcel	Proposed Use	On-Site Parking	Off-Site Parking
K	Concert Facilities (Staff and Artists)	273	
	Commercial Office and Retail	55	4
	Available for Visitors--Concert Hall	684	
	Available for Visitors--Hotel	158	
	Los Angeles County	519	
	Non-Exclusive Public Parking	645	
	Subtotal Parcel K	2,334	4
Q	Office	800	535
	Retail Commercial	50	
	Los Angeles County Replacement	650	645 ^a
	Subtotal Parcel Q	1,500	1,180
W-2	Los Angeles County Replacement	400	----
	Subtotal Parcel W-2	400	0
TOTAL		4,234	1,184

^a Existing County employee parking to be displaced, which may be partially eliminated pending Transportation Management actions by the County

Construction of the partial Walt Disney Concert Hall garage was completed and became operational on April 1, 1996. The approved Parking Plan, which includes construction of Level 1 as part of the Walt Disney Concert Hall and reconfiguration of Level 2, can accommodate up to 2,504 parking spaces. The partially completed Walt Disney Concert Hall garage is currently striped as a park-and-lock facility to accommodate a total of 2,334 vehicles, and it includes adequate space for handicapped parking. Up to 1,200 parking spaces are allocated for juror use during the day. There are 200 parking spaces being used by Aames employees and an additional 200 parking spaces allocated for the public on a first come, first serve basis.

1.1.3 1999 Adoption of Addendum No. 2 to the Final EIR

The approved project was further refined and analyzed in Addendum No. 2 to the Final EIR.¹⁵ Addendum No. 2 to the Final EIR addressed recommended project modifications resulting from completion of preliminary design documents for the Walt Disney Concert Hall¹⁶ and a conceptual design for the CalArts Theater,¹⁷ the need to conform to the available budget, and the need to be responsive to the operational needs identified by the Los Angeles Philharmonic Association (LAPA).

¹⁵ County of Los Angeles, 14 June 1999.

¹⁶ Frank O. Gehry & Associates, Inc., 24 July 1998. Project Description for Walt Disney Concert Hall. Produced by: Frank O. Gehry and Associates, Inc., 12541 Beatrice Street, Los Angeles, CA 90066-70001.

¹⁷ Frank O. Gehry & Associates, Inc., 4 September 1998. Roy and Edna Disney CalArts Theater Schematic Design. Produced by: Frank O. Gehry and Associates, Inc., 12541 Beatrice Street, Los Angeles, CA 90066-70001.

Specifically, Addendum No. 2 to the Final EIR analyzed the following project refinements:

- Elimination of the 1,000-seat Chamber Music Hall
- Elimination of the hotel from Parcel K for potential future development in Parcel Q
- Miscellaneous programmatic changes (room, sizes, and locations) on Parcel K
- Reduction in number of concert hall seats
- Modification of portions of the exterior surface of Walt Disney Concert Hall from polished limestone to brushed stainless steel or titanium
- Adjustment of Walt Disney Concert Hall and back-of-house siting on Parcel K
- Addition of CalArts Theater complex within the Walt Disney Concert Hall parking area on Parcel K
- Modifications to the parking plan/count with a net reduction of 146 parking spaces from the 1996 Approved Parking Allocation
- Philharmonic space redesign (office use) on Parcel K
- Modifications to the landscaping plan for Walt Disney Concert Hall

A summary of the quantitative factors related to the above project refinements is described in Table 1.1.3-1, *1999 Refined Project Development Summary*. Table 1.1.3-1 reflects those project elements that have been modified since adoption of Addendum No. 2 to the Final EIR.

**TABLE 1.1.3-1
1999 REFINED PROJECT DEVELOPMENT SUMMARY**

Parcel	Project Element	Final EIR	Addendum No. 1 to EIR	Addendum No. 2 to EIR
K	Concert Hall Seating Count	3,500 seats	3,500 seats	2,293 seats
	Office	19,100 square feet	19,100 square feet	4,510 square feet
	LAPA Center (including Roof Terrace)	unspecified	unspecified	21,734 square feet
	Ballroom(s)	22,500 square feet	22,500 square feet	eliminated
	Concert Hall: Entertainment Space, Support Facilities, and Reception Area ^a	110,713 square feet ^a	110,713 square feet ^a	223,549 square feet ^b
	Amphitheater ^c	unspecified	unspecified	3,600 square feet
	CalArts Theater ^d	unspecified	unspecified	25,835 square feet
	Meeting Rooms	5,960 square feet	5,960 square feet	eliminated
	Gift Shop, Retail, and Restaurant	unspecified	unspecified	11,755 square feet
	Other Exterior Space ^e	unspecified	unspecified	72,519 square feet
	400-Room Hotel	321,200 square feet	321,200 square feet	eliminated
	Hotel Retail	50,000 square feet	50,000 square feet	eliminated
	Hotel Office	8,800 square feet	8,800 square feet	eliminated
	Parking ^f	3,057 spaces	2,334 spaces	2,188 spaces
Q	Commercial Office ^g	1,335,755 square feet	1,335,755 square feet	no change
	Retail ^g	50,000 square feet	50,000 square feet	no change
	Parking ^g	1,500 spaces	1,500 spaces	no change
W-2	Parking	400 spaces	400 spaces	no change
Total Square Feet		1,924,028	1,924,028	1,749,257

^a Square footage for the Walt Disney Concert Hall element of the Final EIR and Addendum No.1 excludes the Ballroom, Meeting Rooms, and Office Space, which are either eliminated or reduced as part of the refined project (see Section 2, Project Description). The Final EIR estimates approximately 158,273 square feet for the Walt Disney Concert Hall.

^b The 191,549 square feet includes the Ticket Office; Auditorium Seating Area; Under Stage and Storage; Rehearsal and Studio Dressing Room; Backstage Reception; Backstage Areas (including storage and percussion room); Choral Room; Ensemble Room, Green Room; Technical Rooms; Preconcert Area; Main Lobby; Orchestra Lobby; Balcony Lobby; Founder's Room; Gallery Lobby; and Mechanical/Storage Room.

^c The proposed amphitheater accommodates 300 seats.

^d The proposed CalArts Theater accommodates up to 266 seats.

^e Includes Exterior North Plaza, Exterior Balcony and Exit, Founder's Room Exterior Garden, Garden Lobby, and Garden Site

^f The Final EIR indicated that the County operated 2,678 parking spaces in parcels K, Q, and W-2. Work undertaken on Addendum No. 1 to the Final EIR documented a total of 2,214 surface and structure public parking spaces (464 spaces fewer than the original estimate) in facilities on parcels K, Q, and W-2.

^g Not part of the current proposed construction; may be undertaken in the future and may include development of the Hotel element from Parcel K.

Sources: County of Los Angeles and Community Redevelopment Agency, 1991.
County of Los Angeles, August 1996.

Table 1.1.3-2, *1999 Refined Parking Allocation*, reflects modifications to Parcel K parking that would be required in association with the strengthening of the framing and foundations of the structure and construction of the CalArts Theater.

**TABLE 1.1.3-2
1999 REFINED PARKING ALLOCATION**

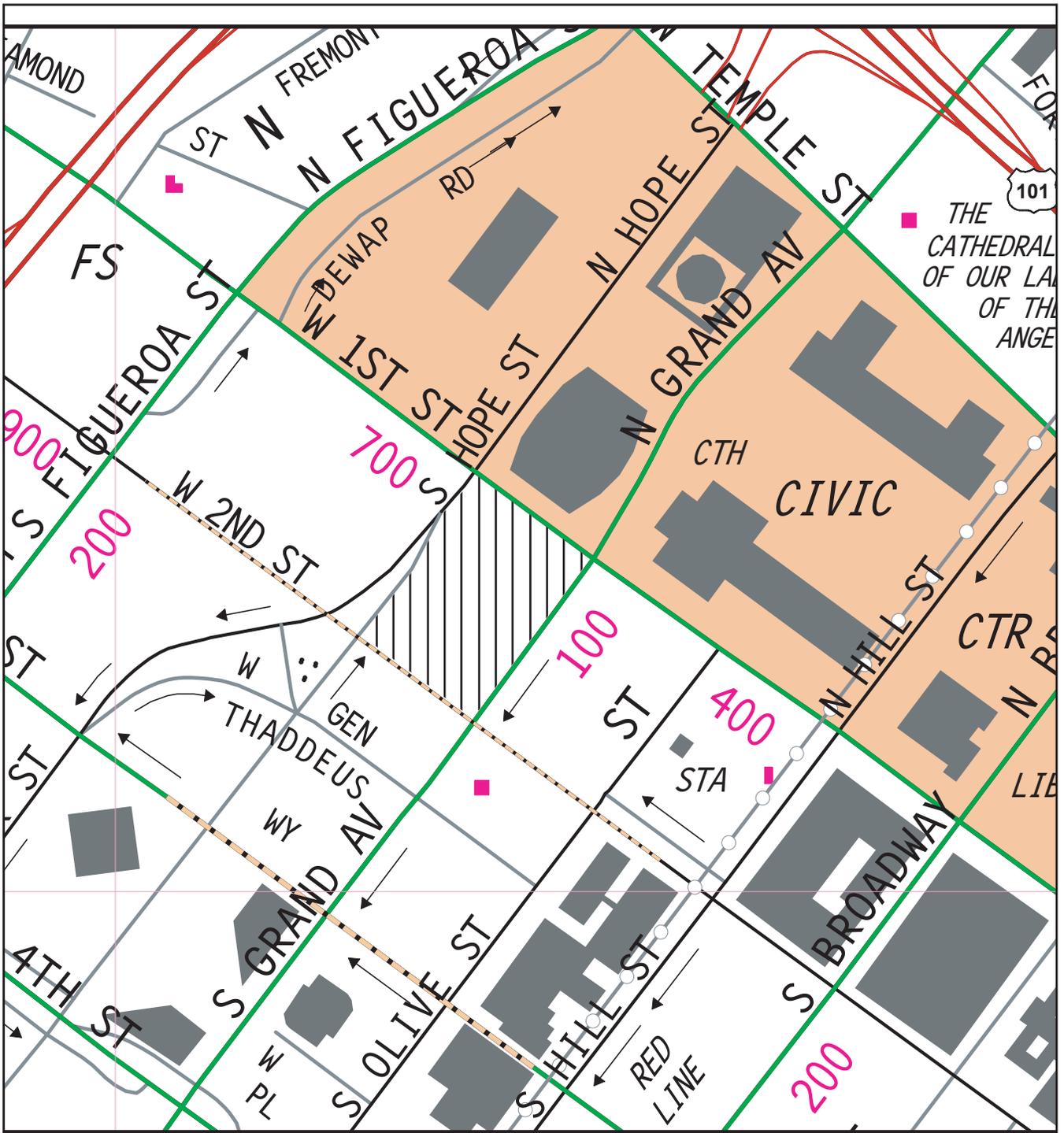
Parking Allocation Scenarios	On-Site Parking			Total On-Site Parking at Project Build-out	Off-Site Parking		
	K	Q	W-2		K	Q	W-2
Preproject (Prior to 1991) Public Parking Spaces	519	1,295	400	2,214	-NA-	-NA-	-NA-
1991 Final EIR Approved Parking Allocation	3,057	1,500	400	4,958	4	1,584	—
1996 Addendum No. 1 to the Final EIR Approved Parking Allocation	2,334	1,500	400	4,234	4	1,189	—
1996 Approved Parking Plan	2,504	1,500	400	4,404	4	1,189	—
1999 Addendum No. 2 to the Final EIR	2,188	1,500	400	4,088	4	1,189	—

Addendum No. 3 to the Final EIR is being prepared for the Lead Agency, the County of Los Angeles, designated by the State of California and as defined in Section 15367 of the CEQA Guidelines.

1.2 REFINEMENTS TO THE PROJECT DESCRIPTION

This Addendum No. 3 to the Final EIR analyzes refinements of project elements as they appear in the certified 1991 Final EIR, the 1996 Addendum No. 1 to the Final EIR, and the 1999 Addendum No. 2 to the Final EIR. The Walt Disney Concert Hall is located in downtown Los Angeles (Figure 1.2-1, *Walt Disney Concert Hall Vicinity Map*). These project modifications address the use of polished stainless steel as the finish material on the Founder’s Room (Figure 1.2-2, *Walt Disney Concert Hall Founder’s Room*) and the CalArts Theater Marquee (Figure 1.2-3, *CalArts Theater Marquee*). Portions of the surface area treated with these materials has become a source of nuisance glare and radiant heat to surrounding land uses. The glare study undertaken in support of this Addendum No. 3 to the Final EIR demonstrated the technological engineering and social feasibility of an interim and permanent solution. The placement of a gray mesh outdoor fabric on surfaces that caused focused reflection was identified as a feasible interim solution and was implemented in October 2003. Brushing the stainless steel through sandblasting or a comparable mechanism, applying a permanent film, or depositing a frit¹⁸ were identified as feasible solutions for permanent treatment of the surfaces that caused focused reflection. This solution would be implemented prior to the fall 2004 season of LAPA. The County has installed a temporary solution that will remain in place until the permanent solution is implemented. In addition to the solutions mentioned above, an overhang, an eyebrow, or a filter may be incorporated into the permanent solution for the CalArts Theater Marquee.

¹⁸ Frit is commonly a batch material composed of glass particles, pigment, and a medium. This powder is applied to a surface and heated to fuse the frit with the surface.



SOURCE: Thomas Guide 2003/2004

LEGEND

 Walt Disney Concert Hall



FIGURE 1.2-1
Walt Disney Concert Hall Vicinity Map

Founder's Room



View from Hope Street and First Street

SOURCE: Sapphos Environmental, Inc.



FIGURE 1.2-2
Walt Disney Concert Hall Founder's Room



Photo 1
View from 2nd Street and Hope Street looking northeast



Photo 2
Close-up view of Marquee

SOURCE: Sapphos Environmental, Inc.



FIGURE 1.2-3
CalArts Theater Marquee

1.3 CEQA COMPLIANCE

Pursuant to Section 15164 of the State CEQA Guidelines, an Addendum to an EIR shall be prepared by the lead agency or responsible agency if changes or additions are necessary and none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred. The decision-making body shall consider the Addendum to the Final EIR prior to making a decision on the project, and a brief explanation of the decision not to prepare a Subsequent EIR pursuant to Section 15162 should be included in an Addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the Administrative Record. The explanation must be supported by substantial evidence in the Administrative Record.

The conditions requiring a Subsequent EIR are defined in Section 15162 of the CEQA guidelines:

- Substantial changes are proposed in the project, which will require major revisions of the previous EIR due to the involvement of new significant environmental effects, or a substantial increase in the severity of previously identified significant effects.
- Substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR due to the involvement of new significant environmental effects, or a substantial increase in the severity of previously identified significant effects.
- New information of substantial importance, which was not known and could not have been known with exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - The project will have one or more significant effects not discussed in the previous EIR;
 - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
 - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternatives.

The County believes that this Addendum No. 3 to the Final EIR is consistent with the requirements of CEQA, and preparation of a Subsequent EIR is not required for the Walt Disney Concert Hall.

Construction of the 1991 project elements, as refined by the 1996 Addendum No.1 to the Final EIR and the 1999 Addendum No. 2 to the Final EIR were completed, and the Walt Disney Concert Hall opened for its inaugural season in October 2003. The mitigation measures specified in Addendum No. 2 to the Final EIR were determined to substantially conform to the 1991 Final EIR. Construction pursuant to those mitigation measures was monitored by the County Department of Public Works throughout the five-year construction project. Therefore, none of the conditions defined in Section 15162 of the State CEQA Guidelines requiring preparation of a Subsequent EIR would occur as a result

of implementation of the interim or permanent solution to resolve glare and heat from selected surfaces as described in Section 1.3 of this Addendum No. 3 to the Final EIR. Refinements to the project description do not raise important new issues about significant effects on the environment when compared to the project description analyzed in the Final EIR, Addendum No. 1 to the Final EIR, and Addendum No. 2 to the Final EIR as approved by the County Board of Supervisors.

The Final EIR evaluated impacts that would result from development of the project, as subsequently approved by the County Board of Supervisors and CRA. The Final EIR incorporated findings of the Initial Study disclosing environmental effects that would not be significantly impacted by the proposed project including:

- Earth Resources
- Water
- Plant Life
- Animal Life
- Natural Resources
- Risk of Upset
- Population
- Housing
- Human Health
- Cultural Resources

The Final EIR evaluated the potential for construction and operation of the project elements to result in significant impacts on the following environmental resources:

- Land Use
- Traffic, Circulation, and Parking
- Air Quality
- Public Services and Facilities
- Visual Impacts
- Shade and shadow
- Noise

The Final EIR made the following conclusions:

- Mitigation measures recommended for land use are capable of reducing impacts to below the level of significance.
- Mitigation measures recommended for traffic and circulation are capable of reducing impacts related to the displacement of some of the existing parking from the project site to below the level of significance.
- Mitigation measures recommended for traffic and circulation are capable of reducing impacts, under special event (matinee) conditions, on four key intersections to below the level of significance.
- Mitigation measures recommended for traffic and circulation are not capable of reducing significant cumulative impacts, under special event (matinee) conditions, on six key intersections to below the level of significance.

- Mitigation measures recommended for traffic and circulation are capable of reducing impacts related to the use of the proposed El Pueblo Garage on the operation of the Sunset/Broadway intersection to below the level of significance.
- Mitigation measures recommended for air quality are not capable of reducing short-term impacts from construction exhaust emission from equipment and fugitive dust generated from soils movement to below the level of significance.
- Mitigation measures recommended for air quality are not capable of reducing long-term impacts of emissions from mobile sources to below the level of significance.
- Mitigation measures recommended for public services and utilities are not capable of reducing impacts on police services to below the level of significance.
- Mitigation measures recommended for public services and utilities are capable of reducing impacts on fire services to below the level of significance.
- Mitigation measures recommended for public services and utilities are not capable of reducing cumulative impacts to below the level of significance.
- Mitigation measures recommended for public services and utilities are capable of reducing impacts on water demand to below the level of significance.
- Mitigation measures recommended for energy conservation are capable of reducing impacts on energy consumption to below the level of significance.
- There are no anticipated impacts on views or viewsheds.
- Mitigation measures recommended for shade and shadow are not capable of reducing impacts from winter shadows on east-facing Promenade residences to below the level of significance.
- There are no anticipated significant impacts on ambient noise levels from construction noise; therefore, no mitigation measures were required.
- Mitigation measures recommended for noise are capable of reducing impacts from construction on ambient noise to below the level of significance.
- Mitigation measures recommended for socioeconomics are capable of reducing impacts from jobs-housing imbalance to below the level of significance.

On February 21, 1991, the County Board of Supervisors certified the Final EIR as having been completed in accordance with the provisions of CEQA. The County Board of Supervisors adopted Environmental Findings of Fact and a Statement of Overriding Considerations. The County Board of Supervisors adopted the Mitigation Monitoring and Reporting Program (MMRP) and found it to be adequate to ensure compliance with the project changes and conditions adopted to mitigate or avoid significant effects on the environment.

On April 29, 1991, the Agency Commissioners of the CRA certified the Final EIR as having been completed in accordance with the provisions of CEQA. The CRA Agency Commissioners adopted Environmental Findings of Fact and a Statement of Overriding Considerations. The County Board of Supervisors adopted the MMRP.

Implementation of interim and permanent solutions recommended for treatment of surfaces that cause focused reflection would make the project consistent with the 1991 certified Final EIR, as amended by the 1999 Addendum No. 2 to the Final EIR. As adopted, that MMRP is adequate to ensure compliance with the project changes and conditions adopted to mitigate or avoid significant effects on the environment.

SECTION 2.0

REFINED PROJECT DESCRIPTION

This section provides a detailed description of the technical changes made to the project during project implementation, the additional technical analyses performed, and the proposed modifications to the Walt Disney Concert Hall facade that will bring the project into conformance with the approved project description. The Disney Hall Glare Study is included in this Addendum No. 3 as Appendix A.

2.1 DESCRIPTION OF PROJECT IMPLEMENTATION

The Walt Disney Concert Hall pushes the envelope of architecture. The Final EIR anticipated the use of a brushed stainless steel material on the entire facade of the Walt Disney Concert Hall. Based on glare analyses performed as part of the EIR¹ and Addendum No. 2 to the Final EIR,² the use of brushed stainless steel would not result in significant impacts to aesthetics related to a new substantial source of daytime glare. During project implementation, the Founder's Room facade (Figure 1.2-1) and the Cal Arts Theater Marquee (Figure 1.2-2) were constructed using polished stainless steel.

In June 2003, the County of Los Angeles (County) and Walt Disney Concert Hall I, Inc. received feedback from the tenants of the Promenade Towers,³ located immediately to the northwest of the Walt Disney Concert Hall, that reflections of sunlight off the Founder's Room in the afternoon hours were causing uncomfortable levels of heat and light inside the units on the southeast side of the apartment complex (Figure 1.1-1). It should be noted that the southeast side of the Promenade Towers was exposed to full sunlight prior to construction of Walt Disney Concert Hall and still receives full sun in the morning hours. The Final EIR and Addendum No. 2 to the Final EIR specified the use of a mix of limestone or plaster, glass, and brushed stainless steel or titanium and specified the use of brushed stainless steel or titanium for non-concentric curving facade features of the Walt Disney Concert Hall. During preparation of Addendum No. 2 to the Final EIR, the Walt Disney Concert Hall confirmed its intent to the Community Redevelopment Agency to use brushed stainless steel or titanium.⁴ During construction of the project, polished stainless steel was used on the surfaces of the Founder's Room (Figure 1.2-2) and the CalArts Theater Marquee (Figure 1.2-3) instead of brushed stainless steel. On the Founder's Room, light reflects from three surfaces referred to as the eye and two knees (Figure 2.1-1,

¹ County of Los Angeles and Community Redevelopment Agency, 1991. Final Environmental Impact Report, Findings of Fact, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations for the First Street Properties Project, Development Parcels K, Q, and W-2. Prepared by: Michael Brandman Associates, 15901 Red Hill Avenue, Suite 200, Tustin, CA 92780. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

² County of Los Angeles, 14 June 1999. Addendum No. 2 to the Final Environmental Impact Report for the First Street Properties Project Bunker Hill Urban Renewal Project, Parcels K, Q, and W-2. Prepared by the County of Los Angeles Department of Public Works, 900 South Fremont Avenue, Alhambra, CA 91803-1331. Prepared for the County of Los Angeles and the City of Los Angeles Community Redevelopment Agency.

³ Adams & Au Coin, LLP Attorneys at Law, 2 July 2003. Letter to Walt Disney Concert Hall I, Inc. (Jack Burnell, President and COO), Re: Promenade Owners Association. 2566 Overland Avenue, Suite 730, Los Angeles, CA 90064.

⁴ Walt Disney Concert Hall I, Inc., 20 October 1998. Memorandum to Community Redevelopment Agency (Ayahlushim Hammond). Subject: EIR Comparison, Walt Disney Concert Hall. Contact: 707 Wilshire Boulevard, Suite 1852, Los Angeles, CA 90017-3501.

Reflective "Eye" and "Knee" of Founder's Room). The eye consists of one area (identified as the eye itself) and two adjacent surfaces. In addition, one brushed stainless steel surface, referred to as the hat due to its shape (Figure 2.1-2, *Reflective "Hat" of Brushed Stainless Steel*), reflects light. Following construction, the reflected sunlight generated from the structure arrives in the afternoon hours and is therefore considered a new source of light and glare for the tenants of the Promenade Towers. The lower units are now shielded by the terrace and street wall of the Walt Disney Concert Hall, and the mid and upper units receive some direct and some filtered light, depending on the unit's location, floor level, and the time of day. A description of the scope, methods, and results of the additional glare analyses are described below.

2.2 GLARE ANALYSES AND RESULTS

2.2.1 Scope

The County performed glare analyses on the Founder's Room facade and the Hope Street and Second Street elevations. Based on reports of reflections and increased temperatures in the immediate vicinity of the Cal Arts Theater Marquee, an analysis of radiant heat gain was performed in the street area in front of the marquee (Appendix A, *Disney Hall Glare Study*).

The County also investigated several interim solutions to reduce glare emanating from portions of the Founder's Room by superimposing a film or fabric on critical surfaces. Four films and one fabric were each tested to determine which would most effectively reduce the glare level while considering the visual impact to the architecture and potential effect of application and subsequent removal of the interim solution on the panels themselves.

As a result of these preliminary glare studies, the County pursued additional glare analyses for the four intersections proximate to the Walt Disney Concert Hall (Figure 2.2-1, *Study Area Intersections*) (First Street and Hope Street, Second Street and Hope Street, First Street and Grand Avenue, and Second Street and Grand Avenue) to determine the presence or absence of veiling reflections that could affect vehicular traffic and pedestrians crossing these intersections.

2.2.2 Methods

Several visual and photographic surveys were made of the study areas to determine the significantly reflective areas of the structure and provide data for photographic simulations of glare, consisting of continual observation of the pattern of light reflection throughout the entire day with photographs taken at regular intervals.

There are two ways of providing a full analysis of the reflections: use of physical models and use of computer models or simulations. Due to the availability of computer models provided by the architect, and the fact that a computer model can be used in one of several simulation programs and can focus on individual surfaces, the computer simulation option was chosen. The computer simulations were generated using Lightscape software.⁵ This software allows simulations with specific material characteristics to be performed for sun positions every half hour. The resulting data is stored as a 3-D file, instead of a single viewpoint; this allows for the complete calculation of the lighting condition resultant from a particular sun position. The simulation is stored and can be subsequently viewed from

⁵ Autodesk, Inc. *Lightscape*. Contact: Autodesk, Inc., 111 McInnis Parkway, San Rafael, CA 94903.



Photo 1
Reflective "Eye"

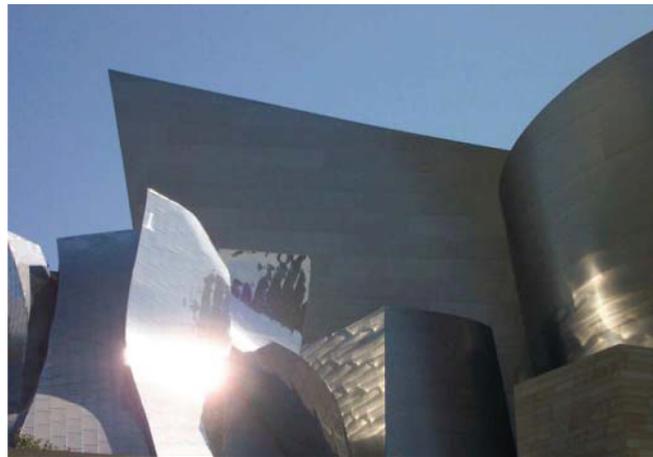


Photo 2
Reflective "Knee"

SOURCE: Schiler and Associates



FIGURE 2.1-1
Reflective "Eye" and "Knee" of Founder's Room



SOURCE: Schiler and Associates



FIGURE 2.1-2
Reflective "Hat" of Brushed Stainless Steel



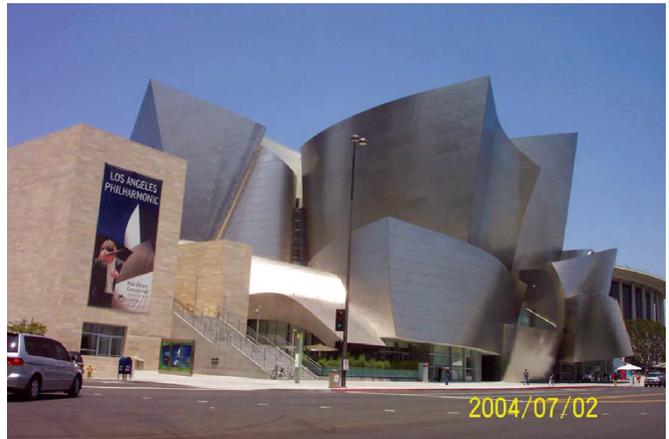
1st Street and Hope Street



1st Street and Grand Avenue



2nd Street and Hope Street



2nd Street and Grand Avenue

SOURCE: Sapphos Environmental, Inc.



FIGURE 2.2-1
Study Area Intersections

multiple positions. In order to account for the glare felt in the Promenade Towers apartments, the viewpoints for the upper floors were calculated in three dimensions and used as the viewpoint locations for the subsequent simulations. The images produced were color coded based on relative levels of glare. Any yellow or red surface, which coincides with a high specularity⁶ (i.e., polished stainless steel), represents a possible source of glare (Figures 2.2-2A and 2.2-2B, *Luminance Plots from Simulation of Existing Conditions*).

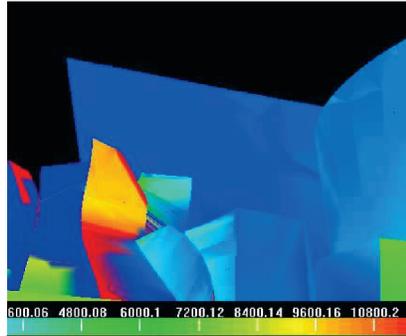
These simulations, based on the visual and photographic surveys, are referred to herein as luminance surveys. The results of the luminance histograms are used to define a level of glare. At least three levels of glare are generally recognized: veiling reflections, discomfort glare, and disability glare. Veiling reflections refer to glare that is objectionable primarily because it obscures desired information, such as sunlight on a glossy magazine or a low sun angle while driving through an intersection. Discomfort glare is glare that is found objectionable by the viewer, but it does not do any physical damage. Disability glare ranges from causing temporary incapacity to permanent eye damage. These three levels have been used in this study to define the level of glare that people notice but consider an acceptable part of the normal environment. This range includes phenomena that can be characterized by the viewer as negative or positive, such as a sparkling or brilliant surface. Using the Schiler method, discomfort glare is the level defined when the glare source is more than three times the median.

Luminance surveys for the Founder's Room were run at half-hour intervals for all daylight hours on representative December, March, June, and September days. These days correspond to days on or near the winter solstice, spring equinox, summer solstice, and fall equinox, respectively. Luminance surveys for the Hope Street elevation were run at hourly intervals for all daylight hours on representative December, March, June, and September days. Luminance surveys for both the First Street and Second Street elevations were run at hourly intervals for afternoon hours on representative late June/early July days.

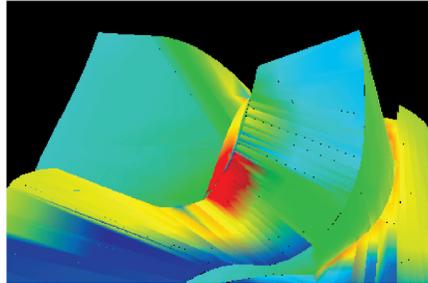
One of the ways to analyze potential glare sources in exterior environments is by creating a luminance histogram of the comparative brightness, or luminance, within a scene. Luminance histograms of the critical images, or the worst hours, of potential glare as determined from the luminance surveys were produced. These histograms are graphical representations of the intensity of glare generated using software written expressly for the purpose of translating visual images into raw data files and analyzing them using statistical functions. The luminance histograms were analyzed using the Schiler glare method, which considers an image to have glare when the possible glare source is more than three times the median of the background curve. Other available methods, such as the Lawrence Berkeley Lab/Gregg Ward method, do not consider the image to be a source of glare until the possible glare source is eight times the median of the entire image. Therefore, the method used in this analysis is the more sensitive criteria and supports a reasonable worst-case analysis.

Physical investigation of the public areas immediately adjacent to the CalArts Theater Marquee evidenced the fact that local radiant heat gain was produced as a result of sunlight reflecting off the stainless and brushed steel surfaces of the CalArts Theater Marquee. One could feel a rise in local

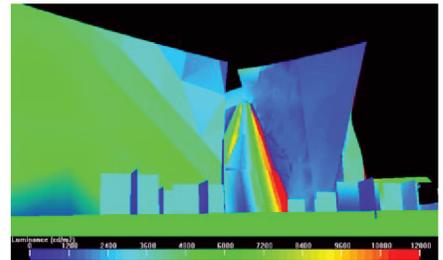
⁶ When light bounces off of a surface, it is called a reflection. The fraction of the arriving light that is bounced off is the reflectivity. Reflections can be either specular or diffuse. The surface is specular if the angle of reflection of the light is exactly and only equal to the angle of incidence; a reflected image is maintained (such as with a mirror). This corresponds to the common terms *shiny* or *glossy*. If the angle of reflection of the light is scattered, the surface is diffusing; there is no reflected image (such as with a matte white finish). This corresponds to the common terms *matte* or *dull*. Reflectivity and specularity are independent.



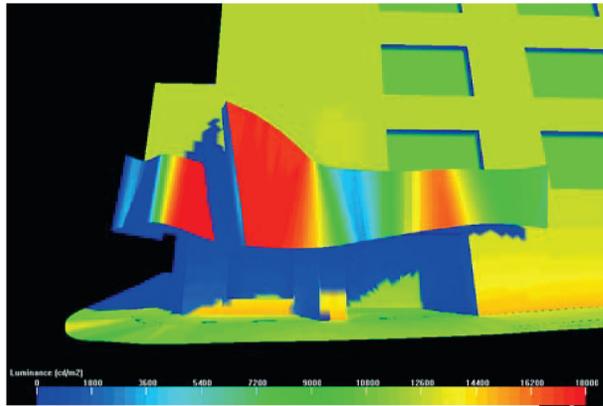
Luminance Plot from "Knee"
Founder's Room



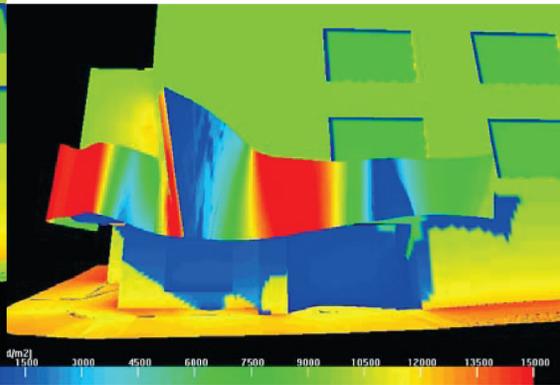
Luminance Plot of "Eye"
Founder's Room



Luminance Plot of "Hat"



Luminance Plot from Simulation
December Panel - CalArts Theater Marquee



Luminance Plot from Simulation
June Panel - CalArts Theater Marquee

SOURCE: Schiler and Associates



FIGURE 2.2-2A
Luminance Plots from Simulation of Existing Condition



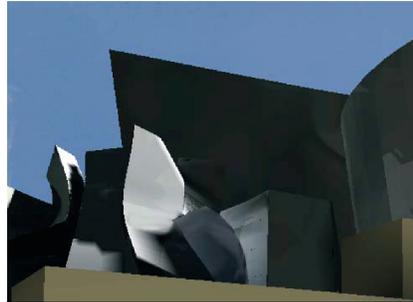
Photo of Reflection from "Knee" Founder's Room



Photograph of "Eye" Founder's Room



Photograph of "Hat" conic section



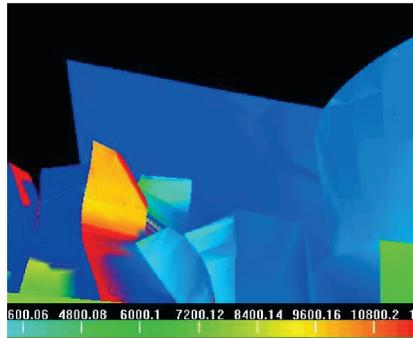
Simulation of Reflection from "Knee" Computer Model



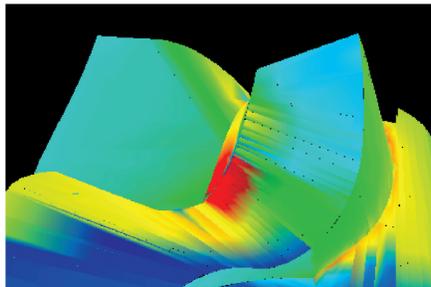
Simulation of "Eye" Computer Model



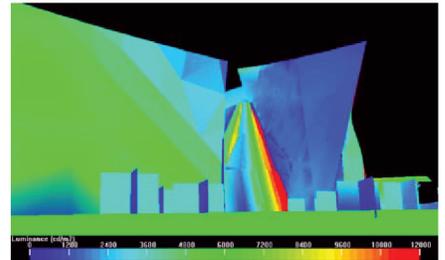
Simulation of "Hat" Computer Model



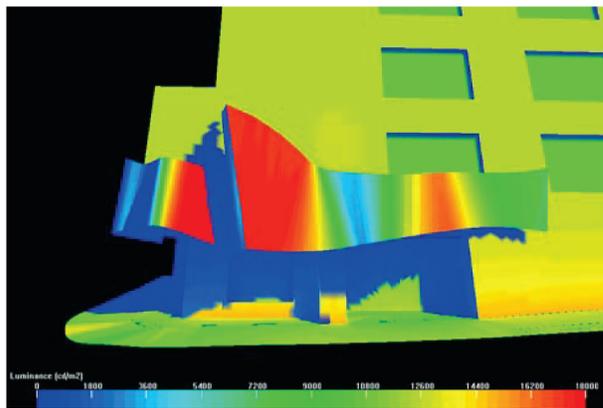
Luminance Plot from "Knee"



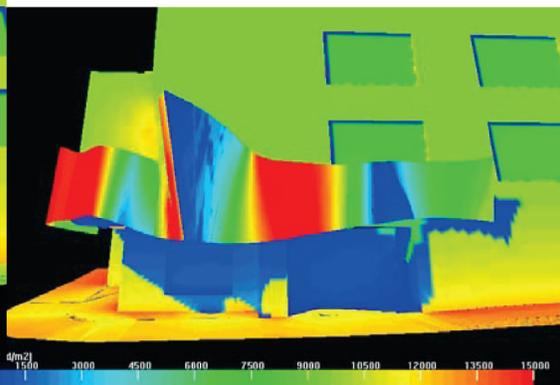
Luminance Plot of "Eye"



Luminance Plot of "Hat"



Luminance Plot from Simulation
December Panel - CalArts Theater Marquee



SOURCE: Schiler and Associates



FIGURE 2.2-2B
Luminance Plots from Simulation of Existing Condition

temperature as one walked along the street with eyes closed. To determine whether the resulting surface temperature increase reaches dangerous levels, dataloggers were embedded in the street surface in a row across the front of the CalArts Theater Marquee entrance, where the concrete curb meets the street asphalt. An additional datalogger was embedded in the street at a visible focus point. The dataloggers were left in place for two weeks and continuously collected data.

To determine which interim solution to implement, a test panel was constructed with the original condition (polished steel), four different films, and one fabric. One film was colorless, translucent, and slightly diffusing; one film was light blue, translucent, and diffusing; one film was white and more strongly diffusing; and one film was white and opaque with a black backing; and the fabric was a gray mesh. To test the surfaces, an image was projected onto the panel and reflected onto a matte white surface. The diffusion was recorded. The test panel was then placed on the Founder's Room on one of the lower surfaces under varying sun conditions. The reflection was targeted onto a matte white surface, the observations recorded, and the results of each surface compared.

Physical investigations were performed for the four intersections proximate to the Walt Disney Concert Hall (Figure 2.2-1) (First Street and Hope Street, Second Street and Hope Street, First Street and Grand Avenue, and Second Street and Grand Avenue) to determine the presence or absence of veiling reflections that could affect traffic and pedestrians crossing these intersections. The glare possibilities were documented by taking photographs of the Walt Disney Concert Hall from the same location at half-hour intervals. The sequence, path, and magnitude of the reflections of the surface of the Walt Disney Concert Hall throughout the day were documented. Photographs were also taken during any brief moments of phenomena that did not coincide with the regular observations. During the regular intervals, surveyors observed the Walt Disney Concert Hall from the intersections and photographed potential veiling reflections that occurred. In addition to documenting the glare from the Walt Disney Concert Hall, surveyors also documented the traffic patterns in order to record the number of people crossing the street with each light and the number of cars driving through the intersections in each direction.

2.2.3 Results

Investigation of the Founder's Room has determined that discomfort glare is produced from three distinct surfaces: the "eye" and two "knees". These nicknames were applied to these portions of the structure due to their shape and for easy reference. The eye is composed of a surface perpendicular to a concave focusing surface and is eye-shaped (Figure 2.1-1). The eye reflectance is a compound reflectance from two adjacent surfaces and the eye itself, resulting in a collimated beam. Further, glare from the eye is above the filtering effect of the trees. The main wing of the Walt Disney Concert Hall immediately to the southwest of the Founder's Room shades the eye in much of September and the winter months, but the reflections will be present in the summer months. Collimated light is composed of parallel rays of light, and is very bright. The knees are two large surfaces that are concave on top and then convex in the lower portions (Figure 2.1-1). The lower surfaces of the knees have a high reflectance; however, views from the first through fourth floors of the Promenade Towers are generally shielded or filtered by the trees. Apartments above the fourth floor receive direct reflection.

On the Hope Street elevation, there is a conic element, or "hat", halfway down the auditorium facade, which due to its configuration and location is a source of concentrated reflections (Figure 2.1-2). The luminance histogram for the Hope Street elevation indicates possible, but not certain, discomfort glare from the conic element. The luminance histogram revealed a glare source approximately 2.5 times the median background level, indicating that glare is possible for some observers but unlikely for most.

Because the surface is brushed, the reflections are bright, but not focused, as at the Founder's Room. Again, the trees provide an integral filtering element for the lower zones of the structure.

The Promenade Towers extend further southwest on Hope Street than the main Walt Disney Concert Hall structure; therefore, some Promenade Towers residents can see reflections from the First Street elevation as well. The luminance histogram of the Hope Street elevation indicates glare is possible but not definite. The luminance histogram of the Second Street elevation indicates no glare emanating from these surfaces.

The investigation of radiant heat gain from the CalArts Theater Marquee revealed a maximum temperature in the roadbed focal point datalogger of approximately 138 degrees Fahrenheit (°F) or 59 degrees Celsius (°C). The typical curb surface temperature peaks at approximately 115°F (46°C). Although elevated, such temperatures are not dangerous to people, unless there is prolonged exposure. Stationary exposure to a direct focus (> 10 minutes), however, would result in the equivalent of a bad sunburn. In addition, temperatures exceeding 400°F are required to initiate spontaneous combustion of paper materials. The dataloggers record showed a clear and repeated temperature pattern. Sunrise is noted as the surface begins to slowly heat up to a peak, followed by a short dip, a reheated peak, and then a steady fade as the surface cools until the next sunrise. It was determined that the short dip after the first peak is a result of a shadow cast by the structure at 333 South Grand Avenue, currently the Wells Fargo Bank Building. However, it would not be expected that this structure would shade the marquee in the summer months, resulting in somewhat higher surface temperatures.

The dataloggers were again installed on July 2, 2004, for the summer measurements and began calculating temperatures on July 3, 2004. The dataloggers recorded temperatures through July 12, 2004. The patterns were the same as the spring temperatures, except that the days became progressively longer before cooling off. The typical maximum temperature peaked at about 130°F. This is surprisingly close to the spring values, indicating that the radiant heat is the dominant factor and the air temperature is a secondary consideration. Again, although elevated, such temperatures are not dangerous to people unless there is prolonged exposure. A lightweight material would achieve higher temperatures than those recorded. It is possible that temperatures sufficient to melt plastic would be achieved in the focal points. Indeed, certain materials prone to spontaneous combustion might ignite under the right conditions. Plastic bottles in the concentrated beam could further focus the beam, creating even higher temperatures. This is another strong indication that the CalArts Theater Marquee should be treated to defocus the beams.

2.2.4 Intersection of First Street and Hope Street

The intersection of First Street and Hope Street (Figure 2.2-1) occurs immediately to the north of the Founder's Room. There are moments when the sun is reflected directly off the Founder's Room into the intersection. This can interfere with a clear view of traffic and pedestrians, especially when heading south on Hope Street and turning left or heading east on First Street.

2.2.5 Intersection of Second Street and Hope Street

The CalArts Theater Marquee occupies the southwest corner of the site (Figure 2.2-1). It is embedded into the main block of the building. The only significant presence that the CalArts Theater projects is through the marquee which wraps around the corner. The intersection of Second Street and Hope Street occurs immediately to the west of the marquee. There are moments when the sun is reflected

directly off the marquee into the intersection. This can interfere with a clear view of traffic and pedestrians, especially when heading north on Hope Street and/or turning right onto Second Street.

2.2.6 Intersection of First Street and Grand Avenue

Although there are very bright surfaces, they do not obscure or backlight pedestrians in the crosswalks or other critical ground-level information (Figure 2.2-1). Surprisingly, the early morning distribution is the most distracting. Later in the day, the levels are higher, but the distribution is more even. In the afternoon, the brightness is somewhat reduced. During the later hours in summer, there is some glare originating from the sun position but not from the building.

2.2.7 Intersection of Second Street and Grand Avenue

The segment forming the roof of the Patina Restaurant reaches very high luminance values (Figure 2.2-1). Fortunately, the roof does not extend to ground level and does not form a backdrop for traffic activities. Thus, although the surface is distracting, it does not affect clear visibility at ground level, even when driving north on Grand Avenue and making a left turn onto Second Street. This is verified in the drive-through film. The other surfaces of the Walt Disney Concert Hall do not create glare in excess of that specified in the Final EIR and Addendum No. 2 to the Final EIR.

2.3 MODIFICATIONS TO THE FOUNDER'S ROOM AND CALARTS THEATER MARQUEE FACADES

Multiple temporary and permanent solutions to reduce glare levels to those described in the Final EIR were tested. These included both the application of various films and the alteration of the polished stainless steel panels to reduce specularly, such as by sandblasting the surface in strategic locations.

To reduce the glare affecting the Promenade Towers residents, the County placed gray mesh fabric over critical reflecting panels of the Founder's Room as a temporary solution while further analyses and permanent solutions were tested. The testing of five interim solutions determined that the gray mesh fabric was preferable in reflectance and specularly to all four films. In addition, the gray color, rather than white or blue, would have the least visual impact to the structure, and could safely be attached and removed. Therefore, the choice was made to utilize the gray mesh fabric as the interim solution. This fabric covering will remain in place until the permanent solution is implemented.

Subsequent coordination between the architect, the glare consultant, and the County resulted in the determination that a sandblasted surface would reduce glare to the appropriate level, maintain the overall aesthetic statement intended by the architect, and be feasible to implement.

SECTION 3.0

ANALYSIS OF ENVIRONMENTAL IMPACTS CAUSED BY THE REFINED PROJECT

This section of Addendum No. 3 to the Final Environmental Impact Report (EIR) describes the environmental effects of the modifications to the selected surfaces of the Founder's Room and CalArts Theater Marquee of the Walt Disney Concert Hall as a result of the glare analysis. The minor technical changes to the project description would not result in significant new impacts or substantially increase the intensity of impacts that were disclosed in the Final EIR,¹ Addendum No. 1 to the Final EIR,² and Addendum No. 2 to the Final EIR.³ Therefore, the project refinements have been determined not to constitute a "substantial change" under Section 15162 of the State of California Environmental Quality Act (CEQA) Guidelines.

3.1 LAND USE AND ZONING

With respect to the modifications to the proposed treatment of selected surfaces of the Founder's Room and the CalArts Theater Marquee, the project would remain the same as that described in the Final EIR and Addendum Nos. 1 and 2 to the Final EIR. Section 4.1, *Land Use and Zoning*, of the Final EIR adequately describes and responds to the affected environment with respect to land use. As with the Final EIR and Addendum Nos. 1 and 2 to the Final EIR, the refined project must comply with applicable County and local regulations and guidelines listed in Section 3.4, *Anticipate Public Agency Actions*, of the Final EIR and is subject to the same regulatory framework as the approved project. The County of Los Angeles (County) believes the information presented in Section 4.1.1, *Existing Conditions*, of the Final EIR, as augmented by site inspections undertaken between October 2003 and June 2004 by Sapphos Environmental, Inc., represents the best available information upon which to describe the existing conditions for land use within the project area.

3.1.1 Existing Conditions

Existing land use plans and zoning ordinances are described in detail in Section 4.1.1 of the Final EIR. The existing conditions for land use are characterized into six areas: (1) Land Use, (2) Redevelopment Plan, (3) Bunker Hill Design for Development, (4) Community Plan, (5) Zoning, and (6) Parking. Construction of the project, as described in the Final EIR, with modifications delineated in Addendum

¹ County of Los Angeles and Community Redevelopment Agency, 1991. Final Environmental Impact Report, Findings of Fact, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations for the First Street Properties Project, Development Parcels K, Q, and W-2. Prepared by: Michael Brandman Associates, 15901 Red Hill Avenue, Suite 200, Tustin, CA 92780. Prepared for: County of Los Angeles and Community Redevelopment Agency of the City of Los Angeles.

² County of Los Angeles, August 1996. Addendum No. 1 to the Final Environmental Impact Report for the First Street Properties Project County Parking Lots 16, 17, and 26 Bunker Hill Urban Renewal Project Parcels K, Q, and W2. Prepared by: County of Los Angeles Chief Administrative Office, 754 Kenneth Hahn Hall of Administration, Los Angeles, CA 90012. Prepared for: County of Los Angeles, and City of Los Angeles Community Redevelopment Agency.

³ County of Los Angeles, 14 June 1999. Addendum No. 2 to the Final Environmental Impact Report for the First Street Properties Project Bunker Hill Urban Renewal Project, Parcels K, Q, and W-2. Prepared by: County of Los Angeles Department of Public Works, 900 South Fremont Avenue, Alhambra, CA 91803-1331. Prepared for: County of Los Angeles, and City of Los Angeles Community Redevelopment Agency.

Nos. 1 and 2 to the Final EIR, was completed in September 2003 and operation of the Walt Disney Concert Hall was inaugurated in October 2003.

3.1.2 Impacts

The significance criteria used in the analysis of impacts related to land use and zoning are in accordance with Appendix G of the State CEQA Guidelines. The analysis of impacts undertaken in this Addendum No. 3 to the Final EIR acknowledges the completion of construction and initiation of operation of the Walt Disney Concert Hall.

The environmental consequences to land use and zoning from the Walt Disney Concert Hall remain as articulated in Section 3.1.2, Impacts, of Addendum No. 2 to the Final EIR:

- **The refined project does not conflict with General Plan designation or zoning.** The modification of selected surfaces of the Founder's Room and the CalArts Theater Marquee is consistent with recommendations put forth by the Design for Development, designating the area for retail, dining, entertainment, and high-rise development. The modifications would also be consistent with the Central City Community Plan, including conformance with height restrictions.
- **The refined project does not conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project.** The modification of selected surfaces of the Founder's Room and the CalArts Theater Marquee would not require alteration of existing areas designated for parking.
- **The refined project is consistent with existing land use in the vicinity.** The modifications of selected surfaces of the Founder's Room and the CalArts Theater Marquee would support continued operation of the Walt Disney Concert Hall as approved by the County Board of Supervisors and the City of Los Angeles Community Redevelopment Agency.
- **The refined project is consistent with the existing on-site land uses.** The modification of selected surfaces of the Founder's Room and the CalArts Theater Marquee would be consistent with the operation of existing on-site land uses as approved by the County Board of Supervisors and the City of Los Angeles Community Redevelopment Agency.

3.1.3 Mitigation Measures

Construction of the Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures.⁴ The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee results in no new significant impacts to land use and zoning; thus, no additional mitigation measures are required.

⁴ County of Los Angeles and Community Redevelopment Agency, 1991.

3.1.4 Level of Significance After Mitigation

As with the project, the recommended modifications to selected surfaces would be consistent with the Bunker Hill Redevelopment Plan, the Bunker Hill Design for Development, the Central City Community Plan, and zoning, and would conform with the joint Design Guidelines. Implementation of the specified mitigation measure reduces impacts to a less than significant level.

3.2 TRANSPORTATION

Section 4.2.1, *Existing Conditions*, of the Final EIR describes the existing environment with respect to the surrounding traffic conditions at the First Street Properties project site based on the best available information at the time of Final EIR certification. The County believes the studies described in Section 4.2, *Transportation and Circulation*, of the Final EIR, as augmented by work undertaken by ATC/Transtech in October 1998 and the parking analysis prepared by the County Chief Administrative Office in 1998, represents the best available information upon which to describe the existing transportation and circulation conditions for the project area. As with the project described in the Final EIR and subsequently revised in the Addendum Nos. 1 and 2 to the Final EIR, the refined project would be subject to the same regulatory framework as the proposed project.

3.2.1 Existing Conditions

Traffic

As described in Section 4.2.1 of the Final EIR and Section 3.2.1, Existing Conditions, of Addendum No. 2 to the Final EIR, there are 14 primary streets that serve the Walt Disney Concert Hall:

- Sunset Boulevard/Caesar E. Chavez Avenue
- Temple Street
- First Street
- Second Street
- Third Street
- Fourth Street
- Fifth Street
- Figueroa Street
- Flower Street
- Hope Street
- Grand Avenue
- Olive Street
- General Thaddeus Kosciuszko Way
- Hill Street
- Broadway
- Spring Street/New High Street
- Main Street
- Alameda Street

A total of 31 intersections were evaluated in the Final EIR. The Founder's Room and the CalArts Theater Marquee are visible from two intersections:

- Grand Avenue / First Street
- Hope Street / Second Street

Parking

As described in Addendum No. 2 to the Final EIR, the Walt Disney Concert Hall garage is currently being operated as a park-and-lock facility capable of accommodating up to 2,188 vehicles with stack parking. The Walt Disney Concert Hall garage was fully completed with the construction of the Walt Disney Concert Hall. There are a total of three entrances to the garage, which are located on Second Street, Hope Street, and Lower Grand Avenue.

3.2.2 Impacts

The significance thresholds contained in Appendix G of the State CEQA Guidelines were used in both the Final EIR and this Addendum No. 3 to the Final EIR to analyze impacts on transportation and traffic generated by the proposed modification to selected surfaces of the Founder's Room and CalArts Theater Marquee.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not generate additional vehicular movement beyond that described in Addendum No. 2 to the Final EIR.** The Walt Disney Concert Hall initiated operations in October 2003. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee could be accomplished from within the footprint of the project and would not require temporary or permanent changes to surrounding traffic and circulation patterns.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect the project's conformance with adopted policies supporting alternative transportation.** Modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect conformance with adopted transportation policies nor interfere with existing bus stops that service alternative modes of travel.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would be consistent with the impacts analysis in Addendum No. 2 to the Final EIR.** Addendum No. 2 to the Final EIR acknowledges significant impacts to transportation systems and patterns of circulation from operation of the Walt Disney Concert Hall and specified mitigation measures to reduce those impacts to the maximum extent practicable. The Walt Disney Concert Hall and the specified mitigation measures have been constructed. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee could be accomplished within the footprint of the constructed project and would not require any further modifications to the surrounding transportation systems and patterns of circulation.

- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not impact rail, waterborne, or air traffic.** The proposed modifications would not be visible to rail, waterborne, or air traffic facilities. The nearest facility is the railroad located 2 miles northeast of the project site.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee are intended to avoid hazards to safety from design features or incompatible uses.** As specified in the Final EIR and Addendum No. 2 to the Final EIR, the traffic design is compatible with existing uses. As constructed, the project did not create any new sharp curves or new intersections. Addendum No. 2 to the Final EIR described the finish materials as being comprised of limestone or brushed stainless steel or titanium. Therefore, Addendum No. 2 to the Final EIR assumed that the amount or brightness of reflections would not differ significantly from other comparable buildings (e.g., Citibank building at 444 Flower) in downtown Los Angeles and would not pose a hazard to safety of surrounding traffic intersections.⁵ The Founder’s Room and the CalArts Theater Marquee were constructed with polished (not brushed) stainless steel that reflects and in some cases concentrates significant amounts of light. The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee are designed to reduce glare at the immediately surrounding intersections to a level comparable to the level of glare resulting from structures being clad in brushed stainless steel, as specified in Addendum No. 2 to the Final EIR.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would be consistent with the provision of emergency access to nearby uses.** As specified in the Final EIR, access to nearby uses such as hospitals and fire stations will continue to be the same for adjacent structures and properties such as the Dorothy Chandler Pavilion, the Ahmanson Theater, the County Courthouse, and the Department of Water and Power building.⁶ The proposed modifications would not affect emergency access in any way.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not pose a hazard or barrier for pedestrians or bicyclists.** As with the project, the proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not pose a hazard or barrier for pedestrians or bicyclists. Currently, there are no designated bicycle paths that exist along either side of the streets that border the First Street Properties project site (i.e., First Street, Second Street, Hope Street, Grand Avenue, Olive, and Hill Street). According to the County General Plan Bikeway Policy Map,⁷ the nearest proposed on-road bike paths are located on Sunset Boulevard (northbound) and Main Street

⁵ Walt Disney Concert Hall I, Inc., 20 October 1998. Memorandum to Community Redevelopment Agency (Ayahlushim Hammond). Subject: EIR Comparison, Walt Disney Concert Hall. Contact: 707 Wilshire Boulevard, Suite 1852, Los Angeles, CA 90017-3501.

⁶ County of Los Angeles and Community Redevelopment Agency, 1991.

⁷ County of Los Angeles, 1984. County of Los Angeles General Plan Bikeway Policy Map.

(southbound). Pedestrian access in the vicinity of the Walt Disney Concert Hall is currently provided by sidewalks located on either side of First Street, Grand Avenue, Second Street, and Hope Street.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not impact parking facilities at the Walt Disney Concert Hall.** Addendum No. 2 to the Final EIR specifies the construction of 2,188 parking spaces at the Walt Disney Concert Hall. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee are limited to exterior facades of the Walt Disney Concert Hall and would not impact areas designated for parking.

3.2.3 Mitigation Measures

Construction of Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures.⁸ The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee results in no new significant impacts to transportation; thus, no additional mitigation measures are required.

3.2.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant transportation-related impacts. As specified in Addendum No. 2 to the Final EIR, the mitigation measures required in conjunction with construction and operation of the Walt Disney Concert Hall have been completed.

3.3 AIR QUALITY

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee are consistent with the analysis of air quality contained in Addendum No. 2 to the Final EIR. Addendum No. 2 to the Final EIR represented the best available information related to air quality impacts of the proposed project.

3.3.1 Existing Conditions

Data from the South Coast Air Quality Management District's (SCAQMD's) Los Angeles Monitoring Station for the years 1993 through 1997 was provided in Table A3.3.1-1, *Summary of Air Quality Data, County of Los Angeles Source Receptor Area*, of Addendum No. 2 to the Final EIR.

3.3.2 Impacts

The significance criteria used in the analysis of impacts related to air quality are the same as those described in Appendix G of the State CEQA Guidelines. The impacts analysis undertaken in this Addendum No. 3 to the Final EIR acknowledges the completion of construction and initiation of operation of the Walt Disney Concert Hall. The environmental consequences to air quality are as articulated in Section 3.3.2, Impacts, of Addendum No. 2 to the Final EIR. The maximum construction

⁸ County of Los Angeles and Community Redevelopment Agency, 1991.

equipment required to complete proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not approach that of the peak day analyzed for construction of the Walt Disney Concert Hall. In addition, it is anticipated that the proposed modification would be completed in a 6- to 12-week time frame.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in substantial air emissions or deterioration of ambient air quality.** As a result of the proposed modifications described in Addendum No. 2 to the Final EIR, air emissions were reduced to 20 percent below the levels analyzed in the Final EIR. The total surface area recommended for modification is less than 10,000 square feet and can be accomplished on site in a 6- to 12-week time frame; thus, the anticipated air emissions would remain significantly lower than that analyzed in the Final EIR.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would contribute to cumulative emissions from build-out of the project elements.** As indicated in Addendum No. 2 to the Final EIR, construction of the Walt Disney Concert Hall resulted in fewer regional emissions than was anticipated in the Final EIR; however, all construction activities contribute to cumulative emission in the air basin. The contribution of the proposed modifications would not be substantial.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in the creation of objectionable odors.** The proposed modifications would be accomplished on site in a 6- to 12-week time frame. The process to brush selected surfaces would be comparable to sandblasting. The work areas would be draped. There would be no anticipated objectionable odors.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee are intended to conserve ambient regional and local air movement/temperature.** As specified in the Final EIR and Addendum No. 2 to the Final EIR, the Walt Disney Concert Hall was expected to have brightness or reflections that would not differ from other comparable buildings (e.g., Citibank building at 444 Flower) in downtown Los Angeles and thus was not expected to alter regional or local air temperature.⁹ The Founder's Room and the CalArts Theater Marquee were constructed with polished (not brushed) stainless steel that reflects and in some cases concentrates significant amounts of light. This concentrated light is sufficient to raise local air temperature on selected sunny days above what would have been expected from the brushed stainless steel. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee are intended to reduce local air temperature to a level comparable to what would have occurred had these structures been clad in brushed stainless steel, as specified in Addendum No. 2 to the Final EIR.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not expose local residents to severe air pollution conditions.** The proposed modifications would be accomplished on site in a 6- to 12-

⁹ Walt Disney Concert Hall I, Inc. 20 October 1998.

week time frame. The process to brush selected surfaces would be comparable to sandblasting. The work areas would be draped. Therefore, residents would not be expected to be exposed to severe air pollution conditions.

3.3.3 Mitigation Measures

Construction of the Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures. Construction required to complete the proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would be required to conform to the mitigation measures specified in Addendum No. 2 to the Final EIR to avoid and reduce construction impacts on air quality.¹⁰

3.3.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant air quality related impacts. As specified in Addendum No. 2 to the Final EIR, the mitigation measures required in conjunction with construction and operation of the Walt Disney Concert Hall have been completed.

3.4 PUBLIC SERVICES AND UTILITIES

With respect to the modifications to the proposed treatment of selected surfaces of the Founder's Room and the CalArts Theater Marquee, the project would remain the same as that described in the Final EIR and Addendum Nos. 1 and 2 to the Final EIR. The Final EIR and Addendum No. 2 to the Final EIR provide analyses related to public services and utilities for the proposed project. Section 4.4.1, *Police*, of the Final EIR and Section 3.4.1, *Existing Conditions*, of Addendum No. 2 to the Final EIR, augmented by site inspections undertaken between October 2003 and June 2004 by Sapphos Environmental, Inc., represent the best analysis for the existing conditions for public services and utilities within the project area. These analyses adequately describe and respond to the affected environment with respect to public services and utilities. As with the Final EIR and Addendum Nos. 1 and 2 to the Final EIR, the refined project must comply with applicable County and local regulations and guidelines listed in Section 3.4 of the Final EIR and is subject to the same regulatory framework as the approved project. The proposed modifications to the selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect public services and utilities.

3.4.1 Existing Conditions

The refined project will comply with the same regulatory framework for the administration of public services as the approved project. A description of the existing conditions for police and fire services, wastewater, and water facilities is discussed in Sections 4.4.1, *Police*, 4.4.2, *Fire*, 4.4.3, *Wastewater*, and 4.4.4 *Water*, of the Final EIR, which were updated in Addendum No. 2 to the Final EIR. A summary of the existing conditions for police and fire services, wastewater, and water facilities is provided in Section 3.4.1 of Addendum No. 2 to the Final EIR.

¹⁰ County of Los Angeles, 14 June 1999.

3.4.2 Impacts

The significance criteria used in the analysis of impacts related to public services and utilities are consistent with those described in Appendix G of the State CEQA Guidelines. The analysis of impacts undertaken in this Addendum No. 3 to the Final EIR acknowledges the completion of construction and initiation of operation of the Walt Disney Concert Hall. The environmental consequences to public utilities are as articulated in Section 3.4.2, Impacts, of Addendum No. 2 to the Final EIR. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee result in no new significant impacts to public services and utilities; thus, no additional mitigation measures are required.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would result in the need for increased police protection.** The modification of selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect recommendations put forth by Addendum No. 2 to the Final EIR requiring increased police protective services to maintain security at the project site.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would result in the need for increased fire protection.** Modification of selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect recommendations put forth by Addendum No. 2 to the Final EIR.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would encourage activities that result in the use of large amounts of fuel, water, or energy.** As indicated in Section 3.4.2 of Addendum No. 2 to the Final EIR, the refined Parcel K development would require less water consumption than was anticipated in the approved project. The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not involve any changes to water consumption.

3.4.3 Mitigation Measures

The Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures related to public services and utilities specified in the Final EIR to avoid and reduce impacts. Completion of the proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not require additional mitigation measures.

3.4.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant impacts related to public services and utilities. The mitigation measures specified in the Final EIR for public services and utilities for Walt Disney Concert Hall have been completed.

3.5 ENERGY CONSERVATION

As a result of proposed changes to the certified Final EIR, energy conservation needed to be assessed and reexamined in response to the decrease in square footage and services provided on site. According to the project modifications that were analyzed in Addendum No. 2 to the Final EIR and subsequently approved and constructed, the consumption of electricity, natural gas, and vehicular gasoline is less than that anticipated in the Final EIR and Addendum No. 1 to the Final EIR. The hotel, a project element within the Final EIR, contributed significantly to natural resource consumption estimates. Addendum No. 2 to the Final EIR recommended elimination of the hotel from Parcel K for potential future development on Parcel Q, addition of the CalArts Theater Marquee, and the use of an electrically powered cooling system instead of gas-fired cooling equipment. With the elimination of the hotel and the change from a gas to an electric cooling system, Addendum No. 2 to the Final EIR determined that the specified project modifications would reduce the natural resource consumption, and this decrease would be below threshold levels for significant impacts requiring mitigation. In assessing the level of impact generated by a decrease in energy consumption, a description of existing energy conditions is warranted. Energy conservation elements associated with the project are described in Section 4.5, *Energy Conservation*, of the Final EIR.

3.5.1 Existing Conditions

An analysis of energy conservation associated with the approved project was described in Section 4.5.1, *Existing Conditions*, of the Final EIR and Section 3.5.1, Existing Conditions, of Addendum No. 2 to the Final EIR. Construction of the project, as described in the Final EIR with modifications delineated in Addendum No. 2 to the Final EIR, was completed in September 2003 and operation of the Walt Disney Concert Hall was initiated in October 2003. The project's use and consumption of energy resources conforms to the same regulatory framework as the approved project.

3.5.2 Impacts

The significance thresholds contained in Appendix G of the State CEQA Guidelines used in the Final EIR and Addendum No. 2 to the Final EIR were also used in this Addendum No. 3 to the Final EIR to analyze impacts on energy conservation and daily operations by the proposed modification to selected surfaces of the Founder's Room and CalArts Theater Marquee.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in the need for new sources of energy.** As a result of the approved project, City of Los Angeles Department of Water and Power (LADWP) service station IS#3134 was constructed at 111 South Grand Avenue. This 34.5 kilovolt (kV) station came on line on October 24, 1995, to provide power to the project. As a result of Addendum No. 2 to the Final EIR, the Walt Disney Concert Hall cooling system was changed from gas-fired cooling system to an electrically powered cooling system. This change constituted only 8.4 percent of the total energy usage for the Walt Disney Concert Hall building. The Walt Disney Concert Hall initiated operations in October 2003. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not require temporary or permanent changes to energy conservation and daily operations.

3.5.3 Mitigation Measures

Construction of the Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures in the Final EIR.¹¹ The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in any new significant impacts related to energy conservation and daily operations; thus, no additional mitigation measures are required.

3.5.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant energy-related impacts. As specified in the Final EIR, the mitigation measures required in conjunction with construction and operation of the Walt Disney Concert Hall have been completed.

3.6 VIEW ANALYSIS

With respect to the modifications to the proposed treatment of selected surfaces of the Founder's Room and the CalArts Theater Marquee, the impact to view, light, and glare of the project would be comparable to that described in the Addendum No. 2 to the Final EIR. This Addendum No. 3 to the Final EIR describes the extent of light and glare and surface treatment necessary to attain the standard established by the original EIR, which is that the glare from this project will be no greater than other existing downtown buildings. Specifically, the glare from the Founder's Room and the CalArts Theater Marquee would be no greater at the Promenade Tower and surrounding intersections than glare from the brushed stainless steel portions of the building. Section 4.6, *View Analysis*, of the Final EIR describes and responds to the affected environment with respect to light and glare. As with the Final EIR and Addendum Nos. 1 and 2 to the Final EIR, the project refinements are subject to the same regulatory framework as the approved project. The County believes the information presented in Section 4.6.1, *Existing Conditions*, of the Final EIR, Section 3.6.1, *Existing Conditions*, of Addendum No. 2 to the Final EIR and obtained during site visits by Sapphos Environmental, Inc. and Schiler and Associates in March and June 2004 represents the best available information upon which to base the existing conditions and impact analysis for view, light, and glare. This analysis is based on the glare study completed by Schiler and Associates in July 2004 (Appendix A, *Disney Hall Glare Study*).¹²

3.6.1 Existing Conditions

Existing conditions related to view, light, and glare within the project area are described in detail in Section 4.6 of the Final EIR and in Section 3.6, *View Analysis*, of Addendum No. 2 to the Final EIR. The Final EIR anticipated the use of a brushed stainless steel material on the entire facade of the Walt Disney Concert Hall. Based on glare analyses performed as part of the Final EIR¹³ and Addendum No. 2 to the Final EIR, the County found that the use of brushed stainless steel would not result in significant impacts to aesthetics related to a new substantial source of daytime glare. During project development, the Founder's Room facade and the CalArts Theater Marquee were constructed using

¹¹ County of Los Angeles and Community Redevelopment Agency, 1991.

¹² Schiler and Associates, July 2004. *Disney Hall Glare Study*. Contact: Schiler and Associates, 1677 East Mountain Street, Pasadena, CA 91104.

¹³ County of Los Angeles and Community Redevelopment Agency, 1991.

polished stainless steel. Reflections of sunlight off the Founder's Room and the CalArts Theater Marquee have generated glare levels and temperatures in excess of those that would be anticipated from brushed stainless steel. Residents from inside the units on the southeast side of the Promenade Towers apartments, located immediately to the northwest of Walt Disney Concert Hall have reported uncomfortable increases in afternoon temperatures and glare.¹⁴ Baseline data from the Final EIR and Addendum No. 2 to the Final EIR and updated information obtained from several visual and photographic site surveys conducted by Schiler and Associates and Sapphos Environmental, Inc. from March through June 2004 were developed to support the view analysis for this Addendum No. 3 to the Final EIR.

Glare

- The Walt Disney Concert Hall is clad in three primary materials that have varying degrees of solar reflectances: limestone, brushed stainless steel, and polished stainless steel. The polished stainless steel surfaces of the Founder's Room and the CalArts Theater Marquee reflect and concentrate significant amounts of light. This results in thermal issues for selected residential units within the Promenade Towers located west of the Walt Disney Concert Hall.
- There is significant light reflection from three surfaces, the eye and the two knees. There are three areas on the polished stainless steel surfaces of the Founder's Room that represent the sources of concentrated light that contribute to temperature increases and glare at adjacent residences, in excess of what was anticipated from the brushed stainless steel cladding used on the Walt Disney Concert Hall (Figures 2.1-1 and 2.1-2). The eye consists of one area (identified as the eye itself) and two adjacent surfaces that result in a compound reflectance comparable to that created by a car taillight or bicycle reflector. The eye is located at a sufficient distance above the treeline, making it unobstructed and unfiltered. The lower surfaces, the knees, also have high reflectance (Figure 3.6.1-1, *Photograph, Simulation, and Luminance of the "Knee," Existing Conditions*). However, the first through the fourth floors of the Promenade Towers are generally shielded by the landscape trees that block or filter the reflectance from the knees. The main wing of the Walt Disney Concert Hall immediately to the southwest of the Founder's Room shades the eye in much of September and the winter months, every year.
- One of the brushed stainless steel surfaces, the "hat," was included in the modeling to determine if shape caused it to produce significantly more light than anticipated by the Final EIR and Addendum No. 2 to the Final EIR (Figure 3.6.1-2, *Photograph, Simulation, and Luminance of the "Hat," Existing Conditions*). As a result of the modeling, it was determined that the luminance generated by the hat at its peak approaches those generated by the Founder's Room. The hat is characterized by a convex rather than concave surface and brushed rather than polished stainless steel such that it does not have the focusing effect of the eye. As a result of modeling, the hat was determined to generate significant light. However, unlike the Founder's Room, the

¹⁴ Adams & Au Coin, LLP Attorneys at Law, 2 July 2003. Letter to Walt Disney Concert Hall I, Inc. (Jack Burnell, President and COO), Re: Promenade Owners Association. Contact: 2566 Overland Avenue, Suite 730, Los Angeles, CA 90064

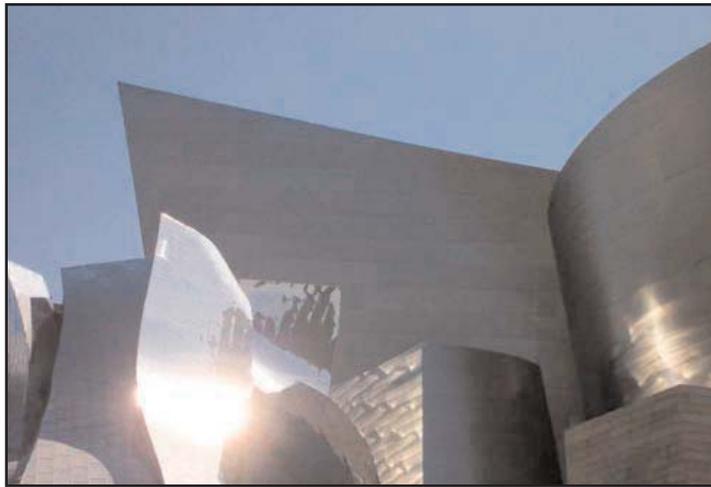


PHOTO 1

Photograph of "Knee," Founder's Room



PHOTO 2

Simulation of "Knee," Founder's Room

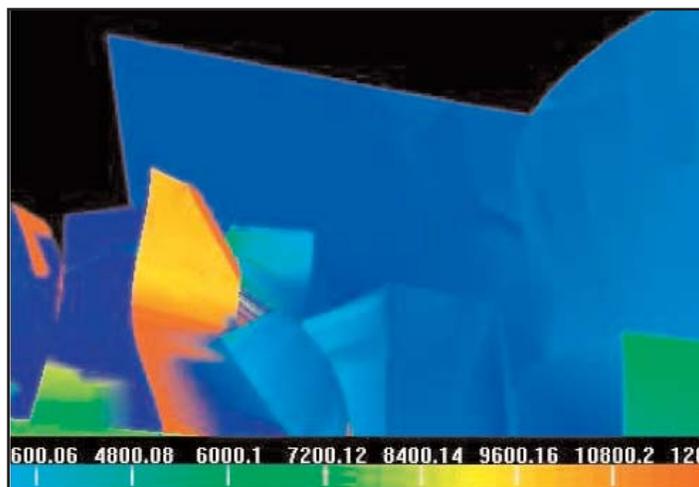


PHOTO 3

Luminance Plot of "Knee," Founder's Room



FIGURE 3.6.1-1

Photograph, Simulation, and Luminance of the "Knee," Existing Conditions



PHOTO 1
Photograph of "Hat"



PHOTO 2
Simulation of "Hat"

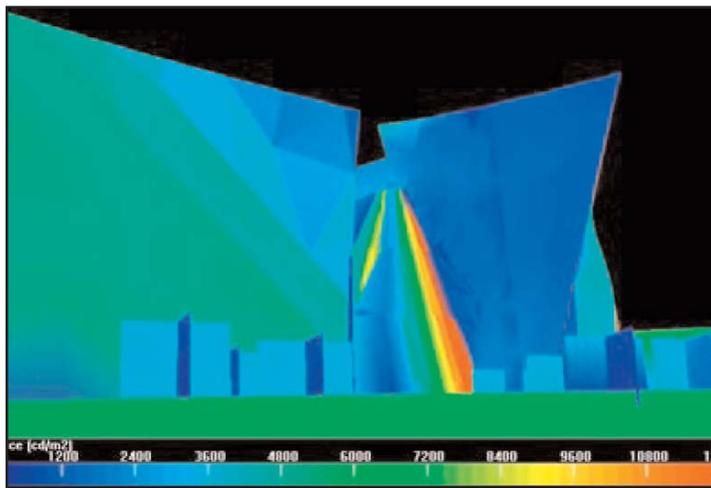


PHOTO 3
Luminance Plot of "Hat"



FIGURE 3.6.1-2
Photograph, Simulation, and Luminance of the "Hat," Existing Conditions

luminance is diffused rather than focused. As with the knees, the landscape trees serve as an important filter.

- The CalArts Theater Marquee (Figure 1.2-3) was included in the modeling to determine if its shape caused it to produce significantly more light or heat than anticipated by the Final EIR and Addendum No. 2 to the Final EIR. The CalArts Theater Marquee occupies the southwest corner of the site. It is characterized by undulating horizontal bands of polished stainless and brushed steel surfaces such that it raises local temperature along Second and Hope Streets. As a result of the modeling, it was determined that the luminance generated by the CalArts Theater Marquee reflects the “hot spots” (Figure 3.6.1-3, *Photograph and Luminance of CalArts Theater Marquee, Existing Conditions*). The reflections varied significantly throughout the day, often in an unexpected manner. The luminance results in some interference with traffic. Most surfaces of the CalArts Theater Marquee result in beamed and focused sunlight onto the ground in front of the marquee. This produces elevated surface temperatures. The worst situation occurs in late summer afternoons.

View

The elements of the project described in the Final EIR, as modified by Addendum Nos. 1 and 2 were constructed in substantial conformance with the massing, position, height, and location described. Therefore, the effect of the project elements on view and viewsheds remains unchanged from that described in the EIR analysis.

3.6.2 Impacts

The potential for impacts relating to views, light, and glare within the project area were analyzed based on criteria established in Appendix G to the State CEQA Guidelines. The analysis of impacts undertaken in this Addendum No. 3 to the Final EIR accounts for the modifications of portions of the exterior surface of the Walt Disney Concert Hall from polished stainless steel to brushed stainless steel to bring the glare experienced at the Promenade Towers into conformance with that of brushed stainless steel surfaces analyzed in the Final EIR and Addendum No. 2 to the Final EIR.

At the time that Addendum No. 2 to the Final EIR was prepared, an evaluation of the aesthetic character of each of the buildings was made. Addendum No. 2 to the Final EIR described the aesthetic character of each building; how each building related to adjacent or nearby buildings; and how street-scapes treatments related to human scale. Particular attention was given to how Parcel K development interacted with the existing adjacent residences.

This impact analysis considers the ability of the proposed treatment of selected surfaces of the Founder’s Room and the CalArts Theater Marquee to conform to the analysis of view, light, and glare included in Addendum No. 2 to the Final EIR. The treatments considered included modification of the surface through sandblasting or other scarification processes, placement of a physical barrier such as a film, and other methods of screening the offensive surfaces. This comparative analysis of impacts is summarized from Section 4.6.2, *Project Impacts*, of the Final EIR, Section 3.6.1, *Existing Conditions*, of Addendum No. 2 to the Final EIR, Section 3.6.1, *Existing Conditions*, of this Addendum No. 3 to the Final EIR and includes supplemental modeling that incorporates information gathered as a result of the field surveys conducted by Schiler and Associates, and Sapphos Environmental, Inc. on March 20, 2004, June 23, 2004, and June 28, 2004. Based on the modeling that was undertaken, the refined

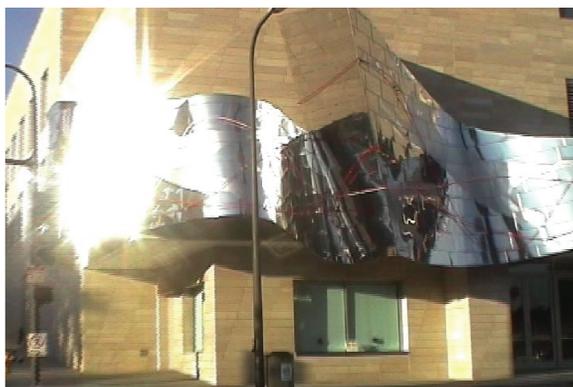


Photo 1
Photograph of CalArts Theater Marquee

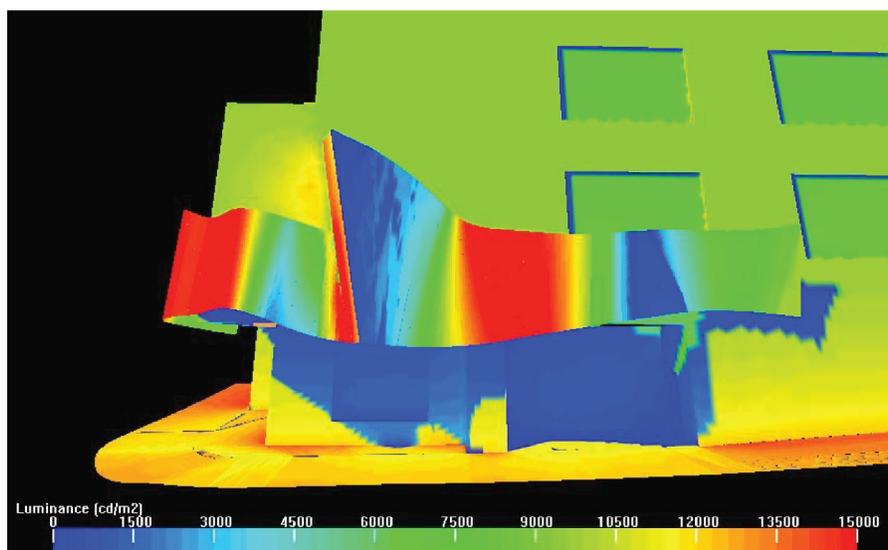


Photo 2
Luminance of CalArts Theater Marquee

SOURCE: Schiler and Associates



FIGURE 3.6.1-3
Photograph and Luminance of CalArts Theater Marquee, Existing Condition

project is expected to substantially conform to the analysis of view, light, and glare described in the Final EIR and Addendum No. 2 to the Final EIR.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not obstruct scenic vistas or views open to the public.** The project elements for Parcel K have been constructed consistent with the Final EIR, as modified by Addendum No. 2 to the Final EIR in regards to obstruction of scenic vistas, etc. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not obstruct scenic vistas or views open to the public, because these recommended modifications would be accomplished from within the footprints of the project and would not interfere with the existing scenic vistas or views and hence, would not require any changes to the existing views.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not create an aesthetically offensive site open to the public.** Existing conditions may be perceived as aesthetically offensive to some members of the public due to excessive light and glare from the selected surfaces of the Founder's Room and the CalArts Theater Marquee, which is not in conformance with the approved project. The approved project was anticipated to utilize brushed steel or limestone on portions of the exterior surface. However, exterior surfaces of the Founder's Room and the CalArts Theater Marquee were finished in polished steel and are not consistent with the approved project. This Addendum No. 3 to the Final EIR recommends sand brushing selected areas on the facades of the Founder's Room and the CalArts Theater Marquee. Due to modifications, the aesthetic character of the refined project would not be aesthetically offensive and may lend visual interest. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would bring the project into conformance with the Final EIR, as modified by Addendum No. 2 to the Final EIR.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not produce substantial new light and glare.** Light and glare were addressed in detail in Addendum No. 2 to the Final EIR (Table A3.6.2-1, *Percentages of Solar Radiation Absorbed by Various Building Materials*). The analysis documented the level of reflectivity of building materials quantified in terms of a ratio between the incident or absorbed energy and reflected energy. The analysis concluded that the reflectivity of the brushed stainless steel or titanium was comparable to or less than the reflectivity from limestone. The use of polished stainless steel on the surface of the Founder's Room and the CalArts Theater Marquee has resulted in light and glare from selected surfaces in excess of that anticipated in the previously approved environmental documents. While modeling and evaluating possible permanent solutions to resolve areas of concentrated luminance, a gray mesh fabric was installed on three surfaces as a temporary solution.

Further analysis of light and glare was conducted by Schiler and Associates to determine the necessary treatment to bring the project into conformity with the certified environmental analysis and approved project. Figure 3.6.1-1, Figure 3.6.1-2, and Figure 3.6.1-3 exhibit the level of reflectivity of the Founder's Room and the CalArts Theater Marquee. The analysis demonstrates that the reflectivity of selected treated surfaces of the Founder's Room and the CalArts Theater Marquee would be reduced to below the level of reflectivity from brushed stainless steel surfaces of the Walt Disney Concert Hall.

Therefore, the proposed modifications (sandblasting critical polished surfaces) to the Founder's Room and the CalArts Theater Marquee would be consistent with recommendations put forth in the Final EIR, as modified by Addendum No. 2 to the Final EIR.

3.6.3 Mitigation Measures

Section 3.6.3, *Mitigation Measures*, of Addendum No. 2 to the Final EIR, recommended one mitigation measure in the Mitigation Monitoring Program.¹⁵ The construction of the Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures. The proposed modification to sandblast the polished surfaces of the Founder's Room and the CalArts Theater Marquee would be consistent with recommendations put forth in Addendum No. 2 to the Final EIR. The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee would result in no new significant impacts related to view, light, and glare; thus, no additional mitigation measures are required.

3.6.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant impacts related to view, light, and glare in the area. As specified in previous environmental documentation, the mitigation measures required. In conjunction with view, light, and glare have been completed and will be further refined through the proposed modification described in Addendum No. 3 to the Final EIR. Therefore, the project will have less than significant impacts on view, light, and glare.

3.7 SHADE AND SHADOW

With respect to the modifications to the proposed treatment of selected surfaces of the Founder's Room and the CalArts Theater Marquee, the project would remain the same as that described in the Final EIR and Addendum Nos. 1 and 2 to the Final EIR. Section 4.7, *Shade and Shadow*, of the Final EIR adequately describes and responds to the affected environment with respect to shade and shadow. As with the Final EIR and Addendum Nos. 1 and 2 to the Final EIR, the refined project must comply with applicable County and local regulations and guidelines listed in Section 4.7, *Shade and Shadow*, of the Final EIR and is subject to the same regulatory framework as the approved project. The County believes the information presented in Section 4.7.1, *Existing Conditions*, of the Final EIR, as augmented by site inspections undertaken between October 2003 and June 2004 by Sapphos Environmental, Inc., represents the best available information upon which to describe the existing conditions for land use within the project area.

3.7.1 Existing Conditions

Existing conditions relating to shade and shadow within the project area, as they relate to the approved project, are described in detail in Section 4.7.1, of the Final EIR and in Section 3.7, *Shade and Shadow*, of Addendum No. 2 to the Final EIR. The existing conditions for this Addendum No. 3 to the Final EIR are consistent with the project build-out described in the Final EIR, as modified by Addendum No. 2 to the Final EIR.

¹⁵ County of Los Angeles and Community Redevelopment Agency, 1991.

3.7.2 Impacts

The significance thresholds contained in Appendix G of the State CEQA Guidelines used in the Final EIR were also used in this Addendum No. 3 to the Final EIR to analyze impacts on shade and shadow by the proposed modification to selected surfaces of the Founder's Room and CalArts Theater Marquee.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not change the total area affected by shadows.** As a result of the proposed modifications described in Addendum No. 2 to the Final EIR, the effects of shadows from the refined project were reduced to below the levels analyzed in the Final EIR. The total area affected by shadows was less due to elimination of hotel from the Parcel K. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not alter the massing, location, or geometry of any existing decrease in the total area affected by shadows from the total area evaluated for approved project.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect the amount of shadow cast onto three surrounding residential areas.** The buildings that comprise the Walt Disney Concert Hall have been constructed consistent with the Final EIR, as modified by Addendum Nos. 1 and 2 to the Final EIR in regards to shade and shadow effects of the project. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect the location, geometry, or massing of the buildings; therefore, there would be no change in the shadow cast onto three surrounding residential areas.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not project additional shadows onto open space at the County Mall.** The three buildings that comprise the Walt Disney Concert Hall have been constructed consistent with the Final EIR, as modified by Addendum Nos. 1 and 2 to the Final EIR in regards to shade and shadow effects of the project. Therefore, shadows cast onto open space at the County Mall are consistent with that analyzed in the Final EIR, as modified by Addendum No. 2 to the Final EIR. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not change the amount of shadow cast onto open space at the County Mall as considered by the Final EIR, and modified by Addendum No. 2 to the Final EIR.

3.7.3 Mitigation

Construction of the Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures.¹⁶ The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee results in no significant impacts related to the effects of shade and shadow cast onto the neighboring areas; thus, no mitigation measures are required.

¹⁶ County of Los Angeles and Community Redevelopment Agency, 1991.

3.7.4 Level of Significance After Mitigation

As with the approved project, the recommended modifications to selected surfaces would have no significant impacts on shade and shadow. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect this result. The level of significance with the proposed modifications would be less than significant.

3.8 NOISE

With respect to the modifications to the proposed treatment of selected surfaces of the Founder's Room and the CalArts Theater Marquee, the project would remain the same as that described in Addendum No. 2 to the Final EIR. As with the Final EIR and Addendum Nos. 1 and 2 to the Final EIR, the refined project must comply with applicable County and local regulations and guidelines listed in Section 4.8, *Noise*, of the Final EIR and is subject to the same regulatory framework as the approved project. The County believes that the information presented in Section 4.8.1, *Existing Conditions*, of the Final EIR, as augmented by further noise analysis undertaken by Davy & Associates on November 12, 1998, represents the best available information upon which to describe the existing conditions for noise-related impacts within the project area.

3.8.1 Existing Conditions

As described in Section 4.8.1, *Existing Conditions*, of the Final EIR and Section 3.8.1, *Existing Conditions*, of Addendum No. 2 to the Final EIR, the dominant noise source in the project area is roadway traffic from First Street, Olive Street, Grand Avenue, and Hope Street. Data on noise conditions is shown in Table A3.8.2-1, *Average Daily Traffic (ADT) Volumes for the Year 2002*; Table A3.8.2-2, *Calculated CNEL (dB) at 100 Feet for the Year 2002 Project Volumes*; Table A3.8.2-3, *Calculated CNEL Increase in DB for 2002 with Project (Normal Conditions)*; and Table A3.8.2-4, *Calculated CNEL in dB for 2002 Traffic Volumes with Project (with Theatre Matinee)*, of Addendum No. 2 to the Final EIR. As described in Addendum No. 2 to the Final EIR, the summary of existing conditions is as follows:

- A dominant source of ambient noise is roadway traffic from First Street, Olive Street, Grand Avenue, and Hope Street.
- Existing noise levels from Olive Street between First Street and Second Street are day-night sound level (L_{dn}) of 70 at less than 50 feet from the roadway centerline and L_{dn} 68 at 50 feet from the roadway centerline.
- Existing noise levels from Olive Street between First Street and Second Street are L_{dn} 70 at less than 50 feet from the roadway centerline and L_{dn} 68 at less than 50 feet from the roadway centerline.
- Existing noise levels from Grand Avenue between First Street and Second Street are L_{dn} 70 at less than 50 feet from the roadway centerline and L_{dn} 67 at 50 feet from the roadway centerline.
- Existing noise levels from Hope Street between First Street and Second Street are L_{dn} 70 at less than 50 feet from the roadway centerline and L_{dn} 67 at 50 feet from the roadway centerline.

The construction of the Walt Disney Concert Hall was completed in September 2003 and operation of the Walt Disney Concert Hall was initiated in October 2003. The proposed modifications to selected

surfaces of the Founder's Room and the CalArts Theater Marquee would have no new significant operational noise impacts.

3.8.2 Impacts

The significance thresholds contained in Appendix G of the State CEQA Guidelines used in the Final EIR were also used in this Addendum No. 3 to the Final EIR to analyze noise-related impacts generated by the modification to selected surfaces of the Founder's Room and CalArts Theater Marquee.

- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in significant increases in existing noise levels or expose people to severe noise levels during construction.** The Walt Disney Concert Hall initiated operations in October 2003. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee could be accomplished from within the footprint of the project, since the proposed treatment of selected surfaces can be accomplished with the use of limited heavy equipment. The noise impacts during construction would be comparable or lower than noise levels identified in the Final EIR and Addendum Nos. 1 and 2 to the Final EIR. As in the Final EIR analysis, noise impacts associated with modifications to the Founder's Room and the CalArts Theater Marquee may result in short-term audible noise levels in the area. However, the construction noise at the nearest residents to the project (Promenade Towers) would be consistent with the approved project; therefore, there are no anticipated significant impacts or ambient noise levels from construction of the refined project.
- **The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not result in significant increases in existing noise levels or expose people to severe noise levels upon build-out of the project elements.** The noise level associated with the modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not generate significant new impacts on ambient noise levels or increase the severity of the previously disclosed impacts.

3.8.3 Mitigation Measures

Construction of Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures.¹⁷ The proposed modification to selected surfaces of the Founder's Room and the CalArts Theater Marquee results in no new significant impacts on noise; thus, no additional mitigation measures are required.

3.8.4 Level of Significance After Mitigation

The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not raise any new significant noise-related impacts. As specified in Addendum No. 2 to the Final EIR, the mitigation measures required in conjunction with construction and operation of the Walt Disney Concert Hall have been completed. The level of significance with the proposed modifications would be less than significant.

¹⁷ County of Los Angeles and Community Redevelopment Agency, 1991.

3.9 SOCIOECONOMIC

With respect to the proposed modifications to the selected surfaces of the Founder's Room and the CalArts Theater Marquee, the project would remain the same as that described in the Final EIR, as modified by Addendum Nos. 1 and 2 to the Final EIR. Section 4.9, *Socioeconomics*, of the Final EIR and Section 3.9, *Socioeconomic*, of Addendum No. 2 to the Final EIR adequately describe and respond to the affected environment with respect to socioeconomic issues. As with the approved project, the refined project must comply with applicable county and local regulations and guidelines listed in Section 4.9, *Socioeconomics*, of the Final EIR and Section 3.9, *Socioeconomic*, of Addendum No. 2 to the Final EIR. The assumptions/projections presented in Addendum No. 2 to the Final EIR relied upon information provided in the Growth Management element of the Regional Comprehensive Plan and Guide¹⁸ for the period between 1990 and 2015 for population, and information provided in the Housing element of the Regional Comprehensive Plan and Guide for the period between 1990 and 2015 for housing and employment. The County believes that the information presented in Section 4.9.1, *Existing Conditions*, of the Final EIR and Section 3.9.1, *Existing Conditions*, of Addendum No. 2 to the Final EIR represent the best available information on which to describe the existing conditions for social and economic effects within the study area.

3.9.1 Existing Conditions

Existing conditions with respect to social and economic factors pertaining to the approved project are described in detail with respect to population, housing, employment, and job-to-housing balance in Section 4.9.1 of the Final EIR and are summarized in Section 3.9.1 of Addendum No. 2 to the Final EIR. The project is located within Census Tract No. 2075 in the Central Los Angeles subregion of Los Angeles County. The analysis for this Addendum No. 3 to the Final EIR shows that the proposed modifications to the selected surfaces of the Founder's Room and the CalArts Theater Marquee would have no impact on population, housing, and employment.

3.9.2 Impacts

The significance criteria used in the analysis of impacts related to social and economic effects are in accordance with Appendix G of the State CEQA Guidelines. This Addendum No. 3 to the Final EIR relies on impact assessment methods described in Section 4.9.2 of the Final EIR and Addendum No. 2 to the Final EIR. This analysis accounts for the completion of construction and initiation of operation of the Walt Disney Concert Hall, the Founder's Room, and the CalArts Theater Marquee. The proposed modifications to selected surfaces of the Founder's Room and the CalArts Theater Marquee would not affect population, housing, and employment as anticipated by Addendum No. 2 to the Final EIR and would not result in new significant impacts to social and economic sectors; thus, no new mitigation measures are required.

¹⁸ Southern California Association of Governments, 1995. *Regional Comprehensive Plan and Guide*. Contact: Southern California Association of Governments, 818 West Seventh Street, 12th Floor, Los Angeles, CA 90017.

- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not result in cumulative impacts on regional or local population projections.** The modification of selected surfaces of the Founder’s Room and the CalArts Theater Marquee would have no effect on existing regional or local populations due to the limited duration of the required work efforts and the availability of skilled labor within the existing market. The proposed modifications would be accomplished in a six- to twelve-week time frame. It is anticipated that a maximum of ten construction workers would be required at one time to complete the modifications. There is sufficient skilled labor with the existing work force. Therefore, the work effort would not have any impacts to growth in the region or generate requirements for additional housing.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not directly or indirectly induce substantial growth in the City or County of Los Angeles.** The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not involve the construction of any infrastructure, such as housing or utilities. In addition, there would be no change in the population and the required housing, and the proposed modifications would not induce substantial growth in the City of Los Angeles.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not displace existing housing or affordable housing.** The proposed modifications of selected surfaces of the Founder’s Room and the CalArts Theater Marquee would be completed within the footprint of the Walt Disney Concert Hall and therefore would not require the displacement of any existing housing or affordable housing units.
- **The proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not exacerbate a job-to-housing imbalance.** The proposed modification of selected surfaces of the Founder’s Room and the CalArts Theater Marquee under this Addendum No. 3 to the Final EIR would be accomplished by the existing labor in the surrounding area and thus would not exacerbate a job-to-housing imbalance.

3.9.3 Mitigation Measures

Walt Disney Concert Hall has been completed in conformance with the specified mitigation measures related to socioeconomic impacts specified in the Final EIR. Completion of the proposed modifications to selected surfaces of the Founder’s Room and the CalArts Theater Marquee would not result in new significant impacts to social and economic effects and thus would not require any new mitigation measures.

3.9.4 Level of Significance After Mitigation

As specified in Addendum No. 2 to the Final EIR, the mitigation measures required in conjunction with social and economic impacts for constructing and operating Walt Disney Concert Hall have been completed and has reduced impacts associated with population, housing, and job-to-housing balance to a less-than-significant level. The proposed modifications to selected surfaces of the Founder’s Room

and the CalArts Theater Marquee would not raise any new significant socioeconomic impacts; thus, the level of socioeconomic impacts would remain less than significant.

SECTION 4.0 FINDINGS

This Addendum No. 3 to the Final EIR has evaluated the potential environmental impacts associated with minor technical changes to the project description made during project implementation and subsequent modifications to the Walt Disney Concert Hall facade to bring the project into conformance with the approved project description described in Section 2.0 of this Addendum No. 3 to the Final EIR. Based on the analysis contained in Section 3.0 of this Addendum No. 3 to the Final EIR, it has been determined that the technical refinements to the Walt Disney Concert Hall, as discussed in Section 2.0, neither create new or more significant environmental impacts nor require any major revisions to the Final EIR.

Under Section 15164 of the State of California Environmental Quality Act (CEQA) Guidelines, an Addendum to an EIR is the appropriate form of document for a project change where none of the conditions described in Section 15162, calling for the preparation of a Subsequent Environmental Impact Report (EIR), have occurred.

The conditions requiring the preparation of a Subsequent EIR, which do not exist for the technical refinements to the Walt Disney Concert Hall, are defined in Section 15162 of the State CEQA Guidelines:

- Substantial changes are proposed in the project that will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
- Substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
- New information of substantial importance, which was not known and could not have been known with exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - The project will have one or more significant effects not discussed in the previous EIR;
 - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
 - Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternatives.

As a result of the analysis undertaken by the County of Los Angeles (County) in Section 3.0, the County has concluded that the level of glare generated by the Walt Disney Concert Hall facade, with incorporation of the project modifications discussed in Section 2.1.3, does not exceed the level of glare determined to be less than significant in the Final EIR, thereby bringing the project into conformance with the approved project description. Therefore, none of the conditions defined in Section 15162 of the State CEQA Guidelines would occur as a result of the implementation of the technical refinements to the project description. Refinements to the project do not raise new or more substantial significant impacts to the environment. The Final EIR comprehensively discloses those environmental impacts that would be anticipated in association with the materials used for construction of the Walt Disney Concert Hall under the approved project description.

Therefore, the County has concluded that a Subsequent EIR, or any follow-up EIR, is not required and that an Addendum to the Final EIR is the appropriate CEQA compliance document for approval of the minor technical refinements to the project, pursuant to and in compliance with State CEQA Guidelines Section 15164.

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***APPENDIX A
DISNEY HALL GLARE STUDY:
AMENDMENT NO. 1: ALTERNATE SURFACE TREATMENT***

Disney Hall Glare Study



Amendment No. 1: Alternate Surface Treatment

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Executive Summary

The sanded surface suggested by Gehry and Associates would be equivalent to or slightly better than the sandblasted surface originally proposed. The proposed sanded surface solution is aesthetically more pleasing and less expensive than the originally proposed sandblasted surface.

Introduction

Review of Original Solutions

As indicated in the original *Disney Hall Glare Study* (Schiler and Associates, 2004), the polished stainless steel surfaces of the Founder's Room and CalArts Theater Marquee clearly require some remediation. The surfaces requiring treatment were indicated in red in the *Disney Hall Glare Study* and reviewed with representatives of Gehry and Associates. Gehry and Associates agreed to modify the tan-colored surfaces shown in Figure 1, *Founder's Room Surfaces, from 1st Street (Northeast)*; Figure 2, *Founder's Room Surfaces, from Hope Street (Northwest)*; Figure 3, *Marquee Surfaces, from West*; and Figure 4, *Marquee Surfaces, from Southwest*.

An interim solution consisting of a gray fabric was installed over some of the surfaces. Several permanent solutions were tested by Schiler and Associates, as reported in the *Disney Hall Glare Study*, including surface films and a sandblasting procedure resulting in a surface similar to the original brushed stainless steel. The sandblasted surface was determined to be preferable to the other solutions.

Cost and Hazard Mitigation

The process of sandblasting (or bead blasting) the surfaces *in situ*¹ presents several difficulties in terms of equipment and especially in terms of the process. Safe equipment access to some of the higher curved surfaces on the Founder's Room is complicated. Furthermore, the spent abrasive must be controlled and collected. The slightest breeze causes dispersion into areas occupied concurrently by the public. Sealing off the work area and/or the public spaces is complicated by the interesting but convoluted nature of the building. Although this is all possible, it is somewhat expensive. As a result, Gehry and Associates has found alternatives that are less expensive and similar in outcome.

¹ *In situ* is defined as the original position.

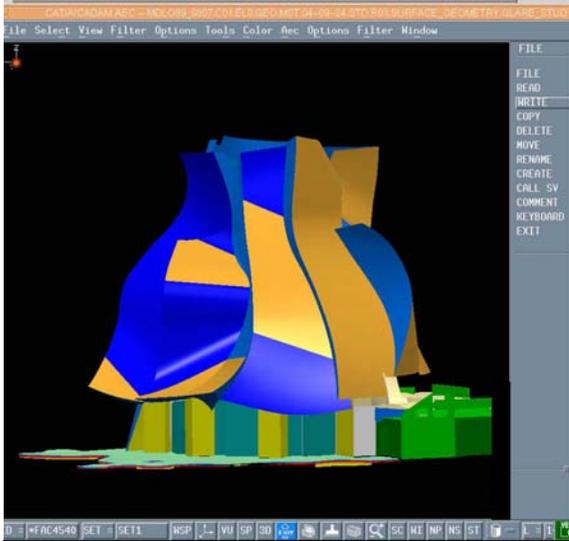


Figure 1 – Founder's Room Surfaces, from 1st Street (Northeast)

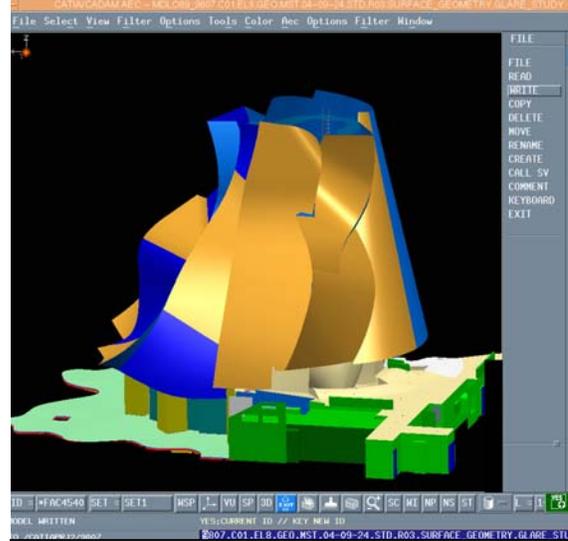


Figure 2 – Founder's Room Surfaces, from Hope Street (Northwest)

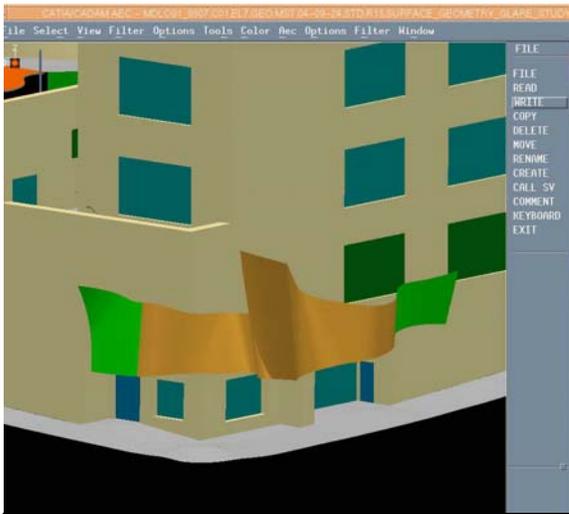


Figure 3 – Marquee Surfaces, from West

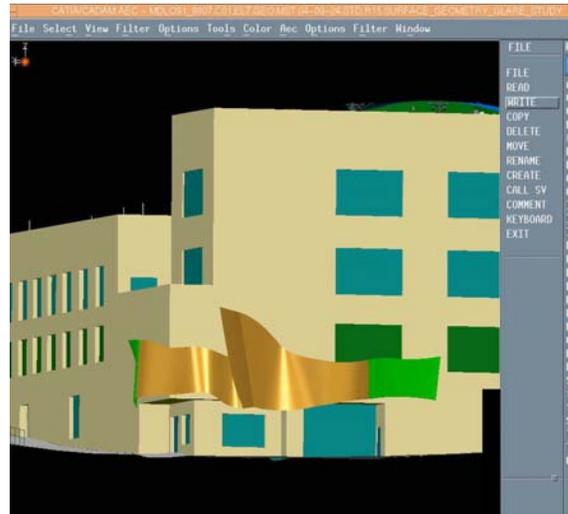


Figure 4 – Marquee Surfaces, from Southwest

Review of Newly Proposed Solutions

Representatives of Gehry and Associates proposed six possible versions of a hand-applied machine sanding of the critical surfaces. There is no pressurized equipment involved, and there is an absolute minimum of spent abrasive.

Test panels were created using each method. The methods were reviewed by Schiler and Associates and the intentions and desirable outcomes discussed with representatives of Gehry and Associates (beginning on January 6, 2005.)

Vibration Sanding with 220 Grit

Vibration sanding with 220 grit reduces the reflectance only slightly, but is successful at reducing the specularity (“shininess” or “glossiness”) substantially (94–98 percent). This would result in defocusing the reflected direct beam sunlight as desired.

The resulting surface of the vibration sanding with 220 grit is fairly uniform.

The resultant grain of the surface is similar to that of the brushed stainless found on the rest of the building.

It is relatively easy to assure that there are no spots on the surface that would be more specular than the rest.

Orbital Sanding with 220 Grit.

Orbital sanding with 220 grit reduces the reflectance only slightly, but is successful at reducing the specularity substantially (83–96 percent). This would result in defocusing the reflected direct beam of sunlight as desired.

The resulting surface of the orbital sanding with 220 grit, however, is not very uniform.

There is a faint pattern to the surface texture, with some portions of the surface strongly affected and some portions remaining more specular. The net effect is interesting, but not as safe as the vibration sanding.

The solution is aesthetically more interesting than the uniform vibration sanding.

Vibration Sanding with 100 Grit

Vibrator sanding with 100 grit reduces the reflectance only slightly, but is successful at reducing the specularity substantially (96–97 percent). This would result in defocusing the reflected direct beam sunlight as desired.

The resulting surface of the vibration sanding with 100 grit is very uniform.

There is more “sparkle” than in the 220 grit. This gives the surface an appearance of “depth,” which comes from the increased graininess and the individual reflections from the minute disturbances inherent in the rougher surface.

There is no portion of the surface that would be more dangerous than the rest.

Orbital Sanding with 100 Grit.

Orbital sanding with 100 grit reduces the reflectance only slightly, but is successful at reducing the specularly substantially (94–97 percent). This would result in defocusing the reflected direct beam sunlight as desired.

The resulting surface of the orbital sanding with 100 grit, however, is not entirely uniform.

There is a strong pattern to the surface texture, with some portions of the surface strongly affected and some portions remaining more specular. The net effect is interesting but not as safe as the vibration sanding.

There is more “sparkle” than in orbital sanding with 220 grit. This gives the surface an appearance of “depth,” which comes from the increased graininess and the individual reflections from the minute disturbances inherent in the rougher surface.

The solution is aesthetically more interesting than the uniform vibration sanding.

Combined Vibration Sanding at 100 Grit Followed by Orbital Sanding at 100 (or Coarser) Grit

It is possible to combine the strengths of vibration sanding and orbital sanding. The first procedure is to sand the surface with the vibration process, producing a uniform surface with no possibility of some portions remaining more specular. This still requires care on the part of the equipment operator, but the method is inherently more uniform.

The second procedure may be applied over the first procedure, resulting in the depth and sparkle inherent in the orbital sanding. Portions of the surface that are not disturbed in the second process retain the safety of the first process. It is expected that the second procedure could be done with an even coarser grit.

The combined procedure provides both the safety of the vibration sanding and the aesthetic depth and patterning of the orbital sanding. The resultant surface would “sparkle” without focusing any direct beam sunlight.

The combined procedure is aesthetically preferable, at least as effective and still likely to be less expensive than the sandblasting (or bead blasting) that was originally considered.

Combined Vibration Sanding at 220 Grit Followed by Orbital Sanding at 220 Grit

Combining the two procedures using the finer grit would produce a slightly smoother surface with roughly the same effect.

Long-Term Impact on Weathering

There were no tests performed to predict any change in the long-term behavior of the stainless steel after the sanding procedures. There could be some degradation in the weathering performance of the steel, but this would only decrease reflectance and specularly, resulting in a lower likelihood of glare. It would also have been inherent in any sandblasting treatment.

Conclusions

Temporary Solution

The likelihood of glare begins to increase substantially after the beginning of March. Either the temporary solution should be extended to cover all of the surfaces, or the permanent solution should be completed before mid March.

Permanent Solution

The permanent solution should be applied in stages most convenient and economical to the project. At minimum, the vibration sanding should be completed by mid March, and it must be stressed to the equipment operator that uniformity is necessary. For cost reasons, the second procedure could be immediately subsequent or even concurrent. Uniformity is not critical and it would be acceptable to use a coarser grit.

Further Studies

No further studies are currently recommended. Schiler and Associates will verify that the surface, as tested in situ, meets the design guidelines.

Summary

Disney Hall will always remain a scintillating building. The proposed solution does not detract from that, but rather it would defocus the reflections such that the glare would be significantly reduced and the most critical conditions would be eliminated. The cooperation shown by Gehry and Associates has resulted in an aesthetically pleasing solution to a complex phenomenon. The changes in the building surface should not

detract from the design concept, but rather reinforce it in a slightly different fashion, taking the environmental concerns into account.

Job #03067:

Disney Hall Glare Study



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Final Report

Disney Hall Glare Study

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Executive Summary

The Founder's Room is the primary source of focused glare on adjacent buildings and intersections. Several surfaces or portions of surfaces should be reduced in specularity by brushing, sandblasting, or covering. These are shown in the report. Sandblasting is suggested.

The CalArts Theater Marquee causes localized glare in the intersection and some overheating on surrounding surfaces. More areas on the marquee should be brushed or covered.

There are several sections of the building that become extremely bright, causing diffused heat gain and mild glare. None of the brushed surfaces are sufficiently blinding and/or in line with traffic to be the real cause of any accidents. None of the brushed surfaces cause extreme heat gain in adjacent buildings.

The impact of the Walt Disney Concert Hall on the surrounding environment can be minimized by treating the CalArts Theater Marquee and the Founder's Room surfaces. The result will be a building typical of other large downtown buildings in impact.

Introduction

A Jewel

The Walt Disney Concert Hall (Disney Hall) is designed as an icon for the City of Los Angeles. Frank Gehry, the architect, talks about frozen motion when describing the swooping and complex curved surfaces. The brushed stainless steel, polished stainless steel, and white limestone present a striking, high-impact image for the Los Angeles Philharmonic, City of Los Angeles (City), and County of Los Angeles (County). Indeed, the building is a jewel in many senses. It sparkles in the sun and changes with every different angle of view. In many ways, it is a state-of-the-art building, pushing the envelope of architecture.

Any building that pushes the envelope discovers new difficulties as well as new beauties. The very sparkle that excites the viewer also presents some difficulties. As Jim Hahn, the mayor of Los Angeles, said during the dedication ceremony, "This building has a UV factor of 100" (L.A. Times, 10/21/2003). He was referring to its brightness on the world stage but also to its physical effects on those in its proximity.

There are portions of the building that are especially reflective. The polished stainless steel of the Founder's Room and the CalArts Theater Marquee reflect, and in some cases concentrate, significant amounts of light. This represents the possibility of glare at a distance and even thermal issues on nearby surfaces. Stationary light weight surfaces in the vicinity of the CalArts Theater Marquee can get very hot. There is the possibility of

interference with traffic. The brushed stainless steel panels result in much milder reflections, but are also examined.

The results of the studies are presented below. For an explanation of the sequence of events during the study, please see the Preliminary Report.

Glare on Promenade Towers

The Founder's Room is located on the north corner of the site. To the northwest, there is a residential mid-rise building, the Promenade Towers. The units of the Promenade Towers that face Disney Hall have a wonderful view. However, there are moments when the sun is reflected directly onto the southeast facade of those units. The lower units are shielded by the terrace and street wall of Disney Hall, but the mid and upper units receive some direct light and some light filtered by trees.

It is useful to note that the southeast facade of the Promenade Towers received direct sunlight before the arrival of the Disney Hall. However, the additional reflected sunlight arrives throughout the afternoon, when the sun has moved to the southwest and west, reflecting off the Founder's Room.

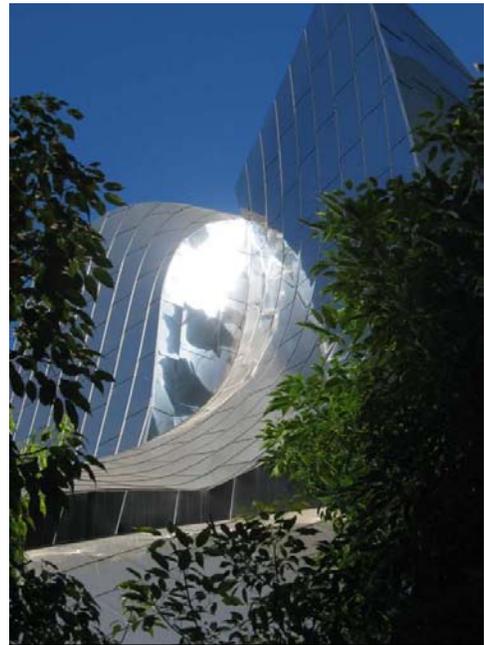
At least one resident of the Promenade Towers has indicated to the County that there are times when they find that the reflections are uncomfortable. This report examines the instances of possible glare, the level of such glare, and what amelioration might prove useful.



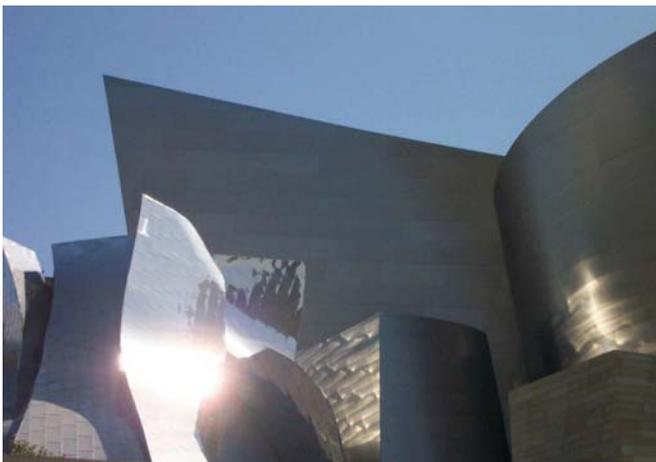
Visual and Photographic Survey

Several visual and photographic surveys have been made of the building. These found that the “hot spots” and reflections varied significantly throughout the day, often in an unexpected manner. This is especially true of building surfaces that form right angles with one another, producing multiple reflections and some focusing.

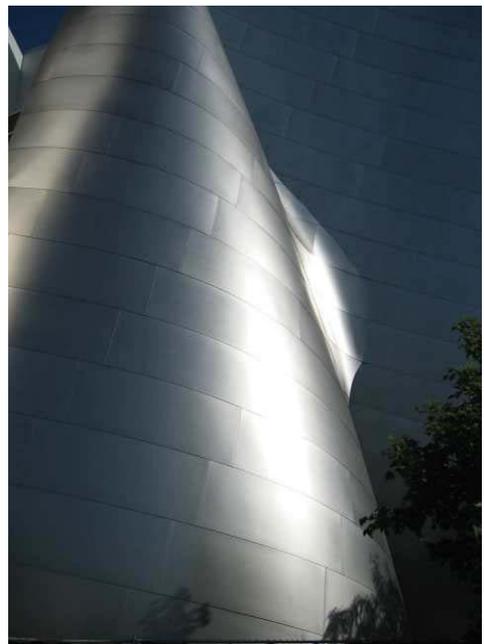
Visual surveys of the Founder’s Room found that there is significant light reflection from three surfaces, the “eye” and the two “knees.” There are two large surfaces on the Founder’s Room, which were nicknamed “knees.” They are concave at the top and convex in the lower portions. The upper portions concentrate light but are not large surfaces. The lower portions do not focus light, but unfortunately varying portions of the surface remain bright throughout most afternoons, as the reflection walks down the surface. This means that there is always some reflection towards the units across the street, but less danger of heat gain. The wider portions of these surfaces are lower and are thus filtered by the trees on the patio/terrace.



Reflective “Eye” on Founder’s Room



Reflective “Knee” on Founder’s Room



Reflective “Hat” of Brushed Stainless

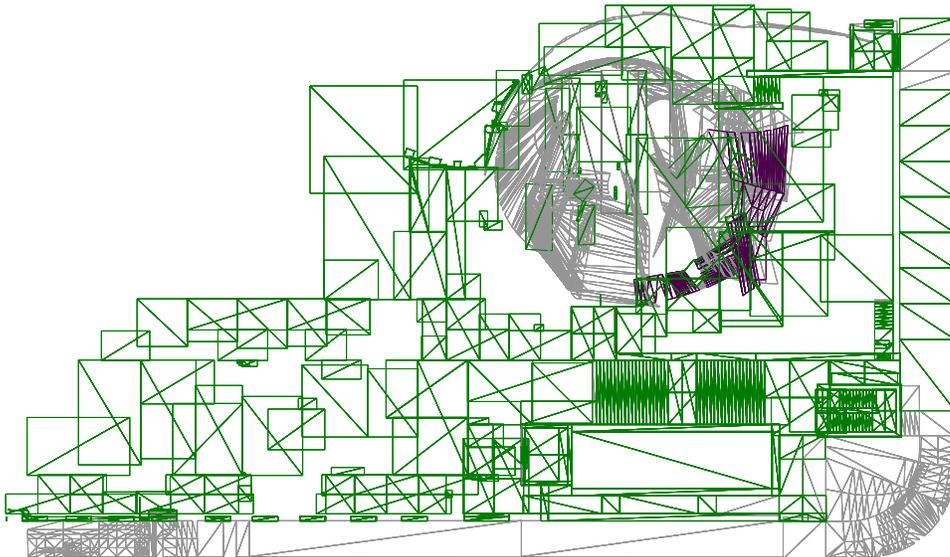
There was also an “eye” that was composed of a surface perpendicular to a concave focusing surface. This produces a collimated beam.

Similarly, there was a portion of the brushed stainless steel facade that posed some possible difficulty. A conic section, halfway down the auditorium facade created some brightness, but no focus.

Computer Surveys

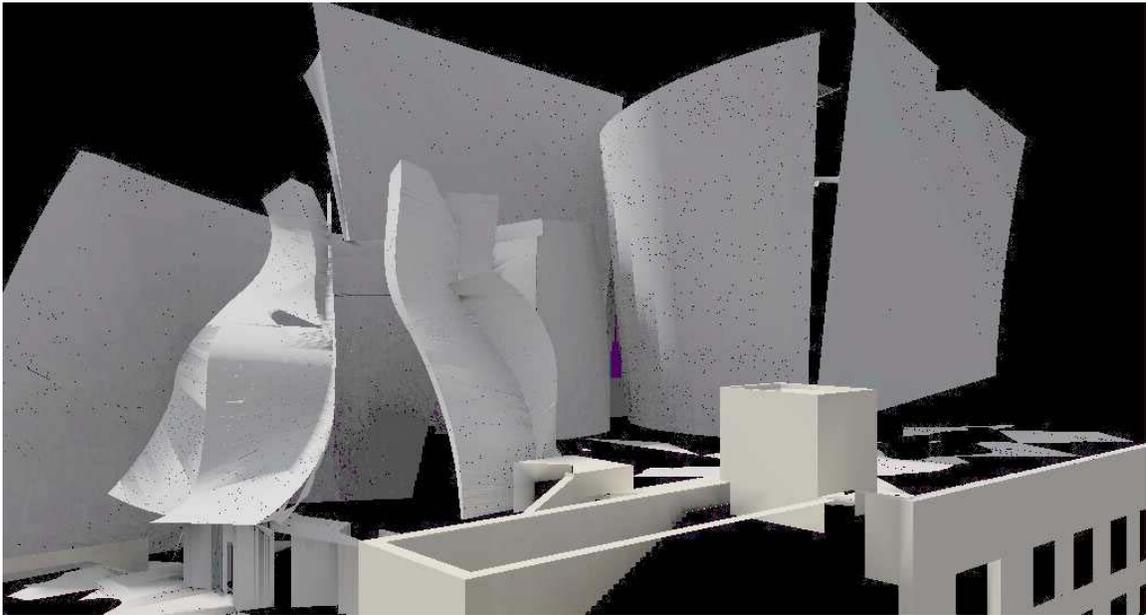
There are two ways of providing a full analysis of the reflections. A complete **physical model** of the building firmly fastened to its base can be tilted and rotated in conjunction with a solar gnomon and then measured and photographed. The photographs can be digitally analyzed for glare. Alternatively, a complete **computer model** can be used in one of several simulation programs, or individual surfaces can be modeled individually.

There were no physical models available for testing. Gehry’s office had several computer files available. The computer simulation option was chosen.

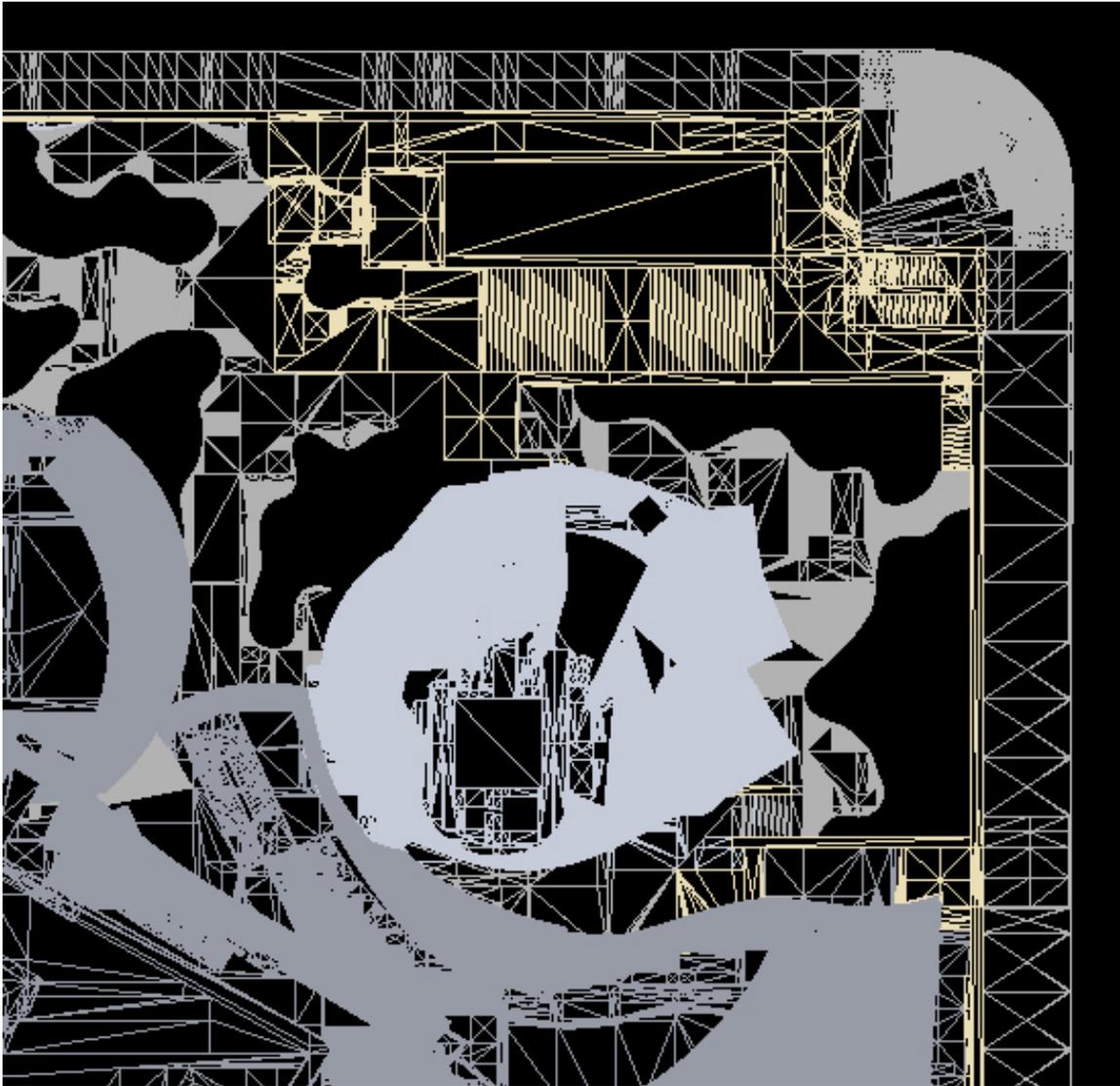


Translation of Computer Files

Files were available in Initial Graphics Exchange Specification (IGES) format. These files were provided by Gehry’s office. They were translated into Drawing Interchange File (DXF) formats using PolyTrans and SolidView Pro. These were tested in AGI32 and Lightscape. Two surfaces from the Founder’s Room were missing.



The second set of files was delivered in DXF format. These files were sorted into two groups. One consisted of the north corner of the site including the Founder's Room. Unnecessary information (e.g., railings, etc.) were culled from the file to reduce the number of polygons. The other file consisted of the rest of the site, although it was later found that the CalArts Theater Marquee was missing.



The Founder's Room file was simulated in Lightscape but was found to be prohibitive in size (950,000+ vertices). A single sun position took in excess of three days of continuous computer run time. The file was culled and the remaining surfaces were combined into larger surfaces.

Missing Data

The Gehry files did not contain information on surrounding buildings, such as the height and facade of the Promenade Towers.

The viewpoints for the upper floors were calculated in three dimensions and used as the viewpoint locations for the subsequent simulations.

Simulations

Lightscape allows simulations with specific material characteristics to be done for hourly sun positions. The data is stored as a three-dimensional file, not just a single view. This allows the complete calculation of the lighting conditions resultant from a particular sun position. This is stored and can be subsequently viewed from multiple positions. (Several alternative programs require separate calculations from each viewpoint.)

The images produced can be color coded for possible sources of glare. Any yellow or red surface that coincides with a high specularly (e.g., polished stainless steel) represents a possible source of glare.

The polished and the brushed portions of the facade were examined separately.

Seasonal Surveys at Half-Hour Intervals of the Founder's Room

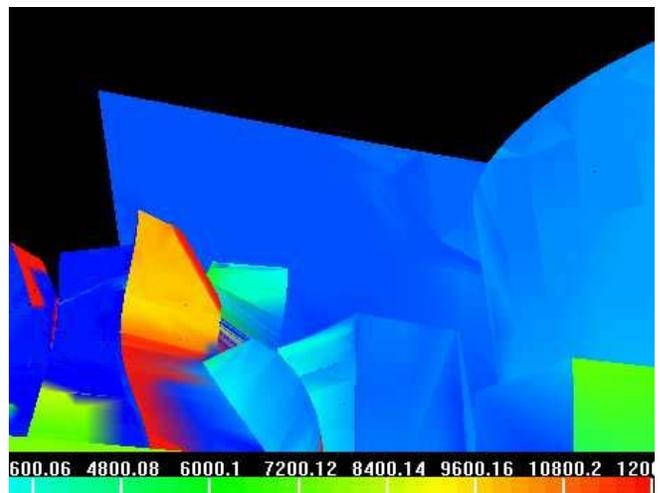
Complete simulations were run at half-hour intervals for all daylight hours on representative December (winter), March/September (spring/fall), and June (summer) days.



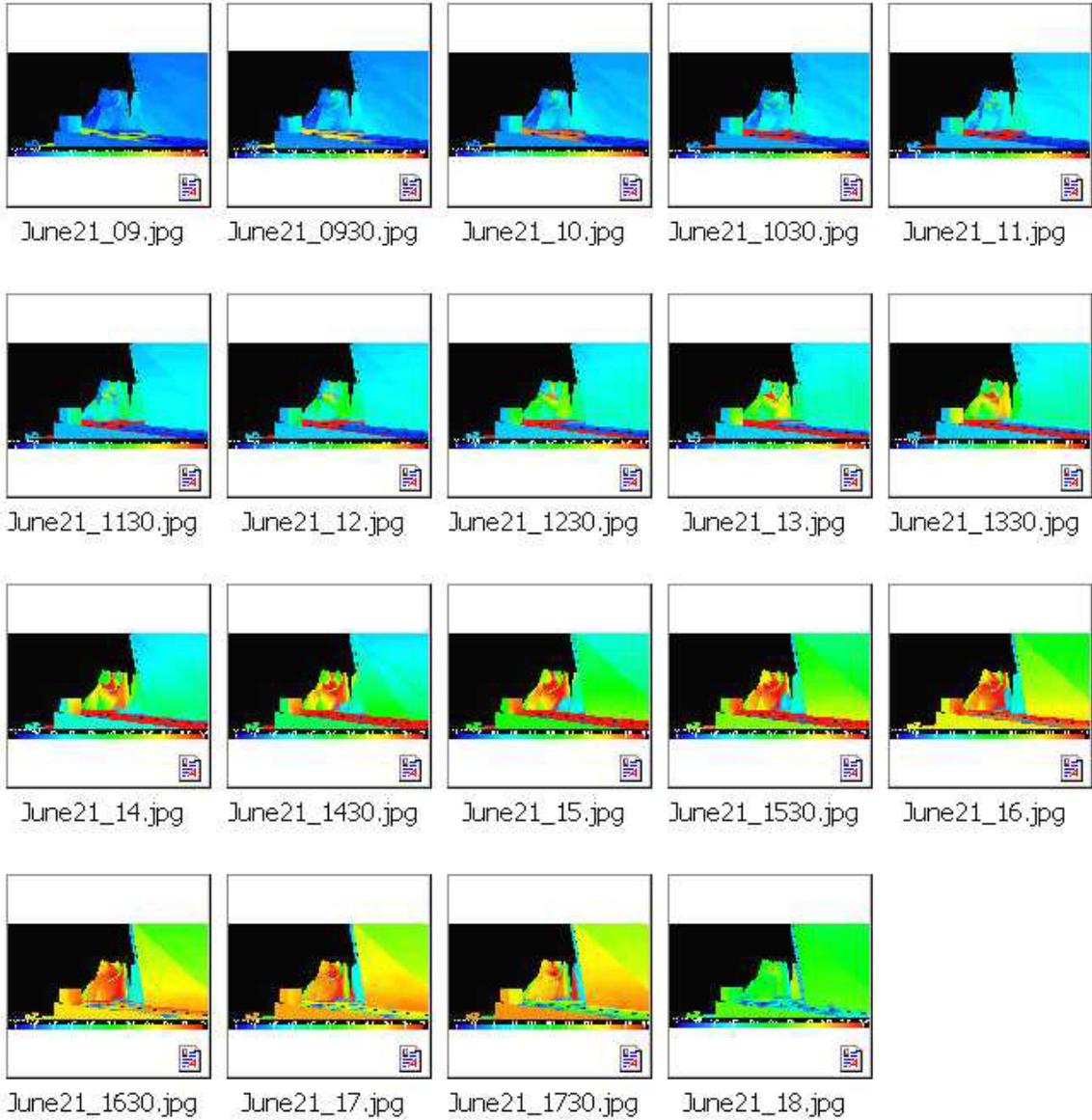
Photo of Reflection from Polished Founder's Room



Simulation of Reflection from Computer Model

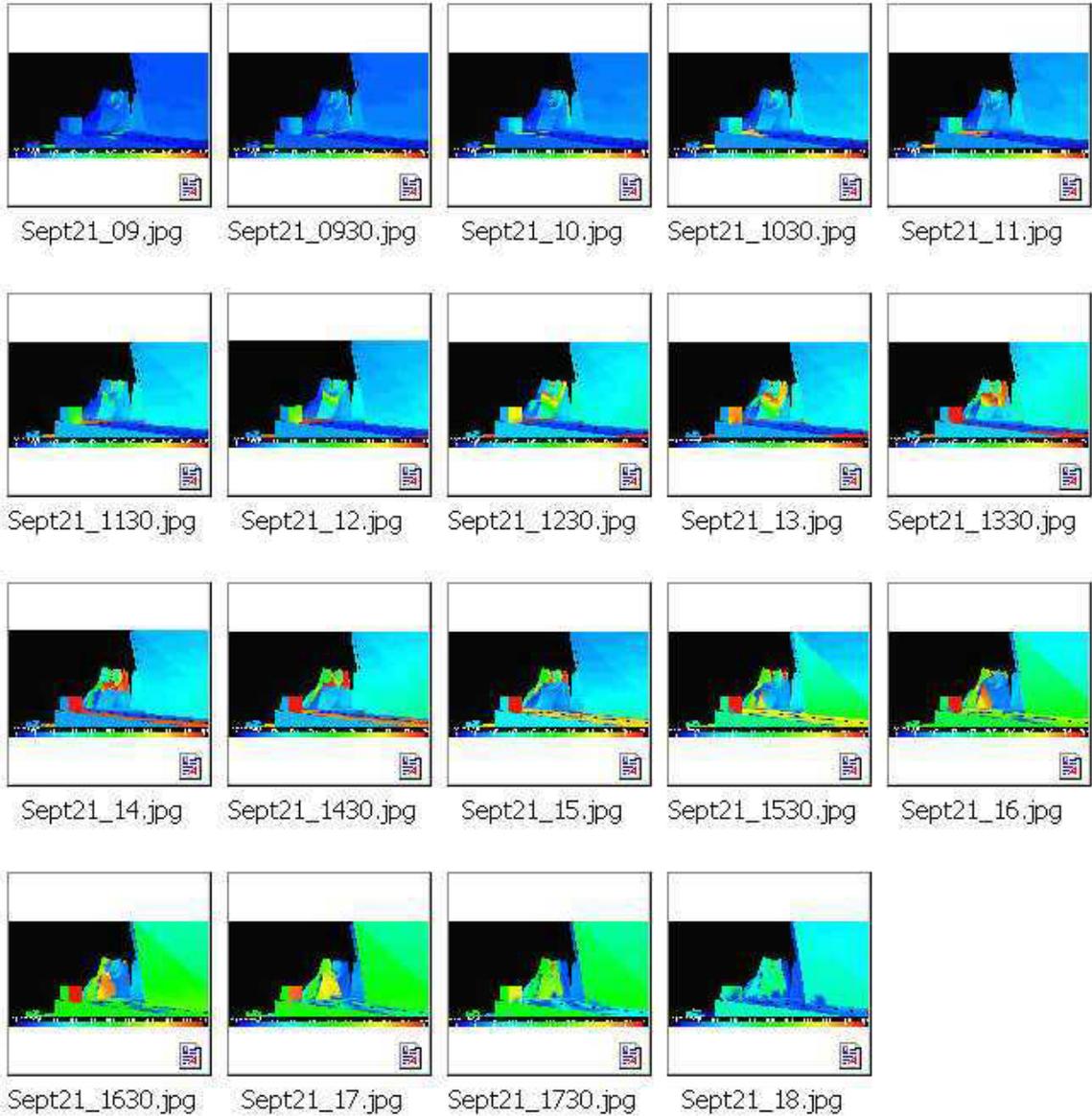


Luminance Plot from Simulation



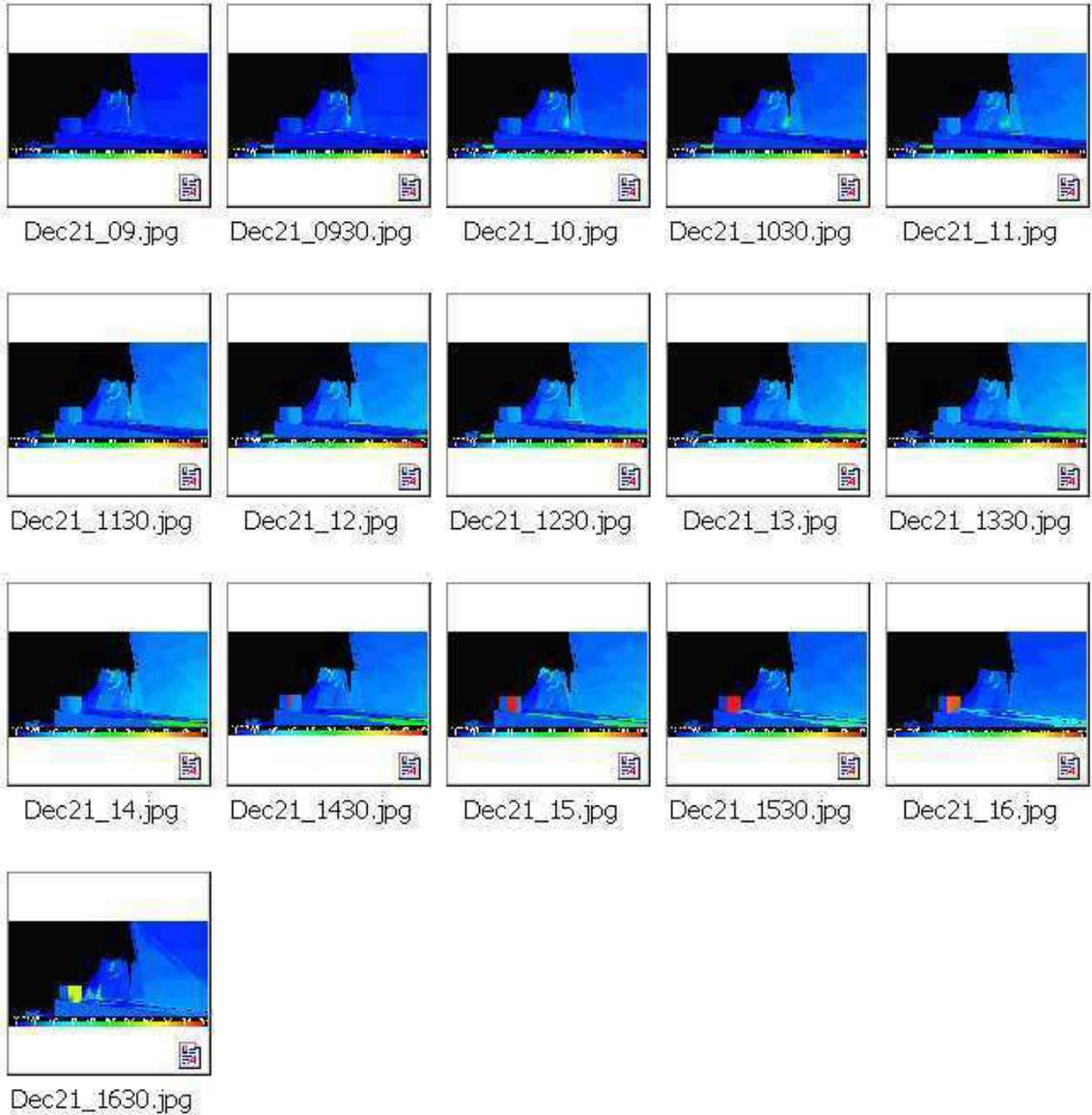
Luminance Plots of Founder's Room at Half-Hour Intervals for June

Note the significant areas from 12:30 p.m. to a peak glare condition around 4:00 p.m.



Luminance Plots of Founder's Room at Half-Hour Intervals for Spring/Fall

Note the continued likelihood of glare at somewhat earlier hours of the day.

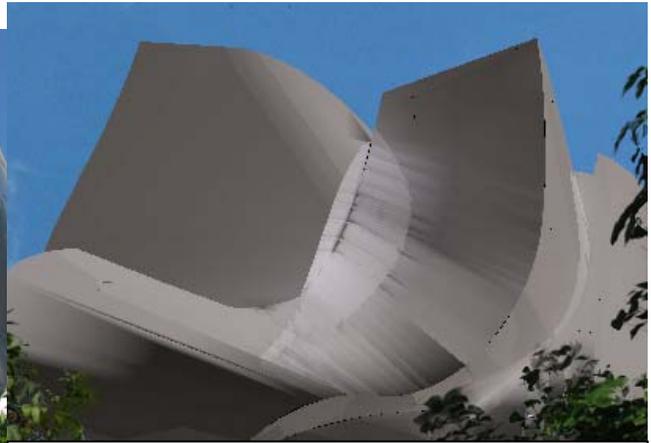


Luminance Plot of Founder's Room at Half-Hour Intervals for December

Note the reduced likelihood of glare in December due to the critical portions of the facade being shaded by other portions of the facade.



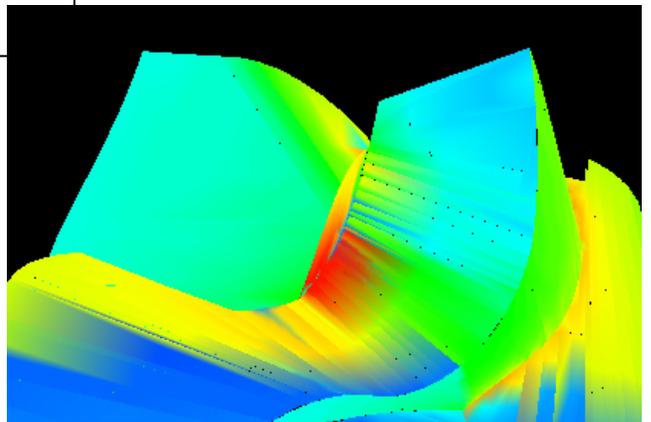
Photograph of "Eye"



Simulation of "Eye"

Results

Luminance surveys of the Founder's Room confirm that there is significant light reflection from three surfaces, the "eye" and the two "knees." The eye reflectance is a compound reflectance from two adjacent surfaces and the eye itself, resulting in the equivalent of a taillight or bicycle reflector. The light is very bright and collimated. Furthermore, the surface is well above the level of the trees; thus, there is no filtering effect. The main wing of the Disney Hall immediately to the southwest of the Founder's Room shades the "eye" in much of September and the winter months, but the reflections reappear in the summer months.

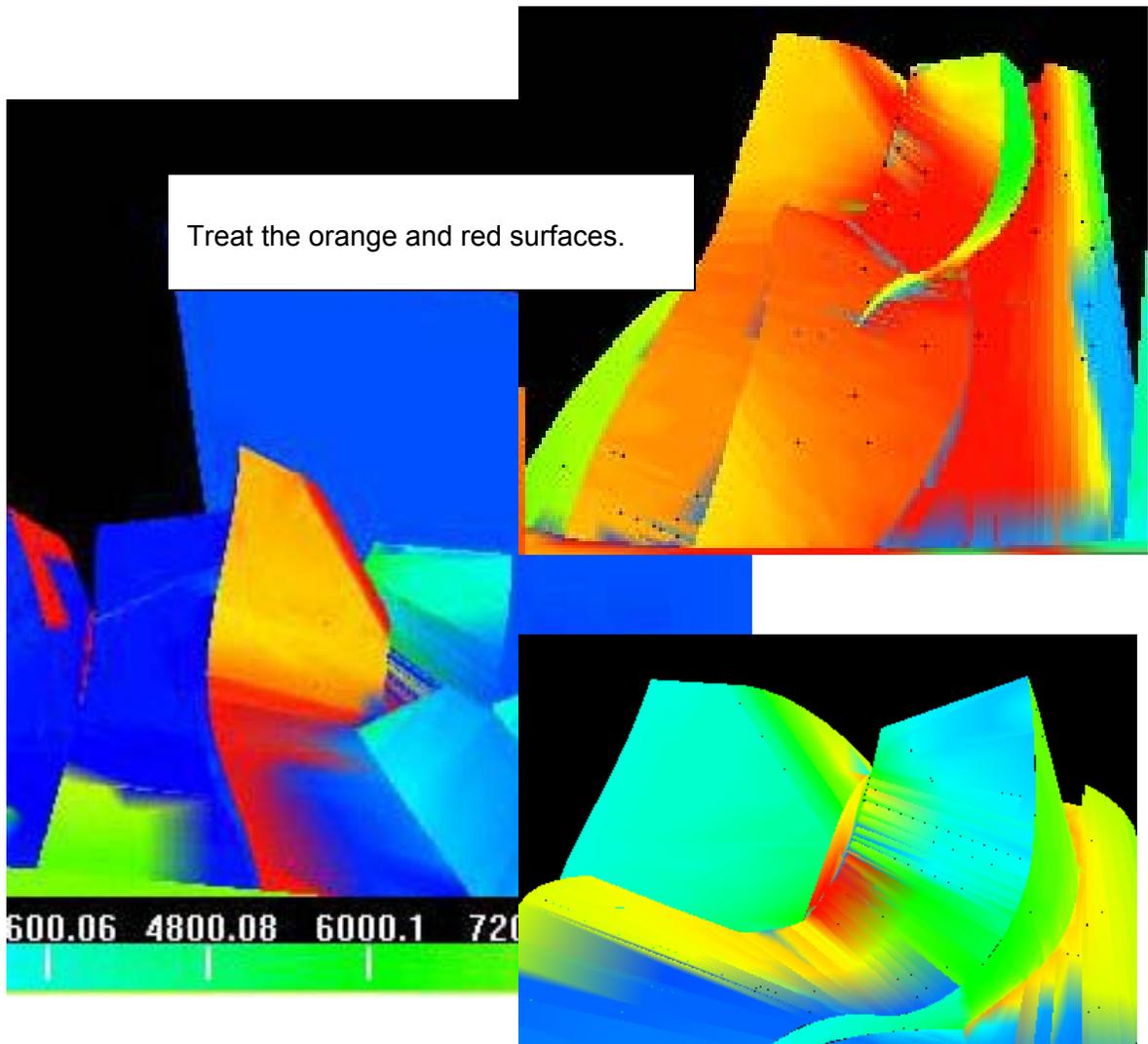


Luminance Plot of "Eye"

Summary

The upper portions of the Founder's Room facing the Promenade Towers will, at various times, send a beam of collimated light into the balconies and apartments. This will cause visual discomfort, which has been simulated, and is likely to cause an increase in heat gain; however, the exact heat gain has not been measured or simulated. The lower surfaces of the "knees" have high reflectance as well. The lower floors of the Promenade Towers are generally shielded or filtered by the trees, although a few units may "see" between the trees. Unfortunately, the uppermost floor will still get some direct reflection, even from the lower panels.

The surfaces indicated in orange or red should be treated.



Glare at Intersection of 1st and Hope Streets

The intersection of 1st Street and Hope Street occurs immediately to the north of the Founder's Room. There are moments when the sun is reflected directly off the Founder's Room into the intersection. This can interfere with a clear view of traffic and pedestrians, especially when heading south on Hope Street and turning left or heading east on 1st Street.



Visual and Photographic Survey

Several visual and photographic surveys have been made of the intersection. These found that the “hot spots” and reflections varied significantly throughout the day, often in an unexpected manner.

Photographic surveys of the Founder's Room found that there is significant light reflection into the intersection from two more surfaces and the corner of a third surface; this is in addition to one of the surfaces that had already been shown to reflect onto the Promenade Towers.

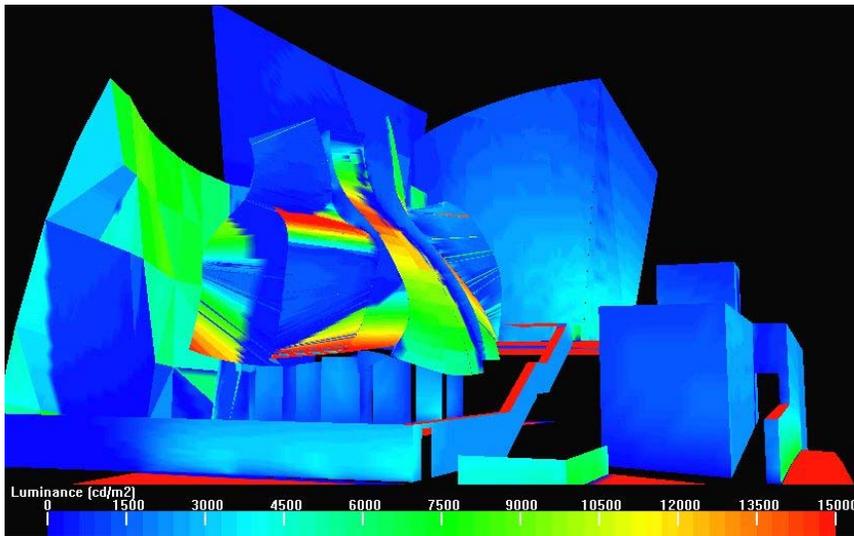
Because the two additional surfaces are curved (like a neck on top and a bulge half way down), they throw a light beam into the intersection at various times throughout the afternoon. Different portions are involved at different times.



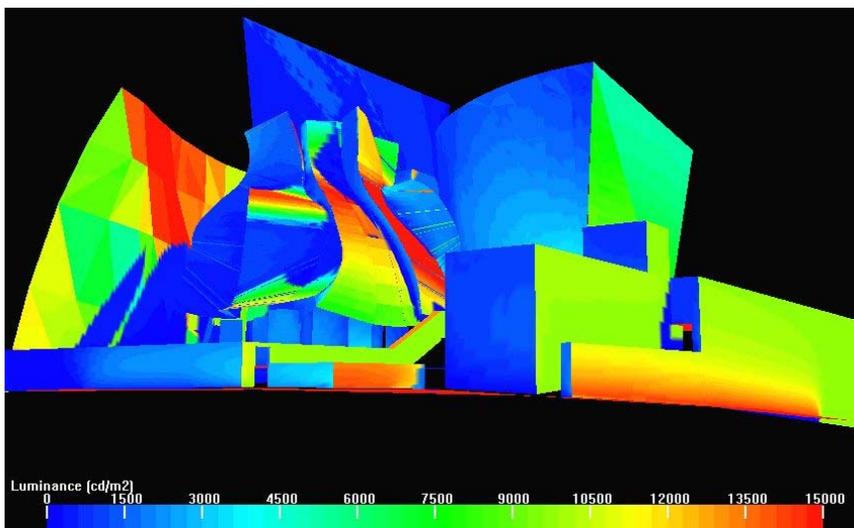
Computer Surveys

Again, the Founder's Room file was simulated in Lightscape, but was found to be prohibitive in size. A single sun position took in excess of three days of continuous computer run time. The file was culled, and the remaining surfaces were combined into larger surfaces. The portion of the Founder's Room that was not visible from the intersection was discarded for this simulation and the other background surfaces were simplified. For this reason, the resulting simulations show light hitting some of the surfaces behind the Founder's Room, which does not occur in the real building and does not interfere with the simulation.

Two kinds of simulations were performed. The first was taken from the eye level of a driver in the left-turn lane heading south on Hope Street. The second was taken from a diagonal point across the intersection, with a wide angle view.

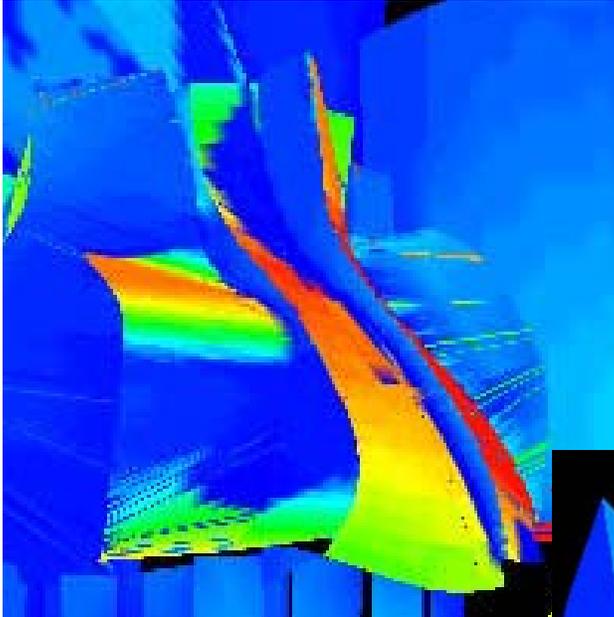


View from Left-Turn Lane, Bus Height



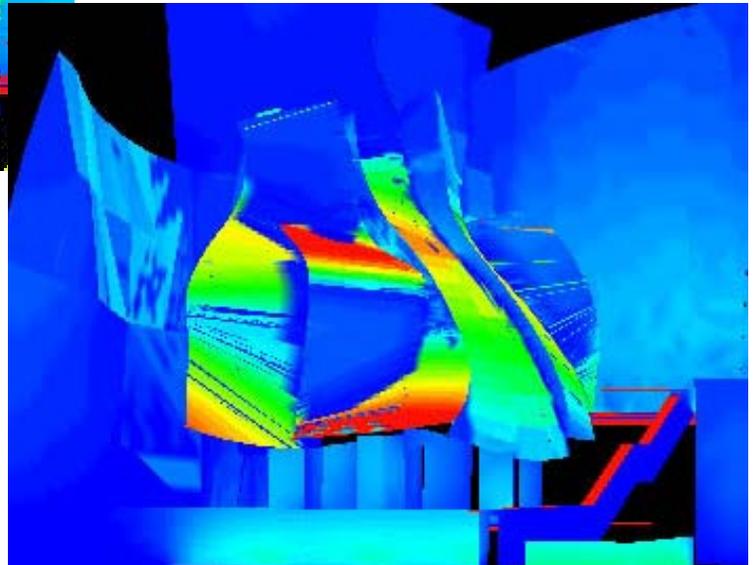
View from Diagonal Point Across Intersection, or Center of Intersection

Again, different surfaces throw glare at different times to one or more of the traffic locations.



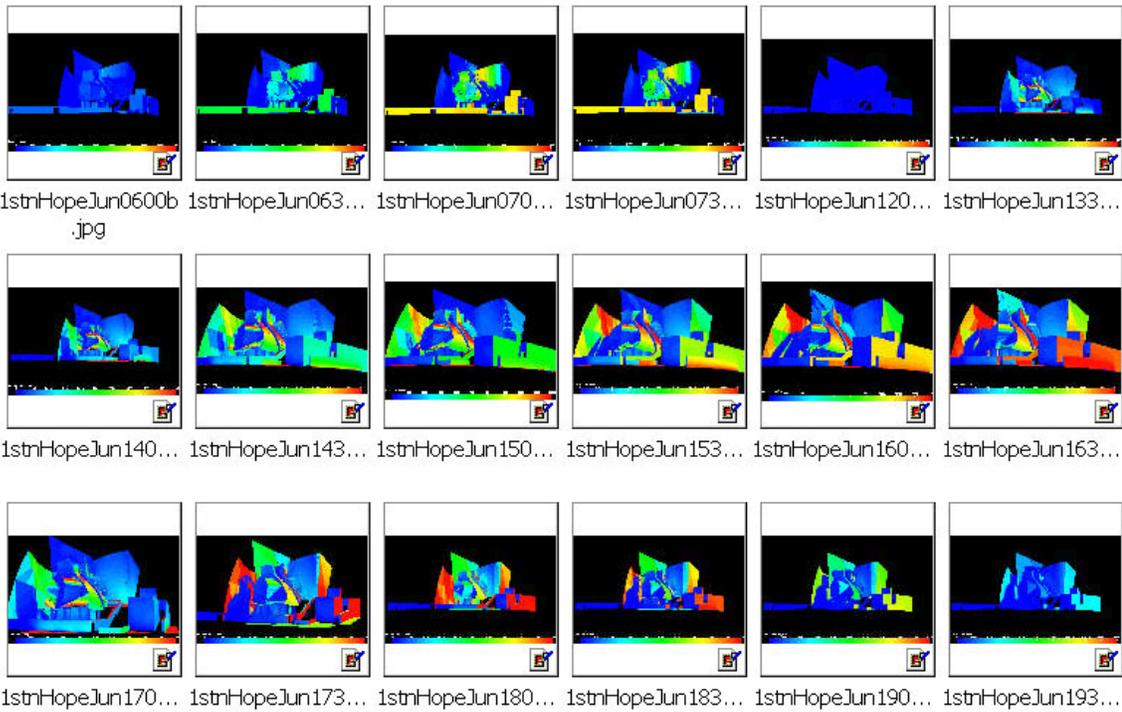
The rightmost surface (seen on edge) throws glare at the Promenade Towers. The surface in the middle throws glare, mostly from the middle and upper portion of the bulge. The surface to the left throws glare only from the top of the bulge.

The surfaces to the right are benign. The top and the bottom of the middle surface and the toe of the left surface throw some glare. (In other images, the toe is brighter and the others have faded.)



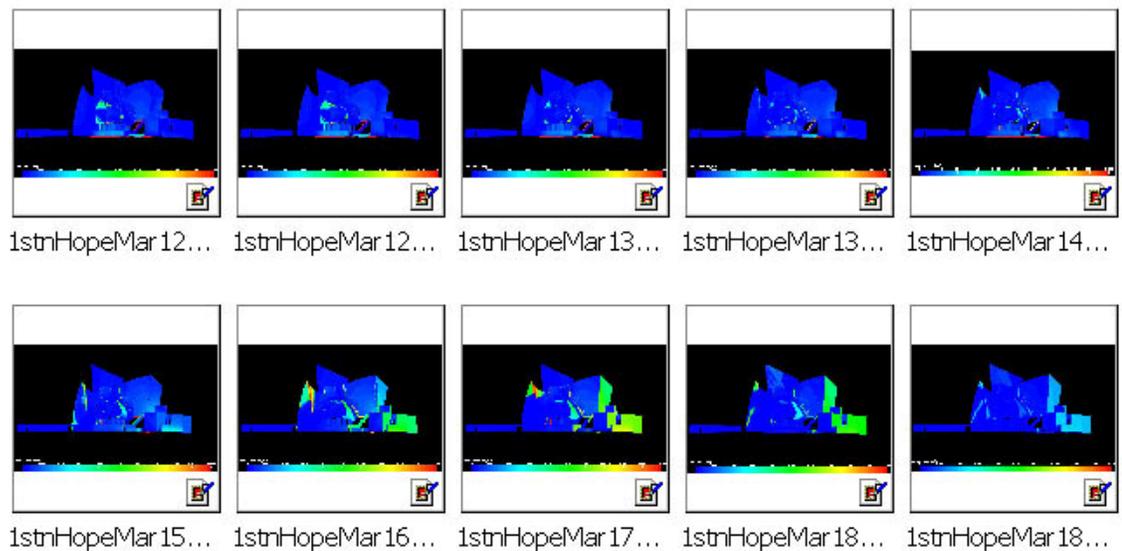
Seasonal Surveys at Half-Hour Intervals of the Founder's Room

Complete simulations were run at half-hour intervals for all daylight hours on representative December (winter), March/September (spring/fall), and June (summer) days.

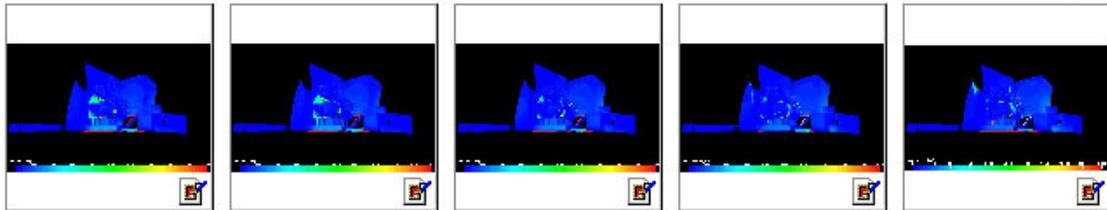


There is some exposure early in the day, but most exposure occurs late in the day. Note the significant areas from 12:30 p.m. to a peak glare condition around 4:00 p.m.

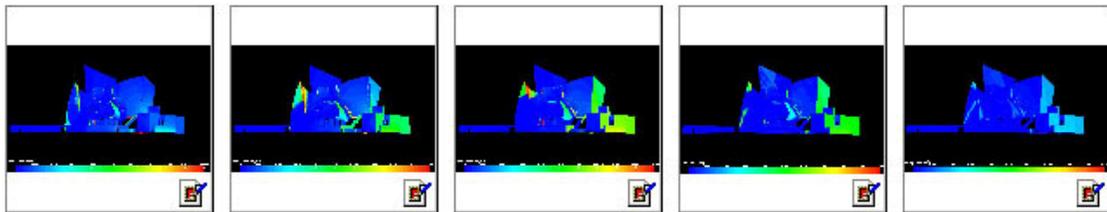
The stone facade facing Hope Street receives heavy doses of light but does not actually represent a problem because it is a matte, diffusing surface.



Note the marked decrease in the likelihood of glare. Unlike the southern facades and the CalArts Theater Marquee, the sun barely strikes the Founder’s Room, from the east in the morning and from the west in the evening.



1stnHopeMar12... 1stnHopeMar12... 1stnHopeMar13... 1stnHopeMar13... 1stnHopeMar14...



1stnHopeMar15... 1stnHopeMar16... 1stnHopeMar17... 1stnHopeMar18... 1stnHopeMar18...

In winter months, there is light only from the west, and it is not problematic.

Results

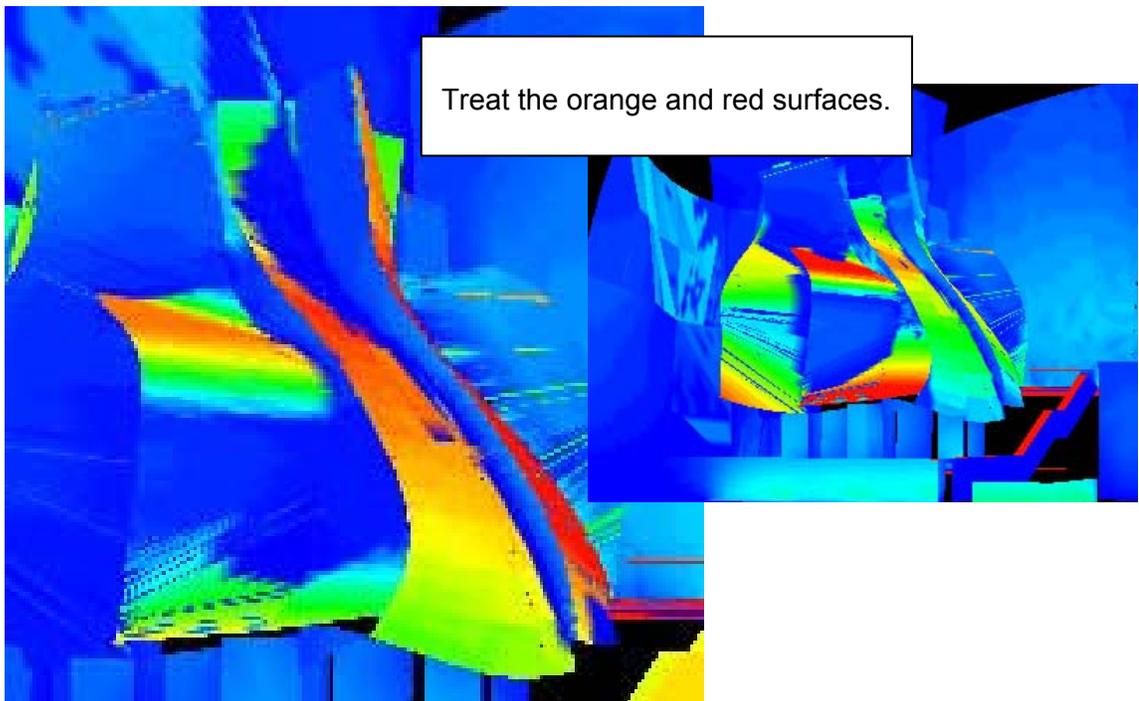
Based on simulations, drive-through films were made heading south on Hope Street and turning left or going straight down the hill. No additional difficulties were encountered. If anything, it was observed that the glare from the higher portions of the surfaces (the “necks”) were bright and somewhat distracting but above the direct view while making a turn. The tops of the surfaces do not need to be treated.

The photographs indicate that the trees are extremely important in shielding the lower edges of the surfaces. If there is any doubt about the maintenance or survival of the trees, the bottom portions of the surfaces should be treated.

The middle (or bulging) portion, the top of the bulge, and the middle of the neck all reflect directly into the intersection at one time or another and should be treated.

Summary

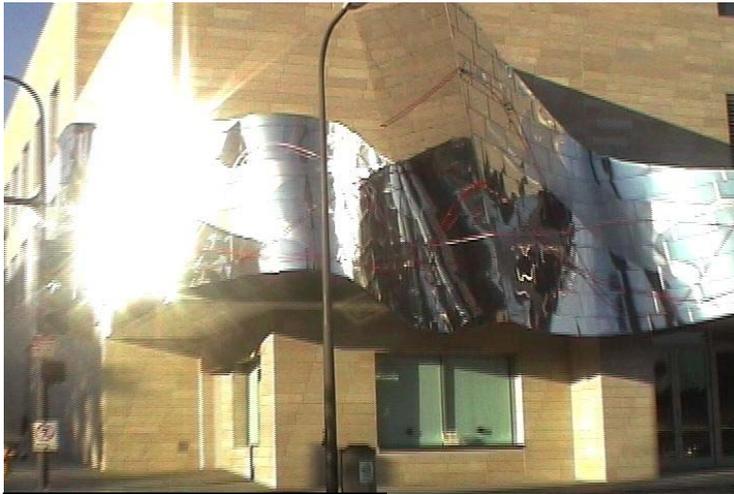
The three surfaces shown should be treated. The entire right surface should be treated. The middle of the middle surface should be treated. The top of the bulge on the left surface should be treated. The trees must be maintained, or the bottom of the left and far left surfaces should be treated.



Glare at Intersection of 2nd and Hope Streets (CalArts Theater Marquee)

The Roy and Edna Disney California Arts Theater (REDCAT) occupies the southwest corner of the site. It is embedded into the main block of the building. The marquee is the only opportunity for CalArts to announce their presence.

The intersection of 2nd Street and Hope Street occurs immediately to the west. There are moments when the sun is reflected directly off the marquee into the intersection. This can interfere with a clear view of traffic and pedestrians, especially when heading north on Hope Street and/or turning right onto 2nd Street.



Heading North



Turning East onto 2nd Street

Portions of the offending surfaces have been treated to create a different surface texture in the overall form of a cat. This is effective in reducing the focusing from the middle of those surfaces; however, above and below the cat, the surfaces still result in glare.

Visual and Photographic Survey

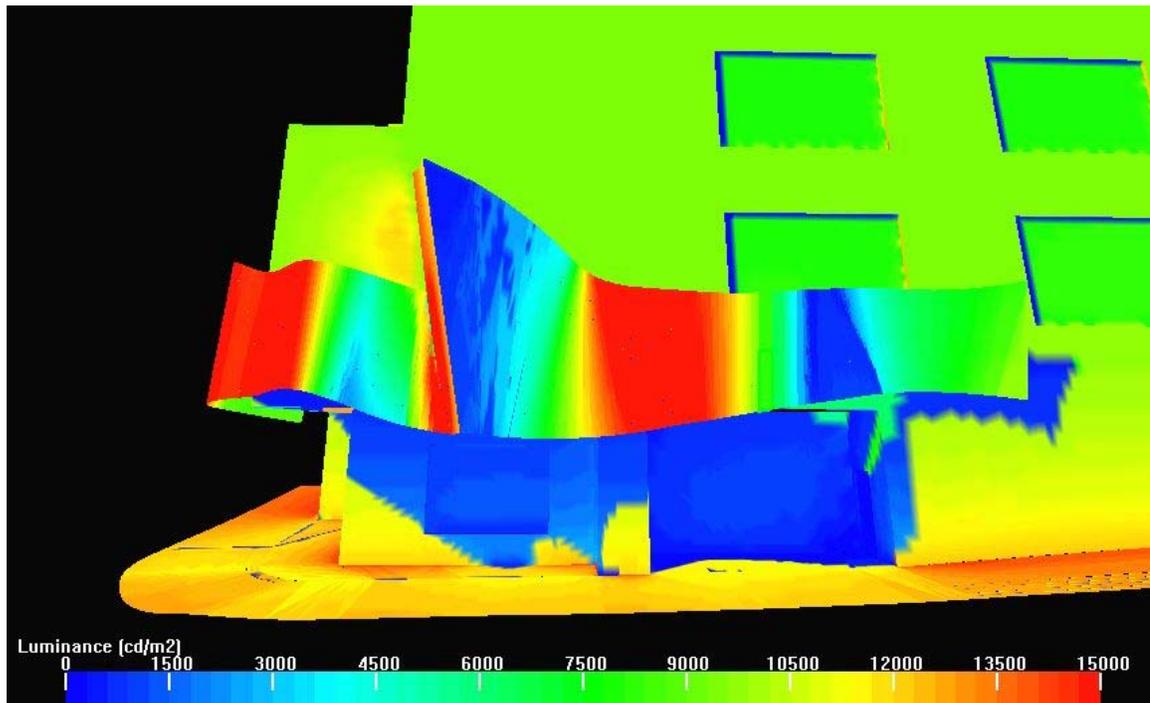
Several visual and photographic surveys have been made of the intersection. These surveys found that the “hot spots” and reflections varied significantly throughout the day, often in an unexpected manner.

Visual surveys of the CalArts Theater Marquee found that there is significant light reflection into the intersection from two areas on the surface, resulting in some

interference with traffic. The majority of the surface results in beamed and focused sunlight (solar gain) onto the ground in front of the marquee. This produces significantly elevated surface temperatures, which will be discussed in a later section of this report.

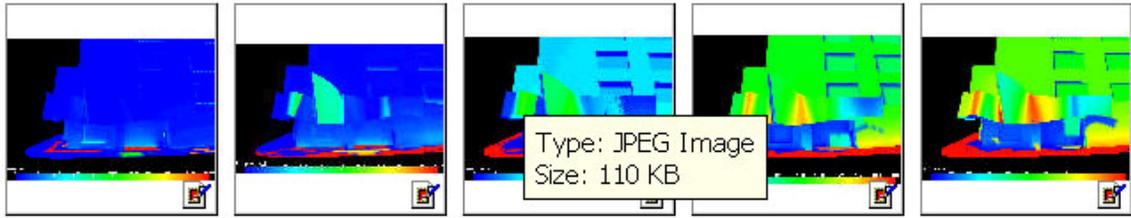
Computer Surveys

Again, the marquee was simulated in Lightscape. The worst situation occurs in late summer afternoons. There are two areas shown in the simulation that require attention.

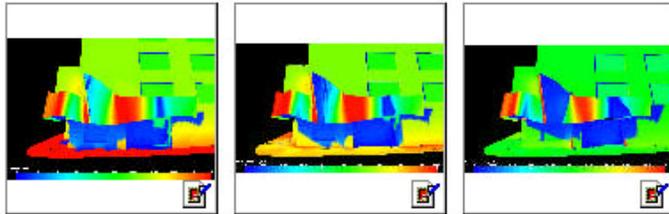


Seasonal Surveys at Half-Hour Intervals of the Founder's Room

Complete simulations were run at half-hour intervals for all daylight hours on representative December (winter), March/September (spring/fall), and June (summer) days. In some instances, the luminance plots are color coded to a higher scale, in order to make the areas of greatest luminance stand out. It becomes apparent that, at one time or another, almost all the regions of the marquee reflect glare. It is also interesting to note that the vertical surfaces on the south facade continue to throw significant amounts of light, even through the winter sun angles.

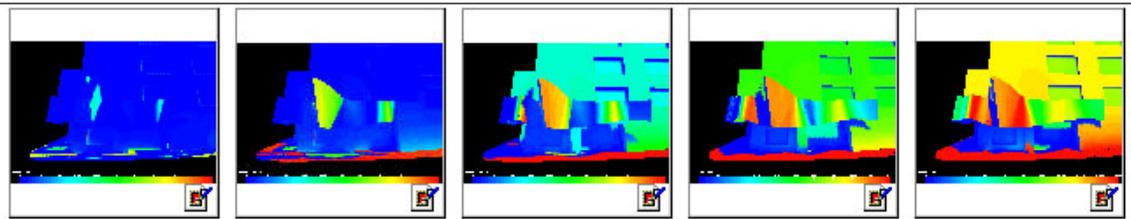


MarqueeJun1100.j pg MarqueeJun120... MarqueeJun130... MarqueeJun140... MarqueeJun150...

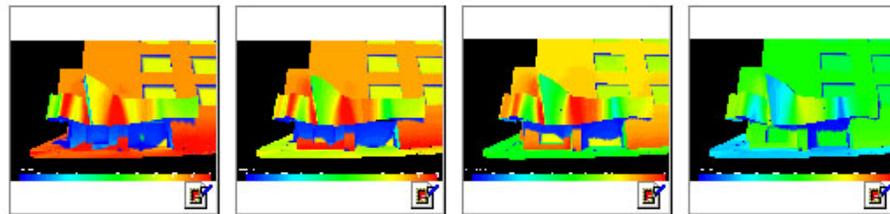


MarqueeJun160... MarqueeJun170... MarqueeJun180...

Luminance Plots of CalArts Theater Marquee at Hourly Intervals for June

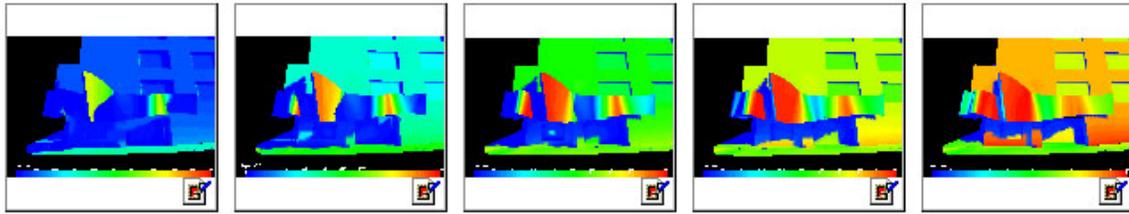


MarqueeMar100... MarqueeMar110... MarqueeMar120... MarqueeMar130... MarqueeMar140...

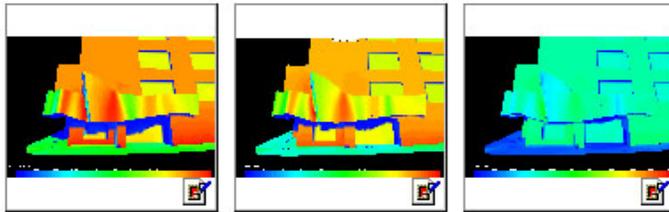


MarqueeMar150... MarqueeMar160... MarqueeMar1700.j MarqueeMar180...

Luminance Plots of CalArts Theater Marquee at Hourly Intervals for March



MarqueeDec100... MarqueeDec110... MarqueeDec120... MarqueeDec130... MarqueeDec140...

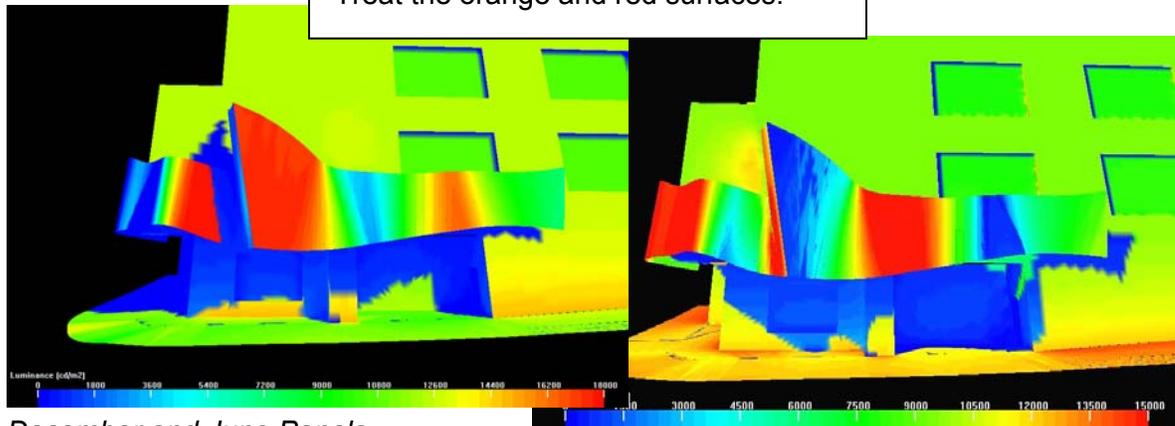


MarqueeDec150... MarqueeDec160... MarqueeDec170...

Luminance Plots of CalArts Theater Marquee at Hourly Intervals for December

The simulation indicates that there are four regions requiring treatment. The “prow” of the marquee and a portion to the left of it are dangerous in spring and winter months. The corner at the intersection and the bay to the right are dangerous in the summer months.

Treat the orange and red surfaces.



December and June Panels

For the first time, the simulations and the photographs seem to indicate slightly different outcomes. The photograph and the simulation of the June 4:00 p.m. glare seem to match exactly. However, the photograph and the simulation of the March 2:00 p.m. glare present somewhat differently. Although the “prow” of the marquee is at a high luminance level, the glare itself is cast downward and parallel to 2nd Street in such a tight fashion that the traffic at the intersection does not see it. Where the cat image has diffused to a lower intensity, it is seen by traffic but is not problematic. In June, the “prow” throws light into the intersection.



December and June Photographs

A careful examination of the other photographs (not shown) indicates that the “prow” does not throw glare into the intersection at any other times; however, it throws glare into the street and sidewalk. This may present a temperature buildup problem (examined later in this report) but does not present a traffic problem. It may annoy traffic traveling west on 2nd Street, but since the traffic control light is free from glare, it is not problematic. It would be safest to treat all four surfaces, but it may not be necessary to treat the “prow.”

Results

Both the photographs and the simulations indicate that there are two regions that require further treatment. Portions of the offending areas have been treated to create a different surface texture in the overall form of a cat. This is effective in reducing the focusing from the middle of those surfaces; however, above and below the cat, there is still more than enough polished surface to result in glare.

In keeping with the nature of CalArts as an institution, there may be some creative way to treat those surfaces. Possible treatment options include brushed treatment, etched treatment, or using a different color of surface film (e.g., red film covering the entire segment or only the background to the cat) to preserve the outline of the cat or creating a red cat. This study simply indicates that the surface requires treatment and suggests that CalArts or the architect invent their own method of diffusing or reducing the reflectance and/or specularly.

Glare from Brushed Stainless Panels on the Hope Street Elevation

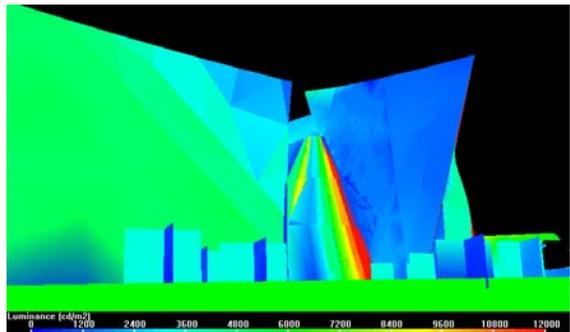
The Founder's Room is not the sole source of glare when seen from the Promenade Towers. Unfortunately, the brushed stainless steel surfaces can also create glare. Glare from the brushed stainless steel surfaces is less extreme but consists of a much larger total surface area. The same procedure was used to examine the instances of possible glare, the level of such glare, and what amelioration might prove useful.



Photograph of "Hat" Conic section



Simulation of "Hat"

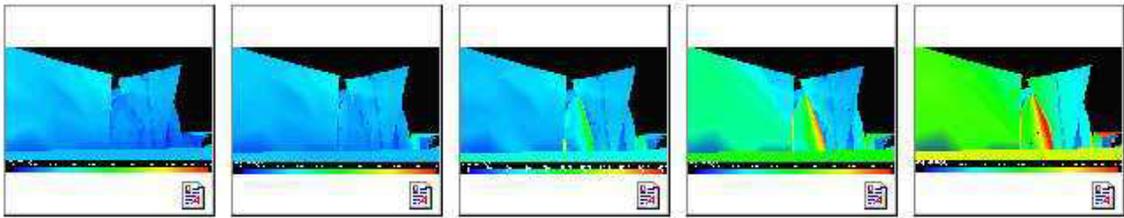


Luminance Plot of "Hat"

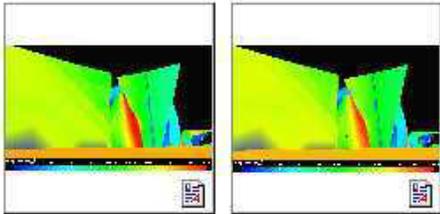
The peak luminances generated by the cone approach those generated by the Founder's Room. Fortunately the surface is convex and brushed stainless rather than concave and polished stainless. The glare will be less than that of the Founder's Room, but should be evaluated with a luminance histogram to be certain that it is not disability glare.

Seasonal Surveys at Hourly Intervals of the Hope Street Elevation

Complete simulations were run at hourly intervals for all daylight hours after noon on representative December (winter), March/September (spring/fall), and June (summer) days.

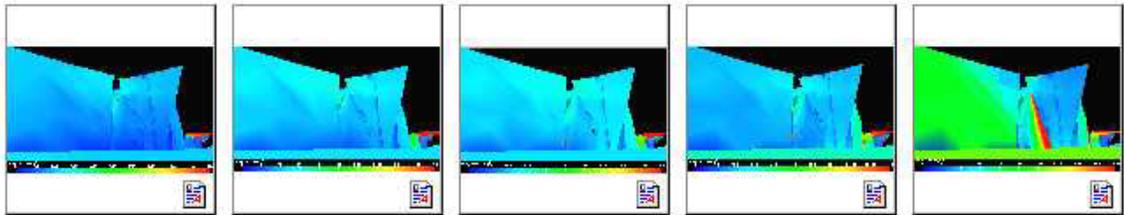


SWJune21_1200... SWJune21_1300... SWJune21_1400... SWJune21_1500... SWJune21_1600...

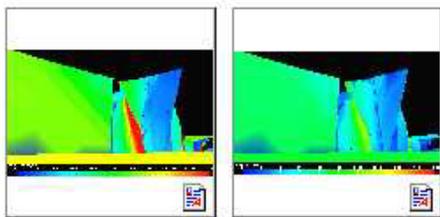


SWJune21_1700... SWJune21_1800...

Luminance Plots of Hope Street Elevation at Hourly Intervals Starting at Noon for December

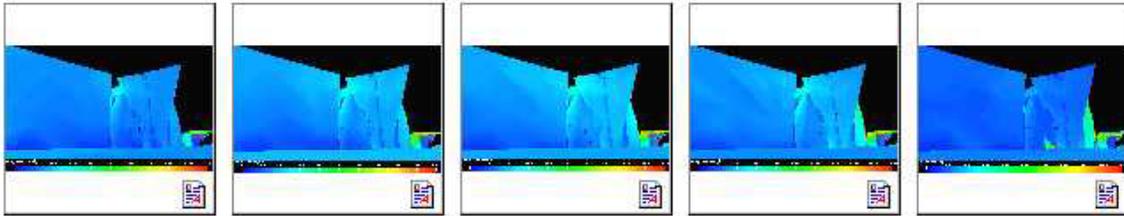


SWSept21_1200... SWSept21_1300... SWSept21_1400... SWSept21_1500... SWSept21_1600...



SWSept21_1700... SWSept21_1800...

Luminance Plots of Hope Street Elevation at Hourly Intervals Starting at Noon for September



SWDec21_1200.jp SWDec21_1300... SWDec21_1400... SWDec21_1500... SWDec21_1600...

Luminance Plots of Hope Street Elevation at Hourly Intervals Starting at Noon for December

Results

Luminance surveys of the Hope Street elevation confirm that there is significant light reflection from the conic shape and surprisingly little light reflection from the larger surfaces. Unlike the polished surfaces of the Founder's Room, the luminances are diffused rather than focused.

Again, the trees form an important part of the filtering, especially for the lower zones where the largest reflective areas appear.

Glare from Brushed Stainless Panels on the 2nd Street Elevation

The Promenade Towers extend further southwest on Hope Street than the main building of the Disney Hall. This means that the Promenade Towers are exposed to the 2nd Street elevation as well. The same procedure was used to examine the instances of possible glare, the level of such glare, and what amelioration might prove useful.

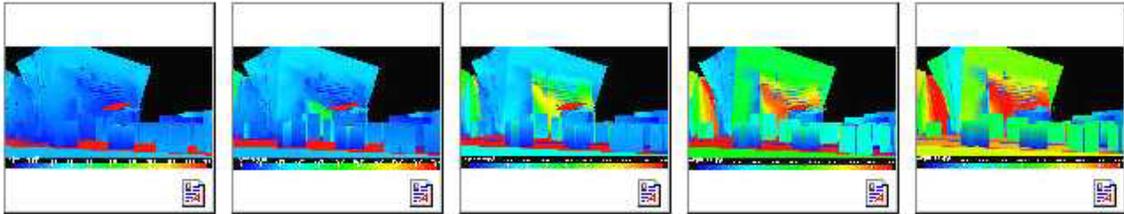
Seasonal Surveys at Hourly Intervals of the 2nd Street Elevation

Complete simulations were run at hourly intervals for afternoon hours on representative June (summer) days.

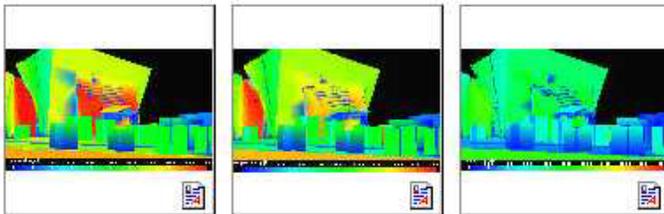
Fortunately, the largest surface, which was aimed slightly upward towards the Promenade Towers, was on the 2nd Street elevation, set back quite some distance from 2nd Street, itself. In fact, the surface is not visible from the street level, but only from the south end of the Promenade Towers and also from more distant buildings such as the Bonaventure Hotel and restaurant, the BP (formerly Interstate Bank) building, and the Wells Fargo buildings.

Results

At 4:00 p.m. and 5:00 p.m., there are indications of possible glare.



SWEJune21_1200.j SWEJune21_130... SWEJune21_140... SWEJune21_150... SWEJune21_160...
pg



SWEJune21_170... SWEJune21_180... SWEJune21_190...

2nd Street Elevation from Southwest at Hourly Intervals for June

Again, this is a brushed stainless surface rather than a polished stainless steel surface. In addition, the observation points are more distant. However, this surface should also be considered in a histogram.

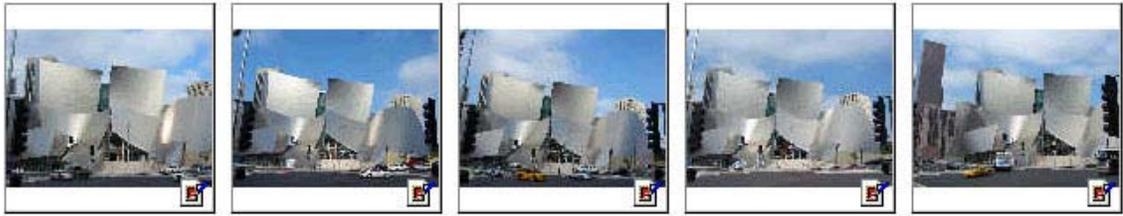
Glare at Intersection of 1st and Grand Streets

There are no polished stainless steel surfaces facing the intersection, but the possibility remained that the brushed stainless steel panels, which reach very high luminance levels, might otherwise provide an unexpected point of glare or high enough backgrounds that the eye would be drawn to them and become adapted to the higher level.



Seasonal Surveys at Half-Hour Intervals of the Intersection of 1st and Grand Streets

Photographs were taken at half-hour intervals throughout the day of the spring equinox and the approximate summer solstice. (There was some weather difficulty that required a half day to be photographed a week later.)



1stnGrand0700... 1stnGrand0730... 1stnGrand0800... 1stnGrand0830... 1stnGrand0900...



1stnGrand0930... 1stnGrand1000... 1stnGrand1030... 1stnGrand1100... 1stnGrand1130...



1stnGrand1200... 1stnGrand1230... 1stnGrand1300... 1stnGrand1330... 1stnGrand1400...



1stnGrand1430... 1stnGrand1500... 1stnGrand1530... 1stnGrand1600... 1stnGrand1630...



1stnGrand1700... 1stnGrand1730... 1stnGrand1800.JP

Photographs of the Intersection of 1st and Grand Streets at Half-Hour Intervals for June

The only glare occurs late in the day from the sun and not the building.



Photographs of the Intersection of 1st and Grand Streets at Half-Hour Intervals for March

Results

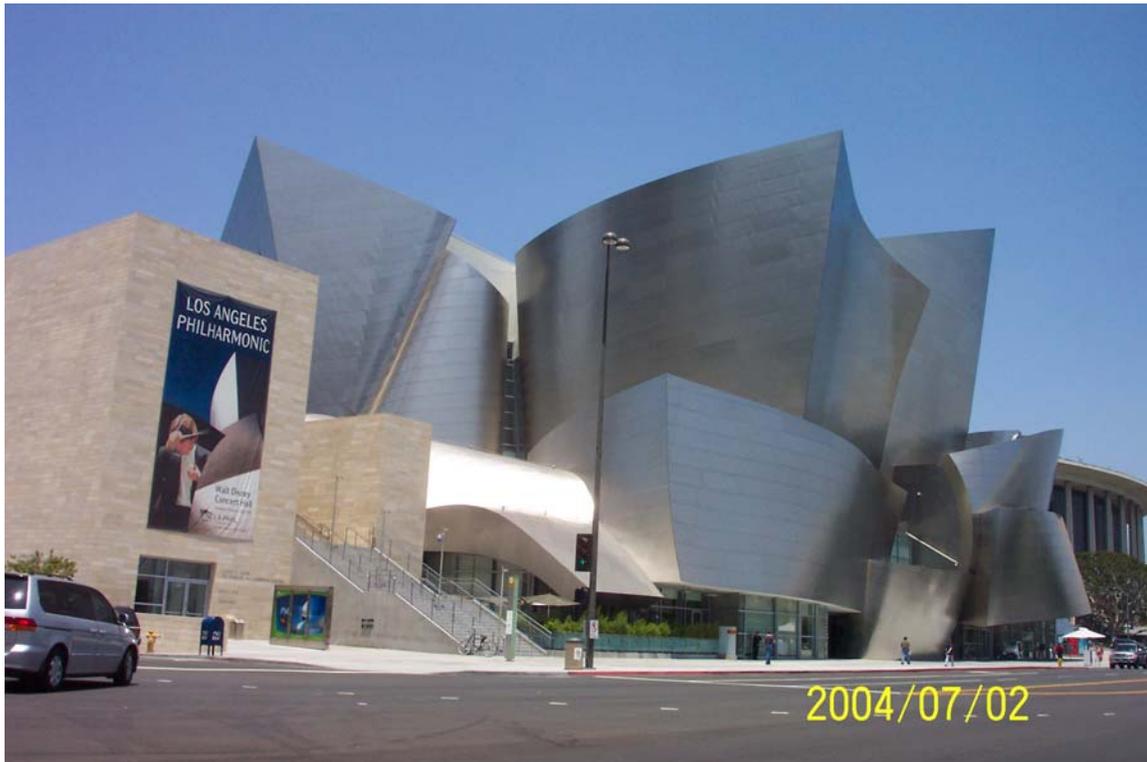
Although there are very bright surfaces, they do not obscure or backlight pedestrians in the crosswalks or other critical ground level information. Surprisingly, the early morning distribution is the most distracting. Later in the day, the levels are higher, but the distribution is more even. After noon, the brightness is somewhat reduced. During the summer, the later hours produce some glare from the sun position but not from the building.

Glare at Intersection of 2nd and Grand Streets

There are no polished stainless steel surfaces facing the intersection, but the possibility remained that the brushed stainless steel panels, which reach very high luminance levels, might otherwise provide an unexpected point of glare or high enough backgrounds that the eye would be drawn to them.

Seasonal Surveys at Half-Hour Intervals of the Intersection of 2nd and Grand Streets

Photographs were taken at half-hour intervals throughout the day of the spring equinox and the approximate summer solstice. (There was some weather difficulty that required a half day to be photographed a week later.)



Note that the upper portion of the roof over the Patina Restaurant is glowing so strongly that the photo simply records it as pure white. Fortunately, it does not focus a beam, so there is no glare (normally indicated by lens flare) or direct interference with traffic.



2ndnGrandxxx1.JPG 2ndnGrandxxx2... 2ndnGrandxxx3... 2ndnGrandXXX4... 2ndnGrandxxx5...
G



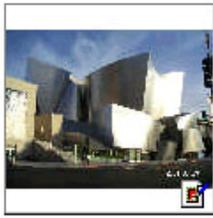
2ndnGrnd0700.JPG 2ndnGrnd0730.JPG 2ndnGrnd0800.JPG 2ndnGrnd0830.JPG 2ndnGrnd0900.JPG



2ndnGrnd1030.JPG 2ndnGrnd1100.JPG 2ndnGrnd1230.JPG 2ndnGrnd1300.JPG 2ndnGrnd1330.JPG

Photographs of the Intersection of 2nd and Grand Streets at Half-Hour Intervals for June

Note that there are some photographs that are not clearly time-stamped and are therefore labeled in a sequential fashion. There is no glare in the photographs, so the time stamp is not critical. (All of the above photographs are courtesy of Sapphos Environmental, Inc.)



2ndGrnd0630.JPG



2ndGrnd0700.JPG



2ndGrnd0730.JPG



2ndGrnd0800.JPG



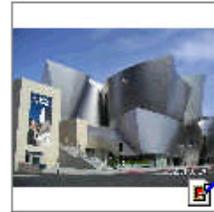
2ndGrnd0830.JPG



2ndGrnd0900.JPG



2ndGrnd0930.JPG



2ndGrnd1000.JPG



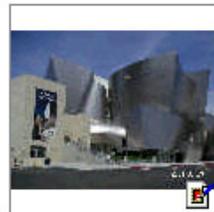
2ndGrnd1030.JPG



2ndGrnd1100.JPG



2ndGrnd1130.JPG



2ndGrnd1200.JPG



2ndGrnd1230.JPG



2ndGrnd1300.JPG



2ndGrnd1330.JPG



2ndGrnd1400.JPG



2ndGrnd1430.JPG



2ndGrnd1500.JPG



2ndGrnd1530.JPG

Photographs of the Intersection of 2nd and Grand Streets at Half-Hour Intervals for March

Results

The segment that forms the roof of the Patina Restaurant reaches very high luminance values. Fortunately, it does not extend to ground level and does not form a backdrop for traffic activities. Thus, although the surface is distracting, it is not difficult to see clearly at ground level, even when driving north on Grand Street and making a left turn onto 2nd Street. This is verified in the drive-through film. The other surfaces are not a problem.

Drive-Through Filming

In order to further determine which surfaces and angles would be critical to traffic safety, a short drive-through film was taken at the worst times for each of the intersections. All of the approaches to the building were filmed. Whenever there was a turn that passed a crosswalk while facing the building, the process of making the turn was filmed. Whenever there was a left turn in the face of opposing traffic, it was filmed.

Key Frames

The videos were digitized. Several key frames have been used throughout this report.

Traffic Density

The number of pedestrians and vehicles throughout the day was recorded for typical weekdays. Pedestrian and vehicular traffic is variable due to the concert schedule, but because of the downtown location, the predominant traffic is not just related to activities at the Disney Hall, and the variance is likely to be minor. The traffic density certainly appears to warrant the necessary steps to ameliorate any glare, as opposed to attempting to close particular crosswalks, etc.

If crosswalks were to be closed, the primary candidates would be the crosswalk on 2nd Street in front of the CalArts Theater Marquee and the crosswalk on 1st Street, directly in front of the Founder's Room. There is no easy replacement route for the crosswalk on 2nd Street.

Results

The drive-throughs confirm the simulations in terms of the surfaces that need to be treated and the surfaces that are bright but not dangerous. The traffic density encourages treatment of the surfaces as opposed to closure of the crosswalks, although this remains a possibility. Note that closing the crosswalks neither solves the Promenade Towers problem nor decreases the heat gain issues in front of the marquee.

Comparative Downtown Glare

All buildings impact their environment and nearly all buildings increase the temperature of the surrounding surfaces. This effect has been known and studied since the early

1930s. The net effect of this phenomenon is called the “heat island” effect. In addition, the visual impact of the Disney Hall is typical of more recent buildings, built since the advent of highly reflective building materials. The Disney Hall is not unusual in contributing to this effect.



Glare on Promenade Towers and Intersection of Hope and 1st Streets from Older Buildings

Downtown Buildings

The Disney Hall is, however, an unusual building. In some instances, the impact is greater than other buildings, especially since some of the specular surfaces are curved. But in many cases, the impact is actually smaller, especially when compared to other large urban buildings.

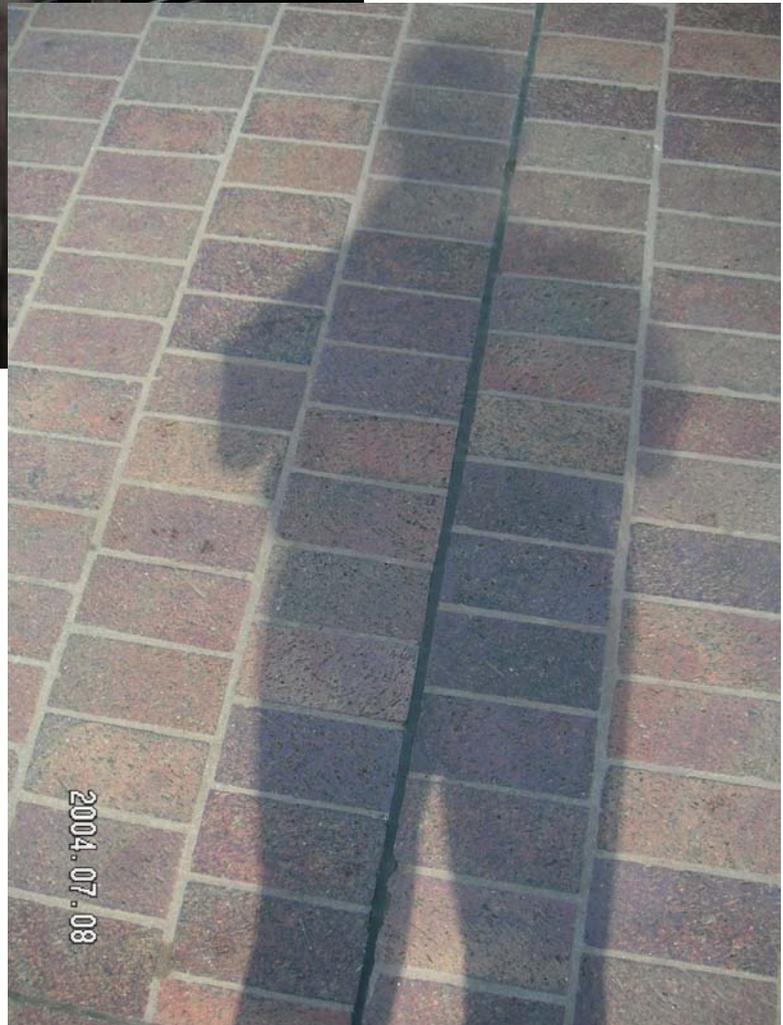
*California Plaza –
350 South Grand Avenue*



*Wells Fargo Center –
333 South Grand Avenue*

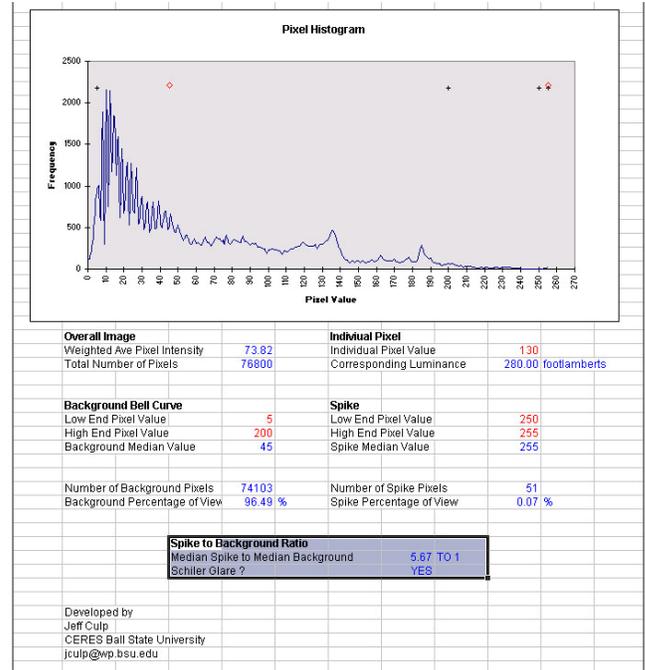


*Mellon Bank –
400 South Hope Street*

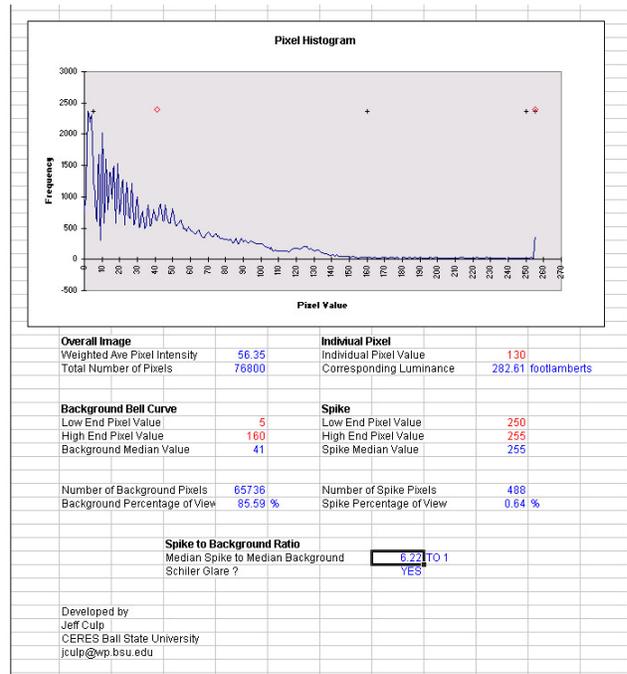


*Shadow cast by reflected
glare, not by sunlight*

It is possible to produce a histogram of these buildings to examine the level of glare.



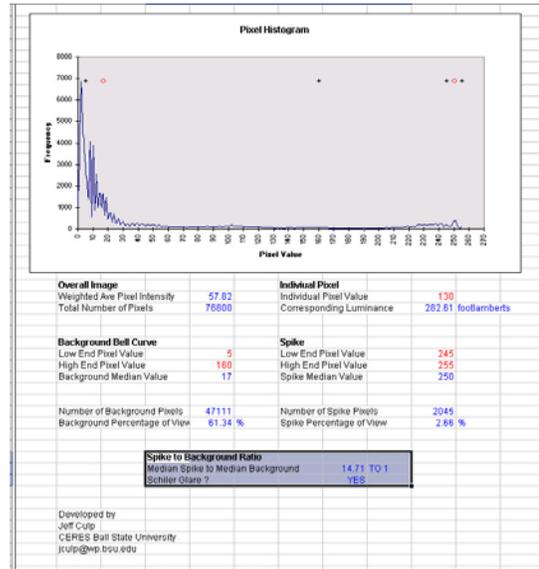
Deutsche Bank at the California Plaza, yields a glare ratio of 5.67, even with a tree.



Charles Schwab at the Wells Fargo Center, 355 South Grand Avenue, yields a glare ratio of 6.62.



Bonaventure throwing secondary glare, yielding a glare ratio of 14.71



Histograms of Downtown Buildings

It is useful to examine some of the other buildings and apply the same techniques used in analyzing the images of the Disney Hall. The histograms of the downtown environment shown above can be compared with the Disney Hall histograms. Please note that they register glare **significantly in excess** of the brushed stainless steel surfaces and all but the worst of the polished (specular) surfaces on the Disney Hall.

The glare ratios for the brushed stainless steel surfaces on the Disney Hall were mostly below 2.25 and occasionally as high as 3.5. The examples of downtown glare shown above range up to a peak of 14.23 (from the Bonaventure), and values between 4.0 and 6.5 occur every day from 4:00 pm to 6:30 pm (summer sun angles) throughout the Bunker Hill / Grand Ave area.

Other Reflective Sources in the Downtown Environment

It is even possible to consider other objects in the normal environment, such as the vehicles that navigate the same intersections. Their impact is often greater than the sources that remain stationary.

Results

Modern building materials are often glass, metal, or polished stone. This is true for aesthetics and durability. The setback is that they are often very reflective. The reflective glass in several of the downtown buildings is as bright as or even brighter than the Disney Hall.

The Disney Hall uses four general categories of materials: stone/concrete, glass, polished stainless steel, and brushed stainless steel. All of these materials are used in other buildings in the downtown area. The only difference is that, in the Disney Hall, most of the facades are curved. Most of those facades are brushed stainless steel, which means that they reflect and reradiate heat but do not focus it; however, most of the buildings in downtown do focus heat. The only unusual surfaces are the concave polished reflecting surfaces. Most of those focus on thin air. There are only a few surface that beam light into occupied areas, and those can be defocused by simple treatment.

Luminance Histograms

Glare is in the eye of the beholder, literally. Most measures of glare are qualitative. At least one measure of glare, Visual Comfort Probability (VCP), attempts to calculate what percentage of the occupants of a space will conclude that there is glare present. Unfortunately, the method was developed for interior spaces and uniform arrangements of fluorescent fixtures and is not easily applied to exterior and extremely varied environments.

Glare is in the world around us at all times. There is glare on the Promenade Towers from other buildings. Indeed, all of us experience glare all the time. There is glare from cars that pass by on a sunny day and from parking lots full of cars. There are far worse instances of glare throughout the City. The sun itself is by far the brightest source of glare. The sun, however, is mostly overhead and thus can be dealt with using overhangs, fins, and awnings. For low sun angles, or when overhangs are not present, curtains, shades, blinds, and other devices can be manipulated and adjusted throughout the day to decrease or remove glare.

At least three levels of glare are generally recognized and a fourth is inferred by default. **Veiling reflections** refer to glare that is objectionable primarily because it covers up desired information. Reflections on a glossy magazine are one example. **Discomfort glare** is glare that viewers find objectionable, but it does not do any damage. **Disability glare** ranges from causing temporary incapacity to causing damage to the eye. These three levels, by default, define the level of glare noticed by people but considered part of

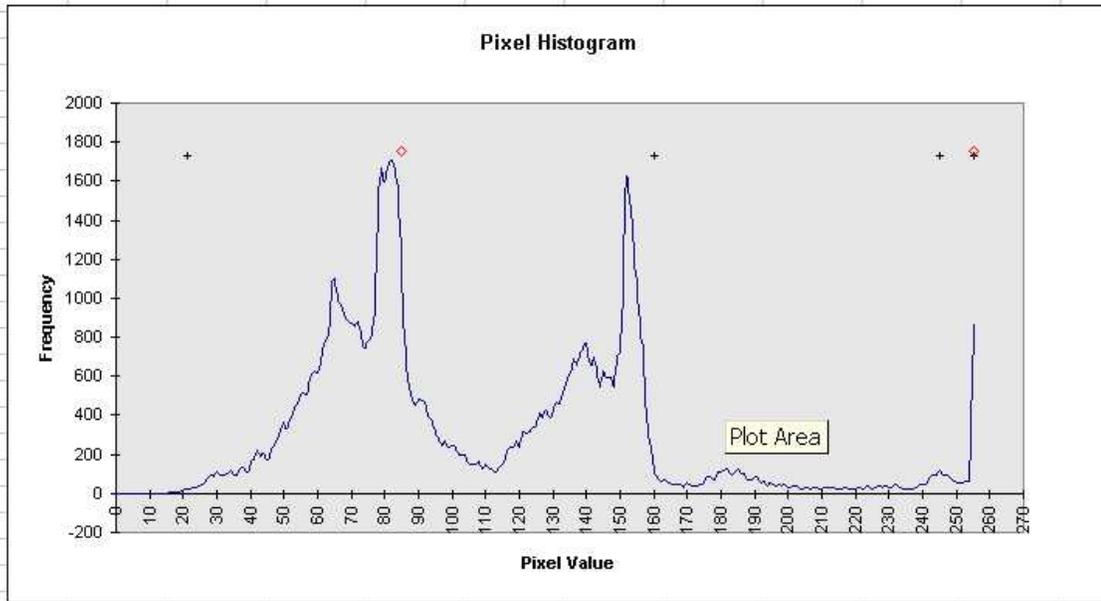
the normal environment. Indeed, phenomena characterized as positive or even delightful come from extreme contrasts, such as sparkle or brilliance. These depend heavily on context, of course.

One of the ways of analyzing possible glare sources in exterior environments is by creating a luminance histogram of the comparative “brightness” or luminance within a scene. With this we can study contrasts. The author of this report has published research papers on this method over the past eight years. There has been significant discussion of this and similar methods. Ball State University has written software that uses these methods to translate visual images into raw data files and analyze them automatically, using MS-Excel statistical and graphing functions. Similar functions are available in Adobe Photoshop.

The surfaces found to be possible glare sources in the preceding simulations are examined using histograms of the critical images (worst hours) to determine whether the glare achieves serious levels. The Schiler glare method considers an image to have glare when the possible glare source is more than three times the median of the background curve. This would correspond to discomfort glare. Other methods (Lawrence Berkeley Lab/Gregg Ward) do not consider the image to be a source of glare until the possible glare source is eight times the median of the entire image. This is a much less sensitive standard.

Histogram of Founder’s Room “Knee” Surface

The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that discomfort glare is clearly indicated.

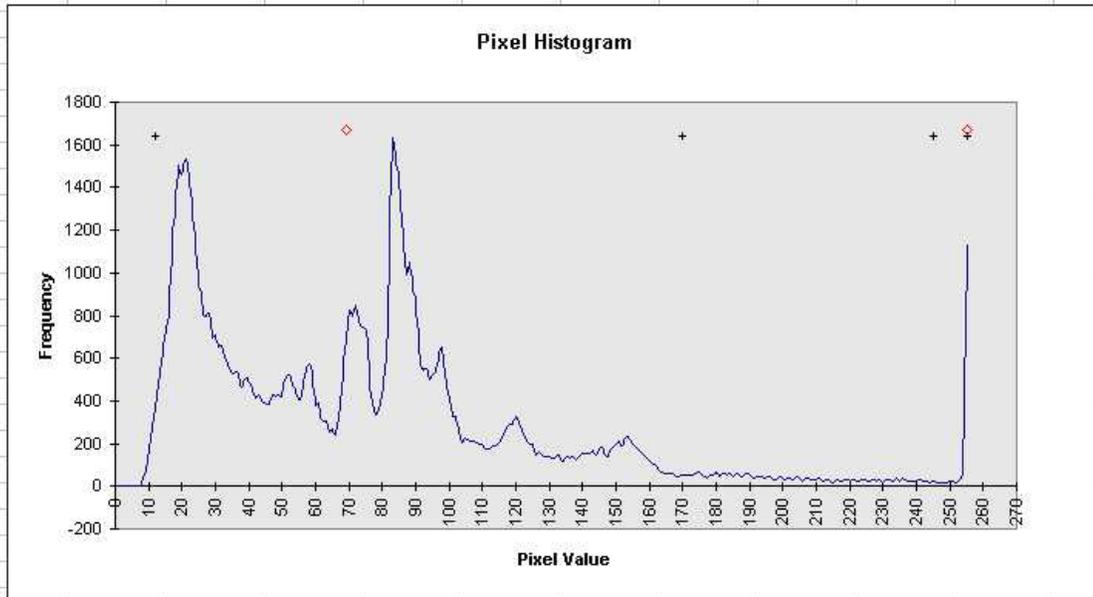


Overall Image		Individual Pixel	
Weighted Ave Pixel Intensity	125.69	Individual Pixel Value	116
Total Number of Pixels	76800	Corresponding Luminance	250.27 lumens
Background Bell Curve		Spike	
Low End Pixel Value	21	Low End Pixel Value	245
High End Pixel Value	160	High End Pixel Value	255
Background Median Value	85	Spike Median Value	255
Number of Background Pixels	70926	Number of Spike Pixels	1614
Background Percentage of View	92.35 %	Spike Percentage of View	2.10 %
Spike to Background Ratio			
Median Spike to Median Background		3.00 TO 1	
Schiler Glare ?		YES	

Developed by
 Jeff Culp
 CERES Ball State University
 jculp@wp.bsu.edu

Histogram of Founder’s Room “Eye” Surface

The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that discomfort glare is clearly indicated.

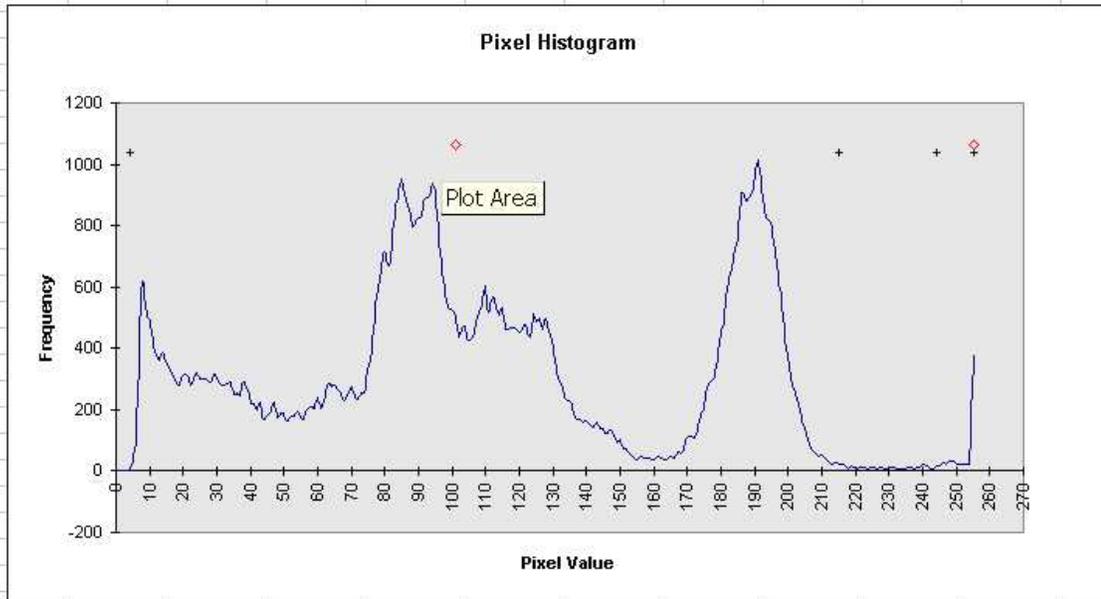


Overall Image		Individual Pixel	
Weighted Ave Pixel Intensity	87.52	Individual Pixel Value	116
Total Number of Pixels	76800	Corresponding Luminance	250.27 lumens
Background Bell Curve		Spike	
Low End Pixel Value	12	Low End Pixel Value	245
High End Pixel Value	170	High End Pixel Value	255
Background Median Value	69	Spike Median Value	255
Number of Background Pixels	72171	Number of Spike Pixels	1374
Background Percentage of View	93.97 %	Spike Percentage of View	1.79 %
Spike to Background Ratio			
Median Spike to Median Background		3.70 TO 1	
Schiler Glare ?		YES	

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Histogram of Hope Street Elevation

The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that glare is possible but not definite.



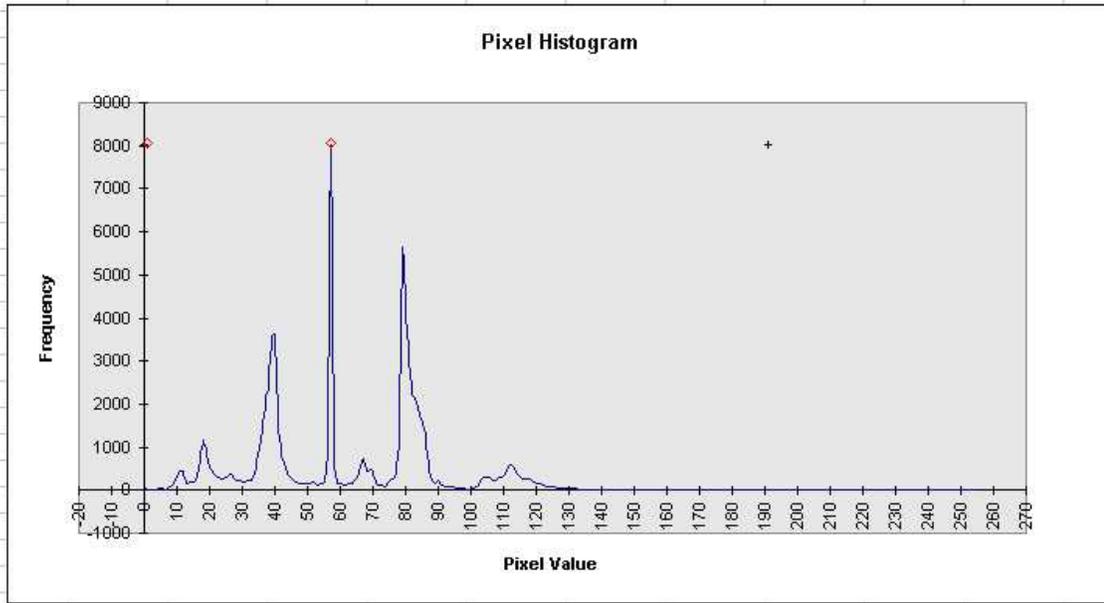
Overall Image		Individual Pixel	
Weighted Ave Pixel Intensity	129.92	Individual Pixel Value	116
Total Number of Pixels	76800	Corresponding Luminance	250.27 lumens
Background Bell Curve		Spike	
Low End Pixel Value	4	Low End Pixel Value	244
High End Pixel Value	215	High End Pixel Value	255
Background Median Value	101	Spike Median Value	255
Number of Background Pixels	75852	Number of Spike Pixels	636
Background Percentage of View	98.77 %	Spike Percentage of View	0.83 %

Spike to Background Ratio
 Median Spike to Median Background 2.52 TO 1
 Schiler Glare ? **MAYBE**

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Histogram of 2nd Street Elevation

The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that there is definitely no glare.

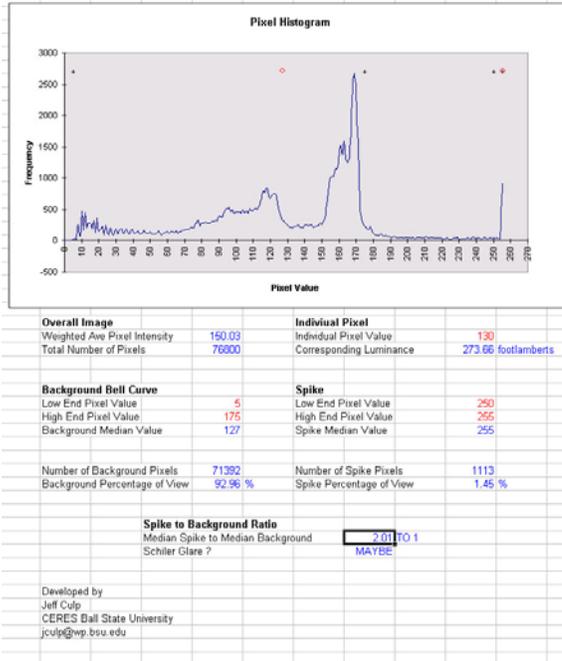


Overall Image		Individual Pixel	
Weighted Ave Pixel Intensity	72.68	Individual Pixel Value	116
Total Number of Pixels	76800	Corresponding Luminance	250.27 lumens
Background Bell Curve		Spike	
Low End Pixel Value	0	Low End Pixel Value	0
High End Pixel Value	191	High End Pixel Value	0
Background Median Value	57	Spike Median Value	1
Number of Background Pixels	76752	Number of Spike Pixels	77
Background Percentage of View	99.94 %	Spike Percentage of View	0.10 %
Spike to Background Ratio			
Median Spike to Median Background		0.02 TO 1	
Schiler Glare ?		<input type="text" value="NO"/>	
Developed by			
Jeff Culp			
CERES Ball State University			
jculp@wp.bsu.edu			

Histogram of 1st and Grand Streets

Most of the photographs of the intersection indicate no glare in the associated histogram. Some are close, showing a “Maybe” in the glare column, with values over 2.25 but under 3.0.

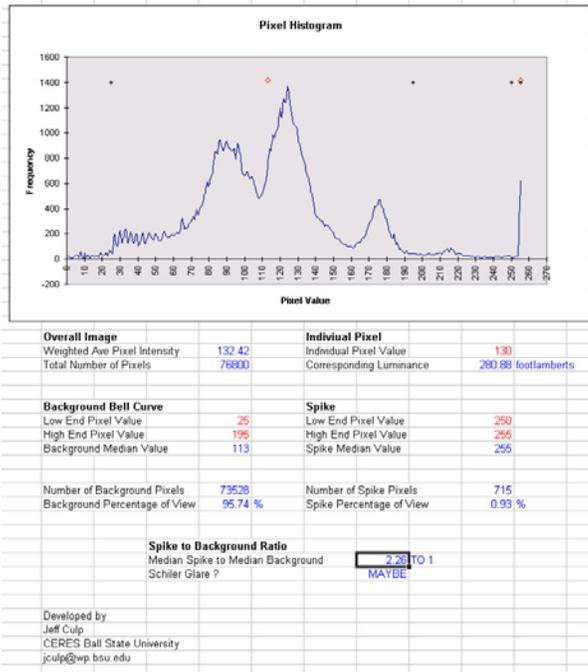
The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that discomfort glare is not indicated.



Histogram of the intersection of 1st and Grand Streets at 11:50 a.m. on July 2.

Histogram of 2nd and Grand Streets

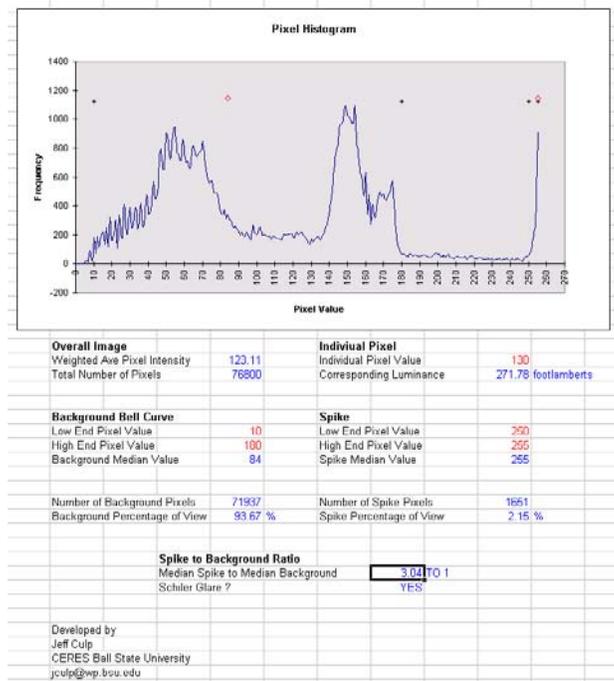
The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that discomfort glare is clearly indicated.



Histogram of the Intersection of 2nd and Grand Streets at 1:20 p.m. on June 23

Histogram of 2nd and Hope Streets

The output page of the program, which includes the histogram and the analysis, is included in its entirety. Note that discomfort glare is clearly indicated.



Histogram of the Intersection of 2nd and Hope Streets at 7:15 p.m. on June 23

Histograms of other Downtown Buildings

The histograms of some of the other photographs of downtown buildings are presented in the Comparative Glare section. The same procedure was used on those photographs as was used on the Disney Hall photographs.

Summary

None of the plots achieve levels of certain *disability* glare. The Founder's Room surfaces clearly indicate *discomfort* glare. Even the brushed surface on the Hope Street elevation indicates the possibility of glare by the Schiler method, although it would fall below the glare threshold according to the LBL/Ward method. The 2nd Street elevation causes no glare.

Solutions

As indicated above, the polished stainless steel surfaces of the Founder's Room and CalArts Theater Marquee clearly require some remediation. The surfaces requiring treatment are indicated in red in their respective simulations, as well as being visible in their respective photographs.

Several interim and final solutions were considered. One of the solutions included superposing a film over the critical surfaces. The reflectance of the original surface was studied, and the surface was modified by four different films: (1) a colorless, translucent, and slightly diffusing film; (2) a light blue, translucent, and diffusing film; (3) a white and more strongly diffusing film; and (4) a white and opaque film with a black backing.

Colorless Translucent Film

The colorless translucent film reduces the reflectance only slightly (~2.5 percent) and hardly diffuses the specular focusing, making it an insufficient change. The "eye" surface is too close to its secondary reflectors and the beam would likely remain collimated. The lower surfaces would benefit, but there would still be significant reflection.

Light Blue Translucent Film

The light blue translucent film reduces the reflectance more substantially (~10 percent). More importantly, the diffusion is significant, which should result in a defocusing of the collimated beam.

Although it would be preferable to have a gray film for the sake of visual and architectural consistency, the blue coloring has a secondary benefit. Sunlight is somewhat red-shifted (lower °K) from skylight (higher °K). The blue film absorbs more sunlight (direct beam) and less skylight (diffuse ambient). This means that the focused reflection is reduced more than the general reflection, making the change more specific to possible glare than of less impact on the general image of the building.

White Translucent Film

The white translucent film reduces the transmissivity slightly (~7 percent) but completely defocuses any specular reflection. This is actually the safest solution.

Unfortunately, the visual impact and the change in the architectural statement of the surface would be very significant. This is the correct solution if *only glare* is being considered.

White Opaque Film

The solid white opaque film reduces the reflectance significantly (~15 percent) but creates a new specular surface, which would not defocus the collimated beam.

The visual impact would be equal to the white translucent film, but the film would still cause focusing and collimation, possibly resulting in a situation very similar to the original situation.

Test Panel

A test panel was constructed with all five conditions (original polished surface, colorless film, blue film, white translucent film, and white opaque film.) An image was projected onto the panel and reflected onto a matte white surface. The diffusion was recorded. The blue and the two white films were adequate.

The panel was then placed on the Founder's Room on one of the lower surfaces under varying sun conditions. The reflection was targeted onto a white matte surface. The sun spot was clear from the original surface, only vaguely diffused by the colorless film, almost completely diffused by the blue film, and completely diffused (e.g., scattered) by both of the white films.

Outdoor Fabric

A textile sample was provided by the architect and tested in the same manner as the films described above. The solid fabric mesh reduces the reflectance significantly and completely diffuses the direct beam radiation with surprisingly little difference in the overall perception of the building.

The fabric was implemented as a temporary solution as was suitable to the extent that it covered the reflective surfaces. The portions of the reflective surfaces that were not covered still resulted in some glare.

Sandblasted Surface

A sandblasted surface was provided by the architect and tested in the same manner as the films described above. The sandblasted surface reduces the reflectance significantly and produces a visual effect similar to the brushed stainless steel panels on the rest of the building. The surface treatment would be much more durable than the fabric, although perhaps slightly less effective.

The visual impact would be equal to the rest of the building, reducing the focusing effect of the surfaces and diffusing the direct beam glare. This treatment could be combined in a creative manner with other similar treatments on the CalArts Theater Marquee. The offending surfaces on the Founder's Room could be completely covered or covered in conjunction with some other treatment method, depending on the aesthetic intention of the architect.

Temperatures at CalArts Theater Marquee on Sidewalk and Street

There have been reports of reflections and increased temperatures in the immediate vicinity of the CalArts Theater Marquee. Again, there is no doubt that there is a certain increase in sparkle and excitement created by the marquee. There is some question, however, of whether the increased radiant gain in the neighborhood of the marquee might cause some difficulty.

This report examines the instances of possible heat gain, the level of such heat gain, and what amelioration might prove useful. The possibility of traffic glare was considered in a previous section of this report.

Temperature and Radiant Heat

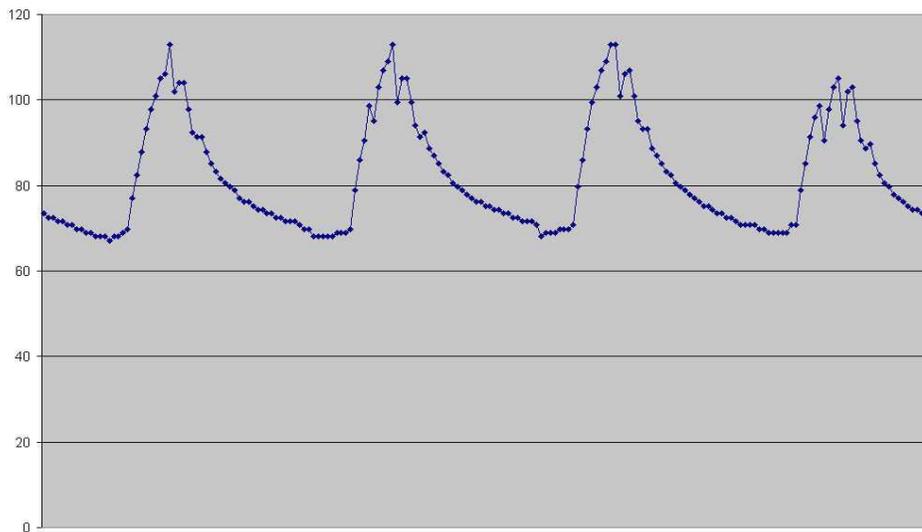
An inspection of the site clearly indicated some radiant gain. It was possible to determine whether or not an observer was standing in the reflected beam from the marquee simply by walking along the street with one's eyes closed. One could feel the radiant heat as one passed through the beam. The real question was, "What are the resulting temperatures attained on the receiving surfaces?" During the installation of the

temperature loggers in the summer testing (below), there was significant discomfort if one held one's hand in the beam for more than a minute.

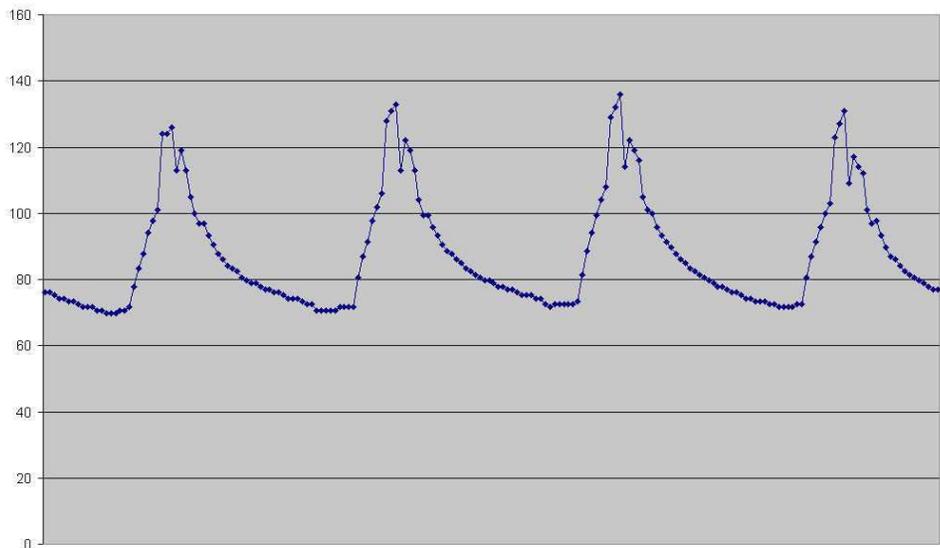
To determine the range of temperatures, dataloggers were embedded in the ground in front of the marquee. In March (the equinox) they were embedded in the street surface in a row across the front of the CalArts Theater entrance, in front of the marquee, where the concrete curb pieces met the street asphalt. An additional datalogger was embedded in the street at a visible focus point.

There was a typical pattern to the data. Sunrise was clearly visible as the sidewalk began to heat up. There was a dip shortly after the peak, followed by a steady fade as the sidewalk cooled.

Typical Curb Surface (F) - Sunday - Wednesday



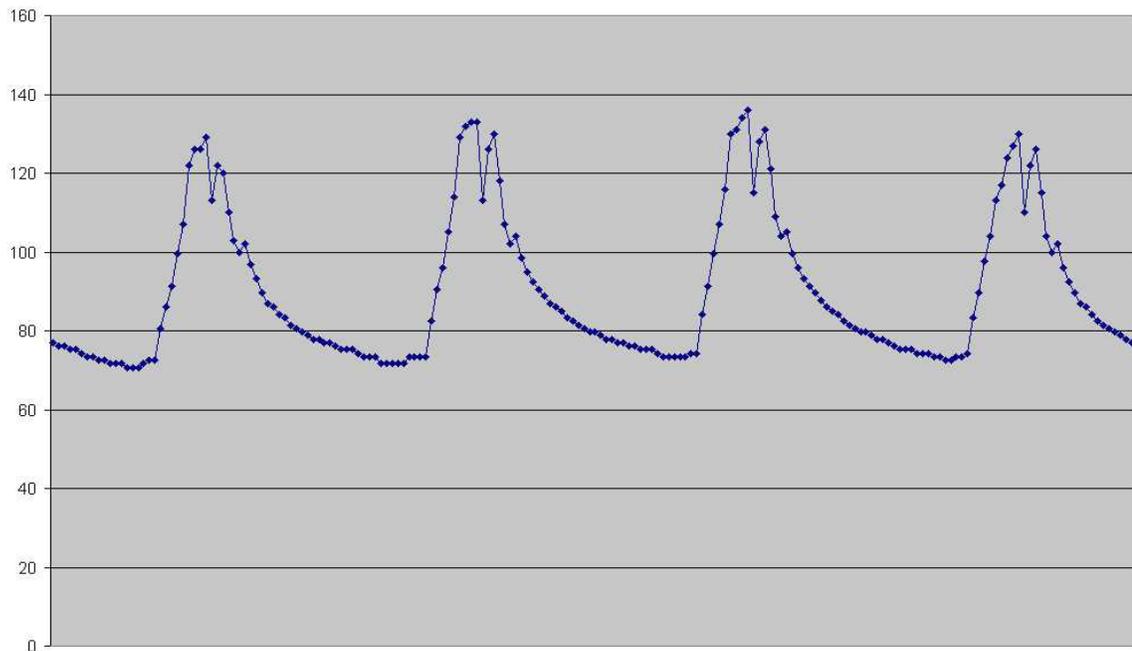
Curb Pos 5 (F), Sunday - Wednesday



Equinox Temperatures

The typical maximum temperature peaks at about 125 degrees Fahrenheit (°F). The maximum temperature at one of the curb edge locations and in the roadbed focal point peaks at about 138°F. Although elevated, such temperatures are not dangerous to people unless there is prolonged exposure. Such temperatures do not cause spontaneous combustion of paper materials, which requires over 400°F.

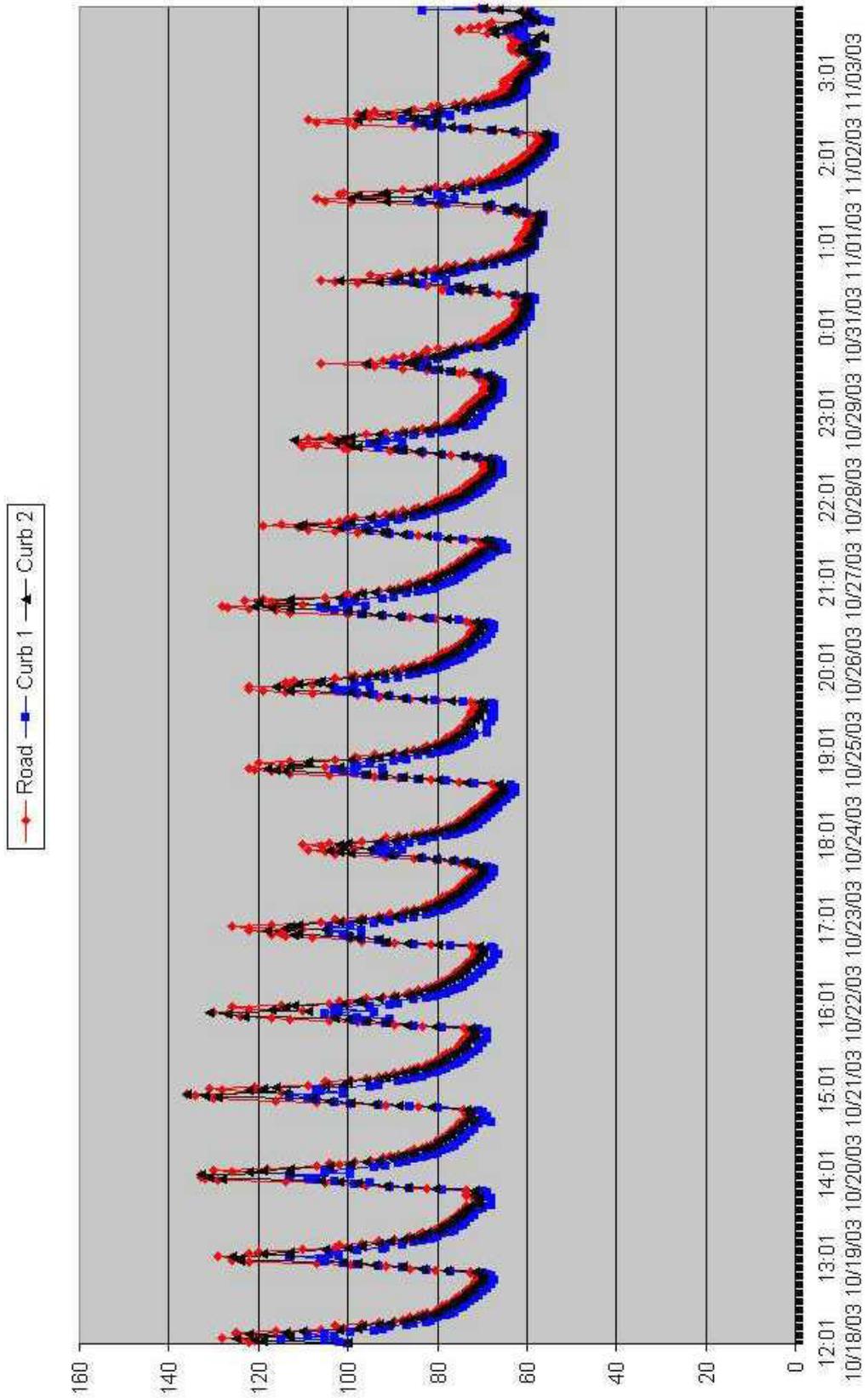
Road Surface (F), Sunday - Wednesday



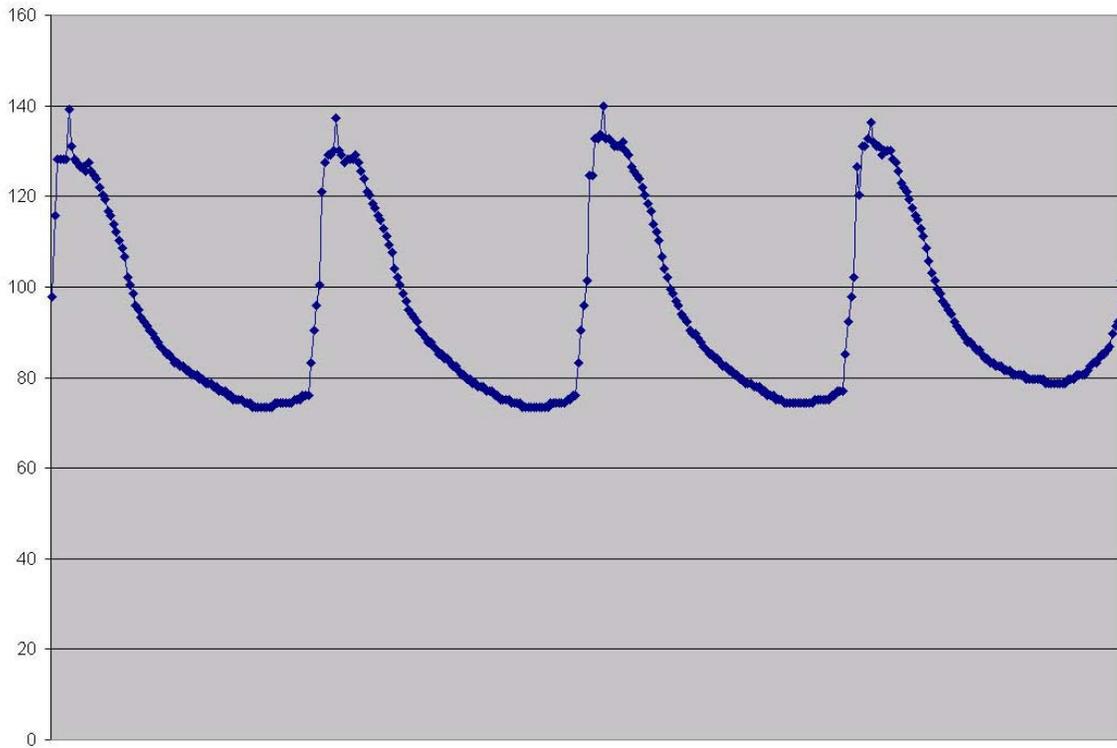
It is interesting to note that on all of the sensors, just before the expected peak temperatures occur, there is a sudden dip. Such a dip would be explained by a massive shadow covering the entire marquee. Inspection of the site confirms that 333 South Grand Street (currently the Wells Fargo Bank building) shades the marquee at that time of day, during winter months. This indicates that summer months (with higher sun angles and higher ambient air temperatures) will achieve higher surface temperatures. It would be useful to repeat the test in July when the marquee is not shaded by the Wells Fargo or the BP (formerly Interstate Bank) Building.

A review of all two weeks of the data shows the same general behavior.

Surface Temperatures (F) - Two Weeks



Summer Temperatures



The patterns were the same as the spring temperatures, except that the days became progressively longer, before cooling off.

The typical maximum temperature peaks at about 140°F. This is surprisingly close to the spring values, indicating that the radiant heat is the dominant factor and the air temperature is a secondary consideration, especially on ground surfaces. Although elevated, such temperatures are not dangerous to people unless there is prolonged exposure. Stationary exposure to a direct focus (>10 minutes), however, would result in the equivalent of a bad sunburn. A lightweight material (e.g., dark plastic) would achieve higher temperatures than those recorded.

Such temperatures do not cause spontaneous combustion of paper materials, which usually requires over 400°F. It is possible that temperatures sufficient to melt plastic would be achieved in the focal points. Indeed, certain materials prone to spontaneous combustion might ignite under the right conditions. Plastic bottles in the concentrated beam could further focus the beam, creating even higher temperatures. This is another strong indication that the marquee should be treated to defocus the beams.

Conclusions

Temporary Solution

If there is any significant delay in applying a permanent solution, the gray fabric should be placed on the surfaces of the Founder's Room currently causing focused reflection onto the Promenade Towers and onto the intersection of 1st and Hope streets.

Permanent Solution

Several permanent solutions should be considered. It would be useful to sandblast the critical polished surfaces, apply a permanent film, or deposit a frit on them. It is also important that the trees on site be maintained in full foliage. They form a part of the solution. Any loss of leaf or reduction in size or density would result in an increase in glare. Again, all of the surfaces on the Founder's Room and the CalArts Theater Marquee should be treated in the manner indicated in the respective segments.

Further Studies

No further studies are currently recommended. The dataloggers placed in front of the CalArts Theater Marquee will be left in place long enough to get data from warmer weather. That data will be available to the County or Sapphos Environmental, Inc., upon request.

Summary

Disney Hall is a scintillating building in every sense of the word. It presents some difficulties with glare. However, the difficulties discovered thus far fall into two categories. There is some glare that is visible but not critical. There is some glare that may be critical but can be resolved by following the recommendations indicated above.

