From:	BOS Legislation, (BOS)
To:	Lew, Lisa (BOS)
Subject:	FW: Expert Reports For Golden Gate Valley Library Hearing
Date:	Thursday, April 15, 2021 3:37:41 PM
Attachments:	Brief Expert Bios.docx Corbett expert report GGVL.pdf 4.10.21 Letter Golden Gate Branch Library.pdf Verve light study findings.pdf Edward Dean Response GGV Library.pdf

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From: Kelly Nice <kellynice@niceandcompany.com>
Sent: Thursday, April 15, 2021 11:42 AM
To: Stefani, Catherine (BOS) <catherine.stefani@sfgov.org>; Donovan, Dominica (BOS) <dominica.donovan@sfgov.org>
Cc: Maureen Holt <maureen@ddmhww.com>
Subject: Expert Reports For Golden Gate Valley Library Hearing

Hello Supervisor Stefani and Dominica,

Attached are the reports regarding expert opinion on the Light and Shade Impact to the Golden Gate Valley Library of the proposed project at 2651-2653 Octavia Street. Also attached are the bios of the experts. Please know that the 4 lighting and shading experts provided these opinions gratis because of their belief that the Symphysis reports conducted for the Planning Department were incomplete and misleading. It is our belief that the Planning Department did not fulfill the Board of Supervisors direction to adequately study the impact of this project on the GGV Library, but instead produced a flawed report, suppressed relevant facts and misled others as the the minimal impact of this project in their efforts to justify an unsupportable Categorical Exemption. As a local citizens group, we don't have the resources or expertise in these very complicated matters and are grateful to have several world-renowned experts volunteer to help protect the library. One note of detail for the report from Michael Corbett. On the last paragraph of page 6, expert George Loisos last name is not included. That will be corrected on the final version.

Finally, our group the Golden Gate Valley Library Friends has created a website that is getting good support from the community and is resulting in additional supporters willing to help in defense of the library. You can see it at https://saveggvlibrary.org/

Thank you.

Maureen Holt and Kelly Nice

Brief Bios: Expert Opinions for Appellant Group GGV Library Friends

1. **Michael Corbett** Well-known local expert with multiple years' experience in environmental and regulatory compliance for historic resources in San Francisco. Mr. Corbett meets the Secretary of the Interior's professional qualifications in history and architectural history, and he is the author of the book, Splendid Survivors (1979), and directed the survey on which the book was based. His work was the basis for Article 11 of the San Francisco Planning Code and for preservation features of the Downtown Plan (1986).

2. **Sean A. Timmons** of Verve Sustainable Engineering Design Studio was one of the designer engineers hired by the City for the GGV Library renovation project 2010-2012. As part of a collaboration with Tom Eliot Fisch and Paulette Taggart Architects, Mr. Timmons renovated the building with new high performance windows, and the new photovoltaic system on the roof. He is an expert in environmental master planning, economic and integrated building systems design.

3. **Edward Dean** of Bernheim & Dean is an experienced large-project architect, who specializes in low-energy building design. Dr. Dean has acted as lead designer on major projects at professionally recognized firms nationwide and has been extensively involved in the planning and renovation of city, university and private libraries and learning centers . Assistant professor of Architecture at UC Berkeley.

4 + 5. **George Loisos and Susan Ubbelohde** of Loisos & Ubbelohde. The firm has over 40 years of experience in shading and daylighting analysis and is a leading firm in the analysis of sun and daylight conditions. They have conducted research for the US Department of Energy, the California Energy Commission and Lawrence Berkeley National Lab on daylighting performance, published numerous papers on daylighting

simulation and design. Dr Ubbelohde is Professor Emerita at UC Berkeley and has taught graduate daylighting design and simulation for 27 years at UC Berkeley.

All five experts reviewed the Planning Department's two studies (1) Daylight Impact Analysis Report (December 2020) - an assessment of the project's impacts on the Library's interior light; and, (2) Shading Impact Analysis Report (December 2019) - impact of shading on the Library's photovoltaic system.

Their opinions are consistent that the project will materially reduce natural light, a character-defining feature of this historic library and increase shading on the Library's solar array, cutting off the renewable energy supply and increasing the Library's carbon footprint.

MICHAEL R. CORBETT
Architectural Historian ♦ 2161 Shattuck Avenue #203 ♦ Berkeley, California 94704 ♦ (510) 548-4123

12 April 2021

Gloria Smith
The Law Offices of Gloria D. Smith
48 Rosemont Place
San Francisco, California 94103

RE: **San Francisco Planning Department's Second CEQA Exemption for 2651-2653 Octavia Street (Case No. 2018-011022 PRJ) Regarding the Impact of the Proposed Project on the Golden Gate Valley Branch Library, A Historic Resource**

Dear Ms. Smith,

As you have requested, I am providing my review of the Categorical Exemption Determination made by the San Francisco Planning Department for a proposed project at 2651-2653 Octavia Street on 27 January 2021 and its impact on the Golden Gate Valley Branch Library, a historic resource. Information and conclusions in this letter are based on a site visit and a review of sources listed on the attached page of references. The site visit on 2 April 2021 involved viewing the structure from the outside only. Because the building is closed during the pandemic, the interior is not currently accessible. However, I have been inside the building several times in the past and for the purposes of this review have reviewed photographs of the interior taken after the renovation completed in 2012.

I make two findings in this letter. First, I demonstrate that the level and quality of natural light in the library, both functions of the architectural design, are a character defining feature of the library. Second, I show that because natural light is a character defining feature, the diminishing of natural light in the library would result in a negative impact on the library under CEQA.

QUALIFICATIONS

I am making these comments as an architectural historian with long experience in addressing the environmental and regulatory frameworks for historic resources in San Francisco. As shown in more detail on my attached resume, I meet the professional qualifications in history and architectural history established by the Secretary of the Interior. I am the author of the book, *Splendid Survivors* (1979), and director of the survey on which the book was based and that served as the basis for Article 11 of the San Francisco Planning Code and for preservation features of the Downtown Plan (1986). I am the author of the Historic Context Statement adopted by the Planning Department for Corbett Heights and for another now in review for North Beach. I am the author or co-author of National Register nominations for the Civic Center, the Uptown Tenderloin Historic District, the Port of San Francisco Embarcadero Historic District, the Jessie Street Substation, Temple Sherith Israel, the Palace of Fine Arts, and the Metropolitan Club.

Among numerous particularly relevant projects I have researched and evaluated numerous other libraries and other buildings by the architect of the Golden Gate Valley Branch Library, Ernest Coxhead. These include the 1893 Beta Theta Pi House in Berkeley designed by Ernest Coxhead and the 1908 Home Telephone Building at 333 Grant Avenue in San Francisco designed by Coxhead & Coxhead, a firm of Ernest Coxhead and his brother Almeric Coxhead. I have also written about three other Carnegie libraries, the 1900 Oakland Public Library, the 1914 Richmond Branch Library, and the 1916 San Francisco Main Library. In addition to these I have worked extensively on early twentieth century buildings for which the provision of natural light is key to their architectural designs and character. Among these are hospitals, factories, and office buildings.

I have been assisted in this effort by Mary Hardy. Mary has an M. Arch. from the University of California and an M.S. in Historic Preservation from Columbia University. She meets the professional qualifications of the Secretary of the Interior in architecture and history and has long experience in both designing according to the Secretary of the Interior's Standards and assessing compliance with the standards as part of the CEQA process. She was the principal author of a study of Coxhead's Beta Theta Pi House. Among libraries, she worked on the Berkeley Public Library.

EXISTING CONDITIONS AND THE PROPOSED PROJECT

The proposed project at 2651-2653 Octavia Street consists of an addition to an existing three-story, two-unit residence that is immediately south of the Golden Gate Valley Branch Library property at 1801 Green Street. The addition consists of an extension of the building westerly toward the rear of its lot and a new fourth floor with a roof deck.

The Golden Gate Valley Branch Library is acknowledged as a historic resource under CEQA. Among other existing and potential categories of recognition, it is eligible for landmark status under Article 10 of the Planning Code. It is one of seven branch libraries in San Francisco that have been recognized for architectural distinction and historical significance.

The proposed project would obstruct some level of natural light that currently flows into the library. The project would reduce the amount of light in the interior and would also alter the quality of interior light, because the balance of light in the library would shift more toward artificial and away from natural light.

THE PLANNING DEPARTMENT'S INTERPRETATION OF CEQA FOR THIS HISTORIC RESOURCE

In its CEQA exemption, the Planning Department determined "that the proposed project would not cause a substantial adverse change in the historic significance of the library." (SFPD 2021, Appeal p. 5) The Planning Department asserted that the "interior light level in the library's main reading room is not a character-defining feature that conveys the historic

significance of the library." (SFPD 2021, Appeal p. 7) The Planning Department cited a lack of "substantial evidence" that the light level is a character defining feature, stressing that character defining features must be physical features.

The Planning Department further reasoned that if the interior light level is not a character defining feature, the project as planned complies with the Secretary of the Interior' Standards for Rehabilitation. Therefore, changes to the light level from the project would not diminish its historic character.

THE LIBRARY BUILDING AND THE ARCHITECT

The Golden Gate Valley Branch Library was designed by Ernest Coxhead and built in 1918. Coxhead (1863-1933) was an important California architect who was born and educated in England. He was active as an architect in Los Angeles and San Francisco from the 1880s to about 1920. He is particularly noted for his residences and churches, mostly in the Arts & Crafts style. Much has been written about his skill as an architect, most notably in influential essays by David Gebhard and John Beach in a 1976 compilation, *Bay Area Houses*, edited by Sally Woodbridge. Characteristic and recurring features of his designs were his entry sequences and expressive use of light.

The library is in many respects a typical Carnegie branch library. Following both the guidelines of Carnegie program officials and the example of many other Carnegie branch libraries around the country, it is a one story building with a basement, it is long and narrow in plan, it has windows on all four sides, it is sited in its parcel to protect natural light on all sides, the bases of its main windows are six feet above the floor leaving the lower walls free for shelves and reaching up toward the light in a constricted urban location, it has a central entry on its long side, and the librarian's desk is at the center of the main space. The main space – the only space on the main floor – is a well-lit reading room which also houses shelving for books and the librarian's desk. The basement originally housed utilities, toilets, a meeting room, and a space for children.

Among these standard features of Carnegie libraries, several have to do specifically with the provision and purposes of light. The dimensions and proportions of the reading room, the placement of windows, and the siting of the building are all to maximize access to light.

In the design of a Carnegie library there were three principal components. The building itself consisted of its structural design and materials, its heating and mechanical systems, provisions for light, etc. The arrangement and furnishings of the building, the province of the librarians, included many practical details that facilitated the functioning of the building as a library. The appearance and finishes, including the architectural style of the building and its symbolism and cultural meaning were the third component.

NATURAL LIGHT IS A FEATURE, FUNCTIONAL AND SYMBOLIC, IN CARNEGIE LIBRARIES

The presence and meaning of light in this library brings together the three components of a library design. Light is a normal, practical aspect of any building. It serves the program of the library and its function. And it symbolizes the higher purpose and meaning of the library.

Andrew Carnegie's well-known efforts to build public libraries in the United States were preceded by less well-known efforts in Scotland where he was born. The first of over 2,500 libraries built by Carnegie was in his home town of Dumfermline, Scotland in 1883. Stating a basic belief of Carnegie's in this first library about his intentions was an ornamental relief sculpture over the main door consisting of a sun face with radiating lines of light and the inscription "Let There Be Light." In relation to the three components of library design, this artwork and inscription are saying that beyond the practical and administrative reasons for light in the building that the light of knowledge will inspire and elevate those who make use of the library. For Carnegie and many many other builders and users of libraries, there was a philosophical association of light with truth that was represented by the concept of libraries and by the physical libraries themselves.

Over the thirty-five years between the first Carnegie library in Scotland and the Golden Gate Valley Branch Library in San Francisco (finished one year before the last Carnegie library grant was made), the motivating idea for the Carnegie program was the bringing of the light of knowledge to the public. In skillful hands, the power of this idea, always present, was emphasized.

In the Golden Gate Valley Branch Library, Ernest Coxhead designed an entry sequence that provided an experience of literal enlightenment, in the sense that the visitor to the library becomes suddenly aware of the light filled space of the reading room at the culmination of the sequence. In the landmark nomination of the library, Bridget Maley calls out the "processional entry" as contributing "to the overall grandeur of the building." This is parallel to numerous of Coxhead's residential and church designs which utilize open and closed spaces, dark and light, and juxtapositions of scale that create a powerful architectural experience.

Approaching the building, the visitor goes toward a grand entry at the center of a wall of giant Corinthian columns. Seen in this way the building is like a classical temple, perhaps a temple of reading. The ordinary neighborhood resident enters through a doorway fit for grandeur. The wall and the entry flatter the visitor, suggesting that the building was suitable for persons of learning and culture, and promising great things inside. The exterior steps narrow as the visitor climbs, focusing attention on the door itself. Inside is an enclosed darkened vestibule and a steep stair up to the main floor. The visitor looks at their feet and holds the railing. Then at the top of the stairs, the visitor can stop and look around and behold

the great light-filled space and walls lined with books. Going from enclosed and dark to open and light, the visitor re-enacts the process of education from ignorance to knowledge.

In a more mundane but more fundamental sense, the provision of light at the time the Golden Gate Valley Branch Library was built was so integral to design that it affected all buildings. One influential writer about library design, John Cotton Dana, wrote in a book that was reprinted many times over at least fifteen years that the workshop, the factory, and the office building were appropriate models for libraries. (Dana 1910, p. 26) Each of these types had a special need for natural light at a time when electric light was expensive and inefficient.

More than any other building type, libraries are associated with good light which is necessary for finding books and for reading. But factories, hospitals, office buildings, department stores, and other types of the period all made particular accommodations for admitting natural light and, in some of these cases, imbuing it with higher meaning. A common type of factory with large areas of glass inside a structural frame was called a Daylight Factory. Hospital wards were long and narrow to provide light and air to patients in their beds. Operating room walls were clad in white reflective materials and lit from above to maximize light and visibility. Department stores were built around glass domes. Office buildings were designed in wings or around light courts to bring light into all rooms.

During the entire period of the Carnegie libraries the buildings were lit by a combination of natural and artificial light. In the beginning, gas or oil lamps and fixtures were used. By the time of the Golden Gate Valley Branch Library, electricity had long been the source of artificial light. However, even in this period, electric light was inefficient and on its own, inadequate. The dominance of natural light provided a character to interior spaces that changed in later decades as electric lighting improved. Edward Tilton, an influential and prolific architect and writer about libraries wrote of the “beautiful mellow light” in the double-height space of a library reading room like that of the Golden Gate Valley Branch Library. (quoted in Van Slyck, p. 97)

INTANGIBLE QUALITIES OF ARCHITECTURAL SIGNIFICANCE

The recognition and protection of intangible qualities has been a fundamental element of historic preservation since its inception with the National Historic Preservation Act of 1966, not even to mention the place of intangible qualities in the appreciation of art and architecture for as many millennia as these things have been appreciated.

For example, in the National Register criteria, which are the foundation of cultural resource evaluation, National Register Criterion C recognizes properties that “possess high artistic values.” (NPS Bulletin 15, p. 17) High artistic values are not the product of a list of physical features, but rather, come from the ways those features are put together and how they shape people’s experience of a place. The interactions of light, space, air, and time for someone walking through a space at different times of the day and the year in different kinds of

weather are some of the intangibles that create high artistic values and experiences of the power of architecture.

In recent decades another approach, cultural landscape analysis, has been developed and adopted for understanding and protecting cultural resources. Initially intended for landscapes as they are traditionally understood, like gardens or historic farming areas, cultural landscape analysis has come to be applied to all kinds of resources including individual buildings. In fact, one of the reasons cultural landscape analysis was widely adopted was because it helped understand and identify intangibles that were not always adequately recognized. Among thirteen types of landscape characteristics recognized by the National Park Service in a substantial literature on the subject are "Natural Features and Systems" and Spatial Organization," both of which may address the interplay of light on physical features as aspects of their significance. (NPS 1996, NPS 2021)

Thus, natural light like aesthetics, beauty, views, spatial sequence, and spatial character has a long and well-established place as a recognized element in the appreciation of architecture and in the identification of historic resources.

NATURAL LIGHT IS A CHARACTER DEFINING FEATURE OF THIS LIBRARY

Natural light in the Golden Gate Valley Branch Library is a character defining feature. Natural light was an essential and fundamental element in the design of the building for practical and symbolic reasons as demonstrated here.

The Planning Department incorrectly stated that character defining features must be physical features. However, there is no such requirement in either CEQA or the Department of the Interior's Standards for Rehabilitation, which the CEQA exemption relied upon. Indeed, the character defining features of buildings like San Francisco City Hall or Frank Lloyd Wright's V.C. Morris Store include non-physical features like the spatial volumes and quality of light as much as they do the materials of the buildings. The same is true for the Golden Gate Valley Branch Library. The amount and quality of light in the main reading room is a fundamental character defining feature of the building.

A CEQA EXEMPTION WOULD BE INAPPROPRIATE FOR THIS PROJECT

I have reviewed the reports by architectural lighting experts Sean A. Timmons of Verve Sustainable Engineering Design Studio, Edward Dean of Bernheim & Dean and George and Susan Ubbelohde of Loisos & Ubbelohde. These experts reviewed the Planning Department's analysis on whether interior natural light in the Library would be diminished by the proposed project. These four experts found that the Planning Department's analysis was flawed and that the project could diminish natural light inside the library to a harmful extent. I am not a lighting expert, nevertheless, based on the evidence from these experts, it is my opinion that were the level and quality of natural light in the Golden Gate Valley Branch

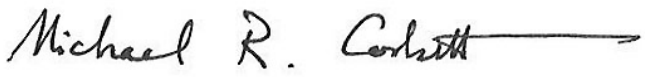
Library noticeably reduced, it would be a negative impact on a character defining feature. As such, the project would have a negative impact on an historic resource and must be fully addressed.

The Categorical Exemption Determination granted by the Planning Department should be rescinded.

SUMMARY OF FINDINGS

The Planning Department applied a flawed analysis to the question of the level and quality of light in the Golden Gate Valley Branch Library as a character defining feature. This is because it contrived a requirement that character defining features must be material or physical. This is incorrect. The finding that the light is not a character defining feature violated CEQA, common sense, cultural landscape analysis, the Secretary of the Interior's Standards, and decades of practice in the evaluation and treatment of historic resources. The Planning Department rejected the principle that the level and quality of light in the library was a character defining feature. This letter provides substantial evidence that light is a character defining feature and there is evidence that the project would diminish the natural light that enters the library. Because the project would diminish the natural light, it may have a significant impact on a historic resource. Therefore, the project is not eligible for a categorical exemption. There is nothing obscure or subtle about this issue. The level and quality of natural light in the library is a character defining feature.

Sincerely,



Michael R. Corbett

Attachments: References
Resume

REFERENCES

Bertram, James. 1915. *Notes on the Erection of Library Bildings* [sic]. New York: Davis & Sanford. Substantially excerpted and discussed in Van Slyck, p. 35-40.

Bostwick, Arthur E. 1917. *The American Public Library*. New York: D. Appleton.

Breisch, Kenneth A. 2017. *American Libraries 1730-1950*. New York: W.W. Norton & Company; Washington, D.C.: Library of Congress.

Burgoyne, Frank J. 1905. *Library Construction, Architecture, Fittings and Furniture*. London: G. Allen.

CEQA (California Environmental Quality Act). 2021. Statutes and Guidelines.

Chalmers, Hadley. 1924. *Library Buildings; Notes and Plans*. Chicago: American Library Association.

Dana, John Cotton. 1910. *A Library Primer*, 5th & rev. ed. Chicago: Library Bureau.

Dean, Edward. 2021. Response to Symphysis Light Study. Bernheim + Dean, Inc., Sustainable Building Consultants.

Eastman, W.R. 1912. *The Library Building*. Chicago: American Library Association Publishing Board.

Google earth. 2021. Aerial view and street view in current and historical imagery.

Historic Environment Scotland. 2015. Abbot Street, Central Library LB25979. Listed building of Scotland. https://portal.historicenvironment.scot/

Kahn, M. 1917. "The Design and Construction of Industrial Buildings." *Technical Journals Limited*.

Kelley, Tim. 2001. *Landmark Nomination, Carnegie Branch Libraries of San Francisco*. Context Statement prepared for San Francisco Landmarks Preservation Commission, San Francisco Planning Commission. January 2001.

Kortum, Lucy. 1990. *California Carnegie Libraries*. National Register of Historic Places Multiple Property Documentation Form.

Loisos, George and Susan Ubbelohde. 2020. Memo to Kelly Nice and Maureen Holt Regarding Golden Gate Valley Branch Library, Impact on Daylight by Proposed Addition at 2651-2653 Octavia Street. Loisos + Ubbelohde Architecture.Energy. 8 September 2020.

Maley, Bridget. 2020. *Landmark Designation Report, Golden Gate Valley Branch, San Francisco Public Library, 1801 Green Street, San Francisco, Ca*. Submitted to San Francisco Landmarks Preservation Commission, San Francisco Planning Commission. Packet includes reports by Kelley, Kortum, and individual branch library designation reports. 22 July 2020.

NPS (National Park Service). 1995. *Bulletin 15: How to Apply the National Register Criteria for Evaluation.*

NPS (National Park Service). 1996. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. Cultural Landscape Guidance Documents. ISBN 978-0-16-089109-0. NPS Cultural Resource Stewardship and Partnerships. Washington, D.C.

NPS (National Park Service). 2021. Cultural Landscapes 101. https://www.nps.gov/articles/cultural-landscapes-101.htm

Pennetier, Olivier. 2020. *Daylight Impact Analysis Report for 2651-2653 Octavia Street*. 13 December 2020.

Sanborn Map Company. 1913. *Insurance Maps of San Francisco.* New York: 1913.

Sanborn Map Company. 1913. *Insurance Maps of San Francisco.* New York: 1913, updated to 1950.

Sanborn Map Company. 1929. *Insurance Maps of San Francisco.* New York: 1929.

SFPD (San Francisco Planning Department). 2021. CEQA Exemption Determination for 2651-2653 Octavia Street, Planning Case No. 2018-011022ENV. 27 January 2021.

SFPD (San Francisco Planning Department). 2021. Appeal of Categorical Exemption for 2651-2653 Octavia Street, Planning Case No. 2018-011022ENV. 12 April 2021.

SOIS (Secretary of the Interiors Standards). 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings.*

Soule, Charles C. 1912. *How to Plan a Library Building for Library Work*. Boston: Boston Book Co.

Timmons, Sean A. 2021. Memo to Maureen Holt Regarding Golden Gate Valley Light Studies. Verve Sustainable Engineering Design Studio. 3 March 2021.

Van Slyck, Abigail Ayres. 1995. *Free to All: Carnegie Libraries and American Culture, 1890-1920*. Chicago: University of Chicago Press.

Woodbridge, Sally, editor. 1976. *Bay Area Houses*. New York: Oxford University Press.

MICHAEL R. CORBETT

Architectural Historian

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Michael R. Corbett is an architectural historian with over forty years experience in architectural history and historic preservation. Based in the San Francisco Bay Area for most of that time, Corbett has worked throughout California, the western United States, Texas, and abroad. From 1988 to 1990, he worked for the New York City Landmarks Preservation Commission. He meets the Secretary of the Interior's professional qualifications for a historian and an architectural historian (SOIS qualified).

Corbett's work principally involves research and writing about buildings and places for city landmark nominations, National Register of Historic Places applications, planning, preservation, and environmental purposes including HABS and HAER documentation. In addition, he has contributed to numerous environmental documents prepared for NEPA and CEQA purposes over many years for transportation projects, power plants, water related projects and others. He has worked with the Section 106 process on many projects.

Corbett's clients have included all branches of the military, the National Park Service, Caltrans, the University of California, the ports of Oakland and San Francisco, and the cities of Fremont, Berkeley, San Rafael, Woodside, Oakland, and San Francisco. Private clients have included PG&E, the Roman Catholic Church, the Maybeck Foundation, San Francisco Architectural Heritage, the Fine Arts Museums of San Francisco, Stanford University, numerous architectural, planning, and cultural resource firms, and many private companies and individuals.

PROFESSIONAL EXPERIENCE

Architectural historian, consultant, Berkeley, 1985 to 1988, 1990 to present.

Senior Architectural historian (variable part-time), AECOM, Oakland-San Francisco, 2017 to 2019.

Architectural historian, Cultural Resources Group, Dames & Moore/URS, San Francisco, 1990 to 2003.

Landmarks preservationist, Research Department, New York City Landmarks Preservation Commission, 1988 to 1990.

Teaching Assistant/Associate, Department of Architecture, Univ. of California at Berkeley, 1985 to 1986.

Architectural historian, The Foundation for San Francisco's Architectural Heritage, 1981 to 1984.

Archivist, College of Environmental Design Documents Collection, Univ. of California at Berkeley, 1979 to 1981.

Architectural historian, Charles Hall Page & Associates/Page, Anderson, Turnbull, Planning and Architecture, San Francisco, 1974 to 1981.

EDUCATION

History of Architecture, University of California at Berkeley, Advanced to Candidacy 1987.
A.B. with honors, Anthropology, Certificate with distinction in American Civilization, Princeton University, 1973.

SELECTED PROJECTS

Rodoni House, El Cerrito. 2016-2019. For this 1899 house and grounds associated with the Little Italy section of El Cerrito, Section 106 steps including evaluation, draft MOA, HALS documentation (with Denise Bradley for Komouros-Towey Architects). For LCA Architects and property owner.

Fireman's Fund Insurance Company Home Office, San Francisco. 2017-2018. National Register nomination form for innovative International Style office building designed in four phases beginning in 1957 by Edward B. Page and multi-element landscape designed by Eckbo, Royston & Williams and their successor, EDAW. For Laurel Heights Improvement Association.

School Administration Building/Paul Robeson Building, Oakland. 2016-2017. Evaluation of 1929 Administration Building designed by William Knowles for Oakland public schools; also the site of the assassination of the school superintendent Marcus Foster and the shooting of deputy superintendent Robert W. Blackburn. For Oakland Unified School District. Subsequently contributed to CEQA

Ethel Moore Memorial, Oakland. 2016-2017. Evaluation of the first public health building in Oakland, designed by Charles W. Dickey and completed in 1922. Named for a pioneering and influential activist in social welfare and public health who died while planning this building. For Oakland Unified School District.

Kraftile Demonstration House and Batchelder Terra Cotta Sculpture, Fremont. 2016-2017. Evaluation of complex site including rare tile house and sculpture. For City of Fremont.

Tesla Motors, Fremont. 2015-2016. Summary Evaluation and Treatment Recommendations for Fremont automobile manufacturing plant, originally designed by John Bolles and completed in 1963 for General Motors; later occupied by NUMMI. For Tesla Motors.

Newell Plantation House, Wharton County, Texas. 2007-2015. Documentation for evaluation of 1840s cotton plantation including headquarters house, agricultural landscape, and sites of slave quarters, in preparation for restoration of headquarters house. With Mary Hardy.

Macaulay Foundry, Berkeley. 2014-2015. Multi-phase history of a sprawling industrial complex focusing on changing foundry processes over 100 years. For property owner and City of Berkeley.

Luchetti House, San Francisco. 2014. Evaluation of 1951 Mid-century Modern house on Twin Peaks designed by Henry Hill for a San Francisco Italian family. For Friends of Clarendon Heights.

Corbett Heights Historic Context Statement, San Francisco. 2012. Historic Context Statement for West Eureka Valley neighborhood, a large and complex area with a patchwork of street grids, over 1,100 parcels, and buildings from every decade since the 1860s. For Corbett Heights Neighbors and the Historic Preservation Fund Committee.

Jackling House, Woodside. 2001-2010. Multi-phase study of 1926 estate of "copper king" Daniel Jackling, with Spanish Colonial Revival Style house designed by George Washington Smith, including evaluation, HABS, and salvage plan. For Steve Jobs and Town of Woodside.

Temple Sherith Israel, San Francisco. 2010. National Register nomination for monumental synagogue designed by Albert Pissis, site of 1906 graft prosecution trials, symbol of Jewish contributions to San Francisco. For congregation.

North Beach, San Francisco. 2010. Historic context statement for large post-1906 area dominated by flats and cottages, with social and ethnic history including beatniks, Chinese, LGBT, and Italians. For Northeast San Francisco Conservancy.

Tenderloin Historic District, San Francisco. 2009. National Register nomination for dense urban district of over 450 buildings including hotels, apartment buildings, garages, churches and film exchanges. For Tenderloin Housing Clinic.

Lachryma Montis, Sonoma State Park, Sonoma. 2007. Analysis of pre-fab 1851 wood frame house with adobe infill and subsequent buildings built for General Mariano Vallejo, as part of cultural landscape study by Denise Bradley. For California Department of Parks and Recreation.

Hearst Memorial Gymnasium. 2005. Historic Structure Report for major 1927 women's facility and extension of campus plan designed by Bernard Maybeck and Julia Morgan. With Molly Lembert and SMWM for University of California.

Palace of Fine Arts, San Francisco. 2005. Co-author of National Register Nomination of 1964 **r**econstruction of one of the principal features of the 1915 P.P.I.E. by William G. Merchant and Hans U. Gerson of original by Bernard Maybeck. For Maybeck Foundation.

Woman's Athletic Club of San Francisco. 2004. First women's athletic club west of Chicago and central element in elite women's club district, 1917 and 1923. Designed by Bliss & Faville. National Register nomination. For Metropolitan Club.

Palo Alto Historic Building Survey. 1998-2001. Training of volunteers, field survey, research, and evaluation of properties in citywide survey. With Dames & Moore for City of Palo Alto.

Whittell Estate, Lake Tahoe, Washoe County, Nevada. 2000. National Register nomination of 1939 rustic stone estate designed for George Whittell, Jr., investor and eccentric conservationist, by Frederick J. DeLongchamps. With Dames & Moore for University of Nevada.

Hoover Dam Diverter Towers, Arizona-Nevada. 1999. Section 106 evaluation of 1935 electrical transmission facility associated with Hoover Dam. With Dames & Moore.

Agnews State Hospital, Santa Clara. 1995-1998. Multi-phase study of architecturally and medically innovative 1907 mental health hospital designed by State Architect including determination of eligibility and HABS documentation. With Dames &Moore for multiple clients including Office of Historic Preservation.

Oakland Harbor Training Walls/Jetties and Federal Channel. 1997. Historic context, evaluation, determination of effects, mitigation for harbor structures begun in 1871 for NEPA and Section 106. With Woodruff Minor and Basin Research Associates, for U.S. Army Corps of Engineers.

City Hall Site, San Francisco. 1994. HABS documentation of exposed City Hall foundations for building designed by Augustus Laver, built 1871-1897, damaged in the earthquake and fire of 1906, and demolished in 1909. With Mary Hardy, Stephen Tobriner, Mesa Technical, and Basin Research for City of San Francisco.

Space Launch Complex 6, Vandenberg Air force Base. 1994. Evaluation of space launch facility built 1979-1986 for military manned space shuttle flights in polar orbit for Section 106. With Dames & Moore.

Reclamation District 1000, Sacramento County. 1994. Rural Historic Landscape Report on 55,000-acre site developed in 1911 by the Natomas Company with levees, canals, pump houses, roads, and farms for NEPA and Section 106. For Army Corps of Engineers, with Dames & Moore.

Los Caminos del Rio Project, Rio Grande Valley, Texas. 1992. Survey of potential National Historic Landmark sites and international context including 18th-century Spanish settlements, the capitol of the Republic of the Rio Grande in Laredo, and a 1912 irrigation system consisting of pumphouses, pumping machinery, and canals; co-author of NHL nomination for Roma, Texas Historic District, a mid-19th-century trading town of stone and brick buildings at the head of navigation of the Rio Grande River. With Dames & Moore for Texas Historical Commission.

Edwards Stadium, University of California, Berkeley. 1992. National Register nomination of 1932 track-and-field stadium, the largest in USA, designed by Warren Charles Perry, and site of Cold War U.S.-U.S.S.R. track events. For Berkeley Architectural Heritage Association.

St. Francis de Sales Roman Catholic Cathedral, Oakland, California. 1991. Multi-phase project including evaluation and HABS documentation of 1889 Gothic Revival church building damaged in 1989 earthquake designed by Charles J.I. Devlin. For the Diocese of Oakland.

Tarrant County, Texas, Architectural Survey. 1981-1991. Multi-year survey of Fort Worth, small cities, and rural areas with team in revolving roles. With Page, Anderson &Turnbull for Tarrant County Historical Commission.

Abattoir of the New York Butchers Dressed Meat Company, New York. 1989. Documentation of 1903 six-story industrial slaughterhouse, the largest Kosher slaughterhouse in U.S.A., designed by Horgan & Slattery. For New York City Landmarks Preservation Commission.

Syms Operating Theater, Roosevelt Hospital, New York. 1988. Landmark nomination report on pioneer 1890 modern operating theater designed by architect W. Wheeler Smith with surgeon Charles McBurney. For New York City Landmarks Preservation Commission.

San Francisco Civic Center Historic District. 1974-1987. Multi-phase project including National Register and National Historic Landmark nominations of multi-block complex of buildings and spaces designed in the spirit of the City Beautiful Movement 1912-1936. For San Francisco Architectural Heritage.

Amarillo Historic Building Survey, Texas. 1980. Historic building survey of City of Amarillo including downtown, residential, and industrial districts. With Charles Hall Page & Associates for City of Amarillo.

Phoenix Historic Building Survey, Arizona. 1979. Historic building survey of five districts including downtown and South Phoenix. With Charles Hall Page & Associates for City of Phoenix.

Sacramento Old City Survey, California. 1975. Historic building survey of residential neighborhoods within original city boundaries. With Charles Hall Page & Associates and John Beach for City of Sacramento.

Jessie Street Substation, San Francisco, 1974. National Register nomination of 1907 electrical substation designed by Willis Polk in brick and terra cotta representing influence of City Beautiful Movement. For Foundation for San Francisco's Architectural Heritage.

SELECTED PUBLICATIONS

Bliss & Faville: The Architectural Profession, Regional Ambitions, and the Development of San Francisco in the Early Twentieth Century. Draft 90% prepared for 640 Foundation, San Francisco, December 2019.

***The Claus Spreckels Building*, San Francisco.** San Francisco: Adolph Rosekrans, 2013.

***Port City: The History and Transformation of the Port of San Francisco, 1848-2010*.** San Francisco: San Francisco Architectural Heritage, 2010.

"**A History of the de Young and its Buildings**" in *The de Young in the 21st Century: A Museum by Herzog & de Meuron*. San Francisco: Fine Arts Museums of San Francisco and London: Thames & Hudson, 2005.

"**Architecture: Continuity and Change in California Courthouse Design, 1850-2000**" in *Courthouses of California: An Illustrated History.* San Francisco: California Historical Society and Berkeley: Heyday Books, 2001.

Building California: Technology and the Landscape. San Francisco: California Historical Society and William Stout Publishers, 1998.

"**Las Vegas, Nevada**" in *The Dictionary of Art,* London: Grove's Dictionaries, 1996.

"**Rearranging the Environment: The Making of a California Landscape, 1870s to 1990s**" in *Facing Eden: 100 Years of Landscape Art in the Bay Area,* Steven A. Nash, editor. Berkeley: University of California Press, 1995.

"**Meat Packing**" in *The Encyclopedia of New York City*. New-York Historical Society and Yale University Press, 1995.

"**Architecture**" in *San Francisco.* Paris: Guides Gallimard, 1993. English edition, New York: Knopf, 1994.

Splendid Survivors: San Francisco's Downtown Architectural Heritage. Prepared by Charles Hall Page & Associates. San Francisco: California Living Books, 1979.

"**History of the Skyscraper**" (Review) in *Journal of the Society of Architectural Historians,* Vol. 37:3 (October 1978), 224-225.

From: Sean Timmons <sean.timmons@verve-engdesignstudio.com>

Subject: Re: Golden Gate Valley Light Studies

Date: March 3, 2021 at 9:44:26 AM PST

To: "maureen@ddmhww.com" <maureen@ddmhww.com>

Cc: Kelly Nice <knice@earthlink.net>

Hi Maureen:

I did receive your report and your voice mail. Apologies for my tardy response but I'm working overseas for several months on SV projects in Europe, so my schedule is hectic. Having said that, I'm happy to help. I have conducted a quick review of the reports you sent me and I comment as follows:

Daylight

SYMPHYSIS Summary: After performing the daylighting analysis, SYMPHYSIS concludes that the proposed project at 2653 Octavia Street will not reduce the visual comfort of the library's patrons in any significant way, when compared to the current existing conditions. The proposed project reduces the libraries' averaged illumination levels minimally for clear sky (-1.8%), overcast sky (-4%), and partly cloudy sky (-11.1%). For both the overcast and partly cloudy skies, the existing conditions require electrical illumination at ALL times to provide the necessary illumination recommended for libraries (300-500 LUX), thus even the small reductions with the proposed condition are irrelevant.

VERVE Sustainable Engineers Response: First and foremost, minimal impact on any structure due to the proposed project should NOT be classified as irrelevant.

The beautiful historic Beaux-Arts Golden Gate Valley Library in the Cow Hollow neighborhood of San Francisco is now LEED Gold certified. As part of the San Francisco Public Library's Branch Library Improvement Program, Timmons Design Engineers in collaboration with Tom Eliot Fisch and Paulette Taggart Architects renovated the building with new high-performance windows, energy efficient lighting and mechanical equipment, low-flow plumbing fixtures and a new photovoltaic system on the roof. The renovations along with a modern addition to improve accessibility earned the project a LEED Gold award for Commercial Interiors and improved the facility for local neighborhood residents and local school children, use.

A tremendous amount of architectural and engineering design time, vision and effort went toward the restoration project back in 2010. TDE was hired to assist in the restoration of this understated jewel of a building and return it back to its initial design

glory and re-establish the building to its surroundings and beautiful neighborhood. Our design approach was to enhance the existing passive features of daylight and thermal mass, and intertwine twenty first century technology, to deliver a modern, state of the art, energy efficient building within a very tight budget. This was achieved and more to the delight of the client and the local community. Our team provided full MEP and Sustainable Design services including CFD modelling to understand daylight and natural ventilation and take full advantage of both to improve wellness, comfort and reduce energy consumption.

Having reviewed the daylighting report, one would have to say its edited in favor of the Developer and conveniently ignores some critical positions presented by the addition of the residential development.

Figures 3 and 4 of the SYMPHYSIS report, depicts sunlight 3D massing models that conveniently indicate sunlight angles taken in the summer when the sun is at its peak position in the sky to present a position of no impact on the Library from the proposed Development. This is true for that time of year but the greatest impact on the Library will be realized when the sun is in its winter solstice and low winter sun angle. This has not been presented in any detail and I can safely say that the shadow cast on the south facing windows will be egregious and could also impact the efficiency of the roof mounted PV system which I do not see covered in the report.

The resulting shading impact of the development would result in extensive artificial lighting being delivered to the reading surface to maintain a comfort light level. The report mentions IES illumination levels of 300 to 500. VERVE would argue that the illumination level should be 500 minimum Lux level at the reading and school child project work surface to provide the wellness factor and visual comfort strived for in the original design in 2010. This would result in a far greater impact to the project Lux levels delivered to the project and therefore find fault with the proposed design in its present form.

VERVE would suggest that the architect of record for the proposed development review the aforementioned sun angles and put forward a design that has zero impact on the Library to ensure that this magnificent, old, and beautiful building is maintained in its current grandeur for now and future generations.

Kind Regards

Sean A. Timmons PE MBA B.Eng(H)

President & CEO

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Below please find my thoughts on some of the questions raised by the two studies - Daylight Impact Analysis December 2020 and Shading Impact Analysis December 2019 - commissioned by the SF Planning Department vis-à-vis 2651-2653 Octavia Proposed Renovation and its impact on the Golden Gate Valley Branch of SFPL.

I will just say that the consultant hired by the City staff is an expert in the software used to analyze daylighting - but he's relying on IES general numbers for light levels. Minimum lighting levels in libraries are based on tasks, not on general room averages. Basing it on the latter will skew the results.

Interior Library Analysis

I must say that I find the charts in the report confusing (and I know this stuff!). For instance, he concludes that there is only 1.7% difference between the proposed versus existing conditions, which appears to be the number that the planning department has used to conclude that there is no real impact. But what does this number mean? It is apparently the ratio (proposed versus existing) *over the entire year* of the daylighting levels when supplemental lighting is not required to bring the space up to 400 lux (40 footcandles).

That number is distorted by the summer months when the sun is high in the sky and the effect of the new project is not felt at all. But the real issue is what happens in the other months, particularly November through February. He gives a hint by charting one day in September assuming a partly cloudy sky. This is uninformative and misleading—it appears there is no effect of the new project. (Strangely, in the report, December 21 is a sunless day—what does that show?)

I would think that the analysis that would best show the effect of the new project is that of the *Daylight Autonomy* for the percentage of time, during the library's open hours (10am - 8 pm), from Nov. 1 to March 1, when supplemental light is NOT required to meet illuminance levels of 500 lux (50fc) in the Reading Areas. Then you'll see the true impact of the new building. (See below for why 500 lux should be used for the task lighting in the Reading Areas.)

In addition, there's a large body of evidence supportive of the fact that the quality of natural light is preferable to artificial light.

Averaging to 400 lux

The Daylight Impact Analysis averages recommended lux levels to 400 lux across the entire floor of the library.

Assuming that the lighting design is good (glare-free, etc.), the IES actually recommends 500 lux (about 50 footcandles) at the desktop where written material (text) is being viewed and 300-400 lux (30-40 fc) otherwise (aisles, etc.). There is nothing about averaging across the entire floor. Choosing 400 lux as an average is an over-

simplification—reading surfaces should be 500 lux, not an average with the light levels of the surrounding floor area.

Most people do not understand that the lighting level recommended for the stacks is in *vertical footcandles* (or vertical lux) and these vary depending on the level of the shelf. (See diagram and explanation below.) The stack area lighting is NOT horizontal illumination as in the reading areas. One needs adequate light to read the titles on the books. So the blanket average can't really be applied to stack areas.

See attachment A (next page).

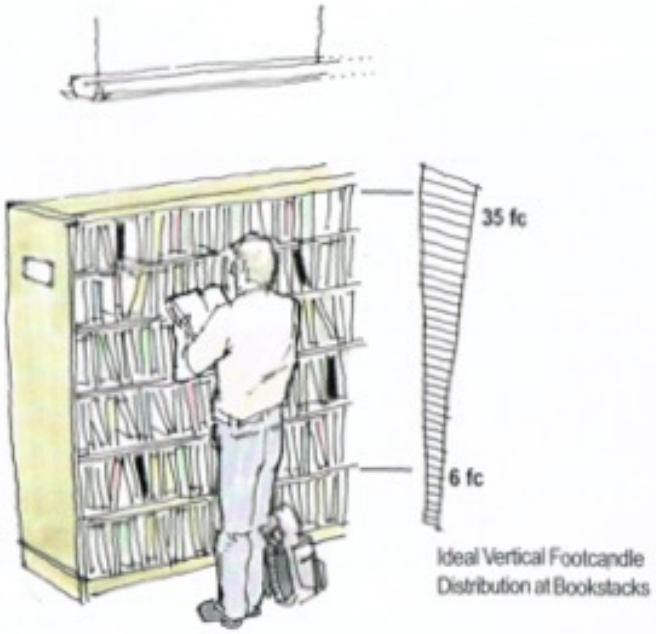
Attachment A

EMS Option 4.5. *In new buildings, carefully study stack light fixture layout alternatives for light levels provided across stack face and installed watts required to achieve those levels.*

Lighting Design in Libraries

Library lighting tasks have specific design requirements. The computer workstation is a common type of library task area, and the book stack is another major lighting task area in the library.

Book stacks must be lit adequately so that patrons can find books and staff can shelve books without visual discomfort. Evenness of illumination across the stack face is more important than achieving a high lighting level at any single point. The lighting level should be a minimum of 6 fc (footcandles) measured vertically on the face of the book spine at a height of 12 inches above the floor, and a maximum of 35 fc at any height, so that no more than a 6:1 ratio results across the entire vertical face of the bookstack.



Ideal Vertical Footcandle Distribution at Bookstacks

Figure 4.5. Ideal vertical footcandle distribution at bookstacks. Light fixtures should be selected and laid out to minimize electric power requirment while maintaining this light distribution.

The claimed 1.8% reduction in light levels (at 400 lux) appears to be a best case example generated for June 21st with clear sky. But actually, the 1.8% reduction is his analysis of the entire year, not the single-day charts and analysis. The report is confusing in this way. I think that the SF Planners are misled as well. They see "1.8% impact" and conclude "no real impact".

The winter light readings for December 21st are not included when the sun is at a lower, more southerly position to the East/West oriented Library and may cause greater reduction. Readings on December 21st are included in the 2019 Solar Panel Analysis, however, with significant impact shown, so there is a lack of consistency between the data points selected for the two studies.

Determining significant reductions in light

11.1% reduction on a partly cloudy day on September 21st is provided as an example and seems like it could be a significant reduction. But one day does not tell the story. Theoretically, as long as the minimum light levels are achieved, it would be okay. But are they? There is not enough data provided to know that.

Solar Panel Analysis

Reduction in solar radiation across both arrays.

The claim is an overall 5.8% reduction in solar radiation across both arrays. The report states: "At most, the solar array would see a 19.8% decrease in solar radiation on the lower solar panels" and the Eastern panels experience a 69% reported increase in shading.

This is straightforward: if the panel gets shade on even a portion, it essentially gets shut down. So, the new project is cutting off part of your renewable energy supply and effectively increasing your carbon footprint.

You probably can calculate this by knowing how much fraction of the output you would lose every day and then use last year's data from the meters on the solar system. The answer would be kWh. That would have to be made up by PG&E electricity, which has a certain fraction of its power produced by gas power plants. They can probably supply the amount of CO2 equivalent to your lost kWh.

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10 April 2021

TO: **Kelly Nice and Maureen Holt**

FROM: George Loisos and Susan Ubbelohde, Principals

RE: Golden Gate Valley Branch Library
Impact on Daylight by Proposed Addition at 2652-2653 Octavia Street

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George Loisos and Susan Ubbelohde were contacted by Kelly Nice and Maureen Holt in March 2021 with concerns about the proposed addition to 2651-2653 Octavia. In particular, they are concerned about the impact of this proposed addition on the daylight in the Golden Gate Valley Library at asked us to review the studies dated December 1, 2019 and December 13, 2020 by Symphysis.

We are well prepared to review the studies and comment on the issue. As founders and principals of Loisos + Ubbelohde, we each have over 40 years of experience in shading and daylighting analysis. Our firm Loisos + Ubbelohde is a leading firm in analysis of sun and daylight conditions (our work can be seen at http://www.coolshadow.com). We bring extensive experience with buildings recognized for their design quality and sustainable performance, with over 75 AIA design and sustainability awards and 17 LEED Platinum buildings. We have worked with a wide range of clients, design teams and projects, including the 4,000 sf Windhover Contemplative Center at Stanford and the 2 million sf Headquarters for Facebook. George Loisos is a registered architect in California. Susan Ubbelohde is Professor Emerita at UC Berkeley and taught graduate daylighting design and simulation for 27 years at UC Berkeley. We have conducted research for the US Department of Energy, the California Energy Commission and Lawrence Berkeley National Lab on daylighting performance, published numerous papers on daylighting simulation and design and delivered conference presentations and keynotes on our work and research internationally.

We find that the two studies are unclear, non-comprehensive in the analysis, and likely to be inaccurate. We don't necessarily disagree with the final conclusions: (1) that the proposed addition will reduce the energy output of the PV arrays and (2) the daylight in the reading rooms requires supplemental electrical lighting for part of the year and will require some greater level of electrical lighting once the addition is built.

However, we do not trust the accuracy of the reports describing the impact of the proposed addition– the impact could be greater or less than indicated (see our comments on this point in the addendum to this letter). More importantly, the results and conclusions in the two reports don't directly address the questions at the heart of the concern. The questions are:

1. To what extent does the proposed addition reduce the energy delivered by the PV arrays?

2. To what extent does the proposed addition reduce the contribution of the south-facing windows to the daylighting in the library reading rooms and stacks? Is this significant in the overall daylighting of the spaces? How does it impact the color of the daylight with the blocking of direct sun?
3. Is the historical experience of the library, which was designed to admit daylight from all sides and to use electrical lighting as supplementary, altered or damaged by the proposed addition?

We are happy to answer any questions about our comments and understanding of the project.

Addendum: Technical concerns on the two reports

The software used is Ecotect, which was discontinued by the company that owns it (Autodesk) in March 2015. Ecotect was developed for education applications and the accuracy of the daylighting has not been validated as accurate for professional or research purposes. In the Shading Impact Analysis (December 1, 2019), this is not a serious issue, since sun angles are well known and the analysis is simply trigonometry that conform to and are validated against 'CIBSE TM33 (2006) Tests for Software Verification and Accreditation' according to Autodesk.
However, the daylighting analysis provided by using Ecotect coupled with Radiance suffers from a surplus of defaults in the application and was never successfully validated as a daylighting prediction tool. L+U has used native Radiance in Unix (without the Ecotect front end since 1995 and has validated the results regularly against built projects as well as in funded research projects. For those with less experience, since 2015 there have been a number of new software tools that are more sophisticated than Ecotect available that use the simulation engine of Radiance but provide a more flexible interface for the input of building and site conditions to better capture all the factors that result in the daylight found in real buildings.

The data for the sky conditions are appropriately matched to the illumination conditions of real climate data, however the data used is collected at SFO, which has different annual skies than the location of the library. **A more proximate data set should have been used, especially for the Shading Impact Report which is measuring the solar radiation on the arrays.** We are also concerned by the incorrect statement on p.47 of the Daylight Impact Report that states "Because there is no sun on overcast days (worst case, low light levels), there is minimal variability in light levels during the day [FALSE], thus this sky condition can be applied to any time of the day and any day of the year.[FALSE]" A glance at sky data for any overcast sky condition shows changes in the available illumination from the overcast sky by the time of day and also by the date of the year. Similarly, the Design Sky Value is not a constant from season to season but varies with the day and cloud cover. **In conclusion, the sky conditions used in the simulations are not appropriate for this area of San Francisco and are not carefully considered as to application.**

In the Shading Impact Report, the complexity of shadow impacts on a PV array is not addressed. While it is clear that the east and west arrays are separate, PV panels in one array are typically connected in series. A shadow that falls on one panel of the array will shut off energy production from all other panels in the same circuit. Thus the analysis should be more finely grained, looking at hour by hour generation of the arrays and taking into account

the circuiting (which must be available from the library). An animation of the shadows (both existing and proposed) would also help explain the role of the proposed addition over the course of the day and throughout the seasons of the year.

Context and 3D model. The 3D model was developed by Symphysis from available sources. We would have urged the use of a commercial 3D model of the surrounding area to prevent estimates that arise from matching 2D GIS information and a take-off of the 3rd dimension from Google Earth. However it is not apparent that there are significant problems with the 3D model of the topography and buildings except lack of detail.

Street trees not included in the 3D model and simulations. There is a significant growth of mature street trees on the north side of the library that has been left out of the analysis. These trees, which definitely exist, will completely change the overall daylight intensity and distribution **The street trees will substantially decrease the illumination provided by the north-facing windows, thereby increasing the relative daylight contribution of the south-facing windows that are impacted by the proposed addition.**

In addition to these problems with accuracy in modeling, the Daylight Impact Analysis Report also makes it hard understand the patterns and nature of impact by the proposed addition and the metrics used are not helping. The Daylight Autonomy results are useful (except for the problems with accuracy detailed above) because they use real weather data in the simulations and describe the full year of daylighting performance in one set of numbers. Beyond that we still do not know how many hours or days at this location will have what kind of sky condition, so we cannot gauge the actual impact over the course of a year beyond the autonomy calculation. We do not know what a clear day in December will deliver, or an overcast morning in June, nor a clear day in September although all happen frequently. This means the percentage differences on pages11-21 not a useful to characterize the impact.

Glare Analysis. The analysis on pp. 38-39 discusses the calculation of glare in the two reading rooms. And is really not a useful study relative to the issues in contention. The conclusion is that the proposed addition somewhat reduces glare from the south windows, even though the analysis also indicates that glare from the south windows is not a problem as it never exceeds 0.30. We do not use the DGP because it is still in development and has not yet assisted us in identifying glare that we could not already see in visual observation. There must be some visual discomfort from the south windows now (although it isn't indicated in the calculation results) because there is screening or shades deployed in the photographs on the bottom of half of these windows to control the entry of the sun.