



ENVICOM
CORPORATION

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Trammell Crow Company
2049 Century Park East, Suite 2650
Los Angeles, California 90067

Environmental Analysis &
Compliance

Attn: Kevin Lindquist

Entitlement & Valuation

Subj: Solar Access/Shadow Analysis

Urban Planning & Design

Dear Kevin:

Resource Management &
Permitting

As requested, Envicom Corporation has prepared a Solar Access and Shadow Analysis for the proposed 2000 Avenue of the Stars office building. The following discussion compares worst- and best-case shadow environment for both existing and proposed conditions.

Illustrative Graphics

Introduction

The proposed Project involves the demolition of two eight-story buildings and reconstruction of a new fifteen-story building at 2000 Avenue of the Stars in Century City. The taller structure that would replace the existing buildings will alter the prevailing shadow pattern within the immediate Project vicinity. The casting of shadows by taller buildings onto adjacent buildings is commonplace in urban settings.

The effects of shading by one building upon another can be either positive or negative depending upon the site-specific circumstances of the properties involved. A potential benefit of shading for adjacent structures may be a cooling effect gained during warm weather. Negative consequences of shading include the loss of natural light for passive or active solar energy applications or the loss of warming influences during cool weather. Factors influencing the relative impact of shadow effects are site-specific and include differences in terrain elevation between involved properties, the height and bulk of structures, the time of year, the duration of shading in a day, and the sensitivity of adjacent land uses to loss of sunlight.

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Shadows cast by structures vary in length and direction throughout the day and from season to season. Shadow lengths increase during the "low sun" or winter season and are longest on December 21-22, the winter solstice. The winter solstice, therefore, represent the worst-case shadow condition and the potential for loss of access to sunlight that a Project could cause is greatest. Shadow lengths are shortest on June 21-22, the summer solstice. Shadow lengths on the spring and fall equinoxes, March 20-21 and September 22-23 respectively, would fall midway between the summer and winter extremes.

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Shadows are cast to the west by objects during the morning hours when the sun is coming up on the horizon in the east. During late morning and early afternoon the shadows of objects move northerly and by late afternoon they are cast easterly in response to the apparent movement of the sun across the sky from east to west. Shadows cast in winter are longer, and those at the winter

solstice the longest. It is instructive, therefore, to map the daily shadow pattern cast by a proposed building on December 21st because it is illustrative of the “worst case” impacts a proposed structure may have upon nearby sensitive land uses.

Land uses are considered sensitive when sunlight is important to function, physical comfort, or the conduct of commerce. Facilities and operations identified as potentially sensitive to the loss of sunlight include: “...routinely usable outdoor spaces associated with residential, recreational, or institutional (e.g., schools or convalescent homes) land uses; commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar energy collectors.” (Draft City of Los Angeles, CEQA Thresholds Guide, p. L.3-1)

Century City North Specific Plan Area Solar Access Ordinance

The Century City North Specific Plan addresses concerns about building shading upon potentially sensitive residential uses by ordinance. The Specific Plan Ordinance states that a proposed Project must be designed in a way: “...to reasonably assure that it (the proposed Project) will not cast a shadow for more than two hours, between 8:00 A.M. and 8:00 P.M., upon any detached single-family dwelling located outside the Specific Plan Area.” The ordinance has been in effect since November 1981.

Existing Conditions

The proposed Project would occupy the southwestern side of the block bounded by the Avenue of the Stars, to the northwest by Constellation Boulevard, to the northeast by Century Park East, and to the southeast by Olympic Boulevard. The proposed Project site has two existing eight-story structures located at 2020 and 2040 Avenue of the Stars.

The proposed Project is centrally located within the Century City North Specific Plan Area and would be located at 2000 Avenue of the Stars. As such the proposed Project structure would be situated among existing mid-rise and high-rise commercial office and hotel buildings that are either nearly as tall or considerably taller.

The Century Plaza Hotel is located on the southwestern side of the Avenue of the Stars opposite the proposed Project and is one story less in height. Immediately east of the proposed Project within the ABC Entertainment Center are the Century Plaza Towers. The Century Plaza Towers are considerably taller than the proposed structure. Commercial properties abut or lie along streets on three sides of the Project site (to the southwest, the northwest and the northeast). Complex shadow patterns are created in this urban setting when the shadows cast by the existing buildings in the Project vicinity coalesce.

Winter Solstice Shadows – Existing and Proposed Project

In the morning hours existing structures cast shadows in a northwesterly pattern that parallels the streetscape areas along the eastern side of the Avenue of the Stars. When the morning shadows are longest they shade both sides of Constellation Boulevard and portions of the Century Club, a two-story restaurant, on the opposite side of the street. The 2040 Avenue of the Stars building shades the open court area between the structures from the morning hours until early afternoon. In the afternoon the existing structures cast shadows northeasterly into the plaza area between the buildings and the Century Plaza Towers. (Figure 1)

The proposed Project would be constructed within the same general footprint of the two existing structures. The proposed structure would have its longer axis facing the Avenue of the Stars. The interior plaza and pedestrian court located between the Century Plaza Towers and the proposed Project would be reconfigured and have a more open design. The proposed building, although higher, would rise to mirror the Century Plaza Hotel in height on the opposite side of the Avenue of the Stars. As the proposed structure would be fifteen-stories, and occupy a different footprint its shadow pattern would also be substantially different.

The proposed structure's winter solstice shadows would cover a greater distance on the ground throughout the day. In the mornings, shadows would extend northwesterly beyond Constellation Boulevard to shade the City National Bank building north of Constellation Boulevard at 1950 the Avenue of the Stars. By 9:00 am Project shadows would reach the landscaped area and open court areas on the south side of the Charles Schwab office building at 1900 the Avenue of the Stars. Late morning Project shadows would shorten substantially and fall within undeveloped space north of Constellation Boulevard and the Century Club. At noon the Century Club would be shaded, as would a portion of the plaza between the Project and the Century Plaza Towers. By 3:00 p.m. the plaza between the Project and the Century Plaza Towers would be in shadow that would reach the lower, westerly-facing sides of the Towers. (Figure 2)

The winter solstice shadow pattern cast by the proposed Project would be contained completely within the central commercial landscape of the Century City North Specific Plan Area. No residential areas would be impacted by Project shadows at any time of day.

Summer Solstice Shadows – Existing and Proposed Project

During the summer solstice the sun travels more directly overhead than at any other day of the year with the result being that shadow directions and lengths are changed considerably. Shadows cast by objects in early mornings and late evenings fall more directly to the east and west. Shadows at the summer solstice will also be the shortest of the year

Figure 1

Figure 2

At the summer solstice, shadows cast by the existing six-story buildings do not shade the width of Constellation Boulevard. The day's shadows are also short enough that the open court area between the two existing structures is only partially shaded during the morning and late afternoon hours. (Figure 3)

At the summer solstice the shadows of the proposed Project would be considerably shorter at all times of day than during the winter solstice. Morning (9:00 am) shadows would be cast westerly to shade the eastern side of the Avenue of the Stars. The overall shadow length would be reduced to the extent that it would no longer shade the City National Bank building, nor would it shade the Century Club at any time of day. In the afternoon (3:00 p.m.) Project Structure shadows would extend easterly into open and landscaped areas of the Project. The plaza between the Project and the Century Plaza Towers would also remain sunny for most of the afternoon until later in the day as shadows gradually extend farther east into the plaza area. (Figure 4)

Summary

As the proposed fifteen-story Project would be taller than the existing eight-story buildings that would be replaced, the Project's shadows would be correspondingly longer at all times of the year. The proposed building footprint, however, would not be as wide in an easterly direction. The result of the adjusted footprint is that the effect of the added building height would not be manifested in as wide-spread an area being shaded in the afternoons, over that already shaded by existing structures, as might have been anticipated.

Winter and summer solstice proposed Project shadows would be completely confined to the interior commercial landscape of the North Century City Specific Plan Area, an area containing numerous mid- and high-rise commercial buildings.

The closest area of residential land use is located southeasterly of the site on the opposite side of Olympic Boulevard and its interchange with the Avenue of the Stars. This multi-family residential area would not be impacted by shadows from the proposed Project as it is located north of the residential units and prevailing angles of sunlight are from the south in all seasons at this latitude.

No Project shading of residential land uses either inside or outside of the above Specific Plan Area would occur.

Sincerely,

Primo Tapia
Director, Special Projects

Figure 3 Existing Shadow Pattern June 21 Summer Solstice

Figure 4 Proposed Shadow Pattern June 21 – Summer Solstice