(Responsible Individual) (Company Name)

I, David Kaneda , from Integrated Design Associates, Inc.

verify that the information provided below is accurate, to the best of my knowledge.

SITE LIGHTING DOCUMENTATION

The project site / exterior lighting plan(s) have been uploaded. The drawing(s) document the location and type of all installed site lighting fixtures OR the drawing(s) demonstrate that the project has no exterior lighting.

Sheet Description Log

Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

05043E30.pdf
05043E31.pdf

☒ I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.

INTERIOR LIGHTING DOCUMENTATION

The building interior lighting plan(s) and section(s) have been uploaded. The drawing(s) document the location and type of all installed interior building lighting fixtures and clearly indicate exterior building surfaces to confirm that the maximum candela value from interior fixtures does not intersect transparent or translucent exterior building surfaces OR the drawing(s) highlight automatic lighting controls that turn off non-essential lighting during non-business hours.

Sheet Description Log

Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

05043E30.pdf
05043E31.pdf

☒ I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.

FIXTURE SCHEDULE DOCUMENTATION

The project lighting fixture schedule has been uploaded. The drawing provides information regarding the installed building and site lighting fixtures.

Sheet Description Log

Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

05043E50.pdf
1537 SSc8 Narrative.doc

☒ I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.

REQUIREMENT 1: INTERIOR LIGHTING SYSTEMS

Please select the applicable interior lighting compliance path option:

○ The project lighting is designed so that the angle of maximum candela from each interior luminaire intersects opaque interior surfaces and does not exit through windows.

◉ Automatic lighting controls have been installed to turn off non-essential interior lighting during non-business hours.

REQUIREMENT 2: EXTERIOR LIGHTING SYSTEMS

☐ The project does not have any exterior lighting

-- OR, FOR PROJECTS WITH EXTERIOR LIGHTING --

Lighting Power Density Tabulation Exterior Site Areas

For each exterior site area, list the location identification, the units (Watts per square foot, Watts per linear foot, Watts per square meter, or Watts per meter) the Area or Distance for the specified location, the actual lighting power density (LPD), and the ASHRAE allowable LPD for that location.

Lighting Power Density Tabulation Exterior Site Areas

Location ID	Units	Area OR Length	Actual LPD	ASHRAE Allowable LPD	LEED Allowable LPD	
West courtyard (hardscape pedestrian use)	W/sf	510	.153	.2	.16	CLEAR
East entrance (building entrance use)	W/sf	74	.973	1.25	1	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
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					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR

150 **Exterior Site Lighting Actual Power (Watts)**

163 **Exterior Site Lighting LEED Allowable Power (Watts)**

(adds 5% unrestricted allowance per ASHRAE 90.1-2004 Table 9.4.5)

Lighting Power Density Tabulation Building Facade / Landscape Lighting

For each building facade / landscape area, list the location identification, the units (Watts per square foot, Watts per linear foot, Watts per square meter, or Watts per meter) the Area or Distance for the specified location, the actual lighting power density (LPD), and the ASHRAE allowable LPD for that location.

Lighting Power Density Tabulation Building Facade / Landscape Lighting

Location ID	Units	Area OR Length	Actual LPD	ASHRAE Allowable LPD	LEED Allowable LPD	
East facade	W/sf	1,764	.08	.2	.1	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
					0	CLEAR
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					0	CLEAR

141	**Exterior Building Facade / Landscape Lighting Actual Power (Watts)**
185	**Exterior Building Facade / Landscape Lighting LEED Allowable Power (Watts)**

(adds 5% unrestricted allowance per ASHRAE 90.1-2004 Table 9.4.5)

Site Zone Classification

Select the appropriate zone classification for the project site.

- ○ **LZ1** - Dark: Wilderness, National and State Parks, Undeveloped Areas (population densities less than 200 people per square mile)
- ○ **LZ2** - Low: Rural, Default for Residential Areas (population densities 200–3,000 people per square mile)
- ○ **LZ3** - Medium: Shopping/Commercial Districts, Industrial Parks, Default for Urban Neighborhoods (population densities greater than 3,000 people per square mile)
- ◉ **LZ4 -** High: Major City Centers (cities with populations greater than 100,000)

Site Lumen Calculation

For each fixture type used for site lighting, list the luminaire type, the quantity of luminaires installed, the initial lamp lumens per luminaire, and the initial lamp lumens above 90 degrees from Nadir.

Site Lumen Calculation

Fixture Type	Quantity of Installed Luminaires	Initial Lamp Lumens per Luminaire	Initial Lamp Lumens Above 90 degrees from Nadir	Total Lamp Lumens	Total Lamp Lumens Above 90 degrees	
						CLEAR
Type "AA 2" - 8" Compact Fluorescent Downlights by	4	3,200	0	12,800	0	CLEAR
Type "AC" - USAR LAS55522G-BB Laser Lights	2	1,600	107	3,200	214	CLEAR
Type "AD" - Wall Mounted Metal Halide Fixture	3	1,800	0	5,400	0	CLEAR
						CLEAR
						CLEAR
						CLEAR
						CLEAR

Site Lumen Calculation

Fixture Type	Quantity of Installed Luminaires	Initial Lamp Lumens per Luminaire	Initial Lamp Lumens Above 90 degrees from Nadir	Total Lamp Lumens	Total Lamp Lumens Above 90 degrees	
						CLEAR
						CLEAR
						CLEAR
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						CLEAR

21,400		Total Site Lamp Lumens
214		Total Site Lamp Lumens above 90 degrees from Nadir
1.00	%	Percentage of Site Lamp Lumens Above 90 Degrees from Nadir

To comply, the Percentage of Site lamp lumens above 90 degrees from Nadir must be no greater than 10%.

NARRATIVE (Required)

Provide specific information regarding the light trespass analysis conducted to determine compliance, including the highest quantities of horizontal and vertical footcandles at the site boundary and at ten feet beyond the site for projects classified as LZ2 (at 15 feet beyond the site for projects classified as LZ3 and LZ4). Please provide any additional comments or notes regarding special circumstances or considerations regarding the project's credit approach.

This project is located in downtown Oakland in a high density city-center environment and is defined as LZ4. Careful consideration was taken for luminaire selection and placement on both the east and west sides of the building. Other than two laser-style lamps on the east facade, all lamps have 100% of their initial lumens below 90% from Nadir. The west side of the building is surrounded by a wall which helps reduce light spill onto adjacent properties. The building entrance on the east side of the building faces a busy street and we again managed to control the light output to limit spill off the property.

The commissioning agent visited the site during the night to confirm that there is minimal light pollution.

The horizontal and vertical foot candles for the site are as follows:

West Courtyard-
maximum horizontal illuminance at property line = 0.01fc
maximum vertical illuminance at property line = 0.5fc
maximum initial horizontal illuminance at 15 feet from site boundary is less than 0.01fc

East Entrance-
maximum horizontal illuminance at property line = 0.1fc
maximum vertical illuminance at property line = 0.1fc
maximum initial horizontal illuminance at 15 feet from site boundary is less than 0.01fc

NARRATIVE (Optional)

Please provide any additional comments or notes regarding special circumstances or considerations regarding the project's credit approach.

☐ The project is seeking point(s) for this credit using an alternate compliance approach. The compliance approach, including references to any applicable Credit Interpretation Rulings is fully documented in the narrative above. *(Indicate the number of points documented in the field below).*

Alternative Compliance Points Documented

Project Name: ALAMEDA COUNTY WASTE MNGMT AUT

Credit: SS Credit 8: Light Pollution Reduction

Points Documented: 1

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today's date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

David	Kaneda	2007-08-21	mail@ideasi.com	
First Name	Last Name	Date	Username (Email Address)	Password

SAVE TEMPLATE TO LEED-ONLINE PRINT TEMPLATE

10000487

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