

BUILDING ENERGY ANALYSIS REPORT

PROJECT:
HCC Bldg C
1200 Arrowhead Avenue
Livermore, Ca 94551

Project Designer:
B.R.Govinda Rao S.E.
864 Bandol Way
San Ramon, CA 94382
925-833-9784

Report Prepared by:
Mangalore Suresh P.E.
Title 24 Online
531 Natalino Circle
Sacramento, CA 95835
510-793-2658

Job Number:

Date:
9/2/2010

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2008 Building Energy Efficiency Standards. This program developed by EnergySoft, LLC - www.energysoft.com.

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CERTIFICATE OF COMPLIANCE (Part 1 of 4) OLTG-1C

Project Name: **HCC Bldg C** Date: **9/2/2010**
Project Address: **1200 Arrowhead Avenue Livermore, Ca 94551** Total Illuminated Area: **108,030**

GENERAL INFORMATION
Phase of Construction: New Construction Addition Alteration

Documentation Author's Declaration Statement
I certify that this Certificate of Compliance documentation is accurate and complete.
Name: **Mangalore Suresh P.E.** Signature: *[Signature]*
Company: **Title 24 Online** Date: **9/2/2010**
Address: **531 Natalino Circle** CEA # CEPE #
City/State/Zip: **Sacramento, CA 95835** Phone: **510-793-2658**

Principal Lighting Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professional Code to accept responsibility for the lighting design.
- This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 6 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: **Satish Pamidi P.E.** Signature: *[Signature]*
Company: **Ajmani & Pamidi Inc** Phone: **415-305-9344**
Address: **101 California Street Suite 2025** License # **E-10472**
City/State/Zip: **San Francisco, CA 94111** Date: **10/10/10**

Principal Lighting Designer's Declaration

I certify that this Certificate of Compliance documentation is accurate and complete, and accounts for all outdoor lighting power, including building mounted, pole mounted, as well as all other lighting designed for the site, and that Additional Lighting Power Allowances for Specific Applications or Additional Lighting Power Allowances for Ordinance Requirements have not been counted more than one time for the same area, in accordance with Section 147 of the Standards.

Outdoor Lighting Mandatory Measures
Indicate location on building plans of Mandatory Measures Note Block: _____

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheets is included)

OLTG-1C Certificate of Compliance. All 4 pages required on plans for all submittals.
 OLTG-2C (Pages 1 of 3) Lighting Wattage Allowances for General Hardscape, Sales Frontage, or Ornamental Lighting. Optional on plans.
 OLTG-2C (Pages 2 of 3) Lighting Wattage Allowance for Par Application or Par Area. Optional on plans.
 OLTG-2C (Pages 3 of 3) Additional Lighting Power Allowance for Ordinance Requirements. Optional on plans.

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CERTIFICATE OF COMPLIANCE (Part 2 of 4) OLTG-1C

Project Name: **HCC Bldg C** Date: **9/2/2010**

COMPLIANCE FIXTURE / LIGHTING CONTROL SCHEDULE and FIELD INSPECTION CHECKLIST
INSTALLATION CERTIFICATE, OLTG-1INST (Retain a copy and verify form is completed and signed.) **Field Inspection**
CERTIFICATE OF ACCEPTANCE, OLTG-2A (Retain a copy and verify form is completed and signed.) **Field Inspection**

A	B	C	D	E	F	G	H	I	
								Field Inspector	Pass
L9	Wall Mounted Compact Fluorescent Down Light		54.0				1	54	
L2	Twin Head Pole Mounted Metal Halide Luminaire		594.0				10	5,940	
L51	Single Head Pole Mounted Metal Halide Luminaire		297.0				3	891	
L8	Surface Mounted Compact Fluorescent Down Light		54.0				1	54	
L4	6" Aperture Compact Fluorescent Down Light		54.0				1	54	
Enter total into OLTG-1C; Page 4 of 4; Row H; Total Installed Watts:							6,992		

1. Type of luminaire (i.e., post-top, wall pack, surface, shoe box); for non-incandescent luminaires, indicate nominal lamp wattage and lamp type (i.e., fluorescent, incandescent, HID); ballast type (i.e., electronic or magnetic); number of lamps and number of ballasts per luminaire. For incandescent luminaires, the luminaire wattage listed in column D shall be the maximum relamping rated wattage on a permanent factory-installed label on the luminaire, NOT the wattage of the lamp (bulb) used, in accordance with Section 130(d) or e.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

EXEMPT LUMINAIRES **Field Inspection**

Name or Symbol	Description of exempt luminaires in accordance with §147

MANDATORY CONTROLS **Field Inspection**

#	Description	Location	#	Description	Location

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of OLTG-1C)
The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Filed Inspector Notes or Discrepancies:

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CERTIFICATE OF COMPLIANCE (Part 3 of 4) OLTG-1C

Project Name: **HCC Bldg C** Date: **9/2/2010**

A. OUTDOOR LIGHTING ZONE
OUTDOOR LIGHTING ZONE: OLZ 1 OLZ 2 OLZ 3 OLZ 4
Is the Outdoor Lighting Zone: Default in accordance with §10-114, or Amended by JHA

Complete the information below if the default Outdoor Lighting Zone has been amended by the local jurisdiction having authority (JHA):

The site is a government designated park, recreational area, wildlife preserve, or portion thereof, and has been designated as LZ2 or LZ3, in accordance with Table 10-114-A, because the site is contained within such a zone.
 The local jurisdiction having authority has officially adopted a change to the State Default Lighting Zone and has notified the Energy Commission by providing the materials required in §10-114(d) to the Executive Director.
 The adopted change is posted on the Energy Commission website.

B. ADDITIONAL LIGHTING POWER ALLOWANCE FOR ORDINANCE REQUIREMENTS
Are additional lighting power allowances for ordinance in Table 147-C used? Yes No

Complete the information below if additional lighting power allowances for ordinance requirements are used:

The local jurisdiction having authority has officially adopted specific outdoor light levels, which are expressed as average or minimum footcandle levels, by following a public process that allowed for formal public notification, review, and comment about the proposed change.
 The local jurisdiction having authority which adopted specific outdoor light levels and has notified the Commission by providing the following materials required §10-114(d) to the Executive Director.

C. ACCEPTANCE FORMS
Required Acceptance Tests
Designer:
This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for the Lighting system, OLTG-2A. The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, list the different lighting and the number of systems. The NAT Section in the Appendix of the Non-residential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. **Forms can be grouped by type of Luminaire controlled.**

Enforcement Agency:
Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements. The OLTG-2A form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the OLTG-2A for each different lighting luminaire control(s) must be provided to the owner of the building for their records.

Certificate of Acceptance			
Equipment Requiring Testing	Description	City of Like Controls	Location

1. Insert: OMS for Outdoor Motion Sensor; OLS for Outdoor Lighting Shut-off Controls; OP for Outdoor Photocontrol; ATS for Astronomical Time Switch; and STS for Standard (non-astronomical) Time Switch acceptance.

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OUTDOOR LIGHTING WORKSHEET (Part 1 of 3) OLTG-2C

Project Name: **HCC Bldg C** Date: **9/2/2010**

A. LIGHTING POWER ALLOWANCE FOR GENERAL HARDSCAPE

AREA WATTAGE ALLOWANCE (AWA)			LINEAR WATTAGE ALLOWANCE (LWA)			INITIAL WATTAGE ALLOWANCE	TOTAL GENERAL HARDSCAPE LIGHTING ALLOWANCE
A	B	C	D	E	F	G	H
Illuminated Hardscape Area	AWA Per Square Foot	AWA (A X B)	Perimeter Length of General Hardscape	LWA Per Linear Foot	LWA (D X E)	IWA (Watts)	C + F + G
106,000	0.092	9,752	2,200	0.920	2,024	770	12,546

Enter total into OLTG-1C; Page 4 of 4; Row A; Lighting Power Allowance for General Hardscape: **12,546**

Yes AWA, LWA, and IWA from Table 147-A was used as appropriate for the Outdoor Lighting Zone

B. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER UNIT LENGTH (Available only for sales frontage)

DETERMINE WATTAGE ALLOWANCE			LUMINAIRE TYPE			DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Linear Foot of Frontage	Sales Frontage Allowance for OLZ (Watts per LF)	Wattage Allowance (B X C)	Name or Symbol	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C; Page 4 of 4; Row B; Specific Application Lighting Wattage Allowance Per Unit Length: **0**

C. SPECIFIC APPLICATION WATTAGE ALLOWANCE FOR ORNAMENTAL LIGHTING

DETERMINE WATTAGE ALLOWANCE			LUMINAIRE TYPE			DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Square Feet of Hardscape	Ornamental Lighting Allowance for OLZ (Watts per ft²)	Wattage Allowance (B X C)	Name or Symbol	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C; Page 4 of 4; Row C; Specific Application Wattage for Ornamental Lighting: **0**

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OUTDOOR LIGHTING WORKSHEET (Part 2 of 3) OLTG-2C

Project Name: **HCC Bldg C** Date: **9/2/2010**

D. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER APPLICATION

DETERMINE WATTAGE ALLOWANCE			DESIGN WATTS						ALLOWANCE
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Number of Applications	Specific Application Allowance (watts)	Wattage Allowance (B X C)	Luminaire Symbol	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I

Enter total into OLTG-1C; Page 4 of 4; Row D; Specific Application Wattage Allowance Per Application: **0**

E. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER AREA

DETERMINE WATTAGE ALLOWANCE			LUMINAIRE TYPE			DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Illuminated Area of Application	Specific Application Allowance (watts per ft²)	Wattage Allowance (B X C)	Code for Luminaire Type	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I
Building Facade-South Wall	1,860	0.350	651	L9	Wall Mounted Compact Fluorescent Down Light	1	54.0	54	54
East Side Canopy	85	0.408	35	L8	Surface Mounted Compact Fluorescent Down Light	1	54.0	54	35
West Side Canopy	85	0.408	35	L4	6" Aperture Compact Fluorescent Down Light	1	54.0	54	35

Enter total into OLTG-1C; Page 4 of 4; Row E; Specific Application Lighting Wattage Allowance Per Area: **123**

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CERTIFICATE OF COMPLIANCE (Part 4 of 4) OLTG-1C

Project Name: **HCC Bldg C** Date: **9/2/2010**

ALLOWED AND INSTALLED OUTDOOR LIGHTING POWER

	Lighting Wattage Power Allowance
A	Lighting power allowance for general hardscape (from OLTG-2C Page 1 of 3) 12,546
B	Specific application lighting wattage allowance per unit length (from OLTG-2C Page 1 of 3) 0
C	Specific application lighting wattage allowance for ornamental lighting (from OLTG-2C Page 1 of 3) 0
D	Specific application lighting wattage allowance per application (from OLTG-2C Page 2 of 3) 0
E	Specific application lighting wattage allowance per area (from OLTG-2C Page 2 of 3) 123
F	Specific application lighting wattage allowance for ordinance requirements (from OLTG-2C Page 3 of 3) 0
G	Total Allowed Wattage = Sum of rows A through F: 12,669
H	Total installed watts (from Compliance Fixture Schedule, (from OLTG-2C Page 1 of 3)) 6,992

Complies if wattage in row H is less than or equal to the wattages in row G Yes No

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REVISIONS BY

05-24-10	HCCC
08-02-10	BPC
HEALTH DEPT PLAN CHECK 08-26-10	HDFC
09-28-10	BPC
10-12-10	BPC2

NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
1200 ARROWHEAD AVE. LIVERMORE, CA 94551

TITLE 24
COMPLIANCE FORMS

DATE: 05/28/10
SCALE: AS NOTED
DRAWN BY: KS/LA
PROJECT: 1200 ARROWHEAD

T24.1

REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
No. E10472
Exp. 12/31/10
STATE OF CALIFORNIA

PLANCHECK RESUBMITTAL #2

BUILDING ENERGY ANALYSIS REPORT

PROJECT:
HCC Bldg. C
1232 Arrowhead Ave.
Livermore, CA. 94551

Project Designer:
B.R.Govinda Rao S.E.
864 Bandal Way
San Ramon, CA 94382
925-833-9784

Report Prepared by:
Mangalore Suresh P.E.
Title 24 Online
531 Natalino Circle
Sacramento, ca 95835
510-793-2658

Job Number:
Bld. C

Date:
7/19/2010

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2008 Building Energy Efficiency Standards.
This program developed by EnergySoft, LLC - www.energysoft.com.

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PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 1 of 3) PERF-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
 Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **CA Climate Zone 12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION
 Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Relocatable - indicate specific climate zone all climates
 Phase of Construction: New Construction Addition Alteration

STATEMENT OF COMPLIANCE
 This certificate of compliance lists the building features and specifications needed to comply with Title 24, Parts 1 and 8 of the California Code of Regulations. This certificate applies only to a Building using the performance compliance approach.
 The documentation author hereby certifies that the documentation is accurate and complete.

Documentation Author
 Name: **Mangalore Suresh P.E.** Signature: _____ Date: **7/19/2010**
 Company: **Title 24 Online** Address: **531 Natalino Circle** Phone: **510-793-2658**
 City/State/Zip: **Sacramento, ca 95835**

The Principal Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the energy efficiency requirements contained in sections 110, 116 through 118, and 140 through 149 of Title 24, Part 6. Please check one:
 ENV. LGT. MECH. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation, and that I am a licensed architect.
 I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
 I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5539 and 6737.1.

Principal Envelope Designer
 Name: **B.R.Govinda Rao S.E.** Signature: _____ Date: **10/10/10**
 Company: **B.R.Govinda Rao S.E.** Address: **864 Bandal Way** License #: _____
 City/State/Zip: **San Ramon, CA 94382** Phone: **925-833-9784**

Principal Mechanical Designer
 Name: **Kuppe Srinivas P.E.** Signature: _____ Date: **10/10/10**
 Company: **Ajmani & Pamidi Inc.** Address: **101 California Street Suite 2025** License #: **M-18346**
 City/State/Zip: **San Francisco, CA 94111** Phone: **415-305-9344**

Principal Lighting Designer
 Name: **Salish Pamidi P.E.** Signature: _____ Date: **10/10/10**
 Company: **Ajmani & Pamidi Inc.** Address: **101 California Street Suite 2025** License #: **E-10472**
 City/State/Zip: **San Francisco, CA 94111** Phone: **415-305-9344**

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PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 2 of 3) PERF-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
 Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

ANNUAL TDV ENERGY USE SUMMARY (kBtu/sqft-yr)

Energy Component	Standard Design	Proposed Design	Compliance Margin
Space Heating	7.73	3.92	3.81
Space Cooling	59.91	42.59	17.32
Indoor Fans	24.58	25.35	-0.78
Heat Rejection	0.00	0.00	0.00
Pumps & Misc.	0.00	0.00	0.00
Domestic Hot Water	8.03	5.85	2.18
Lighting	54.82	44.60	10.21
Receptacle	54.80	54.80	0.00
Process	0.00	0.00	0.00
Process Lighting	0.00	0.00	0.00
TOTALS	209.87	177.12	32.74

Percent better than Standard: **15.6%** (15.6% excluding process)

BUILDING COMPLIES

GENERAL INFORMATION

Building Orientation: (E) 90 deg	Conditioned Floor Area: 7,800 sqft.
Number of Stories: 1	Unconditioned Floor Area: 0 sqft.
Number of Systems: 6	Conditioned Footprint Area: 7,800 sqft.
Number of Zones: 9	Natural Gas Available On Site: Yes

Orientation	Gross Area	Glazing Area	Glazing Ratio
Front Elevation (E)	558 sqft.	84 sqft.	15.1 %
Left Elevation (S)	1,172 sqft.	240 sqft.	20.5 %
Rear Elevation (W)	648 sqft.	54 sqft.	8.3 %
Right Elevation (N)	1,080 sqft.	232 sqft.	21.5 %
Total	3,458 sqft.	610 sqft.	17.6 %
Roof	7,800 sqft.	0 sqft.	0.0 %

	Standard	Proposed
Lighting Power Density	0.876 W/sqft.	0.719 W/sqft.
Prescriptive Envelope TDV Energy	156.038	109.807

Remarks:

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PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 3 of 3) PERF-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
 Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

ZONE INFORMATION

System Name	Zone Name	Occupancy Type	Floor Area (sqft)	Inst. LPD (W/sqft)	Ctrl Credits (W/sqft)	Allowed LPD (W/sqft)	Tailored (W/sqft)	Proc. Loads (W/sqft)
AC-C-1	Zone-1	Office > 250 sqft	1,456	0.742				
	Zone-1A	Corridor/Restroom/Support	630	0.619	0.155			
AC-C-2	Zone-2	Library, Reading Area	1,476	0.732	0.110			
AC-C-3	Zone-3	Corridor/Restroom/Support	1,160	0.621				
AC-C-4	Zone-4	Office > 250 sqft	814	0.663				
	Zone-4A	Corridor/Restroom/Support	390	0.333	0.083			
AC-C-5	Zone-5	Comp Bldg Office	580	0.643				
	Zone-5A	Corridor/Restroom/Support	784	1.378				
AC-C-6	Zone-6	Convention/Conference/Meet	560	0.857				

EXCEPTIONAL CONDITIONS COMPLIANCE CHECKLIST
 The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justifications, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

The Zone Zone-1 has a North/East/South Display Perimeter Credit of 52 ft.
 The Zone Zone-2 has a North/East/South Display Perimeter Credit of 52 ft.
 The Zone Zone-3 has a North/East/South Display Perimeter Credit of 40 ft.
 The Zone Zone-3 has a North/East/South Display Perimeter Credit of 40 ft.
 The Zone Zone-5 has a North/East/South Display Perimeter Credit of 52 ft.
 The Zone Zone-6 has a North/East/South Display Perimeter Credit of 40 ft.
 The HVAC System Trane YHC-036-E A Premium Efficiency 0.32 BHP Supply Fan Motor has been specified.
 The Roof R-38 Roof Attic Reflectance = 0.30, Emittance = 0.75 shall be rated and labeled by the Cool Roof Rating Council in accordance with Section 10-7.

The exceptional features listed in this performance approach application have specifically been reviewed. Adequate written justification and documentation for their use have been provided by the applicant.

Authorized Signature or Stamp _____

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CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
 Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION
 Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces
 Skylight Area for Large Enclosed Space >= 8000 ft² (If checked include the ENV-4C with submittal)

Phase of Construction: New Construction Addition Alteration
 Approach of Compliance: Component Overall Envelope Unconditioned (file affidavit)
 Front Orientation: N, E, S, W or in Degrees: **90 deg**

FIELD INSPECTION ENERGY CHECKLIST

Tag/ID ¹	Assembly Type ²	Area (ft ²)		Orientation N, E, S, W		U-Factor	Cavity R-Value	Exterior R-Value	Interior R-Value	Exterior Finishing	Interior Finishing	Joint Appendix 4	Condition Status	Pass	Fail ³
		Area (ft ²)	Orientation N, E, S, W												
1	Wall	301	(N)	0.069	R-21							4.3.1-A6	New		
2	Roof	1,456	(N)	0.025	R-38							4.2.1-A21	New		
3	Slab	1,456	(N)	0.730	None							4.4.7-A1	New		
4	Wall	64	(E)	0.069	R-21							4.3.1-A6	New		
5	Slab	630	(N)	0.730	None							4.4.7-A1	New		
6	Roof	630	(N)	0.025	R-38							4.2.1-A21	New		
7	Wall	356	(S)	0.069	R-21							4.3.1-A6	New		
8	Roof	1,476	(N)	0.025	R-38							4.2.1-A21	New		

FENESTRATION SURFACE DETAILS

Tag/ID ¹	Fenestration Type ²	Area (ft ²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source ³	Max (R)SHGC	SHGC Source ³	Overhang	Conditions Status	Pass	Fail ³
1	Window	232	(N)	0.330	NFRC	0.190	NFRC				
2	Window	84	(E)	0.330	NFRC	0.190	NFRC				
3	Window	120	(S)	0.330	NFRC	0.190	NFRC				
4	Window	48	(S)	0.330	NFRC	0.190	NFRC				
5	Window	48	(S)	0.330	NFRC	0.190	NFRC				
6	Window	24	(S)	0.330	NFRC	0.190	NFRC				
7	Window	54	(W)	0.330	NFRC	0.190	NFRC				

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
 2. If Fail, then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

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CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
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GENERAL INFORMATION
 Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces
 Skylight Area for Large Enclosed Space >= 8000 ft² (If checked include the ENV-4C with submittal)

Phase of Construction: New Construction Addition Alteration
 Approach of Compliance: Component Overall Envelope Unconditioned (file affidavit)
 Front Orientation: N, E, S, W or in Degrees: **90 deg**

FIELD INSPECTION ENERGY CHECKLIST

Tag/ID ¹	Assembly Type ²	Area (ft ²)		Orientation N, E, S, W		U-Factor	Cavity R-Value	Exterior R-Value	Interior R-Value	Exterior Finishing	Interior Finishing	Joint Appendix 4	Condition Status	Pass	Fail ³
		Area (ft ²)	Orientation N, E, S, W												
9	Slab	1,476	(N)	0.730	None							4.4.7-A1	New		
10	Wall	205	(E)	0.069	R-21							4.3.1-A6	New		
11	Wall	176	(S)	0.069	R-21							4.3.1-A6	New		
12	Roof	580	(N)	0.025	R-38							4.2.1-A21	New		
13	Slab	580	(N)	0.730	None							4.4.7-A1	New		
14	Wall	168	(N)	0.069	R-21							4.3.1-A6	New		
15	Wall	205	(E)	0.069	R-21							4.3.1-A6	New		
16	Roof	580	(N)	0.025	R-38							4.2.1-A21	New		

FENESTRATION SURFACE DETAILS

Tag/ID ¹	Fenestration Type ²	Area (ft ²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source ³	Max (R)SHGC	SHGC Source ³	Overhang	Conditions Status	Pass	Fail ³

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
 2. If Fail, then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 7 of 43

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: **HCC Bldg. C** Date: **7/19/2010**
 Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION
 Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces
 Skylight Area for Large Enclosed Space >= 8000 ft² (If checked include the ENV-4C with submittal)

Phase of Construction: New Construction Addition Alteration
 Approach of Compliance: Component Overall Envelope Unconditioned (file affidavit)
 Front Orientation: N, E, S, W or in Degrees: **90 deg**

FIELD INSPECTION ENERGY CHECKLIST

Tag/ID ¹	Assembly Type ²	Area (ft ²)		Orientation N, E, S, W		U-Factor	Cavity R-Value	Exterior R-Value	Interior R-Value	Exterior Finishing	Interior Finishing	Joint Appendix 4	Condition Status	Pass	Fail ³
		Area (ft ²)	Orientation N, E, S, W												
17	Slab	580	(N)	0.730	None							4.4.7-A1	New		
18	Wall	238	(S)	0.069	R-21							4.3.1-A6	New		
19	Roof	814	(N)	0.025	R-38							4.2.1-A21	New		
20	Roof	814	(N)	0.730	None							4.4.7-A1	New		
21	Slab	390	(N)	0.730	None							4.4.7-A1	New		
22	Roof	390	(N)	0.025	R-38							4.2.1-A21	New		
23	Wall	49	(W)	0.069	R-21							4.3.1-A6	New		
24	Wall	156	(N)	0.069	R-21							4.3.1-A6	New		

FENESTRATION SURFACE DETAILS

Tag/ID ¹	Fenestration Type ²	Area (ft ²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source ³	Max (R)SHGC</
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CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for General Information, Field Inspection Energy Checklist (Opaque Surface Details, Insulation, Fenestration Surface Details), and Discrepancies.

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for General Information, Field Inspection Energy Checklist (Opaque Surface Details, Insulation, Fenestration Surface Details), and Discrepancies.

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 3) ENV-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for Roofing Product (Cool Roofs), Field Inspection Energy Checklist (CRRC Product ID, Roof Slope, Product Weight, Product Type, Aged Solar Reflectance, Thermal Emittance, SRI), and Discrepancies.

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 3) ENV-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for Required Acceptance Tests, Designer, Enforcement Agency, and HVAC System Details.

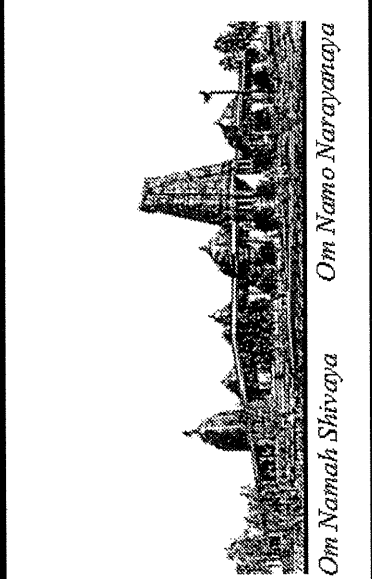
CERTIFICATE OF COMPLIANCE (Part 1 of 3) LTG-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for Indoor Lighting Schedule and Field Inspection Energy Checklist, Mandatory Lighting Controls, and Field Inspector's Notes.

CERTIFICATE OF COMPLIANCE (Part 2 of 3) LTG-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for Indoor Lighting Schedule and Field Inspection Energy Checklist, Mandatory Lighting Controls, and Field Inspector's Notes.

CERTIFICATE OF COMPLIANCE (Part 3 of 3) LTG-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for Indoor Lighting Schedule and Field Inspection Energy Checklist, Mandatory Lighting Controls, and Field Inspector's Notes.

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C. Project Name: HCC Bldg. C, Date: 7/19/2010. Project Address: 1232 Arrowhead Ave., Livermore. Climate Zone: 12, Total Cond. Floor Area: 7,800, Addition Floor Area: n/a. Includes sections for HVAC System Details, Field Inspection Energy Checklist, and Field Inspector's Notes.

REVISIONS	BY
05-24-10	HCCC
08-02-10	BPC
HEALTH DEPT PLAN CHECK 08-22-10	HDCP
09-26-10	BPC
10-12-10	BPC2



NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
1200 ARROWHEAD AVE., LIVERMORE, CA 94551



TITLE 24
COMPLIANCE FORMS
BUILDING - C

DATE: 05/28/10
SCALE: AS NOTED
DRAWN BY: KS/LA

PROJECT: 1200 ARROWHEAD

T24.2B



CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION

Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces (affidavit)

Phase of Construction: New Construction Addition Alteration

Approach of Compliance: Component Overall Envelope TDV Energy Unconditioned (file affidavit)

Front Orientation: N, E, S, W or in Degrees: **90 deg**

HVAC SYSTEM DETAILS

Equipment ²	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST	
		Pass	Fail - Describe Reason ³
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	AC-C-2	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Type ¹ :	Split DX	<input type="checkbox"/>	<input type="checkbox"/>
Number of Systems	1	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Heating Capacity ¹	48,000 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Heating Efficiency ¹	81% AFUE	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Cooling Capacity ¹	49,450 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Cooling Efficiency ¹	15.0 SEER / 12.8 EER	<input type="checkbox"/>	<input type="checkbox"/>
Duct Location/ R-Value	R-8.0	<input type="checkbox"/>	<input type="checkbox"/>
When duct testing is required, submit MECH-4A & MECH-4-HERS	No	<input type="checkbox"/>	<input type="checkbox"/>
Economizer	No Economizer	<input type="checkbox"/>	<input type="checkbox"/>
Thermostat	Setback Required	<input type="checkbox"/>	<input type="checkbox"/>
Fan Control	Constant Volume	<input type="checkbox"/>	<input type="checkbox"/>

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

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CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION

Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces (affidavit)

Phase of Construction: New Construction Addition Alteration

Approach of Compliance: Component Overall Envelope TDV Energy Unconditioned (file affidavit)

Front Orientation: N, E, S, W or in Degrees: **90 deg**

HVAC SYSTEM DETAILS

Equipment ²	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST	
		Pass	Fail - Describe Reason ³
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	AC-C-4	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Type ¹ :	Packaged DX	<input type="checkbox"/>	<input type="checkbox"/>
Number of Systems	1	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Heating Capacity ¹	48,000 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Heating Efficiency ¹	80% AFUE	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Cooling Capacity ¹	37,150 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Cooling Efficiency ¹	15.0 SEER / 12.7 EER	<input type="checkbox"/>	<input type="checkbox"/>
Duct Location/ R-Value	R-8.0	<input type="checkbox"/>	<input type="checkbox"/>
When duct testing is required, submit MECH-4A & MECH-4-HERS	No	<input type="checkbox"/>	<input type="checkbox"/>
Economizer	No Economizer	<input type="checkbox"/>	<input type="checkbox"/>
Thermostat	Setback Required	<input type="checkbox"/>	<input type="checkbox"/>
Fan Control	Constant Volume	<input type="checkbox"/>	<input type="checkbox"/>

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 18 of 43

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

Project Address: **1232 Arrowhead Ave. Livermore** Climate Zone: **12** Total Cond. Floor Area: **7,800** Addition Floor Area: **n/a**

GENERAL INFORMATION

Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces (affidavit)

Phase of Construction: New Construction Addition Alteration

Approach of Compliance: Component Overall Envelope TDV Energy Unconditioned (file affidavit)

Front Orientation: N, E, S, W or in Degrees: **90 deg**

HVAC SYSTEM DETAILS

Equipment ²	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST	
		Pass	Fail - Describe Reason ³
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	AC-C-6	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Type ¹ :	Packaged DX	<input type="checkbox"/>	<input type="checkbox"/>
Number of Systems	1	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Heating Capacity ¹	48,000 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Heating Efficiency ¹	80% AFUE	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Cooling Capacity ¹	37,150 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Cooling Efficiency ¹	15.0 SEER / 12.7 EER	<input type="checkbox"/>	<input type="checkbox"/>
Duct Location/ R-Value	R-8.0	<input type="checkbox"/>	<input type="checkbox"/>
When duct testing is required, submit MECH-4A & MECH-4-HERS	No	<input type="checkbox"/>	<input type="checkbox"/>
Economizer	No Economizer	<input type="checkbox"/>	<input type="checkbox"/>
Thermostat	Setback Required	<input type="checkbox"/>	<input type="checkbox"/>
Fan Control	Constant Volume	<input type="checkbox"/>	<input type="checkbox"/>

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 19 of 43

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

Discrepancies:

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 20 of 43

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

Required Acceptance Tests

Designer:
This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and listed all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:
Systems Acceptance: Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.
Systems Acceptance: Before occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements.

The MECH-1C form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed equipment. In addition a Certificate of Acceptance forms shall be submitted to the building department that certifies plans, specifications, installation, certificates, and operating and maintenance information meet the requirements of §10-103(b) and Title-24 Part 6. The building inspector must receive the properly filled out and signed forms before the building can receive final occupancy.

TEST DESCRIPTION	Qty.	MECH-2A	MECH-3A	MECH-4A	MECH-5A	MECH-6A	MECH-7A	MECH-8A	MECH-9A	MECH-10A	MECH-11A
		Outdoor Ventilation For VAV & CAV	Constant Volume & Single-Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation DCV	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
Equipment Requiring Testing or Verification											
Trane YHC-048-E3	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trane YHC-036-E	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 21 of 43

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 4 of 4) **MECH-1C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

TEST DESCRIPTION	Qty.	MECH-12A	MECH-13A	MECH-14A	MECH-15A	Test Performed By:
		Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	
Trane YHC-048-E3	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Trane YHC-036-E	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 22 of 43

LIGHTING CONTROLS CREDIT WORKSHEET (Part 1 of 2) **LTG-2C**

Project Name: **HCC Bldg. C** Date: **7/19/2010**

POWER ADJUSTMENT FACTORS (PAF) FOR NON-DAYLIGHT CONTROLS
A Separate PAF Worksheet must Be Filled Out for Conditioned and Unconditioned Spaces. Control Credits listed on this schedule are only for:

CONDITIONED SPACES **UNCONDITIONED SPACES**

A	B	C	D	E	F	G
Room # Zone ID	Lighting Control Description ¹	Plan Reference	Room Area (ft ²)	Watts of Control Lighting	Power Adjustment Factor ²	Control Credit Watts (E x F)
Corridor # 2/Vestib	Occ Sensor - Hallway	L2	630	120	0.25	30
Corridor # 2/Vestib	Occ Sensor - Hallway	L3	630	270	0.25	68
Library	Occ Sensor - Library	L1	1,476	1,080	0.15	162
Corridor # 1	Occ Sensor - Hallway	L2	360	120	0.25	30

PAGE TOTAL: 280

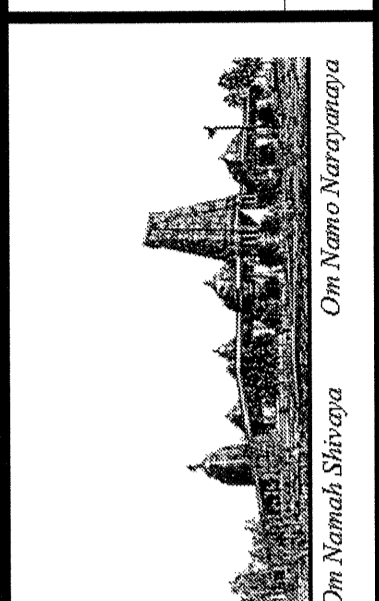
Note: Conditioned and Unconditioned Space shall be separately totaled.

Building total of non-daylight control credit watts for all pages of LTG-2C Page 1 of 2: 0
Enter building total of all daylight controls credit watts from LTG-2C Page 2 of 2: 280
BUILDING TOTAL OF ALL CONTROL CREDIT WATTS: 280
(FOR BOTH NON-DAYLIGHT AND DAYLIGHT CONTROL CREDITS)
Enter in LTG-1C, Page 4: Lighting Control Credit as appropriate for CONDITIONED or UNCONDITIONED Spaces

1. Description shall be consistent with Type of Control defined in Table 146-C
2. Power Adjustment Factor taken from Table 146-C

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 23 of 43

REVISIONS	BY
05-24-10	HCCC
08-02-10	BPC
HEALTH DEPT PLAN CHECK 08-26-10	HDCP
09-22-10	BPC
10-12-10	BPC2



NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
1200 ARROWHEAD AVE. LIVERMORE, CA 94551

Ajmani & Pamidi Inc.
Mechanical & Electrical Engineers
101 California St., Suite 2050
San Francisco, California 94111
Ph: 415.398.0444 Fax: 415.398.0070
E-mail: mail@ajpand.com 09021

TITLE 24
COMPLIANCE FORMS
BUILDING - C

DATE: 05/28/10
SCALE: AS NOTED
DRAWN BY: KS/LA

PROJECT:
1200 ARROWHEAD

T24.3B

AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C			
Project Name HCC Bldg. C		Date 7/19/2010	
Indicate Air Systems Type (Central, Single Zone, Package, VAV, or etc...)			
	AC-C-1	AC-C-2	AC-C-3
Number of Systems	1	1	1
Indicate Page Reference on Plans or Schedule and indicate the applicable exception(s)			
T-24 Sections			
112(a)	81% AFUE	81% AFUE	80% AFUE
112(a)	15.0 SEER / 12.8 EER	15.0 SEER / 12.8 EER	15.0 SEER / 12.7 EER
112(b), 112(c)	n/a	n/a	n/a
112(c), 115(a)	n/a	n/a	n/a
121(b)	Yes	Yes	Yes
121(b)	218 cfm	221 cfm	174 cfm
121(c)	No	No	No
121(c)	No	No	No
122(e)	Programmable Switch	Programmable Switch	Programmable Switch
122(e)	Setback Required	Setback Required	Setback Required
122(f)	Auto	Auto	Auto
122(g)	n/a	n/a	n/a
123			
124	R-8.0	R-8.0	R-8.0

AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C			
Project Name HCC Bldg. C		Date 7/19/2010	
Indicate Air Systems Type (Central, Single Zone, Package, VAV, or etc...)			
	AC-C-4	AC-C-5	AC-C-6
Number of Systems	1	1	1
Indicate Page Reference on Plans or Schedule and indicate the applicable exception(s)			
T-24 Sections			
112(a)	80% AFUE	80% AFUE	80% AFUE
112(a)	15.0 SEER / 12.7 EER	15.0 SEER / 12.7 EER	15.0 SEER / 12.7 EER
112(b), 112(c)	n/a	n/a	n/a
112(c), 115(a)	n/a	n/a	n/a
121(b)	Yes	Yes	Yes
121(b)	178 cfm	202 cfm	84 cfm
121(c)	No	No	No
121(c)	No	No	No
122(e)	Programmable Switch	Programmable Switch	Programmable Switch
122(e)	Setback Required	Setback Required	Setback Required
122(f)	Auto	Auto	Auto
122(g)	n/a	n/a	n/a
123			
124	R-8.0	R-8.0	R-8.0

WATER SIDE SYSTEM REQUIREMENTS (Part 2 of 2) MECH-2C			
Project Name HCC Bldg. C		Date 7/19/2010	
WATER SIDE SYSTEMS: Chillers, Towers, Boilers, Hydronic Loops			
Indicate Page Reference on Plans or Specification			
T-24 Sections			
112(a)			
123			

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL ENV-MM	
Project Name HCC Bldg. C	
Date 7/19/2010	

DESCRIPTION
 Building Envelope Measures:
 §118(a): Installed insulating material shall be certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
 §118(b): All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
 §118(f): The opaque portions of framed demising walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-13 between framing members.
 §117(a): All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
 §116(a) 1: Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft² of window area, 0.3 cfm/ft² of door area for residential doors, 0.3 cfm/ft² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft² for nonresidential double doors (swinging).
 §116(a) 2: Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
 §116(a) 3: Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
 §116(b): Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).

MECHANICAL VENTILATION AND REHEAT (Part 1 of 2) MECH-3C													
Project Name HCC Bldg. C												Date 7/19/2010	

A	MECHANICAL VENTILATION (§121(b)(2))					REHEAT LIMITATION (§144(d))								
	B	C	D	E	F	G	H	I	J	K	L	M	N	
Zone-1	1,456	0.15	218	14.6	15.0	218	218	218	218					95
Zone-1A	630	0.15	95	1.9	0.0	0	95	0						
AC-C-1														
Zone-2	1,478	0.15	221	14.8	15.0	221	221	221						
AC-C-2														
Zone-3	1,160	0.15	174	11.6	15.0	174	174	174						
AC-C-3														
Zone-4	814	0.15	122	8.1	15.0	122	122	122						
Zone-4A	360	0.15	54	3.6	15.0	54	54	54						
AC-C-4														
Zone-5	560	0.15	84	5.6	15.0	84	84	84						
Zone-5A	784	0.15	118	7.8	15.0	118	118	118						
AC-C-5														
Zone-6	560	0.50	280	5.6	15.0	84	280	84						186
AC-C-6														
Totals														

C Minimum ventilation rate per Section §121, Table 121-A.
 E Based on fixed seat or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
 H Required Ventilation Air (REQD V.A.) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column D or G).
 I Must be greater than or equal to H, or use Transfer Air (column N) to make up the difference.
 J Design fan supply CFM (Fan CFM) x 50%, or the design zone outdoor airflow rate per §121.
 K Condition area (ft²) x 0.4 CFM / ft², or
 L Maximum of Columns H, J, K, or 300 CFM.
 M This must be less than or equal to Column L and greater than or equal to the sum of Columns H plus N.
 N Transfer Air must be provided where the Required Ventilation Air (Column H) is greater than the Design Minimum Air (Column M). Where required, transfer air must be greater than or equal to the difference between the Required Ventilation Air (Column H) and the Design Minimum Air (Column M). Column H minus M.

MECHANICAL EQUIPMENT DETAILS (Part 1 of 2) MECH-5C													
Project Name HCC Bldg. C												Date 7/19/2010	

CHILLER AND TOWER SUMMARY													
Equipment Name	Type	Qty.	Efficiency	Tons	Qty.	GPM	BHP	Premium Eff. Motor	Pump Control				

DHW / BOILER SUMMARY													
System Name	Type	Distribution	Qty.	Rated Input	Vol. (Gal.)	Energy Factor or RE	Standby Loss or Pilot	Tank Ext. R-Value	Status				
Takagi T-K2	Instant Gas	Kitchen Pipe Ins	1	185,000	0	0.85	n/a	n/a	New				

MULTI-FAMILY CENTRAL WATER HEATING DETAILS													
Control	Qty.	HP	Type	In Plenum	Outside	Buried	Add 1/2" Insulation						

CENTRAL SYSTEM RATINGS													
System Name	Type	Qty.	Output	Aux. kW	Efficiency	Output	Efficiency	Status					
Trane YHC-048-E3	Split DX	2	48,000	0.0	81% AFUE	49,450	15.0 SEER / 12.8 EER	New					
Trane YHC-036-E	Packaged DX	4	48,000	0.0	80% AFUE	37,150	15.0 SEER / 12.7 EER	New					

CENTRAL SYSTEM FAN SUMMARY													
System Name	Fan Type	Economizer Type	CFM	BHP	Premium Eff. Motor	CFM	BHP	Premium Eff. Motor					
Trane YHC-048-E3	Constant Volume	No Economizer	1,600	0.32		none							
Trane YHC-036-E	Constant Volume	No Economizer	1,200	0.32		none							

MECHANICAL EQUIPMENT DETAILS (Part 2 of 2) MECH-5C													
Project Name HCC Bldg. C												Date 7/19/2010	

ZONE SYSTEM SUMMARY													
Zone Name	System Name	Type	Qty.	Heating	Cooling	Min CFM Ratio	Reheat Coil	Fan			Outside Air		
								CFM	BHP	Premium Eff. Motor			
Zone-3	CAV Box/No Reheat	VAV Box	1	0	0	100%	None						
Zone-6	CAV Box/No Reheat	VAV Box	1	0	0	100%	None						

EXHAUST FAN SUMMARY													
Room Name	Qty.	CFM	BHP	Premium Eff. Motor	EXHAUST FAN			Room Name	Qty.	CFM	BHP	Premium Eff. Motor	
					Room Name	Qty.	CFM						

REVISIONS BY
 05-24-10 HCCC
 08-02-10 BPC
 HEALTH DEPT PLAN CHECK 08-26-10 HDPC
 09-22-10 BPC
 10-12-10 BPC2

NEW BUILDING "C" - PHASE 1B
 HINDU COMMUNITY and CULTURAL CENTER
 1200 ARROWHEAD AVE. LIVERMORE, CA 94551

DATE 05/28/10
 SCALE: AS NOTED
 DRAWN BY: KS/LA

PROJECT:
 1200 ARROWHEAD

T24.4B

PLANCHCK RESUBMITTAL #2

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL		ENV-MM
Project Name HCC Bldg. C	Date 7/19/2010	
DESCRIPTION		
Building Envelope Measures:		
§ 118(a): Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.		
§ 118(c): All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.		
§ 118(f): The opaque portions of framed demising walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-13 between framing members.		
§ 117(a): All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.		
§ 116(a) 1: Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft ² of window area, 0.3 cfm/ft ² of door area for residential doors, 0.3 cfm/ft ² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft ² for nonresidential double doors (swinging).		
§ 116(a) 2: Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.		
§ 116(a) 3: Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.		
§ 116(b): Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).		

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MECHANICAL MANDATORY MEASURES: NONRESIDENTIAL		MECH-MM
Project Name HCC Bldg. C	Date 7/19/2010	
Equipment and System Efficiencies		
§ 111: Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.		
§ 115(a): Fan type central furnaces shall not have a pilot light.		
§ 123: Piping, except that conveying fluids at temperatures between 60 and 105 degrees Fahrenheit, or within HVAC equipment, shall be insulated in accordance with Standards Section 123.		
§ 124: Air handling duct systems shall be installed and insulated in compliance with Sections 601, 602, 603, 604, and 605 of the CMC Standards.		
Controls		
§ 122(e): Each space conditioning system shall be installed with one of the following:		
1A Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempt from the requirements of Section 112 (d)) shall be installed with an automatic time switch with an accessible manual override that allows operation of the system during off-hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the device's program and time setting for at least 10 hours if power is interrupted, or		
1B An occupancy sensor to control the operating period of the system; or		
1C A 4-hour timer that can be manually operated to control the operating period of the system.		
2 Each space conditioning system shall be installed with controls that temporarily restart and temporarily operate the system as required to maintain a setback heating and/or a setup cooling thermostat setpoint.		
§ 122(g): Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation zones. Each zone shall not exceed 25,000 square feet; shall be provided with isolation devices, such as valves or dampers that allow the supply of heating or cooling to be setback or shut off independently of other isolation areas; and shall be controlled by a time control device as described above.		
§ 122(c): Thermostats shall have numeric setpoints in degrees Fahrenheit (F) and adjustable setpoint stops accessible only to authorized personnel.		
§ 122(b): Heat pumps shall be installed with controls to prevent electric resistance supplementary heater operation when the heating load can be met by the heat pump alone.		
§ 122(a&b): Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a deadband of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.		
Ventilation		
§ 121(e): Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.		
§ 122(f): All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.		
§ 121(f): Ventilation System Acceptance. Before an occupancy permit is granted for a newly constructed building or space, or a new ventilating system serving a building or space is operated for normal use, all ventilation systems serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.		
Service Water Heating Systems		
§ 113(c) Installation		
3. Temperature controls for public lavatories. The controls shall limit the outlet Temperature to 110°F.		
2. Circulating service water-heating systems shall have a control capable of automatically turning off the circulating pump when hot water is not required.		

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HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 2,086		
System Name AC-C-1			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	23.0		
Cooling System			
Output per System	49,450		
Total Output (Btu/h)	49,450		
Total Output (Tons)	4.1		
Total Output (Btu/h/sqft)	23.7		
Total Output (sqft/Ton)	506.2		
Air System			
CFM per System	1,800		
Airflow (cfm)	1,800		
Airflow (cfm/sqft)	0.77		
Airflow (cfm/Ton)	388.3		
Outside Air (%)	13.7%		
Outside Air (cfm/sqft)	0.10		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
1,124	22,716	3,292	595
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
595	16,730	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 2 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 2 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 32 of 43

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 1,476		
System Name AC-C-2			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	32.5		
Cooling System			
Output per System	49,450		
Total Output (Btu/h)	49,450		
Total Output (Tons)	4.1		
Total Output (Btu/h/sqft)	33.4		
Total Output (sqft/Ton)	358.2		
Air System			
CFM per System	1,800		
Airflow (cfm)	1,800		
Airflow (cfm/sqft)	1.08		
Airflow (cfm/Ton)	388.3		
Outside Air (%)	13.8%		
Outside Air (cfm/sqft)	0.15		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
994	19,428	3,041	411
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
411	11,095	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Oct 2 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Oct 2 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 33 of 43

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 1,160		
System Name AC-C-3			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	41.4		
Cooling System			
Output per System	37,150		
Total Output (Btu/h)	37,150		
Total Output (Tons)	3.1		
Total Output (Btu/h/sqft)	32.0		
Total Output (sqft/Ton)	374.7		
Air System			
CFM per System	1,200		
Airflow (cfm)	1,200		
Airflow (cfm/sqft)	1.03		
Airflow (cfm/Ton)	387.6		
Outside Air (%)	14.5%		
Outside Air (cfm/sqft)	0.15		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
950	14,538	2,390	163
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
163	599	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 2 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 2 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 34 of 43

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 1,174		
System Name AC-C-4			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	40.9		
Cooling System			
Output per System	37,150		
Total Output (Btu/h)	37,150		
Total Output (Tons)	3.1		
Total Output (Btu/h/sqft)	31.6		
Total Output (sqft/Ton)	379.2		
Air System			
CFM per System	1,200		
Airflow (cfm)	1,200		
Airflow (cfm/sqft)	1.02		
Airflow (cfm/Ton)	387.6		
Outside Air (%)	14.7%		
Outside Air (cfm/sqft)	0.15		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
843	12,955	2,577	147
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
147	10,878	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 4 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 4 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 35 of 43

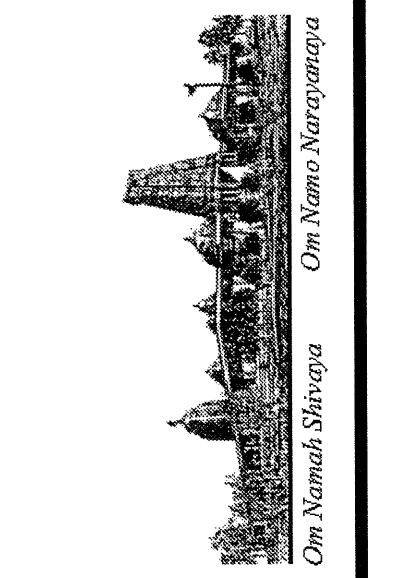
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 1,344		
System Name AC-C-5			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	35.7		
Cooling System			
Output per System	37,150		
Total Output (Btu/h)	37,150		
Total Output (Tons)	3.1		
Total Output (Btu/h/sqft)	27.6		
Total Output (sqft/Ton)	434.1		
Air System			
CFM per System	1,200		
Airflow (cfm)	1,200		
Airflow (cfm/sqft)	0.89		
Airflow (cfm/Ton)	387.6		
Outside Air (%)	16.8%		
Outside Air (cfm/sqft)	0.15		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
1,191	18,058	2,789	155
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
155	11,407	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 3 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 3 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 36 of 43

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY		Date	7/19/2010
Project Name HCC Bldg. C	Floor Area 560		
System Name AC-C-6			
ENGINEERING CHECKS			
SYSTEM LOAD			
Number of Systems 1			
Heating System			
Output per System	48,000		
Total Output (Btu/h)	48,000		
Output (Btu/h/sqft)	85.7		
Cooling System			
Output per System	37,150		
Total Output (Btu/h)	37,150		
Total Output (Tons)	3.1		
Total Output (Btu/h/sqft)	66.3		
Total Output (sqft/Ton)	180.9		
Air System			
CFM per System	1,200		
Airflow (cfm)	1,200		
Airflow (cfm/sqft)	2.14		
Airflow (cfm/Ton)	387.6		
Outside Air (%)	7.0%		
Outside Air (cfm/sqft)	0.15		
COIL COOLING PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
489	7,624	1,154	80
COIL HTG. PEAK			
CFM	Sensible	Latent	COIL HTG. PEAK
80	5,896	0	0
HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 3 PM Jan 1 AM			
COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)			
Note: values above given at ARI conditions			
TIME OF SYSTEM PEAK Jul 3 PM Jan 1 AM			

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 37 of 43

REVISIONS	BY
05-24-10	HCCC
08-02-10	BPC
08-26-10	HDCP
09-22-10	BPC
10-12-10	BPC2



NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
1200 ARROWHEAD AVE., LIVERMORE, CA 94551

PROJECT:
1200 ARROWHEAD

DATE
05/28/10
SCALE:
AS NOTED
DRAWN BY: KS/LA

PROJECT:
1200 ARROWHEAD

T24.5B

ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-1											Floor Area 2,086		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone -1		1.0					218	Jul 3 PM	920	22,753	4,372	403	22,452
Zone- 1A		1.0					0	Jul 2 PM	204	4,834	293	192	5,397
TOTALS													
0 0 0 0 218 Jul 3 PM 27,518 4,665 27,649													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 36 of 43

ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-2											Floor Area 1,476		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone-2		1.0					221	Aug 3 PM	936	23,264	4,432	411	22,881
TOTALS													
0 0 0 0 221 Aug 3 PM 23,264 4,432 22,881													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 39 of 43

ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-3											Floor Area 1,160		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone-3		1.0					174	Jul 2 PM	950	14,538	2,390	163	11,986
TOTALS													
0 0 0 0 174 Jul 2 PM 14,538 2,390 11,986													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 40 of 43

ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-4											Floor Area 1,174		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone-4		1.0					122	Oct 2 PM	629	9,662	1,677	92	6,765
Zone- 4A		1.0					54	Jul 5 PM	237	3,636	900	56	4,113
TOTALS													
0 0 0 0 176 Jul 4 PM 12,965 2,577 10,878													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 41 of 43

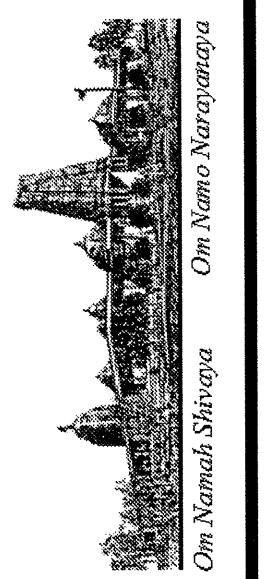
ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-5											Floor Area 1,344		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone-5		1.0					84	Jul 3 PM	467	7,076	1,154	79	5,794
Zone-5A		1.0					118	Jul 2 PM	725	10,991	1,615	76	5,613
TOTALS													
0 0 0 0 202 Jul 3 PM 18,058 2,769 11,407													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 42 of 43

ZONE LOAD SUMMARY													
Project Name HCC Bldg. C											Date 7/19/2010		
System Name AC-C-6											Floor Area 560		
ZONE LOAD SUMMARY													
ZONE NAME	SYSTEM NAME	ZONAL SYSTEM					COOLING PEAK				HEATING PEAK		
		Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone-6		1.0					84	Jul 3 PM	489	7,624	1,154	80	5,898
TOTALS													
0 0 0 0 84 Jul 3 PM 7,624 1,154 5,898													
(BLOCK LOAD)													

EnergyPro 5.1 by EnergySoft User Number: 2849 RunCode: 2010-07-19T13:14:10 ID: Bld. C Page 43 of 43

REVISIONS	BY
05-24-10	HCCC
08-02-10	BPC
HEALTH DEPT PLAN CHECK 08-26-10	HDCP
09-22-10	BPC
10-12-10	BPC2



NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
1200 ARROWHEAD AVE. LIVERMORE, CA 94551

Almani & Parridi Inc.
Mechanical & Electrical Engineers
121 California St., Suite 2025
San Francisco, California 94111
Phone: (415) 398-4444 Fax: (415) 398-0877
E-mail: mail@aprod.com 06021

TITLE 24
COMPLIANCE FORMS
BUILDING - C

DATE
05/28/10
SCALE:
AS NOTED
DRAWN BY: KS/LA
PROJECT:
1200 ARROWHEAD



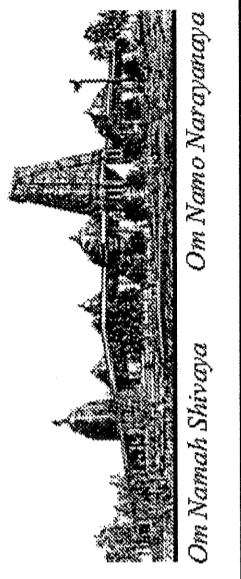
T24.6B



LIGHTING MANDATORY MEASURES: NONRESIDENTIAL		LTG-MM
Project Name HCC Bldg. C	Date 5/17/2010	
Indoor Lighting Measures:		
§131(d): Shut-off Controls		
For every floor, all interior lighting systems shall be equipped with a separate automatic control to shut off the lighting.		
1. This automatic control shall meet the requirements of Section 119 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.		
2. Override for Building Lighting Shut-off: The automatic building shut-off system is provided with a manual, accessible override switch in sight of the lights. The area of override is not to exceed 5,000 square feet.		
§119(h): Automatic Control Devices Certified: All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.		
§111: Fluorescent Ballast and Luminaires Certified: All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.		
§131(a): Individual Room/Area Controls: Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor-to-ceiling walls.		
§131(b): Uniform Reduction for Individual Rooms: All rooms and areas greater than 100 square feet and more than 0.8 watts per square foot of lighting load shall be controlled with bi-level switching for uniform reduction of lighting within the room.		
§131(c): Daylight Area Control: All rooms with windows and skylights that are greater than 250 square feet and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylight area controlled by a separate switch, or the effective use of daylight cannot be accomplished because the windows are continuously shaded by a building or the adjacent lot. Diagram of shading during different times of the year is included on plans.		
§131(c): Display Lighting: Display lighting shall be separately switched on circuits that are 20 amps or less.6		
Outdoor Lighting Measures:		
§130(c)1: Mandatory lighting power determination for medium base sockets without permanently installed ballasts		
§132(a): All permanently installed luminaires with lamps rated over 100 Watts either have a lamp efficacy of at least 60 lumens per Watt or are controlled by a motion sensor.		
§132(b): All luminaires with lamps rated greater than 175 Watts in hardscape area, including parking lots, building entrances, canopies, and all outdoor sales areas meet the Cutoff Requirements.		
§132(c)1: All permanently installed outdoor lighting meets the control requirements listed.		
§132(c): Building facades, parking lots, garages, canopies, and outdoor sales areas meet the Multi-Level Lighting Requirements listed.		

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REVISIONS	BY
05-24-10	HCCC
08-02-10	BPC
HEALTH DEPT PLAN CHECK 08-26-10	HDPC
09-22-10	BPC
10-12-10	BPC2



NEW BUILDING "C" - PHASE 1B
HINDU COMMUNITY and CULTURAL CENTER
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TITLE 24
 COMPLIANCE FORMS
 BUILDING - C

DATE
05/28/10
 SCALE:
AS NOTED
 DRAWN BY: KS/LA
 PROJECT:
1200 ARROWHEAD

T24.7B

