



Envelope Compliance Certificate

Project Information

Energy Code: 2015 IECC
 Project Title: 6th Street Auto Sales
 Location: Lawrence, Kansas
 Climate Zone: 4a
 Project Type: New Construction
 Vertical Glazing / Wall Area: 34%

Construction Site:
 1716 West sixth Street
 Lawrence, KS 66044

Owner/Agent:
 6th Street Auto Sales
 1716 West sixth Street
 Lawrence, KS 66044

Designer/Contractor:
 K. Hector Girardin
 TechCAD Services LLC
 166 W 110th Street
 Carbondale, KS 66414
 785 249 3884
 hector@techcadservices.com

Building Area

Floor Area

1-Auto Sales (Retail) : Nonresidential	3020
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Additional Efficiency Package

Enhanced Interior Lighting Controls

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Roof 1: Insulation Entirely Above Deck, [Bldg. Use 1 - Auto Sales]	1760	---	30.0	0.032	0.032
Floor 1: Slab-On-Grade:Unheated, Vertical 3 ft., [Bldg. Use 1 - Auto Sales] (c)	260	---	10.0	0.510	0.540
Floor 2: Slab-On-Grade:Unheated, Vertical 3 ft., [Bldg. Use 1 - Auto Sales] (c)	1260	---	10.0	0.510	0.540
<u>NORTH</u>					
Exterior Wall 2: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	559	19.0	0.0	0.067	0.064
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Auto Sales]	21	---	---	0.190	0.610
Basement Wall 1 copy 1: Solid Concrete:8" Thickness, Medium Density, Furring: None, Wall Ht 10.0, Depth B.G. 10.0, [Bldg. Use 1 - Auto Sales]	480	---	8.0	0.103	0.108
<u>EAST</u>					
Exterior Wall 3: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	642	19.0	0.0	0.067	0.064
Door 2: Insulated Metal, Swinging, [Bldg. Use 1 - Auto Sales]	21	---	---	0.190	0.610
Exterior Wall 8: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	315	19.0	0.0	0.067	0.064
Window 5: Metal Frame with Thermal Break:Operable, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	131	---	---	0.370	0.450
Window 6: Metal Frame with Thermal Break:Operable, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	72	---	---	0.370	0.450
<u>SOUTH</u>					
Exterior Wall 4: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	220	19.0	0.0	0.067	0.064

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Window 2: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	165	---	---	0.370	0.380
Exterior Wall 6: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	336	19.0	0.0	0.067	0.064
Window 4: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	186	---	---	0.370	0.380
Basement Wall 1 copy 2: Solid Concrete:8" Thickness, Medium Density, Furring: None, Wall Ht 10.0, Depth B.G. 10.0, [Bldg. Use 1 - Auto Sales]	200	---	8.0	0.103	0.108
Basement Wall 1 copy 4: Solid Concrete:8" Thickness, Medium Density, Furring: None, Wall Ht 10.0, Depth B.G. 10.0, [Bldg. Use 1 - Auto Sales]	280	---	8.0	0.103	0.108
WEST					
Exterior Wall 1: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	252	19.0	0.0	0.067	0.064
Window 1: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	117	---	---	0.370	0.380
Exterior Wall 5: Wood-Framed, 16" o.c., [Bldg. Use 1 - Auto Sales]	453	19.0	0.0	0.067	0.064
Window 3: Metal Frame with Thermal Break:Operable, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	169	---	---	0.370	0.450
Door 3: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Specs.: Product ID n/a, SHGC 0.40, [Bldg. Use 1 - Auto Sales] (b)	90	---	---	0.370	0.770
Basement Wall 1: Solid Concrete:8" Thickness, Medium Density, Furring: None, Wall Ht 10.0, Depth B.G. 10.0, [Bldg. Use 1 - Auto Sales]	200	---	8.0	0.103	0.108
Basement Wall 1 copy 3: Solid Concrete:8" Thickness, Medium Density, Furring: None, Wall Ht 10.0, Depth B.G. 10.0, [Bldg. Use 1 - Auto Sales]	400	---	8.0	0.103	0.108

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.

(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 19% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.0.4.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

K. HECTOR GIRARDIN / OWNER

Name - Title

K. HECTOR GIRARDIN

Signature

SEPT. 20, 2016

Date



Interior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
 Project Title: 6th Street Auto Sales
 Project Type: New Construction

Construction Site:
 1716 West sixth Street
 Lawrence, KS 66044

Owner/Agent:
 6th Street Auto Sales
 1716 West sixth Street
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Designer/Contractor:
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 hector@techcadservices.com

Additional Efficiency Package

Enhanced Interior Lighting Controls

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B X C)
1-Auto Sales (Retail)	3020	1.26	3805
Total Allowed Watts =			3805

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Auto Sales (Retail) Linear Fluorescent 1: 48" T8 32W (Super T8): Electronic:	2	39	64	2496
Total Proposed Watts =				2496

Interior Lighting PASSES: Design 34% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.0.4.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

K. HECTOR GIRARDIN / OWNER
 Name - Title

K. HECTOR GIRARDIN
 Signature

SEPT, 20, 2016
 Date



Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
 Project Title: 6th Street Auto Sales
 Project Type: New Construction
 Exterior Lighting Zone: 2 (Neighborhood business district)

Construction Site:
 1716 West sixth Street
 Lawrence, KS 66044

Owner/Agent:
 6th Street Auto Sales
 1716 West sixth Street
 Lawrence, KS 66044

Designer/Contractor:
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 TechCAD Services LLC
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Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Exterior Wall (Illuminated area of facade wall or surface)	1350 ft2	0.1	No	135
Open Sales Area (Outdoor sales area/lot)	9805 ft2	0.25	Yes	2451
Customer Waiting (Main entry)	9 ft of door	20	Yes	180
Conference (Other door (not main entry))	3 ft of door	20	Yes	60
Showroom (Other door (not main entry))	3 ft of door	20	Yes	60
Detail Bay (Other door (not main entry))	14 ft of door	20	Yes	280
Wash Bay (Other door (not main entry))	9 ft of door	20	Yes	180
Total Tradable Watts (a) =				6231
Total Allowed Watts =				6366
Total Allowed Supplemental Watts (b) =				600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.

(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<u>Exterior Wall (Illuminated area of facade wall or surface 1350 ft2): Non-tradable Wattage</u>				
Incandescent 1: Incandescent 60W:	1	7	60	420
<u>Open Sales Area (Outdoor sales area/lot 9805 ft2): Tradable Wattage</u>				
Halogen 1: Halogen 120W:	1	9	120	1080
<u>Customer Waiting (Main entry 9 ft of door width): Tradable Wattage</u>				
Incandescent 1: Incandescent 60W:	1	1	60	60
<u>Conference (Other door (not main entry) 3 ft of door width): Tradable Wattage</u>				
Incandescent 2: Incandescent 150W:	1	1	150	150
<u>Showroom (Other door (not main entry) 3 ft of door width): Tradable Wattage</u>				
Incandescent 1: Incandescent 60W:	1	1	60	60

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<u>Sales lot street frontage (302 ft): Tradable Wattage</u>				
<u>Detail Bay (Other door (not main entry) 14 ft of door width): Tradable Wattage</u>				
Incandescent 2: Incandescent 150W:	1	1	150	150
<u>Wash Bay (Other door (not main entry) 9 ft of door width): Tradable Wattage</u>				
Incandescent 2: Incandescent 150W:	1	1	150	150
Total Tradable Proposed Watts =				1650

Exterior Lighting PASSES: Design 75% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.0.4.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

K. HECTOR GIRARDIN / OWNER

Name - Title

K. HECTOR GIRARDIN

Signature

SEPT. 20, 2016

Date



Mechanical Compliance Certificate

Project Information

Energy Code: 2015 IECC
 Project Title: 6th Street Auto Sales
 Location: Lawrence, Kansas
 Climate Zone: 4a
 Project Type: New Construction

Construction Site:
 1716 West sixth Street
 Lawrence, KS 66044

Owner/Agent:
 6th Street Auto Sales
 1716 West sixth Street
 Lawrence, KS 66044

Designer/Contractor:
 K. Hector Girardin
 TechCAD Services LLC
 166 W 110th Street
 Carbondale, KS 66414
 785 249 3884
 hector@techcadservices.com

Additional Efficiency Package

Enhanced Interior Lighting Controls

Mechanical Systems List

Quantity System Type & Description

- 1 HVAC System 1 (Single Zone):
 Heating: 1 each - Unit Heater, Gas, Capacity = 91 kBtu/h
 Proposed Efficiency = 92.00% Ec, Required Efficiency = 80.00% Ec
 Cooling: 1 each - Single Package DX Unit, Capacity = 92 kBtu/h, Air-Cooled Condenser, Air Economizer
 Proposed Efficiency = 16.00 EER, Required Efficiency = 11.00 EER
 Fan System: FAN SYSTEM 1 | Gound Level -- Compliance (Motor nameplate HP method) : Passes

 Fans:
 FAN 1 Supply, Single-Zone VAV, 2800 CFM, 0.5 motor nameplate hp, 0.0 fan efficiency
- 1 HVAC System 2 (Single Zone):
 Heating: 1 each - Central Furnace, Gas, Capacity = 64 kBtu/h
 Proposed Efficiency = 92.00% Et, Required Efficiency = 80.00% Et
 Cooling: 1 each - Split System, Capacity = 57 kBtu/h, Air-Cooled Condenser, Air Economizer
 Proposed Efficiency = 16.00 SEER, Required Efficiency = 13.00 SEER
 Fan System: FAN SYSTEM 2 | Basement Level -- Compliance (Motor nameplate HP method) : Passes

 Fans:
 FAN 2 Supply, Single-Zone VAV, 2000 CFM, 0.5 motor nameplate hp, 0.0 fan efficiency

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.0.4.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

K. HECTOR GIRARDIN / OWNER
 Name - Title

K. HECTOR GIRARDIN
 Signature

SEPT. 20, 2016
 Date