

# C406 Additional Efficiency Package Option Summary

PROJ-C406

2018 Seattle Energy Code Compliance Forms for Commercial Buildings including R2, R3, & R4 over 3 stories and all R1

Revised Mar 2021 rev. 1

<b>General Info</b>  This PROJ-C406 form shall be provided as a cover sheet for all compliance form submittals. <b>Project Title</b> shall match plans title block.	Project Title: <b>Sound 31st</b>	Date <b>11/03/2021</b>  For SDCI Use
	Project Street Address: <b>4734 31st Ave S</b>	
	Project City, County, Zip: <b>Seattle, WA 98108</b>	
	Project Owner or Rep: <b>4734 31st Ave S LLC</b>	
	Jurisdiction: <b>City of Seattle</b>	

<p>A minimum of 8 credits are required for new construction, and change in space conditioning or occupancy projects.</p> <p>Select all packages included in the current project scope. Also select packages complied with under previous projects (shell and core, other tenant spaces in building, etc) that apply to this permit.</p> <p>Buildings with multiple tenant spaces may comply with different options (mix &amp; match).</p> <p>Options are required for all space conditioning types.</p> <p>Include discipline specific information for C406 options in ENV-SUM and LTG-SUM.</p> <p>Refer to SBCC website for official interpretations regarding C406 provisions.</p>	<b>Efficiency Package</b>	Occupancy Type			Current Scope	Completed in Shell and Core Permit	
		Primary	Secondary	Tertiary			
		Group R-1	Group B	Group M			
		Credits Claimed					
		C406.2 More efficient HVAC performance				<input type="checkbox"/>	<input type="checkbox"/>
		C406.3.1 Reduced lighting power - 10%				<input type="checkbox"/>	<input type="checkbox"/>
		C406.3.2 Reduced lighting power - 20%				<input type="checkbox"/>	<input type="checkbox"/>
		C406.4 Enhanced digital lighting controls				<input type="checkbox"/>	<input type="checkbox"/>
		C406.5 On-site renewable energy				<input type="checkbox"/>	<input type="checkbox"/>
		C406.5 On-site renewable energy (1/3)				<input type="checkbox"/>	<input type="checkbox"/>
		C406.5 On-site renewable energy (2/3)				<input type="checkbox"/>	<input type="checkbox"/>
		C406.6 Dedicated outside air systems (DOAS)				<input type="checkbox"/>	<input type="checkbox"/>
		C406.7 High performance DOAS				<input type="checkbox"/>	<input type="checkbox"/>
		C406.8 Reduced service water heating energy use				<input type="checkbox"/>	<input type="checkbox"/>
		C406.9 Reduced service water heating energy use (R-1/R-2)				<input type="checkbox"/>	<input type="checkbox"/>
C406.10 Enhanced envelope performance				<input type="checkbox"/>	<input type="checkbox"/>		
C406.11 Reduced air infiltration				<input type="checkbox"/>	<input type="checkbox"/>		
Total Credits For Each Occupancy Type							
Area of Occupancy Type							
Area-weighted Average Credits							
<b>C406 Comments:</b> Project using Total Building Performance Path, so no C406 options are required.							

# SHGC Calculation

# ENV-SHGC

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<b>Project Title:</b> Sound 31st		<b>Date:</b> 11/03/2021	
<b>Target Insulation Allowance:</b> Fully Conditioned Space - Commercial, Group R, Mixed Use		For SDCI Use	
<b>Fenestration Area</b> as % gross above-grade wall area 23.2% Max. Target: 35%			
<b>Skylight Area</b> as % gross roof area Max. Target: 5%			
<b>Vertical Fenestration Alternates:</b> None Selected on ENV-SUM			
<p>Notes: 1 - Proposed vertical fenestration and skylight areas entered in ENV-SHGC must match proposed fenestration areas in ENV-UA.</p> <p>2 - If Target Area Adjustment is required per ENV-UA, then target areas will be automatically adjusted in ENV-SHGC. Refer to Target Area Adjustments worksheet for this calculation.</p> <p>3 - Fenestration assembly SHGC shall be the manufacturer's NFRC product rating, or shall be the default value per Section C303.1.3.</p> <p>4 - Fenestration that separates conditioned space from a non-conditioned space shall be included in this worksheet.</p>			
User Note			

Skylights		Proposed SHGC			Target SHGC		
Sch. ID	Provide SHGC source and fenestration schedule ID	SHGC	x Area (A)	= SHGC x A	SHGC	x Area (A)	= SHGC x A
					0.32		
					SHGC		0.32
Skylight Totals							

All Non-North Vertical Fenestration+						Target SHGC ++			
Sch. ID	Provide SHGC source and fenestration schedule ID	PF	SHGC	x Area (A)	= SHGC x A	PF Category	SHGC	x Area (A)	= SHGC x A
A5.10	NFRC - Window Schedule	0	0.35	2965	1038	PF < 0.2	0.38	2987	1135.2
A5.11 / 12	NFRC - Storefront Schedule and Entry Door	0	0.35	23	8	0.2 ≤ PF < 0.5	0.46		
						PF ≥ 0.5	0.61		
						++ If projection factor (PF) credits are applied to the proposed design, Target SHGC will sum fenestration area by PF category.			
Non-North Window Totals								2987.3	1135.2

+ If PF credit is applied, then vertical fenestration must be entered in the correct table according to orientation. If credit is not applied then all vertical fenestration can be entered in either table.

North Vertical Fenestration+						Target SHGC++			
Sch. ID	Provide SHGC source and fenestration schedule ID	PF	SHGC	x Area (A)	= SHGC x A	PF Category	SHGC	x Area (A)	= SHGC x A
						PF < 0.2	0.51		
						0.2 ≤ PF < 0.5	0.56		
						PF ≥ 0.5	0.61		
						++ If projection factor (PF) credits are applied to the proposed design, Target SHGC will sum fenestration area by PF category.			
North Window Totals									

TO COMPLY - The Proposed Total SHGC x A shall not exceed the Target Total SHGC x A.

Area	SHGC x A	Area	SHGC x A
2987.3	1045.5	2987.3	1135.2

Component Performance Compliance (SHGC)

SHGC COMPLIES

# Envelope Summary

ENV-SUM

2018 Seattle Energy Code Compliance Forms for Commercial Buildings including R2, R3, & R4 over 3 stories and all R1

Revised Mar 2021 rev. 1

<b>Project Info</b>  <i>Compliance forms do not require a password to use. Instructional and calculating cells are write-protected.</i>	<b>Project Title:</b> Sound 31st	<b>Date:</b> 11/03/2021
	<i>Applicant Information. Provide contact information for individual who can respond to inquiries about compliance form information provided.</i>	
	<b>Company Name:</b> SHW Architects	
	<b>Company Address:</b> 1101 East Pike St, Suite 200, Seattle, WA 98122	
	<b>Applicant Name:</b> Hugh Schaeffer	
	<b>Applicant Phone:</b> 206-329-1802	
<b>Applicant Email:</b> hugh@s-hw.com		For SDCI Use
<b>Project Description</b>		
<input checked="" type="checkbox"/> New Building <input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input type="checkbox"/> No Envelope Scope		
<b>Envelope Project Scope</b> <i>Select all that apply.</i>		
<input type="checkbox"/> All Commercial <input checked="" type="checkbox"/> Group R - Commercial <input type="checkbox"/> Mixed Use - Commercial + Group R <input type="checkbox"/> Semi-heated <input type="checkbox"/> Refrigerated Cooler <input type="checkbox"/> Refrigerated Freezer <input type="checkbox"/> Equipment Building		
<b>Envelope Description</b> <i>Provide brief description of the project and relevant supporting documentation.</i>  <i>If project includes multiple Target Insulation Allowance areas, and/or is demonstrating compliance as an Addition + Existing, Alteration + Existing, or Addition + Alteration + Existing project, provide a brief summary of the approach to whole building compliance.</i>		
Primarily wood-frame wall construction with the first floor and second floors being steel-framed walls. Windows are either storefront or vinyl framing both with double pane. Roof is a combination of batt insulation between joists with rigid insulation above. Exposed floors have wood framing with batt insulation. Slab-on-grade insulation has rigid insulation at the perimeter.		
<b>Air Barrier Testing</b> <i>Air barrier testing is required for all new construction projects. Testing criteria is 0.25 cfm/ft² under test pressure of 0.3 inch w.g. To comply with C406.11, demonstrate that measured air leakage does not exceed 0.17 cfm/ft².</i>		
<input checked="" type="checkbox"/> Air barrier testing per Section C402.5.1.2 included in project scope <input type="checkbox"/> Additional Efficiency Package Option - C406.11 Reduced Air Infiltration <input type="checkbox"/> Testing not required. Explanation:		
[Empty box for explanation]		
<b>Compliance Documentation Scope and Method</b>		
<b>Scope of This Calculation</b>		
<input checked="" type="checkbox"/> New Building <input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input type="checkbox"/> No Envelope Scope		
<b>Target Insulation Allowance</b> <i>Sets the title and calculations in the compliance forms. Selection required to enable forms.</i>		
<input checked="" type="radio"/> Fully Conditioned - Commercial, Group R, Mixed Use <input type="radio"/> Semi-heated <input type="radio"/> Refrigerated Cooler <input type="radio"/> Refrigerated Freezer <i>If project includes more than one Target Insulation Allowance area, and/or if project includes addition and alteration areas complying independently, for each area complete an ENV-SUM form Rows 16-55 and either an ENV-PRESCRIPTIVE form, or ENV-UA + ENV-SHGC forms if demonstrating compliance via component performance.</i>		
<b>Envelope Compliance Path</b> <i>Selection required to enable forms.</i>		
<input type="radio"/> Prescriptive <input checked="" type="radio"/> Component Performance		
<b>Component Performance Calculation Adjustments</b>		
<input type="checkbox"/> Change of Occupancy (C503.2) / Conditioning (C505)/C407 - 10% higher UA allowed <input type="checkbox"/> Substantial Alteration (C503.8) - 15% higher than C402.1.5 UA allowed <input type="checkbox"/> Additional Efficiency Package Option - C406.8 Enhanced Envelope - 15% lower UA allowed		

# Envelope Summary, pg. 2

ENV-SUM

2018 Seattle Energy Code Compliance Forms for Commercial Buildings including R2, R3, & R4 over 3 stories and all R1

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Project Title: <b>Sound 31st</b>		Date: <b>11/03/2021</b>	
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**Additions** ☐ Addition stand alone ☐ Addition + Existing

***Addition stand alone** - Complete Vertical Fenestration and Skylight Area Calculation. Enter total existing-to-remain wall, roof, vertical fenestration and skylight areas as EXISTING. Enter total addition envelope assembly areas as NEW. If resulting total building WWR exceeds 30% and/or SSR exceeds 5%, refer to C502.2.1 and C502.2.2 for prescriptive compliance alternatives. If complying via component performance, complete ENV-UA per instructions for addition stand alone projects.*

***Addition + existing** - Complete ENV-UA per instructions for addition + existing projects.*

**Alterations - Fenestration and Skylight** ☐ Replacement windows only, or resulting total building WWR ≤ original WWR ☐ Total building WWR increased by alteration

☐ Replacement skylights only, or resulting total building SRR ≤ original SRR ☐ Total building SRR increased by alteration

***WWR and SRR not increased** - Vertical Fenestration and Skylight Area Calculation not required.*

***WWR and/or SRR increased** - Complete Vertical Fenestration and Skylight Area Calculation. Enter total existing-to-remain wall, roof, vertical fenestration and skylight areas as EXISTING. Enter total altered envelope assembly areas as NEW. If resulting total building WWR exceeds 30% and/or SSR exceeds 5%, refer to C503.3.2 and C503.3.3 for prescriptive compliance alternatives. If complying via component performance, complete ENV-UA per instructions for alteration + existing projects.*

Vertical Fenestration and Skylight Area Calculation	Total Vertical Fenestration Area (rough opening)	NET Exterior Above Grade Wall Area	Total Skylight Area (rough opening)	NET Exterior Roof Area
New	<b>2987</b>	<b>9880</b>	<b>0</b>	<b>3312</b>
Existing	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total	<b>2,987</b>	<b>9,880</b>	<b>0</b>	<b>3,312</b>
		Vertical Fenestration-to-Wall Ratio (WWR) <b>23.2%</b>	Skylight-to-Roof Ratio (SRR)	

**Exempt Single Glass**  
Always enter exempt glazing area here.

Area \_\_\_\_\_

Enter area here and: if complying prescriptively exempt area MUST also be included in total vertical fenestration in cell D30; If complying via component performance do not enter exempt glazing on ENV-UA or ENV-SHGC.

**Mechanical Equipment Penetrations**  
Always enter mech. equipment area here.

Area \_\_\_\_\_

<b>Vertical Fenestration Area Compliance</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Vertical Fenestration Area</div> <div style="width: 85%;"><b>VERTICAL FENESTRATION AREA COMPLIES WITH MAXIMUM ALLOWANCE</b></div> </div>
<b>Skylight Area Compliance</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Skylight Area</div> <div style="width: 85%;"><b>NO SKYLIGHT PROPOSED. COMPLIES WITH MAXIMUM ALLOWANCE.</b></div> </div>

**Maximum Prescriptive Vertical Fenestration (%)** 35% per C402.4.1.1

**Vertical Fenestration Alternates**

☐ High performance fenestration U-factors and SHGC per C402.4.1.1.2

☐ 50% or more of CONDITIONED floor area is within DLZ per C402.4.1.1.1

Show locations of qualifying daylight zone areas and ft<sup>2</sup> on project plans.

For Daylight Zone Area Calculations -

a) Sidelight areas include primary + secondary daylight zone areas.

b) Include overlapping toplight and sidelight daylight zone areas under Toplight.

Daylight Zone Calculations			
Daylight Zone Fenestration Alternate Not Selected. No Calculations Required	Sidelight Daylight Zone Area	Toplight Daylight Zone Area	Percent Daylight Zone Area

**Street Level Retail**  
If C402.4.1 Street Level Retail glazing exception taken for any portion of building read Street Level Retail instructions on Readme.

Street Level Retail with other areas  <input type="radio"/>	Enter gross wall area per C402.4.1 exception requirements: <b>n/a</b>  Enter total window area in Street Level Retail qualified wall : <b>n/a</b>  Area of window transferred from other areas: <b>n/a</b>
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# Envelope Summary, pg. 3

ENV-SUM

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Project Title: <b>Sound 31st</b>		Date: <b>11/03/2021</b>			
<b>Single Story Spaces Requiring Skylights</b>  <i>In these spaces a minimum of 50% of the floor area shall be within a skylight daylight zone (DLZ). Refer to C402.4.2 for requirements.</i>  <i>SRR = Skylight to roof ratio</i>	<i>List all enclosed spaces that exceed 2,500 ft², have ceiling height greater than 15 ft, and are space types required to comply with this provision. Indicate aperture with "AP" prefix ( AP 1.1%)</i>				
	Space	Area (ft²)	DLZ Area (ft²)	SRR or Aperture	Exception
<b>Envelope Exemptions</b>					
<b>Low Energy and Semi-heated Spaces</b>	<i>Low energy spaces per C402.1.1.1 are exempt from the thermal envelope provisions. Uncooled, semi-heated spaces heated by systems other than electric resistance are exempt from wall insulation provisions only per C402.1.1.2.</i>  <i>List all installed equipment in spaces claiming this exemption to verify eligibility based on installed peak heating and cooling capacity per sf.</i>				
		Wall Insulation R-Value	Roof Insulation R-Value	Overall Average U-Factor	
<b>Equipment Buildings</b>  <i>Equipment buildings are exempt from the thermal envelope provisions per C402.1.2.</i>  <i>The following shall be met to be eligible: building size ≤ 500 sf, average wall/roof U-factor ≤ U-0.20, electronic equipment load ≥ 7 watts/sf, heating system output capacity ≤ 17,000 btu/h. Cooling system capacity not limited. Heat pumps can be larger than 17,000Btuh if cooling efficiency is 15% better than Table C403.3.2(2).</i>	Equipment Building Envelope				
		Electronic equipment power (watts/sf)			
		Cooling system capacity (Btu/hr)			
		Heating system output capacity (Btu/hr)			
		Heat pump system capacity (Btu/hr)			
		Heat pump system cooling efficiency			
		Heat pump code required cooling efficiency			

# Component Performance Path, pg. 1

ENV-UA

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Revised Mar 2021 rev. 1

<b>Project Title:</b> Sound 31st						<b>Date:</b> 11/03/2021			
<b>Target Insulation Allowance:</b> Fully Conditioned Space - Commercial, Group R, Mixed Use						For SDCI Use			
<b>Calculation Adjustments</b> None									
<b>Fenestration Area</b> as % gross above-grade wall area <b>23.2%</b> Max. Target: <b>35.0%</b>									
<b>Skylight Area</b> as % gross roof area Max. Target: <b>5.0%</b>									
<b>Vertical Fenestration Alternates:</b> None Selected on ENV-SUM									
<b>For Stand-alone Projects<sup>14,15</sup></b>				Vertical Fenestration		Net Wall		User Note	
<b>Existing-to-remain Areas</b>				Skylights		Net Roof			
Envelope Component				Proposed UA			Target UA		
Cavity+CI		Plan/Detail #	U-factor Source & Table # <sup>2</sup>	U-factor	x Area (A)	= UA (U x A)	U-factor	x Area (A) = UA (U x A)	
Roofs	Deck	R=					0.027		
		R=					Above Deck Insulation	U-0.027	
		R=							
	Mtl Bld	R=					0.027		
		R=					Metal Building	U-0.027	
		R=							
	Joist/Rfr	R=					0.027		
		R=					Joist/single rafter	U-0.027	
		R=							
	Attic/Oth	R= 38+20	RW1a A5.00	Table A102.1: Flat Roof + Roof Deck	0.018	3312	59.6	0.021	3312 69.5
		R=					Single raft, attic, other	U-0.021	
		R=							
Opaque Walls - Above Grade <sup>4,6,7</sup>	Steel	R=					0.055		
		R=					Steel/metal frame	U-0.055	
		R=							
	Mtl Bld.	R=					0.052		
		R=					Metal Building	U-0.052	
		R=							
	Wood/Oth	R= 21+0	WF1   A5.00	Appendix A - A103.3.1(5)	0.054	9796	529.0	0.051	9796 499.6
		R=					Wood Frame, other	U-0.051	
		R=							
	Mass	R=					0.057		
		R=					Mass Wall	U-0.057	
		R=							
Transfer <sup>5</sup>	R=					0.200			
	R=					Mass Transfer Deck	U-0.20		
	R=								
Intr. Slab	R=					0.100			
	R=					Slab piercing wall ins	U-0.10		
	R=								
Below Grd	Wall <sup>4</sup>	R= 13+10	CC1   A5.00	Appendix A - A103.3.7.1(2)	0.049	1732	84.8	0.070	1732 121.2
		R=					Assumed to be Mass Wall	U-0.07	
R=									
Floors <sup>8</sup>	Mass	R=					0.031		
		R=					Mass Floor	U-0.031	
		R=							
	Mtl Joist	R= 38+0	FW2   A5.00	Table C402.1.4   See Detail C3 on A6.00	0.029	89	2.6	0.029	89 2.6
		R=					Joist/Framing, metal	U-0.029	
		R=							
Wd Joist	R=					0.025			
	R=					Joist/Framing, wood	U-0.025		
	R=								

	Area <sup>1</sup>	UA	Area <sup>1</sup>	UA
Page 1 Subtotal	14929	676	14929	693

# Component Performance Path, pg. 2

ENV-UA

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<b>Project Title:</b> Sound 31st							<b>Date:</b> 11/03/2021			
<b>Fenestration Area</b> as % gross above-grade wall area <b>23.2%</b> Max. Target: <b>35.0%</b>							For Building Department Use			
<b>Skylight Area</b> as % gross roof area Max. Target: <b>5.0%</b>										
Building Component				Proposed UA			Target UA			
Ins. R		Plan/Detail #	F-factor Source & Table # <sup>9</sup>	F-factor	x Perimeter	= FP(F x P)	F-factor	x Perimeter =	FP (F x P)	
Slab-on-grade <sup>8</sup>	Unheated	R= 10	FC-0   A5.00	Appendix A - A106.1 (Horizontal for 2')	0.700	262	183.1	0.540	262	141.2
		R=						Slab-On-Grade U-0.55		
	Heated	R=						0.550		
		R=						Heated Slab-On-Grade U-0.54		
Schedule ID			U-factor Source <sup>10,11</sup>	U-factor	x Area (A)	= UA (U x A)	U-factor	x Area (A) =	UA (U x A)	
Doors <sup>6,9</sup>	Swinging	A5.20 - Door Schedule	NFRC	0.370	84	31.1	0.370	84	31.1	
							Opaque Swing Doors U-0.37			
	Garage							0.600		
							Garage Door, <14% Glaz. U-0.60			
Other							0.340			
							Opaque rollup & sliding U-0.34			
Vertical Fenestration <sup>6,11</sup>	AW, fixed						0.34			
							AW, Fixed U-0.34			
	AW, op.						0.36			
							AW, Operable U-0.36			
	Mtl entry	Door 101 - A5.20	NFRC	0.60	23	13.5	0.60	23	13.5	
							Metal Frame, Entrance Dr U-0.60			
Other, fix	Vinyl Windows - A5.10	NFRC - Operation Type F	0.26	2051	533.3	0.26	2051	533.3		
						Non-AW, Fixed U-0.26				
Other, op	Vinyl Windows - A5.10	NFRC - Operation Type C	0.28	914	255.8	0.28	914	255.8		
						Non-AW, Operable U-0.28				
Skylights <sup>11</sup>	All Types						0.45			
							All types U-0.45			
<b>Refrigerated Space Freezer Floors</b>				<b>Proposed UA</b>			<b>Target UA</b>			
CI		Plan/Detail #	U-factor Source & Table # <sup>2</sup>	U-factor	x Area (A)	= UA (U x A)	U-factor	x Area (A) =	UA (U x A)	
Freezer Floor	R=									
	R=									
	R=						Freezer Floor			

	Area	UA	Area	UA
Page 2 Subtotal	3333	1017	3333	975
Page 1 Subtotal	14929	676	14929	693
Project Total	18261	1693	18261	1668

TO COMPLY - The Proposed Total UA shall not exceed the Target Total UA.

Component Performance Compliance (UA)

UA DOES NOT COMPLY

Refrigerated Space Windows In Doors <sup>12, 13</sup>

		Plan/Detail #	Description	Cooler / Freezer	Double Pane Glass	Triple Pane Glass	Inert Gas Filled	Heat Reflective Treated Glass
Glazing in Doors	In Door							
	Reach in							

**Note 1** - If vertical fenestration or skylight area exceeds maximum allowed per C402.4.1, then Target Area Adjustment of all applicable envelope elements will be calculated automatically by the compliance form. Refer to Target Area Adjustments worksheet for this calculation.

**Note 2** - Opaque assembly U-factors shall come from Appendix A or be calculated per approved method as specified in C402.1.5.1.

**Note 3** - Reserved.

**Note 4** - Semi-heated spaces - For spaces eligible for this wall insulation exception, the UA calculation excludes all wall assemblies. However, wall area values are required to run the window-to-wall ratio calculation. Enter into form all wall types in the semi-heated space. Enter the sf area of each wall type and enter "1" for the U-factor.

**Note 5** - Mass transfer slab edges must be covered with an assembly having an overall U-factor of 0.2.

**Note 6** - Demising walls, doors, and vertical fenestration separating spaces with different degrees of space conditioning (unconditioned, semi-heated, fully conditioned) shall be included only on the ENV-UA form for the space with the greatest degree of space conditioning.

**Note 7** - Enter mechanical equipment penetrations (C402.1.4.2) as the wall type of the surrounding wall. If total penetration area is less than or equal to 1% of net above grade wall (ENV-SUM, E34), the proposed U-factor shall be equal to that of the surrounding wall and does not need to be separately listed. If total penetration area is greater than 1% of net wall then the penetrations must be entered separately and the proposed U-factor shall be U-0.5.

**Note 8** - Concrete columns and walls penetrating the floor insulation and concrete slab floors directly above electrical vaults do not need to be listed as floors or slabs. These components comply without insulation while the remaining floor must be fully insulated.

**Note 9** - Slab-on-grade F-Factors shall come from Appendix A or calculated per approved method as specified in C402.1.5.1.

**Note 10** - Opaque door U-factors shall come from Appendix A or calculated per approved method as specified in C402.1.5.1. A door is defined as opaque if less than 50% of the door area has glazing.

**Note 11** - Fenestration assembly U-Factors shall be the manufacturer's NFRC product rating, which includes the glazing and frame, or shall be the default value per Section C303.1.3.

**Note 12** - Refrigerated Coolers - Target U-factors for cooler roof, wall and door assemblies are per C410. Enter proposed information under the most similar assembly type. Target F-factors for slab-on-grade floors are per C402. Target U-factors for floors that separate a cooler from a non-cooler space (unconditioned and conditioned) are per C402. Target U-factors for vertical fenestration (not within cooler doors) are per C402. Enter only the opaque portion of refrigerated space doors. Windows within doors and reach-in display case doors shall comply with C410 prescriptive requirements.

**Note 13** - Refrigerated Freezers - Target U-factors for freezer roof, wall and door assemblies are per C410. Enter proposed information under the most similar assembly type. Target U-factor for insulated freezer floors is per C410. Insulation is required under the entire freezer floor. Enter proposed information in the Freezer Floor section. If the freezer floor assembly rests on top of a standard floor, the vertical edge of the freezer floor shall be entered as a section of freezer wall. If freezer floor insulation is installed as integral to or applied underneath a slab-on-grade or exposed floor, this floor area shall be thermally broken from the surrounding floor. Enter proposed thermal break information in the Freezer Floor section and note it as In-Floor Thermal Break. Enter only the opaque portion of freezer doors. Windows within doors and reach-in display case doors shall comply with C410 prescriptive requirements.

**Note 14** - Stand alone projects - Enter total existing-to-remain sf areas for net above grade walls (including opaque doors), net roof, vertical fenestration and skylights in section provided at top of ENV-UA form. Enter UA information for new envelope assemblies in Building Components section.

**Note 15** - Addition + Existing, Alteration + Existing projects - Enter sf areas and estimated U-factors for all existing-to-remain envelope assemblies in Building Components section. Identify these assemblies as EXISTING in U-factor Source & Table # column. Enter UA information for new addition and altered envelope assemblies in Building Components section. Existing and new information will autofill into the Vertical Fenestration and Skylight Area Calculation section of ENV-SUM as all NEW. Does not affect calculation results.



# Project Summary

PROJ-SUM

2018 Seattle Energy Code Compliance Forms for Commercial Buildings including R2, R3, & R4 over 3 stories and all R1 Revised Mar 2021 rev. 1

<b>General Info</b>  <i>This PROJ-SUM form shall be provided as a cover sheet for all compliance form submittals. Project Title shall match plans title block.</i>	<b>Project Title:</b> Sound 31st	<b>Date:</b> 5/25/2022
	<b>Project Street Address:</b> 4734 31st Ave S	For SDCI Use
	<b>Project City, County, Zip:</b> Seattle, WA 98108	
	<b>Project Owner or Rep:</b> 4734 31st Ave S LLC	
	<b>Jurisdiction:</b> City of Seattle	

<b>Project Description</b>  <i>Select all that apply to the scope of project.</i>  <i>Select Addition + Existing or Alteration + Existing if the existing building will be combined with the addition or alteration to demonstrate compliance per Section C502.1 or C503.1.</i>	<b>New Construction and Additions</b> <input checked="" type="checkbox"/> New Building <input type="checkbox"/> Building Addition		
	<b>Existing Building Retrofit</b> <input type="checkbox"/> Alteration <input type="checkbox"/> Change of Occupancy <input type="checkbox"/> Change in Space Conditioning <input type="checkbox"/> Historic Building <input type="checkbox"/> Substantial Alteration		
<b>Building Elements Scope - Select all that apply</b> <input type="checkbox"/> All <input checked="" type="checkbox"/> Building Envelope <input type="checkbox"/> Mechanical Systems <input type="checkbox"/> Service Hot Water Systems <input type="checkbox"/> Lighting Systems <input type="checkbox"/> Electrical Systems			

<b>Occupancy Type</b>	<input type="radio"/> All Commercial <input checked="" type="radio"/> Group R - R2, R3, & R4 over 3 stories and all R1 <input type="radio"/> Mixed Use		
	<i><b>Mixed Use</b> - Building is greater than three stories above grade and it has both Commercial and Group R occupancies.</i> <i><b>Mixed Occupancy</b> - Building is three stories or less above grade and it has both Commercial and Group R2, R3 or R4 occupancies. Select All Commercial to document compliance for the commercial areas of the building. The residential spaces shall comply with the WSEC Residential Provisions.</i>		

<b>Space Conditioning Categories</b>  <i>Select all that apply to the scope of project</i>	<input checked="" type="checkbox"/> Fully Conditioned <input type="checkbox"/> Unconditioned <sup>3</sup> <input type="checkbox"/> Refrigerated Spaces (Warehouse and/or Walk-in <sup>1</sup> ) <input type="checkbox"/> Low energy <sup>3</sup> <input type="checkbox"/> Semi-heated <sup>2</sup> <input type="checkbox"/> Greenhouse <sup>4</sup> <input type="checkbox"/> Personal wireless service facility shelter <input type="checkbox"/> Equipment building <input type="checkbox"/> Standalone elevator hoistway		
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<b>Floor Area and Stories</b>	Floors Above Grade	Building Gross Conditioned Floor Area	Project Gross Conditioned Floor Area
	4	16,381	16381.0

<b>General Compliance Path</b>	<input type="radio"/> Prescriptive/Component Performance <input checked="" type="radio"/> Total Building Performance <input type="radio"/> Target Performance Path		
	<i><b>Prescriptive / Component Performance</b> - Projects shall demonstrate compliance with all applicable mandatory and prescriptive requirements of this code. Refer to C401.2, Item 1 for more information. Compliance forms to include with a Prescriptive submittal: All applicable ENV, LTG, and MECH.</i>		
	<i><b>Total Building Performance</b> - Projects complying via total building performance (TBP) shall include a summary of results from a whole building energy model per Section C407 and shall demonstrate compliance with all applicable mandatory provisions in this Code. Refer to Section C401.2, Item 2 for more information. Compliance forms to include with a TPB submittal: All applicable ENV, LTG, and MECH, and the Energy Analysis Summary.</i>		
	<i><b>Target Performance Path</b> - Projects complying via the Target Performance Path (TPP) shall include a summary of results from a whole building energy model per Section C407 and shall demonstrate compliance with all applicable mandatory provisions of C407.2. Refer to Section C401.3 for more information. Compliance forms to include with a TPP submittal: All applicable ENV, LTG, and MECH, and the Energy Analysis Summary.</i>		

- Note 1 - Refrigerated Spaces - They shall comply with the envelope and refrigeration equipment requirements in Section C410. Warehouse coolers and freezers shall also comply with the envelope requirements in C402. C410 takes precedence for overlapping requirements.
- Note 2 - Semi-heated Spaces - If heated with equipment other than electric resistance of limited capacity and not cooled may take an exemption for wall insulation. All other envelope assemblies shall comply with the thermal envelope provisions. See C402.1.1.2 for details.
- Note 3 - Low Energy spaces including unconditioned spaces are exempt from all provisions in WSEC Section C402 Building Envelope, however all other applicable provisions in the Code do apply including lighting, mechanical, service water heating, etc.
- Note 4 - Eligible greenhouses are defined as spaces that maintain a specialized sunlit environment that is used exclusively for cultivation, protection and maintenance of plants. Cooling with outside air and/or evaporative cooling is allowed, but cooling equipment that requires a condensing unit is NOT eligible. Radiant heating systems, gas or propane fired condensing heating systems and heat pumps with cooling disabled are allowed but all other heating systems are not.