

| CSA STANDARD F280-12 COMPLIANCE                                                                                                                                                                                                                                                            |  |                                                                           |  | CSA F280-12<br>Form Set Ver 24.10                                                                                                                |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------|---|
| NBC 2015: 9.33.5.1.; 9.36.3.2. & 9.36.5.15; NBC 2020; 9.33.5.1.; 9.36.3.2.; 9.36.5.15 (5); 9.36.8.9. (1);                                                                                                                                                                                  |  |                                                                           |  |                                                                                                                                                  |   |
| These documents issued for the use of <b>BC MINISTRY OF HOUSING</b>                                                                                                                                                                                                                        |  |                                                                           |  | <b>PROJECT #</b>                                                                                                                                 |   |
| and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.                                                                                                                                                                |  |                                                                           |  | 1                                                                                                                                                | 2 |
| <b>BUILDING LOCATION</b>                                                                                                                                                                                                                                                                   |  |                                                                           |  |                                                                                                                                                  |   |
| Model: QPLX-01-UNIT 2                                                                                                                                                                                                                                                                      |  | 3 Site: SOUTH                                                             |  | 6                                                                                                                                                |   |
| Address:                                                                                                                                                                                                                                                                                   |  | 4 Lot:                                                                    |  | 7                                                                                                                                                |   |
| City & Province: VANCOUVER, BC                                                                                                                                                                                                                                                             |  | 5 Postal Code:                                                            |  | 8                                                                                                                                                |   |
| <b>COMPLIANCE</b> <small>(See page 2 for input summary and page 3 for room by room values)</small>                                                                                                                                                                                         |  |                                                                           |  |                                                                                                                                                  |   |
| Submittal is for: <input type="checkbox"/> Whole house <small>aw</small>                                                                                                                                                                                                                   |  | <input checked="" type="checkbox"/> Room by Room <small>ar</small>        |  | Units: <input checked="" type="checkbox"/> Imperial <input type="checkbox"/> Metric <small>b</small>                                             |   |
| <b>HEATING</b>                                                                                                                                                                                                                                                                             |  |                                                                           |  |                                                                                                                                                  |   |
| <b>Minimum Heating Capacity:</b>                                                                                                                                                                                                                                                           |  | <b>10,549</b>                                                             |  | <b>BTUH</b> <small>(total building heat loss as per 5.2.7)</small>                                                                               |   |
| 5.3.1 The total heat output capacity of all heating systems installed in a building shall not be less than 100% of the total building heat loss as determined in Clause 5.2.7.                                                                                                             |  |                                                                           |  |                                                                                                                                                  |   |
| 5.3.2 The combined heating delivery of the heating systems that serve a room or space shall not be less than 100% of the space heat loss , as determined in Clause 5.2.6.. (If room by room submittal, see page 2 for individual space heating requirements)                               |  |                                                                           |  |                                                                                                                                                  |   |
| <b>COOLING</b>                                                                                                                                                                                                                                                                             |  |                                                                           |  |                                                                                                                                                  |   |
| <b>Nominal Cooling Capacity:</b>                                                                                                                                                                                                                                                           |  | <b>10,379</b>                                                             |  | <b>BTUH</b> <small>(Nominal Cooling Capacity as per 6.3.1)</small>                                                                               |   |
| <b>Minimum Cooling Capacity:</b>                                                                                                                                                                                                                                                           |  | <b>8,303</b>                                                              |  | <b>BTUH</b> <small>e</small>                                                                                                                     |   |
|                                                                                                                                                                                                                                                                                            |  | <b>Maximum Cooling Capacity:</b>                                          |  | <b>12,973</b>                                                                                                                                    |   |
|                                                                                                                                                                                                                                                                                            |  | <b>BTUH</b> <small>f</small>                                              |  |                                                                                                                                                  |   |
| 6.3.2 Except as provided in Clause 6.3.3., the cooling system capacity shall not be less than 80% of the nominal cooling capacity for the building, as determined in Clause 6.3.1.. In no case shall it be less than the nominal cooling capacity of the building minus 1800 W (0.51 tons) |  |                                                                           |  |                                                                                                                                                  |   |
| 6.3.3 Where the cooling system is added to an existing heating system, it's capacity in Watts shall not exceed 18 times the capacity of the air-handling capacity of the existing system in L/s. (Cooling capacity in Tons not more than 1.0 per 400 CFM of air handling capacity)         |  |                                                                           |  |                                                                                                                                                  |   |
| 6.3.4 Except for ground-source and water source heat pumps used for cooling, and as permitted in Clause 6.3.5, the installed cooling capacity shall not exceed 125% of the nominal cooling capacity for the building, as determined in Clause 6.3.1.                                       |  |                                                                           |  |                                                                                                                                                  |   |
| 6.3.5 If the nominal cooling system capacity for the building, as determined in Clause 6.3.1. is less than 6,000 W (1.7 tons), the installed cooling system capacity may exceed the nominal cooling system capacity for the building by up to 1750 W (0.49 tons).                          |  |                                                                           |  |                                                                                                                                                  |   |
| <b>ATTACHED DOCUMENTS</b>                                                                                                                                                                                                                                                                  |  |                                                                           |  |                                                                                                                                                  |   |
| <input checked="" type="checkbox"/> Design Summary <small>g</small>                                                                                                                                                                                                                        |  | <input checked="" type="checkbox"/> Room by Room Results <small>h</small> |  | Other: <small>i</small>                                                                                                                          |   |
| Other: <small>j</small>                                                                                                                                                                                                                                                                    |  |                                                                           |  |                                                                                                                                                  |   |
| Notes: <small>j</small>                                                                                                                                                                                                                                                                    |  |                                                                           |  |                                                                                                                                                  |   |
| <b>CALCULATIONS PERFORMED BY</b>                                                                                                                                                                                                                                                           |  |                                                                           |  |                                                                                                                                                  |   |
| Name: TODD BACKUS <small>55</small>                                                                                                                                                                                                                                                        |  | Designers Signature, Stamp Imprint<br>or other certification mark         |  | I, _____                                                                                                                                         |   |
| Company: TECA <small>56</small>                                                                                                                                                                                                                                                            |  |                                                                           |  | have reviewed and take responsibility for the design                                                                                             |   |
| Address: PO BOX 73105, EVERGREEN RO <small>57</small>                                                                                                                                                                                                                                      |  |                                                                           |  | work described in this document & I am qualified in the                                                                                          |   |
| City & Prov.: SURREY, BC <small>58</small>                                                                                                                                                                                                                                                 |  |                                                                           |  | appropriate categories. <small>63</small>                                                                                                        |   |
| Postal Code: V3R 0J2 <small>59</small>                                                                                                                                                                                                                                                     |  |                                                                           |  | Accreditation Reference 1 <small>64</small>                                                                                                      |   |
| Phone: 604-594-5956 <small>60</small>                                                                                                                                                                                                                                                      |  |                                                                           |  | Accreditation Reference 2 <small>65</small>                                                                                                      |   |
| Fax: - <small>61</small>                                                                                                                                                                                                                                                                   |  |                                                                           |  | Issued for: <small>66</small>                                                                                                                    |   |
| E-mail: TBACKUS@TECA.CA <small>62</small>                                                                                                                                                                                                                                                  |  |                                                                           |  | Issued for: <small>67</small>                                                                                                                    |   |
|                                                                                                                                                                                                                                                                                            |  | 68 Page: 1 of 3                                                           |  |                                                                                                                                                  |   |
|                                                                                                                                                                                                          |  | <b>TECA HEAT LOSS &amp; HEAT GAIN CALCULATOR</b>                          |  |  <b>HVAC DESIGNERS OF CANADA<br/>VERIFIED F280 SOFTWARE</b> |   |

| CSA F280-12 INPUT SUMMARY                                                                                                                                                                                                                                                                                                                                              |  |                                                            |  |                                                                                                                                                                                                                                                                    |  | CSA F280-12<br>Form Set Ver 24.10 |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|--|
| These documents issued for the use of <u>BC MINISTRY OF HOUSING</u>                                                                                                                                                                                                                                                                                                    |  |                                                            |  |                                                                                                                                                                                                                                                                    |  | PROJECT #:                        |  |
| and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.                                                                                                                                                                                                                                            |  |                                                            |  |                                                                                                                                                                                                                                                                    |  | QLPX1-U2-SOUTH                    |  |
| BUILDING LOCATION                                                                                                                                                                                                                                                                                                                                                      |  |                                                            |  |                                                                                                                                                                                                                                                                    |  |                                   |  |
| Model: QPLX-01-UNIT 2                                                                                                                                                                                                                                                                                                                                                  |  | Site: SOUTH                                                |  | Lot:                                                                                                                                                                                                                                                               |  |                                   |  |
| Address:                                                                                                                                                                                                                                                                                                                                                               |  | City/ Prov: VANCOUVER, BC                                  |  | Post. Code:                                                                                                                                                                                                                                                        |  |                                   |  |
| CALCULATION BASED ON (See Following Page For Results)                                                                                                                                                                                                                                                                                                                  |  |                                                            |  |                                                                                                                                                                                                                                                                    |  |                                   |  |
| Dimensional Info Based On:                                                                                                                                                                                                                                                                                                                                             |  | drawings done by: Leckie Studio Architecture + Design Inc. |  |                                                                                                                                                                                                                                                                    |  |                                   |  |
| Attachment: Row House - Middle Unit                                                                                                                                                                                                                                                                                                                                    |  | Front Facing: S                                            |  | Assumed?                                                                                                                                                                                                                                                           |  | Yes                               |  |
| # of Stories: 3 (4 total floors)                                                                                                                                                                                                                                                                                                                                       |  | Air Tightness: 1.5                                         |  | Assumed?                                                                                                                                                                                                                                                           |  | Yes                               |  |
| Weather Location: Vancouver (city hall)                                                                                                                                                                                                                                                                                                                                |  | Internal Shading: No                                       |  | Assumed?                                                                                                                                                                                                                                                           |  | Yes                               |  |
| Wind Exposure, Site: Low crops, x/H > 20                                                                                                                                                                                                                                                                                                                               |  | Occupants: 3                                               |  | Assumed?                                                                                                                                                                                                                                                           |  | Yes                               |  |
| Wind Sheltering, Building: Light local shielding                                                                                                                                                                                                                                                                                                                       |  | Ventilated? Non-dedicated HRV                              |  | HRV/ERV?                                                                                                                                                                                                                                                           |  | Yes                               |  |
| Units: <input checked="" type="checkbox"/> Imperial <input type="checkbox"/> Metric                                                                                                                                                                                                                                                                                    |  | HRV ASE %: 65%                                             |  | HRV ATRE %:                                                                                                                                                                                                                                                        |  | 0%                                |  |
| HEATING DESIGN CONDITIONS                                                                                                                                                                                                                                                                                                                                              |  |                                                            |  | COOLING DESIGN CONDITIONS                                                                                                                                                                                                                                          |  |                                   |  |
| Outdoor Temp: -7°C, 19.4°F                                                                                                                                                                                                                                                                                                                                             |  | Indoor Temp: 22°C, 71.6°F                                  |  | Mean Soil Temp: 11°C, 51.8°F                                                                                                                                                                                                                                       |  | Outdoor Temp: 28°C, 82.4°F        |  |
| Soil Cond. Normal conductivity: dry sand, loam, clay                                                                                                                                                                                                                                                                                                                   |  | Water Table Depth: Normal (7-10m, 23-33ft)                 |  | Slab Fluid Temp: None                                                                                                                                                                                                                                              |  | Range: 7°C, 44.6°F                |  |
| Indoor Temp: 24°C, 75.2°F                                                                                                                                                                                                                                                                                                                                              |  |                                                            |  | Latitude: 49.25                                                                                                                                                                                                                                                    |  |                                   |  |
| ABOVE GRADE WALLS                                                                                                                                                                                                                                                                                                                                                      |  |                                                            |  | BELOW GRADE WALLS                                                                                                                                                                                                                                                  |  |                                   |  |
| ID 1: 1/ (TYP. EXT. WALL: R-22), inside wall, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 16"OC, R20 (5.5"), // Sheathing materials, Softwood plywood, // Insulation, Mineral wool and glass fibre, // Cladding materials, Vinyl siding, outside air; 22.42R-VALUE                                                                 |  |                                                            |  | ID 1:                                                                                                                                                                                                                                                              |  |                                   |  |
| FLOOR HEADERS                                                                                                                                                                                                                                                                                                                                                          |  |                                                            |  | CEILINGS                                                                                                                                                                                                                                                           |  |                                   |  |
| ID 1: 1/ (TYP. HEADER: R-22); 22R-VALUE                                                                                                                                                                                                                                                                                                                                |  |                                                            |  | ID 1: 1/ (TYP. ROOF: R-32), inside ceilings, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 24"OC, custom insulation, // Sheathing materials, Softwood plywood, // Roofing materials, Built-up roofing, outside air; 32.01R-VALUE |  |                                   |  |
| WINDOWS                                                                                                                                                                                                                                                                                                                                                                |  |                                                            |  | EXPOSED FLOORS                                                                                                                                                                                                                                                     |  |                                   |  |
| ID 1: 1/ (Windows (Energy modelling requirements)) custom, USI: 1.3, SHGC: 0.25                                                                                                                                                                                                                                                                                        |  |                                                            |  | ID 1: 1/ (TYP. EXPOSED FLOOR), inside floor, // Finished floor w/ underlay, // 3/4" ply, // framing w/ cavity insulation: softwood (default), 2x12 joists @ 16"OC, R35 (9.25") // Exterior finished material // outside air: 30.98R-VALUE                          |  |                                   |  |
| SKYLIGHTS                                                                                                                                                                                                                                                                                                                                                              |  |                                                            |  | DOORS                                                                                                                                                                                                                                                              |  |                                   |  |
| ID 1: 1/ (SKYLIGHT) double glazed, Fixed — Wood/Vinyl, insulating, low-E, 13mm Air, USI: 1.96, SHGC: 0.47                                                                                                                                                                                                                                                              |  |                                                            |  | ID 1: 1/ (EXT. DOOR) Insulated metal — Polyurethane core, without storm door, USI: 0.91                                                                                                                                                                            |  |                                   |  |
| FOUNDATIONS                                                                                                                                                                                                                                                                                                                                                            |  |                                                            |  |                                                                                                                                                                                                                                                                    |  |                                   |  |
| ID 1: 1/ [Heated Crawlpace] Concrete Slab & Walls, insulation: below slab = 2.64RSI, interior wall = 2.11RSI, exterior wall = 2.11RSI (configuration #69) // any first storey construction type, interior surface of wall insulated over full-height, exterior surface of wall insulated over full-height, sub-surface of floor slab fully insulated but no insulation |  |                                                            |  |                                                                                                                                                                                                                                                                    |  |                                   |  |
| Issued: August 22, 2025                                                                                                                                                                                                                                                                                                                                                |  |                                                            |  | Page: 2-2 of 3                                                                                                                                                                                                                                                     |  |                                   |  |
|  <b>TECA HEAT LOSS &amp; HEAT GAIN CALCULATOR</b>                                                                                                                                                                                                                                    |  |                                                            |  |  <b>HVAC DESIGNERS OF CANADA</b><br><b>VERIFIED F280 SOFTWARE</b>                                                                                                             |  |                                   |  |

| CSA F280-12 INPUT SUMMARY                                                                                                   |                        |        |                |                                       |                                                 | CSA F280-12<br>Form Set Ver 24.10                                                                                                      |               |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------|--------|----------------|---------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------|
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| Model: QPLX-01-UNIT 2                                                                                                       |                        |        | 3 Site: SOUTH  |                                       |                                                 | 6                                                                                                                                      |               |
| Address:                                                                                                                    |                        |        | 4 Lot:         |                                       |                                                 | 7                                                                                                                                      |               |
| City & Province: VANCOUVER, BC                                                                                              |                        |        | 5 Postal Code: |                                       |                                                 | 8                                                                                                                                      |               |
| CALCULATION RESULTS - ROOM BY ROOM (BTUH)                                                                                   |                        |        |                |                                       |                                                 |                                                                                                                                        |               |
| #                                                                                                                           | ROOM NAME              | 71     | HEATING        | 72                                    | TOTAL COOLING                                   | 73                                                                                                                                     |               |
| 1                                                                                                                           | (#1)HEATED CRAWL - U2  |        | 1,674          |                                       | 4                                               |                                                                                                                                        |               |
| 2                                                                                                                           | (#2)102-ENTRY & STAIRS |        | 2,944          |                                       | 1,032                                           |                                                                                                                                        |               |
| 3                                                                                                                           | (#3)203-KITCHEN/DINING |        | 1,905          |                                       | 3,467                                           |                                                                                                                                        |               |
| 4                                                                                                                           | (#4)204-LIVING ROOM    |        | 860            |                                       | 2,747                                           |                                                                                                                                        |               |
| 5                                                                                                                           | (#5)205-STUDY          |        | 564            |                                       | 484                                             |                                                                                                                                        |               |
| 6                                                                                                                           | (#6)304-LANDING        |        | 720            |                                       | 1,101                                           |                                                                                                                                        |               |
| 7                                                                                                                           | (#7)305-WASHROOM       |        | 72             |                                       | 63                                              |                                                                                                                                        |               |
| 8                                                                                                                           | (#8)306-BEDROOM 1      |        | 857            |                                       | 550                                             |                                                                                                                                        |               |
| 9                                                                                                                           | (#9)307-BEDROOM 2      |        | 953            |                                       | 930                                             |                                                                                                                                        |               |
| Ventilation Loss (if separate):                                                                                             |                        | 1,177  | BTUH           | 74                                    | Latent Gain (if separate, value or multiplier): |                                                                                                                                        | 2,395 BTUH 75 |
| Total Building Heat Loss (5.2.7):                                                                                           |                        | 10,549 | BTUH           |                                       | Nominal Cooling System Capacity (6.3.1):        |                                                                                                                                        | 10,379 BTUH   |
| See page 1 for heating & Cooling System Capacity Limits                                                                     |                        |        |                | Issued: August 22, 2025               |                                                 | 76 Page: 3 of 3                                                                                                                        |               |
|                                             |                        |        |                | TECA HEAT LOSS & HEAT GAIN CALCULATOR |                                                 |  HVAC DESIGNERS OF CANADA<br>VERIFIED F280 SOFTWARE |               |