DESIGN NARRATIVE

DATE: January 8, 2024

PROJECT: 910 Telecom, 910 15th Street – Denver, CO
G3 Architecture Project No. 22-113

ENTITY: Krystal Marquez, Senior City Planner
City and County of Denver Landmark Preservation
201 W. Colfax Ave., Dept. 205
Denver, CO 80202

910 Telecom proposes to place a new chiller for data center equipment in an empty space on
the existing roof of a building at 910 15th Street.

910 15th Street has historically housed telephone switching gear, and has transitioned to a
building housing data center equipment as traditional telephone switching gear is phased out.

The heat generated by telephone switching gear and data center equipment requires cooling of
that equipment.

G3 Architecture, Unified Building Group (the general contractor), and its structural, mechanical,
plumbing and electrical engineering consultants worked with 910 Telecom over the past
several months in the design and placement of the new chiller.

The existing roof (see Roof Plan on Sht. A201) has (20) existing chillers, (5) existing generators,
(4) fuel tanks and a boiler placed across the surface of the roof. The only open area on the roof
is at the southeast corner of the roof, and a portion of the east edge in the middle of the roof.

Placement of Chiller

Structural:

- The proposed chiller weighs 29,556 pounds and must be placed over existing columns
  and beams.

- The proposed chiller is 49’-11” (long) x 7’-4” (wide) x 8’-4” (high).

- At the southeast corner of the building, existing columns and beams between grid lines
  5 and 6 and E and F are able to directly support the 29,556 pound load.

- The only other open roof area, on the east side of the building, does not allow the
  29,556 pound chiller load to be optimally placed over existing columns and beams.

Mechanical:

- Locating the chillers in the middle of the east side of the roof would require the
  relocation of existing condensers.
• The southeast location significantly reduces the amount of line set piping back to the compressor room resulting in higher efficiency of the chiller.

• Chiller efficiency can decrease if placed too closely to adjacent walls. Placing the chiller on the plan east side would cause an efficiency drop due to nearby adjacent walls.

• Because of the crowded roof conditions with the existing equipment, the southeast location was the only area that allowed a chiller of this size to maintain manufacturer required clearances.

• The southeast location allowed the chiller to be setback further (12'-6¼") from the edge of the roof compared to the other open roof area at the middle of the east edge of the roof.

Please let us know of any questions or comments you may have after your review.

G3 Architecture, Inc. – “Architect”

Authorized Signature

Scott R. Higa, AIA, NCARB
Principal
License No. 305622 (CO)

January 8, 2024
Date

cc: Joong Song, Principal, G3 Architecture, Inc.
PERSPECTIVE VIEWS

DATE: January 8, 2024

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Perspective Views

15th Street (note yellow line in aerial plan photo describing distance and origin of the perspective station point)

- View from 80’ away

- View from 100’ away
• View from 150’ away

• View from 200’ away

• The chiller cannot be seen from the distances noted.

Champa Street (note yellow line in aerial plan photo describing distance and origin of the perspective station point)

• View from 65’ away
Note that in all perspective views, the proposed chiller cannot be seen.
Please let us know of any questions or comments you may have after your review.

G3 Architecture, Inc. – “Architect”

Authorized Signature

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January 8, 2024
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### Technical Data Sheet

#### Specifications

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<tr>
<th>Parameter</th>
<th>Value</th>
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<td>Model</td>
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<td>Capacity</td>
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<td>Efficiency</td>
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<td>Noise Level</td>
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<td>Temperature Range</td>
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</table>

#### Features

- **Cooling Capacity:** 3.0 kW
- **Power Factor:** 0.85
- **Noise Level:** 52 dB
- **Voltage:** 208V/230V
- **Current:** 5.0 A
- **Power Rating:** 3.5 kW
- **RPM:** 1440
- **Type:** Right Rotation
- **Temperature Range:** -20°C to 40°C

### Diagram

![Diagram of CH-L Chiller](image)

**NOTE:** A water strainer must be installed at the inlet of the evaporator to protect it from damage. Please refer to the CEMD for additional details.

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**UNIFIED BUILDING GROUP**

**Architecture:** 900 S. Orange Ave.

**Scope:** Roof Top Chiller & Electrical Transformer Improvement

**Project:** 910 Telecom

**Location:** Denver, CO 80202

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**Specs**

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**Dakken Logo**

**910 Telecom**