

August 17, 2018

Timothy Wales, P.E., City Engineer  
City of Saratoga Springs  
474 Broadway  
Saratoga Springs, NY 12866

**RE: 385 Broadway Apartment Project  
Engineering Review**

Dear Mr. Wales:

The LA Group is in receipt of comments from Barton & Loguidice, dated July 19, 2018. The following are responses to the comments.

**General**

**Comment 1:** Has the project received any correspondence from or coordinated with NYSSHPO in regard to the existing NYS Heritage areas or nearby historic district?

**Response 1:** **NYSSHPO correspondence has been added to the SWPPP. Correspondence states the building is non-historic and they have no archaeological concerns.**

**Comment 2:** Provide city with colored elevations showing existing and proposed street trees.

**Response 2:** **Architectural renderings have been included in the DRC submissions, which the City has received.**

**Comment 3:** Are bike racks proposed in the parking garage? These will be most desired for residents as opposed to Broadway which are good for commercial business operations and should be retained.

**Response 3:** **Yes, bike racks are proposed in the northeast corner of the parking garage.**

**SEQR**

**Comment 1:** Why does document list green/landscaping area as zero? There is not much proposed but some lawn and landscaped area is proposed.

**Response 1:** **The land uses and covertypes have been updated on the SEQR document.**

**Water and Sanitary Sewer**

**Comment 1:** Add statement that existing system can provide sufficient quantity and flow rate for sprinkler systems from existing system without fire pumping to boost pressure. Is 6" water service sufficient for large fire event on multiple floors? Confirm anticipated fire flow demand (1,000 GPM) from building architect for appropriate building classifications and considerations of occupancy and construction materials. Confirm fire protection systems and water system capacity meets NYS Insurance Services Office and NFPA standards.

- Response 1:** The fire flow demand will be determined by the building fire protection designer. The architect's mechanical designer will verify the size of the incoming service.
- Comment 2:** Where will a backflow preventer be located for this project? Factor in RPZ and all head losses for fire prevention calculations and indicate available top floor pressures.
- Response 2:** The MEP designer will determine backflow preventer location and configuration inside the building. They will also verify available pressures within the building.
- Comment 3:** Add a calculation of available pressure at the top floor shower heads at 6' above finished floor. Pressure is anticipated to be adequate. Needs to be 35-40 psi minimum.
- Response 3:** The MEP designer will verify available pressures within the building as part of the building plumbing design.
- Comment 4:** How will water be made available for green roof irrigation during extended dry periods?
- Response 4:** During extended dry periods, the green roof will be manually watered by maintenance personnel.

## Stormwater

### *Stormwater Pollution Prevention Plan (SWPPP)/stormwater modeling*

- Comment 1:** We suggest the continued use of the NYSDEC Stormwater Practice worksheets to aide with stormwater calculations green roofs but without exceeding maximum porosity levels. Value for drainage layer porosity seems higher than maximum. Show extent of green roof on the plan set.
- Response 1:** The porosity of the drainage layer has been revised to 25% for the green. The total extent of the green roof is 3,784 SF. The layout of the green roof can be found on detail 5 of plan sheet L-06. Note that since this is a redevelopment project 25% of the WQv is required to be treated. The NYSDEC worksheet for green roofs produces an error in calculations as it does not account for the fact that the project is redevelopment.
- Comment 2:** Use P =1.2 inches in lieu of 1.15. water quality volume will not increase much.
- Response 2:** In accordance with Figure 4.1 of the NYS Stormwater Management Design Manual, the 90<sup>th</sup> percentile rainfall for Saratoga Springs is 1.15 inches. WQv calculations will maintain the 1.15 inch rainfall number as this rainfall depth has been consistently used on projects in Saratoga Springs.
- Comment 3:** The green roof detail lacks detail to know specifics to check calculation assumptions supporting 10-inch per hour infiltration, porosity and drainage layer characteristics.
- Response 3:** Material callouts have been added to the plans. Permeability of soil media ranges according to product data. Infiltration rate used conservative lower end of the permeability range.
- Comment 4:** The green roof detail indicates 1" maximum ponding but the horizontal orifices modeled are above that as well as peak elevations for the storms modeled. Please clarify and provide roof planting plan with slopes to roof drains with proposed elevations.
- Response 4:** The orifices for the green roofs are modeled at 0.1' above the engineered soil in accordance with detail 6 on sheet L-06. The 0.1' maximum ponding refers to the maximum ponding prior to utilization of the overflow orifices. Larger storm events with peak elevations above the overflow orifice are contained by the green roof walls which are lined with a waterproof membrane.

**Comment 5:** Is there an underdrain proposed for the green roof? How does drainage to the drainage layer shown at 2" depth get conveyed out of the roof system?

**Response 5:** **The drainage layer connects directly to the building's roof drainage system. No underdrains are used. Collection of the roof drainage will be detailed by the architect and building MEP designer.**

**Comment 6:** Add in statement that upon completion and one year after to perform site inspection with city of Saratoga Springs staff to identify any needed corrective measures and/or maintenance.

**Response 6:** **The SWPPP states that "All post-construction stormwater management facilities must be inspected annually by a qualified professional, a report prepared and submitted to the City Engineer documenting the inspections as well as the maintenance activities that were completed during the prior year."**

**Comment 7:** Submit NOI as required from revised calculations.

**Response 7:** **The project disturbs less than one acre of land and therefore does not require coverage under the NYS general stormwater permit.**

**Comment 8:** Provide operations and maintenance manual as a separate appendix in SWPPP.

**Response 8:** **Maintenance requirements for the green roof are listed in section 6.2 of the SWPPP. A manufacturer operation and maintenance manual will be provided to the owner once all green roof materials have been approved and installation is complete.**

#### **Cost Estimate**

**Comment 1:** Costs for concrete curb (onsite) and granite curb offsite are very low and need to factor in excavation, asphalt sawcutting at Broadway, preparation and imported materials and placement. Costs presented should be doubled at least.

**Response 1:** **The unit cost for both onsite concrete curb and offsite granite curb factor have been revised.**

**Comment 2:** As built plan cost seems quite low.

**Response 2:** **The as-built plan cost has been updated.**

#### **Plans**

*L-2*

**Comment 1:** Wooden split rail fence does not seem to fit the look of this site in our opinion and suspect a metal fence and railing system would be better suited. Detail does not indicate wooden system is pressure treated and believe this will require more maintenance than a metal based system.

**Response 1:** **Comment noted, fence has been revised to chain link.**

*L-03*

**Comment 1:** Provide more spot elevations for proposed grading along west part of site both south and north of garage entry.

**Response 1:** **Additional spot elevations for the grading along the west of the site have been added. All new asphalt is to be blended with existing asphalt within the property boundaries.**

L-04

**Comment 1:** We suggest substitution of NYSDOT type 2 sub-base where Type 4 is called out for better resistance to moisture, particularly beneath replacement curb on Broadway like concrete curb section and sidewalks.

**Response 1:** **The concrete sidewalk and curb details have been updated to call out type 2 subbase in lieu of type 4 subbase.**

**Comment 2:** For granite curb along Broadway that will be adjacent to parking and occasional mounting by trucks and adjacent to snowplowing activities we recommend continuous dry mix concrete under curb instead of just at joints for prevention of curb damage.

**Response 2:** **Comment noted.**

L-06

**Comment 1:** Green /roof section requires much more detail regarding materials, depths, and product data.

**Response 1:** **Additional information has been added to the green roof detail.**

**Comment 2:** Is 6-inch water service sufficient for proposed fire protection flows?

**Response 2:** **Yes, water usage calculations are provided in the engineer's report.**

*DRC13, DRC14, DRC15 and DRC16*

**Comment 1:** Provide colored elevations and show any roof top equipment.

**Response 1:** **Colored elevations and roof top equipment are included in DRC applications that have been submitted to the City.**

**Comment 2:** Is rooftop access still below maximum 70' building height?

**Response 2:** **Per City Code "height limitations shall not apply to architectural features not used for human occupancy or mechanical equipment." The top of the roof is 63'2". The rooftop access is not for human occupancy.**

Sincerely,



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Civil Engineer  
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