



3311 Rhode Island Ave. Structural Assessment

Report of Findings

4/28/2026

April 28, 2026

Attention: **Arel Architects**
c/o Ronald Lipford, AIA, NOMA
5827 Allentown Way
Temple Hill, MD 20748

Subject: **Structural Assessment**
3311 Rhode Island Ave
My. Ranier, MD 20712
Project Number: P0100066584

Building Envelope Consultants and Scientists, LLC (BECS) is pleased to submit the following report detailing the project's background, document review and building description, our observations, recommendations, and next steps.

We will contact you within the next week to discuss our report and any related questions you may have. Please feel free to contact us at your convenience if you have questions, comments, or additional information you would like to see reflected in the report before that time.

We appreciate this opportunity to be of service and look forward to our continued service as your Consultant. It has been a pleasure serving as part of your team; we look forward to reviewing this report with you and developing proactive and pragmatic solutions to address the indicated repairs.

Sincerely,

Building Envelope Consultants and Scientists, LLC



Patrick O'Brien, P.E.
Regional Managing Director, Mid-Atlantic



Nick Palumbo, P.E.
Technical Director

Project Background

BECS was recently engaged to conduct a structural assessment of the referenced subject property (Figure 1). It is our understanding that previous investigations and repairs have been completed by others that may correlate to the observations conducted by BECS during our site observations. In an effort to promote an unbiased investigation, BECS was only notified that there were reportedly apparent structural distress conditions at the facility. The nature, history and/or locations of these distressed items were not provided. Record construction drawings, repair documents, and/or other written forms of building construction documentation were also not available.

A limited visual structural investigation was conducted, with site observations conducted by Patrick O'Brien, a Professional Engineer registered in the State of Maryland. Parties present included multiple inspectors from Prince George's county, a Building Engineer (reportedly under employment at the current facility for approximately 1 year), and one representative with Arel Architects also with limited background on this facility. Observations conducted were visual in nature. Façade, roofing and interior space observations were conducted during this walkthrough. No exploratory openings nor material sampling/testing were conducted as part of this investigation. While multiple units were observed, this investigation primarily focused at Unit 218 – a unit that included floor truss failures directly above, and contained temporary structural shoring previously installed by others.

Photographic documentation of observations are available in Appendix A.



Figure 1 – Aerial view of subject property (Image Source: Google Earth)

Document Review and Building Description

As referenced, no building documentation was provided. At the time of our visit, however, a building permit was posted at the front entrance of the facility. This permit was dated February 18, 2021, with an amendment issued Aug 12, 2021. Parties listed on the permit included:

- Owner: Artspace Mount Ranier LP
- Contractor: Hann and Hann Inc
- Architect/Designer of Record: Structura Inc

The original permit issuance includes a brief description of 'Repairs to Floor Truss at Units 202, 214 and 216' (Photos 1 and 2). The referenced amendment includes a brief descriptor of 'Add Stair Dwgs'. According to Maryland Department of Assessments and Taxation records, the structure's construction was completed in 2007.

The building is an apartment complex that includes a two-level concrete podium slab (one above and one below grade – Basement and Ground Level 1), with two elevated levels (Level 2 and Level 3) of wood framed construction above. Where made available for observations, the Level 2 units observed include a loft space not otherwise observed at the Level 3 units. Storefront fenestrations exist at ground level (Level 1). At the time of visit, no commercial retail operations were apparent and may no longer be in operation.

Observations and Discussions

BECS interviewed the facilities management team to get a better understanding of previous structural repairs conducted at the facility. It was communicated that approximately 2 to 3 years ago, several repairs were conducted at multiple Level 2 units to address structural distress along the truss floor framing above, supporting Level 3 units. Neither the diagnosis for these repairs, nor the extent of the repairs, was readily communicated. It is presumed that this history correlates to the permit posted at the front entrance of the facility. BECS observations are further outlined below:

Unit 202

Unit 202 includes a rectangular floor plan with a loft space above. A shoring system was previously installed centrally located within the unit, and all ceiling finishes were removed to expose the open-web wood truss-joist floor framing above. These truss-joists are fabricated with 2x4 members, and metal plate connectors at each panel point. There are also intermediate metal plate connectors along the top and bottom chords to develop continuity of the member. The shoring tower includes two steel shoring beams supporting and perpendicular to the wood truss floor framing above (Photo 3). The truss-joist floor framing above spans the primary East-West direction (parallel to Rhode Island Avenue). The shoring system is branded by Scaffold Resources.

It is apparent that the majority of bottom chord metal-plate splice connections along the Level 3 wood truss framing has failed (Photos 4 and 5). Several top chord splice connection plates, to a lesser frequency than bottom chord splice plates, were also observed as failed (Photo 6). When interviewing the tenant of the space directly above (Unit 312), it was discussed that approximately two to three years ago, two successive and sudden loud 'pops' were felt by the resident. Approximately two months later, an additional audible pop was reported by the resident. Cracks in the floor finishes were also noted at Unit 312 (Photo 7). Shoring was installed after the tenant reported this distress. Based on this description and the observations within Unit 202, it is likely that these pops and floor cracks were due to the splice connection plates failing.

The cause of the failure is not conclusive via visual observations only; however, the most likely contributing causes are discussed here:

- Truss framing members are generally designed as 'two force' members to resist either tension or compression forces. The convergence of diagonal or vertical members along top and bottom chords is referred as a 'panel point'. Top and bottom chords can become overloaded if concentrated point loads are not located at panel points, inducing shear stresses not otherwise designed for.
- At the typical truss-joists which have failed, we observed the failed bottom chord splice connection is located where a panel point would be expected, making it difficult for the adjacent vertical member to properly align with this panel point. As a result, the vertical member at this location is offset from a panel point by approximately 4 to 6 inches. This offset may result

in a concentrated shear force that the truss was not designed for. The diagonal member also appears to be cut at an angle to receive this vertical member, indicating that this vertical member may have originally been designed to be located at panel points. At one of the truss-joists, a single wood fracture occurred immediately adjacent to the splice, further supporting this hypothesis. Figure 2 depicts the above narrative.

- Given the history of failures at several Level 2 units, it is possible that the truss framing may be improperly designed, or improperly fabricated. This would result in a systemic issue requiring large-scale repairs, rather than individualized unit repairs as previously conducted. A structural analysis, coupled with these site observations, may conclusively confirm if the floor framing has the capacity to address potential structural and serviceability concerns.

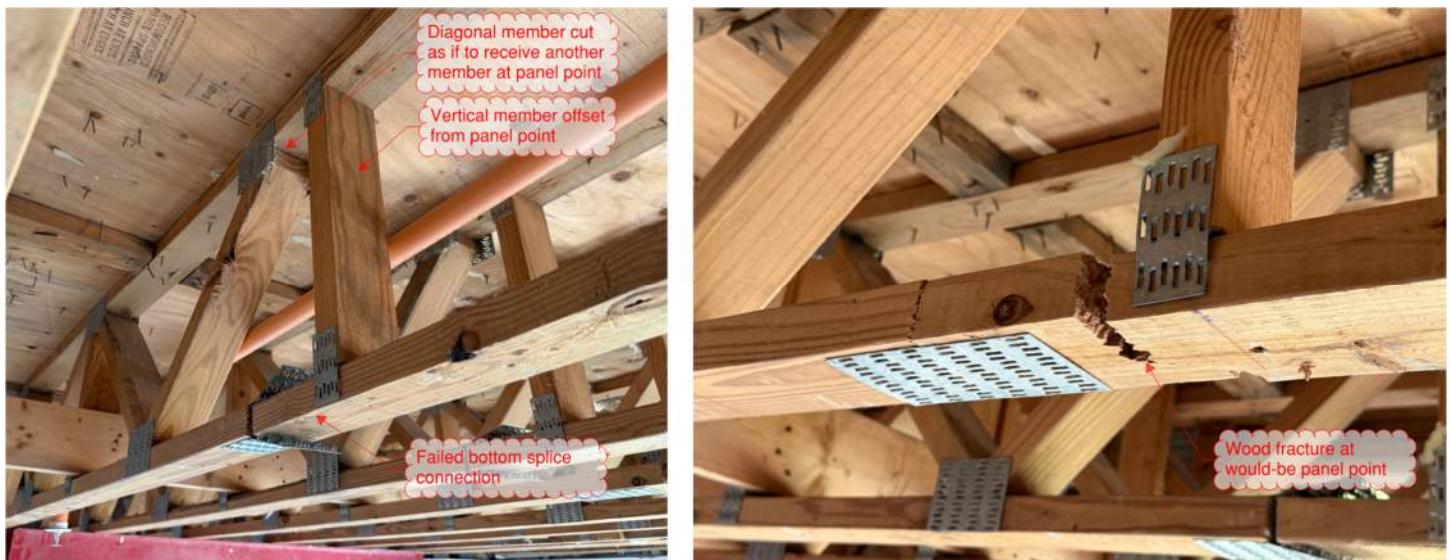


Figure 2 – Typical splice connection failure (left); wood fracture at would-be panel point if vertical member was not offset (right)

Existing Shoring

The top and bottom chord splice connections occur at approximately mid span. It is noted, however, that the shoring beams supporting the bottom chord trusses are located at approximate third points and not immediately below or adjacent to the referenced bottom splice failures. It is unclear, without performing a structural analysis, if the shoring locations are appropriate to resolve the failures observed.

Additional Observations

BECS entered approximately 5 units at Level 2 and Level 3. Of those units, several Level 3 units were identified with signs of structural movement, as evidenced by cracks in the floor, corners of door frames, and wall to ceiling transitions (Photos 8 through 10). Most tenants interviewed were not able to provide a clear history of when these signs of distress occurred. It is possible that previous repairs have addressed the cause of movement, and the symptoms (i.e. the referenced cracks in interior finishes) were not yet addressed. It is also possible that a systemic overloading issue persists at the referenced property.

Stairwells

Two stairwells were also reviewed, located at the terminal ends of each 'wing' of the facility. These stairwells included signs of retrofits in which anchors were installed into the concrete masonry unit (CMU) block wall stair framing securing the wood framing to the stair walls. While it is expected to observe ledger board anchors supporting the stair landings to the walls, it is atypical to see stringers with direct attachment/connection to the adjacent walls, as seen at both stairwells. Furthermore, these anchors are skewed, suggesting that structural movement has occurred or that the post-installed anchors were installed to alleviate a potential concern with the stairwell (Photos 11 and 12). If the anchors were post-installed, the skewed angle of the anchors may be a direct result of existing constructability constraints such that the anchors were required to be installed at a skewed angle. Given the lack of cracks in the masonry, bowing or signs of sagging stair framing, and the note on the referenced permit addendum indicating stair repairs, it is likely that these anchors were installed in their current condition.

The locations and areas of concern reviewed during this visit were primarily driven by units coordinated by Prince George's County building officials. BECS did not visit first floor or basement level units to identify further signs of potential structural distress.

Exterior Observations

BECS also performed a limited visual assessment of exterior elements, including a brief walkthrough of rooftop areas and a ground level perimeter walkthrough to observe façade elements that may be exhibiting signs of structural movement. The roofing system was a Carlisle EPDM fully reinforced (membrane thickness of 60 mil) roofing system with tapered insulation that appears to have exceeded its service life, as evidenced by several reports of Level 3 leaks and multiple patch repairs throughout the roof (Photos 13 and 14). The roof drains towards exterior scuppers along the roof perimeter. The Level 3 hallway had several ceiling lights with water staining, and Unit 305 also had extensive damage from previous roof failures. While roofing observation failures do not directly correlate to observed structural distress items, it is noted that leaks can result in wood rot, and if left unaddressed, cause failures in the roofing system. Roof leaks should not be left to persist.

No immediately visually apparent items were identified along the structure's façade that would indicate structural distress, such as cracks, buckling, or displacement of façade cladding components.

Conclusions and Recommendations

It is apparent structural distress has occurred throughout the Level 3 floor framing. It is not clear, however, if that distress is systemic or isolated to specific units.

Based on our understanding of the wood-framed system constructed, and our observations of the existing conditions, it is our professional opinion that the following immediate actions be pursued:

1. In the IMMEDIATE TERM (May 2027), either emergency structural repairs or temporary shoring adjustments under the direction of a licensed structural engineer shall be made at Unit 202's ceiling framing (Level 3 floor framing) to alleviate further structural concern. If repairs/shoring adjustments are anticipated to be cost prohibitive, or delays are likely, we recommend Unit 312 tenants be temporarily relocated until such structural modifications can be executed.

To gain a more conclusive understanding, BECS recommends the following items:

2. Provide all building documentation available as related to these items, including:
 - a. Original construction drawings, including structural drawings as archived by Prince George's County
 - b. Reports of previous studies as they relate to the referenced structural distress in this report
 - c. Repair drawings referenced on the permit placed at the facilities entrance (issued by Structura)
3. Conduct a structural analysis to verify if the existing framing is properly sized and designed to withstand code required loads. Both the roof framing and floor framing structures are recommended for analysis. Exploratory openings should be conducted at additional locations to verify existing construction.

Next Steps and Closing

BECS is pleased to provide engineering support to conduct the recommended engineering analysis and design efforts described. A proposal for the following items can be provided upon request:

1. Coordinate with shoring contractor to make temporary adjustments of the shoring to confirm safe occupancy for tenants at Unit 312.
2. Review all available documentation and perform an engineering analysis of the wood framed floor trusses to confirm adequate structural performance and required structural modifications.
3. Prepare repair design documents to be submitted for permit, conduct bidding services for competitive pricing, and conduct construction quality assurance services for specified repairs.

Limitations

Evaluations of existing buildings and their components require that certain assumptions be made regarding existing conditions. Some assumptions cannot be verified without performing intrusive investigations, which can prove costly and may damage existing features of the building. We did not remove finishes, take samples, or perform tests unless otherwise indicated in this document. Our evaluations do not consider conditions that may develop into or cause structural deficiencies or defects. They are limited to the visually apparent condition of the components at the locations observed and at the time of the investigation. We are not responsible for other portions of the property that are not a part of this investigation or for components unrelated to those reported, such as mechanical, electrical, and plumbing. We did not investigate the presence or absence of any hazardous substances, including but not limited to toxins, carcinogens, mold, noise, and contaminants in soil, water, and air.

We performed these services consistent with the level of skill and care ordinarily exercised by professional engineers and consultants in this region under similar conditions. No other representation, warranty, or guarantee is given. Our opinions are based on our engineering judgment. We will not be responsible for latent defects that may appear in the future or for differing opinions of others that may arise. The intent of our investigation was not to perform an exhaustive study to locate every existing defect but rather to focus on the overall condition of the elements of concern and specific conditions brought to our attention by the Client and included in our proposal scope. Should additional information become available that we were unaware of, did not see, or was unknown at the time of our investigation, we reserve the right to revise our report as needed.

This report is to be read in its entirety; thus, no portions of this report may be used outside the context of the entire report. This report is not a construction document and is not intended to be used for construction or actual repairs based on this report alone. This report is intended solely for the use of the Client or Owner; any third-party use, third-party reliance, or third-party decisions made based on this report shall be the sole responsibility of such third parties.



Appendix A

Photographic Documentation



 **This Permit Must Be Displayed**
Building Permit

Issued to: Artspace Mount Rainier, LP

Contractor: Terry Hann/Hann & Hann Inc.

Location Address: 3311 Rhode Island Avenue
Mount Rainier, MD 20712

Date issued: 03/04/2021

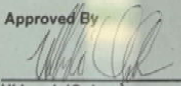
Expiration date: 09/04/2021

County Permit #: 51682-2020-00

The holder of this permit is authorized to: repairs to floor Truss for units 202, 214, and 216 at the above referenced location in accordance with approved drawings and the Prince George's County Permit.

*"Do not cut, prune or remove any trees without a tree waiver".
Call Rocio Latorre @ (202) 731-0163 or rlatorre@mountainiermd.org for a tree waiver.*

Any unauthorized activities may be subject to a fine and/or revocation of this permit.

Approved By: 
Ukkundo Oohwaka
Code Compliance Officer

3311 RHODE ISLAND AVE # MULTIPLE MOUNT RAINIER 20712
PRINCE GEORGE'S COUNTY
PERMIT
ISSUANCE DATE: Feb 18-2021
CASE NUMBER: 51682-2020-00
EXPIRATION DATE:

Photo 1 – Permit overview



Photo 3 – Overview of Unit 202 shoring



Photo 4 – Wood connection bottom splice plate failures



Photo 5 – Wood connection bottom splice plate failures



Photo 6 – Top splice and adjacent diagonal connection plate failures



Photo 7 – Unit 312 floor finish cracks



Photo 8 – Failure in Level 3 floor finish



Photo 9 – Crack propagating from Unit 305 door header/jamb corner



Photo 10 – Crack at Unit 305 wall/ceiling transition



Photo 11 – Stair stringer with skewed anchors



Photo 12 – Stair stringer with skewed anchors



Photo 13 – Roofing system manufacturer information



Photo 14 – Overview of roofing area with failed patch repairs