



November 15, 2021

Villanova University
800 Lancaster Avenue
Villanova, PA 19085

ATTENTION: Mr. Robert Morro

REFERENCE: Visual Inspections for Water Damage & Fungal Growth-16 Buildings
Villanova University, 800 Lancaster Avenue, Villanova, PA
Criterion's Project Number: **212406**

Dear Mr. Morro,

Criterion Laboratories, Inc. (Criterion) conducted visual inspections for water damage and fungal growth in sixteen (16) buildings on the campus of Villanova University, located at 800 Lancaster Avenue in Villanova, PA. Within the scope of our inspection, we found that buildings are in good/excellent condition for their age and are properly maintained. In the spaces within the scope of the inspection, moisture and mildew issues were minor, and consistent with buildings of this age. No atypical or systemic issues were observed. One hundred and ninety-four (194) residence hall rooms, all accessible restrooms/shower rooms and common areas were included during inspections of the following sixteen (16) buildings:

- Alumni Hall
- Austin Hall
- Caughlin Hall
- Corr Hall
- Delurey Hall
- Fedigan Hall
- Good Council Hall
- Katharine Hall
- McGuire Hall
- Odwyer Hall
- Sheehan Hall
- Simpson Hall
- St Mary Hall
- St Monica Hall
- Stanford Hall
- Sullivan Hall

Summary of the Inspection

In general, the buildings have proper grading and drainage to prevent water intrusion from groundwater. Discussions with students revealed a general satisfaction that improvements have been made to mitigate water damage and fungal growth in the buildings. HVAC units appeared to be clean and properly maintained with few exceptions.

Some students did report moisture concerns and indicated that dehumidifiers needed to be emptied frequently.

Problems identified by Criterion included HVAC units blocked by furniture and refrigerators. Insufficient clearance can promote fungal growth on the furniture and decrease HVAC efficiency. Laundry rooms are extremely humid and often have general housekeeping issues. High humidity will promote fungal growth in the laundry rooms. Some buildings have grading/drainage issues and some windows exhibit evidence of condensation.

General Observations

- Villanova Facilities EHS informed us of previous fungal growth issues. They utilized qualified outside contractors and internal maintenance for remediation efforts and to rectify moisture/humidity issues (i.e. repairing/installing additional HVAC units and utilizing industrial dehumidifiers). Exploratory interviews with residents confirmed this with the majority of them noticing an improvement since their return from break.
- Some residents still have concerns with moisture issues. Those with their own dehumidifiers report having to empty the water tanks frequently.
- HVAC units were inspected and appeared to be clean, operational, and had new clean filters installed within the past month
- There is a consistent recurring pattern across the residential buildings with dorm room HVAC units and refrigerators not obtaining the minimum clearance (oftentimes being completely blocked with dorm furniture/contents.) Furthermore, some thermostats were set at extremely low temperatures and units were on while the windows were open.
- There is a consistent recurring pattern of growth in shared laundry rooms. Laundry rooms were extremely hot and humid with issues of dust/lint build up. Recommend improving ventilation, maintenance, and general housekeeping in these areas.

- Localized areas that are more severe and require further investigation and additional attention include individual rooms with fungal growth on HVAC diffusers. Individual room HVAC systems are not interconnected, and mold in an individual room does not indicate a building-wide issue. Additional investigation and attention may be required where extensive fungal growth was observed, like the laundry room plenum space in Sheehan basement.

Methods

Conducted visual inspections for water damage and fungal growth in sixteen (16) residential buildings on campus. Representative dorm rooms were inspected from each floor: based on the size of the building, room location, room setup, and accessibility, with some randomized. Common areas that were accessible were also inspected. An Infrared Camera and Moisture Meter were utilized for additional qualitative and quantitative data. A tape measure, ruler, and level were used to measure the grading around the exterior.

Number of Dorm Rooms Inspected (in addition to common areas):

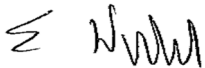
- Alumni Hall: 9 rooms (3 per floor)
- Austin Hall : 12 rooms (4 per floor)
- Caughlin Hall: 9 rooms (3 per floor)
- Corr Hall: 6 rooms (3 from each floor)
- Delurey Hall: 9 rooms (3 per floor)
- Fedigan Hall: 10 rooms
- Good Council Hall: 9 rooms, 3 per floor)
- Katharine Hall: 12 rooms (3 per floor)
- McGuire Hall: 9 rooms (3 per floor)
- Odwyer Hall 9 rooms (3 per floor)
- Sheehan Hall: 16 room (4 per floor)
- Simpson Hall: 4 rooms
- St Mary Hall: 12 rooms
- St Monica Hall: 12 rooms (3 per floor)
- Stanford Hall: 40 rooms (8 per floor)
- Sullivan Hall: 16 rooms (4 per floor)

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Action Items

- Three (3) building- Corr Hall, Katharine Hall & St Monica Hall appear to have grading/drainage issues that have resulted in ponding on the exterior of Katharine Hall and St Monica Hall, and water intrusion into the basement mechanical space in Corr Hall. Groundwater should be diverted away from these buildings.
- Ensure that windows exhibiting evidence of condensation are properly sealed.
- Install dehumidifiers and/or provide proper venting and drainage for laundry rooms to decrease relative humidity levels.
- Clear blocked roof drains.
- Ensure that dorm room HVAC units are not obstructed and meet the minimum recommended clearance
- Continue responding to fungal growth complaints in a timely manner as issues arise.

Sincerely,



Eric Wysocki
Project Manager