
MEMORANDUM

TO: Dallas Caudle, AIA, Smith Gee Studio
FROM: Russell Skrabut, PE, Genesis Engineering Group
DATE: August 26, 2014
RE: 30 Music Square West, Nashville, TN – Existing Building Observations

As requested, below are our observations from our brief walk-through the existing building at 30 Music Square West on August 15, 2014. Genesis conducted this walk-through to gain a general understanding of the condition of the existing structural, mechanical, electrical, plumbing and fire protection systems.

Structural observations were made at during a separate walk through with the building owner on 8/21/14.

Mechanical Observations from 8/15/14:

- HVAC systems consist primarily of DX split systems. Indoor units are either natural gas-fired furnaces or air handlers with electric heat. Large indoor units are located in central mechanical rooms near the building core. Smaller air handlers are located above ceiling in the tenant suites. Domestic hot water heater observed is natural gas.
- HVAC systems ages could not be determined as most lacked nameplates. General condition indicates that the large systems are at least 15 years old. Systems visible in the central mechanical rooms show significant signs of wear.
- Outdoor air is provided through the central systems located in the mechanical rooms. However, given the apparent age of the HVAC systems, it is likely that the ventilation provided does not meet current International Mechanical Code (IMC) requirements. In older office buildings, we typically find that existing mechanical systems cannot accommodate the increased amount of outdoor air required by the IMC. Given the age of the systems and the likelihood that they are currently undersized with regards to the IMC outside air requirements, we recommend replacing systems. Replacement will improve both systems efficiency and occupant comfort.
- Ductwork is primarily routed above ceiling within the occupied spaces. Within the mechanical rooms, it is visible and very worn. Ductwork is largely not insulated or has damaged insulation. Recommend replacing ductwork and insulate them to current International Energy Conservation Code (IECC) requirements to improve both systems efficiency and occupant comfort.
- The majority of the corridors were observed to lack supply air (and associated outdoor air). Recommend installing additional mechanical systems to both condition and ventilate these areas in order to improve public spaces' indoor air quality.
- Private bathroom in studio does not have exhaust air. Recommend adding a local exhaust system to ventilate the room per current IMC requirements.
- HVAC systems observed are locally controlled by thermostats. Only a few programmable thermostats were observed. At a minimum, recommend updating all thermostats to programmable thermostats with setup/setback features per current IECC requirements.
- Third floor mechanical room has a roof vent that is open to daylight and susceptible to wind driven rain falling into the room. Vent needs to have a damper added/repared to prevent water damage.
- Recommend installing a drain pan under the water heater in the studio mechanical room.
- Restroom plumbing fixtures need to be replaced to meet current ADA requirements.

Structural Observations from 8/21/14:

- Original building construction appears to be circa 1963
- Structure is composed of two individual buildings separated by an expansion joint between the 3-story volume studio space and the typical office area (also 3-stories)
- Detailed observations of the studio space were not possible at the time of our visit
- Construction of each building is a combination of structural steel bar joists supporting conventional metal floor/roof deck, conventional structural steel framing, load bearing CMU, and CMU infill.
- No signs of structural moment frames and/or braced frames were apparent at the exposed structure areas of the building
- Load bearing CMU walls viewed in the 2nd level mechanical rooms appeared to be hollow
- A partial basement area is located near the elevator shaft/pit.
- Exterior survey of the building shows significant brick movement at the above left area of the main entry. Interior survey of this area showed evidence of repeated water intrusion
- In the mechanical space near the basement pit, substantial delamination/corrosion of the metal floor deck is occurring. The deck appears to be painted deck in lieu of galvanized deck that is more widely used in this type of construction today.
- The overall cost of building restoration to achieve market rental rates would likely exceed the percentage allowable for grandfathering of prior building codes. This would require the structure to be brought up to current seismic and wind codes contained in IBC 2012.
- With much of the CMU visible to us at the time of our survey likely being hollow and unreinforced, the walls would require substantial reinforcing to meet current building codes. To properly reinforce the walls, a continuous mechanical connection would need to be established from the roof structure to the foundation. This is usually accomplished by saw-cutting the face shell of the existing CMU, inserting a reinforcing bar and filling each cell solid with 3,000 psi grout fill. The inserted reinforcing bar would be drilled and epoxied into the building foundation at regular spacing around the building perimeter and at critical load bearing walls.
- The studio space is likely unusable as office space due to its irregular volume. Addition of interstitial floors would not be possible with the existing building systems without substantial modification and reinforcing. Any such reinforcing will require compliance with current wind and seismic codes. The current space has no window openings. Use as an office space would require modifications to the walls to allow for a reasonable amount of openings for windows and HVAC exhaust/intake.
- Any new construction adjacent to the existing buildings will likely require significant underpinning of the existing foundations prior to construction to avoid damage to the buildings. Circulation into the existing buildings from any new construction will require cutting of existing exterior walls.

Electrical Observations from 8/15/14:

- The Main Electrical room is located on the 2nd Floor and does not have code required clearance. All of the distribution gear appears to be original construction except for an added branch panel. The condition of the equipment appears to be fair but replacement parts are no longer manufactured. It is recommended to replace all of the electrical gear.
- The lighting throughout the building appears to be a mix of fluorescent and incandescent lamps. The building does not appear to meet current energy code. It is recommended to replace all of the lighting fixtures to improve energy efficiency..
- The fire alarm system apparently is 7 years old but does not meet current ADA standards. The devices are mounted too high and the candela rating of the strobes are incorrect. The corridor smoke detector spacing exceeds maximum allowed distances. It is recommended to replace the fire alarm system in order to meet today's standards and ADA requirements.