

## **BALTIMORE ASHRAE CHAPTER** **HISTORIC MANSION MEETING PLACE**

### **"Behind the Scenes"**

Over the years, there have been substantial upgrades “behind the scenes” to the heating, ventilating and air conditioning (HVAC), electrical, fire protection and plumbing systems throughout the Federal Registered Historic Mansion. The majority of the upgrades have been accomplished with material donation from various member firms and Friends of the Mansion as well as donations and in-kind services to help complete the various projects.

Many of the material donors, in-kind service providers and cash donations are from **ASHRAE** Members and Member Firms.

The start of the wave to improve the buildings systems started back with the “Boiler Blast” project. This initiative included the total upgrade of the gas fired hot water heating system located in the lower basement level of the building. The heating system that was replaced was over fifty (50) years old and was in dire need of upgrade. The Boiler Blast initiative involved a series of volunteer engineers, contractors, material suppliers and sub-contractors who came together for the common cause of upgrading the failing heating system. 100% of this project was completed with volunteer material and labor as well as cash donations.

With the momentum gained from the Boiler Blast project, attention was turned to the aging HVAC systems serving the Ballroom, Dining Room and most of the other smaller rooms throughout the Mansion. The heating and air conditioning systems serving these areas were upgraded with discounted labor and equipment purchases. This effort upgraded the HVAC systems in the major rooms of the Mansion as well as the private room/areas throughout the lower level of the Mansion. As the Boiler Blast and HVAC upgrade projects were completed, there were electrical power upgrades provided for the support of the new mechanical equipment as well as miscellaneous electrical upgrades in the various areas.

Following the mechanical and electrical system upgrades to the various rooms, both the ESB and the GJMEF's attention turned to the Courtyard enclosure projects. Along with the beautiful courtyard enclosure project, a substantial project was undertaken to provide new mechanical and electrical systems to serve the enclosed courtyard as well as setup the infrastructure for the fire protection of the entire mansion. Behind the scenes, a new fire water service and fire pump was installed to serve the entire mansion, including the vertical addition that will eventually provide complete handicap access, additional handicap bathrooms as well as appropriate circulation and storage space. A complete new fire protection system was installed in the enclosed courtyard area to begin the goal of providing wet pipe sprinkler protection throughout the mansion.

This fire protection initiative continued with the restoration of the Drawing Room. If you look carefully at the ceiling, you will notice small, round disks in the ceiling of the drawing room. Concealed behind these disks are recess type sprinkler heads. In addition, the Drawing Room project fire alarm system upgrades included special exit signs that will drop

down from their ceiling recesses in the event of a fire alarm activation. Concealing these fire protection systems helped to maintain the historic appearance of the Drawing Room.

As restoration projects continued throughout the Mansion over the years, upgrades to the HVAC, electrical and fire protection systems also continued. As the restoration of the phased Ballroom project proceeded over several years, the HVAC systems were upgraded to remove the inappropriate 2' square supply air outlets that were located in the ceiling panels. The Ballroom restoration project included new glass ceiling panels with LED lighting to provide a skylight effect and improve lighting for the various events held in the Ballroom. You will not see the inappropriate square metal air devices in the ceiling of the restored Ballroom. If you look very carefully at the new glass ceiling panels located in the plaster grid of the three (3) original architectural features you will notice that the glass panels are elevated above the plaster frames. You have to look very carefully to notice this detail. The space around the raised glass panels is used to supply the conditioned air into the Ballroom to provide the heating and cooling that is needed to maintain comfortable conditions throughout the renovated Ballroom.

The fire protection systems were also extended to serve the renovated Ballroom as well as the stage area. Again, if you look very carefully at the Ballroom ceiling, you may notice the same type of small, round disks in the plaster details that conceal recessed sprinkler heads. Also included in the Ballroom project was a total rewiring of the Ballroom area as well as new wiring to the restored wall sconces. The glass ceiling panels include high efficiency LED lights that are dimmable and various colors of lighting schemes can be provided to set the mood for various Ballroom events.

During the time frame of the Drawing Room and Ballroom restoration projects, attention was given to the uncomfortable conditions in the main Foyer area. After careful consideration, volunteer club members and contractors developed a plan to conceal equipment and ductwork to provide air conditioning for the main foyer area. Supply air outlets were carefully designed and installed in the walls of the foyer. It takes a very sharp eye to locate and identify these air outlets. The next time you are in the Mansion, look around the Foyer and see if you can identify how the Foyer area is provided with air conditioning. Another unusual detail of the Foyer air conditioning system is the return air path back to the HVAC unit that is located in a third floor storage room. For this requirement, the circular stairway was used to provide for a return air path. Return air travels up the circular stairway and through the slots of the large Tiffany dome at the top of the stairway. Above the dome is a glass skylight enclosure. The return air is circulated through this enclosed area which provides some ventilation and air circulation above the Tiffany dome which provides double duty to help protect the very valuable Tiffany dome.

More recent behind the scenes projects included upgrades in the Marble Hall, Library as well as additional improvements to the Drawing Room. Along with the Library restoration project, new HVAC was installed to serve the Library. Since there was a single HVAC system serving both the Library and the Drawing Room, the opportunity was seized to provide two (2) new systems; one (1) dedicated to the Library and the second system dedicated to the Drawing Room. These HVAC system upgrades were accomplished with donated equipment from Mitsubishi as well as support of several ESB member firms. Along with the system upgrades for the Library and Drawing Rooms, return air from these two (2)

areas travels through the Marble Hall and down the decorative stair area. This return air path provides passive air conditioning to these areas of the building.

Along with the Library restoration project, the fire protection system was extended to serve both the Library and the Marble Hall. Again, look carefully up at the ceilings of the Library and you will notice the small round disks in the flat ceiling areas. You will need to look much closer in the Marble Hall since the sprinklers were carefully concealed in the round plaster cornice detail material near the ceiling line. The Library project also included an upgrade of the wiring systems for the receptacles and lighting throughout the Library area. The electric power and lighting upgrades included power into each of the glass front bookcases. Attention is now given to installing high efficiency LED lights in each of the bookcases that will provide illumination for each individual book and display case as well as provide general illumination for the Library. The lighting upgrades will be a significant improvement to the overall library experience. The next time you are passing through the Marble Hall, try to identify the fire protection system.

Future behind-the-scenes upgrades will include new mechanical and electrical systems for the Heritage Room and other areas on the west side of the building. As the Club's leadership continues to consider the vertical addition, mechanical and electrical systems will be included for the vertical addition as well as the opportunity to improve the HVAC, fire protection, plumbing and electrical systems on the west side of the Mansion.

With the substantial progress of restorations to the historic rooms of the Mansion, the most recent focus of the Garrett-Jacobs Mansion Endowment Fund was the long awaited vertical addition to contain essential Mansion function and support spaces. The vertical addition project construction will begin in 2017 with a Spring 2018 completion. The vertical addition project will include a four (4) stop elevator and new toilet facilities with full handicap accessibility. In addition, a much-needed emergency egress stair will improve the safety of the Mansion and provide Fire Department emergency access and a wet standpipe system. The addition also includes some office and much-needed storage space.

The ESB and Garret-Jacobs Mansion Endowment Fund Boards again thank all volunteers and suppliers of donated material and labor for their continued support of the various improvement initiatives over the years. We look forward to the continued support of our generous members and friends as we continue to improve the Mansion "behind-the-scenes" systems.