



Testing Specialties Inc. – Building Systems Commissioning

**Project Name: Beverly Hills Hotel Renovation Case Study**

Project Detail: Estimated Construction Budget  
\$120 Million Dollars



Renovation of Historical Facility built in the 1920's

Design Build Concept

Major consideration was to keep original look and feel of facility

Major Obstacles to overcome:

- Adding modern HVAC and Plumbing systems to existing facility
- Adding Modern Security, Computerized Control and Fire Life Systems
- Dealing with high end customers

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- Limited access and space
- Severe Noise restriction on Construction
- Very restrictive Fire Codes
- Limited Construction site staging and storage area
- Historical Building Considerations and Limitations
- Unknown existing field conditions

Normally the Commissioning Team is put together at the onset of a project. This project was well under construction when TSI was asked by the Owner Representative to participate as Commissioning Agents.

The scope of this project was to have TSI perform construction overview of the MEP trades and to assist the Owner with day-to-day Quality Assurance and Quality Control issues.

**Case History Statement:**

When the Beverly Hills Hotel was built in the 1920's, it did not have forced air heating and cooling systems installed. As the years went by and HVAC systems were available, various areas of the facility received heating and cooling devices.

With the notoriety of the Beverly Hills Hotel being as it is, and this major renovation at hand, a great deal of attention was paid to the air delivery system; as the facility has several grand ballrooms, ante rooms, meeting rooms, and private areas that would require air to be delivered with the greatest of engineering skill.

**The following notations were taken from actual field notes taken by our Commissioning Agent on just one construction issue:**

The HVAC ductwork was to be sheet metal with internal insulation. The ductwork segments were fabricated off site and brought on the site for installation on a continuous basis. Each segment of ductwork was to have the internal duct lining cut and sealed as per the Division 15 ductwork specifications.

The TSI Commissioning Agent began to inspect the duct segments as they were being installed and noted that as each segment was butted up the next adjoining duct section, that the ends of the internal duct liner was being compressed or in some cases voids being left.



Beverly Hills Hotel - Wing

**Problem observed:** Internal duct lining was not being sealed properly at the ends of each duct section as it was being installed. If this problem was not corrected, the result will be; as the Air Handling Unit (AHU) is started, the air velocity in the ductwork will tear away the liner, which will lodge on the ductwork elbow turning vanes, thus causing major air distribution problems. Since much of this ductwork is being installed in inaccessible locations, a fix is needed.

**Recommended fix:** TSI recommended that each section of the liner be sealed as each section is being installed to insure continuous integrity of the duct liner. The ductwork was modified to allow access. A duct installer actually worked inside the duct installing and sealing the duct behind him as the sections were being installed, in smaller ducts, access doors were used to access the affected duct liner joints.

**Estimated  
Cost Savings:**

There are several sets of savings involved with this notation:

The Owner stated that a specific dollar value could not be assigned to this fix; however, the intrinsic value of finding this potential failure was significant for the following reasons:

- What is the cost associated with the failure of a high profile event due to an HVAC problem.
- What would be the cost associated with the bad publicity of a failed or negatively reported event relative to future events, knowing the Beverly Hills clientele.
- What would the savings be in actual dollars the installing contractor would have to spend as a warranty issue solving the problem.
- Further cost avoidance came to play due to the fact that the test and balance contractor was able to perform his task without problems or delay.



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