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**HOW TO**

**BUY BUILDING**

**TESTING SERVICES**

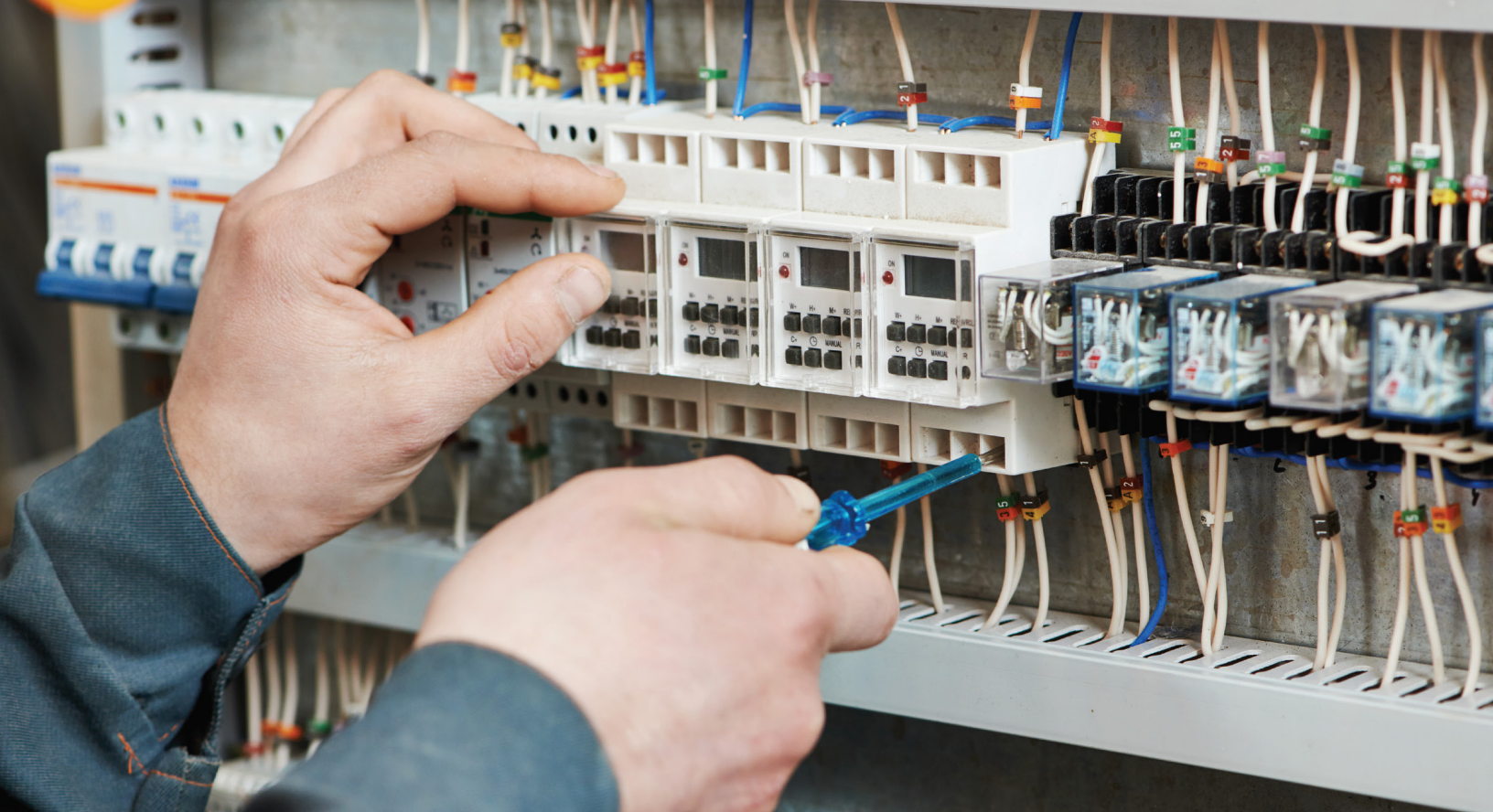
### **SMART BUILDINGS NEED TECHNICAL COMMISSIONING**

Building testing for mechanical and electrical systems historically has gotten completed by the installing contractor. However, buildings today have so much more demand to improve efficiency, and at the same time to be reliable. Also, buildings are getting much more complicated with complex energy strategies and meeting new code requirements. Building testing can no longer just be a spec item that is done during the warranty period. Building testing has become imperative for acceptance of building mechanical and electrical systems, or the building simply does not work. Codes are changing and will require building testing be completed prior to releasing the occupancy permit in the not so to distance future. So the question will be, “How are building codes inspectors going enforce this requirement?” Most likely, it will get pushed down to the professional services, where Architect and Engineers will then tighten their specifications and push the liability to the General Contractor. This is not a resolution, this is at best a Band-Aid that attorneys will make money from.

The USGBC LEED Program makes building testing (commissioning) a prerequisite. However, the USGBC does not have any real method for enforcement, therefore many buildings are just “paper” commissioned. This is where a commissioning agent is hired, hands forms to the contractor to fill out, then shows up to the site to watch the contractor perform the testing. I could be missing something, but where is the quality control in that process?

The other challenge is electrical systems, for the most part, have been totally ignored. This is not that hard to do, given when the electrical system doesn’t work, typically a breaker opens. But what if that breaker doesn’t? Also, electrical systems are becoming so much more integrated with the total building. Lighting control systems are required by code. New codes being adopted require that 50% of the plug load gets shut-down when the building is not occupied.

Intelligent sensors follow people around a building and notify other systems when they need to be activated. It is just not that easy anymore, and these systems have to work



because the work around is turn them off and that is just a waste of resources, time, and money.

### **COMMISSIONING IS A PROFESSIONAL SERVICE**

With all that said, then just how should someone go about buying testing services that provides the quality control needed and can provide some assurances that the building will operate not only at turn-over but for the life of the systems? As a design engineer who has provided commissioning and start-up services since the late 80s I, can say with some confidence that it can be done. The key is not make the testing services low bid based on some written specifications. When you do that, then it becomes a commodity, and what you get is paper commissioning, and at start-up, the real work will be pushed to the warranty phase - if you're lucky. Testing services should then be retained the same way you hire another professional service. It should be qualified based and the scope of work should be worked out based on the project requirements. You cannot really use the one size fits all because it is easy to do low bid - but who is going to check the quality control of the company providing the quality control?

I am not saying that there are not companies out there that look great on paper and can



provide dazzling presentations when interviewed. Because this profession is not any different than any other when it comes to that. However, this e-book is designed to provide you with insightful information that you can use to differentiate between those “Who Can” and those “Who Can’t Sell”.

### **CHECK LISTS ARE NOT QUALITY CONTROL**

Most RFPs we see always ask for “your process” which gets compared to either some standard or the other companies competing. As a buyer what you really want to be looking for is exactly how they are going to go through the process of quality controlling your project. If the solution is to provide check list to the contractors and write test scripts that the contractor will execute, then isn’t the contractor actually doing their own quality control? What you really want is someone who can work with the design professionals, contractors, and actually performs the checking and testing that is needed to truly validate the systems being designed and installed so that they work as intended. I always get the biggest kick out of when the QC process company states “...they are going to review and test as it pertains to commissioning.” My question is, what does not pertain to commissioning?

### **SIGNS OF PAPER COMMISSIONING**

Another sure sign of paper commissioning, is if the testing company offering the QC services does not actually own any calibrated testing equipment for both mechanical and electrical systems. If they don’t, this is a sure sign that they are limited to just doing “Paper Commissioning”. Also, does

the company have certified testing technicians that have a proven record? Many companies own the testing equipment and give enough instruction for someone to look good using it. However, if the person has not been trained and cannot analyze the actual test data, then good chance that the data may be compromised.

### **MUST BE A TEAM PLAYER**

Many certification programs actually encourage the testing agent to report all findings immediately to the Owner. Now if I was the Owner, the last thing I would want is to have the company I hired to do the testing just tattling on the design team and installing contractors. Sure the challenges should be documented, ALONG with the resolution that the testing company assisted in solving. QC is not just seeing how smart you can make yourself look, it's about making systems work at their highest efficiency and reliability possible. This is a team effort and there is no room for trying to one-up the company who did the design or is doing the installation.

### **NOTHING REPLACES EXPERIENCE**

Providing testing at the level we are discussing, does take a few years of experience to obtain. However, the entire team does not have to be “that guy”. But, you do need at least one of them on the team. Unfortunately, this isn't something that can be taught in a classroom. The classroom does provide the necessary fundamentals but nothing replaces the experience working on the job working with design professionals and installing contractors and talking their language. At the same time, a wide and diverse knowledge of mechanical and electrical systems is required. If nothing else, require that you at least have two persons on the project where one is highly proficient in mechanical and the other electrical.

Providing commissioning for the highly sophisticated buildings that are required today is going to take an extra level of quality control. The QC process has to start at the beginning of the project. Any process engineer can validate that statement. With that said bring on your Commissioning company early in the project, and interrogate the testing company like you want your systems tested. You will hear in their responses if they can do the project or not.

816.229.9009

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