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ENERGY CONSERVATION ASSISTANCE PROGRAM

Physical surveys of over 300 buildings in hot and humid climates indicate material/design performance flaws exist in comparison to expected results using nationally accepted standards (ASTM methods).

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“10 years of field analysis has shown that even recently constructed buildings (1997 to 1999) have continued to experience comfort, energy and indoor air quality problems though using the most up to date codes, standards and materials.”

“Every Facility surveyed needed additional retrofits such as interior storm windows, modifications to the return air systems, additional dehumidification or ways to lower internal heat loads to create economical comfort levels acceptable for a healthy indoor environment. Over 25% of the buildings surveyed were new construction that had not reached full occupancy levels.”

“U and R values used temperature variants that do not represent the actual weather conditions and thermal loads in Southern regions.”

“With some of the newer products, the standard testing procedures could not be used to properly determine actual performance. In other cases, products that had been properly tested and on the market for decades did not perform as well, when installed in a facility, as the laboratory tests and performance specifications stated they would. This not only creates an embarrassment factor for the architect and design engineers but more importantly creates additional overhead burdens for the building’s end user, or in some cases the taxpayer when government buildings are involved, who are paying the utility and equipment maintenance costs.”

“In the End Results (Actual Savings) where high cost conservation measures, such as new chiller equipment, automated computer control systems and expensive window treatments, the track record pertaining to the projected savings was not better. On these higher cost recommendations, the projected energy savings were compiled by large private sector corporations who were either the manufacturer of the devices being installed or professional energy management companies with world wide repetitions. The end results were significantly flawed in comparison to the actual savings being realized.”

“Cause and Effect” – Companies with large facilities contract their facility maintenance to every available energy management and equipment manufacturer

available. During the contract, every possible modification that could be made was made. None of the modifications made the savings or comfort levels as presented. As each of these companies was released and a new company contracted, additional modifications were made with the same failures and the cycle continued through the preceding companies.

“Was it possible that the accepted published standards used in the industry were not accurate enough for our local conditions.” Looking at ASTM standard testing (Ex. C 976 for building assemblies),“ it became obvious early on in this endeavor that some of the procedures were not representative of conditions encountered by building materials in southern regions.” “Though standard tests methods presently exist, such as ASTM C 976-90, ASTM E 547-93, ASTM C 518-91, ASTM E 1105-93 and NFRC 100-91, etc. that under the above standard test methods, minimum precision conclusions needed could not produce repeatable results in comparison to actual performance curves of installed / operational systems.”

For all results, “a consecutive logging of data is accomplished with computer interfaces. The minimum test period is 24 hours at various locations and the average test period is 168 hours. The maximum test period was 35,040 hours at one facility.”

“Unfortunately, the technical data in the existing standards do not support the end results. Hopefully, the results we have shared will inspire the Energy Conservation

Professionals to **THINK OUT OF THE BOX** and **REVISE THE BOOK.**”