
DETAILED ENGINEERING DRAWING/SPECIFICATION REVIEW REPORT

Date: May 27, 1993

Agency: University of Texas at Austin

Agency: University of Texas
Address: Austin, Texas
Project: Energy Conservation Measures
Address: Main Building

Design Cnslt: Energy Engineering Associates, Inc.
Address: 500 Capital of Texas Hwy, Bldg 3, Ste 101
Telephone #: (512) 328-0082
Contact: Scott Simmons

Status of Design: 90% Submittal

CMC Firm: O'Connell Robertson and Associates, Inc.
Address: 811 Barton Springs Road, Suite 900
Austin, Texas 78704
Telephone #: (512) 478-7286
Contact: William H. Clark, II, P.E.

LoanSTAR PROGRAM - GOVERNOR'S ENERGY OFFICE

ENGINEERING REVIEW REPORT (continued)

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ANALYSIS OF ECM'S

O'Connell Robertson and Associates has been provided a copy of the drawings by Energy Engineering Associates, Inc. In the absence of the original audit or the project design specifications, a few comments can be made on the design as completed to date.

1. No details are provided on the structure and composition of the new air handler room walls. It may be helpful to provide adequate insulation in the new walls, as well as the floor and ceiling if possible.
2. The new ductwork designs are what SMACNA terms semi-extended plenums. They recommend balancing dampers in each branch duct off this plenum. Backdraft dampers where the return air branches enter the return air plenum may also be beneficial.
3. No relief air dampers are shown in the new designs for the basement north, basement southeast and level twenty-nine air handlers. This may cause problems in maintaining building pressurization, outside air control and may hinder the recirculation of returned air.
4. Depending on the age and condition of the existing system, it may be advantageous to clean the ductwork, at least those runs with the highest static pressure. This will reduce the load on the fan and save some energy.
5. No outside air is provided to any of the hot decks. In the heating season the tower rooms, with high exterior exposure, may not receive adequate fresh air.
6. Friction losses within the air handler rooms may be reduced by specifying recessed lights, and by calling for any piping and conduit to be run in the ceiling space.
7. The fan motors for the cold deck are situated so that the considerable heat generated will enter the air stream. With slight structural modification these motors can be located outside the cold deck, or even inside the hot deck space where the heat can be put to effective use.
8. An economical alternative may be to replace the existing design of a motor control center with several remote VFD/starter racks for each air handler, with a single motor control center containing the starters, VFDs and disconnects. This will permit the future capability of using programmable logic controllers and easy interface with a DDC energy management system.