

NEW BRAUNFELS REGIONAL REHABILITATION HOSPITAL

NEW BRAUNFELS, TEXAS

ADAM BERNARDO
MECHANICAL OPTION

» GENERAL PROJECT INFO

Function 40-bed, acute-care hospital **Size** 49,488 square feet **Height** 18-27 feet, 1 story **Construction Dates** July, 2010 - June, 2011 **Delivery Method** Single Prime Contract

» ARCHITECTURE

- The facility contains a hospital wing as well as outpatient day treatment rooms, exam rooms, and a therapy pool.
- 40 patient rooms are laid out in cross design maximizes the number of rooms in the area while providing each with an exterior view.
- Large amounts of southeast glazing create a visually appealing entrance and invite sunlight into public areas of the clinic.
- Exterior shading devices near entrances help shade vehicles used to drop off patients.

» STRUCTURAL SYSTEM

- 1 ½" metal roof deck is supported throughout the building by K-series bar joists and wide-flange girders of various sizes.
- Vertical loads are transferred to HSS columns and down to 6' x 6' spread footings .
- The floor is composed of a 5" thick slab on grade.
- Glass curtain walls are supported by variably-sized wide-flange columns and cross braced with hollow structural sections for resisting lateral loads.

» LIGHTING/ELECTRICAL SYSTEMS

- Patient, exam, and therapy rooms contain recessed T8 lamps in a static fluorescent troffer with electronic ballast control.
- Circuit breakers are served by a central, 1600-amp circuit breaker switchboard with a 1000-amp backup circuit breaker.
- The building's power is distributed through 5 dry-type transformers with a total power capacity of 272.5 kVA.

» PROJECT TEAM

Owner Ernest Health, Inc.

Architect Dekker/Perich/Sabatini

Structural Engineer Dekker/Perich/Sabatini

MEP/FP Engineer JBA Consulting Engineers

General Contractor MJ Harris, Inc.

» MECHANICAL SYSTEMS

- Conditioned air is supplied to the facility from three packaged rooftop units that utilize direct expansion cooling and gas-fired heating.
- Air is distributed to VAV terminal units that serve each zone. Most units contain reheat coils that are served by two gas-fired boilers.
- The entire facility utilizes a fully-ducted return system.
- A specialized pool dehumidification system controls the indoor environmental quality of the pool area while maintaining proper pool temperatures.
- Kitchen and dining functions are served by a 100% outdoor air makeup air unit.

» PLUMBING/FIRE PROTECTION

- Domestic hot water is generated by two gas-fired, 130-gallon water heaters and distributed via two hot water circulating pumps located in the mechanical room.
- Emergency domestic potable water is kept in a 500-gallon insulated vertical storage tank.
- Fire and smoke dampers are controlled by duct detector sensors at zone level.

<http://www.engr.psu.edu/ae/thesis/portfolios/2012/ASB5112/index.html>

