



# NATIONAL INTREPID CENTER OF EXCELLENCE

<http://www.engr.psu.edu/ae/thesis/portfolios/2010/raa5025>

Bethesda, MD

## DESIGN TEAM

**Owner :** The Intrepid Fallen Heroes Fund  
**Contractor :** Turner Construction  
**Architect :** SmithGroup  
**Structural :** Cagley and Associates, Inc.  
**MEP :** SmithGroup  
**Civil :** A. Morton Thomas & Assoc, Inc.  
**Soils :** Schnabel Engineering, Inc.

## PROJECT OVERVIEW

**Location :** National Naval Medical Center, Bethesda, MD  
**Occupants :** Military personnel/veterans suffering from traumatic brain injury and psychological issues.  
**Function :** Advanced research, diagnoses and treatment base facility.  
**Size :** 72,000 Square Feet  
**Stories :** 2 levels  
**Construction Dates :** March 9, 2009 – May 10, 2010  
**Budget :** \$65 Million  
**Delivery Method :** Design Assist & Design build

## ARCHITECTURE

The northeast and south sides are dedicated to clinical and support spaces of the facility. Meanwhile, the northwest side is allocated to the healing and public areas of the building. The exterior wall consists of a curved curtain wall system along with concrete precast panels extending the height of the building 38'-8". The roof consists of a thermoplastic polyolefin (TPO) membrane system. Finally, spacious lobbies and playground areas are provided for relaxation.



## STRUCTURAL

The foundation system is composed of reinforced concrete spread footing (3000psi). The first level is a 5" thick slab-on-grade system. The floor to floor height is 15' with 5'-6" difference between the low roof and high roof. Remaining levels consist of elevated 9" thick two-way reinforced concrete slab. Reinforced concrete columns range from a 24"x 24", 12"x 24", 16"x30" and 16"x24".

## ELECTRICAL

NICoE is serviced from an upgraded 15KV primary feeders to a 2500 KVA, 13.8KVA, 480Y/277V, 3PH, 4-Wire primary transformer. Also, a 3000A main-bus continuous switchboard provides power to all building loads. A standby diesel generator rated at 400KW, 480Y/277V, 3p,4W is used for emergency power. In addition, a 225 KVA UPS battery backup is connected to two PDU's that provide the service room with the required emergency power.



## MECHANICAL

All mechanical equipment is located on the first and second floor of the mechanical room. The central utility plant on base provides chilled water, high pressure steam, and electrical pump condensate lines. The primary heating and domestic hot water is comprised from high pressure steam. VAV and constant volume control boxes are used throughout the building.