

# ALVATON ELEMENTARY SCHOOL

**BOWLING GREEN, KENTUCKY**

**WARREN COUNTY PUBLIC SCHOOLS**

**KENNY STANFIELD, AIA**

*Sherman Carter Barnhart* PSC

# ALVATON ELEMENTARY SCHOOL

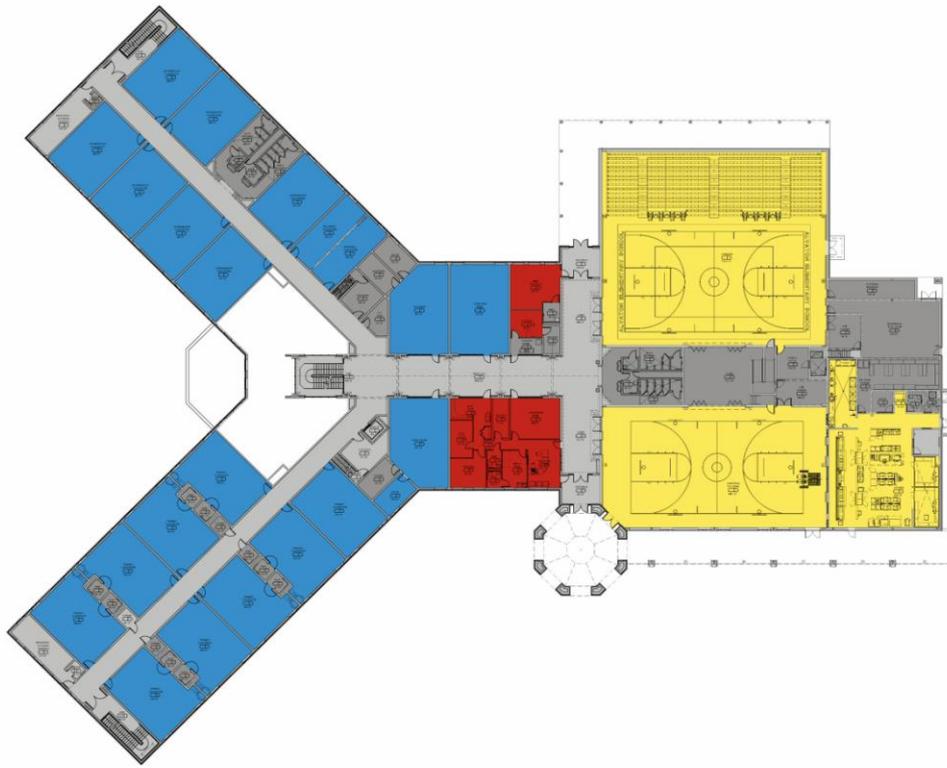
- **750 STUDENT CAPACITY (GRADES K-5)**
- **15 MONTH CONSTRUCTION SCHEDULE (OPENS AUG. 1, 2006)**
- **FIRST ICF CONSTRUCTED SCHOOL IN KENTUCKY**



# BUILDING SITE CHARACTERISTICS

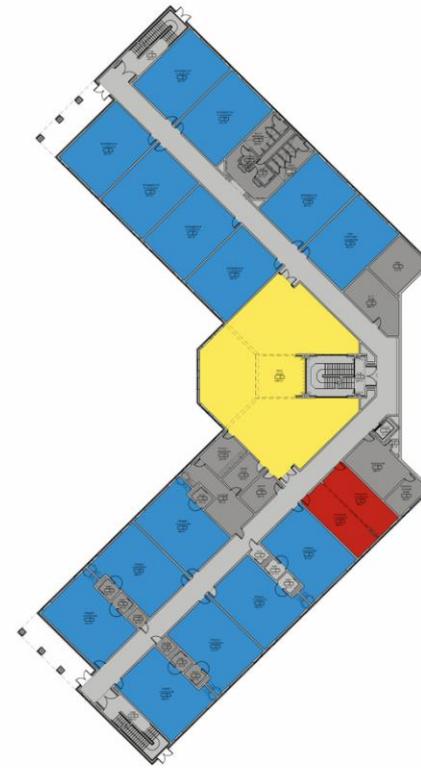
- **COMPACT FOOTPRINT**
- **EAST-WEST ORIENTATION FOR OPTIMAL DAYLIGHT**
- **GEOHERMAL SYSTEM INSTALLED UNDER PLAYING FIELDS**
- **BUILT INTO HILLSIDE TO PRESERVE NATURAL SITE CHARACTERISTICS**





51,882 SQ. FT.

ENTRY LEVEL PLAN



25,277 SQ. FT.

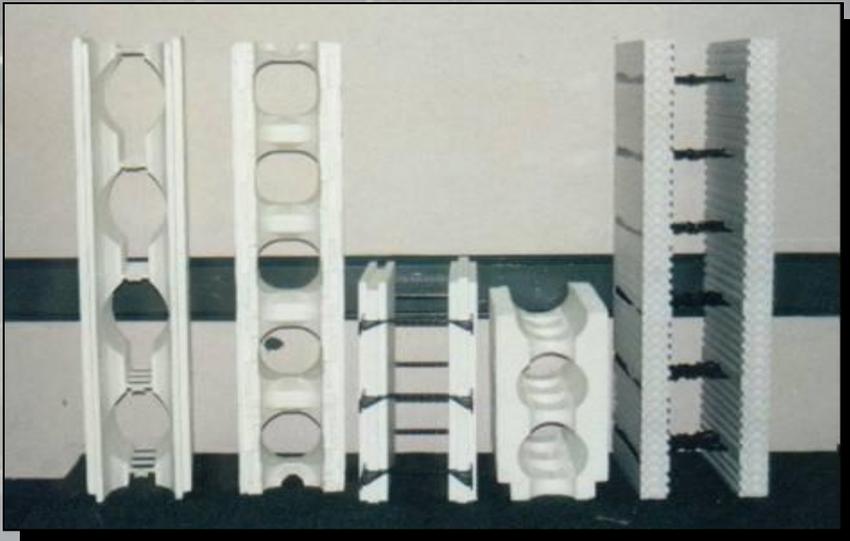
LOWER LEVEL PLAN

## **HIGH PERFORMANCE BUILDING ENVELOPE**

- ICF WALL SYSTEM (ALL PERIMETER WALLS R-32 TO R-50)**
- FOAM INSULATION CORE METAL ROOF PANELS (R-31)**
- INSULATED TRANSLUCENT SANDWICH PANEL CLERESTORY (KALWALL)**
- HOLLOW CORE CONCRETE PLANK FLOOR SYSTEM – REDUCES BUILDING VOLUME**

## WHAT IS AN ICF WALL SYSTEM?

- **CONSISTS OF 2 INSULATION PANELS OF EPS (EXPANDED POLYSTYRENE) LINKED TOGETHER TO FORM TWO PARALLEL SURFACES**
- **PANELS ARE CONNECTED WITH CROSS TIES OR WEBS SEMI-EMBEDDED IN EACH FOAM PANEL TO FORM A BLOCK OR UNIT**



## ICF BASICS

- **BLOCKS OR UNITS ARE STACKED TOGETHER TO FORM WALLS**
- **REINFORCING STEEL IS INSTALLED, USING CROSS TIES FOR STABILIZATION**
- **CONCRETE POURED INTO HOLLOW CAVITY CREATES A SOLID, MONOLITHIC, STRUCTURAL, INSULATED WALL SYSTEM**



# HIGH PERFORMANCE FEATURES OF ICF WALL SYSTEM

- **IMPROVES BUILDING EFFICIENCY**
- **COMPRISED OF GREATER THAN 50% RECYCLED MATERIAL**
- **REDUCES CONSTRUCTION WASTE**
- **REDUCES NOISE INFILTRATION**
- **BLOCKS OUT ALLERGENS AND AIR POLLUTANTS**
- **DURABLE LONG LIFE MATERIALS**





**•WALLS BRACED FROM INSIDE  
BUILDING FOOTPRINT – REDUCES  
CONSTRUCTION IMPACT ON SITE**

**•REDUCES CONSTRUCTION TIME DUE  
TO SPEED OF WALL ASSEMBLY**

**•LABOR COSTS LOWER THAN  
TRADITIONAL MASONRY WALL  
CONSTRUCTION**



•ICF WALL SYSTEM ALLOWS ANY  
TYPE OF VENEER SURFACE

•ALVATON FAÇADE CONSISTS OF  
ACCENT & FIELD BRICK, GROUND  
FACE CMU, AND E.I.F.S. TRIM &  
SOFFITS



# ALVATON INTERIOR HIGH PERFORMANCE FEATURES

- **GEOHERMAL HEATING AND COOLING SYSTEM**
- **PORCELAIN TILE PAVERS THROUGHOUT PUBLIC SPACES AND CORRIDORS**
- **AIR VENTILATION VIA HEAT RECOVERY SYSTEM**
- **OCCUPANCY SENSORS FOR LIGHTING CONTROL**
- **TIME CLOCK CONTROLS FOR CORRIDOR LIGHTING LEVELS**
- **TRITIUM EXIT SIGNS (30 YEAR LIFE EXPECTANCY)**





**•CLERESTORY DAYLIGHTING FOR CORE SPACES (MEDIA CENTER, GREAT HALL, GYM AND CAFETERIA)**







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