

Shelter Solutions



Building Structures

Delivering Reliability



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FEATURES & BENEFITS

- Speed of Deployment
- Proven Experience Across the Globe
- Versatility
- National Footprint -78 Precast Facilities
- Reliability
- Reduced Transportation
- Safety & Security
- Reduced Total Cost of Ownership
- Design Flexibility
- Easily Expandable
- Delivered Fully Assembled
- Increased Interior Height Capabilities
- Fast & Easy to Install
- Variety of Finishes



MARKET APPLICATIONS

Telecommunication

- Data Center
- Cable Television
- Broadband
- Wireless
- Re-generation Huts
- Repeater Rooms
- Cable Hub Buildings
- Fiber Optic Buildings
- Telephone Buildings:
- Head Ends
- Optical Transfer Nodes
- Central Offices
- Huts
- Vaults
- Cabinets
- Monopole
- Payment and Call Centers
- Television Broadcast Facilities
- Emergency Operations Centers
- Public Safety Radio Shelters
- Two-Way Radio Buildings
- Remote Central Office Buildings

Telecommunications Equipment Pads -Foundations:

- Generator Pads
- Guyed tower foundations
- Earth Station

Federal

- Satellite Communication Buildings
- 911 Radio Systems

Power & Energy

- Power Substation Control Buildings
- Electrical Control Buildings
- Mechanical Enclosures
- Switchgear Buildings
- Generator Enclosures
- MCC / VFD Enclosures
- Guard Houses
- Attendant Booths
- Security Checkpoints
- Bulletproof Storage
- Border Entry Buildings
- Administration Offices

Transportation

- Administration Offices
- Weigh Station Buildings
- DOT Toll Booth Buildings
- Vaults; CEV's

Oil & Gas

Odorant Buildings

HAZMAT

- Flammable Storage
- Corrosive Storage

Parks and Recreation

- Restroom, Shower
- Concession Buildings
- Multi-Use Facilities

Other Applications

- Pump Stations
- Storm Shelters
- Office Space
- Wastewater Facility Shelters



Delivering Reliability

Above Ground Precast Structures







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Turn

Oldcastle

Shelter & Building	Interiors	





Single Piece High Performance Shelters

Vandal Resistant I Bullet Resistant I Fire Resistant I Earthquake Resistant I Hurricane Resistant



Please call **888.965.3227** to speak with a precast specialist.

Above Ground Precast Structures

Pre-Engineered

At Oldcastle Precast, we understand that our customers require quick, safe and sustainable shelter solutions. Our proactive communication policies along with our experience and performance standards ensure we exceed our customer's expectations. Each custom High Performance Shelter is made from steel reinforced precast concrete and specifically engineered to meet your project requirements. Our shelters are available in a variety of standard and custom dimensions to fit your needs. Oldcastle Precast provides you the additional flexibility to factory equip your shelters for accelerated installation and hook up.

Pre-engineered shelters provide durability, flexibility, convenience and costeffectiveness for long lasting security.

Ideal Application:



- Cable Equipment
- **Telephone Equipment**
- Utility Equipment
- Pump Houses
- Generator Buildings
- Control Rooms
- **Guard Houses**
- Storage
- Restrooms
- 🚺 HAZMAT
- Concessions







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Double Wide High Performance Shelters

Vandal Resistant I Bullet Resistant I Fire Resistant I Earthquake Resistant I Hurricane Resistant



Double Wide Section 1



Double Wide Section 2









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Above Ground Precast Structures

Pre-Engineered Precast Concrete Shelters

Unlimited Optional Features: Precast concrete buildings can be shipped equipped for all applications.

Practical

Saves Time & Gets Your Site Operational Fast: Quick installation and simple site preparation. With built-in floor, no footings or foundations are necessary unless required by local codes.

Decreases Maintenance Expenses: Durability and vandal reistant features.

Maintenance Free: Will not rust, warp, corrode, rot, or burn and retains finish without maintenance.

Saves Money: Costs much less and eliminates many inherent costs of comparable built in place construction.

Ideal Application:

- Data Centers
- **Office Space**
- Wireless Equipment
- Cable Equipment
- **Telephone Equipment**
- **Utility Equipment**
- Pump Houses
- Generator Buildings
- Control Rooms
- Guard Houses
- **Storage**
- Restrooms
- 🚺 HAZMAT
- Concessions
- Military Storage
- Wastewater Facilites









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Multi-Section - Maxi-Mod[®] High Performance Buildings

Vandal Resistant I Bullet Resistant I Fire Resistant I Earthquake Resistant I Hurricane Resistant













Above Ground Precast Structures

Pre-Engineered Precast Concrete Buildings

The Maxi-Mod all precast building system allows for the ultimate in design flexibility for your large shelter needs. Maxi-Mods provide you with a fasttrack building that can be customized in a variety of sizes and configurations. Each Maxi-Mod can be engineered to be expanded to meet your needs. Our construction process is concurrent with site preparation & permitting, saving time and money on your project.

Our shelters are manufactured with precision steel forms to produce exacting tolerances required for superior quality and watertight design.

Ideal Application:

- **Data Centers**
- **Office Space**
- Wireless Equipment
- Cable Equipment
- **Telephone Equipment**
- Storage
- 🚺 HAZMAT
- Military Facilities
- Wastewater Facilites



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Clam Shell High Performance Buildings



Please call **888.965.3227** to speak with a precast specialist.

Above Ground Precast Structures

Cell Blocks[®] Foundation System

Oldcastle Precast Cell Blocks are a precast, post-tensioned foundation system designed to accommodate monopoles, lattice towers, shelters, equipment cabinets, power/telco pedestals, precast walls, chain link fencing and stairs.



Custom Services and Turn-Key Solutions

Oldcastle Precast Shelter Solutions has the experience, knowledge and resources to be your long term partner in the deployment, renovation and maintenance of your equipment facility. We provide pre-planning, coordinate the manufacturing of the shelter and handle all of the field details to ensure your on-time completion. We customize a deployment program that meets your quality, schedule and value specification needs.

Oldcastle Precast's experienced project management, design and engineering team will work with you to create strong and innovative solutions that meet the demands of your specialized project.



Ideal Application:

- Wireless Equipment
- Cable Equipment
- Telephone Equipment
- 🚺 Pump Houses
- Generator Buildings
- Control Rooms
- Guard Houses
- Storage

Turn-Key Services:

- Program Management
 Oversight & Communication
 Value Engineering
 Procurement
- Real Estate Site Selection Due Diligence & Evaluation Negotiate & Close Property
- Design, Engineer & Permit Space Planning Zoning and Permitting Civil, Structural, Architectural, Mechanical and Electrical
- Site Development Site Work & Foundations Utilities Towers & Dishes
- Building Construction Final Outfitting & Assembly Architectural Enhancements Renovations & Upgrades
- Equipment Integration Racks & Cable Ladder Offsite & Factory Equip Wiring & Testing
- Continuing Services Site Audits & Inspections Preventive Maintenance Repairs

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Shelter & Building Interiors



Please call **888.965.3227** to speak with a precast specialist.

Above Ground Precast Structures

Electrical and mechanical systems are designed and installed to meet customer specifications as well as specilized technicians to integrate customer supplied equipment. Many accessory options are available to customize electrical, generator. grounding, cabling, heating and cooling, and other features for your building.







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Delivering Reliability



Oldcastle Precast is the leading manufacturer of precast concrete, polymer concrete and plastic products in the United States. With a nationwide network of facilities our products are always close at hand. Our employees are committed to upholding core values of reliability, quality and service in revolutionary ways. Our attention to detail exceeds the expectations of customers from some of the largest companies in the U.S., across a spectrum of industries.





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Data Center & IT Facilities



Delivering Reliability





Precast Concrete Buildings

Multiple Options & Applications

Oldcastle Precast quickly deploys cost-effective, high quality, expandable, precast concrete data centers to meet your growing IT infrastructure needs. Oldcastle Precast is your solution to manage your construction project from beginning to end no matter what the square footage demand; a full turnkey solution.

- □ Fast-Track construction
- □ Saves money by saving time
- □ Flexible design
- □ Scalable to meet changing technological and business needs
- □ Safe & secure IT facility
- □ Turnkey services
- □ Total precast concrete solutions
- □ Reduces total cost of ownership
- Pre-engineered designs available based on quantities of racks and rack loads
- □ Multiple options available to meet your program needs
- □ Easily expand data center in difficult environments
- Easily add components including servers, frames and racks
- Fully assembled, conditioned, distributed power, equipment rack systems, in-row, load-variable cooling and monitoring capabilities available

Data Center & IT Facilities

Oldcastle Precast®

Custom Services and TurnKey Solutions

Oldcastle Precast Shelter Solutions has the experience, knowledge and resources to be your long term partner in the deployment, renovation and maintenance of your data center facility.

Oldcastle Precast's experienced project management, design and engineering team will work with you to create strong and innovative solutions that meet the demands of your specialized project.





Please call 888.965.3227 to speak with a solution specialist.

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TurnKey Services:
Program Management

Site Selection

Design, Engineer & Permit Space Planning

Site Development

Building Construction

Equipment Integration Racks & Cable Ladder Offsite & Factory Equip

Utilities

Real Estate

Oversight & Communication Value Engineering Procurement

Due Diligence & Evaluation

Negotiate & Close Property

Zoning and Permitting Civil, Structural, Architectural,

Mechanical and Electrical

Site Work & Foundations

Final Outfitting & Assembly Architectural Enhancements Renovations & Upgrades



Delivering Reliability

Below Ground Precast Structures



Featured Products

Controlled Environment Cabinets (CEC)

Oldcastle Precast's CEC products are the solution for smaller applications where space is limited in high density areas. Designed to be above ground or partially buried for low profile applications, CEC's are installed in just a few hours. Available in a variety of sizes, CEC's are a sustainable alternative to metal cabinets. Site preparation is easy and cost effective.

Oldcastle Precast's efficient CEC designs allow technicians to work immediately, maintain equipment in any weather condition, and provide a comfortable environment. Our cabinets also allow for easy expansion. Oldcastle Precast CECs accommodate six bays of electronics, in addition to battery and rectifier gear. Oldcastle Precast has engineered the industry's strongest, most secure and efficient CEC to fit your equipment needs.



Controlled Environment Manholes (CEMH)

Oldcastle Precast's urban designed, zero profile CEMH products provide a pre-wired solution for your lighting, air conditioning, alarms and any other specific requirements. Oldcastle Precast's CEMH is designed to be flush to grade and visually appealing. A compression sealed entry hatch permits placement flush with the ground, pavement or sidewalk. This heavy gauge galvanized steel hatch is vandal resistant and won't compromise your equipment if flooding occurs.

Ideal Application:

- Low Profile Areas
- Cities and Towns
- Business Parks
- Subdivisions
- Apartment Complexes
- Strip Malls
- Planned Urban Developments

Ideal Application:

- Placed in Sidewalks
- 🚺 Downtown
- 🚺 Urban Areas
- Boroughs
- 🚺 Towns
- Cities



CEMH's contain two levels.

The top level includes the air conditioning, control assembly, power entrance, transfer switch and an emergency power generator connector. The bottom level houses the telecommunications and environmental control equipment. CEMH products are easy to permit and provide an electronic equipment enclosure right where you need it - out of sight.

Controlled Environment Vaults (CEV)

Oldcastle Precast's below-grade Controlled Environment Vaults are built secure and watertight. Our precast concrete structures install quickly and are delivered pre-wired with HVAC, lighting and alarms designed to your requirements. Available in a variety of sizes, Oldcastle Precast CEVs are the optimal choice, providing unmatched security for your network requirements.

Ideal Application:





Microcell[™] Environment Vaults

Oldcastle Precast's Microcell Controlled Environment Vaults house micro-cells underground and are ideal for applications where shallow excavation and/or size restrictions require small vaults. Equipment can be placed out of sight and secure from the weather. In addition to having a zero profile, they offer unmatched security and are cost effective.

DowntownUrban Areas

Ideal Application:

- Subdivisions
- Business Parks
- Apartment Complexes
- Cities



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Delivering Reliability



Oldcastle Precast is the leading manufacturer of precast concrete, polymer concrete and plastic products in the United States. With a nationwide network of facilities our products are always close at hand. Our employees are committed to upholding core values of reliability, quality and service in revolutionary ways. Our attention to detail exceeds the expectations of customers from some of the largest companies in the U.S., across a spectrum of industries.



888.965.3227

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Full Turnkey Services

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Strength You Can Count On

Oldcastle Precast Shelter Solutions has the experience, knowledge and resources as your long term partner in the deployment, renovation and maintenance of your equipment facility. The manufacturing, deployment and integration of any facility is a complex process that our team successfully delivers. Oldcastle Precast provides a turn-key solution from pre-planning, design and procurement through manufacturing, facility set-up and systems integration to ensure on-time delivery of the product you desire.

Oldcastle Precast Shelter Solutions provides the following benefits:

- Single Point of Accountability
- Diverse Experience
- Efficient and Expedited Deployment

We customize a deployment program that meets your quality, schedule and values through an understanding of your:

- Technical Specifications
- Equipment Requirements
- Geographical Requirements

Building Structures - Shelter Solutions

Oldcastle Precast®

Oldcastle Precast will help you manage your schedule and budget.

	 Program Management Single Source Communication Onsite Supervision Schedule / Cost / Quality Coordination
	Real Estate Site Selection Due Diligence
and the second	 Negotiation and Acquisition
~	Design, Engineering and Permitting
	Space Planning
Malla Alton	Zoning and Permitting
	Civil, structural, architectural, mechanical and electrical
	Site Development
	Civil and Foundation Work
	Utilities Coordination
	Ancillary Installation such as towers and dishes
	Building Construction
	Final Outfitting and Assembly
	Architectural Enhancements
	Renovations and Upgrades
	Equipment Integration
	Racks and Cable Ladder
	Off Site and Factory Equipment Installation
	Wiring and Testing
ELECTRONIA A	Continuing Services
	Site Audits and Inspections
•	Preventive Maintenance
	Repairs

Shelter Solutions



Tenant Improvement Services

Delivering Reliability









Experience You Can Count On

Oldcastle Precast Shelter Solutions is your single source for system Critical facilities. Not only do we manufacture our precast shelters in multiple sizes and configurations , we also modernize existing facilities to meet today's technology requirements.

Oldcastle Precast Shelter Solutions possesses the ingenuity and fexibility to provide these services in and around sensitive areas occupied by customers, staff, or critical equipment.

On every project our knowledge and experience help you through any portion of the overall process. From concept to completion our team is available to meet your needs, and provide solutions.

Please call 888.965.3227 to speak with a solution specialist.

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Oldcastle Precast[®]

CEV Services

CEV & Shelter Maintenance Products & Services

AC Upgrades



- No upgrading of electrical service required
- Systems will work with existing controller
- Retrofit of dual compressor CEV in just 1 day
- Additional cooling capacity, up to 6 tons and greater reliability
- New condenser located in A/C housing with restrictive air inlet's/outlets
- New condenser utilizes modern Scroll compressor-assessable simplified
- New condenser BLOWER moves required air through restrictive louvers
- Ceiling mounted air handler designed to fit in the center of the CEV walkway
- Ceiling mounted air handler blows 800 cfm down/out to improve circulation
- "Hatch pak" provides fresh outside air upon demand
- Blower motor and squirrel cage can be replaced in minutes
- Entire system designed to make maintenance and repairs simple and fast

Above Ground Buildings AC Upgrades & Improvements





Can be installed outside or custom built to install AC unit inside of building.

NGCEV New Hatch Replacement & Issue II & Issue IV Hatch Replacement.





Typically manufactured in 2 weeks. Can be accelerated in emergency cases

OZ-Bank Expansion



Full Turnkey can be Installed in banks of 2, 4, 6, & 8



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CEV Services

Issue II and Issue IV Control Panel Replacements. Built to Specification.



COLLAR EXTENSION Replacements. Built to Specification



Building Roof Repairs From Cracks to Major Overhauls



Custom Building Work Buildings-Roofs-Siding-Landscape



CEV, CUE, CMH, Flush mount, Huts & All other Concrete Structures.



Please call 888.965.3227 to speak with a Solution Specialist or visit us at oldcastleprecast.com

NGCEV Control Panel Replacements Upgrade to a Solid State Control



CEU Sump Pump Installation Installed in Above Ground Buildings



CEV Relocate-Full Turnkey Provided Resealed and Con-Wrapped



Change out old Gem Floats to S.S. Probe Floats including Heater & Dehumidifier



Cracks & Leaks in parting lines or cold joints are injected and sealed.



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MCNC/CommScope Golden Leaf Rural Broadband Project North Carolina

RCS1020 Precast Concrete Shelters

Project Overview

New fiber build installation of approximately 2,000 miles of fiber optic cables throughout a 69 county area in the state of North Carolina. As part of the BroadbandUSA Initiative once complete the project will greatly increase the broadband capacity and stabilize bandwidth and Internet access costs for public school systems, community college campuses, libraries, universities, and other community anchor institutions.

Phase 1 required (2) two turnkey Co-Location Shelters to house the headend fiber network system.

Phase 2 required an additional (18) eighteen turnkey Co-Location shelter sites.

Construction Challenge

In collaboration with MCNC, Commscope, and the State of North Carolina, Oldcastle Precast provided a "turnkey" solution for (20) different sites. Oldcastle Precast's scope of work consisted of the manufacturing, outfitting and installation of (20) twenty RCS1020 shelters along with foundations, fencing, power service, dc installation, racking and generators.

Precast Solution

The turnkey project involved the manufacturing and complete out-fitting of Oldcastle Precast's RCS1020 Precast Equipment Shelters with all specified equipment. In addition, the fully out-fitted shelters were shipped, installed and made fully functional at (20) twenty different locations in North Carolina. The RCS1020 shelters were manufactured at our Newnan, GA facility and foundations were installed in the field by our Oldcastle Services Group.

Construction Schedule

Start Date :January 2012Completion Date:Scheduled for September 1, 2012







MANUFACTURING FACILITY:

Oldcastle Precast Newnan, Georgia

SCOPE OF WORK

Precast Structure	Golden L
A. Structural Engineering	Conden I
Drawings: Detailed drawings	1,752 in newly-constructe Expa
B. Precast Concrete Shell	Dansen Jon State
Size: (1) RCS 1020 concrete shelter with	waffled floor
Concrete: 5000 psi concrete	
Outside dimension $-20-0$ Long X 10-0 W 3 Finished inside dimension $-10^{\circ}-0^{\circ}$ Long X 9'-	-0" W/ x 9'-0" H
Weight: Approximate finished weight: 48,432	2 pounds
Specifications: Floor load: 200 PSF	and the family and the part
Roof load: 60 PSF	The second
Wind load: 150 MPH, Exp "C" Bullet Posistance: LIL 752 Level 4 equivalent	A second frances of the second
Fire Rating: 2 hour	
Seismic Zone: Up to 50% gravity accelera	ation
C. Finishes	
Exterior Walls: Exposed aggregate finish v	with tan trim
Insulation: R-11 on walls and ceiling	
Telco Board: (1) 4'x4' telco termination b	board; white
Floor: Vinyl composition tile	
Roofing: Dura-cool coating	
Doors: (2) 3'-0" x 7'-0" heavy duty	steel door & frame
Locks: (2) Kaba – 5 key combinat	ion locksets,
Door Hardware: NRP Stainless steel hinges, o	closer, pick plate,
holder, weather stripping, doc	or shoe & aluminum
Door Drip Caps: (2) Door drip caps – 2 ½" v	vide
Door Canopy: (2) Standard 3070 door ca	nopies
E. Power	o) (
Power Service: 200A,1Ø, 120/24	UV
"SQ D", breakers	leaker w/ 42 positions
Exterior Disconnect: 200A, 1Ø, exterio	or disconnect
Surge Suppression: (1) AC Data surge	e suppressor –
AC2100NA Convenience Outlets: (8) 120v/20A duni	lex outlets
Exterior GFI Outlets: (1) 120/20A outlet	t I
Twistlock Receptacles: (4) 120v/20A twist	tlock receptacles
Automatic Transfer Switch: (1) Automatic Tra	ansfer Switch –
Fiber Termination Panel: (2) Fiber Terminat	tion Panels
Battery Plant: (2) 100A, Eltek V	alere DC
Battery Plants	
Standard Racks: (2) Standard rack	S
F Environmental System	entor
HVAC: (2) 3 ton, 1Ø – Marvair HVAC	units with 5kw heater, no economizer
Controls: (1) Lead / Lag controller	
G. Alarms Alarms: (1) 25 pair alarm terminal box	with latrusian smalke power failure
HVAC fail and high/low ten	nperature
H. Lighting	
Interior: (4) 4', double tube fluorescent	light fixtures with lexan covers
Exterior: (2) Exterior lights, 70 Watt	HPS with photocell dual flood lights
Switches: (2) 20 amp light switches	adar nood nghto
I. Cable Ladder	
Cable Ladder: 60 linear feet of 18" wide g	old chromate cable ladder with
the second se	

Golden LEAF Rural Broadband Initiative

1,752 in newly-constructed or reconstructed fiber and 852 miles of IRU fiber. 2,604 total miles of new operational infrastructure. Expansion of NCREN will traverse 69 counties (67 completely or partially underserved).







Also Offering:

Real Estate Services

- Identification/Evaluation
- Due diligence
- Contract negotiation
- Representation at closing
- Real Estate Commissions

02 Case Study



City of Opelika – New Fiber Optic Building for New FTTH Network Opelika, AL

3096 Precast Concrete Maxi-Mod Buildings

Project Overview

The City of Opelika is developing a new fiber to the home (FTTH) network to provide both broadband services as well as the ability to monitor and manage their own energy consumption. The FTTH new fiber optic network and new smart grid technology for the network will give residents and businesses access to new high-quality broadband voice, data and video services, including light-ning-fast Internet access, IPTV and video-on-demand services.

Opelika will be the first city in the State of Alabama to build an all fiber optic network and will leverage that infrastructure to enhance economic development and attract new businesses to the community

Construction Challenge

The \$2.6 million project included the complete "Full Turn Key" construction of a 60 foot by 96 foot building that would house the new head-in building and data center building. The scope of work consisted of manufacturing, out-fitting and installation of the building, fencing, power service, dc installation, racking and generators.

Precast Solution

The turnkey project involved the manufacturing and complete out-fitting of (2) two Oldcastle Precast # 3096 Precast Concrete Maxi-Mod components to create the required 60 ft x 96 foot building with all specified equipment. In addition, the fully out-fitted building modules were shipped, installed and made fully functional for the City of Opelika. The # 3096 Precast Concrete Maxi-Mod components were manufactured at our Newnan, GA facility and foundations were installed in the field by our Oldcastle Shelter Solutions Group.

Construction Schedule

Start Date :May 2012Completion Date:Scheduled for August 1, 2012







Design & Construction Team

GENERAL CONTRACTOR:

RACO, Inc.

OWNER:

City of Opelika

PRECASTER:



MANUFACTURING FACILITY:

Oldcastle Precast Newnan, Georgia

SCOPE OF WORK

Precast Structure

A. Structural Engineering

Engineering: Provided complete product engineering services. Drawings: Provided detailed engineering drawings. Supervision: Provided an onsite managing supervisor.

B. Precast Concrete Shell

Size (2) Model 3096 maxi-mod concrete building. Each outside dimension: ~ 97'-4" Long x 31'-4" Wide x 10'-1" High. Each finished inside dimension: ~ 96'-0" Long x 30'-0" W x 10'-0" H. Weight: Approximate weight: 59,000 pounds per concrete section. Floor load: 150 PSF Roof load: 60 PSF. Specifications: 130 MPH, Exp "C". Wind load: Seismic Zone: Zone 4.

C. Finishes

Exterior Finish:	Smooth chamfered surface w/ textured finished.
Interior Finish:	Interior walls & ceiling finished w/FRP laminated board.
Insulation:	Outside walls & ceiling insulated.
Floor:	VCT anti-static tile with rubber base molding.
Interior Walls:	Steel Stud 2x4 framing, insulation, drywall, and FRP (2hr rated);
	(2) Video Head-End Offices-# 1 & #2; (1) Set-Up Office/Lab;
	(1) Electrical/Battery Room; (1) Storage/Receiving Area;
	(1) Server Room.
Roofing:	60 mil Duro Last Roof with a 20 year warranty

Roofing:

D. Doors and Openings

(3) 4'-0" x 7'-0" heavy duty steel doors and frames. Doors: Doors: (9) 6'-0" x 7'-0" heavy duty steel doors and frames.





(12) Locksets w/ changeable core; (6) Mortise; (5) Passage; (4) Panic Bars Doors; frames have electric strike & card reader Locks: Door Hardware: NRP Stainless steel hinges, door closer, door pick plate, door holder, weather strip, aluminum threshold, 2.5" drip cap.

E. Power

Power Service:	1200A, 3Ø, 480V
Disconnect Switch:	(1) 2000A @ 480VAC 3 PHASE main switch gear.
Surge Suppression:	(2) 100K Peak Amp Surge Suppressor.
Generator:	Included in section 11.
ATS -A:	ASCO 7000 series service entrance rated with isolation 1200A/4P ATS – NEMA1.
ATS -B:	ASCO 7000 series with isolation bypass switch – 1200A/4P ATS – NEMA1.
Main Distribution Panel:	(1) 1200A (DSSB) support phase one loads.
HVAC Panel:	(1) 600A HVAC (HM) Panel.
DC/UPS Panel:	(1) 800A (HC) Panel.
LA Panel:	(1) 225A (LA) Housekeeping Panel.
HA Panel:	(1) 100A Lighting Panel.
Transformer:	(1) 75kVa 480VAC to120VAC step transformer for non-critical housekeeping loads.
Convenience Outlets:	(61) 20A, 120V Duplex outlets (as needed throughout bldg.).
Exterior GFI Outlets:	(11) 20A, 120V outlets.
Power Conditioning:	(2) APC Symmetra PX 100 kW UPS with 50 kVA modules, PDU & cables with connectors to the "A"
	power strips in Rows 1 & 2 (3) APC Symmetra PX 40 kW UPS with 10 kVA modules, including
	batteries, PDU & cables with connectors to the "A" power strips in Rows 1 & 2 complete.
DC Plant/Batteries:	Lineage DC Plant and Batteries.

DC Plant/Batteries:

F. Environmental System

••••••••••••••••••••••••••••••••••••••	
HVAC:	(2) Bard W60A1C06MP 2. 5 Ton 3Ø HVAC Units with dehumidification, 9kw heat, "E" controls (low ambient control).
	(17) Bard W60A1D06MP 5 Ton 3Ø HVAC Units with dehumidification, 9kw heat, "E" controls (low ambient control).
Controls:	(10) Bard MC4000B Lead Lag Controller with enhanced alarm board.
HFans:	(5) Broan 331H wall exhaust fans.
Grills:	Return air, and exhaust grills.

G. Alarms

	Security Management:	Security Management System per E2.06 and the Security Management System specification.
H. Ligh	ting	
	Interior (Mod A):	(96) 4' fluorescent light fixtures with 20% up light.
	Interior (Mod B):	(20) 4' fluorescent light fixtures with wire guards.
	Exterior:	(13) 100 HPS Exterior fixtures with photo cell.
	Emergency:	(11) Emergency fixture with exit sign and dual flood lights.
	Exit:	(8) Exit sign/lights.
	Switches:	(12) 20 amp light switches.

I. Cable Ladder:

Cable La Fiber tray	ıdder: y:	(750) LF of 12" gray cable ladder mounted above rack spaces: Ladder mounting hardware, Two layers of cable ladder mounted above DC rows, One lay of cable ladder mounted above AC rows.(321) LF of fiber tray as shown on drawing T2.01.
u nding Halo:	Will mee	et requirements on T2.03 & T2.04. No.2 AWG Bare, Stranded copper wire around inside perimeter of building.

J. Grou

Halo:	No.2 AWG Bare, Stranded copper wire around inside perimeter of building.
Bonding:	No. 6 insulated copper wire from metallic items such as conduit, electrical boxes and equipment to perimeter
	ground bus. #2 stranded green jacketed communication equipment ground bus secured to Newton #2106C
	brackets mounted to the cable ladder.
Ground Bar:	(2) 24" x 4" x ¼" Cooper ground bars, insulators, connecting rods & exterior; Copper straps (4") to earth ring;
	One bar interior, one exterior.

K. On-site Mechanical and Electrical

Electrical (exterior):

Exterior ground halo : Perimeter loop with copper cable, 10' copper cladded rods, inspections ports, conduit entry into building with all connections cadwelded.

Lightning protection:	Lightning protection system adhered to roof; lightning arrestors adhered to roof with each down leg cadweld to 10'
	copper cladded rod connected to the main ground loop.
Generator work:	Included as part of Section 11.

Power Conditioning:	Included as part of Section 7.

Electrical (interior): Included as part of section seven. Plumbing: Water lines and condensate lines. Lines outside 5 feet from the building are excluded. Fire Protection: System engineering per NFPA protocol; tanks, piping and FE-25 agent to 9% concentration; smoke detectors and

relays; abort buttons, pull stations and strobes; required testing, start-up and instructions.

Included as part of section seven. HVAC: Controls and automation: Included as part of section seven.

L. Equipment

Generator:	CAT Model C27 - 750 KW (480V) diesel generator with standard weather enclosure with critical grade silencer; main line circuit breaker; 24 hour belly fuel tank (1,600 gallon); analog / digital control panel; start-up and training.
Generator work:	Receive, set and anchor; up to 20 If of conduits (line voltage, blocker heater and controls) and matching number of conductors for 750KW generator. UG conduits to be encased in concrete.
Load Bank Test:	Complete a 4 hour load bank test of the generator per specifications and plans.
ATS -A:	Included as a part of Section 7.
ATS -B:	Included as a part of Section 7.
Power Conditioning	Included as a part of Section 7.

M. Electronic Equipment Integration

Cable ladder: Included in section seven.















04 Case Study



Oklahoma Department of Transportation Weigh Station Buildings Project

RCS 13830 Precast Concrete Buildings

Project Overview

The Oklahoma DOT (ODOT) is constructing new state-of-the-art commercial truck weigh and inspection stations for heavy trucks entering Oklahoma. A total of nine POE weigh stations will be built along major highway entrances around the state's border.

The \$100 million dollar project consists of building eight permanent, manned stations at key ports of entry into Oklahoma, along with a ninth unmanned "virtual" station that will allow regulators to use special equipment to weigh and check trucks as they move along the highway.

Construction Challenge

In collaboration with Telco Supply Company and the Oklahoma State DOT, Oldcastle Precast provided a "turnkey" solution for the ODOT Port of Entry Precast Weight Station Buildings. Oldcastle Precast's turnkey scope of work consisted of the manufacturing, outfitting and installation of (2) two RCS 13830 Precast Concrete POE Buildings.

Precast Solution

The ODOT, using metal office trailers in the past, knew it was essential, going forward, to provide a more secure and durable building to house the DOT employees that weigh and regulate the trucking industry on Oklahoma's highways. They chose precast concrete construction as the solution.

The turnkey project involved the manufacturing and complete out-fitting of Oldcastle Precast's RCS 13830 Precast Concrete Buildings with all specified equipment. In addition, the fully out-fitted buildings were shipped, off loaded and installed at the POE sites near Oklahoma City. The RCS 13830 Precast Concrete Buildings were manufactured at our Newnan, GA facility.





Design & Construction Team

GENERAL CONTRACTOR:

Telco Supply Co., Sulphur, OK

OWNER:

Oklahoma Dept. of Transportation



MANUFACTURING FACILITY:

Oldcastle Precast Newnan, Georgia

Construction Services: Provide by Oldcastle Services

Case Study - Oklahoma Department of Transportation Weigh Station Buildings Project



SCOPE OF WORK

Precast Structure A. Structural Engineering Detailed engineering & drawings	
B. Precast Concrete Shell Size (1) RCS 1430 Light Weight Precast Concrete POE Precast Office Building Outside Dimension – 30' long x 13'8" Wide x 10.1' High Finished Inside Dimension – 29' Long x 12' 8" Wide x 9' High Weight: Approximate finished weight: ~82,700 pounds Specifications: Floor load: 200 PSF Roof load: 60 PSF Wind load: 150 MPH, Exp "C", I=1.15	
Buillet Resistance: 0L752 Level 4 Equivalent (.30-06 at 15 Ft.) Fire rating: Two Hour Equivalent Seismic Zone: Up to 50%Gravity acceleration per IBC2006. Higher ratings are available to 300%Gravity acceleration	
C. Finishes	
Exterior Walls: Solid Precast Concrete, 4" Thick with Textured Thorocoat finish, Interior Wall & Ceiling: Nudo White 1/2 "FRP board Insulation: R-11 in walls and ceiling	
Floor: Vinyl composition tile with rubber base molding Roofing: White Elastomeric coating Stud Partition Walls: Restroom & Closet walls:	
D. Doors and Openings	
Doors: (2) 3'-6" x 7'-0" 16 gauge steel door with 14 gauge steel frame Locks: High Security Lockset with changeable core and Panic hardware Other Door Hardware: (2) NRP Stainless steel hinges, anti-pick plate; kick plate, hydraulic door closer, weather strip, aluminum threshold; door sweep	H
Door Hood: (2) 54'w x 30"d door rain hoods, (2) Door drip cap Interior Doors: (2) 3'-0" x 7'-0" Interior steel doors with hardware; Windows: (5) 5ftW x 4ftH Shatterproof Tinted Windows rated 150 MPH with1- 5/16" tempered, tinted, hurricane resistant glass	
E. Power	
Power Service:200A 1Ø 120/240VDisconnect Switch:(1) SQ D, D224NRB ,200A Exterior Disconnect SwitchMain Distribution Panel:(1) SQ D NQ series, MB panel, 200A 1Ø, 40 spaceSurge Suppression:(1) Raycap/AC Data B82XXR-G at MDPConvenience Receptacles:(6) 20A, 125VDedicated Receptacles:(~32) 120V, 15A ReceptaclesExterior GFI Receptacle:(2) 20A, 125V	
F. Environmental System	
HVAC:(1) 3 Ton, 240V,1Ø wall mounted HVAC systemControls:(1) Auto heat/cool thermostat controllerRestroom Exhaust fan:(1) Restroom exhaust fan	
G. Alarms	
Alarms: (1) 25 pair split 66 block in storage room with intrusion smoke H. Lighting	
 (2) 2' x 2', surface mtd fluorescent fixtures Exterior: (2) 100W HPS Exterior light with photocell Lithonia TWA series Emergency: (2) Emergency fixture with dual flood lights Switches: (2) 20A light switches 	
I. Grounding	
Grounds: Standard Commercial service grounding per NEC. K. Additional Items Telco, Computer, Radio: Install other conduits only as required Counter: Plastic laminate counter with ledge Storage shelves/Cabinet: Plastic laminate storage shelves in storeroom & storage	
cabinet in restroom Restroom: Block outs for plumbing & floor drain provided by Oldcastle. IT equipment box/cabinet: IT equipment box/cabinet in storage room	



