New Parkland Hospital: Glazing Meets Structure
Dallas TX

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Presenter:

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New Parkland Hospital, Dallas TX
New Parkland Hospital, Dallas
Texas

BACKGROUND
➢ Began in Nov 2010
➢ Construction Partners selected in 2009
➢ Largest Hospital in the USA
➢ High Expectations
➢ Thorough Design Process
➢ Unique Design Elements
➢ High level of co-ordination
➢ Made an immediate impact
➢ Will be Completed in 2014
New Parkland Hospital, Dallas Texas

KEY TEAM PLAYERS

➢ Owner: Parkland Hospital, Dallas TX
➢ GC – BARA, Dallas TX
  ➢ Balfour Beatty Construction
  ➢ Austin Commercial
  ➢ HJ Russell
  ➢ Azteca

➢ Architect: HDR (Interior) + CORGAN (Skin & Public Areas), Dallas TX
➢ Structural Engineers:
  ➢ AG&E LLC w/ DATUM GOJER Dallas, TX
  ➢ Testing Lab - Terracon
➢ Curtain Wall Consultant: MGI
➢ Cladding Subcontractors:
  ➢ Win-Con, Harmon, NOWI
  ➢ CDC Inc, CES Inc (Cladding Engineers)
  ➢ ATI – Exterior Cladding Testing
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DESIGN CONSIDERATIONS

- LARGE BUILDING LAYOUT/FOOTPRINT
- LARGE AMOUNT OF GLASS
- USE OF FRITTED GLASS
- BUILDING FAÇADE UNIQUENESS
- CONTROLLING THE INTERIOR ENVIRONMENT
- CO-ORDINATION BETWEEN FAÇADE AND STRUCTURE
- MULTIPLE EXTERIOR COMPONENTS: CURTAIN WALL, GLAZING, ALUM PANELS, LOUVERS, CURTAIN WALL, STRUCTURAL STEEL COMPONENTS
- SEVERAL TRANSITIONS
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DESIGN COMPONENTS

➢ TESTING (WIND TUNNEL)
➢ ENGINEERING SYSTEM AND SUPPORT
➢ COMPONENT PROFILES
➢ FUNCTIONAL MOCK-UP
➢ TESTING (LABORATORY STRUCTURAL TESTS)
➢ TESTING (ONSITE) –VISUAL
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PROPOSED MODEL RENDERING
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Actual Construction
DESIGN CONSIDERATIONS

❖ Wind Pressure
❖ Building Movements
❖ Interfaces / Intersections
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For differential pressures across parapets, roof screens, helipad overhangs, roof overruns, canopies and pedestrian bridges, refer to Table 4.
For pressures on roofs, refer to Figure 12.
For pressures on soffits, refer to Table 3.
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- 2.2M SQ BLDG HOPITAL
- 17 STORIES + 1; 300 FT TALL
  - Basement & (2) Helipads on Roof
- Over 8 ACRES OF GLASS
- OVER 2,000 WORKERS AT PEAK
- 45 ELEVATORS
- 7,000 DOORS
- 32,000 Light Fixtures
- 6,000 Plumbing Fixtures
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- Current Building Status is 99% “Complete”
- Awarded TCO from City of Dallas on 7-21-14
- 7,000 + PEOPLE THRU ORIENTATION
- 6,250,000 + MAN HOURS TO DATE
- Poured concrete every week for 2 yrs (160K CY poured in total)
- Poured floor every 2 weeks;
- Maintain 100 YDS/HR during pours
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➢ 865 PRIVATE BEDS
➢ 96 NICU BEDS
➢ 48 LDRS BEDS
➢ 1009 TOTAL BEDS
➢ 108 EXAM - EMERGENCY ROOMS
➢ 27 OPERATING ROOMS
➢ 3800 PARKING SPACES; 1800 STAFF, 2000 VISITORS
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- 42,000 DATA OUTLETS
- 10,000 STRANDS OF FIBER OPTIC CABLE
- 8.5 MILES OF CABLE TRAYS
- 575 MILES OF CONDUIT
- 43,300,000 LBS OF REBAR (if #8 BARS, OVER 3073 MILES)

- 852 Cameras
- 1397 Card Readers
CONSTRUCTION
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WHERE TO START

PROJECT STARTED IN WINTER OF 2010
➢ UNDERSTAND OWNERS EXPECTATIONS
➢ DEVELOP A STRONG CONCEPT
➢ DEVELOP A GOOD TEAM FOCUSED ON THE PROJECT TASKS
➢ KNOW WHEN/HOW TO DELEGATE
➢ WORK WITH THE GC ON SCHEDULES
➢ ANTICIPATE FIELD CONDITIONS ADAPTATION
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January 2011
New Parkland Hospital, Dallas
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CONCRETE POURS
“Very Challenging in the Summer of 2011”
REBAR EVERYWHERE!!
THE CONCEPT OF RELATIVE SIZE

MGI

Size 11 Shoes
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September 2011
New Parkland Hospital, Dallas, Texas
March 2012
New Parkland Hospital, Dallas
Texas
June 2012
New Parkland Hospital, Dallas
Texas

EXTENSIVE ENGINEERING FOR THE CANTILEVERED WALL
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POST TENSION WALLS CREATE CANTILEVER
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750 FT of Wall

160’ Up in the air

Walls were 4’ thick

800 CY per pour @ 10” slump

3,200 CY of concrete

Used Maturity Meters to measure heat
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March 2014
CONSTRUCTION CHALLENGES
Feb 2012

Wish Clinic Area starting

Demoed OLD parking garage

ONE SHEAR WALL KEPT STANDING
Mega Shoring Columns
LOTS OF SHORING
LOTS OF SCAFFOLDING
HALF WAY
POUR
HALF WAY POUR
2000 workers at max rate
BED TOWER AND WISH CLINIC
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CHECKING GLASS COLOR

VARIATION
FUNCTIONAL
MOCKUPS
TRY TO INCORPORATE ELEMENTS THAT OF INTEREST
LABORATORY
MOCKUPS
JOB SITE INSTALLATION
INSTALLING UNITIZED CURTAIN WALL

TWO UNITS INSTALLED

LOWER PODIUM

MGI
INSTALLING UNITIZED CURTAIN WALL

INTERIOR VIEW

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DINING AREA
HOW COOL IS THE EFFECT ON GLASS

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MGI

Names used to generate the graphics on glass
CONSTRUCTION

AT THE LINK BRIDGE ACROSS THE ROAD

CONSTRUCTION

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TREMCO AIR BARRIER WITH ETA (ENGINEERED TRANSITION ASSEMBLY) SYSTEM USED ON THE EXTERIOR OF THE PODIUM & WISH CLINIC BUILDINGS
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ALUM LOUVERS

ALUM COMPOSITE PANELS
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ROOFING

SOPREMA, torchable grade, 2-Ply Modified Bitumen Membrane Roofing system with 2 layers of ridge board insulation and tapered insulation
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ROOFING/ HELIPAD
ALL-GLASS WALL CONSTRUCTION

- FLAT PLATES
- TENSION RODS
ALL-GLASS WALL

Harmon; W & W Glass

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ALL-GLASS WALL
ALL-GLASS WALL INTEGRATED WITH LANDSCAPE
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ALLOWING GREAT DAYLIGHT

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INTEGRATING STRUCTURE WITH AESTHETICS
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WISH CLINIC CONSTRUCTION
WISH CLINIC 2-LEVEL LINK BRIDGE

SCALE IS DECEPTIVE

MGI
ALUM LOUVERS

ALUM COMPOSITE PANELS

NOW INC
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JOBSITE
FIELD TESTING
DIFFERENTIAL PRESSURE TESTING
AIR/WATER
WATER TESTING
TIME TO GO CHECK OUT THE BUILDING
PATIENT ROOM CORRIDOR
6th Floor dedicated Burn Floor
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LABOR AND DELIVERY ROOM

Last year, Parkland delivered 10,236 babies. More space, including 44 labor and delivery rooms, will make deliveries easier and safer. Each room features separate spaces for the mother, family members and baby.
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CUTTING-EDGE OPERATING ROOM

LED LIGHTS WITH CAMERA
Surgery becomes nearly shadow-free under intense LED lights, making the surgical field easier to see. A video camera at the center allows real-time remote viewing of every surgery, and footage can also be reviewed later.
WISH CLINIC TRANSITION
The large overhang doesn’t touch the lower building
The large overhang doesn’t touch the lower building.
CHAPEL WITH LIMESTONE INTEGRATED TO CONTRACT METAL AND GLAZING
THE LANDSCAPE OF THE PROPERTY IS INFLUENTIAL ON THE CALMING EXPERIENCE NEEDED AT THE FACILITY
NEED TO PLAN FOR **PUBLIC TRANSPORTATION** OPTIONS – LIGHT RAIL & BUS ROUTES SERVE THE FACILITY
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SUMMARY

➢ VERY CHALLENGING PROJECT
➢ PROFILE HAS LOTS OF TRANSITIONS
➢ FIELD QC WAS VERY IMPORTANT
➢ FIELD TESTING WAS IMPLEMENTED AT TYP AND TRANSITION AREAS
➢ WELL COORDINATED PROJECT, GIVEN THE SCALE
➢ REQUIRED FOCUSED EXCHANGES BETWEEN GC AND SUBS FOR COORDINATION
HOW COOL IS THIS?
Thank You

Questions?