

RYAN


Des Moines US Courthouse

Des Moines, IA



**iowa
better
concrete
conference**


RYAN




Agenda

1. Introductions
2. About Ryan
3. Project Overview
4. Preconstruction
5. Concrete Applications and Challenges
6. Statistics
6. Q&A


**WE
BUILD
STORIES**




RYAN




Jordan Stokes
Self Performed Work Project Manager



TJ Meyerholz
Director of Preconstruction




Ron Embrey Jr.
Senior Superintendent



Lauren Bockholt
Senior Project Engineer

RYAN | About Ryan – Midwest Profile

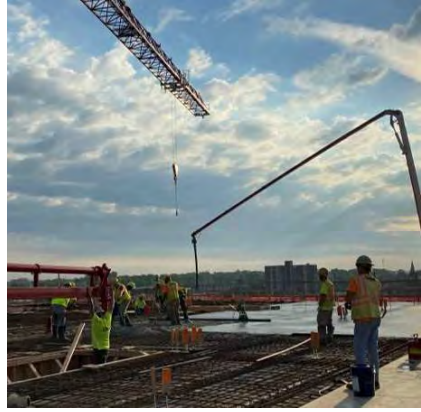
2019 CONSTRUCTION VOLUME \$206M	TOTAL NUMBER OF MIDWEST PROJECTS & CONSTRUCTION VOLUME FROM 2013 - 2019 740 PROJECTS \$903,792,229	1ST MIDWEST OFFICE CEDAR RAPIDS 1990	 <ul style="list-style-type: none"> ATLANTA AUSTIN CEDAR RAPIDS CHICAGO DALLAS/FORT WORTH DES MOINES KANSAS CITY MILWAUKEE MIRNEAPOLIS PHOENIX ROCHESTER SAN DIEGO SEATTLE TAMPA TUSCON
CORE VALUES INTEGRITY FUN RESPECT STEWARDSHIP EXCELLENCE SAFETY FAMILY	CONCRETE DEMOLITION INTERIOR FINISHES ROUGH CARPENTRY		
2019 SELF PERFORMED WORK VOLUME \$20M	.83 SAFETY MOD RATE	CURRENT NUMBER OF MIDWEST EMPLOYEES 263	

RYAN Midwest Region SPW



Ryan SPW

- Crews
 - Laborers #s
 - Finishers #s
 - Carpenters #s
- Volume
- Scopes we perform work
- CR DSM



RYAN U.S. COURTHOUSE – DES MOINES, IA



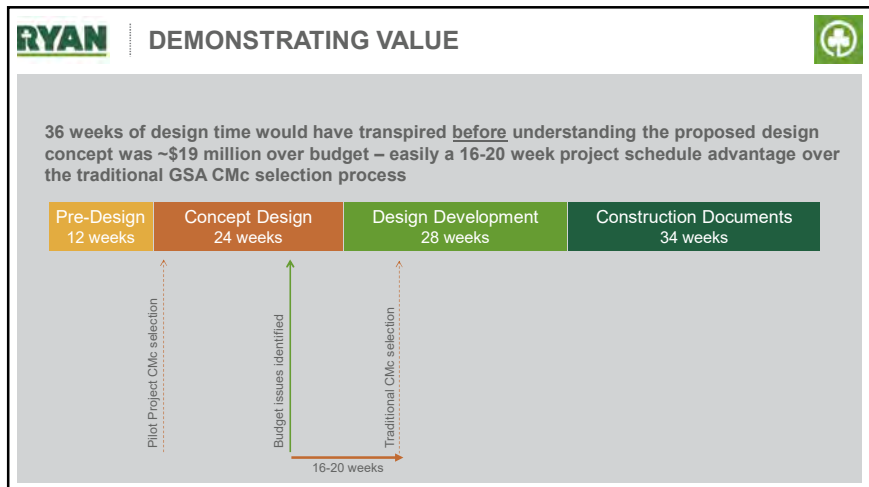
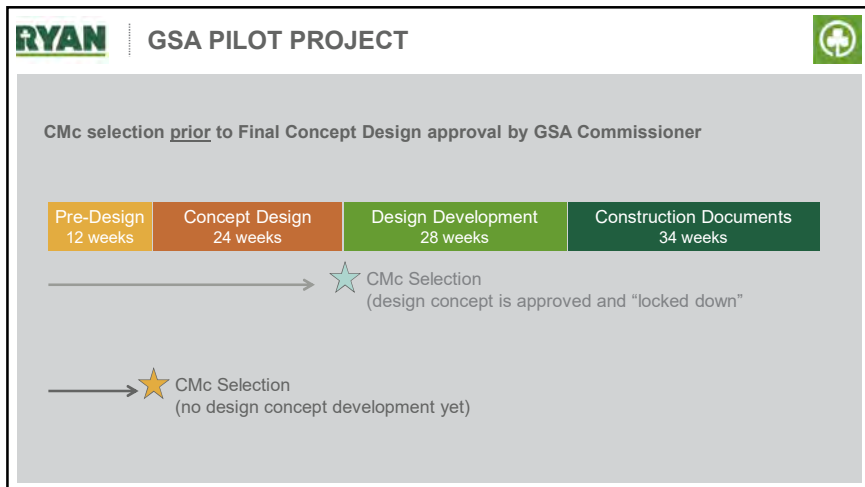
- 231,000 square feet
- 6 occupied floors
- 9 Courtrooms
- LEED Gold & SITES Gold
- \$105.7M GMP contract w/ open-book accounting
- Funds were allocated by Congress in 2016





RYAN How Ryan was Selected

1. Advisory Step Technical Proposal
 - Past Experience
 - Past Performance
 - Project Management Approach
2. Selection Step Technical Proposal
 - Management Plan
 - Personnel
 - Schedule
 - Local Experience
 - Price Proposal - based on Program of Requirements narrative



RYAN DEMONSTRATING VALUE

36 weeks of design time would have transpired before understanding the proposed design concept was ~\$19 million over budget – easily a 16-20 week project schedule advantage over the traditional GSA CMc selection process

Pre-Design 12 weeks	Concept Design 24 weeks	Design Development 28 weeks	Construction Documents 34 weeks
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Budget issues resolved ↑

Design revisions identified prior to Final Concept Design approval:

- 19-feet of building height eliminated
- 10,000 square foot building area reduction
- 500,000 cubic feet of volume
- Simplified structure = 17 fewer columns
- Vastly simplified mechanical system
- Minimal impact to floor plan layouts or design intent

RYAN PROCUREMENT PLAN

Pre-Design 12 weeks	Concept Design 24 weeks	Design Development 28 weeks	Construction Documents 34 weeks
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- BP #1 – Site Prep & Removals
- BP #2 – Deep Foundations
- BP #3 - Elevators
- BP #4 – Enclosure
- BP #5 - Foundations
 - 75% Design Development Package
 - Structure
 - Site Utilities
 - Earthwork
- BP #6 – Major MEP Equipment
 - 100% Design Development Package
 - Majority of remaining scope

RYAN PROCUREMENT PLAN

Pre-Design 12 weeks	Concept Design 24 weeks	Design Development 28 weeks	Construction Documents 34 weeks
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Construction Start with Ryan phased procurement plan ★


~11-months faster →

Construction Start with traditional GSA procurement process (75% CDs) ★

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Preconstruction

- Oklahoma City Bombing
- Progressive collapse & blast resistance
- Landing at a concrete frame solution
 - Steel vs. Concrete Structure
- Types of concrete structures
 - Steel Pan
 - Flat slab
 - Drop beams
 - Post Tensioned





Concrete Applications/Project Challenges



Superstructure

- Auger Cast Pile Foundations
 - 293 Piles
 - Formed CIP Pile Caps
 - Perimeter Grade Beams
- Tower Crane Pad
- Foundation Walls
- Birds Run Sewer
 - 100-year-old active storm sewer
 - Scanned and created 3D model of sewer
 - Bridged sewer using (3) W36x395 beams encased in concrete
- Total Schedule duration: 7 months



Left: Foundation walls and SOG
Right: Birds Run Sewer Beams



Concrete Applications/Project Challenges



Structure

- Reinforced Pan Deck Structure
 - 30-, 40-, and 50-Foot Bays
 - 53" and 66" Typ. Pan Sizes
 - 29" Total Depth
 - 5" Slab
 - 24" Beam
 - 36" Average Beam Width
 - 12" Average Joist Width
- Average Floor Plate size
 - Level 1&2: 26,200 SF
 - Level 3-7: 33,300 SF
- Floor to Floor Height
 - Typical: 14'-5"
 - Courtroom Floors: 18'-8"



RYAN Concrete Applications/Project Challenges

Typical Deck Pour Sequence

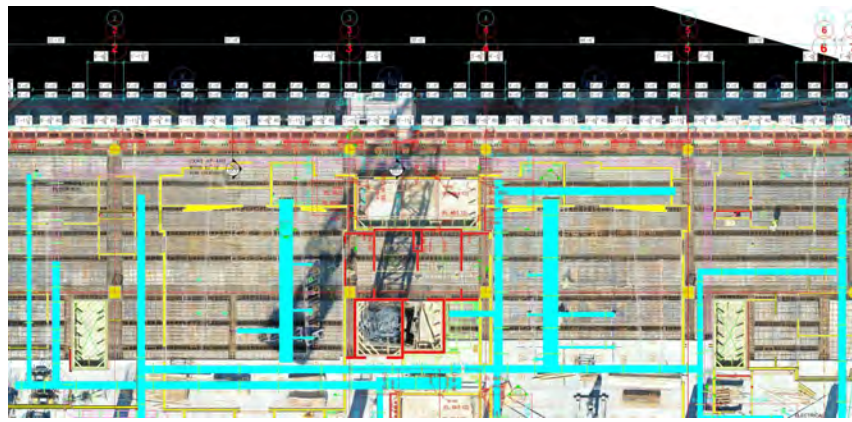
- 3 pours per floor
 - 430 CY Average Pour Size
- Shoring: 1 week
- Edge form/Pans: 1 week
- MEP Sleeves/Hangers: 1 week
- Reinforcing: 4 days
- Pour: 1 day
- Columns: 6/day (12 per deck pour)
- Total Schedule duration: 11 months



RYAN Typical Deck Pour



RYAN Digital Construction Verification



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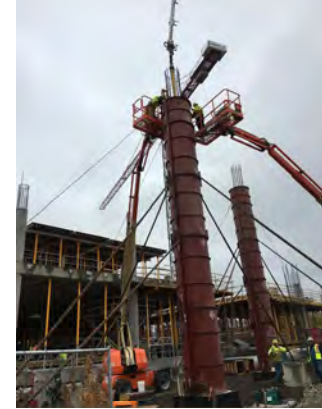


RYAN Concrete Applications/Project Challenges



Structure Cont.

- Columns
 - Round and Square Columns
 - 30" Ø and 30" Square
 - Multiple Mix Designs
 - Basement/Level 1: 10,000 PSI
 - Level 2/3: 8,000 PSI
 - Level 4/5/6: 5,000 PSI
 - Concrete Surface Category 3
 - Self consolidating concrete
- Mega Columns
 - 48" Ø
 - 36' above grade, 13' below grade
 - 36' section as 1 monolithic pour
 - 10,000 PSI SCC
 - Concrete Surface Category 4
 - Mock-up required



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Left: Typical column pour
Right: Scaffold @ east overhang

RYAN Concrete Applications/Project Challenges



Site Concrete

- Site retaining walls
 - CSC 3 Finish
- 17,000 SF Sidewalk
- 8,000 SF Vehicular Paving
 - Drive aprons
 - Public street pour back
- 5,800 SF Paving @ East Entry





Concrete Applications/Project Challenges



Winter Conditions

- Temporarily enclosed level below deck that was being poured
- Gas powered heaters kept underside of deck to ~85°F
- Covered decks w/ snow tarps after placement
- Wrapped columns in concrete blankets
- Hot water/accelerator in concrete



Concrete Summary

Foundations	1,575 CY
Foundation walls	605 CY
Slab on Grade	461 CY
Decks	9,605 CY
Columns	748 CY
Mega Columns	157 CY
Site Concrete	1,200 CY
TOTAL Concrete:	14,351 CY
Total Reinforcing	1,200 Tons



Questions

