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# Course Description

This session offers both an introduction to Integrated Project Delivery (IPD), as well as the perspective of an owner who has successfully completed a project using IPD. The introduction is based on the jointly-authored paper, *IPD for Public and Private Owners*, which offers a terminology baseline for the term Integrated Project Delivery. By clearly differentiating between IPD using a multi-party contract and IPD without a multi-party contract (“IPD-ish”), this introduction will serve as a prelude to subsequent IPD-related sessions and provide everyone with an ability to see where they fall on the IPD spectrum. Speakers will talk about their experience using a multi-party IPD contract and lean techniques and will share the benefits that their firm received and whether they believe it was worth the risk.

# Learning Objectives

At the end of this program, participants will be able to:

- 1) Attendees will be able to identify terminology associated with the term Integrated Project Delivery.
- 2) Attendees will be able to differentiate between IPD using a multi-party contract and IPD without a multi-party contract.
- 3) Attendees will be able to recognize where they fall on the IPD spectrum.
- 4) Attendees will possess the tools necessary for risk-assessment of IPD projects.

# IPD Contracting at Sutter Health

## The Integrated Form of Agreement (IFOA) on the Sutter Medical Center Castro Valley Project



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Sutter Health - Facility Planning & Development

September 21, 2011

AGC IPD Conference, San Antonio TX

# Outline

1. **Why Sutter is using the IFOA**
2. **How an IFOA is different**
3. **And Creates an Innovative Work Environment**
4. **Outcomes so Far**
5. **Q&A**

# 1. Why Sutter is Using the IFOA

# General

- California State Bill 1953 Requires all Acute Care Facilities to be meet seismic code
- \$5Billion to be spent over 10years
- Needed certainty of scope, schedule and budget
  - GMP, Lump Sum, D/B, CM-at-Risk had not produced this
  - Looked for a better way – created the IFOA
- **HIGH RISK, OWNER HAS A LOT TO LOSE**

# Specific

- Eden Medical Center, Castro Valley must be replaced
- Change in hospital governance based on an agreement in September 2007 that required:
  - Foundation & structure package to Agency by 12/31/08
  - Construction commencement by 07/31/09
  - \$260M in Escrow lost if failed to meet these
- **HIGH RISK, OWNER HAS A LOT TO LOSE**

- 130 Bed Hospital, 7 Stories, 223,000 SF
- \$320 Million Total Project Cost
- \$225 Million Design and Construction Cost



- New contract model
- New clinical care model
- Finish project 30% faster
- Absolute cap on funding
- LEED Silver
- Very constrained site
- Highest seismic zone





## Historic Earthquakes with Magnitude $\geq 6.0$

Earthquake	Summary Magnitude*
1 San Francisco, June 21, 1808	6.30
2 Oakland, June 10, 1836	6.80
3 San Francisco Peninsula, June 1, 1838	7.00
4 San Jose, November 26, 1858	6.10
5 South Santa Cruz Mountains, October 8, 1865	6.30
6 Hayward, October 21, 1868	6.80
7 Antioch, May 19, 1889	6.00
8 Mare Island, March 31, 1898	6.20
9 San Francisco, April 18, 1906	8.25
10 Morgan Hill, July 1, 1911	6.60
11 Morgan Hill, April 24, 1984	6.20
12 Loma Pheta, October 18, 1989	7.00

### LEGEND

- MAJOR ROAD
- HISTORICALLY ACTIVE FAULT
- HOLOCENE ACTIVE FAULT
- 6.0-6.4 MAGNITUDE EARTHQUAKE
- $\geq 6.5$  MAGNITUDE EARTHQUAKE



### NOTES:

Earthquakes Magnitude data from:  
 USGS, California Earthquake History, 1799 - Present,  
[http://pasadena.wr.usgs.gov/info/calhist\\_eqs.html](http://pasadena.wr.usgs.gov/info/calhist_eqs.html)

\*Events prior to 1808 - adjusted intensity magnitude  
 Events after 1898 - surface wave magnitude

**REGIONAL EPICENTER MAP**  
 Sutter Health Center  
 Castro Valley, California

# **HIGH RISK, OWNER HAS A LOT TO LOSE**

I.e. a typical profile for a complex major project

## **2. How an IFOA is Different** (from other collaborative non-IPD contracts)

# Collective Ownership of Risk & Opportunity

**Owner**

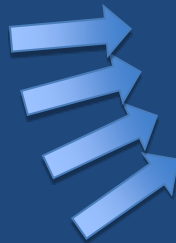


**100% of Profit  
at Risk**

**50% Share  
of Savings**



**Designers**



**Trades**

**Process/BIM  
Specialist**



**If all Profit  
used up,  
Owner pays  
Cost of Work**

**Lowest Risk Profile  
to Owner for  
Complex Projects**

# Strict Limits to Change Orders

1. Owner changes its requirements
2. Law / Regulations change
3. Differing site conditions
4. Nothing Else

# Strict Limits to Change Orders

the following: (a) a change in the scope of work directed or authorized by Owner during the Construction Phase; (b) a change required by regulatory authorities (including inspections and including OSHPD and the State Fire Marshal) during the Construction Phase that was not reasonably ascertainable from the Contract Documents and not reasonably inferable from CM/GC's or IFOA Subcontractor's actual knowledge of local practices or circumstances; (c) Differing Site Conditions;

# Project Managed by the “Core Group”

- You are a member if:
  - Put your profit at Risk
  - Manage the project for the owner
  - Operate the building after handover
- Manages Strategy, Changes, Contingency
  - Main Strategy: Eliminate, Reduce & Manage Risk
- All Decisions Must be Unanimous

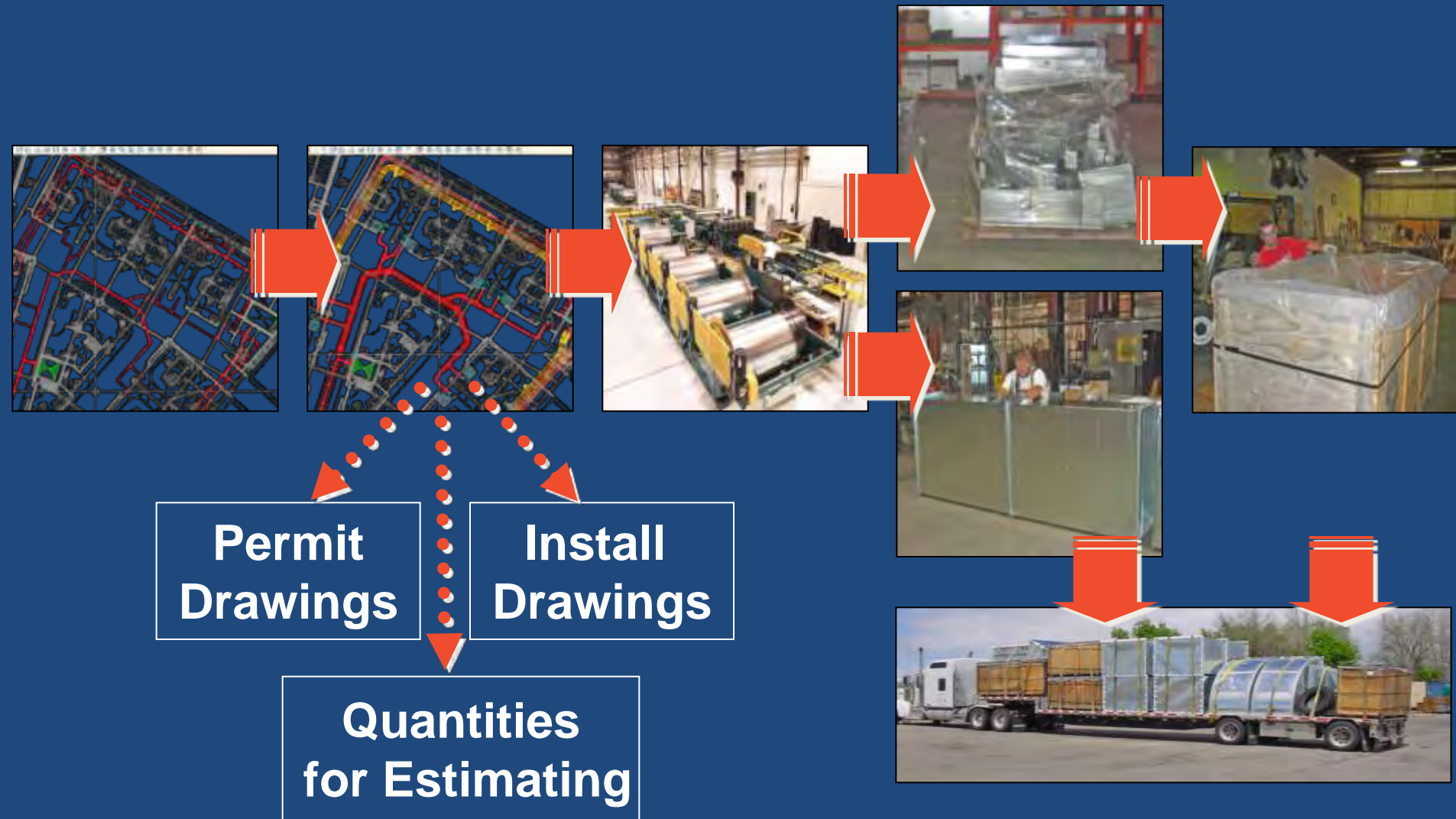
# **3. The Innovative Work Environment**

# Core Group Focus on Risk Management

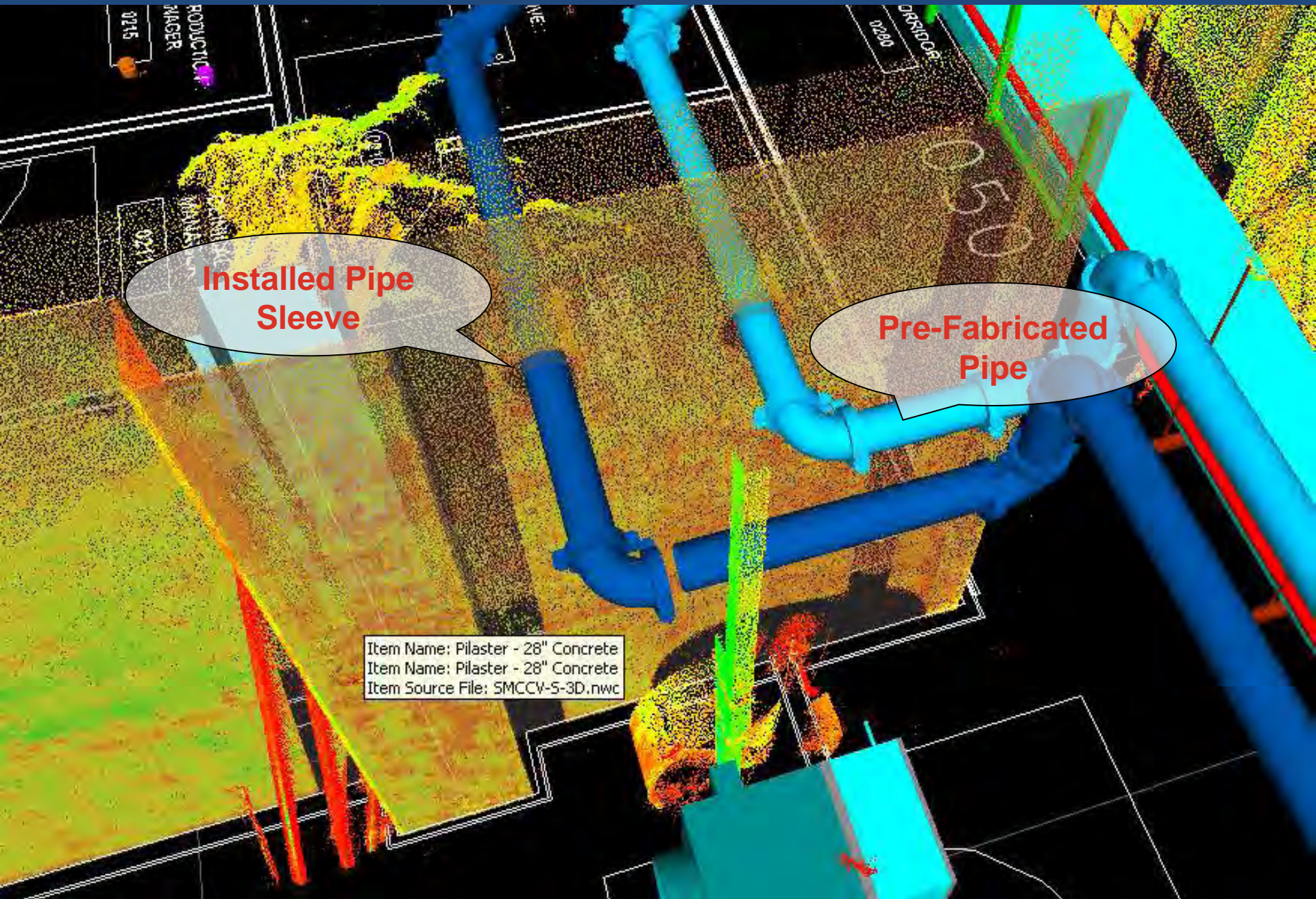
- Design for Fabrication Concept
- Single Design/Trade Model for Mechanical
- Back-converted 2D Vendor Designs into 3D
- Hired 3<sup>rd</sup> Party ADA Specialist
- Solved the “Edge-of-Slab” Nightmare
- Slab Inserts for MEP Located Direct from Model
- Confirmed Build with Laser Scanning
- Exact Modeling of Wall-Framing

“It’s not just a good idea, it’s your PROFITS”

# Example: The Design for Fabrication Concept



# Example: Confirm Build with Laser Scanning



**Installed Pipe Sleeve**

**Pre-Fabricated Pipe**

Item Name: Pilaster - 28" Concrete  
Item Name: Pilaster - 28" Concrete  
Item Source File: SMCCV-5-3D.nwc

# 4. Outcomes so Far

**Design 100%  
Complete**

**Construction 72%  
Complete**



**September 2011**

# Scope installed exactly per 3D model

Mechanical: 99%

Plumbing: 99%

Electrical: 71%

Framing: 79%

# Uncertainty

# Reduced by 83%

	To Date	Projected	Normal
No. of RFI's :	334	500	3000

Baseline: Normal experience on acute care facility in CA

# Tool-Time / Direct Work

73%

Industry Average: 40 – 60%

# Rework

# Down 15% – 95%

Considered the Single Biggest Contributor to Extremely High Level of Worker Morale

	Baseline	→	Actual
Mechanical:	7%	→	0.5%
Plumbing:	10%	→	0.5%
Electrical:	10%	→	8.5%
Framing:	5%	→	0.5%

Baseline: Normal experience on acute care facility in CA

# Productivity

## Up 5% - 20%

	Baseline	→	Planned	→	Actual	→	Projected
Mechanical:	100%	→	105%	→	116%	→	120%
Plumbing:	100%	→	100%	→	107%	→	110%
Electrical:	100%	→	114%	→	105%	→	107%
Framing:	100%	→	122%	→	120%	→	121%

Baseline: Normal experience on acute care facility in CA

Delay in Completion Date since Owner  
Authorized Project in September 2007

None

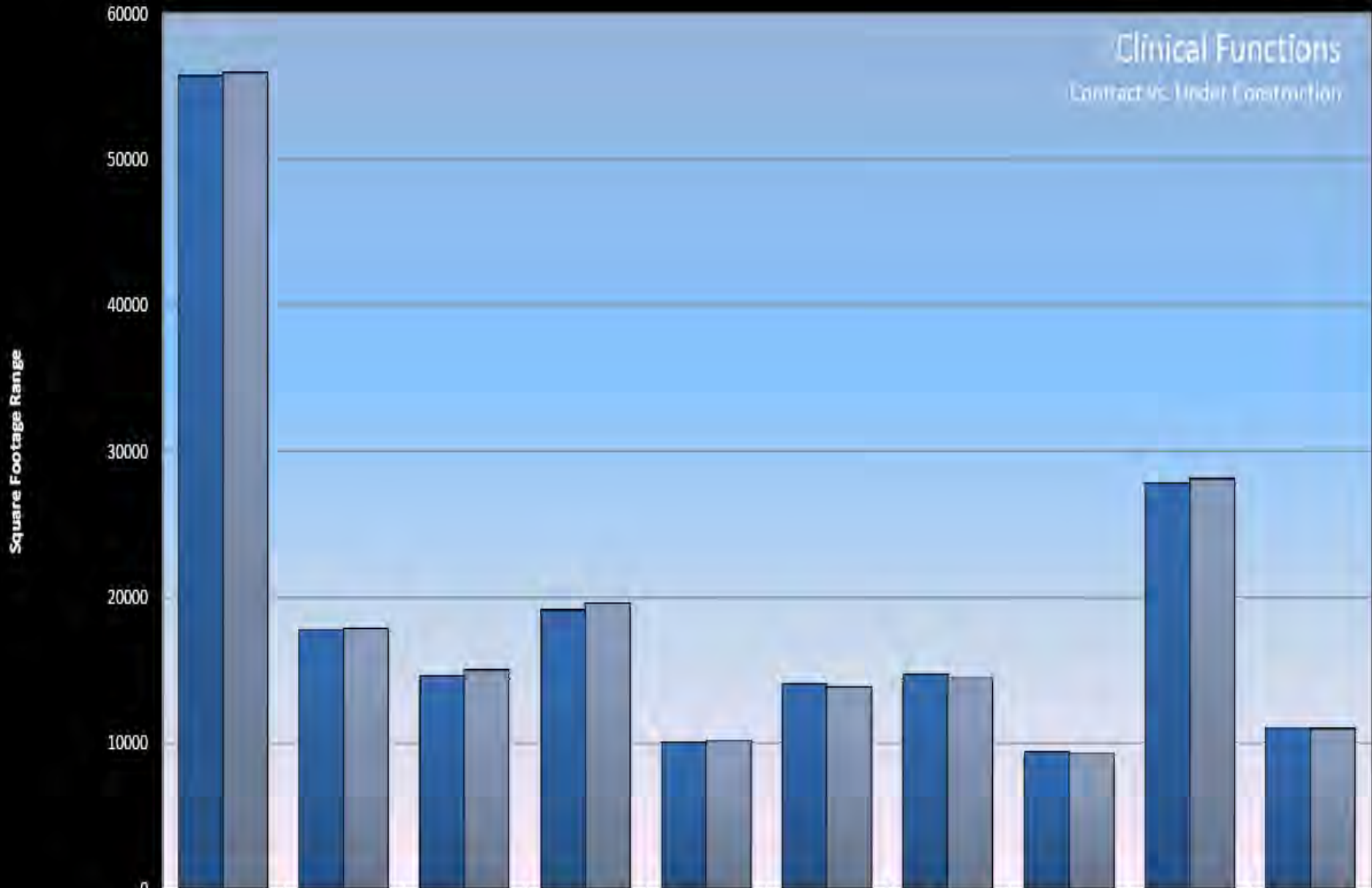
(Meeting target of 30% faster delivery)

# Compromises to Owner's Space Program

Effectively **None**

# Clinical Functions

Contract vs. Under Construction



	Medical / Surgical Unit	Critical Care Unit	Universal Care Unit	Interventional Services	Diagnostic Imaging Services	Emergency Services	Family Birthing Unit	Other Clinical Spaces	Support Services	Common Facilities
Contract	55616	17682	14537	19035	10014	13953	14657	9304	27746	10988
Under Construction	55838	17800	14931	19525	10173	13769	14478	9264	28019	10905

# Cost Increase Since Owner Finalized Space Program in April 2008

None

(And Profit Pool is Fully Funded)

**Thank you for your time!**

**QUESTIONS??**

**This concludes The American  
Institute of Architects  
Continuing Education Program**