YEAR-OVER-YEAR REVENUE

2009 $654
2010 $727
2011 $817
2012 $890
2013 projected $860

AHEAD OF THE CURRENT™
SAFETY AWARDS – EMR

AGC of America
- 1st Place Safety Excellence Award

AGC Oregon-Columbia Chapter
- 1st Place Recognition of Safety Excellence

AGC of California
- 1st Place Safety Excellence Award

Construction Users Roundtable (CURT)
- Safety Excellence Award

International Risk Management Institute
- Gary E. Bird Horizon Award

Cal/OSHA Consultation Services
- Effective IIPP; Health & Safety Program Assessment

NCCI EXPERIENCE MODIFICATION RATE

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>63%</td>
</tr>
<tr>
<td>2010</td>
<td>61%</td>
</tr>
<tr>
<td>2011</td>
<td>62%</td>
</tr>
<tr>
<td>2012</td>
<td>50%</td>
</tr>
<tr>
<td>2013</td>
<td>56%</td>
</tr>
</tbody>
</table>

AHEAD OF THE CURRENT™

ROSENDIN ELECTRIC
QUALITY

- Companywide Quality Program and Manager
- Pre-Task Planning
- Customer Satisfaction Surveys
  - 25% Completion
  - 100% Completion
- Quality Manual
- QA/QC and Commissioning Program
- BIM 360™ Field (VELA) Documentation/Library
- Corporate Training
- Best Known Methods
CONSTRUCTION MANAGEMENT

- Preconstruction Coordination and Planning
- BIM / 3D Modeling
- Procurement
- Scheduling
- Labor Supervision and Field Production
- Coordination with all Other Crafts
- Prefabrication / Prepackaging
- Contract Administration
- Cost Control
- Quality Control
- Testing and Commissioning
BIDDING TO COMPLETION

A TRADE PARTNERS OBSERVATION ON THE ADVANTAGES OF INTEGRATED PROJECT DELIVERY
PLANS AND SPECIFICATIONS – HARD BID

- Bob’s observation of an estimator making a mistake
- Instructions to bidders... (Do not contact people who may have answers)

THE WAR ROOM

- Last second revisions and confusions
- A friend in every office
- Emotion in the way of logic (The thrill of the chase)
- The phantom scope letter with INEXCLUSIONS
- Hours of meetings figuring what is in and out while the trade partner maneuvers to include anything he may have missed
For the trade subcontractor to avoid these political games and last second guessing, a method to go direct to award is the public opening.
PUBLIC OPENING

- Fewer games and honest values
- Still low bidder and wonder why
- Low is not necessarily best
- Same issues with bid documents and getting answers before committing
PUBLIC OPENING – A Personal Experience

Results from my first public bid opening in 1961...

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Bid Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Electric</td>
<td>$125,225.00</td>
</tr>
<tr>
<td>XYZ Constructors</td>
<td>$119,450.00</td>
</tr>
<tr>
<td>Weisman Electric</td>
<td>$62,256.91</td>
</tr>
</tbody>
</table>

...a long ride home!
Many Other Methods

Inverse Online Bid Auctions....Also known as watching a train wreck

Design Build...a step in the right direction
INTEGRATED PROJECT TEAMS

Many Advantages to All

- Brought in early to share expertise in our field
- Direct access to customer to make sure what they want is *what they want*
- Work with design team to avoid designing “unconstructable” construction
- Once budget is agreed to in the validation phase, work hard to let the budget define the design

*This is the path to achieving on-time and under budget projects.*
So this is the ultimate solution... All an owner needs to do is hire a construction team, let them go, and a successful project will be guaranteed?

Because of the tendency of so many people going back to what they are familiar with, integrated project teams have a tendency to fall back on traditional (and proven problematic) methods when things go wrong.

There is a way to keep the team from regressing.
The Integrated Form of Agreement Contract
Lean Integrated Project Delivery (IPD)

Pre-Construction and Construction
IPD — PHILOSOPHY OR DELIVERY METHOD?

- Philosophy
  - No multi-party contracts
  - Collaboration is typical or enhanced (IPD-Lite, IPD-ish)

- Delivery Method
  - Includes multi-party contracts
  - Collaboration is a requirement
  - Shared financial risk and reward based on Project financial outcome
  - Changes team process and dynamics
  - Qualifications based selection of trade partners
  - Typically cost plus with an EMP/Profit at Risk
**INTEGRATED FORM OF AGREEMENT (IFOA)**

Trade Partner Agreement Supporting Lean Methodologies

- Collaboration expectations
- Defines project culture and behavior (inter-discipline mutual respect and trust)
- Pull Planning (Last Planner, V-Planner)
- BIM Execution Plan
- Optimization of the Whole (best for project)
- Increasing Relatedness
- Risks and Rewards
- Transparent Financials (open book)
- Colocation
- Expected Project Outcome
- Liability Waivers (agreeing not to sue one another motivates team to seek solutions rather than assigning blame)
COLLOCATED FACILITY

- Major Trade Partners, Engineers, Architects, General Contractors & Owner Representatives

- Open collaboration workspace for all disciplines (no silos)
PRE-CONSTRUCTION GOALS AND ACTIVITIES

- Basis of Design (BOD)
- Pre-Construction & Construction Milestone Schedule
- Validation (Pre-Con Team Costs and BOD square foot level estimates)
- Target Value Design (TVD) – Maximizing Value & Minimizing Non-Value Added Activities
- Trade Partner/Designer/Owner User-Group Collaboration
- Quality Control/Constructability Reviews
- Hybrid Drawing Set
- Construction
- Detailing and Coordination
PRE-CONSTRUCTION GOALS AND ACTIVITIES

- Design Completion
- BIM Model Complete
- Estimated Maximum Price EMP (detailed construction estimate)
- Identifying Problems Early
- Change Management Plan
- Risk and Reward Register
- Pre-Task Planning
- Target Value Production (TVP) / Value Stream Mapping (VSM) Plans
- Scope Matrix all Disciplines (eliminate redundancy)
- Safety Plan
- Facility/User Group Buy-In
CONSTRUCTION GOALS

- No RFI’s
- No Change Orders
- No Back Charges
- Adherence to Construction Schedule
- Owner Value
- Successful Completion Below EMP with Minimal Risk and Maximum Reward
- No Claims or Litigation
- National Recognition (ENR)
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