It Isn’t Always Easy Being Green

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OCP Contractors

#BIM&Prefab
Benefits of Prefabrication

Owner/AE
- Increased Quality
- Fewer Change Orders
- Earlier Building Completion

Construction Manager/GC
- Shorter Critical Path on Schedule
- Fewer Tradesmen on Project
- Less Clean Up
- Lowered Project Insurance Costs

Specialty Contractors
- Increased Productivity
- Controlled Working Environment
- Better Crew Management
- Lower Job Cost
The “Dark Side” of Prefabrication

Owner/AE
- Completed Design
- Selections and Submittals Completed Early
- Constructability Issues

Construction Manager/GC
- More Pre-Planning Required
- Modeling, Shop Drawings Submittals Needed Earlier
- Staging and Material Handling Issues
- Added Coordination and Meetings

Specialty Contractors
- Staging and Warehouse Space Requirements
- Special Material Handling Equipment
- Jigs and Fixtures for Fabrication
- Tradesman Learning Curve
- Added Coordination and Meetings
Prefab Anyone?
Salem Community Hospital

- 87 Bathroom Pods
- 1,200 lf of Corridor Racks
- 43 Headwalls
- 43 Footwalls
- 38 Sink Walls
- 2,600 lf of Soffits in a Box
Prefab - Where Do We Start?
Double Bathroom Pod, First Try!
Oh $#*$%! 
Will the Toilet Fit?
Finally, Something We Can Build!
Mock Ups - Last Chance for Changes
Warehouse Space - Is It Big Enough?
Prefab - Is It Faster?

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Wow, That Looks Big and Heavy!
Moving a “Very Large” Bathroom Pod
Corridor Rack Installation - Impressive and Troublesome
Trucking - How Do We Get It There?
Hoisting - How Do We Pick It Up?
Learning Curve - You Want To Do “What”?

- Non-Standard Activities
- Added Engineering and Design Issues
- Implementation
- Educating the Tradesmen
Cost Analysis - Is It Cheaper?

OCP Contractors Inc.
Salem Hospital - Prefabrication Cost Summary

<table>
<thead>
<tr>
<th></th>
<th>Estimated Cost</th>
<th>Prefabrication Costs</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>Material</td>
</tr>
<tr>
<td></td>
<td>Labor</td>
<td>Shop Labor</td>
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<tr>
<td><strong>Total Estimated Cost:</strong></td>
<td>$36,422.00</td>
<td>$40,792.00</td>
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<td><strong>Total Installed Cost:</strong></td>
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<td>$42,300.00</td>
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<td><strong>Learning and Downtime:</strong></td>
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<td>On Site Installation</td>
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<td>$16,800.00</td>
<td>Learning and Downtime</td>
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<td>$36,400.00</td>
<td>Trucking &amp; Material Handling</td>
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<tr>
<td><strong>Cost Variance:</strong></td>
<td>($57,427.00)</td>
<td><strong>Total Installed Cost:</strong></td>
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<tr>
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<td></td>
<td><strong>Cost Variance:</strong></td>
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</tbody>
</table>
Summary

- Completed Design
- Pre-Planning for Prefabrication
- Modeling and Coordination
- Impacts to Cost
- Space Requirements
- Learning Curve and Set Up