Keeping Up With Classroom Technology: How to Create Sustainable Oversight

February 24, 2016
Raj Nagra, Clovis USD
Tom Rayburn, Maintenance Login
Dennis Ziegler, Lake Elsinore USD

Clovis USD: Tech all around us

› Walking the site

› Plans and Specs

› Meetings, meetings, and more meetings
Let’s go for a walk

› Walking the site “should” be required for the architect and designers before anything is put on the plans.

Let’s go for a walk

› Did anyone look in the box? Look above any ceiling tiles?
Plans and Specs

› Multiple people need to review both.

› You need to understand what’s in your specs from the **contractor’s** point of view.

› You need to understand what’s on the plans from the **architect’s** point of view.

---

**DATA SYMBOL LIST**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA OUTLET</td>
<td>PROVIDE ONE (1) ELECTRIC BOX, ONE (1) BACK BOX FROM RECESS BOX TO ACCESSIBLE ATTIC SPACE, 15 PULL, DATA CABLE(S), ACROSS (PER PLAN AND PERIPLATE, PER SPECIFICATIONS. 697/108 U.S.A.</td>
</tr>
<tr>
<td>DATA SERVICE OUTLET</td>
<td>PROVIDE ONE (1) BACK BOX, ONE (1) BACK BOX FROM RECESS BOX TO ACCESSIBLE ATTIC SPACE, 15 PULL, DATA CABLE(S), ACROSS (PER PLAN AND PERIPLATE, PER SPECIFICATIONS. 697/108 U.S.A.</td>
</tr>
<tr>
<td>VOICE OUTLET</td>
<td>PROVIDE ONE (1) BACK BOX, ONE (1) BACK BOX FROM RECESS BOX TO ACCESSIBLE ATTIC SPACE, 15 PULL, VOICE CABLE(S), ACROSS (PER PLAN AND PERIPLATE, PER SPECIFICATIONS. 697/108 U.S.A.</td>
</tr>
</tbody>
</table>

---

**Plan Diagram**

- **6" ABV COUNTER**
- **RECEPTION**
- **101**
Meetings......yeah.

› Someone dealing with the technology being implemented at the site needs to attend the meetings on a regular basis.
Wait, what’s he doing here?

› Nobody has time to check everything.
› There will be spot checks:
  – We will look above the ceiling tiles.
  – We will look in christy boxes.
  – We will look at cable terminations.
› If it’s not right, rip it out and do it right.
  – The word will spread quickly when they need to spend a lot of their own money to fix something that should have been done correctly the first time.

Document everything.
Document everything – assume audit
CSI Standards

MasterFormat 2004 Edition Divisions are:

**PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP:**
- Division 00 — Procurement and Contracting Requirements

**SPECIFICATIONS GROUP**
- General Requirements Subgroup
  - Division 01 — General Requirements
- Facility Construction Subgroup
  - Division 02 — Existing Conditions
  - Division 03 — Concrete
  - Division 04 — Masonry
  - Division 05 — Metals
  - Division 06 — Wood, Plastics, and Composites
  - Division 07 — Thermal and Moisture Protection
  - Division 08 — Openings
  - Division 09 — Finishes
  - Division 10 — Specialties

Classroom CSI Standard

Grab from either architect, construction, or Facility Planning
What if the schools have money . . . and are independent

Create a Unit Price Bid

BID NO. 07-16

UNIT PRICE BID FOR LOW VOLTAGE AND CLASSROOM TECHNOLOGY DISTRICTWIDE

DATE ISSUED: January 14, 2016

DATE DUE: February 4, 2016 BY 2:00 P.M.

PREQUALIFICATION DUE: January 28, 2016 BY 4:00 P.M.
### Bid 07-16 Labor Items

<table>
<thead>
<tr>
<th>HOURLY RATE SCHEDULE</th>
<th>BASE LABOR RATE</th>
<th>TOTAL COST</th>
<th>SECOND SHIFT LABOR RATE</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrician Inside Wheaton</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Electrician Inside Wheaton - Journeymen</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Electrical Inside Wheaton - Apprentice</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>ELECTRICAL VARIOUS WIRING, WELDING AND FIBER OPTIC SPlicing</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Electrician, Small Build - Journeymen</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Electrician, Small Build - Apprentice</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Mechanical Drafting</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Shop Foreman - Inside</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Labor with Operator - MIN H 15&quot;, Depth not 10&quot;, VE, Base</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Labor with Operator - MIN H 15&quot;, VE, Base, PC board, hardware</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>12' Coil, Japan shop with driver</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Bearing assembly (e.g. rearmer undergraudent, transmission and/or other)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Tensioning, installation, identification</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>20 or less</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>201-400</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>401 or more</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

### Bid 07-16 Bill of Materials (BOM)

<table>
<thead>
<tr>
<th>AV / Low Voltage</th>
<th>Description</th>
<th>Item</th>
<th>QTY</th>
<th>VNEC</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE600</td>
<td>CATALHEL</td>
<td>Indoor T3 1/4&quot;</td>
<td>1</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>GE600</td>
<td>CATA250</td>
<td>Cool Air</td>
<td>1</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HGTC-2A (2)</td>
<td>If two comp Vessel Jig</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HGTC-2A (2)</td>
<td>If two comp Vessel Jig</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HM60</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF60</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF80</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF100</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF80</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF100</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF120</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF150</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF200</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF250</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
<tr>
<td>Legend Wiremold</td>
<td>HSF300</td>
<td>Transformer Size Clip</td>
<td>10</td>
<td>Est.</td>
<td>$</td>
</tr>
</tbody>
</table>
BOM can serve as in-house too

› External:
  BOM menu items
  under your oversight

› In-house:
  O/T and materials
  charged to site account number

Use vendor support for ongoing staff development

Cisco Certification
Bogen
Rauland
Over Shoulder
Finding money for technology

Just the answers . . .

No money, maybe you do . . .

• Purchase decisions for 100 year ownership

• Continuous process improvement means . . .
  • Lowering your cost to operate
    • Utilities/Labor/Supplies
    • Lower/Automate administrative costs
  • Lower Management Costs
    • Create a metric – e.g. what is taking time & then measure it so you can reduce it.

• When's the last time you itemized your tasks and responsibilities so you can selectively abandon non-core items to right-size your core responsibilities

• As always - communicate how maintenance impacts education
Tracking Productivity

Goal = to track/know what your staff is doing so you can selectively abandon it; if not a core function.

Recapturing existing expenditures

• eRate Version 2
• Prop 39 – spend $1 in cash and save $5 in dimes
• Cost Avoidance (report it) – energy
• All site work via O/T to sites
• Use of Facility Revenue SB1404
• Network with neighbor districts
• Only reduce staff that people see
• Targets of opportunity, where do you spend your $?
Where are your opportunities?

1. Supplies – probably not
2. Utilities – YOU BET
3. Labor Saving Opportunities:
   - Staffing Model
   - Noncore activities - yes
   - Your Biggest 3 Trades

Where is M&O GF Spent

Where’s the money going?
- Labor
- Utilities
- Water
- Supplies

- 65%
- 25%
- 3%

- Not you – delegate it

  › Reset Your Staffing Model (Google APPA staffing model)
    - Right-size your responsibilities
    - Let decision makers set your service level
    - You know the routine . . .
      train (on what you want) > measure > report

  › Use LCAP Plan to say what you’re going to do

  › Attack Your Big 3 Spenders
    - TeleCom (eRate)
    - HVAC
    - ELECTRICAL

  › How do we right ourselves save $ and to look good?
Attack Your Big 3 Spenders

Where’s the money going?
- Labor
- Utilities
- Water
- Supplies

- 65%
- 25%
- 3%

Who is consuming those - Telecom, HVAC, & Electrical

Attack Telecom

eRate (treat like SFP):

- Voice Over Internet Protocol (VoIP)
- SIP Trunking
Attack HVAC

Expand filter PM program to include minor service (e.g. belts)

Add to facility use procedure & fee

Make reporting cost avoidance a priority to garner savings for further investment (e.g. network just your MZ’s)

Make summer program an O/T program that is self-funded and ask for funding of it - I need $x to save $y

The answer is – “turn it off when no one is there”

Attack Electrical Trade Items

PM Program:
• Add Photocell Sensors
• Rent-buy IR Sensors

Re-lamping doesn’t take an electrician

Utility Incentives . . .
Attack Electrical Trade Items

- HVAC units (motors, drives, et.al)
- HVAC controls
- Lighting (e.g. gyms), controls
- The Internet of Things
- Daylighting
- Central plant retrofits
- Energy efficiency infrastructure projects
- Power savers for PC’s

Include savings goal in LCAP
Hammer that “good facilities improve academic achievement”

Researchers have repeatedly found a difference of between 5-17 percentile points between achievement of students in poor buildings and those students in above-standard buildings, when the socioeconomic status of students is controlled.


LCAP goals . . .

“Provide wireless connectivity districtwide to all public areas in support of district objectives”

› Identify non-compliant district classrooms to current district set CSI Standards
Recap – How to Create Sustainable Oversight

› All departments to use same CSI Standard (i.e. Facilities or designated persons to maintain official district standard).
› Use LCAP to require tracking of classroom inventory and goal(s) for technology.
› Always be seeking continuous process improvement to reduce and/or create cost-avoidance opportunities to have money to do those things that make your staff look good.
Questions?

Raj Nagra  
Clovis USD  
RajNagra@cusd.com  
559-327-9636

Dennis Ziegler  
Lake Elsinore USD  
(951) 253-7015

Tom Rayburn  
Maintenance Login  
trayburn@maintenancelogin.com  
949-218-5551