

Mills Peninsula Health Services Planning and Control in Design



Statistics

- **Burlingame, CA**
- **Full Campus replacement on existing site (20 acres)**
- **Patient focused hospital of the future**
- **313 beds (inc 70 shelled)**
- **10 operating rooms**
- **600,000 sq. ft. hospital and MOB**
- **Base isolated foundation**
- **7 levels**
- **810 car 4 level parking structure**
- **Start site work 7/2005, Parking Structure 10/05**
- **Occupy 3/2010**

The Mills Peninsula Team

Mills Peninsula Staff

Sutter Facilities Planning & Development

Anshen & Allen – Architects

- Rutherford & Chekene – Structural Engineer
- Ted Jacob Engineering Group – MEP Engineers

Turner Construction Co. - CM/GC

Design assist subcontracts working under cost plus GMP proposals. Approximately 70% of the hard cost of construction under contract.

Cost of shop drawing moved into design phase.

Design Assist subcontractor

- ACCO – Mechanical and Plumbing
- Morrow-Meadows – Electrical
- Herrick- Structural steel
- Aderholt-Light Metal Framing & Drywall
- Guarantee Glass, CS Erector, Clark Pacific, X-Wall
- Superior Automatic Sprinkler
- Otis Elevator
- Swisslog Tube
- 3M Fire / Smoke Stop all trades

Office of Statewide Health Planning and Development (OSHPD) Permit and Construction

- 12 to 18 Months review process
- All construction must be detailed in documents.
- All field conditions requiring deviations from approved construction documents require Resubmittal to OSHPD

Team's Desired Outcome

- **Avoid all “deferred approvals” and the subsequent delay from re-submittal and review by the permit agency –OSHPD
Milestone: Submit full coordinated set of construction documents for the structural core increment by November 15, 2005**
- **Control unknown budget creep**
- **Status: CD's submitted on time to OSHPD**
- **Site work / utilities construction began 7/05**

Sutter vision Lean big Five Ideas for pre-construction

- Collaborate really Collaborate
- Increase Relatedness
- Optimize the Whole
- Tightly Couple Learning w/ Action
- Networks of Commitments

Mills Peninsula Design Phase Plus

- **Selected team members by qualifications – early**
- **Aim to limit risk to design team and contractors, cost plus contracts, “optimize the whole”**
- **Selected milestones from the Master Schedule**
- **Developed “lean” reverse phase schedules**
- **Teams organized into 5 specialty subgroups**
 - **Site, MEP, Structure, Interior, X-wall**
- **Core group meeting of Owner/Architect/Contractor**

Mills Peninsula Design Phase Plus

- **Teams re-located to one office – “The Big Room”**
- **No “or Equals” documents based on actual chosen equipment. Owner must be willing to bid and pay for shop drawing by vendors. Additional meeting and trips to review vendor selections.**
- **Real time estimates, each subgroup updates estimates every 5 weeks.**

Mills Peninsula Delta's

- Struggled with “last planner” scheduling system
- Much greater level of detail earlier in design phase, changes during CD more involved.
- Shortage of subs willing to invest resources years in advance of project profits.
- Challenged by roles of subs on design team.
- Unclear level of detail required by OSHPD, how much detail is too much.
- Concurrent permit and construction – resources, Phased work increases load.
- Meeting time for all team members increased.

Mills Peninsula Lessons Learned

- **Fully coordinated construction documents based on shop drawings require the AE design team to modify their accepted normal work flow.**
- **Owner must accept on faith the value of this model, can't bid subcontractor shop drawing.**
- **CM/GC must employ resources to manage design assisted sub contractors, during pre-construction.**

Lessons Learned

- **Collaborate really Collaborate**

Team has developed working respect and trust before we break ground

The big room, weekly meetings, direct communications between design professionals and subcontractors, without RFI's saves time and waste.

- **Increase relatedness**

Big room, weekly + meeting to resolve issues face to face

Lessons Learned

- **Optimize the whole.**

Design of the central plant and all utility congested areas based on how best to deliver the best possible solution for the lowest cost and the best value.

- **Tightly couple learning w/ Action**

Design professionals, contractors , owner, face to face meetings involved in the solution process, eliminate multiple rework.

- **Network of Commitments**

Weekly and six week look ahead