Experiment Operations Center (XOC)

XOC Purpose

- The purpose is to combine operations functions of *Intensity Frontier* experiments into a single, centrally-located and optimized space.
- g-2, LBNE, MINERvA, MicroBooNE, MiniBooNE, MINOS, Mu2e, NOvA, SeaQuest...

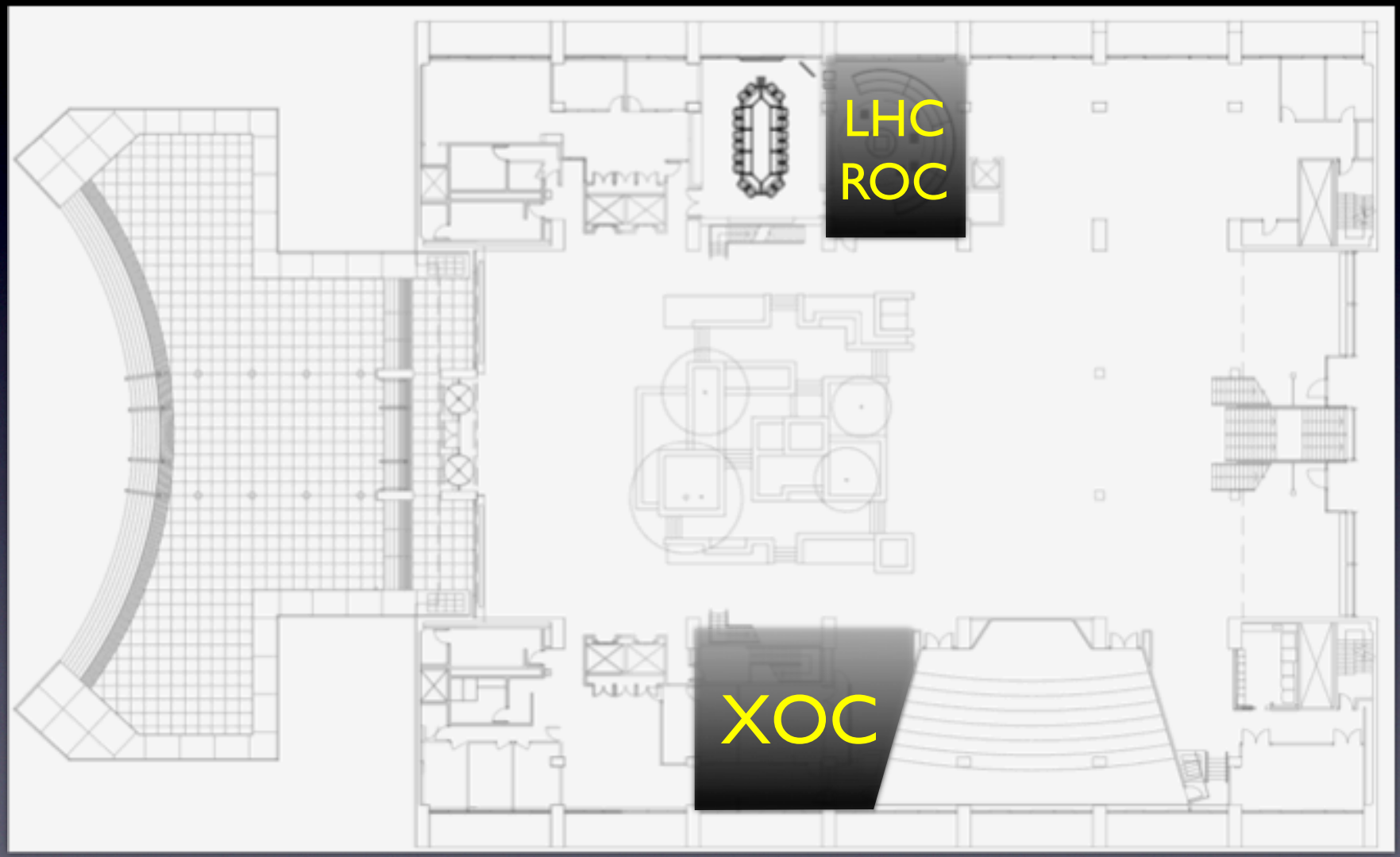
XOC Functions

- The primary function is to provide a single, centrally-managed location that can accommodate the hardware and software needed to operate the experiments.
- The XOC would provide a communications focal point for Fermilab operations staff and experimenters.
  - Operators in the Main Control Room (MCR) will have a single location to contact and communicate with the experiments.
  - Experimenters will be able to get information on the operational status accelerator components and experiments.
- A new education and outreach venue to highlight Fermilab research at the Intensity Frontier.

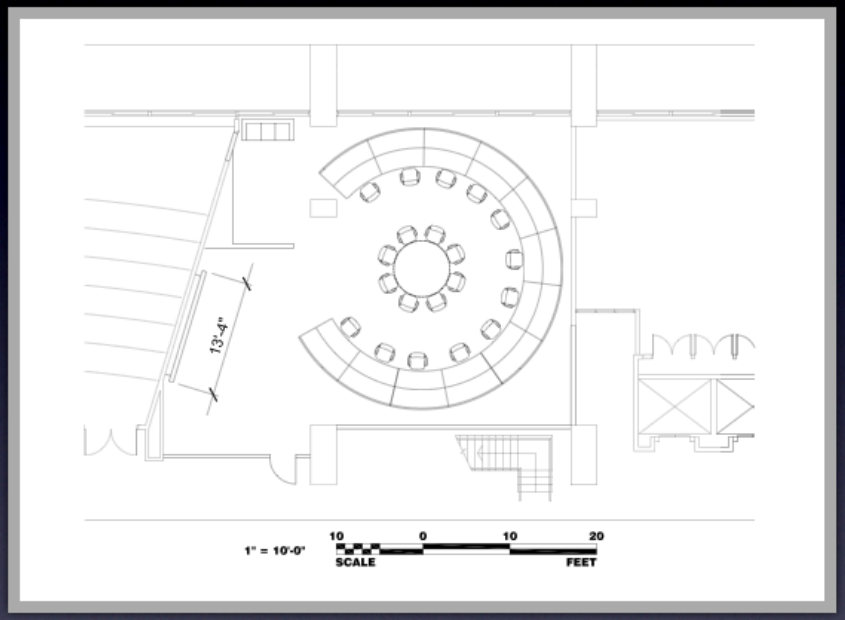
XOC Justification

- Benefits of a single, centrally-managed operations center:
  - Potential cost savings from standardized hardware and software. For example, updating operating systems for console PCs, and applying security patches.
  - Cost savings from shared support personnel by co-locating computing & networking equipment in the same space.
  - Simplify the ability to mitigate problems by using shared infrastructure (for example, easier to resolve problems caused by power outages and network outages).
- Benefits of a shared neutrino control room (WH-12) have been demonstrated.
- The XOC would combine operations functions in a single location, as opposed to our current approach to converting existing office space into control rooms.
- Experimenters working in the XOC will be in close proximity to each other, so they can share insights on commissioning and operations. For example, beam conditions for one experiment are likely to be of interest to others who share accelerator beamline components.
- Location in the Atrium is well suited for education and public outreach.
  - For example, the ROC attracts considerable attention from visitors and VIPs.

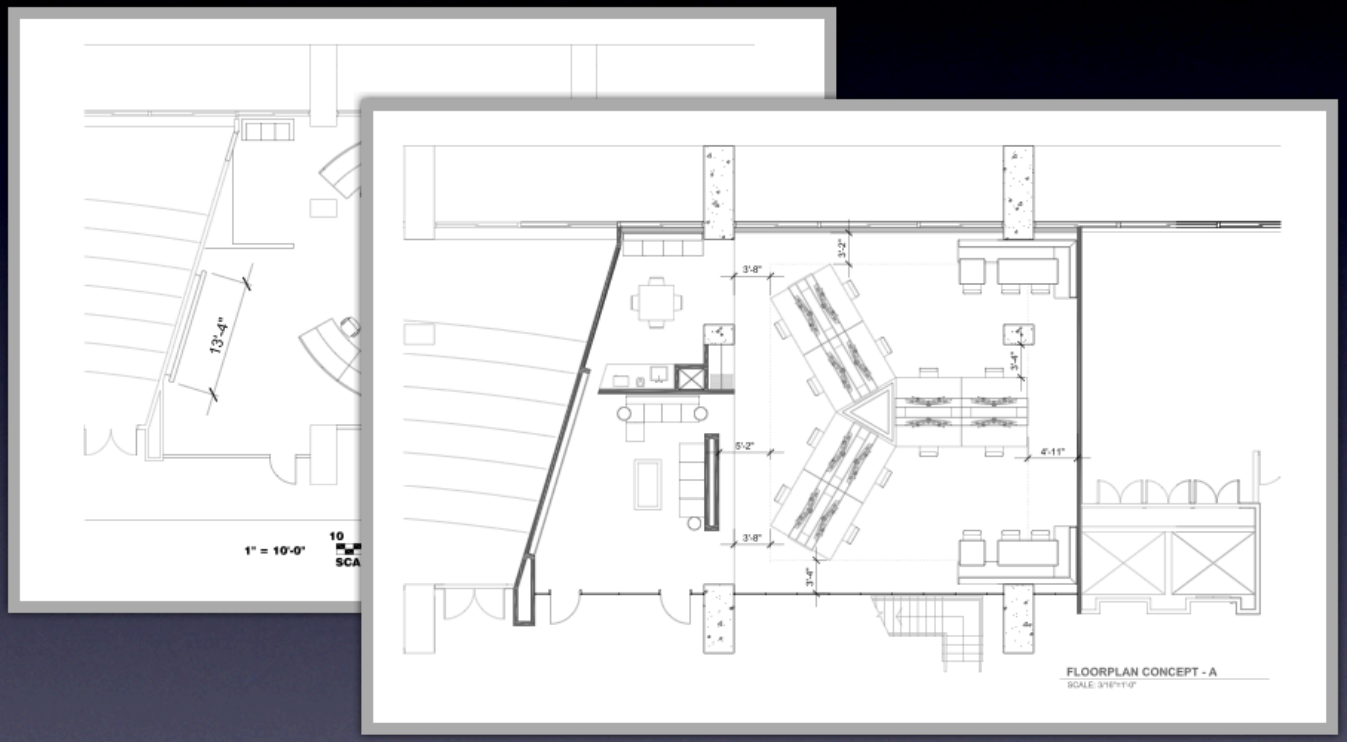
Proposed Location



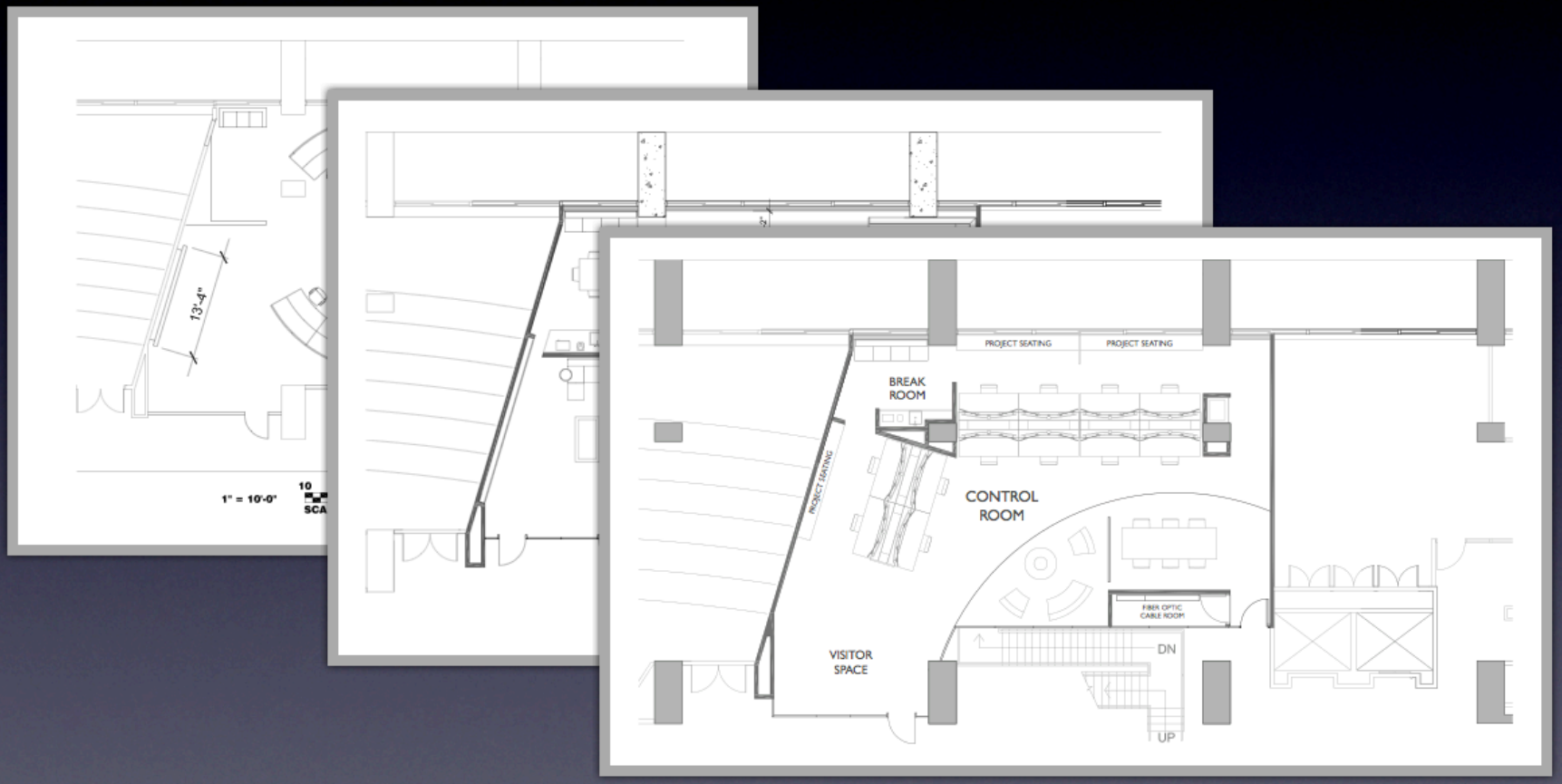
Conceptual Designs



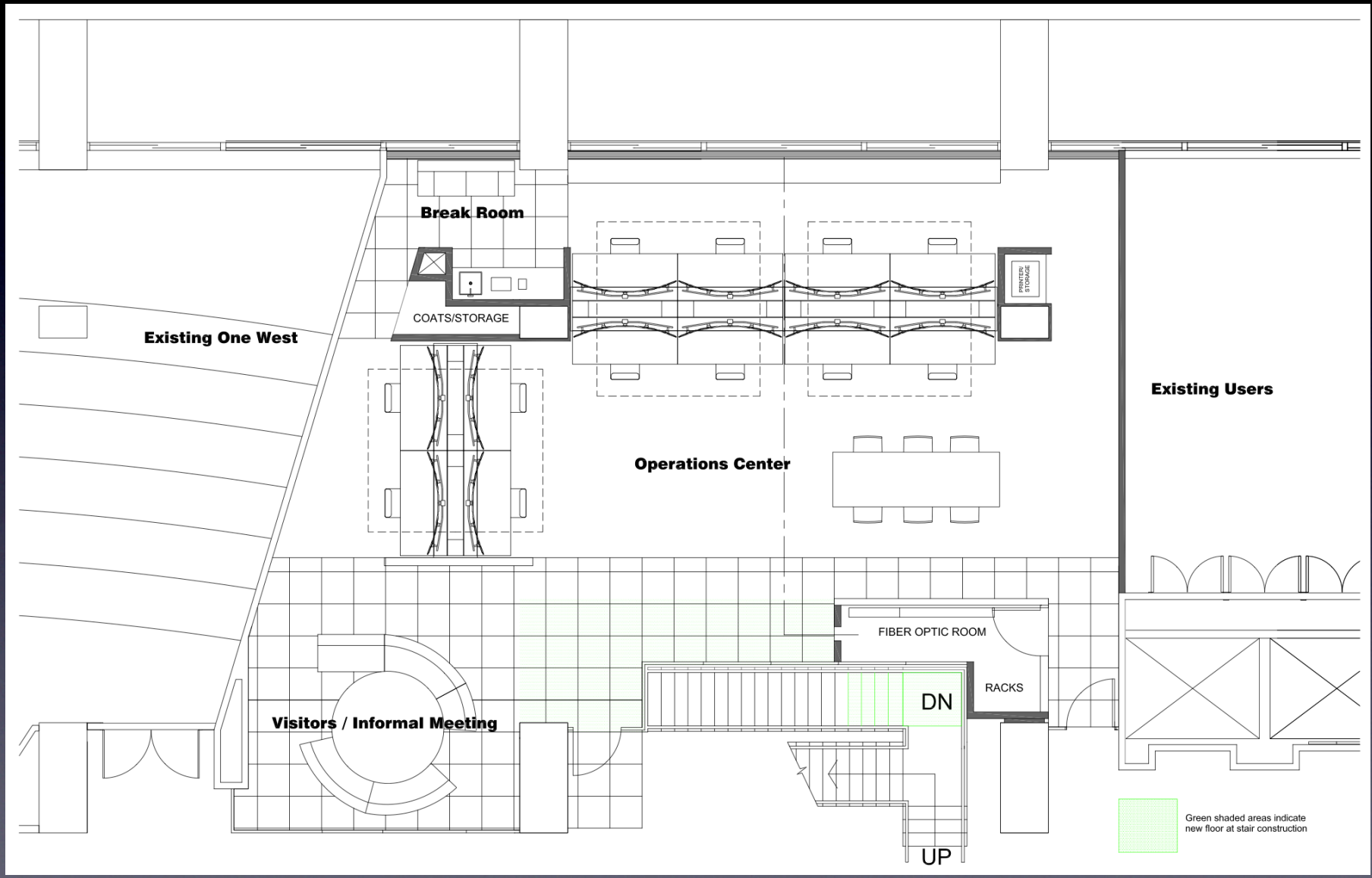
Conceptual Designs

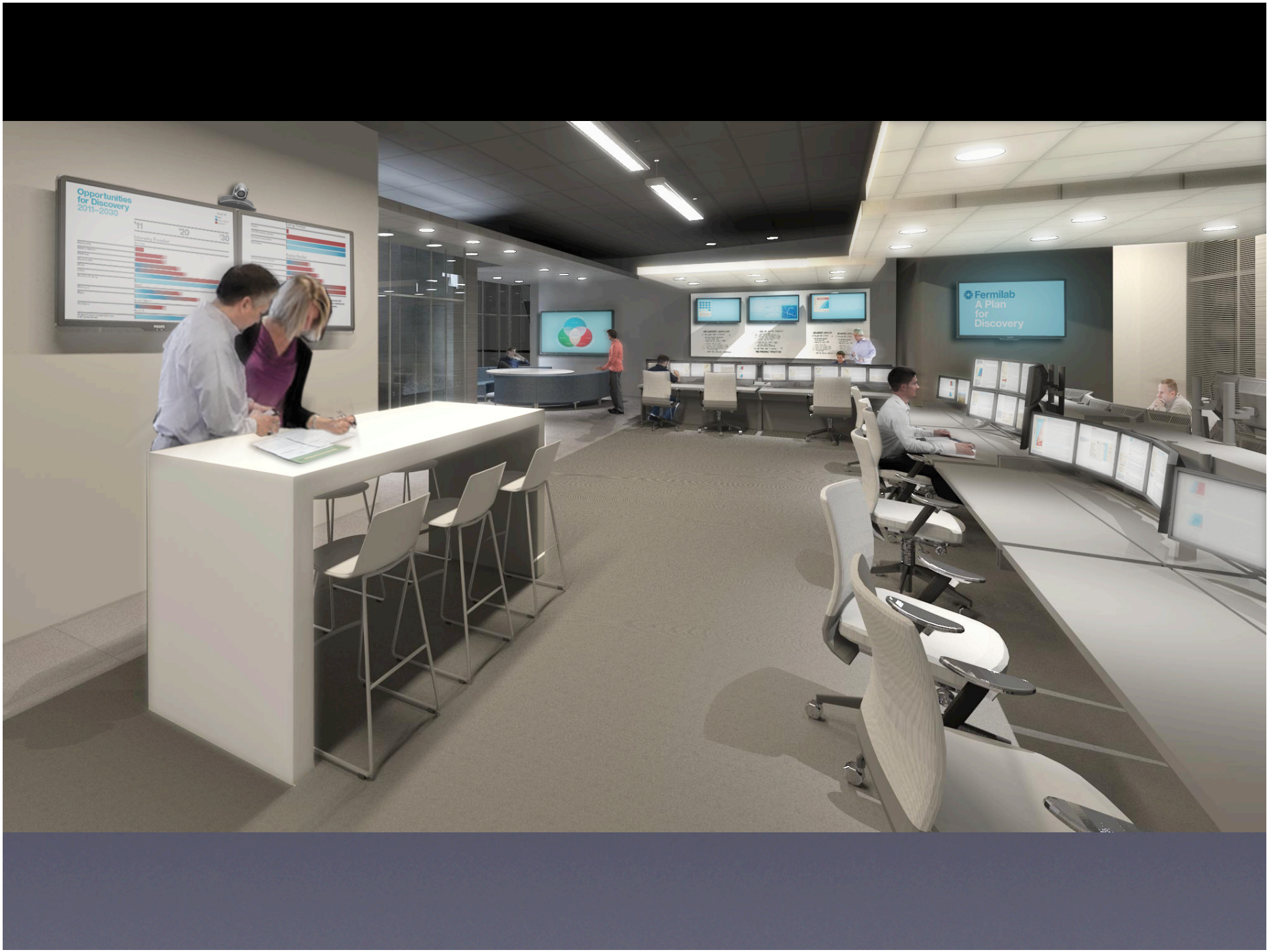


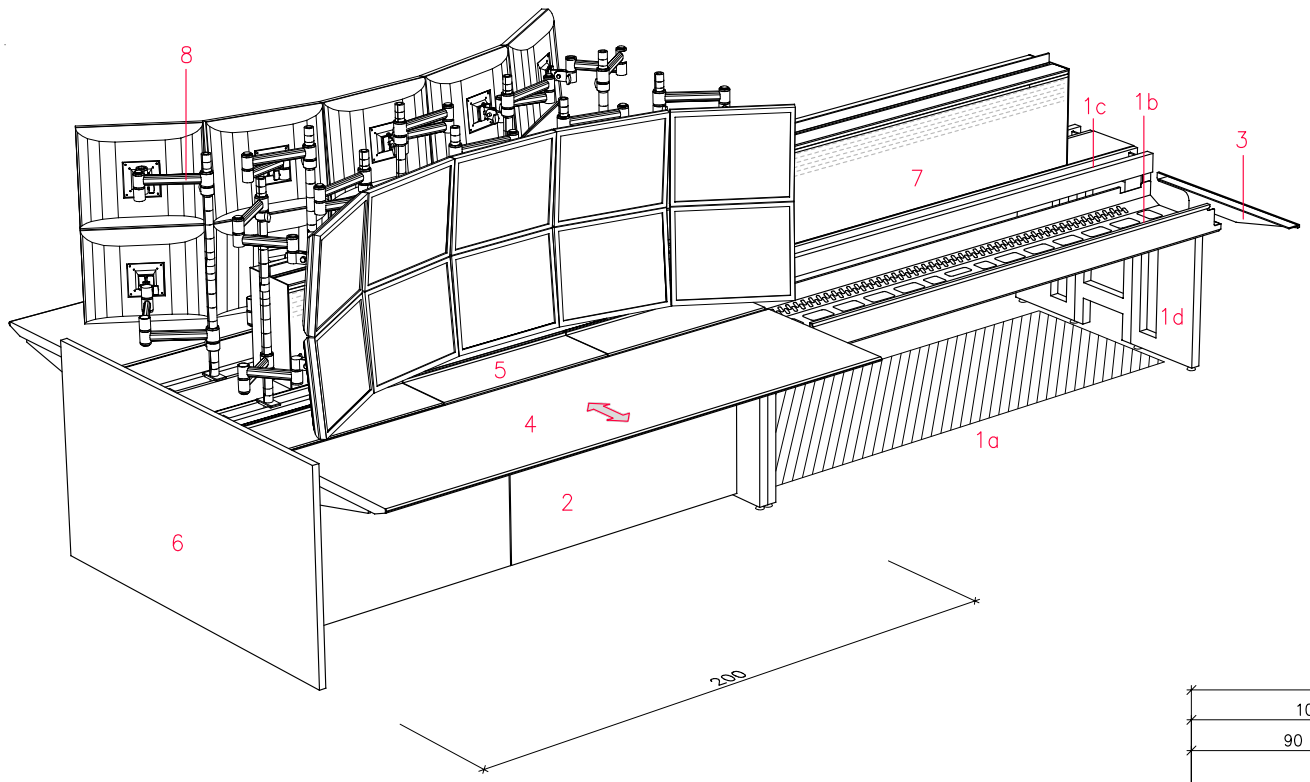
Conceptual Designs



Present Conceptual Design

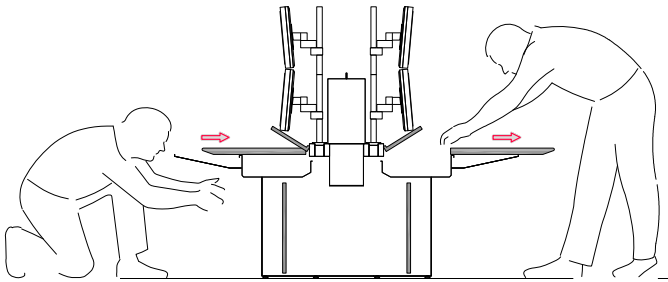


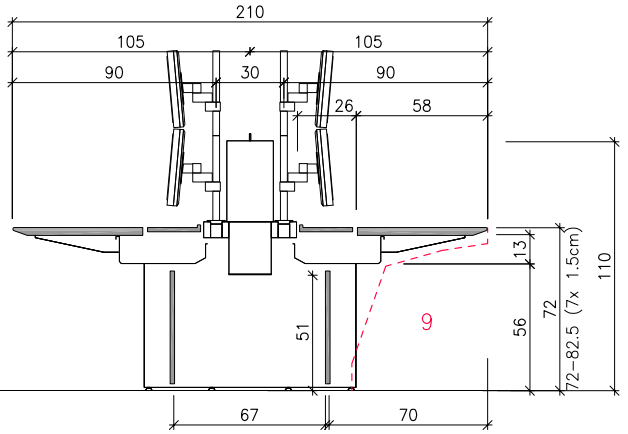

Opportunities for Discovery
2011–2030
Fermilab
A Plan
for
Discovery



1. Torsion–resistant Base Element
a. Unobstructed Technical Area
b. Spacious Cable Tray
c. Stable Central Support
d. Base Element Sides with adjustable Feet

2. Resistant Wing Doors
3. Height Adjustable Supports for Worktop
4. Sliding Worktop
5. Fold–down monitor tops
6. End Panel
7. Integrated cooling system Cool–Top
8. Stable console and swivel arms for Flat Screens
9. Leg room EN 527–1





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FERMILAB, BATAVIA / USA
EXPERIMENT OPERATIONS CENTER (XOC)
TECHNICAL DATA U–COM 200/90, COOL–TOP

VARIANT: U2
1:20 DATE: 8.8.11
PLAN: A3 jb

Timeline

- Oct 2011: XOC Requirements committee formed
- Jan 19 2012: Requirements workshop with representatives of each IF experiment
- April 2012: Money available to produce design
- July 18 2012: Detailed design workshop with experimenters – everyone welcome. More details nearer the time.
- Late summer 2012: Detailed design finalized
- End of shutdown 2013: Hope to have XOC ready for use

Final Remarks

- Hope to have XOC functional by end of long shutdown
  - This depends on funding availability
  - Have a plan B for monitoring
- See http://xoc.fnal.gov/ for more