

ACE Mentoring
Chemistry Lab Reconstruction
Trinity High School



Architecture Group

Ben Block, Michael Murphy, Max Sherman, Evan Henderson, Jacob
Woods

Architecture Group

Context of Project & Intended Use:

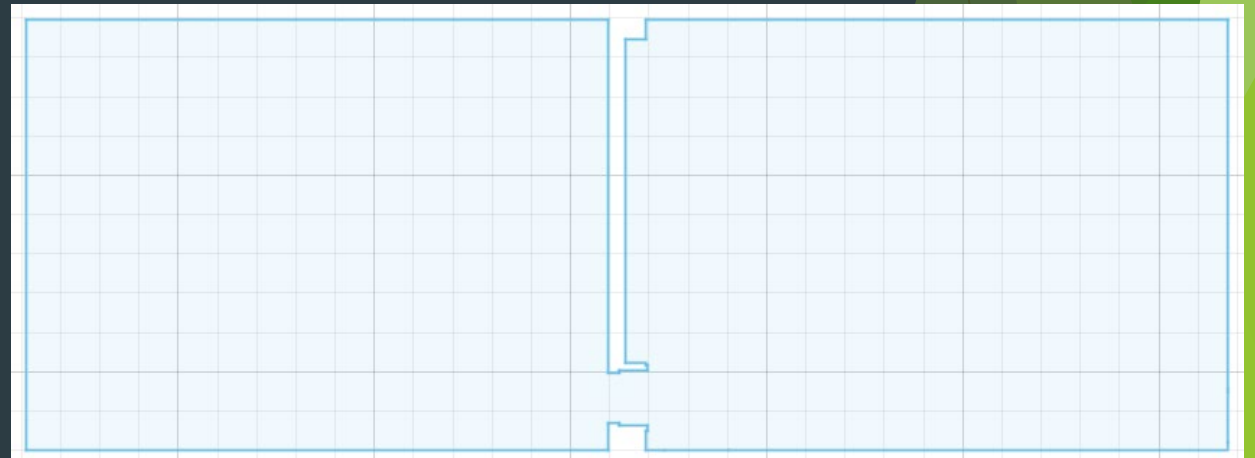
- Chemistry lab for Trinity High School, built 1950s
- Since been renovated few times over school's history
- Deemed outdated, inconvenient by current faculty - could use major improvements
- Intended for use of approx. 25 students
- Lab connects directly to main classroom



Existing Lab

Dimensions of Current Lab:

- Classroom and lab are both approx. 31' x 23' individually
- Partition with storage cabinet separates both rooms
- 3 Lab stations: 16' x 4' with intended 6 students per station, 18 total;
 - 3 sinks/station



Proposed Lab

- Instructor desires for wall to be removed, creating whole classroom without view of lab obstructed
- Lab Redesign:
 - Added lab station and shortened others while keeping proportion of students/stations same; 24 students total
 - Added 1 sink – 2 large, 2 small; Completely new countertops & cabinets
 - Added cabinets along sidewall by fume hood, added dishwasher
 - Patch floors of cracks throughout, & patch ceiling of preexisting wall
 - Painting of room





MEP Group

Anthony Holder, Connor Kalvar, Liam Cantin, Emerson Cardoza,
Landan Eirk, Carson Song

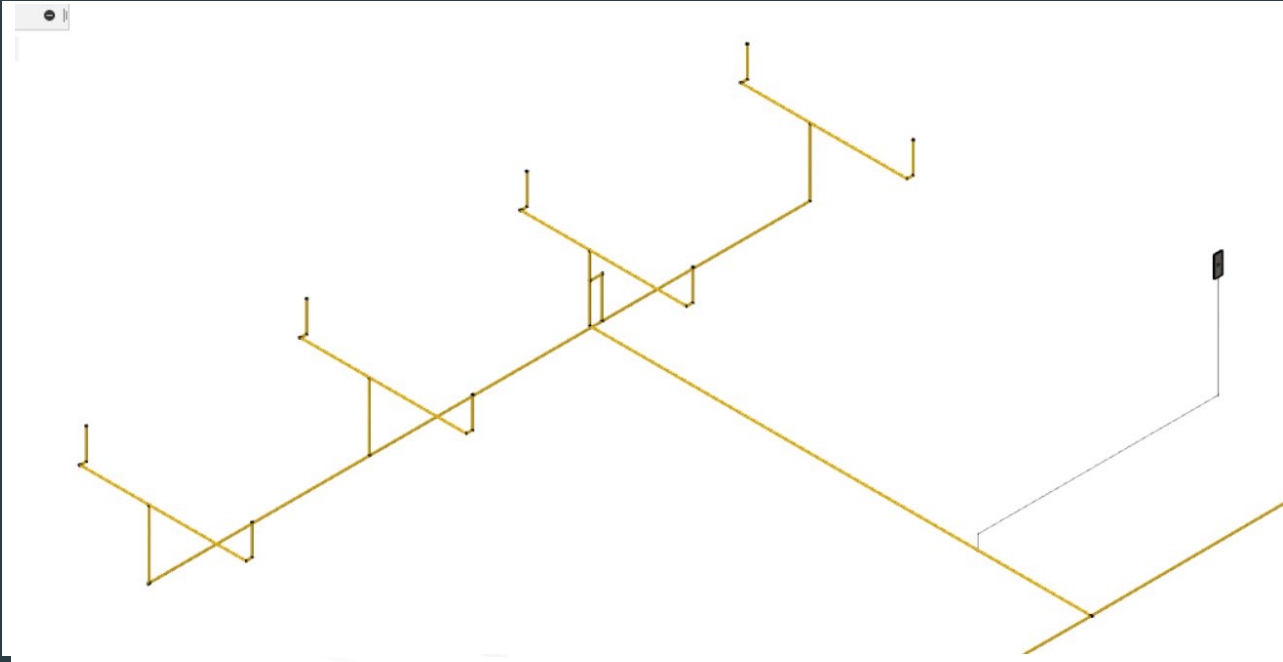
Electrical & Mechanical

- ▶ Sub panel – to handle the increased load from more outlets and water heater.
- ▶ GFI outlets - safer
- ▶ New shutoff
- ▶ New light panels due to extra space.



Plumbing

- ▶ **Green: Drain | Yellow: Gas**
- ▶ **Blue: Water | Red: Hot Water**
- ▶ Changes require overhaul of piping for lab.
- ▶ Addition of hot water requires electrical heater nearby. (wall mounted)
- ▶ New piping for 4th table
- ▶ Consolidation of drains for traps
- ▶ New Trench Drains for Emergency shower (Maybe not)
- ▶ Moving and Replacing Gas shutoff



Construction

Keaton Gaddie, Michael Coomes, Tyler Solon, Dashal Smothers, Ethan Benner, Luke McCubbin,

Material Cost Estimate

Electrical
TOTAL: **\$8,000**

GFIC Outlets x
16 = **\$1,000**

Electrical Panel
= **\$5,000**

Light Fixtures
x3 = **\$300**

Mechanical
TOTAL: **\$20,000**

4 port gas valve
x 6 = **\$4,500**

Exhaust Fan
x2 = **\$10,000**

Carpentry
TOTAL:
\$100,000

Demo Wall =
\$15,000

Replace Counter Tops =
\$20,000

Cabinets for Workstations
= **\$50,000**

Wall Cabinets = **\$5,000**

Material Cost Estimate Cont.

- ▶ **Plumbing TOTAL: \$30,000**
 - ▶ Underfloor Work = \$10,000
 - ▶ Water Heater = \$5,000
 - ▶ Small Sink Drains x 16 = \$1,000
 - ▶ Mercury Traps x 4 = \$500
 - ▶ Dishwasher = \$800
 - ▶ Big Faucets x 8 & Small Faucets x 16 = \$5,000

Additional Costs

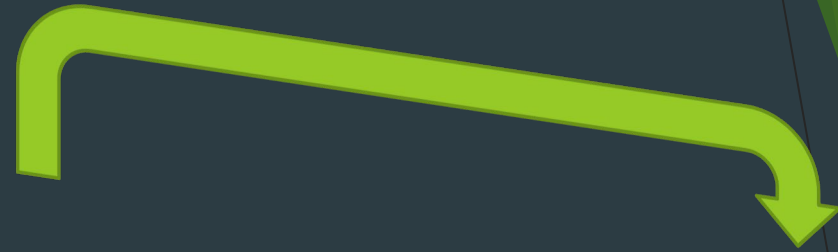
▶ Floor Cost Renovation

- ▶ To patch = **\$4,500**
- ▶ Complete Renovation: Roughly **\$20,000**

▶ General Conditions:

- ▶ Superintendent: **\$12,000**
- ▶ Building Permit: 1-2 business days; **\$65** per permit
- ▶ Dumpster: **\$1,500**

- ▶ Misc. Patch (walls, floors, paint) = **\$5,000**



Total Cost Estimate:

\$180,000

*w/ only patching floor estimate

Questions?