

To: Sunny Balwani[sbalwani@theranos.com]
Cc: Daniel Young[dyoung@theranos.com]; Elizabeth Holmes[eholmes@theranos.com]
From: Tim Kemp
Sent: Mon 1/21/2013 7:28:14 PM
Importance: Normal
Subject: RE: Possible minilab clusters in 3200
Received: Mon 1/21/2013 7:28:17 PM
[ACAD-1FPLANS-permit-10.pdf](#)
[3200 Power.xlsx](#)

Attached, please find a drawing showing a sample layout of 19 minilab clusters that can be fit onto the ground floor of 3200 with minimal relocation of walls. Figure that the walls between the Edison Lab, the Machine Shop and Old CLIA Lab would be removed. CLIA and the clunkers would occupy room 122, the old chemistry lab. It is about the same size as the current CLIA lab in 1601, including the virus and bacteria labs. I'm not sure how much space accessioning and aliquotting will require, but presume that it could go in the CLIA lab space. If we need more space, we could give up a cluster or two or move some operations upstairs.

Space-wise, it looks like we could manage to fit the whole thing downstairs. Upstairs there would be plenty of room for offices and other areas. This could process 47.5K samples per day.

We do have an issue about power. See attached spreadsheet. Given an estimate of 500W/minilab, and not including the robot on each cluster (I'm getting an estimate for that) we do have a problem powering and cooling 380 minilabs. If there is enough A/C to do the cooling, the total power consumption will exceed the available power in the building. Depending on other power usages in the building, the most we would likely be able to power is 200 to 300. I don't yet know how much excess A/C is available. I will find out.

Tim.

From:Sunny Balwani
Sent: Saturday, January 19, 2013 4:59 PM
To: Tim Kemp
Cc: Daniel Young; Elizabeth Holmes
Subject: RE: Possible minilab clusters in 3200

Can you ballpark if we can fit 15-20 Normandy clusters + Clunkers Lab + Storage for 100K-500K cartridges (whatever possible) + CLIA Lab office space in EMC?

If not then how much space would be needed for such an arrangement?

Assuming the following

1 cluster = 20 minilabs = 120 blades X 24 hours/day X 1 hour per sample run time ~2.5K Samples/day per cluster X 20 clusters = 50K samples per day.

Thanks.

From:Tim Kemp
Sent: Thursday, January 10, 2013 6:15 PM
To: Sunny Balwani; Elizabeth Holmes
Cc: Nicholas Menchel; Brian Argyres; Rafat Mehdi; Adrit Lath; William Westrick; Shashank Sharma; Farzin Shadpour
Subject: Possible minilab clusters in 3200

Please find enclosed a drawing showing possibilities of how MiniLab Clusters might be disposed in 3200. This drawing is purely for envisioning how many clusters might be placed in various rooms. It can be used as a tool for deciding which room would be best. For example, it's pretty clear that 5 MiniLab Clusters and all of CLIA will fit in the front lab. The building, won't, I think, support all of these clusters.

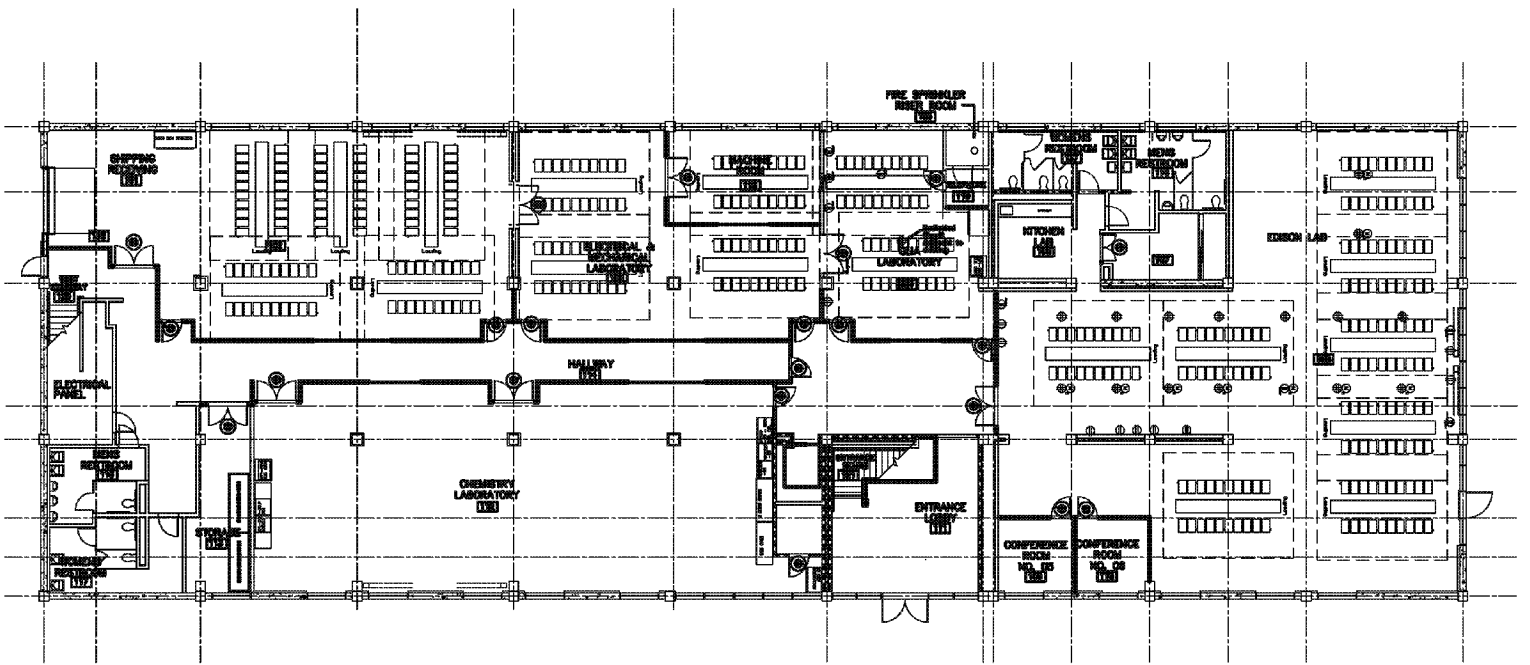
A couple of notes on the drawing.

- This is a background with some locked elements. I wanted to erase the machine shop wall, but couldn't I'll see about getting that fixed. Imagine that that wall isn't there.
- The wall between the stock room and the Edison Lab appears to be structural, so we most likely can't remove it.
- The Front lab area (where cartridge Mfg. was) is 3800 square feet, not including conference rooms
- The stock room is 1980 square feet
- Edison + Machine Shop is 1400 square feet
- The walls between the old chem lab, stock room and Edison could all come out, making one large room of about 6400 square feet. We would likely have to leave a support wall, as in the front lab, in the middle where the door between Edison and the stock room are.

My last understanding on the Delta Robot is that we still might consider it for 3200. I will do a similar placement operation for the Delta Robot line. Then we can reduce the cases.

I will also pursue some costs. This shouldn't be too difficult to derive from some of the costs estimates that we have gotten before.

Tim.



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