

PEAK NOTES

SOME GENERAL RECOMMENDATIONS FOR A GAIT LAB

A lab of 40' x 40' with 20' high ceilings is ideal. If the space ends up being a bit smaller than this, then that's fine, but we recommend asking for as much as possible in hopes that you will get enough.

The floor covering material should be as non-reflective as possible. Carpeting is best for non-reflectivity, but not always the most practical. There are rubberized flooring materials available that are good for labs, but make sure they are somewhat textured (improves traction and reduces reflectivity) and have a matte finish. (Try Robbins, Inc. in Cincinnati, OH. 513-871-8988. They make a flooring called Pulastic 2000). If you must go with tile or linoleum, pick a textured, flat finished type. And a darker color for the floors is better.

The walls should be painted a flat finish, also to reduce reflections. They don't have to be painted black, although white is the least desirable because white reflects light effectively and will cause tracking to be difficult. We recommend a light gray or blue, as long as it has a flat or matte finish.

Windows to outdoors should be avoided if possible. Too much ambient light, especially from sunlight, can cause problems with extraneous reflections, and can cause back-lighting problems for cameras on opposite walls from the windows. If there will be windows in the lab, then make provisions to cover them with flat, non-reflective shades or panels.

If the cameras are to be mounted on the walls, then horizontal bars should be mounted approximately 8' to 10' off the floor. The bars will give maximum flexibility in camera positioning.

Electrical outlets should be placed appropriately. At least two outlets should be near each camera location, as each camera and light source will need power. Several outlets should be placed near where the Peak workstation will be located for computer, monitor, VCR's and peripheral equipment. Multiple outlet power strips are normally used, so the number of outlets doesn't need to be excessive as long as the circuit can handle the power requirements.

Provisions should be made for routing of cables from the camera locations back to the control center or room. Each camera will typically have two video cables running to it (one for video output and one for synchronization). Make sure that there is enough flexibility in the cable routing system to allow for variable camera positioning.

If a separate room is going to be used for the computer, amplifiers, etc., make sure that the cables from video cameras, force platforms, etc. are routed into the control room.

There should be a window in the control room that provides a view of the laboratory data collection area. Ideally the window should not be covered by anything to allow communication between personnel in the lab and in the control room. Some labs will not put glass in the window, but a roll-up screen or cage to provide security when not in use. The cage can then be opened during use, and there won't be any glass on the window to cause undue glare for the cameras.

Overhead lighting should be sufficient, but not excessive. The lighting should be incandescent if possible, as fluorescent lighting (and other phasing type of fixtures) can cause phasing problems on recorded video images. Since fluorescent lighting is typically much cheaper and cooler to operate, many labs will install two types of lighting. Fluorescent light on one circuit to use during times when data are not being collected, and incandescent type lighting on another circuit than can be turned on when video data are being collected. And it can be helpful to have dimming capabilities on the incandescent light, or several separate circuits to allow for intensity control. If only fluorescent or phasing-type lighting will be used, then it would be ideal to have the lights on the same circuit as the camera outlets. This allows the cameras to be line-locked to the line frequency, thus minimizing the amount of phasing in the video image.

A locking storage closet should be incorporated into the plans to allow expensive and sensitive equipment to be locked up when not in use.

These are the primary things to consider when designing a lab. Of course the details of every lab are different, so if you have any questions, or would like us to review any drawings or plans, please let me know.