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Fantasy ILT – The Ideal Computer Room Layout for Staff, Students and Technicians

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Summary

This article looks at the issues that should be considered when designing a computer room for a college, and includes some possible floor plans. It also gives a suggested budget.

Introduction

The final say on computer room design and room layout in Sixth Form Colleges is often dictated by the quantity of machines required to fulfil teaching requirements and what classroom is available for conversion to a computer suite. These factors impose restrictive limits from the outset, and this article looks at the potential to establish a more detailed set of desirable options that should be researched and considered thus leading to compromises being made during the design process rather than before it.

Fantasy computer room layouts - hmmm after momentarily allowing my thoughts to wander toward Tolkienesque interior design, PCs made of chocolate and Virtual Reality Work Stations, actual reality soon got hold of me again and I decided to take a more level-headed approach.

In a case study I recently wrote for Ferl, "[Layouts for learning - finding the best configurations](#)" dated June 2001, I drew upon tensions that occur in Sixth Form Colleges and small Further Education Centres with regard to the constant demand for "x" amount of computers to satisfy course requirements, which in turn would be located in any room that was free for conversion to a computer room regardless of suitability. The needs are urgently focused on satisfying the technological requirements and seldom fully take account of satisfying the needs of the user groups who have to utilise the room and equipment.

This article will focus on the requirements of Staff, Students and Technicians and what is perceived to be of importance for each of these groups regarding computer room design and whether any of these requirements are mutually shared between groups or antagonistic between these groups.

Staff

[Click here for a floor-plan of a general purpose design for a computer room [Floor Plan.pdf](#)]

As the floor-plan intimates, teachers/trainers I have talked to like to have computers in rows, it means that they can see what their students are doing and the teacher can move amongst the students through the rows with relative ease. Teachers/Trainers also like to write on flip-charts or whiteboards to express themselves, so a whiteboard for example needs to be easily accessible to a teacher and easily viewable by students too.

Digital projectors are becoming more prevalent in classrooms, and it would be useful if a teacher could plug their projector into a desktop or laptop computer and project the image onto a screen or whiteboard. The projected image would need to be easily visible by the target audience (to prevent neck-craning) and there would need to be sufficient power sockets to accommodate peripheral devices to be plugged in (a little desk set aside for the purpose of placing a laptop and projector would be beneficial too).

If you had to pack in more computers than the general purpose design floor-plan allows, you could place the PCs back to back in rows. One row of PCs and monitors would face one direction and the other row of PCs would face the opposite direction (this is still useful for the teacher, because they would still be able to peruse students' work by row).

The teacher would also benefit greatly from having a desk set aside for them in the computer suite, so that they could have a one to one with students and use this as a base during the lesson progression (also useful to place handouts and such like as well).

Software that would enable a teacher to control other PCs in the room from one control PC would also be very useful for visual/interactive demonstrations (e.g. Web page design or programming), and possibly a few of the PCs having web-cams could prove useful for multi-

media or international projects.

The room would also need suitable lighting (not fluorescent tube lighting), and have anti-sunglare covering on the windows with good ventilation and if possible air -conditioning.

Students

[Click here to see an image of a Plasma screen monitor [plasma monitor.gif](#)]

This group is singularly the most important of the three groups, these are the people who have to use the environment the most and this is the group that will suffer due to any problems with the design of the computer room. Most of the Staff requirements tie up with things that would improve Students' requirements too. However, chairs and desk space/desk type are very important issues for students. Chairs need to be comfortable and support the user's back correctly (as per Health & Safety regulations) and each desk for a user must be able to comfortably accommodate one keyboard, one mouse and still allow space for an A4 pad and possibly a text book above the A4 pad (avoid gimmicks like pullout keyboard trays on desks, they cost extra money and are a good idea in principle but awful to use in practice, even the shortest of people knock their knees against them and you lose row space as people have to sit further backward to pull the trays out and use them).

17" to 19" monitors are a must these days, peering into a 15" monitor is not going to help with issues like eyestrain and tension headaches. If you can (budget willing) consider plasma screens to save space, but they are very expensive at the moment and beyond the reach of most of us (£4000 for a 40" monitor), however keep your eye on the prices as they will drop over time and because plasma monitors are thin they will offer the user more desk space.

It is worth considering placing a couple of Apple Machines in the computer suite too so as to expand the students experience of working with/on different technologies.

What you have to aim for with the end user is a satisfactorily pleasant working environment and that includes furniture, décor, light, ventilation and suitability for the task.

Technician Support

[Click here for an image depicting network and electric cable ducting [Ducting1.jpg](#)]

Access to power and network node points and ease of installation and removal of PC equipment are the key interests of the Technicians, they do not need to undertake an assault course every time they have to remove a PC for servicing.

Having the computers in rows also leads to efficient cabling and network plans, the Technicians will then always know the location of network node points and be able to record the history of a PC that has always been connected to the same point.

If Staff and Students are happy with their working environment and not disaffected by it, the chances are that the suite will be kept in a better condition (cleaner and no vandalism) and social interaction between Technicians and Staff/Students will improve also.

A security camera to monitor potential for vandalism and burglary is also an essential requirement.

As we can see from determining what each group requires, there is a great deal of overlap and common interest and very little significant antagonism between the needs of the three groups.

Guideline Budgets & Solutions

Here is a rough guide for prices (including optional features): -

- Room gutted and decorated and correct lighting and anti -glare film on windows - £5000
- Network and power infrastructure (including cabling and switches or routers) - £4250
- 22x PCs with 17" Monitors - £17,000
- 2x Apple Computers - £2200 (OPTIONAL)
- Chairs - £1350
- Desks - £2700
- Portable/Fixed Projector (if portable, locked away when not used) - £2000 (OPTIONAL)
- VCR and amp (locked away when not used) - £300 (OPTIONAL)
- Air Conditioning - £6000 (OPTIONAL)
- Security Camera - £4000 (OPTIONAL)
- Sundries (e.g. Software Licenses, Web Cams etc) - £1500

TOTAL = £46,300 - (£31,800 without options).

It is imperative that the costs stated above are only treated as vague reference points, please do not base any computer suite build firmly on the prices stated here. Always be sure to attain at least 3 different quotes for all the items (and any other items) listed above.

Ask members from Staff, Students and Technicians at your institution what they would like from a new computer room project (or the refurbishment of an old suite), and with regard to solutions give yourself a range of options based on their requirements. Look for the common areas in all three groups (or at least areas with greatest overlap in two of the groups) and see how you can accommodate these areas of mutuality within your computer room project.

It might seem a very obvious point, but disruption to users of the computer room should be kept to a minimum, so avoid locating the room near any centres of constant loud noise (e.g. Music or Design & Technology Departments).

Do not allow yourselves to become too restricted from the outset. In your decision making process, establish the core requirements and then filter out the options that aren't a possibility (due to expense) or have minimal impact (e.g. web cams). Have different options according to cost and real necessity.

Teaching Staff, Students and Technicians are rarely consulted in depth and are usually excluded from the decision making process. The rooms are generally built for machines and not people with the technological requirement paving the way for the learning, rather than the learning environment paving the way for the technology. It doesn't have to be this way, a little thought early on in the process can and does go a long way.

Useful Websites:

<http://www.123computerroom.com/>

<http://www.bruns-pak.com/>

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