Green Meadow Apartments

Consultant, Zeb Drivdahl
Community Partner, Marie Timpano, Action Housing

Green Meadow Apartments is a primarily lower middle income, tax credit housing community located in Baldwin Borough southeast of Pittsburgh. The apartments in the community range from one bedroom to four and house people of all ages and all family sizes. Maintained by Home Properties corporation of New York City, Green Meadow has contracted Action Housing corporation to help foster community development in the neighborhood. Action housing is a non profit organization created to help provide housing aide to the homeless, victims of domestic violence and substance abuse, the physically and mentally disabled, the elderly and other low income individuals and families in Allegheny county. The organization's mission is to help vulnerable families and individuals build more secure and self sufficient lives through special needs housing facilities, weatherization, mortgage assistance, homeless assistance, public housing empowerment and family self sufficiency programs. One of their current projects involves establishing a computer lab in the new community center at Green Meadows Apartments. The purpose of this lab is to provide the residents of Green Meadows with job training, technical training and educational programs, as well as provide the residents with free access to technology, all towards the ultimate goal of further community building in the apartment complex.

Situation Description

The community center itself is a recently completed structure scheduled for a grand opening in mid September of this year. It is a sizeable structure, two floors, comprised of office space for the housing managers, a large common room and kitchen designed to host various programs for the residents of the development, an exercise room, a small library, an outdoor deck with pool and the computer lab. The computer lab is on the second floor of the center and has a locking door to close it off from the rest of the center when necessary. The lab consists of three large tables designed to hold three computers each for a total of nine computers. These tables are well suited to holding computers as their will be plenty of space for the computers on the desk and room left on the table between the workstations for people to place books and other materials. The desks are arranged in a row pattern, all facing towards the forward area of the room. The only power outlets in the room are arranged along the walls, meaning that power cables will need to be stretched along the floor, creating the problem of people tripping over cords. Construction on the building is not yet complete however, and the possibility of floor mounted outlets situated beneath the tables still exists. The tables themselves are not currently well suited to holding computers, as there is no way to get a power cable from a monitor or CPU underneath the table to plug in to a possible floor mounted outlet. The room, at present, contains only one phone jack, a somewhat serious problem for a lab that must be at least partially internet capable in order to provide the necessary job training programs.

Once open, the community center will focus on providing programs to all members of the housing development, ranging from education to entertainment and socializing/ community building. The computer center in particular will be geared at providing a variety of programs for people of all ages. At present there is only one formal program planned for the lab, namely a job training program for individuals of working age. This program will be designed to furnish the residents who attend with basic computer skills, such as word processing, spreadsheets, email, and use of the internet, particularly as a search tool for employment opportunities. The inclusion of this program as one of the primary uses for the computer center means that at least partial internet connectivity (a few, if not all, machines connected) will be a definite requirement in the setup of the lab. This creates a bit of a problem given the fact that one phone jack is present in the room. Another program being considered in the lab is an after school educational program where children can come in and use the computers for homework, learning programs, and internet research. These after school programs in particular would more than likely necessitate the use of a CD-ROM drive for the multimedia educational software. A basic introductory class to the use of a computer, geared primarily at seniors who have little to no experience with computers, is also being planned. In addition to these formal programs, open lab time is also planned for

residents to come in and use the machines for letter writing, email, internet browsing and other personal use.

At present, the staff for the computer lab is uncertain. The building itself and the design of programs that will occur at the community center are not yet complete. As such, it is difficult to comment on who will maintain the computer lab and who will run the programs that take place in the lab. The technical ability of both the Action Housing and Home Properties staff is quite limited. As the person in charge of community development programs for Action Housing on the property, the responsibility for upkeep and maintenance of the lab will more than likely fall to Marie Timpano. However, due to her limited technical experience and the fact that she already has a great deal of work to do at the site, it is unlikely that she will be able to fulfill this role. Most likely, another person, either from within Action Housing or hired from outside, will be needed to maintain the technical environment of the lab with Marie acting as this person's supervisor and as administrator for the lab.

Currently, the computer center does not have any equipment. The machines for the lab will come through donations from two separate locations. One will be a donation two new Celeron level computers of unspecified speed from IBM corporation. The remaining computers will be, older, rebuilt computers donated to the center The Christian Electronic Information Group. It is unknown at this time what the speed and type of these computers will be, though it is believed they will all be at least Pentium 120MHz machines and they will all be PCs (no Macs or UNIX stations). All of the computers will have monitors, mice, keyboards, CD-ROM and 3.5 inch floppy drives. Software for the machines has not been purchased as Action Housing is awaiting the approval of a $5000 technology grant from Target corporation for this purpose. Once approved, the funds will be used to purchase the operating system software and word processing software. Internet connection for the machines is unknown at this point and will not be known until the issue of the phone jacks and network outlets mentioned earlier is resolved.

Due to the preliminary stage the computer lab project is currently in, it is unknown how management of the facility will take place. Until such time as the equipment and software is procured and the internet connectivity issue is resolved, it will be difficult to determine the technology management structure that should be in place. As stated earlier, it is safe to assume that a lab technician will be needed, either appointed from within Action Housing and Home Properties or hired from outside. Funding for the lab is also uncertain at this point. The lab represents a joint project between Action Housing and Home Properties, and it is unknown how much each company will be able to contribute to the setup and maintenance costs of the lab.

Problems and Possibilities

The primary challenge in this project involves setting up a computer lab with eleven machines in the Green Meadow apartments community center. This lab would give the residents access to computers and technology currently unavailable to them. The computer lab can be used to provide technical training programs, educational activities and after school programs for children, entertainment (video games for children, web browsing for items of interest to adults and senior citizens), or general purpose use (email, search for online sales, etc.). By creating this lab and giving the residents access to the internet and other computing technologies, Action Housing is hoping to foster community development in the Green Meadow apartments, a critical goal for Action Housing in all housing areas it works with.

The resources for setting up the computer lab are readily available, primarily in the form of two donations of machines. The first donation consists of two brand new Celeron class computers recently donated by the IBM corporation. These machines come equipped with mouse, keyboard, 15 inch monitors, 8GB hard drive, 64MB of RAM, 3.5 inch floppy drive and CD-ROM drive. Each machine comes preloaded with Windows98. IBM also donated two new black and white laser printers. The other large donation is from The Christian Electronic Information Group and consists of 16 used Compaq machines equipped with 486 33MHz processors, varying (low) amounts RAM, ~250mB hard drives, monitors, keyboards, mice, and no modems or CD-ROM drives. Of the two donations, the machines provided by IBM are ready to

use in almost any job training or community program and will require no additional set up. The older machines are a bit more problematic. For one thing, the machines are used and as such must be cleaned before they can be used. This will involve clearing the hard drives of all data and reformatting them. This task will take a bit of time, but it should be easily accomplished, though the community partners will need to be trained to perform this job (which they are motivated to do and more than capable of as this is a fairly simple task). Another problem lies with the fact that the specifications on these machines are significantly below the Pentium level machines that were originally expected. This problem becomes apparent when we consider the issue of software. Once cleared of all old data, the 486 machines will need an operating system and applications installed. However, these machines will not run Windows 98 or any of the newest word processing or internet browsing software. One possibility is to install Linux on the machines, as it requires less computing power to run than Windows. However, this is not a feasible alternative due to the complexity of the Linux operating system and the low technical ability of the users and administrators of the lab. Instead, older software (Windows 95 and Office 95) will be purchased and installed, as the machines do have the capacity to run this software. This also creates the added bonus of lower costs since used and not new software will be purchased.

Funding for these purchases will be available through Home Properties. Installation of this software will most likely be beyond the abilities of the community partner. However, provided the software arrives on time, I will be able to install the software myself with little or no difficulties. Perhaps the biggest question mark for the project regarding set up for the lab is the issue of sustainability and maintenance of the lab. The older, 486 level machines have no warranty or service coverage. Parts are available by cannibalizing some of the machines (the center received more machines than it has use for), but dedicated repair personnel are unlikely to be available. When we consider the age of these machines, it is clear that breakdowns will occur and some form of support will be needed. This tech support and repair will need to come either from within Action Housing and Green Meadow apartments management or from an outside hire. Funding for an outside hire or extra hours paid to an existing staff member is likely to be an issue and must be considered when budgeting for the upkeep of the lab.

Although there are many difficulties with pursuing this project, the potential rewards and impacts to Action Housing and Green Meadow Apartments are substantial. From an organizational standpoint, this computer lab will give Action Housing a powerful new resource to use for community building in the Green Meadow Apartments site. The various programs proposed for the lab mentioned earlier in this document all represent a significant step towards fostering a strong community atmosphere. Residents will interact and get to know each other at the computer lab programs, as well as gain valuable technical knowledge and experience. They will have access to technology previously unavailable to most of them. This project also gives Green Meadow a strong technical environment to utilize where none existed before. However, with this expanded capacity and enhanced community development ability come certain costs. Green Meadows and Action Housing must come up with a technical management and budgeting system, something they did not need before. This places increased pressure on the staff of these organizations as they must gain experience with technical management, an area they have had little or no exposure to up until this point. However, the staff seem willing to invest the effort necessary to make the project a success, and given this fact, the added pressures the lab creates on the staff and organizational management concerns seem far outweighed by the benefits provided by the lab.

Workplan

The physical space the lab will be housed in is already well prepared. All of the desks are sturdy and have a great deal of space to accommodate the number of machines that will be placed on them while still leaving room for people using the computers to place books or other items on the desks. The tables are arranged in a row fashion facing the front of the room, an ideal situation for the teaching programs the Green Meadow apartments and Action Housing wish to implement. Power and phone outlets have yet to be installed in the room, but these are on their way and will be completed shortly. These outlets will be beneath the desks so that cables can easily be run from the machines, through small holes in the tables and plugged in to the floor outlets. Getting phone lines available for the modem connections has yet to occur but it should be completed at the same time the power outlets are installed.

Once the physical space of the lab has been set up, the focus of the project shifts to the computers themselves: getting them set up, plugged in and in basic working order. This is where the majority of the work for establishing the lab will take place. Set up difficulties for the machines donated by IBM should be minimal. These machines will all be modern, fully equipped PCs with all the necessary capabilities to run the operating system, internet and office (word processing) software necessary to facilitate worthwhile programs in the community center computer cluster. The real difficulty concerns the older machines. First of all, these machines were donated by private companies and all of the hard drives must be wiped clean under the terms of donation of the machines. Once this is complete, the capabilities of these machines must be measured against the software desired for the lab programs and a determination made as to whether or not they will be able to run that software in their current state. Currently, we have determined that in order to facilitate easy internet access and worthwhile training programs, the machines must be able to run Win95, Internet Explorer/Netscape Navigator, and the Microsoft Office 95 suite (at least Word and Excel) or some other comparable office software. If the machines are capable of running these programs, then we can move on to the procurement and installation of software for these machines. However, if they are not able to run these programs then a number of alternatives must be weighed and decided upon. One option would be to simply give up on the older computers and run the lab with just the six IBM machines (perhaps soliciting more donations to up the number of computers later on). Another option consists of upgrading the processors, RAM, and adding modems to these machines to the point where they are able to run the necessary software. A final option would be to build, from scratch and parts cannibalized from the 486 machines, a few, low end Pentium systems. These systems could be built at a low cost if care is taken not to add any “bells and whistles” (i.e. make them just barely up to specs for the software). Which option is chosen depends on the needs of Action Housing for the lab, availability of funds to do a possible upgrade, and availability of the older parts needed to do an upgrade.

Once the computer hardware has been setup comes the task of purchasing and installing software. For the IBM machines, this issue is of minimal consequence since they will come preinstalled with the operating system and other software (though office software may need to purchased independently). For the older (or from scratch machines, depending), the issue becomes more complex. These machines will need to have all software purchased for them and installed from the ground up. Money for purchasing the software should be made available with a grant from Target corporation or through additional monies budget to the project by Home Properties. Once the software is purchased, it will need to be installed. This may be a bit of a problem since the older machines do not have CD-ROM drives. The solution would probably be to cable an older machine to a newer one via a serial connection and install software that way. Once the software installation phase is complete the computer lab will be in a basic working order and useable to residents.

The next project task with the lab is the issue of internet connectivity. In order to provide quality job training and other programs to facilitate community development, the residents will need internet access and training. A number of options exist in pursuing internet connectivity for the lab. One option would be to install a shared cable modem, ISDN line or DSL connection for the lab. This would allow for high speed access to the internet for all computers in the center. However, due to the limited availability of funds for this project and the costs associated with establishing a lab infrastructure of this kind (network

cards for all machines, networking hub, software to run the network, installation of the DSL/ISDN/Cable modem line, cost to hire and retain someone as lab network administrator) this option does not appear to be feasible. The second alternative and the one being pursued at the Green Meadows site is the installation of separate modem lines for all computers in the lab. The first task is to install modems in all the old machines and physically connect them to the phone outlets under the desks. Again, this will be relatively simple for the IBM donated machines but the older machines may need to have modems purchased and installed on them in order to gain connectivity. The building itself already has enough extra phone lines to accommodate all of the lab computers. All that is needed is to run outlets to the computer lab, and maintenance personnel on site are more than equipped to handle this task. At the same time, the issue of ISP accounts needs to be resolved. It should be possible to find a local dial up ISP willing to provide cheap connectivity to a community center, perhaps even the same ISP providing connectivity to the Green Meadow apartments administrative center and staff. Regardless of which ISP is chosen, each computer will need to have its own connection to the ISP, whether that consists of a separate account for each machine or a master account for the entire lab that allows up to eleven concurrent log ins.

The majority of work outlined in this workplan dealing with the computers themselves (set up, clearing of hard drives, installation of software) will be performed by me as the student consultant. Marie and her assistant will be able to provide some help, but due to the hectic nature of their positions and lack of technical knowledge they will be unable to assist with most of the work. Even without any assistance, there should be no difficulties performing all of the necessary tasks before my term as student consultant ends in early December. Administrative aspects of the lab, such as securing funding, equipment, software and personnel for the lab are being handled by Marie with input and recommendations from myself.

Project Activities Timeline (in weeks, beginning 10/11/1999)

Project Activity	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Configure Lab Physical Space	X						
Set up machines and relevant hardware	X	X	X				
Purchase/Install Software			X	X			
Add modem hardware					X		
Obtain ISP accounts				X	X		
Conduct training for lab technician/administrator	X	X	X	X	X	X	X

Increased Capacity

The challenge originally posed by this project was the setup of a computer lab at the Green Meadow Apartments community center, a lab capable of providing various educational and community building programs to the residents of the site. To that end, the technical environment at the Green meadow site has improved dramatically since the computer lab project began in September. Where before there was only a room with a few tables and chairs, there are now two printers, two state of that art IBM Celeron PCs and eight older, 486 class machines. These machines were solicited as donations by the Action Housing staff, who were forced to work with a tight budget for the computer lab project. The Celeron PCs are already equipped with a full software package that contains Windows98, Office97, printer connection, and coming soon, modem connections to the internet. The 486 machines will be loaded with Windows95 and Office95 as soon as the licensing agreements are purchased and the software installed (expected soon). Unfortunately, it has not been possible to come up with a feasible solution to get these older machines on to the internet at a cost affordable to Green Meadows and Action Housing. However, despite this limitation, the computer lab is primed to have a significant impact on the Green Meadow community. Computer training courses for seniors involving the basic use of a computer and a word processing program are already set to being in mid to late November. Plans for after school education programs are also in the works. Furthermore, members of the community have already expressed a keen interest in seeing the lab open for general use. Several individuals have inquired as to when the lab will be opened,

wanting to use the machines for everything from letter writing to personal finances to internet job searches.

Although there has been a large improvement in the technical capacity at Green Meadow, there are still some areas that have not been adequately covered by this project. First and foremost, much of the lab equipment consists of old machines that are not able to run the newer programs available today. This limits the usefulness of the lab, particularly where job training and educational programs are concerned. Training courses will have to be conducted slowly due to the poor performance of the older machines, and it will not be possible to provide state of the art software to the residents for training, somewhat limiting the value of the programs provided. Furthermore, the internet connectivity is limited to only two machines with modem based connections. In addition to placing further limitations on the programs that can be offered in the lab, the limited connectivity will likely frustrate many of the residents. With the rising popularity and usefulness of the internet for many tasks (most notably shopping), the presence of only two internet capable machines will cause long wait times to use those machines and doubtless be a source of aggravation for many tenants. The lab also has no capability for all of the machines to be able to send print jobs to the two printers. Instead, users must do their work on one of the machines in the lab, save it, and then switch to one of the two Celeron machines in order to print. This quite obviously will create problems for users of the lab who want to print their work as they will be forced to wait for availability of one of the Celeron machines in order to print any documents. In all of these cases of less than optimal capacity, the issue is funding. Though the Green Meadow community center and Action Housing would like to provide more high end machines with internet capabilities and a networked printer structure, under current budget restraints this has not been possible. The creation of the center was forced to rely on donated machines and a very limited budget, and the center as it stands today represents a significant accomplishment given the constraints. Despite all the technical limitations, there is every indication that the computer center and related programs created through this project will be a valuable resource for Action Housing and their mission of community building in the Green Meadow Apartments complex.

Sustainability

The equipment in the Green Meadow community center computer lab should be sustainable for quite some time to come. The Celeron based PCs donated by IBM will remain on warranty for the next two years so any problems encountered with the hardware on those machines can be dealt with by a call to IBM customer service. The same is true of the two printers in the lab. Of more concern are the older 486 based machines. Although these machines and monitors are over six years old, they still show every indication of functioning properly. All mice and keyboards work well, there are no difficulties with the monitors and the machines themselves appear to be functioning in perfect working order. Even so, the machines are old and there is every reason to expect breakdowns with the hardware will occur sometime in the near future. This is not a cause for concern, however, as the center has on hand eight more machines with the exact same configuration that are currently not being used. These machines can either act as replacements in the event of a breakdown or be cannibalized for spare parts for repairs. As far as Y2K issues with the older hardware and software are concerned, tests have already been conducted and confirm that the lab is Y2K compliant, eliminating the worry that the computer center will break down in under two months. The lab is thus at a state where required hardware for maintenance purposes is readily available at no extra cost and all Y2K related software and hardware problems appear to have been sorted out.

Lab Administration and Support

The biggest shortcoming (and cause for concern) with the sustainability of the lab lies with the staff. Right now, there is no one on site, either from Action Housing, Home Properties (the development company that owns Green Meadows) or the Green Meadows staff that can adequately administer and maintain the computer center. This is obviously a major shortcoming and cause for concern on this project. Computers, particularly the old ones that make up the bulk of the machines in the lab, tend to break, and none of the staff members available currently has the expertise to diagnose and fix problems

with machines in the lab. There are certain employees of Action Housing that posses these skills and could assist with breakdowns, but none of them are working at the Green Meadows site. In order to address these problems, Marie (the administrator from Action Housing in charge of the computer lab and related programs at Green Meadows) and I are currently developing a set of administrative and support requirements for the lab. This administrative requirements document will outline the various maintenance tasks required for upkeep of the lab (periodic defragmenting of hard drives, space checks on the hard drives, checking disk drive functionality, etc.), state the need of for a part time computer lab "tech whiz" (possibly and existing Action Housing employee from off site), cover the responsibilities that person would have, and state maintenance schedules and procedures for the lab (how often the tech whiz will come on site, how problems will be reported to that person and so on). A copy of this administrative requirements document has been attached to this document as Appendix A. Thus, although there is no existing on site staff member to administer the lab, the creation of an administrative requirements document will allow Marie and Action Housing to find and effectively utilize personnel to maintain the computer lab. Combined with the equipment and programs already in place for the Green Meadow lab, this project has had significant positive outcomes, both realized and potential, for Action Housing and its community building mission at the Green Meadows center.

Recommendations

The computer lab at Green Meadow Apartments already shows enormous potential as a technical resource and source of community building for the tenants. The lab is able to provide the Green Meadow residents with access to technology not previously available to them. It also allows Marie and Action Housing to make available a number of training and educational programs that they were previously unable to provide. However, even with these successes, there are still steps that Green Meadow Apartments community center should take in conjunction with Action Housing to ensure the continued success of the computer center.

Support and Administration

The most important thing to consider is the need of a lab administrator and "tech guru". In order to deal with the problems of software malfunctions and hardware difficulties that will undoubtedly appear in the lab, the center must have an individual with a basic knowledge of computer hardware and software systems to conduct repairs and maintenance. This person would not need to handle the lab full time as a lab of only ten computers (with no network), two printers and only two internet connections is not likely to warrant such an expenditure. However, no one currently on site has the expertise to deal with maintenance issues and in order to facilitate rapid repair of lab problems, a contact point responsible for technology issues in the lab must be appointed. Without such a contact point, repairs in the lab will take large amounts of time as Marie, the administrative contact for the lab, is forced to hunt down a person in Action Housing with the required knowledge and available time to conduct repairs. As the computer lab is already slated to begin hosting training programs for seniors, this tech guru contact should be named as soon as possible.

Internet Connectivity

The limited internet access (only two machines) of the lab is another area where the lab could be greatly improved. Of all the possible services provided by PCs today, the internet is (arguably) the most useful and most versatile. Email, online shopping and discounts, web based job searches and educational resources are just some of the many services that the residents could use the internet for. However, with only two machines connected, the availability of the internet to the tenants will be fairly limited. In order to facilitate easier access, Action Housing and Green Meadow should take the time to look for cheaper ISP's that would allow them to provide internet access for more of the computers in the lab. They should also consider looking in to more radical solutions such as a shared ISDN or DSL line or Cable modem within a limited lab network structure to provide faster access for more of the machines in the center. This extended capacity would allow more tenants to get on the internet at one time and take full advantage of the services offered. It would also allow Action Housing to provide a full fledged internet training program to teach people how to effectively use the internet, something that can not be done now with

only two connected computers. Resources for evaluating the costs and benefits of these various internet connection options have been included at the end of this document in the resources section.

Addition of Newer Computers
Although the existing 486 machines are adequate to provide minimal job training and educational programs, they are extremely slow and can be frustrating to use as a result. Green Meadow and Action Housing should look in to ways to procure faster machines for the computer center. This could involve something as simple as watching the classified ads or computer shows for parts to upgrade existing machines, sale or donations of improved performance used machines, or even the solicitation of more grants for new computers similar to two existing Celeron machines donated by IBM. However the improved performance is achieved and to whatever extent, it will allow lab users to perform their tasks at quicker pace and give them access to more modern, more useful software than the existing 486 dominated lab currently does.

Funding
As mentioned earlier, the chief limiting factor for Action Housing in all of these endeavors is funding, and Action Housing should continue to look for technology grants that would allow them to undertake the initiatives recommended above. As a nonprofit organization, Action Housing suffers from the chronic problem of low funding. But by continuing to keep an eye out for monetary and equipment grants, of which there are a significant amount given the recently booming economy and high tech industry in particular, Action Housing can continue to improve upon the Green Meadows Community center computer lab and the quality of services it offer to tenants.

Resources

- Green Meadow Apartments Computer Lab Management Requirements
  Document is attached to this report as Appendix A. Prepared by myself (Zeb Drivdahl), this document outlines a set of suggested requirements for maintaining the computer lab at Green Meadows and ensuring its continued growth. Specifically, the document outlines the maintenance requirements of the lab, the staffing needs for effective lab maintenance, and provides guidelines to use for upgrading the center when resources become available. A copy of this document has been given to Marie Timpano of Action Housing to assist in budgeting tasks and establishing lab maintenance procedures.
- Three Rivers Free Net - http://trfn.clpgh.org/
  A community based computer network aimed at providing southwestern Pennsylvania residents and non profit organizations with free access to local and world wide distributed information. The site contains links to foundation grant sites where Action Housing could apply for more funding or higher end computers for the Green Meadow computer center. The site also has areas where nonprofit organizations can post messages to solicit technology donations as well as browse or search the site (and the internet as a whole) for available grants and technology donations.
- Yahoo Regional Search – ISP's
  http://dir.yahoo.com/Regional/U_S__States/Pennsylvania/Cities/Pittsburgh/Business_and_Shopping/Business_to_Business/Internet_Services/Access_Providers/
  Provides a listing of Pittsburgh area ISP's. This can be used to search for the lowest cost ISP for the center, potentially allowing for more computers to have internet access at a lower cost.
- The Foundation Center - http://fdncenter.org/
  This site contains a large volume of information on charity foundations, tips for non profit organizations seeking funding for specific purposes/causes and other useful information regarding fundraising through foundations. Of particular interest is the online librarian part of the site which allows users to type in specific questions regarding funding for a certain goal (such as where to start looking for funding, what resources are available for a given project) which will then be answered within five business days. This site could be used to seek out foundation grants for furnishing new

computers for the computer lab or covering the costs of increased internet access. As a side note, this site contains a large volume of information applicable to many projects run by Action Housing, not just the Green Meadow computer lab, and could be used to assist with funding searches for numerous other projects.

- http://dir.yahoo.com/Business_and_Economy/Companies/Computers/Retailers/Hardware/Used/
  A large listing of companies selling new and used computer equipment. If funding becomes available, site could be used to search for affordable used equipment to enhance lab (new computers, networking hardware for printers, etc.)

Appendix A - Computer Lab Management Requirements
Green Meadow Apartments

1.0 Introduction
The computer lab at green meadow apartments represents a significant resource, both for residents as an access to technology and the internet, and to Action Housing and Home Properties as tool for community development. However, the sustainability of the lab as a viable technical resource depends on a sound maintenance, management, and funding plan. This document represents an attempt to define the maintenance and staffing needs of the lab, as well as provide suggestions for future upgrades to the lab. The intended audience is for both technical and non-technical staffers. For the technically minded, this document contains a set of tasks required for effective maintenance of the lab (section 2.1), as well as a prioritized set of upgrades to be made to the lab when resources become available (section 3). For the non-technical audience, this document summarizes the staffing needs of the lab and offers suggestions for choosing individuals to staff the lab (section 2.2). Furthermore, when examined with the input of technical staff members, this document represents a tool to help with budgeting for the lab, both for maintenance and continued improvement.

2.0 Maintenance Requirements
This section outlines the tasks required for maintaining the Green Meadows community center computer lab. Section 2.1 is geared primarily towards technical personnel, whereas section 2.2 is aimed at a non-technical management audience.

2.1 Tasks
The following list outlines the tasks necessary in order to ensure the continued, successful operation of the Green Meadow Apartments community center computer lab. For the repeating, scheduled tasks listed below, all time frames are suggestions – shorter and longer times between tasks are possible, but the given time frames are strongly recommended.

- Biweekly checks of all hard drives on all machines. This involves booting up each computer, checking that hard disk space is available and deleting all unnecessary files to free up hard drive space.
- Biweekly virus checks. The virus detection and removal software present on all machines must be executed and a thorough virus sweep performed.
- Biweekly disk scans. The scan disk utility (part of the Windows95/98 system tools and already installed on each machine) should be executed and all hard drives on each machine scanned for errors and automatically repaired (only a standard check is required, not a thorough one).
- Monthly disk defragmentation. The disk defragmenter utility (again, part of the Windows95/98 system tools package and installed on each machine) should be run on each hard drive in every computer and the disks defragmented.
- Hardware troubleshooting and repairs as needed. Any time a machine breaks down, that machine must be troubleshot and repaired. For the older machines, spare parts are available in the form of the unused machines in storage. For the newer machines, check the documentation that came with the system for customer service and repair information. Repair and troubleshooting can be performed during the biweekly visits for the tasks mentioned above.
- Software troubleshooting as needed. All software difficulties that appear must be troubleshot and repaired in a timely fashion. This includes printing difficulties, problems with connecting to the internet, application crashes and all other software related difficulties. Repair and troubleshooting can be performed during the biweekly visits for the tasks mentioned above.

2.2 Staffing Requirements

In order to ensure that all maintenance tasks relevant to the lab are performed in an efficient and timely manner, a staff person should be appointed as the repair person and lab administrator. This person should have a working knowledge of hardware and software operation, troubleshooting, and repair. Extensive knowledge or training is not required – just the very basic technical skills. Anyone who has ever tinkered with computer and software repairs on their own, at home, or in their free time should be able to handle the position. The lab administrator should be responsible for performing all of the tasks listed in section 2.1 according to a set schedule. This person should also be named as the contact point for reporting breakdowns in lab machines and software, and their contact information must be readily available to Green Meadows Community center staff so that problems can be reported quickly. It is estimated that fulfilling the requirements of this position will require between 1-4 hours of work a week, depending on the operational status of the lab machines. Whether this position is filled by assigning it to an already present staff member or through hiring an outside individual is a decision that must be made by Green Meadow Apartments. If an outside person is hired, care must be taken to ensure that the person possesses the requisite technical skills.

3.0 Upgrade Guidelines

This section deals with suggested upgrades to the computer lab. Although it is aimed primarily at technical staff, non-technical staff will find it useful in budgeting and planning for the future of the lab, particularly when read with the help of technically knowledgeable personnel. Please note that the recommendations given here are by no means exhaustive – other options do exist to increase the capacity of the lab and should be explored as they present themselves.

3.1 Hardware Upgrades

All of the machines in the lab in need of enhancement or replacement are 486 processor based machines operation at 33MHz with 20 Mb of RAM, hard drives of ~250Mb, and a single 3.5” floppy disk drive. Any machines brought in as replacements should exceed these requirements. This includes any Pentium, Pentium II, Pentium III or Celeron processor machines with speeds above 33MHz. All other system attributes (RAM, hard drive size, peripherals) should meet or exceed the existing values listed above.

3.2 Software Upgrades

The machines currently in the lab are already equipped with the maximum software package they can effectively execute. No software upgrades are possible to these machines without first upgrading the machines themselves (higher end software simply will not run on the existing machines). However, if the machines are replaced with newer, faster machines, software upgrades are possible. The following is a list of desirable software titles, in order of desirability:

- Windows 98
- Microsoft Internet Explorer 5.0 **AND/OR** Netscape Navigator
- Microsoft Office 2000 (including Word, Excel, Outlook, and PowerPoint)
- Educational software (such as Math tutor programs, educational trivia games and similar software). Educational software purchases should target a wide range of age groups, grade school (basic programs and games) through High school (advanced study topics, SAT preparation programs, etc.)
- Quicken **OR** Microsoft Money (these programs would allow residents to use lab machines to balance their finances)

3.3 Increased Internet Connectivity

If funds become available, more machines should be given internet connectivity. This involves purchasing and installing a modem in each of the machines to be added and setting up a new account with the internet service provider (ISP) for each computer to be added. Before the decision to add more computers to the internet is made, it is important to remember that each computer added represents an increase in the monthly service charge assessed by the ISP for providing internet connectivity.

Alternatively, the option also exists to have one or more shared ISDN, DSL, or Cable modems available to the lab. This option would be quite expensive however, as it would require the establishment of a network infrastructure for the lab (network cards for every computer, a networking hub, software to run the network, personnel costs to hire someone capable of setting up and administering the lab). If funds do become available however, this infrastructure would represent a significant improvement in the speed and availability of internet connectivity in the lab.