

**PEDCo E & A Services
Project Web Site**

Submitted to
The Faculty of the Information Engineering Technology Program
in Partial Fulfillment of the Requirements
For
the Degree of Bachelor of Science
in Information Engineering Technology

Kyle C. Glass

University of Cincinnati
OMI College of Applied Science

March 2000

**PEDCo E & A Services
Project Web Site**

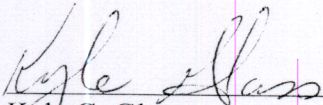
By

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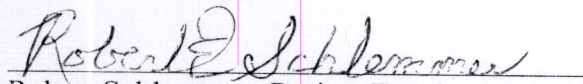
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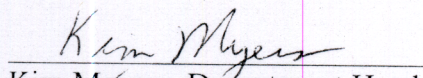
Kyle C. Glass,

3/14/2000
Date



Robert Schlemmer, Project Faculty Advisor

Mar. 14, 2000
Date



Kim Meyers, Department Head

3/14/2000
Date

Acknowledgements

First and foremost I would like to thank THE ALMIGHTY YAHWEH ELOHIM for all of his wonderful benefits to me. I would also liked to thank the management and administration at PEDCo E & A Services Inc. for allowing me to use all available resources necessary to complete this project. To my family and friends who would have like to spend more time with me, thank you for the patience and perseverance. And finally I would like to thank all of the IET Faculty and staff for having the tolerance to help me along when at times I was not as diligent as I should have been.... Thank you.

Kyle C. Glass

3/15/00

Dedication

I would like to dedicate this project to my mother Juanita Glass, and to my beloved father

Charles E. Glass (10/1/34 to 2/23/00).

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Abstract

The following report covers the accomplishments and design criteria needed to develop the PEAS Project Web Site. The purpose of this project was to create a central location where the progress of all ongoing projects could be monitored. This would allow management and engineers of PEDCo E & A Services, owners, contractors, and vendors to communicate more effectively, timely and reducing costs.

The material covered in this report demonstrates the design, materials used, and functionality of the project Web Site. The information illustrates the benefit of having a central site for engineers and architects to exchange information from local or remote locations relative to current projects. The site is designed exclusively for PEDCo E & A Services and fits all of the requirements demanded by management.

1 Statement of Problem

During the past year, it has become increasingly clear that what this industry needs is not necessarily more ways to create lines on a drawing from point A to point B, but rather better ways to manage design data and better tools to enable people to work together more effectively, particularly from dispersed sites. The objective is simple: to make it as easy to work with someone halfway across the country or on the other side of the globe, as it is to work with someone in the next cubicle or down the hall.

Until recently, only large organizations had the funds and expertise to establish computer systems that enabled project participants at multiple locations to simultaneously view and manipulate drawings and related design data. This put smaller firms and government agencies with limited budgets at a disadvantage. Recent developments have given these smaller organizations a competitive edge in the engineering arena. The first, and probably most important, is the Internet. The second is the amount of commercial software now available that enables small organizations and service providers to put together high-tech solutions allowing them to stay competitive in the corporate world.

1.1 Definition of Need

Using the Internet or an Intranet, a project Web site can be accessed by team members regardless of where they are located. An extranet is an intranet that can be accessed by external personnel who have appropriate privileges. A

project extranet typically includes team members outside the design organization such as the owner, a vendor, or a contractor.

2 Review of Literature

The literature used to investigate the purpose for creating a project Web site came from a number of sources. There were mailings that offered to build and promote a project extranet for the company from a number of sources.

The bulk of the information came from the Internet. From a standard search engine I was able to type in a combination of words relating to the Internet and AutoCAD.

The information found at ARNONA, the makers of the CAD- Viewer Pro I will be demonstrating was found to be very informative. In addition to advertising their product, they gave insight as to where AutoCAD and the Internet will be heading into the twenty-first century. They explained how real-time project collaboration will be available within the next two years at a fraction of the cost it is available at today.

3 Description of Solution

The project Web site for senior design is a web site on a private Intranet or Extranet that will serve as a point of entry for a central site of project activity. This site provides various project teams access to all of its relevant information throughout the course of a particular project. The approach used allows everyone working on a project

the opportunity to share information with each other. This will be particularly effective when team members are working on projects from different geographical regions.

3.1 User Profile

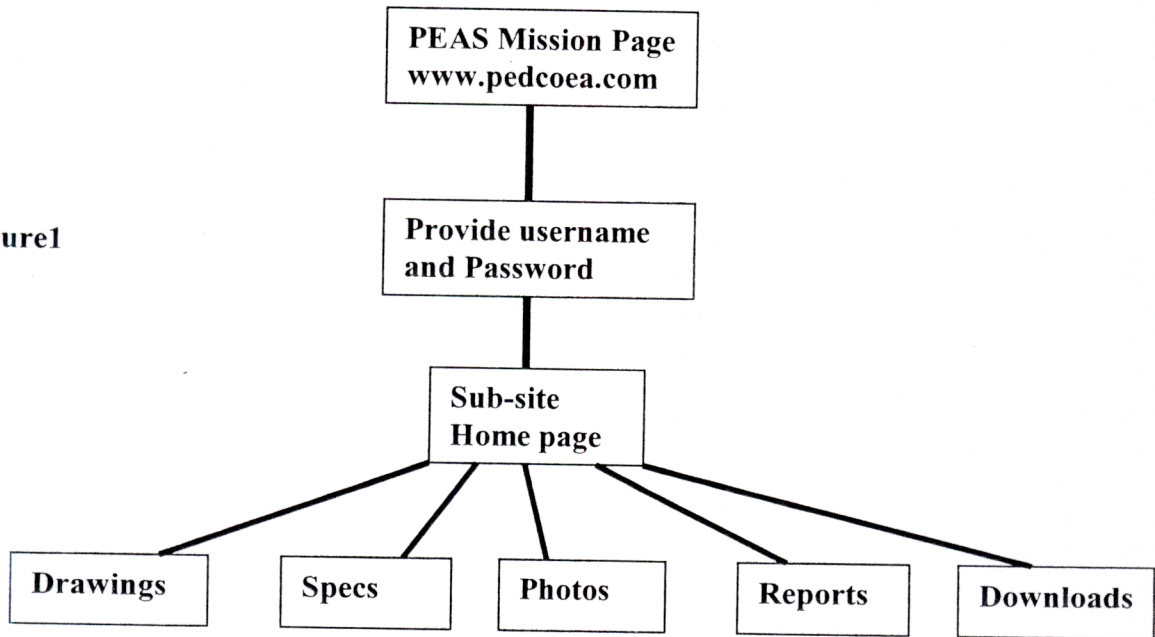
The users that will be accessing this site are management and project team leaders with PEDCo E & A Services. They are familiar with accessing the Internet and logging onto a system via a username and password.

Product vendors, project owners, and contractors wishing to bid on jobs also access the site checking the progress of jobs. They will be assigned usernames and passwords from specific PEAS project team leaders in order to gain access.

3.2 Design Protocols

There is a diagram that displays the structure of the Site in Figure 1. The user interface will consist of a user-friendly environment without a lot of clutter on the pages. Once a user has entered the initial PEAS Mission Home Page they select a point of entry. After making the selection they are prompted to provide a username and password to gain entry to the initial site. If the user is denied access to the site then he/she is promptly notified and asked to try again. After three tries they are asked to exit the site altogether. On the sibling pages (PEAS, Contractors, Vendors, Owners) there is "worded" navigation (i.e. HOME) to allow them to move from page to page. Since the default navigation on the latest version of both IE 5.01 and Netscape 4.27 seemed sufficient, there was no real need to create hyperlinks allowing for forward and back navigation.

Figure1



3.3 HELP

There will be little help after normal working hours because that there will be no one in the office to update any files or drawings. It is made clear to anyone accessing the site that they have to contact the necessary PTL for the latest updates regarding drawings and files posted on the site. This will be important since the system administrators (initially) will be the only ones updating the site. If the site goes down, that will mean that the server has gone down and that will be a major issue for everyone.

4 Objectives of the Project (Deliverables)

The deliverables of the project are:

- All users will enter the PEAS Mission page via www.pedcoea.com and select a point of entry
- The site will prompt the designated user to provide a username and password to access the web site.
- Engineers and others depending on which point of entry they select will be able to gather necessary information pertaining specific drawings and files
- If a drawing is selected they will be able to view from any location and on any PC via CadViewer Pro or view the drawing in its original format via Volo View Express
- With CADViewer Pro the user will be able to maneuver through the drawing make redlines, add text, and post notes on the drawing they access
- The user will also be able to download the drawing of their choice.
- If the user is in the PEAS group then they will be able to move throughout the entire site while as others will be restricted to their group's pages only.
- Some groups will have photos available relating to specific jobs
- Reports will be available in the PEAS group for PTL to monitor
- The user will also have the option to access another web site, www.bhdp.com, and check the progress of jobs going on there.

5 Design and Development

5.1 Budget

The budget for developing this Web site was minimal. This was because the software was available on-line as well as through IET faculty. The budget for the PEAS Project Web Site was:

<u>Resource</u>	<u>Price</u>
1. Applet Password Wizard	\$10.00
2. Zip Disk	\$10.00
3. CDR	\$20.00
Total	\$ 40.00

5.2 Timeline

8/31/99

Demonstrated Prototype (Had all pages set up but not completed; was able to log on and access a drawing as well as make update to a database from within the architectural department)

9/30/99 thru 10/31/99

Consulted with PEDCo E & A Services management and decided to restructure total site.

11/1/99 thru 11/30/99

Reconstructed the entire site to meet management's new criteria for a less complex, straightforward, workable, project web site.

Dropped all of the internal departments and created one general PEAS page, a Contractors page, Vendors, Page and an Owners page.

12/1/99 thru 12/31/99

Had the CadViewer Pro completely set up for drawings to be accessed via a list of drawings. Tested and decided to add Volo View Express at the request of management for viewing of drawings in their original format.

1/1/00 thru 1/31/00

Had new site constructed and ready for information to be added by Project Team Leaders.

2/1/00 thru 2/15/00

Fix any problems and make any necessary changes or modifications to accommodate the users.

2/16/00 thru 2/29/00

Posted all necessary information pertaining to current PEAS projects on the site.

3/1/00

Prepare final report.

3/3/00

Turn in final Report and Project.

3/9/00

Demonstrate PEAS Project Web Site before IET faculty and staff.

5.3 Software

The software used to construct the project site is as follows:

5.3.1 MS FrontPage: for the overall total development of the site.

5.3.2 MS Interdev: for creating relative linking properties for all links enabling the site to be run from any location.

5.3.3 Arnona CADViewer Pro and CAD Viewer Light: this software allowed drawings to be viewed on any PC from anywhere over the Internet without having any additional software installed. Also drawings could be redlined and saved with this utility.

5.3.4 Volo View Express: less powerful than CADViewer Pro and requires installation onto the PC to view a drawing. However, this application allows drawings to be viewed in their original .dwg format

5.3.5 Coffeecup Applet Password Wizard: this software generated a login prompt that would work on virtually any browser and in any format.

5.4 Hardware

The only hardware that was used for this project was a P133mhz PC used for constructing the site and a Compaq Proliant server used to house the files.

6 Proof of Design

The PEAS Project Web Site will be hosted at www.pedcoea.com. When a user enters this URL they will arrive at the PEDCo E & A Services Inc. Missions Page.

Once they have read the company's mission statement they will be allowed to enter one of four sub-sites: See (Figure 2)

PEAS

Contractors

Vendors

Owners

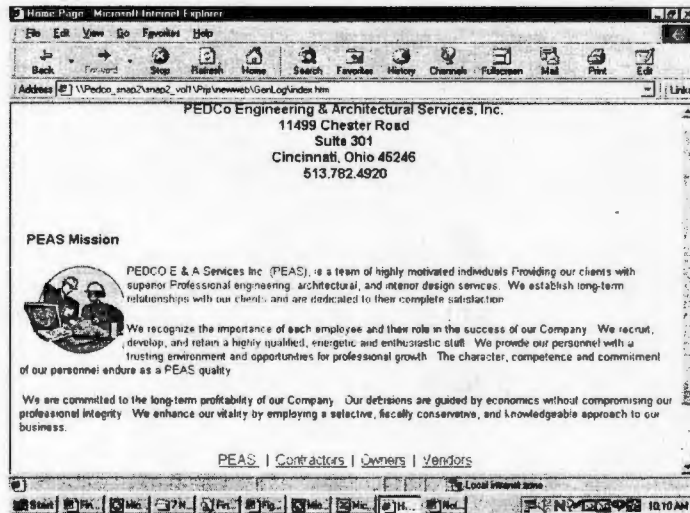


Figure 2

When the user has made a selection they will then be prompted to provide a user name and password (Figure 3). They will have three tries to provide a correct username and login. If they fail they will be sent to a page notifying them to check with a PEAS Project Team Leader (PTL) and try again at a later time (Figure 4). When they arrive at the initial sub-site's home page they will be able to gather information about ongoing projects (Figure 5).

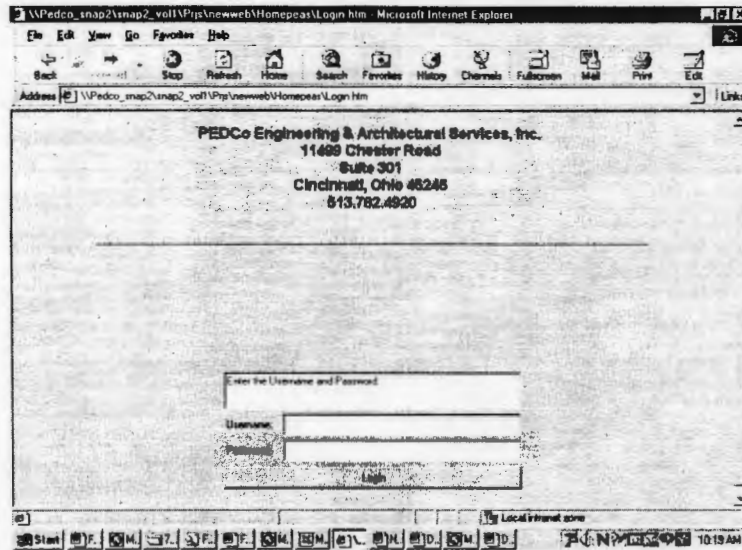


Figure 3

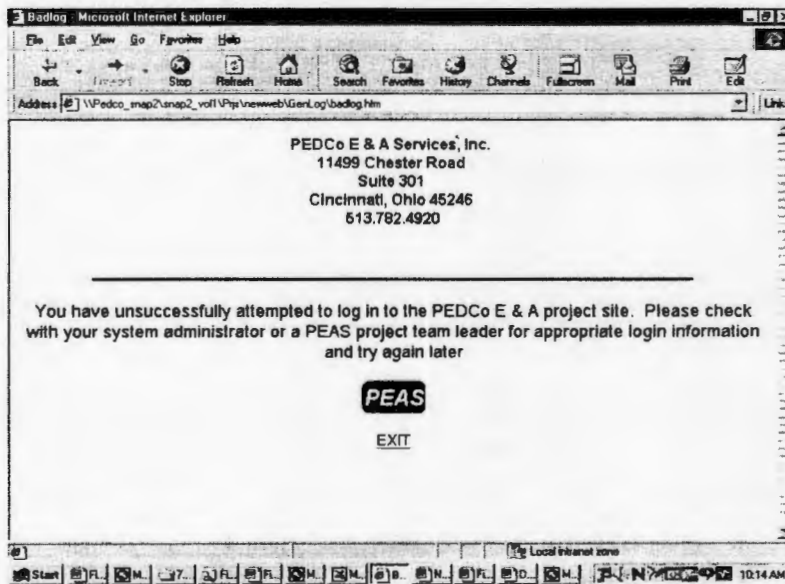


Figure 4

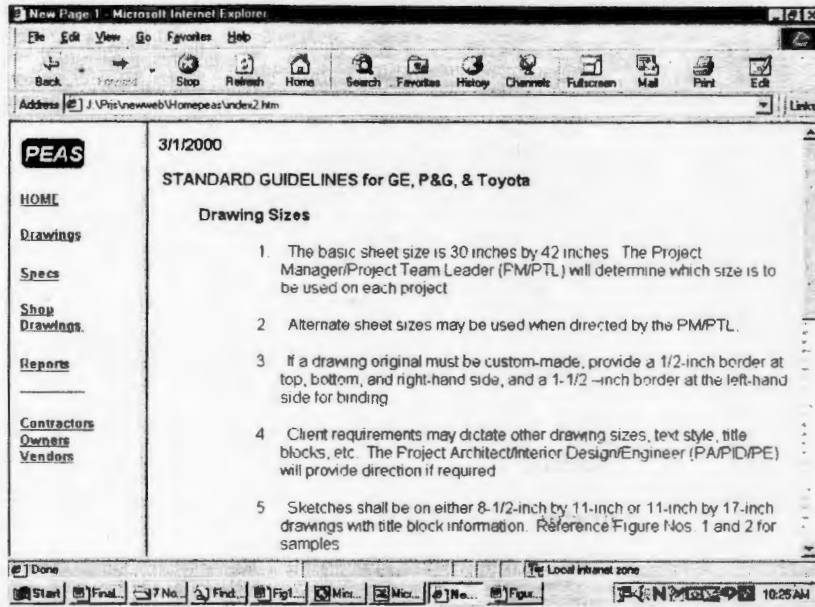


Figure 5

Depending on the sub-site they chose they will be able to select from various pages to gather and retrieve information on, such as Drawings (Figure 6, 6a, and 6b), Specifications (Figure 7), Photos (Figure 8), and Downloads (Figure 9).

Drawings: there are two methods for viewing drawings; Cadviewer and Volo.

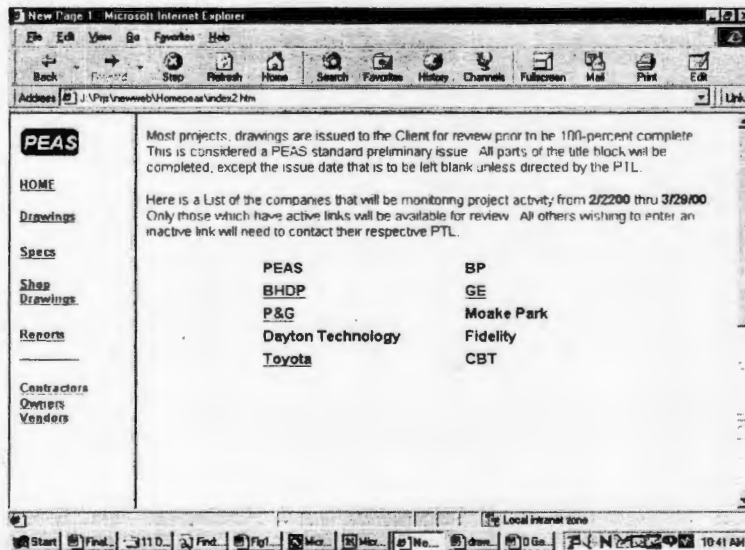
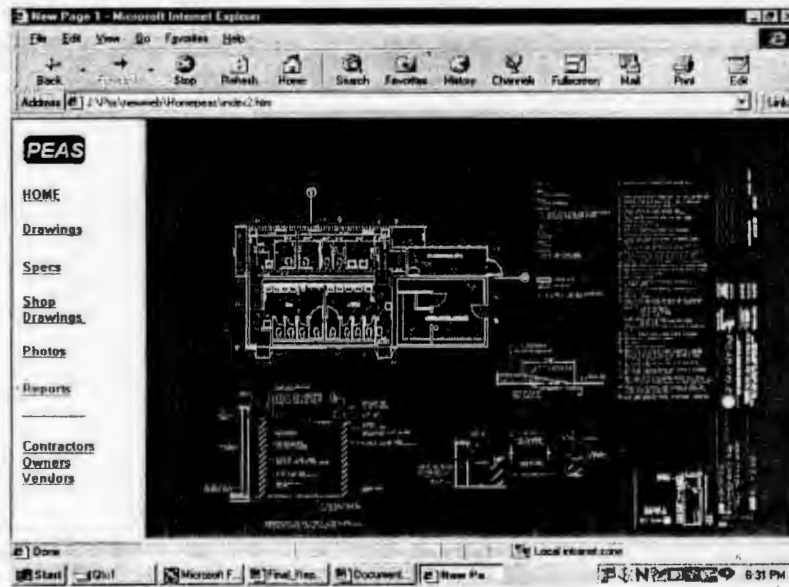


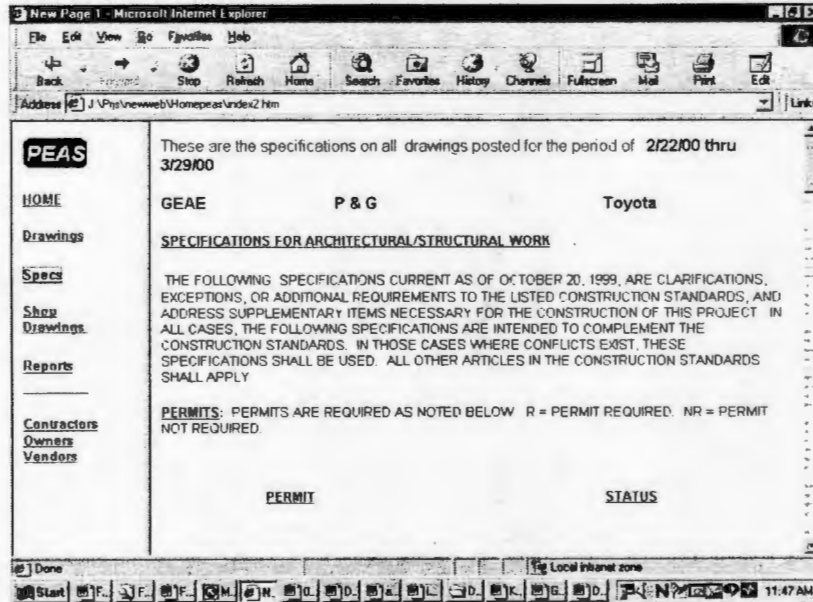
Figure 6



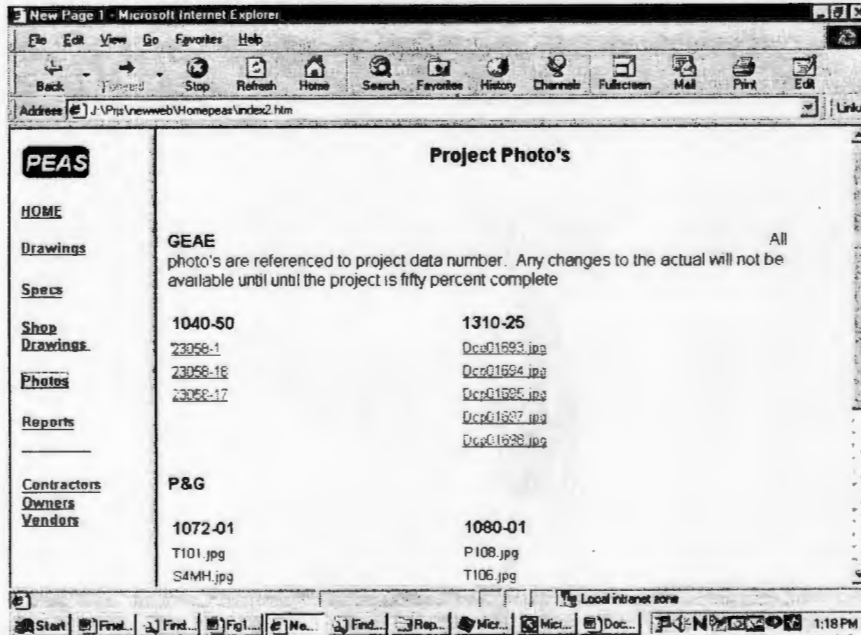
CADViewer (Figure 6a)



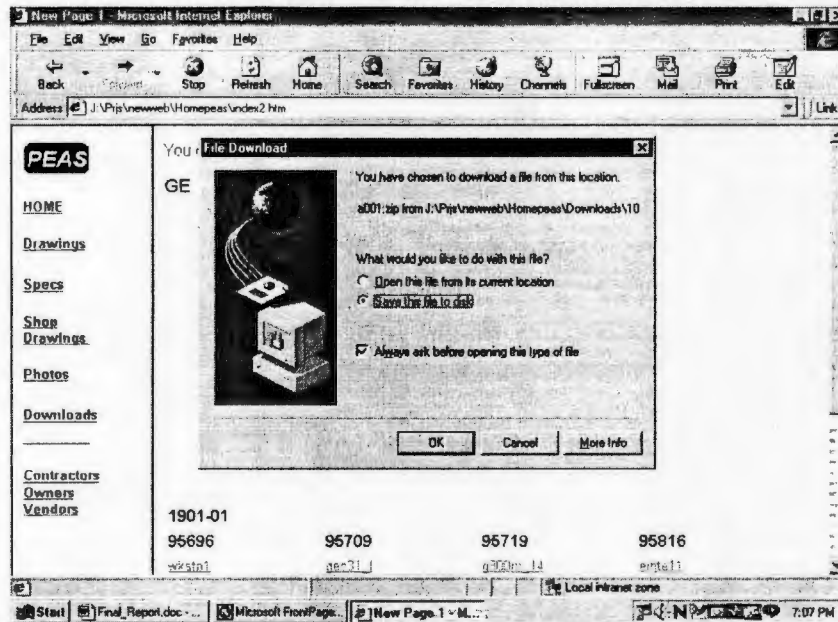
Volo View Express (Figure 6b)



Specifications (Figure 7)



Photos (Figure 8)



Downloads (Figure 9)

Once a user has retrieved all of the information they will be able to download any of the drawings they wish, make the necessary changes in AutoCAD and email the drawing along with any comments to a designated PTL.

7 Conclusion and Recommendations

The PEDCo E & A Project Web site is the first step for a much bigger, more dynamic site for the company. When I first developed the concept for a project web site, I had planned to use the company I was working for to be a model. Once I started inquiring about what would engineers and architects within the company like to see on a project site, most gave minimal feedback. Little did I know this was because none of them had even thought of having a company site that would not only be informative but also interactive.

Once I discussed my project with the office manager, he immediately wanted me to develop it not only as a class project, but for the benefit of the company as well. Approximately one year later they have their site and I my senior design project. Since the day I started gathering information on how to construct my project there have been a number of companies sending literature to the office either offering to develop a site for us or for to take advantage of a fully functional site that would host our drawings and files.

After taking a look at sites such as Buzzsaw.com and NetDocuments.com, it became clear to me that what took me a year to develop was nowhere near as sophisticated and elaborate as theirs. They offered a user-friendly site that would take care of all the features I offered and a whole lot more. The down side is that they offer very little web space (100mb) and charge significantly more for additional space. This is where my site outshines them all. By creating the site myself I can post as many files and drawings on the site as I please, which will be a big benefit if the company is collaborating with several companies at the same time.

In conclusion, I feel it would much more beneficial for PEDCo E & A Services to pay for as much space as needed and have their site hosted by a third party, primarily Buzzsaw.com. They have the servers, firewalls, and all the necessary tools that would allow any project team leader to post drawings and set the necessary security allowing project monitoring to be done effectively.

References

Web Sites

Arnona CADViewer Pro Home Page

<<http://www.cadviewer.com>>

Buzzsaw Home Page

<<http://www.buzzsaw.com>>

Netdocuments Home Page

<<http://www.netdocuments.com>>

Volo View Express Home Page

< <http://www.autodesk.com/products/volo/index.htm>>

AutoCAD Home Page

<<http://www.autodesk.com/autocad>>