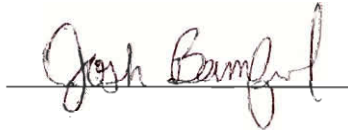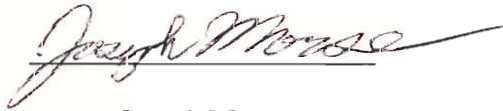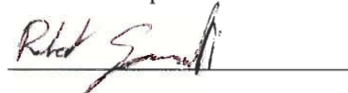Project Number: 44 JDF 8L05

Merton Resources

An Interactive Qualifying Project Report
submitted to the Faculty
of the
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by

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Abstract

Merton has hosted many successful WPI projects over the past 8 years – but the time has come to give this valuable resource a more corporate profile and structure. An interactive website that promotes projects and gives examples of previous successes was built. It leads Merton officers through the application process and procedures for running their own projects. The report highlights existing barriers for successful and outlines what is needed at an organisational and corporate level to resolve these issues.

Executive Summary

One of the degree requirements at Worcester Polytechnic Institute (WPI) is to complete an Interactive Qualifying Project (IQP). The overall goal of the IQP is to connect science and technology on the one hand with society on the other. Most often the IQP is completed in the student's junior year; there are many options for completion. Students can stay on campus and work on the project for one to three terms, or they may leave campus, completing the IQP in a single term. Each year, many students decide to complete their IQPs at the London Project Centre, and many of these students are assigned a project from the Merton Council. The projects completed in Merton have ranged from research on sustainable energy programs to strategies to resolve traffic problems.

In the eight years since the first project was sponsored in Merton, there have been many organisational issues that have not been addressed by WPI or Merton. Hearing about WPI in the first place is currently more of a right-place, right-time event for most officers. Only a few officers have worked with WPI directly, and they have become the main source of information about projects for others. Finding the proper funding for a project is a task in itself for a Merton Officer. The officer usually must ask several departments in the council to secure funding. When the students arrive, they may discover that they have no desk or office resources to use. Desks are found in all corners of the building, and access to computers, the internet, and printers may be tough to come by. Because the Merton Council is a crowded building, these seemingly trivial resource issues may be, in reality, quite difficult to overcome.

There are also several issues on the WPI side. The most important issue is the lack of a local coordinator. There has not been a coordinator in London for several

years, and this has placed a burden on both WPI and Merton. Currently, a Merton officer (Adrian Hewitt) is acting as the de facto coordinator, which places an unnecessarily heavy burden on his shoulders. Several of the problems with projects in Merton could be worked out with the presence of a permanent local coordinator. There are also issues with the screening of projects. Often, there are problems with the liaison or the project itself that need to be addressed when the project team arrives. A local coordinator could also help in that regard.

The overall goal of this project is to ease the process of sponsorship and completion of WPI projects in Merton. Our project had three main phases, all interrelated. The first was an information collection stage, where we surveyed or interviewed several people or groups in Merton and WPI to help us make the web resource as informative as possible. The next phase was the creation of the actual web resource for the Merton Council, where council members can find background information about WPI and the projects done in Merton, along with information to officers interested in creating a project for WPI. The third was a letter to the Corporate Management Team (CMT), asking them to centralize funding and resources for these projects in the future. All of these phases are meant to make future projects run easier and more efficiently.

In order to obtain first-hand knowledge of projects in Merton, several different groups of people within the Merton Council were surveyed and interviewed. We surveyed representatives from each of the strategic objectives of the council; they were asked a certain set of questions, depending on whether or not they knew of previous WPI projects in Merton. Most importantly, previous and current liaisons were interviewed. The liaisons gave us many important insights from their

experience with WPI. Using feedback from all of these groups, the web resource was made as informative and as helpful to as many people as possible.

We designed a website hosted by WPI to serve as a resource for the various officers of the Merton Council. The website serves as a resource for officers interested in learning more about WPI and its projects in Merton. Because of the dual nature of the web resource, information and attraction, things such as ease of browsing and availability of information are key considerations. Information is displayed clearly, concisely, and is easy to navigate; this will make the resource user-friendly to the officers. In addition to background information, users of the resource will find an interactive checklist for keeping track of their progress, a proposal template they can fill out, and copies of previous projects to browse.

The Corporate Management Team proposal must be strongly and carefully worded to appeal to a very specific audience. The CMT are looking for reasons to invest money and resources into WPI projects in the future. Such resources include desk space, internet access, printer and photocopier access, and swipe cards. If funded, the CMT proposal will ultimately centralize the WPI program in Merton, creating a central pot for project funds and possibly set resources for project teams as well.

With the existence of the web-based resource, future projects should not run into as many of the problems that many groups have faced when working on projects in Merton. If the Corporate Management Team agrees to centralise funding and resources for future projects, this will make projects run even more smoothly.

Statement of Authorship

This report is the combined work of Josh Bamford, Joseph Morse and Robert Spremulli. We shared equally in the authoring and editing of all sections.

Acknowledgements

Table of Contents

Table of Figures

1. Introduction

Every student that graduates from Worcester Polytechnic Institute (WPI) is required to complete a project known as the Interactive Qualifying Project (IQP). The IQP focuses on a balanced relationship between science and technology on the one hand and society on the other. Each year, many students are given the opportunity to complete their projects away from the WPI campus. London is a popular site for students going abroad, and one specific project area in London is the Borough of Merton, whose organisational members sponsor over 1/3 of the London projects.

Merton and WPI have a long-running relationship. In fact, the first project carried out in Merton was during the summer of 1996, more than eight years ago. Even so, at this moment, few staff members in the Merton Council know about the IQP program. One goal of this project is to make more of Merton's officers aware of WPI, its relationship with Merton, and what an IQP can do for them. To increase awareness of WPI's involvement in Merton's community, we have written a proposal to make the case for central coordination of future projects, including dedicated funding and available office space. This proposal will be sent to the Corporate Management Team for review.

Another issue that needs to be addressed is that potential sponsors must be aware of the commitment that an IQP requires. The officers in Merton who have sponsored projects have experience with what exactly an IQP team can accomplish, but those who have no previous experience with teams need to know that sponsoring a project requires not only submitting a proposal, but also requires time to dedicate to communicating with the team over a period of two terms (14 weeks), desk space for the team, internet connections, and access to a telephone and other office equipment.

Currently projects are created in Merton when an interested officer hears, through word of mouth, about WPI and its IQPs. The officer then approaches either Mr. Adrian Hewitt or Mr. Ernest Obumselu, who act as project co-ordinators due to their experience with the program. Mr. Hewitt or Mr. Obumselu then fill the officer in on the rest of the details. This process is decidedly inefficient and places a strain on Mr. Hewitt and Mr. Obumselu.

As the number of projects has increased, certain other problems have arisen. Some liaisons have cancelled projects at different stages of the students' preparation. While the liaisons may not have thought that it would be a problem to drop a project group, the advisors and other liaisons had to find a new project, while the students had to adjust to it and complete that new project in a much shorter time period. All this can cause strain not only on the students, but also on the faculty and mentors associated with the project, and on the liaison's relationship to WPI. By educating sponsors and liaisons of commitments necessary in keeping a project running smoothly, these incidents may be avoided.

To address these problems, Mr. Hewitt and Mr. Obumselu have requested that we create a section on the internet that they can direct officers to[1]. The officers can then learn more about the WPI-Merton relationship. In this section, one should be able to find information about WPI in general, WPI's IQP program, previous projects, indications of possible future projects tied in with Merton's key goals, and multimedia that can help illustrate the previous points. We also created a project proposal template to make it easy for officers who want to propose a project. Merton officers can browse examples of previous IQPs and proposals, and learn about the timeframes of projects. They also can

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[1] Unless otherwise stated, each subsequent mentioning of the web resource refers to Version 2.0.

find the costs, the administrational and organisational requirements, and the responsibilities expected of Merton officers sponsoring an IQP.

There are currently several liaisons for this project. Our unofficial PQP liaison was Prof. Paul Davis of WPI, who is the Dean of the Interdisciplinary and Global Studies Division (IGSD). An interview we conducted with Prof. Davis can be found in Appendix A. Our two official liaisons in the Borough of Merton are Mr. Adrian Hewitt, the Principal Environmental Officer of Merton, and Mr. Ernest Obumselu, the Research and Community Engagement Officer of Merton. These liaisons have had previous experience working with WPI; interviews with them can be found in Appendices K, L, M, and N.

There are several important results that should come out of our completed project. Firstly, this resource will help to resolve organisational issues with the sponsoring process. The intranet section will allow Mr. Hewitt and Mr. Obumselu to direct interested officers to a source of information about WPI's involvement with Merton. Also, officers who otherwise had not heard of WPI before may notice the added section to the Merton Council's intranet. The increased exposure of WPI to the Merton Council officers may in itself result in an increase in project ideas for teams in the future. The proposal, if successful, will centralise funding and resources for future projects, guaranteeing at least a certain number of projects per year. Also, recommendations are given to Merton and WPI on how to improve organisation of future projects in Merton.

The next section is an overview of WPI and its projects. The third is an overview of Merton and its council. The section after is a set of requirements put forth by WPI for liaisons and sponsors. Then we outline our work for the project in detail. Results are provided in the following two sections, pertaining to the web resource and the CMT

proposal, respectively. Conclusions and recommendations are provided in the final section.

2. An Overview of WPI and Its IQP

This section presents an overview of WPI and its projects. The interactive qualifying project is explained in more detail, and then the creation of these projects is explained. We finish up with a description of the students' preparatory project for the IQP. These subsections explain how quality IQPs are initiated.

Worcester Polytechnic Institute (WPI) and its Projects

Worcester Polytechnic Institute (WPI) was founded in 1865, as an institute where science and practice would be taught hand-in-hand. John Boynton, a self-made tin manufacturer, and Ichabod Washburn, owner of the (then) world's largest wire mill, combined their ideas of elevating the social status of the mechanic and teaching through apprenticeship, into the dream that eventually became Worcester Polytechnic Institute[2]. Today, WPI is ranked 51st in America for undergraduate engineering programs, according to the *U.S. News and World Report's* America's Best Colleges 2004 issue[3]. Along with its engineering accolades, WPI is known worldwide for its strong global program, with project sites in many countries.

Over the past 135-plus years, WPI graduates have contributed many breakthroughs to society. Some notable contributions of graduates are the liquid-fuelled rocket, stainless steel, the airbag safety system, the first commercial radio station, videotape, and the first airplane to cross the Atlantic Ocean[4].

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[2] *Tech Bible: The History of WPI.*
[3] WPI: Recognition for WPI. http://www.wpi.edu/About/Awards/recognition.html
[4] *More Than 135 Years of Breakthroughs That Have Changed the World.*

WPI students do not solely solve technological problems, however. Students are also encouraged to explore the intersections of science, technology, and society. In addition to normal coursework the WPI plan consists of three projects that all students must complete in order to graduate. A Major Qualifying Project (MQP) relates solely to a student's major. An Interactive Qualifying Project (IQP) presents an issue bridging science, technology, and culture. A Sufficiency project usually encompasses a student's Humanities and Arts education[5].

For undergraduates, WPI operates on a term (quarter) system. Four terms, lasting seven weeks each, make up the school year. Each term, students are encouraged to take three courses. Currently, there are about 2,800 undergraduate students, as well as about 1,000 graduate students[6].

Interactive Qualifying Project (IQP)

The Interactive Qualifying Project (IQP) deals with the relationship between science, technology and society. An IQP is required for each student in order to graduate. Since its inception in the early 1970s, where the first off-campus site opened at Washington, DC[7], WPI's global project network has grown to more than twenty locations on five continents[8]. More than three thousand students have completed off-campus projects since the IQP's foundation.

The IQP is a project where students get to apply their scientific, engineering or managerial class experience to provide possible solutions to social problems. Students

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[5] If the student is a Humanities major, the Sufficiency project actually encompasses the student's math and science education.
[6] *Facts and Figures.*
[7] *Three Decades, Three Thousand Students.*
[8] *The WPI Global Perspective Program.*

must show that they are capable of professionally analyzing, presenting, and proposing possible solutions to an area's social problems. In the past few years, more than half of all IQPs have been completed at off-campus sites[9]. Regardless of the site, students at off-campus sites work full-time for a local sponsor in order to complete the project in the term's seven week duration. IQP groups usually consist of three to four students.

IQP Creation

The first step in the creation of a project is to find a problem. Sometimes, IQPs are initiated by students or individual faculty members, but usually projects are proposed by organisations outside of WPI. There are several different ways WPI identifies organisations interested in participating in IQPs, but usually it is done by word of mouth by previous project sponsors. Occasionally, WPI finds sponsors, or organisations come to WPI themselves, but most often previous sponsors recommend others[10]. After a potential organisation is found, the next step is to make them understand what the IQP entails.

One of the main issues to work out between a potential sponsor and WPI is what is expected from the IQP students. Many times, the sponsor does not have a true IQP, and is merely looking to hire interns. The IGSD often speaks with the organizations to convince them of the social science aspects. Occasionally, if a sponsor cannot agree to the social science aspect, negotiations may be ended. Other times, what project sponsors want is too narrow, leaving the students no room to do their own research. IQPs need to

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[9] *Interdisciplinary Studies.*
[10] Davis, Paul. Personal Communication. December 10, 2004.

be open-ended and allow students to expand on them and see their influence on society; this is sometimes the most difficult part of setting up the project[11].

Pre-Qualifying Project (PQP) or Project Proposal

In preparation for an off campus IQP, students are usually required to complete a project proposal as a pre-qualifying project, or PQP. The PQP is a layout of the resources necessary for completing the project, which includes an overview of the current situation in the area the project deals with, the problems that need to be confronted, and the methods that may be used to confront these problems. It provides a structured approach to aid the students in carrying out research and devising conclusions. Students are expected to complete the PQP during the duration of the seven-week term prior to their IQP.

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[11] Davis, Paul. Personal Communication. December 10, 2004.

3. Merton

This section discusses Merton in general, and then the history of WPI within Merton. It then provides an overview of the direction Merton is heading now and in the future. This subsection covers several key facts about the three year plan Merton currently has in place to improve the borough. The final subsection provides an overview of what problems have arisen in the past with the sponsorship of projects in Merton.

The Borough of Merton

Merton is a borough in southern London composed of five main centres: Wimbledon, Mitcham, Morden, Colliers Wood and Raynes Park (there are several other minor areas as well). There are approximately 184,000 people living in Merton, but it is mostly a commercial borough with many stores for daytime shopping and many pubs for night time socializing[12]. The borough is also home to the famous Wimbledon Tennis Championships. Merton has been sponsoring IQPs since 1996[13]. The vast majority of these have been sponsored by the Council of Merton.

The Borough of Merton is led by the Merton Council. The council is made up of 60 members and a staff of 5,500 officers and teachers. Merton's current mayor is Margaret Brierly, who was appointed in 2004 for a two year term. The council itself has an election every four years, with the next election to be held in 2006. The council is split up into six different, specialized sections, which handle separate tasks in Merton. The six sections are Chief Executive, Corporate Resources, Customer Services and

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[12] Merton Housing Services. The Private Landlord's Guide. p. 3.
[13] Davis, Paul. Personal Communication. December 10, 2004.

Development, Education, Leisure and Libraries, Environment and Regeneration, and Housing and Social Services[14].

History of IQPs in Merton

IQPs have been done in Merton since the summer of 1996. WPI developed a strong relationship with Steven Cardis, who is currently with the Greater London Authority (GLA). Currently, Adrian Hewitt and Ernest Obumselu have the strongest relationship with WPI. Both are considered good friends, and sponsor many of the projects done for Merton. There are also many other friends and supporters of the projects in Merton, including others who have sponsored WPI projects. As many as a third of the projects that are operated in London have been sponsored by the Merton Council[15].

In the eight years since the first Merton IQP, more than 30 projects have been completed in Merton. These projects encompass a broad spectrum of social problems that were problematic for the Borough of Merton. Here are some of the past topics of projects in Merton:

- Research on sustainable energy programs
- Feasibility assessment of ground source heat pump systems
- Evaluating a local magazine
- Analysis of sporting facilities
- Strategies for improving usage and effectiveness of playgrounds
- Strategies for improving recycling participation and methods
- Developing an interactive parks website
- Strategies for increasing awareness of local nature reserves of Merton
- Strategies for improving the overall condition of Mitcham
- Strategies for improving designated parades
- Strategies for communicating with residents about social services

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[14] London Borough of Merton – Your Council. *http://www.merton.gov.uk/council/*
[15] Davis, Paul. Personal Communication. December 10, 2004.

- Strategies for resolving traffic problems in Wimbledon

Just by looking at this list, it is possible to see the broad spectrum of social issues that Merton faces.

Strategic Objectives of the Merton Council

The Council of Merton has established six strategic objectives for it to complete by 2006, as detailed in the booklet, "Merton – the next three years". Within each objective are several more specific goals with individual completion times. The six objectives are: Education Merton, Safe, Clean & Green Merton, Caring Merton, Thriving Merton, Equalities Merton, and Effective Merton[16]. Each of these six areas strives to improve Merton in their respective area, and tackle several key issues.

Education Merton

As the name implies, Education Merton focuses on providing and furthering education within the borough of Merton. Education Merton is concerned with raising the standards of education for all of Merton. Not only does that mean providing more resources to schools, but it also means supporting lifelong education and community involvement throughout the borough[17].

In order to accomplish these objectives, the department has set several goals for the coming years. Among these goals are providing free, high quality schools for young children, improving General Certificate of Secondary Education (GCSE) scores so that they meet or exceed the national average, and increase attendance at schools as well. In

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[16] Merton – the next three years (2003-2006). Merton Council. 2003, p. 1.
[17] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 4-5.

addition, the department works to encourage participation in youth services, to improve library hours, and to provide learning opportunities each year[18].

Safe, Clean & Green Merton

Safe, Clean and Green Merton is concerned with keeping the environment of Merton clean, encouraging recycling, and reducing crime. They accomplish this by regularly checking streets and walking areas for litter, and buildings for graffiti. Frequent surveys of people about parks and open spaces provide feedback on citizen satisfaction with public grounds. Another goal of this strategic objective is to attempt to increase the amount of household waste recycling and reduce the number of burglaries in the borough[19].

Caring Merton

Caring Merton has several priorities set in place: to focus on positive life changes for children, to enable adults and older people to have greater choice and services that maximize their independence, and to provide seamless services across housing, health and policing[20]. Each of these focuses on improving the care provided the citizens of Merton.

There are several more defined goals as well. These include increasing the number of children living in a family setting, better protection for children, quicker assessments by Social Services, and better support for those leaving hospitals. The borough would also like to increase the number of adoptions from 7 children in 2002/03 to at least 32 children by March 2006, and to provide a named social worker for every

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[18] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 4-5.
[19] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 6-7.
[20] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 8-9.

child looked after by the local authority. Finally, the borough hopes to prevent unnecessarily extended stays of healthy hospital patients[21].

Thriving Merton

Thriving Merton also has set priorities: The achievement of sustainable regeneration in the most deprived neighbourhoods is a major goal. Others include the improvement of the quality and diversity of Merton's town centres, the improvement of transport systems, reducing reliance on private cars, the improvement of the quality of the borough's housing stock and the increase of the supply of affordable housing[22].

Merton would like to put in place neighbourhood plans in three different areas, which would include the creation of new jobs and improving residents' perceptions about where they live. More economic activity in Mitcham is another goal. Seven sites in Mitcham will be developed to reduce vacant shop units. Also, sustainable travel modes such as walking, bicycle or bus will be used more. Housing is a large area where improvements will be made. The number of houses meeting the 'decent home' standard set by the Government will be increased. Accommodations for the homeless and the approval of 1290 new homes will also be put in place[23].

Equalities Merton

The goal of Equalities Merton is to promote equality and aid to those who are impoverished or with special needs. Their priorities are to implement a council-wide equality plan which values their workforce and improves service provision. Several more of their priorities are to introduce changes to develop easier community access to services

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[21] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 8-9.
[22] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 10-11.
[23] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 10-11.

and to address poverty and reduce social exclusion. They have several goals for completion by 2006. One of these is to provide the community with the feeling that they are being treated fairly. Also, they would like to provide electronic delivery of services, be able to conform to the Disability Discrimination Act, aid the learning of children with special needs, and be able to deal with benefit and renewal claims on time[24]. With Merton being a diverse borough, this objective aims to embrace diversity and help those who need it.

Effective Merton

The goal of Effective Merton is the improvement of their services and the use of resources more effectively. There are several priorities of Effective Merton. One of these is to provide the best value by making the most of their resources within a clear performance management framework. Another priority is to work in partnership with other organizations, such as WPI, and residents, so they can address local needs effectively. Merton would also like to be able to communicate well and listen to customers, staff and the local community. A final priority set in place is to embrace innovation and change, in the pursuit of better service provision[25]. By improving use of resources and working with other organizations, Merton hopes to be able to improve and advance itself.

By 2006, they hope to have several steps accomplished, such as overall satisfaction increased, using resources more effectively, and working with partners for improved performance. The council hopes to answer complaints and telephone calls more promptly than in previous years to improve service to the residents. The council

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[24] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 12-13.
[25] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 14-16.

also plans to keep taxes average in comparison to the other outer London boroughs, which is one of its residents' key concerns. In addition to this, Merton will be recognized for being innovative, such as creating easy to understand documents and a website for reporting graffiti[26].

Project Efficiency Problems within Merton Council

Although WPI and Merton have been collaborating on projects for the past eight years, there still is not an efficient system of dealing with projects. The main reason for this is that there is no centralized sponsorship from the council. Resources for each project must be obtained from the individual departments of the council which proves to be time-consuming and not always successful.

Currently, all projects in Merton go through either Adrian Hewitt or Ernest Obumselu. Since neither Mr. Hewitt nor Mr. Obumselu is a member of every department in the Merton Council, trying to organize resources for incoming students can prove chaotic. Resources such as desk space, computer access, internet access, and printer access are pretty much on a first-come, first-serve basis. Students in the same project group may not even end up located on the same floor of the building, causing obvious communication problems.

Because of the ad hoc manner of project development, there is no source of information about WPI and how to develop projects other than Mr. Hewitt and Mr. Obumselu. WPI possesses a form outlining the sponsor and liaison requirements, found in Appendix B. It remains unclear, however, whether or not all the officers involved with projects end up receiving a copy of this form, or if it is descriptive or comprehensive

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[26] Merton – the next three years (2003-2006). Merton Council. 2003, pp. 14-16.

enough. Some liaisons have not realized the time or space commitments for students, and this can result in poor direction of projects, along with poor educational results for the students.

4. Liaison/Sponsor requirements

As there are requirements on the students working on an IQP, there are also requirements on the sponsors to ensure a successful project. The sponsor's tangible obligations include providing a desk, access to a computer and a printer, and access to a telephone, fax machine, and a photocopier. Providing a desk can be a particularly difficult requirement for sponsors that do not have large offices. Computer access is not as necessary as desk space, because most of the time students have laptops given to them by the WPI Academic Technology Center (ATC).

For any project to be completed successfully, the sponsor must assign a liaison who is very familiar with the project problem, is interested in the outcomes of the project, and is available during normal working hours to answer questions from the project group. This means that the liaison/sponsor can not propose a project and then ignore it during the seven weeks of the project completion. Also, the liaison must not act as nanny, but more of a coordinator of the project[27].

An important requirement of a liaison is the time commitment before the actual project starts. The seven week period of preparation is pivotal for the successful completion of the project. It is during these seven weeks that the students prepare for the project. During this time, conversations through email and several phone interviews may be necessary. It is during this initial communication that the students learn what exactly the sponsor wants out of the project. If the liaison is unable to communicate with the students, it is possible that the students may be preparing for something that is unwanted by the sponsor. Also, there are certain time requirements when the students are in

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[27] Hawks, Jenny. *London Centre Guide For Project Sponsors*. p. 1.

London. One of these requirements is that the liaison be available once a week for a meeting with the students' advisor and the students. If the students are well prepared and everything has been going smoothly, this may be an easy requirement to fulfill. It is also necessary that, in these meetings, the sponsor or liaison let the students' advisors know of any problems[28].

There are also several set requirements that are defined in the "WPI London Centre Guide for Project Sponsors" written by Jennie Hawks. These are as follows:

- React promptly to requests for contacts, information or written proposals so that their schedule is maintained, remembering that there is a time difference of 5 hours
- Make sure that the project is developing in the way that you wish it to
- Read the proposal thoroughly when it comes to you by mail to ensure that you are entirely comfortable with it and in agreement with the students' proposed tasks
- Keep in touch with the Faculty Adviser and me if you need help. [29]

During the first week of project completion in London, the students may be requested to give a presentation on their project proposal. It is recommended that all appropriate staff members involved attend this presentation, if it is given.

A final defined requirement is that the sponsor is financially responsible for any on-site visits required for the completion of the project. The sponsor may also be responsible for the planning of these visits. Students, however, have tube passes that cover a certain portion of London[30].

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[28] Hawks, Jenny. *London Centre Guide For Project Sponsors.* p. 1.
[29] Hawks, Jenny. *London Centre Guide For Project Sponsors.* p. 1.
[30] Hawks, Jenny. *London Centre Guide For Project Sponsors.* p. 2.

5. The Project in Detail

Our project had three main phases, all interrelated to each other. The first was an information collection stage, where we surveyed or interviewed several people or groups from Merton or WPI who helped us make the web resource as informative as possible. The next phase was the creation of a website resource for the Merton Council, where council members can find background information about WPI and the projects completed in Merton, along with information to officers interested in creating a project for WPI. The third was a proposal to the Corporate Management Team, asking them to centralize funding and resources for these projects in the future. All three phases are meant to make future projects run more easily and efficiently.

Surveys and Interviews

In order to obtain first-hand knowledge of projects in Merton, several different groups of people from WPI and within the Merton Council were surveyed or interviewed. An interview conducted with Paul Davis at WPI (*c.f.* Appendix A) gave us the background information we would need to begin the project. The Information Technology division of the council was interviewed; they provided us with technical information about the Merton intranet, to help design the web section more efficiently, while still complying with the standards set by the council. We surveyed representatives from each of the strategic objectives of the council; they were asked a certain set of questions, depending on whether or not they knew of previous WPI projects in Merton. Laura Menides of WPI was interviewed (*c.f.* Appendix C) to learn how WPI could do to improve the organisation of Merton projects. Most importantly, previous and current

liaisons were interviewed (*c.f.* Appendices K, L, M, N). The liaisons gave us many important insights from their experience with WPI. Using feedback from all of these groups, the web resource was made as informative and as helpful to as many people as possible. In addition, a discussion with a current WPI project group, Merton GIS, was conducted. The Merton GIS team had been having organisational difficulties, and their experiences and opinions were important to this project. The key facts learned from the Merton GIS group can be found in Appendix D.

Interviews seem to be the best and most appropriate way to collect the data needed; our project's research is based almost entirely on personal opinions and experiences. In some cases, such as the strategic objectives questions, surveys would suffice. Since there were only a few questions, an interview was not needed. For most, however, interviews provided the most straightforward and direct way of obtaining the information, whether it be the technical capabilities of the IT staff, or the personal experiences of liaisons. Interviews do suffer in accuracy occasionally because participants must remember with only a few moments for thought.

Our site is a part of the Merton Council's Intranet, so the interview with the Information Technology group of the council was mainly to find out how a new section of the intranet can be uploaded. The email sent to the IT staff is in Appendix E, and the interview conducted with Andy Leigh from the IT department is in Appendix F. The main points we learned from the discussion were how to make the resource available on the intranet, what programming languages we could use, and how the Merton intranet and internet sites were related. If the same information on both pages could be used, that

would prove more efficient than keeping two updated sections. In short, the IT staff provided us with information for the backend of the web resource.

The information we wanted from the strategic objective contacts dealt with past or future projects. One set of questions was designed for contacts that knew about previous WPI projects in Merton. These questions were meant to understand any previous WPI projects relating to the strategic objective. The other set of questions was designed in case the contact had never heard of any previous WPI projects in Merton. These questions were meant to get ideas for future WPI projects relating to that specific objective. The letter sent out to the strategic objectives contacts, along with the questions that were attached, can be found in Appendix G.

By interviewing past and current liaisons, we were able to get useful information from people with first-hand knowledge of IQPs from the officer's perspective. These discussions showed how well WPI students can perform, and if their project had an impact on the borough. The letter sent out to past and current liaisons can be found in Appendix H, while the list of questions used as a springboard in our interviews can be found in Appendix I.

Website

The website we designed went through two versions. The first version was going to be uploaded to Merton's intranet, under the "Corporate Resources" section. However, the process of uploading and updating the page would have been too cumbersome. The JavaScript code we used would have had to have been ported into another script that the intranet allowed, which would have required a submission of a Service Request Form (SRF). Every image and video clip we planned to use would have had to have been

approved by the IT department, which would have required a separate SRF. After discussing these problems with our liaisons, the decision was made to move the page to a WPI server. Getting a WPI account is relatively simple, and updating the site is much simpler. The content of both sites is the same, though the layouts have changed significantly. Officers will still be able to reach the website through Merton's intranet, but it will be through a link that takes the user to the WPI page. The only possible problem is bandwidth; accessing video straight off of Merton's intranet would have been virtually instantaneous, while connecting to WPI's servers takes more time.

Layout Version 1.0

In our first version, we designed a website for use on Merton's intranet to serve as a resource for the various officers of the Merton Council. The website served as a resource for officers interested in learning more about WPI and its projects in Merton. Because of the dual nature of the web resource (information and attraction), things such as ease of browsing and availability of information were key factors to consider. Because this was part of a larger network of pages, our section needed to look similar to the rest of the site. Information needed to be displayed clearly, concisely, and had to be able to be easily navigated by the officers of Merton.

To create a page on the council's intranet that does not look radically different from the other pages, we obtained a copy of the "Corporate Resources" section from the intranet. Using programs such as Dreamweaver and Textpad, we extracted a template for our pages that had the same graphics and font as the "Corporate Resources" section. The template can be found in Figure 1.

Figure 1

Template of Corporate Resources Page.

The content of Version 1.0 is the same as version 2.0, and is described in the next subsection.

Content and Layout Version 2.0

Because of the move from Merton's intranet to a WPI server, the website is freed from the constraints of the layout. The "Corporate Resources" template shown in Figure 1 is no longer needed, reducing the clutter on the screen. Our liaisons and faculty advisors suggested a table of links on the left-hand side of the page, maybe with pull-down menus, which logically leads the user through the pages. The new layout was designed with this point in mind, and the new template can be found in Figure 2.
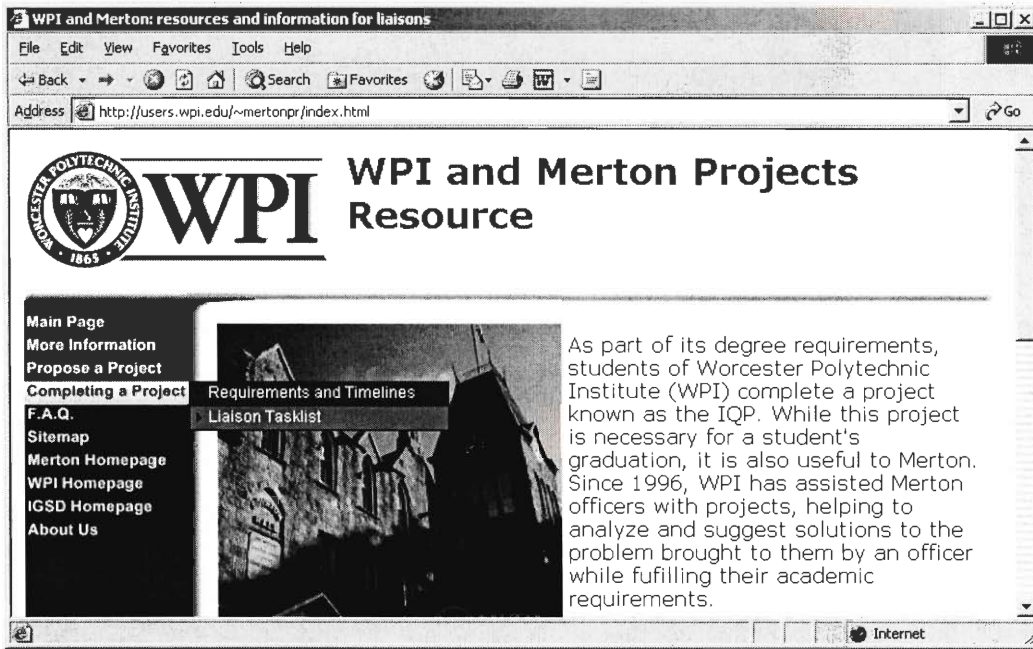
Figure 2
Template of new page.

The key to building a good website is a detailed understanding of what the end result will be; thus making a detailed site map was the next step in the process. We created a hierarchy that could be easily implemented in a website without becoming too complex for the user. The sitemap is divided into 5 basic sections: WPI Info, Project Resources, Project Examples, Miscellaneous (Misc.), and Links. A copy of the sitemap can be found in Figure 3.
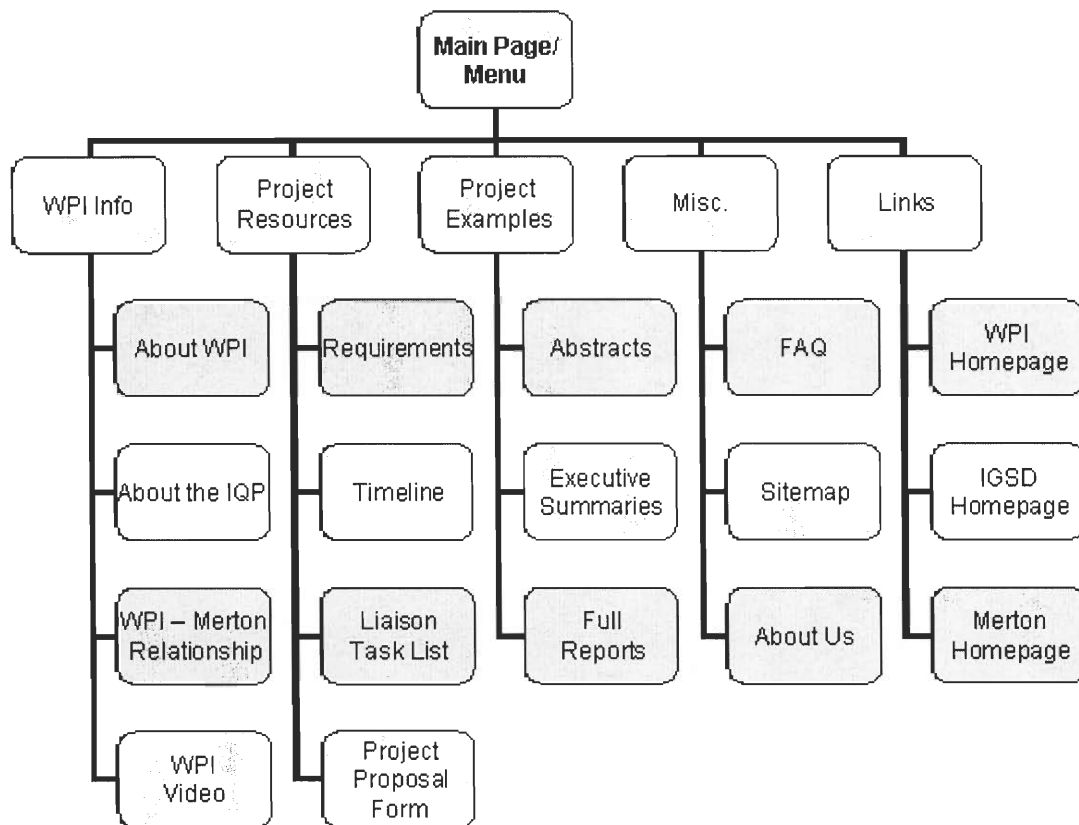
Figure 3
Site Map for WPI Intranet section.

The "WPI Info" section includes general background information about the university and the IQP. It also includes a section showing the history of WPI's projects in the borough. Most of this information was found either in the WPI website, the WPI Tech Bible, the WPI Undergraduate Catalogue, or the interview with Paul Davis (Appendix A). Video clips that we extracted from a WPI promotional DVD (used with permission) were added in case the user prefers visual information.

"Project Resources" is a section for those who would like to submit a project idea or have a project already in progress. This section contains all the interactive tools to aid current and future liaisons. One can find a list of requirements for sponsors and liaisons, along with a timeline of projects. There is also a task list where the user can check off

tasks as they are completed. This ensures that the user is aware of all of the requirements and resources needed for a successful project. Finally, there is a project proposal template that the user can fill out and submit electronically to the necessary people, including Mr. Hewitt, for review. This form prevents submission until the user has completed the three preliminary steps of the task list.

The task list and proposal template are a bit different from the rest of the site, as they required a bit of coding. The task list is implemented using JavaScript and cookies on the user's computer. The JavaScript serves two features: it reads and writes cookies, or bits of information to be remembered, to the user's computer, and it determines which boxes need to be checked upon loading and saved upon submitting. When the user clicks the "Update List" button or navigates away from the page, the scripts count which boxes have been checked and stores the information in the cookie as a binary string (a list of 1's and 0', 1 representing checked and 0 unchecked). When the page is loaded, the cookie is read, the string retrieved and examined, and the appropriate boxes are checked. JavaScript is already enabled, as there is a small script being used on all of Merton's intranet pages, and cookies are most likely accepted on all computers. The proposal template is another form using JavaScript. There are several fill-in fields for all the information needed to be collected for the proposal. These are then forwarded to the necessary officer in Merton (currently Adrian Hewitt), who can review them and either contact the sender or forward them to the IGSD. The scripting language here is used in order to send the input information. The function code we use for the task list and the proposal template can be found on the enclosed CD.

The next area of the sitemap is "Project Examples". Here, a user who is interested in setting up a project can view ideas of possible projects and project areas for brainstorming. These ideas are organised into the six strategic objectives set by the Merton Council, as described in Chapter 3. Past project information is also stored here. Various abstracts are available for people to read. In addition, there are several full reports and executive summaries for the liaisons to preview to better understand what the project teams turn in and accomplish.

The following section, "Misc.", is an amalgamation of pages that were too unique to be grouped with others. An FAQ page is available with answers to commonly asked questions about the process. A page about us is included so people who browse the web resource can see the project team who developed it. The link to the sitemap can also be found here, for organisation purposes.

The final main area of the site is "Links", where there are links to several external pages. The first of these is the WPI homepage. This is in case users have any questions about the university in general. Next, there is a direct link to the IGSD's webpage, the global studies division of WPI through which all off campus IQPs are managed. Finally, a link is included to Merton's website. For technical reasons, we were unable to create a link to their intranet homepage.

As with most web sites, maintenance will become an issue after a period of time. The information contained in the website may become outdated or wrong as things change. Additionally, people generally prefer sites that are frequently updated; it gives the user a sense that the site is still important enough to invest time into. The website is

simple enough for a web designer or another student to edit sometime in the future, and we include documentation (*c.f.* Appendix O) for any of the more complicated sections.

Corporate Management Team (CMT) Paper

Since the overall goal of our project is to ease the process of the creation and completion of projects in Merton, certain steps were taken in addition to the creation of the website itself. A specific objective is to centralise the funding and resource management for future WPI projects. To this end, a proposal was written to the Corporate Management Team. This proposal needed to be strongly but carefully worded to appeal to a very specific audience, as the Corporate Management Team is looking for reasons to invest money and resources into WPI projects in the future. Also, the proposal contains the funding and resource requirements as listed below:

Funding

Currently, funding for WPI projects must be searched out from various sources in the Council. A set centralized fund of £20,000 should be set aside every year for these projects, in order to secure at least 8 projects every year.

Office Space

Desks
Each group will need a work area, furnished with at least two desks. In addition, there must be enough chairs provided to sit the entire project team.

Computers
The desks usually need not be equipped with a desktop computer, as most if not all of the students will have a laptop with them. In certain cases, for example, running specialized software, computers more powerful than the student laptops that are capable of performing the needed tasks will need to be provided. If a desktop computer is provided, a WPI domain must be created so that students may sign in to their own accounts. In addition, it is more helpful for students to be given PCs rather than terminals, in case they need to install software or share files with their laptops.

Internet
Connections to the internet must be available, as students will need to check e-mail and conduct online research. Email cannot be blocked for the stations that the WPI groups are placed at. If the

council does not permit the students to connect to the internet via their laptops, then a computer with internet access must be provided.

Other

Telephones must be provided for local calls, even if they are only allowed to the Civic Centre. Access to a printer and photocopy machine are also required.

Swipe cards

To get into most floors, swipe cards are required. Each student must be provided their own swipe card, which will be returned at the end of the student's stay.

Addition of "WPI Projects" section to the "Find out about" and/or "Sections" menus on intranet

Council members will be able to find information about WPI and their Merton-based projects.

We worked very closely with Adrian Hewitt and Ernest Obumselu on this proposal, to ensure that it sounds professional and informative, while keeping it to just a few pages. This proposal can be found in Appendix J.

6. Findings Pertaining to the Web Resource

Although one of the initial requirements of this project was to create a web-based resource, the necessity of this did not really become obvious until our interviews were completed. The need for a centralized source of information became apparent through our group's personal experience in acquiring resources, and interviews with past and current liaisons.

Misconceptions and Opinions About WPI Students

Interviews conducted with liaisons revealed much about the view of WPI in Merton, which overall is very good. Those who have heard of WPI have also heard of many of the projects completed and have a very high opinion of WPI students. In the interview with the Information and Project Officer in the Environment and Regeneration Department, Simon Bashford (Appendix K), he stated, "No, WPI students have a good reputation. No hesitation," when asked if he hesitated at all before deciding to work with WPI students. The majority of those in Merton, however, have not heard of WPI. This became apparent through the questionnaires sent to strategic objective contacts. Although we were politely persistent in our attempts to collect information, only one of the six was returned, and it did not provide any helpful information. The lack of response could be due to these contacts not having heard of WPI or perhaps not having time to complete the survey.

Throughout the interviews with past liaisons, it became apparent that there were some initial misconceptions that liaisons had before the start of the WPI projects they had sponsored. Several were unsure of the actual abilities of the students. Adrian Hewitt

stated, "You think students, right, ok... Think too busy to deal with this – can they do what needs to be done?" Not only have some doubted the actual abilities of the students, some also have misconceptions about the actual background of the students. Cecily Herdman (*c.f.* Appendix L) expressed confusion about the students' background, whether they have an arts or technology background. Overall there are many misconceptions about what exactly WPI students can accomplish, and their background.

Confusion With The Completion of Projects

There also seemed to be much confusion on what is required of the liaisons and sponsors. From the necessary resources to the actual time requirements, many of the liaisons feel that requirements are not clearly defined. Information currently provided about project requirements is from word of mouth from Adrian Hewitt. In the interview with Cecily Herdman (*c.f.* Appendix L) she expressed her view that there is not much background information provided at all. She also stated how little information she had prior to actually acting as liaison, and that was only from an informal chat with Mr. Hewitt.

Those who sensed the lack of information prior to the starting of the projects also sensed the haphazard nature of acquiring resources for the students. The overall response was that the acquiring of resources is on more of an as-needed basis rather than having all necessary resources prepared before the arrival of students. This is caused by the lack of prior information as stated previously.

Another aspect that causes much confusion is the educational side of the WPI projects. Many liaisons propose a project but do not realize that the students need to get an education out of the project just as much as the liaison needs to get results. Adrian

Hewitt expressed in Appendix M how he initially did not really understand the educational requirements. He would get confused when hearing the professors discuss the IQP paper and other aspects with the students. Adrian also explained how this could actually benefit the liaison. This provides the liaison the opportunity to act as a mentor to the students and allows them to teach for once.

In the interviews, past liaisons also had several suggestions for items to add to the web resource. Past liaisons have potentially the greatest insight into the process in Merton since they have experienced it. Several requests made by Cecily Herdman in Appendix L, along with questions she would like answered on the web resource, are summarised here:

- Exactly how the relationship between WPI and Merton developed.

- Why the students are doing these projects?

- The background of the students.

- Practical information such as "what's expected".

- Is someone there to help with the acquiring of the necessary resources?

- A listing of actual requirements.

- An explanation of how students select the projects.

Adrian Hewitt in Appendix M also expressed an interest in a simple explanation of the overall process to be placed on the website.

IQP Groups Experiences

Along with the interviews that were conducted, some of the findings relating to the website are from the group's own personal experiences. Upon first arrival, it was apparent that the liaisons were not completely sure what the teams required. This seemed

true for not only new liaisons but for experienced liaisons as well. The acquiring of the resources necessary to complete the project seemed on an as needed basis. Desk space, computer access and key cards were secured during the first week after the students' arrival. Other Merton groups experienced these problems as well. The Merton GIS group in particular had resource problems. As it can be seen in Appendix D, most of the resources they needed for their project they just had to take, rather than being given to them by their liaison. The Merton Energy team has had desk space issues throughout the term. Overall, the current groups in Merton are experiencing the lack of preparation of the liaisons for their project groups.

7. Findings Pertaining to the CMT Proposal

Through our own experiences, as well as those of other current project groups, we have identified a number of organisational issues that need to be addressed in the CMT proposal. Interviewing past and current liaisons has solidified our views, and brought up a few organisational issues that we may not have run into during our stay. Among the most important of these issues are desk space, meeting rooms, computer/internet access, and building access.

Desk Space

During the first week of the term, no desks were provided for us, so we arrived at work for a half-hour to an hour meeting with the liaisons, and went back to the dormitory to work on the project. Adrian Hewitt considers the first week to be particularly stressful. He is currently responsible for acquiring all the resources for WPI teams. Not only is this difficult, it is also a burden on the students that have to wait for many necessary resources.

We received a desk in the Housing Support office on the second floor at the beginning of the second week, but the three of us could not fit into one desk. One or two of us took other desks in the same office when the owners were not in for the day, but we were never guaranteed having more than one desk on any given day. Some of these desks did not have computers. By the middle of the fourth week, the lady whose desk we were given in that office came back from vacation, and we had to occupy temporarily free desks in the office until a new desk was allocated to us.

Our group was split up into two rooms during the fifth week onwards, one desk at the Corporate Resources office on the fifth floor, and one desk at the Housing and Social Services office on the fourth floor. In order to communicate with each other, we either had to log into AOL Instant Messenger (AIM) Express[31] and type back and forth, or call the other member(s) on the phones. However, AIM would not work on two of the terminals, because the computers we were given did not support Java, a requirement of AIM. Talking over the phone would have disrupted the other workers in the offices we were placed in.

Other current WPI teams working in Merton experienced similar difficulties securing desk space. The Merton Energy team was stationed on the eleventh floor in the Environment office, where they used a combination of Adrian Hewitt's desk, when he was away, and any other desks that were not in use on any given day. Usually, there were two students to each desk.

During our meetings with some of the past and current liaisons to WPI groups, every single one mentioned problems finding desk space. In our interview with Cecily Herdman she mentioned how she had organised a room before the students had arrived, but it ended up being taken by someone else before the students showed up. Simon Bashford informed us how his WPI team, a group of four, ended up all working at one desk. This led to inefficiency and workers nearby to complain about the noise. Simon suggested maybe an office dedicated solely to WPI project teams, so that they can all get their work done without bothering Merton workers with any noise. If that's not possible,

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[31] Found at http://aimexpress.aol.com/, 7 Feb. 2005.

all liaisons suggested dedicated desks should be reserved for all the teams before they arrive.

Meeting Rooms

One necessity that Mr. Hewitt and Ms. Herdman brought up was a free room for the weekly liaison meetings. This term, we have not run into problems finding a free meeting room, but there have been problems in the past, and there may be some in the future. Ms. Herdman mentioned that there is a very limited number of meeting rooms/areas in the building, so careful allocation of these rooms is needed.

Computer/Internet Access

A USB flash drive is an extremely useful tool for moving files between computers, and the use of these would be helpful to move files from our laptops to the Merton computers. The terminals, however, that we were able to use on the second floor did not have physical computers; we connected to a network computer. Therefore, we could not use any of our flash drives. We had to take several steps to solve this problem. We took the files from our laptops, put them onto a flash drive, and had one of our members make a trip from the second floor to the eleventh floor. Another WPI group was working on this floor, and we could access one of their computers. There, we could plug the drive in, move the files onto the network, and make the trip back downstairs. The process was repeated at the end of the day, moving files from the network onto the flash drive.

The fifth floor office we worked in had different problems, but added up to the same solutions. These terminals had physical computers, but the USB ports in them had

no power provided to them. Trips to the office on the fourth floor were necessary to move files to and from the network drive.

The Merton GIS project team had technological problems of their own. A week passed before the team had access to any computer or the internet. The CD drive on their computer was disabled, and their computer was too slow to run necessary software for their project. A collection of important notes from a short discussion with the Merton GIS group can be found in Appendix D.

Finding a workable email interface throughout the building was also difficult for us to obtain. When we were located on the second floor we had access to email through a previously set up account for WPI. Using Microsoft Outlook on the terminals we were able to send and receive email under the address CEWPIStudents @merton.gov.uk. However, each of our WPI email addresses, which use Webmail, was blocked. Several ways to bypass the WPI Webmail barriers were discovered. Joe Morse had his email forwarded to his WPI Electrical and Computer Engineering Webmail address, which was not blocked, while the Merton GIS team discovered a "hack" to get into WPI's Webmail directly[32]. After being moved to the fourth and fifth floors, Outlook wouldn't load on any of the computers, so the *CEWPIStudents* mail could not be checked there. Trips back to the second floor office were necessary to receive that mail, which disrupted the workers in that office.

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[32] By typing in the IP address directly, https://130.215.36.218/squirrelmail-1.4.2/src/login.php, WPI Webmail may be accessed.

Building Access

Access to the building was also an issue during the first week. The three of us were given swipe cards, but we later found out that one of the cards didn't work. The problem was solved soon after. One problem that we've also discovered is that the faculty advisors were not issued swipe cards, which made it difficult for the advisors to access the building for the weekly meetings. The way the advisors would obtain access to the building was by waiting at a locked door until someone else swipes them in.

8. Conclusions and Recommendations

There have been a number of organisational issues regarding WPI projects at Merton. These obstacles have usually been solved, though not as quickly as most people involved would have preferred. What follows are two sets of recommendations to help improve the entire process.

Recommendations within Merton

Before students can begin the projects, the necessary funding must be secured at Merton. WPI charges a fee of £2500 for each project, which the project co-ordinator must secure from individual sections of the council. This task is difficult for the liaison, since each council section has its own priorities, and funding a student project is not always at the top of them. Funding for projects should be provided on the corporate level, which would guarantee at least a certain number of projects a year in the entire council.

The first main issue that directly affects students is the lack of desk space. This has affected every current Merton project team, along with teams from previous years. The liaisons for each project are put under the stress of running around the building and finding new desks every time teams lost one of the previous desks. Switching desks so many times has detrimental effects on teams. Each computer that was used had to be configured separately to be able to sign on, reach the internet, and check email, which wasted precious time that could have been spent on important project work. Having group members on separate floors makes getting work done inefficient and difficult in general. Desks need to be reserved in advance for the entire seven weeks that students

spend in Merton. Students should be able to plug their laptops into the network ports to access the internet, unless computers will be provided for each desk. A general-purpose domain on Merton's network would also be recommended, as well as unblocked Webmail services.

Another major issue is the availability of information about WPI to Merton officers. Currently, this information is only available in the heads of several officers in the council. Our recommendation is that officers use the web resource we designed to find the information they seek.

Students also need proper desk supplies, which the liaison currently has to secure. Getting these supplies is at the moment on more of an as-needed basis. Not having access to a printer makes getting important documents to the liaisons and faculty advisors a major problem, and results in less feedback to improve drafts of reports. Access to a network printer, a photocopier, and telephones need to be set up for project teams.

Swipe cards were not available until the second week for most groups. Faculty advisors had trouble getting to the weekly meetings in the building, since they were not provided with swipe cards. All students (and perhaps the faculty advisors) need to be provided swipe cards the day they arrive in Merton.

Recommendations for WPI

By creating the web resource and submitting the proposal to the Corporate Management Team, we hoped to fix several outstanding organisational problems within Merton Council in respect to WPI projects. There are, however, several recommendations that must be made on the WPI side of the projects. Currently there is no local coordinator for the London Project Centre. In our interview with Professor

Laura Menides (*c.f.* Appendix C), she mentioned that the local coordinator was in charge of finding projects, welcoming the students and faculty, arranging rooms for meetings, setting up the final presentations, and making sure everything goes smoothly for the students, advisors, and liaisons. The lack of a local coordinator has led to several organisational issues and an increased level of responsibility for an individual in Merton. Adrian Hewitt, who acts as liaison for several projects, has taken on several roles that would normally be occupied by the local coordinator. Mr. Hewitt has had to help with the submission of project proposals and helps guide several of the teams within Merton. With the lack of a local coordinator, this has placed an unnecessary burden on Mr. Hewitt that could eventually lead to fewer and less impressive projects in Merton.

Currently United States based cell phones are provided to students for emergency use. Not only are these very inconvenient, they are also very expensive. Calls can cost as much as $2 per minute, which is far from economical. Some students may need cell phones while outside completing fieldwork for their projects, and this can lead to the students receiving high cell phone bills upon return to the United States. A more economical solution to this problem is to provide United Kingdom based cellular phone plans. Using the current cellular phones, it would be possible to remove the Subscriber Identity Module (SIM) cards in the phones and replace them with U.K.-based SIM cards. SIM cards can either be purchased under a prepaid plan or under a normal monthly plan. The prepaid plan would probably be the most viable option. Calls within the U.K. can cost as low as 5p (10 cents) per minute within the U.K. and calls to the U.S. can cost as low as 20p (40 cents) per minute. Several providers also offer free incoming calls on prepaid plans. Students can be required to return the phones with a certain amount of

money left on the card; this can be done with a simple "Top-Up" at any grocery or convenience store in the U.K. This may not be as cost-effective for people calling these phones from the U.S., but in the long run this system would be much cheaper.

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Appendix A   Interview with Paul Davis

The following is a shorthand write-up of an interview with Professor Paul Davis of WPI, conducted on December 10, 2004, from 4pm to 5pm.

How does one go about sponsoring a project?

Some people call up looking for project, but more commonly they work from old sponsors to new sponsors, kind of a referral system. In Merton, we've gotten connections into other boroughs, some connections to the LDA London Dev. Authority. Within Merton, there have been one or two individuals who were assigned to be chief liaisons, Hewitt and Obemsalu. Really those two who developed our new project. They do a lot of work for us in the borough, finding new sponsors. Adam smith didn't know what he was getting into, or what the requirements were.

How do they come up with project proposal?

The proposal we get the first night is an endpoint we work toward, and is often written by the sponsor. Typically, someone approaches Davis, and if the problem sounds like a good IQP, then the project is accepted. General pattern is someone usually has a problem that is pretty utilitarian, and what we need to do is talk to them to find out what their real problem is, which they might not be articulating. We try to give them something that satisfies their needs, and satisfies our educational needs.

What are the potential problems that may arise?

A person can be too fixed on the deliverable they see. Sometimes the picture is too narrow. Some folks have decided exactly what they want and exactly how they will get it. That doesn't leave enough room for students to do anything. Sometimes what they want isn't even right!

Are there any set requirements they need to be worried about?

(may send out email) Almost every case, there's a project fee. Current fee 2500 pounds. We're not a money-making consultancy. Most of that money goes to the tube passes for students. In some cases, the sponsor has no money, and if the project is good, we don't need the money. We ask for financial support, but it's not completely necessary. Some fees go to other projects that don't have any funding. Highest priority is liaison time. Phone conversations while students in the US. Being a liaison should be able to devote an hour a day, and for a busy professional, that's a lot of time. Work environment and support, space for us, telephone and computer connections. Merton is packed to the gills, they have a few outbuildings, one group was sitting in a server room and it wasn't very comfortable. Project fee, space, liaison time in increasing order of importance.

How clear is that to the liaison?

Paul Davis or James Demetry usually does this, and they try hard to lay this out explicitly. From the salesmanship point of view, it's not as extreme, but we try to get them interested. We want to see their commitment. With Adam Smith we thought we were at that point.

Have any other project groups ever worked on a similar project?

Short answer no, but a number of sites had "bootstrap" projects, which gives a team a task of finding good IQPs. There is a notebook of all London projects, title page, exec. summary, abstract.

On avg, how many projects are completed in merton each year?

As many as a third of the projects that are operated can be in the Merton Council. A lot of the projects are really good and make good IQPs, but it's bad to get too dependant on them and we might be wearing them out for good projects.

How long has the WPI Merton Council bond been going on?

Summer E term 1996 was probably the first projects there.

This bond, is it mainly with Adrian Hewitt and a few specific people?

The relationship varies, it is people based, strong relationship with Cardis, who is now in the Greater London Authority. Hewitt and some of his colleagues came to us through Steve, and is our best connection now. Ernest is less commited to the projects than Adrian, but a good friend of WPI. After them, a whole lot of people, most are still working at Merton, and are friends and supporters of the projects. Chief Executives office has done some projects, and some others who are key folks. Our group will get a list of all Merton people, but don't call them willly-nilly... Few groups outside the chief executives have done projects too.

Will we have access to IQPs in London?

Do not have a central source. Until last year, we didn't do projects electronically. We can get electronic versions from Davis. We should start with the notebook, find some key projects, and several things we might do. Scan the notebook, so we can use it in London. If our group spent some time with executive summaries, maybe look at a few of the completed IQPs here at the library.

On a personal level, what is the most valuable aspect of this project?

Outcomes: Insight into the barriers to saying 'yes' for potential sponsors, and the attractive points. +/- in decision process for individual liaisons or jus the general structure. Do the bosses want the projects? Workers? Both? What's attractive and

what's not. From the perspectives of the Merton people. What could we do to make them see enough value to get over the negatives or to enhance the positives. Then, our processing and delivering as much as we can to meet those needs.

Are WPI's views the same as Merton's?

Doesn't know. Not a single response from Merton.

Are there any sponsors who have not enjoyed the IQP that we could contact?

Probably some where there was no repeat, but talking to them might be hard. There was an organization, science outreach group type. Anybody who sponsored a project in the last few years would be ok to contact, check with Davis and the notebook, if they seem like candidates. There have been cases when the sponsor didn't like the projects, and some cases where the students didn't do what the sponsors wanted. Sometimes sponsors are just pains in the asses.

Is there a record with sponsors we don't want to work with again?

Mental list. Arthritis care D term, not very well, but they fixed it. They're taking a year off, though.

What may have turned them off? What caused Smith to drop a project?

Tough to think of this as a list off the top of the head. A different, feasible approach would be to talk with some of the sponsors both in and out of Merton in the last few years. Ask them what they got out of it, what made it hard, what made it easy. Some might have had experiences with weak teams.

Who decides when the project is split apart or not into multiple terms?

Davis is responsible for the quality of the program.

Are there any specifics to look for in a sponsor?

Quality of the idea/challenge is the first criteria. Behind that is whether the organization or the setting will be a good environment. Complex judgment. If the problem is really important, and the liaison is all for it, then it's a good choice.

What do you think personally attracts a sponsor to want a project?

Some are looking to get a job done. Some really enjoy working with American students, students in general. Some are trying to move their organization or operation. Most in Merton enjoy working with our students, and they want to get a job done. They need the work, and enjoy working with the students. Some are entrepreneurial and see IQP teams as a way to think creatively.

Are there any other schools that may offer competition?

Kind of, but it's not head to head. A lot of American universities have internships, and British schools do too. They may use up a potential sponsor's time. The way they're most competitive, after the time part, Davis has to get past the idea of them hiring three or four person groups. Nobody else who does what we do, but there are other schools putting students in the UK.

Do new sponsors request previous iqp reports? Do we supply them?

Seldom offer reports themselves, but abstracts or page or two printouts are used. The sponsors have relatively little interest in the report itself. What they have interest in are the outcomes and the validity. All the work we do on a good methodology and background research make valid outcomes. If we can answer a really hard question, if we have proper methodology and background, then that's important. The deliverable part is most important. Being able to tell them the findings of the study. Results matter most. The write-up is an academic requirement. An executive summary is really important.

Who else can we talk to on campus that might have ideas/helpful stuff for our project? What should we ask?

Jim Demetry. He's in Washington right now, maybe a telephone interview. He's advised London many times, knows Merton very well. Take an abbreviated set of these questions to him, explain the purpose of our project in an advance email, ask him for advice. Professor Vernon-Gerstenfeld has run more centers than anybody. Prof. Rob Krueger runs Worcester, he has experience with city officials. Fabio Carrera runs Boston, but he's away. Sue V-G does a lot with organizations. They could give us a lead on sponsor values. Prof. Elms, in terms of understanding organizations, along with Prof. Basalo (sp?) . Elms has advised in London and at least one Merton project. Organizational behavior, maybe ask him about improving the number and quality of projects. What do we need to find out about the organization, how they work, to answer this question. He could point us to a book or an article. What are the patterns of behavior in organizations? Number of common models, maybe Merton fits into some of those. Ask for important concepts and maybe pointers for us.

Anything we've overlooked?

Complicated problem. Easy to oversimplify. Be prepared to pick through lots of stuff to get the useful things.

Do we have an official liaison?

Adrian volunteered, but need to sort out whether he and Ernest will officially share it, or if one will be and one won't.

Appendix B   WPI London Centre Guide For Project

Sponsors

The job of a WPI Project Sponsor is not an onerous one but there are essential points that all sponsors need to be aware of and implement before committing to a project.

1. The team of three students require:

❖ Desk space, access to a computer and printer (although it is likely they will have a laptop with them

❖ Access to a telephone/fax

❖ Access to a photocopier

2. The team requires a named liaison who knows the project, is interested in the outcome of their efforts, and can be available on demand to the team and their Faculty Adviser. The liaison does not need to act as a nanny, indeed **should not** as the project is the students' work, but should be available as if to a team of outside consultants. The real demand time will be when the students are starting their project for you in the USA. They only have seven weeks to grasp all aspects of the project, to understand what you wish to be accomplished and how this might be achieved. They will need to be in weekly contact at least during this preparation phase, preferably by e-mail though they can manage perfectly well using telephone and fax. It is important that you or your named liaison:

❖ React promptly to requests for contacts, information or written proposals so that their schedule is maintained, remembering that there is a time difference of 5 hours

❖ Make sure that the project is developing in the way that you wish it to

❖ Read the proposal thoroughly when it comes to you by mail to ensure that you are entirely comfortable with it and in agreement with the students' proposed tasks

❖ Keep in touch with the Faculty Adviser and me if you need help

3. When the team is in London, you or the liaison will need to be available once a week for a briefing meeting with the Faculty Adviser and students and available as needs be, in the interim. If the students have been well prepared and everything is going smoothly then the liaison will not have to be much involved. However, it is important that you keep the Faculty Adviser and me informed of any problems so that they can be dealt with expeditiously; letting problems fester is counterproductive.

4. Week 1 the students will be expected to make a presentation to you to ensure that the proposal is what you are wanting them to work on. You may think that a formal presentation is not necessary. That is fine as long as the students know this on day one.

5. Ensure that at the initial presentation to you in Week 1 and the final presentation in week 7 you have invited all staff and others, who would be interested in the project and who might have to implement the report's recommendations, to those presentations.

6. If the team needs to go out on site visits, these are your total responsibility as to organisation and payment. All students have a London travel pass for the necessary zones for their project.

    Dates: The students start work with you the morning of the first Monday in London. At 13.45pm they are expected to be at King's College for induction as King's College students. This may mean that if the project venue is out of London, the students will not start with you until the Tuesday. All students have a long weekend during their stay in London, please ensure that you know about it. The final week of the term is when the final presentations take place. I co-ordinate the timetable for that week together with you.

    If there is anything that is not covered in the above, please do get in touch with me for clarification.

Jennie Hawks
Co-ordinator, London Centre
Tel: 020 7274 9128 Fax: 020 7274 3236 E-mail: jhawks@dircon.co.uk
28/02/05

Appendix C   Interview with Laura Menides

The following is a shorthand write-up of an interview with Professor Laura Menides of WPI, conducted on February 14, 2005, from 6pm to 7pm.

For how long have you been an advisor for global IQP's?

1993 first time in London.

About how many projects in London have you acted as an advisor for?

Fourth time in London, so maybe fifteen.

Have you ever been an advisor for international projects other than in London?
    If so, how many?

    If any outside London:
    San Juan, Puerto Rico, Melbourne Australia, Washington DC, San Francisco.
    Have you noticed any key differences between the IQP process in London and in other areas?
    Housing different. In Puerto Rico, students and faculty live in the same building.
    Everyone's in a studio apartment. In Melbourne, students were two blocks away from the faculty.

Any structural differences?

There are local coordinators at all other sites, but sometimes faculty are local coordinators.

You are currently either advisor or co-advisor to two project teams in Merton. Is this correct?

Principal advisor for 1, co-ad for another.

We have heard about many issues the GIS team faced and some that the Energy team has faced, are there any issues within Merton that other teams have come across in the past?

Lots of project change from the planning stage to the final project. About the same in Merton as other sites.

    Were these problems easy to solve or were they due to deeper problems within Merton?

About how long has it been since there was a local coordinator in London?

Two years.

You have advised projects in London when there was still a local coordinator. Do you remember off hand what the basic duties of the coordinator were?

Jennie Hawks did a lot of things. Local coordinator in general would find the projects, welcome the students and faculty. Would have met faculty advisor at the building and guarantted the flats were furnished. Make sure every project has a good liaison, rooms arranged for meetings, set up final presentation long in advance, would have come to all the final presentations, would have been in touch with the advisors to make sure everything's going smoothly, and arranged swipe cards for all students and faculty. She would teach colloquial talk and help students adapt to the city.

Are there any recent problems that would have been easier to handle with the presence of a local coordinator?

Misplaced projector may have been avoided, because the local coordinator takes care of all the equipment.

Are there any other problems with the structure of the London project centre that you feel should be addressed?

Is the local coordinator someone who has acted as liaison before, or WPI searches out and hires?

With Jenny Hawkes, Paul Davis hired her. She had not been liaison. You need someone with lots of contacts.

Projects are very good, academic level is high, liaisons are committed, students well selected, so no.

Is there anything you believe that WPI could do to improve the overall organisation of the London project centre?

Aside from the local coordinator, it's been around for a long time, there's a lot of projects that lead to more future projects. There should be some kind of library or listing of WPI projects. Many don't know of previous projects.

Maria Watkins? "Lance Schachterle", email les@wpi.edu, Associate provost at wpi who initiated London project centre?

Appendix D Findings from talk with Merton GIS

- Merton overall wasn't ready for their team.

- Their liaisons department went through major restructuring prior to the arrival of the WPI team. This lead to their liaison, Michael Kelliher, to be overloaded with work and has been difficult to receive any information from.

- Their team had difficulty getting phone calls to Michael during the preparation term, also.

- They experience many difficulties procuring necessary resources. It took them over a week to have any type of computer or internet access. They had to fight every step of the way to procure necessary resources.

- The groups web based email is still blocked. Also the CD drive on their computer was also disabled. Necessary software and data could not be move onto the Merton computer.

- Certain resources needed for the project completion were not available. Things as simple as a measuring tape are nearly impossible to come by.

- The liaison did not understand the project too well himself. Seemed almost as if someone else suggested this project and the liaison went along for the ride.

- Poor communication within the borough also led to many problems. The actual project the WPI team was trying to complete was already done. In fact an entire department is dedicated to the project they were assigned to.

Possible Solutions: Maybe on task list: Have you thought through the project idea? Made sure it hasn't already been completed by another department? Can it be accomplished in seven weeks?

Overall it seems the problem is with preparation and overall interest in the project. Before the potential liaison submits it is necessary that they research the projects background. This is necessary for several reasons. First of all it is necessary that the liaison understands whether or not this is exactly what is wanted. It has happened in the past that at first the project seems like a solution to the problem but can be completely unrelated. Also, it is necessary the liaison performs research within the Borough of Merton related to the potential project. This is to make sure that the problem presented has not either already been addressed or is about to be addressed by another source. Research into the project will also help the liaison to understand what exact resources are required for the successful completion of the project. Overall the advisors need to understand that this is a learning experience for the students. If the liaison spends time

attempting to facilitate the entire process both concerned parties will benefit more from the entire process.

Appendix E   Email to Merton I.T. staff

Attention: Merton IT staff

We are a group of American students from Worcester Polytechnic Institute (WPI) who are currently working to develop a resource for the Council of Merton's intranet. The purpose of this resource it to supply information about the relationship between WPI and Merton as well as provide tools to help potential liaisons prepare themselves for incoming project teams.

Before we develop the resource, we have some questions we would like to ask someone in the IT department regarding the setup of the intranet, the available technologies we will have to work with, and if there are any guidelines. A short, half hour interview would be most helpful in answering our questions. We would like to schedule this interview before the end of the week if at all possible.

Thank you for your time, and we look forward to meeting you.

The Merton Resource Team

Robert Spremulli
Joseph Morse
Josh Bamford

Appendix F   Interview with Andy Leigh from IT

We are aware that you currently are using the Obtree system. Could you tell us a little about is, especially in regards to how restrictive a system is it?

Obtree is an online application. There are 2 parts, the administrator part, which is an executable used to set up the system, and the web interface, used by content users. There are no html tags allowed, all of it is automatically generated. Styles are applies via flags in the text wizard

How would we go about uploading pages?

All uploading is completed through Obtree. There is no FTP access or any workaround to upload pages.

Is it possible to include .js files and additional style sheets (not overwriting the ones they have)?

This is only possible with administrator privileges. Gavin Compton or David Cook would have to approve.

What is intranet02?

This is the old intranet server before we implemented Obtree. We really want to avoid uploading anything there.

You must submit an SRF to put the two interactive pages up on the intranet. Send the files relating to the two pages to make in a little easier for them. Talk to Ernest about an SRF

Are there any databases in use for the intranet?

Obtree itself uses SQL, however this is maintained completely by the Obtree program.

Is there any scripting language, such as Perl or PHP enabled?

No

Are server side includes (SSI) / Perl enabled?

No

Is there any preference over which language is used?

Obtree has its own scripting language, which is similar to Javascript

Is there anything (JavaScript, etc) not permitted on the intranet/internet?
All scripts have to be given to the IT staff to be rewritten. It is at this point it is decided if the script will be allowed on the intranet.

Is there a set directory/path convention for images?

All images must be submitted with an SRF to be uploaded. They are then taken care of by the IT staff.

How are websites created and placed on the intranet?

Usually they are typed up (or copied from existing web pages) and pasted into Obtree fields

Would there be any issues with placing video clips (around a minute in length) on the intra/internet?

As long as they're small, and wmv, shouldn't be a problem. Again, Gavin Compton or David Cook must approve.

Are the intranet and internet set up for easy exchange of information between the two, such as data appearing on both, or are they kept mostly, if not completely separate?

There is no connection between the website and the intranet. However, the main website will be transferred over to Obtree by March.

How would we put webpage's up?

Ernest should have rights up upload pages, though he may only have CE rights. Kay Adams will be able to tell you who to talk to if he can't.

Appendix G   Letter and questions for strategic objectives contacts

Information about WPI Intranet Resource

Dear NAMEHERE,

We are a project group from an American university, Worcester Polytechnic Institute (WPI) and have several questions pertaining to the strategic objective you are a contact for.

We currently are creating a website that will be placed on the intranet to aid in the creation and success of future WPI-Merton projects. You have been contacted since you are listed as a contact for one of the strategic objectives of the publication "Merton – the next three years" and we have several questions that pertain to these strategic objectives.

WPI is a university of science and technology in central Massachusetts, USA. One of our degree requirements is to complete an Interactive Qualifying Project; a project relating to social and science issues. Each year our university allows many of these projects to be completed by students outside the United States. Many of these projects are completed in conjunction with Merton. Some of these are as follows.

- Sustainable Energy in London Borough of Merton

- Merton Sports and Recreational Assessment

- Mining Census Data

- Feasibility Assessment of a Geothermal Heat Pump

- Data Protection Act Compliance

At the end of this email are some questions and it would be much appreciated if you could spend two minutes to respond. Please reply to wpi-resource@wpi.edu.

Thank you for your time,

Robert Spremulli
Joseph Morse
Josh Bamford

Questions to answer if you previously knew of WPI.

Has there ever been a WPI project pertaining to this strategic objective?

If so, roughly how many projects have been completed in this area?

What projects have been completed in this area?

Were the outcomes of these projects beneficial to improving Merton?

Were you ever skeptical of ability of the students completing the projects?

Who could we contact regarding some of these projects?

Questions to answer if you did not previously know of WPI.

Do you believe WPI completed projects in any way can help with advancing Merton?

If you do not believe these projects can help Merton what are the reasons for your skepticism? (For example: not sure of abilities of students, don't know exact requirements to sponsor a project)

If you do believe WPI completed projects can help in Merton in what areas do you believe this to be true?

Appendix H   Email to past/current liaisons

Dear NAME,

We are a project group from WPI. Currently, we are working on a web-based resource that will make staff across the Merton Council more aware of the resource WPI can bring to every day problems and challenges the authority faces. You are receiving this letter because at one point in time you acted as a liaison for one of the WPI projects here in Merton. As you probably know, the existing methods of starting and preparing a project are a bit disorganized. Only a few members of the Merton Council know of the projects, and even then, fewer members fully understand the exact nature of the projects. Funding isn't provided corporately, and securing the necessary resources for a project team, such as a desk, computer, and internet access, is often a last-minute process.

These are the problems we hope to solve with our project. One of our goals is to centralize the sponsorship of projects at the corporate level. We will hopefully be able to secure a yearly budget for sponsoring WPI projects here in Merton, along with dedicated work spaces and access to the necessary tools that teams need. Another goal is to provide information about the IQP program to those not familiar with WPI to encourage the possibility of future liaisons.

Since you have been a liaison for previous projects, we would like to know what type(s) of experiences you've had working with WPI students and faculty. We would appreciate it if you could set aside at most a half hour of your time in order to meet with us and discuss your experiences and opinions on the matter. You can reach us at wpi-resource@wpi.edu.

Thank you for your time,

The Merton Resources Team,

Josh Bamford
Joe Morse
Rob Spremulli

Appendix I Questions for past/current liaisons

Have you acted as liaison for more than one project?

Were there any alternatives considered before working with a WPI project team?

Were you hesitant in working with WPI students?

Were you questioning of the capabilities of WPI students?

Did you find the WPI students hard to work with?

Did you feel that the students acted professionally?

Were there any misconceptions you had about the process at first?

Were there any requirements you found to be difficult to provide? (For example: time, desk space, funding)

Did you feel that there was no clear explanation of the responsibilities expected of you?

Did you receive a copy of the WPI Guide for Sponsors and did you find it descriptive and comprehensive?

Were you pleased with the outcome of the project?

Did the project have a lasting effect on Merton?

If you had an available project, would you be willing to work with WPI students again?

What would you like to see in a web-based resource for project sponsors/liaisons?

Appendix J   CMT proposal

CORPORATE MANAGEMENT TEAM	

SUBJECT: WORCESTER POLYTECHNIC INSTITUTE AND MERTON COUNCIL

LEAD OFFICER: ADRIAN HEWITT/ERNEST OBUMSELU

RECOMMENDATIONS:

1) **CMT NOTE WPI/MERTON COUNCIL PARTNERSHIP AND PROJECTS**

2) **CMT NOTE THE PARTICULAR SKILLS, EXPERIENCE AND APTITUDES WPI BRING TO PROJECTS IN MERTON COUNCIL**

3) **CMT ENDORSE PROPOSED ARRANGEMENTS TO PROVIDE LONG TERM SUPPORT TO THAT RELATIONSHIP**

EXECUTIVE SUMMARY AND PURPOSE OF REPORT
The purpose of this report is to alert senior management to the working partnership the Council has with Worcester Polytechnic Institute and to highlight the particular advantages that flow from that relationship. The report also details projects WPI students have worked on and recommends actions Merton Council can undertake to improve that partnership and create value for both Merton Council and WPI.

BACKGROUND

Since 1996 there have been more than 30 consulting projects completed by Worcester

Polytechnic Institute in the Borough of Merton. These projects have saved thousands of

pounds for Merton Council over using a consultancy firm.

WPI is recognised as one of the finest technological universities in America, placing a

heavy emphasis on 'real-world' application as well as theory. Students from WPI have

been conducting research and completing projects for Merton Council for the past eight

years. Merton currently sponsors 8 WPI projects each year, on average. Departments

and sections that have commissioned them were very pleased with the outcomes of most projects, and found the students to be highly motivated and professional.

FINANCE AND COSTS

WPI project teams are well worth the financial commitment. The amount of work and time that the students put into a project is often more cost efficient than hiring commercial consultants. £2500 provides a team of three to four students who will work on the projects for 14 weeks. 7 of these weeks are spent working on the project in WPI. While in America, the students conduct in-depth background research for the project, while developing a plan of action for when they arrive in London. Once here, students follow through with their plan, while keeping in touch with the relevant Merton officer(s) to ensure the project is running smoothly. (A typical timeline of a project can be seen in Appendix 1)

SUPPORTING THE MERTON/WPI PARTNERSHIP

However, in order for Merton to maximise the value of this unique resource, a corporate profile and structure is required. There are resources necessary for the successful completion of a WPI project. These requirements seem simple but are often difficult to come by for Merton officers acting as liaison for a WPI project. By planning or centralizing these resources, WPI projects can be completed with efficiency and ease. There is a group of officers who have worked closely with WPI before, and have experience with project groups. Adrian Hewitt, Ernest Obumselu, Cecily Herdman, and Simon Bashford have decided to act as a "project coordination and evaluation group". This group will look over project proposals and make initial recommendations as to which go forward. They will also be on hand to offer advice and guidance on how to

progress chosen projects. The role of the group will also be to evaluate completed projects.

FUNDING FOR WPI PROJECTS

Although university students complete the projects, certain costs are associated with these projects. As stated before, the fee is £2500 and covers some of the students' costs for the completion of the project, such as a Tube pass and housing costs. Currently individual sections need to find this fee from their own budget. More often than not the process of funding projects is haphazard, creating financial uncertainty within individual units which can prevent a project from progressing that might have been great benefit to the whole council. A possible solution to this problem is a centralized fund to allow a certain number of projects each year. By setting up a resource to fund projects each year, it may be possible to have a consistent number of projects each year and to make the most of the WPI/Merton partnership. It is recommended that the Council should adopt a strategic approach to which projects are selected each year.

REQUIREMENTS

Students need proper office space and resources, included in the following -

- Desks

- Computers and internet access

- Computers

- Unblocked Webmail system

- Additional office resources

- Telephones

- Network printer and photocopier access

- Swipe cards

Desks

Project co-ordinators will need to sort out several other resources necessary for the students. Previous projects have shown that one of the more difficult is securing necessary desk space. With limited space within the Civic Centre, acquiring sufficient working space for students is a very daunting task. A potential solution to this problem is a dedicated workspace that can house eight students to complete work on their projects, or maybe two workspaces that can provide for four students each. Each team would only need two desks, and sometimes having students hot-desk when officers are away works out too. The students do not actually need to be located adjacent to the project co-ordinator.

Computers and Internet Access

Students require internet access and computers. There are several ways that the problem of internet access can be resolved. The current solution is using existing computers with access accounts set up specifically for the students. There are, however, several problems with the current way of providing student teams internet access. Some students are given terminals to use. This limits the students' use to software on the main server, and prevents the student from retrieving or placing files on the computer. There are several steps to provide a solution. First of all, the students use a WPI web-based system to access their email. This has been blocked in the past, which must be made available for future project groups. Also, if it is at all possible, several internet ports should be unblocked, and a specific domain should be created to allow WPI students to connect their laptops to the internet. This way, students would not need a Civic Centre computer.

However, if students are not allowed to plug their laptops into the network, computers with internet access must be supplied.

Additional Office Resources

Students will also need common desk items to do their work, such as:

- **Telephone**

  Telephones must be made available, mostly for internal communication purposes, but external communication is often required for the completion of some projects.

- **Network printer and photocopier access**

  Access to a network printer and a photocopier is necessary for students to be able to print and copy reports and useful materials.

- **Swipe cards**

  Swipe access cards are required by all students to be able to access the building

FINANCIAL IMPLICATIONS
£20, 000 for 8 projects annually (£2,500 per project).

LEGAL IMPLICATIONS AND STATUTORY PROVISION
None

HUMAN RIGHTS AND EQUALITIES IMPLICATIONS
None

RISK MANAGEMENT AND HEALTH AND SAFETY IMPLICATIONS
Risks would need to be identified by Merton Council liaisons and managed with WPI staff

CONSULTATION UNDERTAKEN
None

APPENDICES – The following appendices form part of this report:

Appendix1 Cecily Herdman's Project Experience

Cecily Herdman was a project coordinator for the "Feasibility of the Implementation of Ground Source Heat Pump System in the Merton Community" project. Below is a quick overview of the steps she needed to take to complete the project.

- She contacted Adrian Hewitt about how to submit a WPI project proposal.

- She then submitted the proposal to Professor Paul Davis at WPI

- Seven weeks after proposal approval she received a phone call from the students that would be working on the project.

- Before the students arrived Cecily procured desk space, computers and other necessary office resources.

- When the students arrived weekly meetings were held with Cecily, the students and the students Professors to follow the progress of the students.

- The last week the students presented the outcome of their project.

This project, as well as many other WPI projects, have proven to be very useful. To this day many government officials, both within Merton and outside Merton, have referenced this project when making key decisions that deal with using ground source heat pumps. There are many obstacles Cecily faced along the path of project completion. The following points are the problems she faced along the way:

- Desk space was difficult to acquire for the students.

- Weekly meeting spaces were near impossible to find.

- Acquiring computer and internet access for the students was hard.

Although Cecily was pleased with the outcome, the problems with acquiring resources could have had detrimental effects on the project. Without the necessary resources, the potential value of projects cannot be realised.

OFFICER CONTACTS: Ernest Obumselu and Adrian Hewitt

Appendix K   Interview with Simon Bashford

Have you acted as liaison for more than one project?

Just one

Were there any alternatives considered before working with a WPI project team?

No, "When I got an email asking for ideas, I used a project in the back of my mind for a few months

Were you hesitant in working with WPI students?

No, WPI students have a good reputation. No hesitation

Were you questioning of the capabilities of WPI students?

No

Did you find the WPI students hard to work with?

Very nice, easygoing bunch

Did you feel that the students acted professionally?

Yes totally

Were there any misconceptions you had about the process at first?

Difficulty understanding the concept, conveyed poorly

He could have given students more background. Problem with that is it could be a bit objective

Were there any requirements you found to be difficult to provide? (For example: time, desk space, funding)

All of them were. Time was difficult – but the group was pretty self sufficient. Thinks might have been better results if he had met more regularly. Time wasted on tangents. Obtaining a working area was very difficult. 4 people at one desk finally, people nearby complained

Did you feel that there was no clear explanation of the responsibilities expected of you?

There was a fairly brief one: Desk, enough chairs, and PC w/ internet. Paul Davis informed.

Weekly meetings explained. 2 shorter meetings would have been better.

Did you receive a copy of the WPI Guide for Sponsors and did you find it descriptive and comprehensive?

No.

Were you pleased with the outcome of the project?

Very, it was very well produced. He had to hold back from influencing with personal bias though. Live work units the basis, not very efficient. "I have a computer in my house and I work there, does that make it a live work unit?" It somewhat sorted out internal wrangling between two departments. Suspected answer, project confirmed, trouble not giving it away. He was quite happy with it.

The presentation was good. Full of planning officers, which was agood. A few asked questions students unprepared for. Got a bit tense & ugly, but handled very well

Did the project have a lasting effect on Merton?

Definitely, within a week, he had a meeting in which he referenced the report. Hasn't been embedded enough yet, ego thing. People's pride prevented it from coming through fully. Used when he speaks with developer architects.

Definitely ego, could be because student run project for hesitation. Believes it was mostly Pride and ego.

If you had an available project, would you be willing to work with WPI students again?

Most definitely, it did without a doubt. Very impressed, even though is was difficult to find the time

What would you like to see in a web-based resource for project sponsors/liaisons?

Dedicate an office for WPI students to use.

Appendix L   Interview with Cecily Herdman

Have you acted as liaison for more than one project?

Just one project

Were there any alternatives considered before working with a WPI project team?

No, we didn't. It was an unusual project, didn't start off with a problem or issue, made for students. Might be better to talk to other people regarding processes

Were you hesitant in working with WPI students?

Yes, I think so. In all honesty, experiences have been mixed, one past project went brilliantly, another was chatty.

Were you questioning of the capabilities of WPI students?

She didn't have much background on the students (arts or technological). Would have liked some

Did you find the WPI students hard to work with?

No.

Did you feel that the students acted professionally?

Yes, incredibly impressed. Sorted out hours. They asked to be flexible so they could come in earlier

Were there any misconceptions you had about the process at first?

No, she doesn't think so. The project changed through the course of it, partly them not understanding the student's background and expertise well enough

Were there any requirements you found to be difficult to provide? (For example: time, desk space, funding)

Yeah, it was logistically difficult. Organized a room, but it got taken last minute. Where they are going to work is an issue. Very limited meeting rooms, areas. Quite a bit of work and quite a bit of organization. Believes this is a weak area. "Quite a task"

Did you feel that there was no clear explanation of the responsibilities expected of you?

No, not much information at all, information would have been useful. "Background, purpose, requirements." Informal chat with Adrian is what gave her what info she had.

She hadn't remembered seeing the sponsor guideline, though it looked a little like something she'd seen recently (Post project)

Research project she helped with unofficially, teen pregnancies, tried to see if it would happen. Project group kept asking her, she couldn't really answer. Project fell through, could have been savaged if info was available.

Were you pleased with the outcome of the project?

Very pleased, high profile event at the end, and packed presentation at Colliers Wood. Very pleased with the outcome

Did the project have a lasting effect on Merton?

The outcome was that we couldn't go ahead with what the students investigated, so yes and no. No immediate results, but we knew it wouldn't work and could give results to others.

If you had an available project, would you be willing to work with WPI students again?

Yes. Time for supervision would be an issue. More supervision and giving them information leads to better results.

What would you like to see in a web based resource for projects?

How relationship developed

Why students doing it

Background of students

How they chose the project – are they interested in it?

Practical information "what's expected" in terms of a contract

Is someone there to help with resources

Requirements (desks costs)

Unclear about when you put in bids for research project – how long going to be here, how actual process takes place. Do students pick them out, is it lottery? Are people getting students who are interested?

Appendix M   Interview with Adrian Hewitt

Some questions are blank on this list because Adrian Hewitt is one of our liaisons.

Have you acted as liaison for more than one project?

I heard word of mouth from Steve Cardis. I learned from him.

Speed is an asset. "We come and get it done fast an accurately." Working with WPI is easier & quicker than consultants, less to go through.

Were there any alternatives considered before working with a WPI project team?

Were you hesitant in working with WPI students?

Yeah, I did. "You think students, right, ok….." think too busy to deal with this – can they do what needs to be done?

Were you questioning of the capabilities of WPI students?

A bit – are the students able to do the research? One time the students didn't gel, they seemed like first met, debate a lot. Sometimes an alpha-male/alpha-female emerges; sometimes good, sometimes bad.

Did you find the WPI students hard to work with?

Did you feel that the students acted professionally?

Were there any misconceptions you had about the process at first?

I didn't understand the learning component. Professors would discuss it and I would get confused. What part of the professors' plan this? Have the professors been grilling them. We're mentors, almost teachers. It's a benefit for the liaison; lets them teach for once.

Were there any requirements you found to be difficult to provide? (For example: time, desk space, funding)

Desk space is the biggest problem. Meeting rooms and meeting the team form time to time. There is a danger of disconnection. Long term is meeting rooms. Stress during the first few days troublesome. Internet connection should be less than a problem from now on.

Did you feel that there was no clear explanation of the responsibilities expected of you?

There was no clear explanation

Did you receive a copy of the WPI Guide for Sponsors and did you find it descriptive and comprehensive?

"Is there one?"

Were you pleased with the outcome of the project?

Not all of them, but due to lack of guidance & slightly poor group. I would still work with WPI after them, though.

Did the project have a lasting effect on Merton?

If you had an available project, would you be willing to work with WPI students again?

What would you like to see in a web-based resource for project sponsors/liaisons?

Like a story to explain the process

Appendix N   Interview with Ernest Obumselu

Some questions are blank on this list because Ernest Obumselu is one of our liaisons.

How did you become a Liaison?

I was aware of it, unlike some/most council officers. Had something to deliver quickly, discrete body of work which could be competed in a couple weeks.

The project was useful to him and students.

Have you acted as liaison for more than one project?

Were there any alternatives considered before working with a WPI project team?

Were you hesitant in working with WPI students?

Yes, uncertain if I could obtain the resources. Felt I wouldn't have enough time for supervision. Gave proposal with broad specifications, defined an area culturally specific to England, the student's proposal was a bit different. The issue was that I wasn't being clear with what I wanted. Speed, clarity, & resources

Project dealt with the census, a small section on poverty, but kind of completely different.

Were you questioning of the capabilities of WPI students?

Never

Did you find the WPI students hard to work with?

Occasional problems, sometimes the teams don't gel. Other times, gather around a leader figure.

Did you feel that the students acted professionally?

Were there any misconceptions you had about the process at first?

I didn't appreciate the academic/paper because the students seem to do it in the background. As a team liaison, didn't provide proper links between

Were there any requirements you found to be difficult to provide? (For example: time, desk space, funding)

Once came into find team asleep at 2 in the afternoon

Did you feel that there was no clear explanation of the responsibilities expected of you?

Not really, I had bits of paper with info, but things like swipe cards were a last minute thing.

Did you receive a copy of the WPI Guide for Sponsors and did you find it descriptive and comprehensive?

Were you pleased with the outcome of the project?

Yes, but lots of issues, you need to be aware of the commitment, and sometimes get unlucky with student group.

Did the project have a lasting effect on Merton?

If you had an available project, would you be willing to work with WPI students again?

What would you like to see in a web-based resource for project sponsors/liaisons?

Appendix O   Website Documentation

Introduction

This document is meant to serve as documentation for the WPI-Merton web resource. It will include a list of files and what they are, as well as explanation of the code, the JavaScript and how to edit pages to add information. This document does assume basic knowledge of HTML coding, and assumes you will use a text based editor. For information about basic html coding, multiple websites are available. http://www.htmlgoodies.com is a good reference site. WPI also links to many html resources.

Table of Contents

Table of contents removed in appendix, as page numbers no longer apply

List of files

Root Directory about-us.html
-info about the project team
abstracts.html
-contains the list of abstracts
boynton.html
-vid pop up window: wpi history
cleanwater.html
-vid pop up window: cleanwater iqp
examples.html
-link page: iqp report examples
exec-summaries.html
-examples: executive summaries
faq.html
-misc: faq page
full-reports.html
-examples: full iqps
index.html
-main page
info.html
-link page: more information links
iqp.html
-wpi info: iqp info
links.html
-link page: external links
londoniqp.html
-vid pop up window: London iqp
merton.html
-wpi info: Merton history
misc.html
-link page: misc links

poten-proj.html
-examples: potential projects
project-resources.html
-link page: project resources
proposal.html
-resource: proposal submission form
requirements.html
-resource: list of requirements
sitemap.html
-misc: sitemap for web resource
tasklist.html
-resources: liaison task list
timelines.html
-resources: timelines for projects
veniceiqp.html
-vid pop up window: Venice iqp
wpi-main.html
-link page: wpi links
wpi-video.html
-wpi info: videos about wpi
wpi.html
-wpi info: about wpi
merton.css
-stylesheet used for website
wpi-resource-java.js
-java code used on all pages
wpi-resource-java2.js
-additional java code for tasklist
succeed.tmpl
-proposal success page
wpi-resource-java2.js
-proposal failure page

images/

adobe.gif
-Adobe PDF logo. Used as download link on exec-summaries.html and full-reports.html
boynton.jpg
-Image of Boynton hall. Used on index.html
boyntonmovie.jpg
-Logo for WPI history video.
cleanwater.jpg
-Logo for cleanwater IQP video.
clear1x1.gif
-Transparent gif used for spacing. Used on all pages.
londoniqp.jpg
-Logo for London IQP video.
reunionplaz.jpg
- Image of the fountain. Used on index.html
sitemap.gif
-The sitemap image. Used on sitemap.html
timeline.jpg
-The interactive timeline. Used on timelines.html
veniceiqp.jpg
-Logo for Venice IQP video.
word.gif
-Logo for word documents. NOT USED
wpi_logo_big.gif
-Large WPI logo. Used on all pages
wpi_logo_sm.gif
-Small WPI logo. NOT USED

vid/
-video clips from the WPI DVD. These should not need to be touched.
cleanwater.wmv
londoniqp.wmv
veniceiqp.wmv
wpihist.wmv

images/border/
-These images are used for the layout of the site. They should not need to be edited or changed.
sidebar_bottom.gif
sidebar_bottom_corner.gif
sidebar_left.gif
sidebar_top.gif
Thumbs.db
topbar_arch_left.gif
topbar_arch_right.gif
topbar_background.gif
topbar_right.gif

docs/
-PDF documents of the executive summaries and full reports. Add any pdf copy on an IQP or summary as necessary, but ensure to protect the file from everything except low quality printing and content extraction for accessibility. Files ending in 2 are the full reports.
buildingdesign.pdf
constructionminiguides.pdf
heatpump.pdf
heatpump2.pdf
lwsanalysis.pdf
mining.pdf
recycling.pdf
recycling2.pdf
sustainableenergy.pdf
sustainableenergy2.pdf
sustainableenvironment.pdf
sustainableenvironment2.pdf

menu/

-These images are used for the menu of the site. They should not need to be edited or changed. To change the sub items of the menu if necessary, see below

arrow_000000.gif
cdm_1_menu.png
cdm_1_menu_hl.png
cdm_10_menu.png
cdm_10_menu_hl.png
cdm_2_menu.png
cdm_2_menu_hl.png
cdm_3_menu.png
cdm_3_menu_hl.png
cdm_4_menu.png
cdm_4_menu_hl.png
cdm_5_menu.png
cdm_5_menu_hl.png
cdm_6_menu.png
cdm_6_menu_hl.png
cdm_7_menu.png
cdm_7_menu_hl.png
cdm_8_menu.png
cdm_8_menu_hl.png
cdm_9_menu.png
cdm_9_menu_hl.png
CDM_spacer.gif

-These two files activate the menu functions. They contain all the code for the image swapping and the popups.

cdm_all.js
cdm_ie.js

-This file contains variables used for the sub menu. This includes format, text, and link.

menu.js

How to edit the site

Account info

The account is set up on mertonpr. Go to http://www.wpi.edu/+groupaccounts/ to modify account ownership and perform administrative access to the webspace itself. To upload files, use an SCP client (many available freely online). The owner of the webspace should be able to access the group account through their own login. The user account is mertonpr. All files for the web should go in the public_html folder.

General HTML edits

The website code is divided into several sections. Below in the sample code (taken from misc.html), each area is highlighted with code that shouldn't be edited replaced with ellipses.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
<script language="JavaScript" src="wpi-resource-java.js"></script>
...
</head>
<body>
...
<!-- TemplateBeginEditable name="header" -->
<img src="images/wpi_logo_big.gif" width="245" height="92" align="left">
    <h1 valign="middle">WPI and Merton Projects Resource</h1>
<!-- TemplateEndEditable -->
...
<!-- TemplateBeginEditable name="left" -->
    <a href="index.html"><img name="CDM_image1" onmouseover="activate(1);"
onmouseout="deactivate(1)" src="menu/cdm_1_menu.png"    width="129"
height="18" border="0"></a><br>
<!-- TemplateEndEditable -->
...
<!-- TemplateBeginEditable name="main" -->
            <h2>Miscellaneous links</h2>
    <ul>
    <li><a href="faq.html">FAQ</a></li>
    <li><a href="sitemap.html">Sitemap</a></li>
    <li><a href="about-us.html">About the project team</a></li>
    </ul>
<!-- TemplateEndEditable -->
...
</body>
</html>
```

Here is where the code for the header is. This code appears at the top of each page. Note the height of the image is the height of the header.

This is a menu code sample. You shouldn't have to edit it.

The main section is where the body of the page goes. Begin with a title in <h2> tags, and use <p>, <ul>, <table> as necessary.

Editing the sitemap

If any pages are added or removed from the site, the sitemap should change to reflect this. Open the file "sitemap.ppt" and use PowerPoint to recreate the flowchart. Depending on the nature of the edits, you may be required to reshape the imagemap code. Many different programs are capable of generating imagemap code: Dreamweaver, the GIMP, and multiple freeware programs. It can even be done by hand, although this method it tedious at best. Simply replace the code on the sitemap.html page if necessary.

Editing the menu

The menu was generated using a program to make the images and submenus. Editing the actual left menu is rather difficult. Editing the submenus is much more manageable.

- Open menu.js in the menu subfolder
- Browse to where it says:

```
/* -------------------------------------
   Submenu Items.
   -------------------------------------
*/
```

- Find the area you want to edit. There are numbers 1-10, for the 10 main menu items. The second number its what number submenu item it is. For example, to add something after full reports in the "More information" menu:
  - CDM_submenu2_8_text = "Full Project Reports"
  - CDM_submenu2_8_link = "full-reports.html"
- Paste the following below it:
  - CDM_submenu2_9_text = "New menu item"
  - CDM_submenu2_9_link = "link.html"

To delete from the menu, simply remove the two lines necessary, and edit any subsequent sub items of that group so numerical order does not skip.

Editing the task list

There are two basic segments of code in the task list. They are defined here and referred to in each subsection. Generic versions are listed below:

- **Table row (Question)**
  ```
  <tr><td width="25px"><script language="Javascript">document.write('<input
  type="checkbox" name="ckbox" '); currentQuestion(check);
  document.write('>');</script></td><td>Question<a
  onMouseOver="showNote('note##')" onMouseOut="hideNote('note##')"><span
  class="help">About</span></a></td></tr>
  ```

  You will need to replace *Question* with a typed question and the **##** of '**note##**' with a number over 30.

- **Help Note**
  ```
  <div id="note##' class="note1">Help Blurb</div>
  ```

  You will need to replace *Help Blurb* with what you want to appear as a help bubble for question labelled '**note##**'.

All instructions below describe how to edit the html code using a text editor, editing tasklist.html unless otherwise noted.

Deleting from any section but the first section of the task list

There are two steps to remove an item from the task list from any section other than the first.

1. Find the Table Row of the question you wish to remove. Delete from <tr> to </tr>.
2. (optional, but recommended) Find the corresponding Help Note. Delete it.

Adding to any section but the first section of the task list

Two steps are necessary to add to from the task list from any section other than the first.

1. Find where you want to insert the question. Paste the generic Table Row code above. Make the changes explained.
2. Find the list of Help Notes. Add one for your newly added question. Copy and paste the code above in, and make sure to match the note number here with the number you assigned the question.

Adding to or deleting from the first section of the task list

Three steps are necessary to modify this section.

1. Add or remove, following the directions above.
2. Find the next question: the first question of the second group. Change the text to correctly reflect the number of questions in the first section.
3. a. In proposal.html, look for the submit button; it may be easiest to do a search for "name="proposal-submit"".
   b. Below that, there should be a line that looks like "if(check.substring(0,**3**) == '*111*')". The numbers may be different. Change the **bold** number to the number to the number of questions in section one of the task list. The *italic* number should be a bunch of 1's; there should be as many 1's as the first number. In this case, there are three 1's.
   c. Now look a little farther down, in the else statement. You will see "alert('Please … check the first **three** items ...');". Change this to reflect the changes you have already made.

Editing the proposal form

The proposal form is a basic HTML form. The script used it one provided by WPI. Simply leave the <form> tag's attributes as they are, and any other fields can be added or replaced as necessary. The most important field is the one labelled "email-recipients". This holds the email addresses that the proposal will be sent to. More information is available on the WPI website.

Understanding the backend of the site

The proposal submission code

This code is managed by WPI. There should be little need to modify anything with it.

mertonstyle.css

This is a brief explanation of the different classes in the stylesheet merton.css. Tag modifications are ignored, as most are minor formatting issues.

.MENU
Reduces text size and formats text and links to be visible in the sidebar. Deprecated due to image links

.MAIN
Used on every page. All this does is move the main info of a page away from the side and top bars.

.QUESTION
Used in the FAQ. Formats questions slightly differently to make them differ from answer text.

.ANSWER
Used in the FAQ. Formats answers slightly differently to make them differ from question text.

.HIGHLIGHT
Used in abstracts.html. Background color change for IQPs with executive summaries available.

.highlight2
Used in abstracts.html. Background color change for IQPs with executive summaries and full reports available.

.HELP
Modifies text to appear as a superscript link. When the mouse hovers over this, the default help pointer will appear. Used on the task list and proposal form.

.NOTE
Like .note1 and .note2, meant for the menu. Deprecated.

.NOTE1
Formats the popup help notes and the main notes on the timeline. Formats include border, font, background, and initial visibility.

.NOTE2
Formats the student notes on the timeline. Formats include border, font, background, and initial visibility.

wpi-resource-java.js

function writeCookie(name, value, hours)
Writes the cookie to the users computer that stores which boxes have been checked on the tasklist

function readCookie(name)
Reads the cookie to the users computer that stores which boxes have been checked on the tasklist

function checkString()
Checks the information from the page and determines which boxes have been checked.

function currentQuestion(string)
Parses the string and passes the current digit to isChecked.

function isChecked(char)
This function checks the current question, if necessary.

createNotes=function()
       showNote = function(note)
       hideNote = function(note)
These functions create, display, and rehide all the help bubbles.

startup=function()
Calls two separate functions when called. See below.

window.onload=startup;
When the page is loaded (site is visited or the page is refreshed) calls the function startup.

wpi-resource-java2.js

shutdown=function()
Calls two separate functions when called. See below.

window.onunload=shutdown;
When the page is unloaded (another site is visited or the page is closed) calls the function shutdown.