



Illinois Institute of Technology

Conceptual Design and Planning for the Environment of Chicago Area Health Clinics by Access Community Health Network

Project Plan
IPRO 340

Advisors: David Winkin and
Mathew Miller

1.0 Introduction and Objectives

In the 21st century, medical technology is advancing at a rapid rate, thus allowing people to benefit from new treatments being developed. However, much of the underserved and underinsured public are not benefiting from the breakthroughs as one might expect. In order for the existing facilities to better serve the public, gradual transformations and upgrades must be made. This is the challenge being tackled by our IPRO: How can we realistically suggest a renovation model for existing Access Community Health Network facilities which would promote cost efficiency and technological advancement in both environmental and operational capacities?

- The primary objective of this session of IPRO 340 is to deliver a five-year model for which existing Access Community Healthcare facilities can be shaped into more environmentally and operationally efficient centers for medical treatment.
- In designing such a model, secondary goals include familiarization with cutting edge medical technology, modernized building flow, spatial relations, as well as the development of business process models. In addition, we plan to investigate ways in which Access Community Healthcare can enhance the level of patient experience by making peoples' visit to their facilities more enjoyable and informative.

2.0 Background

Access Community Health Network is the nation's largest association of community health centers, operating in over 50 locations in the medically underserved communities of the greater Chicagoland area as well as Cook and DuPage counties. Access serves over 210,000 patients annually, of which 76,000 are children. One third of these patients are completely uninsured, 50% have Medicaid, 11% have Medicare, and the remaining 7% have commercial insurance.

Access services include general health care for families, medicinal, internal, and pediatric services. Services involving schools, sports, and immigration physicals are also included. Along with these services immunizations, Obstetric/Gynecologic care, and midwifery are available. Access offers management of chronic disease such as diabetes, asthma, and high blood pressure. Low cost breast and cervical cancer screenings, mental health services, substance abuse treatment programs, HIV/AIDS counseling, testing, and primary care are also available through Access.

Access's mission is to provide high quality, cost effective, safe, and comprehensive primary and preventative health care for the underserved communities of Chicago. One problem that Access faces is inadequate space for the services currently being provided, and for those that will hopefully be provided at these facilities in the future. Space constraints in the waiting areas make it difficult to



accommodate a large number of patients during peak daytime hours. This can result in extremely time consuming waiting periods potentially extending visits to over an hour.

Access is in the process of expanding their options for the delivery of care within their network. They look forward to cooperating with more hospitals and providing new services and providing space for new medical procedures currently under development. The Access facilities of the future must be able to address the issues previously mentioned. As the geriatric population in the United States continues to grow there will be an increasing need for adequate services to provide patients within this age group, as well as continued care for children.

The Access facilities need solutions to the issues of space while continuing to provide care and services for their patients. Access is committed to meeting the demands of their customers by continuing to provide high quality services and healing environments within their facilities. IPRO 340 will continue to build on past semesters work by familiarizing themselves with the Access facilities through site visits and specific issues that can be immediately addressed, standards that must be met for the different facilities at their different locations, as well as research new technologies that can be implemented into Access's centers that will continue to provide for its patients the best quality health care while keeping LEAN processes in consideration.

3.0 Methodology

To best engage the task at hand, we decided to develop the renovation model in phases. This model will represent a gradual transition that could be implemented by Access within the next five years.

Initially, the team splits into two subgroups, State of the Art Technology (SAT) and Lean Principles (LEAN). After having appointed team leaders to each respective subgroup, research from past semesters regarding the applicable technology is reviewed. Each of the team leaders designates a specific division of research (i.e. Information Technology, Infection Control, and Lean principles) to every individual of a group. The SAT will function primarily, just as its LEAN counterpart as a research team, both for continued expansion upon older work done, as well as exploration of new and innovative possibilities.

In order to properly apply the research to building a renovation model, multiple site visits will be conducted at three selected Access healthcare facilities. Site visit tasks include (but are not limited to) interviews, facility space inventory, picture-taking for reference, and examining the in-house medical equipment. The knowledge gained through site visits specifically will allow both subgroups to further develop feasible plans for which their respective researched advancements may apply as per the given situation.

Prior to site visits, information packets containing introductory site information will be assembled and provided to the group visiting. Introductory site information will include hours of operation, lease status, transportation directions, along with sets of surveys for the purpose of gathering knowledge of how efficient everyday



operations are conducted. To create an accurate projection model for the renovation, the team will incorporate the knowledge acquired from site visits combined with research on zoning, leasing agreements, and general business planning in order to properly coordinate a first draft of the design plans.

Each group of individuals that goes on a site visit is responsible for preparing and conducting a brief overview for the rest of the team. These reports shall include a basic structural detail of the facility which includes photos and general observations. From there, analysis of space, flow, and possible minor primary-phase renovations are discussed and inventoried for further consideration. Compiling data from each site visit will better equip the team to understand the fundamental processes of day-to-day operation of each venue.

The next phase of action following site visits and finalized research becomes implementation. The way in which we shall do this is by shifting gears within our teams and reorganizing the leadership roles. Ultimately, new subgroups under the topical umbrellas of Reorganization, Implementation, Finance, and Technology will begin to tackle creating the actual five-year model.

The Reorganization team will focus on possible refinement of facility flow in terms of space as well as communication. This, like all the other subgroups will overlap and work jointly with the Technology subgroup to choose feasible modes of communication within the building, picking out space-saving furniture, in addition to supplementary medical equipment that would improve overall service.

On the other side of the spectrum, the Implementation subgroup will be in charge of finding out, what we may or may not be possible to accomplish in terms of renovations. Potential roadblocks that must be accounted for and reported are zoning permits, Access policy scope, and structural instabilities that may prevent certain building changes or additions.

Working closely with just about every division will be the Finance subgroup, who will be in charge of preparing the cost reports in addition to potential revenue streams. Staying within a cost efficient budget is one of the objectives of this project, and keeping track of all expenses certainly will be an integral portion of the final model.

Lastly, the Technology subgroup will be responsible for determining the possible equipment additions and replacements for each existing facility. This team will focus on putting the physical pieces of the renovation plan into actual use. Conjointly done with the Implementation team, as well as with input from the entire IPRO team, a rendering of the theoretical renovated facilities following the five-year model will be created.

In terms of deliverables, a compilation of all relevant minor reports will be prepared. These will include cost estimates, technological overviews, Access feedback, time-tables for phase completion, as well as some final thoughts on the final model. Aside from the aforementioned paperwork, a digital rendering of the projected model facility will be included as a final deliverable.

4.0 Expected Results

A. IPRO 340’s expected results this semester are to create an implementable plan to renovate three existing Healthcare Facilities for Access Healthcare using the research and design done by previous semesters, now including financial consideration.

B. To maintain the sustainability and lean concepts incorporated in the ideal design while remodeling the three healthcare centers.

C. A better understanding of the day-to-day activities of the health centers through multiple site visits to differing Access centers. This knowledge will allow for the scrutinizing of initial ideas for realistic implementation into the facilities and the weeding of poor choices for the Access Network.

D. By looking at the past IPRO’s project plans we can delve further into the details for creating a realistic solution to our problem. Knowing the final design for the floor plans of the centers allows is to focus on materials, the newer medical equipments that can be added to the facilities, time estimates for implementation, and the cost of the projects.

E. These designs, and the forthcoming ideas, are to follow lean principles to create less waste, be the most appropriate, and allow for the best navigation of every aspect of this business.

F. These results will show the cost, supplies, and time needed to implement the final design.

5.0 Budget

Transport	\$400
Final Project/Presentation (bindings, printing costs, posters, supplies, etc.)	\$400
Goal Parties	\$100
Miscellaneous	\$50
Books	\$100
Total:	\$1,050

6.0 Schedule of Task and Milestone Events

Please refer to attached appendix A.



7.0 Individual Team Member Assignments

Ernest Bellamy

- Year: 5th
- Major: Arch
- Experience, Skills, Strengths: Freehand Drawing, Model making, Drafting, AutoCAD, Adobe Photoshop, Illustrator, 3ds Max, Revit, SketchUp. Previous experience as group member and team leader of IPRO 340 (Fall '07).
- Role and Responsibilities: Site visit coordinator. Lean principles research for Lean/Implementation team of Phase I

Loren Bo

- Year: 5th
- Major: Arch
- Experience, Skills, Strengths: AutoCAD, Adobe CS3, Sketch-Up, 3ds Max. Experience in facilities management and as manager of an amateur athletic team. Previous classes in healthcare design, energy efficient design and construction management.
- Role and Responsibilities: Sub team leader of Technology/Finance group. Sustainable technology research for Technology/Finance group of Phase I.

Lawrence Chung

- Year: 3rd
- Major: BME
- Experience, Skills, Strengths: Microsoft Office Suite, Visio, and MATLAB. IT support, network system administration and project management.
- Role and Responsibilities: Information Technology research for Technology/Finance group of Phase I.

Danielle Dipego

- Year: 5th
- Major: Arch
- Experience, Skills, Strengths: AutoCAD, Adobe Photoshop, Illustrator, 3ds Max. Experience as a team member of an architecture firm.
- Role and Responsibilities: User experience research for Technology/Finance group of Phase I.

Pankti Gala

- Year: 3rd
- Major: BME
- Experience, Skills, Strengths: Microsoft Office. Synthesis of nano-particles, Nanoshell purification using centrifugation, particle characterization.
- Role and Responsibilities: Lean principle research and process flowchart research for Lean/Implementation team of Phase I.



Crystal Glover

- Year: 4th
- Major: Arch
- Experience, Skills, Strengths: AutoCAD, VIZ, Adobe CS3. Strong communication skills. Experienced as a team member of a Civil, Architectural, and Environmental Engineering firm.
- Role and Responsibilities: Lean Principle research for Lean/Implementation team of Phase I.

Phaedra Howe

- Year: 3rd
- Major: BME
- Experience, Skills, Strengths: Highly motivated, efficient working practices. Proficient in MATLAB, Java experience.
- Role and Responsibilities: Building and lease limitation research for Lean/Implementation team of Phase I.

Omaditya Khanna

- Year: 2nd
- Major: Chemical Engineering
- Experience, Skills, Strengths: Experience at a clinical research facility and free health clinic. Independent thinker able to innovate new solutions.
- Role and Responsibilities: User experience research for Technology/Finance group of Phase I.

Jongpil Park

- Year: 4th
- Major: Architecture
- Experience, Skills, Strengths: AutoCAD, 3ds max, Adobe Photoshop, Illustrator, Sketch UP. Experience as team member of Architecture firm.
- Role and Responsibilities: Medical and Healthcare limitations research for Lean/Implementation team of Phase I.

Sarah Wahlstrom Helgren

- Year: 4th
- Major: BME
- Experience, Skills, Strengths: MatLab, Java, Visual Basic, PAL Chip Programming, Pspice. Experience as clinical volunteer and research assistant at University of Chicago.
- Role and Responsibilities: Sub team leader of Lean/Implementation group. Process flow research for Lean/Implementation group of Phase I.

Mary Yu

- Year: 3rd
- Major: BME



- Experience, Skills, Strengths: Adobe Photoshop, Scion Imaging, Tera Recon Aquarius. Experience in working in Lutheran General Hospital and as research assistant at UIC. Volunteer construction for Habitat for Humanity.
- Role and Responsibilities: Infection control research for Technology/Finance group of Phase I.

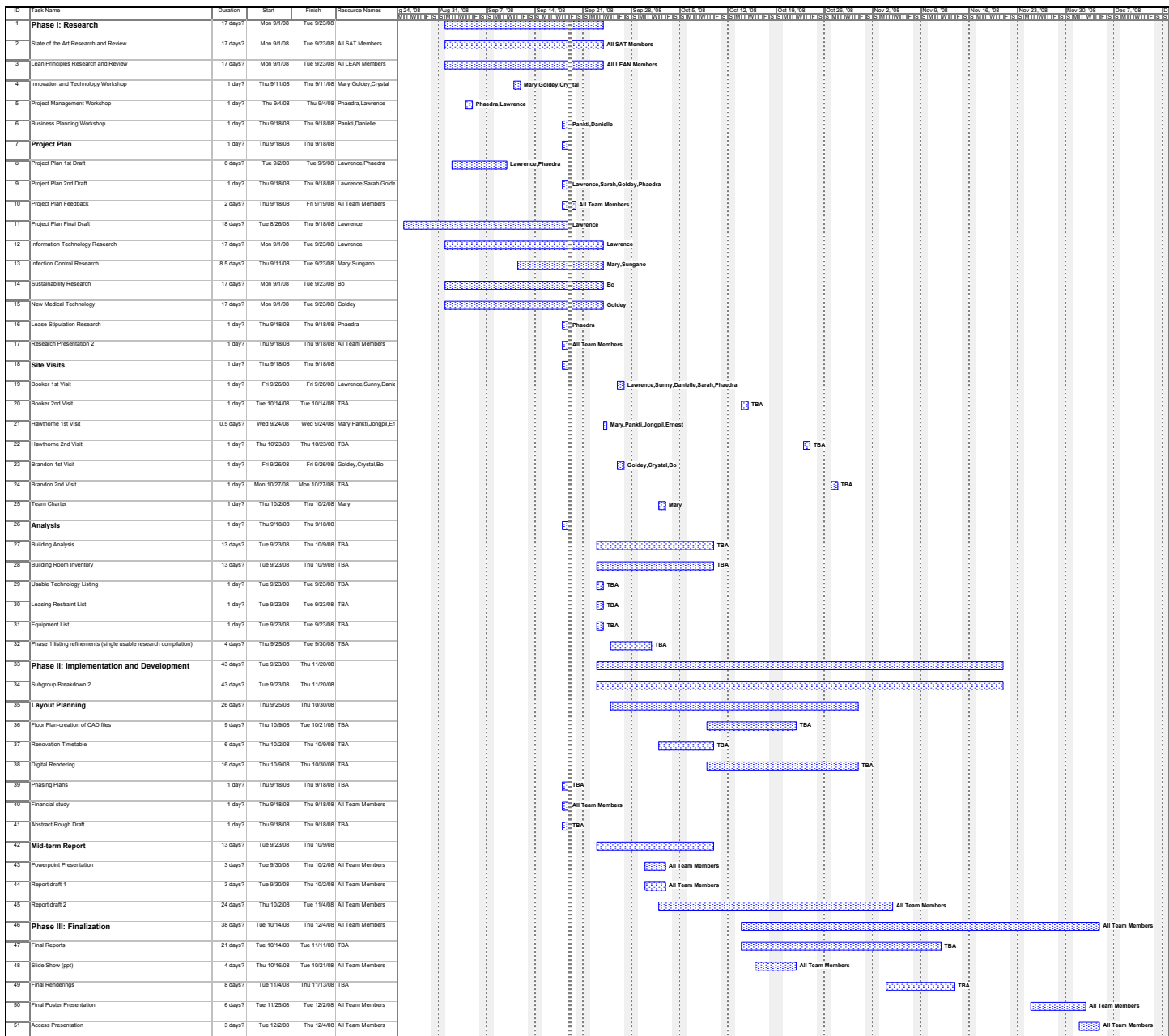
Sungano Ziswa

- Year: 5th
- Major: Arch
- Experience, Skills, Strengths: AutoCAD, Adobe CS3, 3ds Max, Rhino. Experience as architecture team member of healthcare facility.
- Roles and Responsibilities: Infection Control research for Technology/Finance group of Phase I.

8.0 Designation of Roles

Meeting Roles:

- Agenda Maker – Sarah Wahlstrom Helgren
- Minute Taker – Lawrence Chung
- Time Keeper – Sarah Wahlstrom Helgren
- Event Scheduler – Ernest Bellamy
- All group members are responsible for conducting and contributing research, presenting periodic summary reports, and compiling research, reports, and all other documentation.



ID	Task Name	Duration	Start	Finish	Resource Names	Aug 24, '08							Aug 31, '08							Sep 7, '08							Sep 14, '08						
						M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
1	Phase I: Research	17 days?	Mon 9/1/08	Tue 9/23/08																													
2	State of the Art Research and Review	17 days?	Mon 9/1/08	Tue 9/23/08	All SAT Members																												
3	Lean Principles Research and Review	17 days?	Mon 9/1/08	Tue 9/23/08	All LEAN Members																												
4	Innovation and Technology Workshop	1 day?	Thu 9/11/08	Thu 9/11/08	Mary,Goldey,Crystal																												
5	Project Management Workshop	1 day?	Thu 9/4/08	Thu 9/4/08	Phaedra,Lawrence																												
6	Business Planning Workshop	1 day?	Thu 9/18/08	Thu 9/18/08	Pankti,Danielle																												
7	Project Plan	1 day?	Thu 9/18/08	Thu 9/18/08																													
8	Project Plan 1st Draft	6 days?	Tue 9/2/08	Tue 9/9/08	Lawrence,Phaedra																												
9	Project Plan 2nd Draft	1 day?	Thu 9/18/08	Thu 9/18/08	Lawrence,Sarah,Golde																												
10	Project Plan Feedback	2 days?	Thu 9/18/08	Fri 9/19/08	All Team Members																												
11	Project Plan Final Draft	18 days?	Tue 8/26/08	Thu 9/18/08	Lawrence																												
12	Information Technology Research	17 days?	Mon 9/1/08	Tue 9/23/08	Lawrence																												
13	Infection Control Research	8.5 days?	Thu 9/11/08	Tue 9/23/08	Mary,Sungano																												
14	Sustainability Research	17 days?	Mon 9/1/08	Tue 9/23/08	Bo																												
15	New Medical Technology	17 days?	Mon 9/1/08	Tue 9/23/08	Goldey																												
16	Lease Stipulation Research	1 day?	Thu 9/18/08	Thu 9/18/08	Phaedra																												
17	Research Presentation 2	1 day?	Thu 9/18/08	Thu 9/18/08	All Team Members																												
18	Site Visits	1 day?	Thu 9/18/08	Thu 9/18/08																													
19	Booker 1st Visit	1 day?	Fri 9/26/08	Fri 9/26/08	Lawrence,Sunny,Danic																												
20	Booker 2nd Visit	1 day?	Tue 10/14/08	Tue 10/14/08	TBA																												
21	Hawthorne 1st Visit	0.5 days?	Wed 9/24/08	Wed 9/24/08	Mary,Pankti,Jongpil,En																												
22	Hawthorne 2nd Visit	1 day?	Thu 10/23/08	Thu 10/23/08	TBA																												
23	Brandon 1st Visit	1 day?	Fri 9/26/08	Fri 9/26/08	Goldey,Crystal,Bo																												
24	Brandon 2nd Visit	1 day?	Mon 10/27/08	Mon 10/27/08	TBA																												
25	Team Charter	1 day?	Thu 10/2/08	Thu 10/2/08	Mary																												
26	Analysis	1 day?	Thu 9/18/08	Thu 9/18/08																													
27	Building Analysis	13 days?	Tue 9/23/08	Thu 10/9/08	TBA																												
28	Building Room Inventory	13 days?	Tue 9/23/08	Thu 10/9/08	TBA																												
29	Usable Technology Listing	1 day?	Tue 9/23/08	Tue 9/23/08	TBA																												
30	Leasing Restraint List	1 day?	Tue 9/23/08	Tue 9/23/08	TBA																												
31	Equipment List	1 day?	Tue 9/23/08	Tue 9/23/08	TBA																												
32	Phase 1 listing refinements (single usable research compilation)	4 days?	Thu 9/25/08	Tue 9/30/08	TBA																												
33	Phase II: Implementation and Development	43 days?	Tue 9/23/08	Thu 11/20/08																													
34	Subgroup Breakdown 2	43 days?	Tue 9/23/08	Thu 11/20/08																													
35	Layout Planning	26 days?	Thu 9/25/08	Thu 10/30/08																													

Project: GantChart
Date: Fri 9/19/08

Task Milestone External Tasks

Split Summary External Milestone

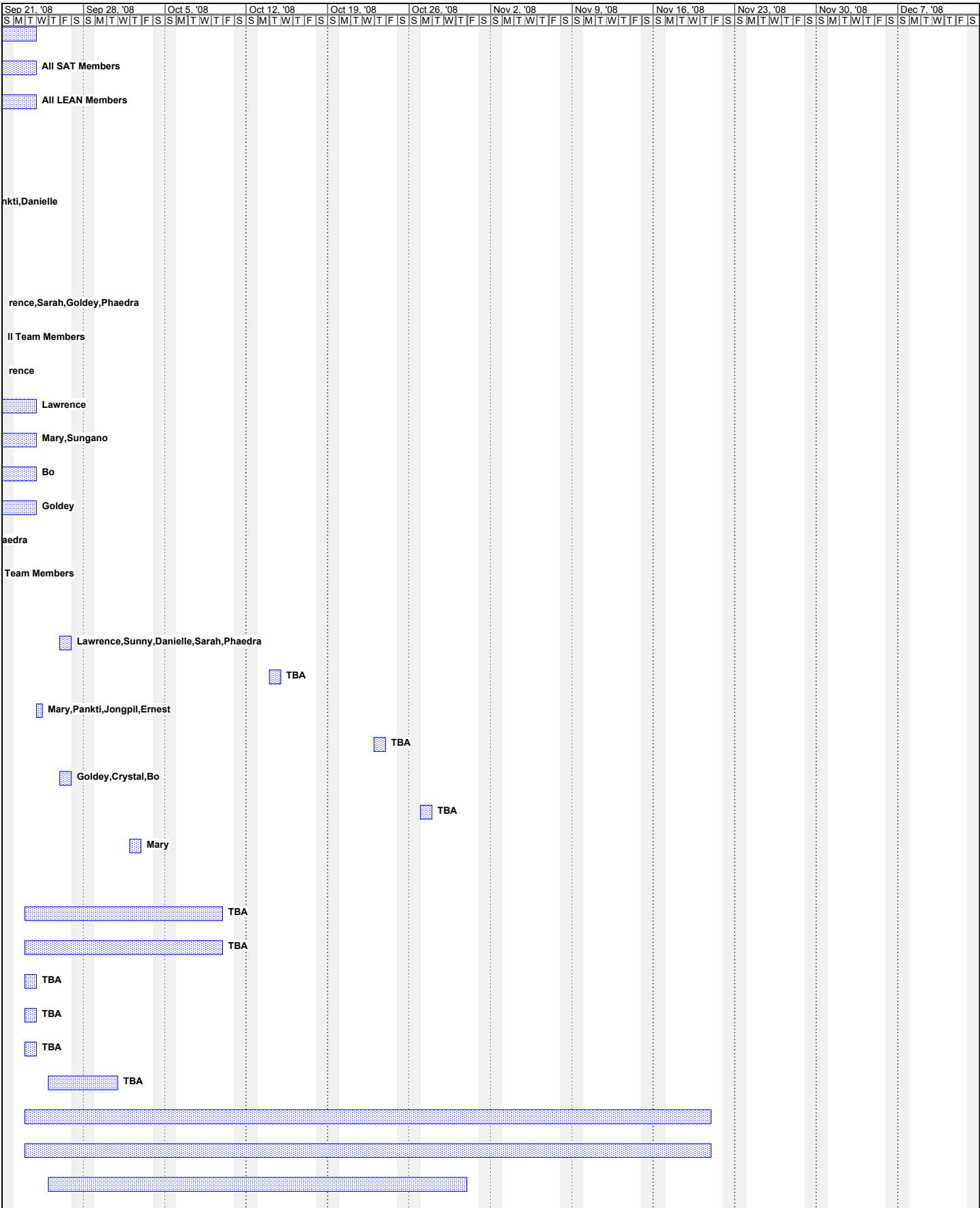
Progress Project Summary Deadline

ID	Task Name	Duration	Start	Finish	Resource Names	Aug 24 '08				Aug 31 '08				Sep 7 '08				Sep 14 '08								
						M	T	W	T	F	S	M	T	W	T	F	S	M	T	W	T	F	S	M	T	W
36	Floor Plan-creation of CAD files	9 days?	Thu 10/9/08	Tue 10/21/08	TBA																					
37	Renovation Timetable	6 days?	Thu 10/2/08	Thu 10/9/08	TBA																					
38	Digital Rendering	16 days?	Thu 10/9/08	Thu 10/30/08	TBA																					
39	Phasing Plans	1 day?	Thu 9/18/08	Thu 9/18/08	TBA																					
40	Financial study	1 day?	Thu 9/18/08	Thu 9/18/08	All Team Members																					
41	Abstract Rough Draft	1 day?	Thu 9/18/08	Thu 9/18/08	TBA																					
42	Mid-term Report	13 days?	Tue 9/23/08	Thu 10/9/08																						
43	Powerpoint Presentation	3 days?	Tue 9/30/08	Thu 10/2/08	All Team Members																					
44	Report draft 1	3 days?	Tue 9/30/08	Thu 10/2/08	All Team Members																					
45	Report draft 2	24 days?	Thu 10/2/08	Tue 11/4/08	All Team Members																					
46	Phase III: Finalization	38 days?	Tue 10/14/08	Thu 12/4/08	All Team Members																					
47	Final Reports	21 days?	Tue 10/14/08	Tue 11/11/08	TBA																					
48	Slide Show (ppt)	4 days?	Thu 10/16/08	Tue 10/21/08	All Team Members																					
49	Final Renderings	8 days?	Tue 11/4/08	Thu 11/13/08	TBA																					
50	Final Poster Presentation	6 days?	Tue 11/25/08	Tue 12/2/08	All Team Members																					
51	Access Presentation	3 days?	Tue 12/2/08	Thu 12/4/08	All Team Members																					
52		1 day?	Thu 9/18/08	Thu 9/18/08																						

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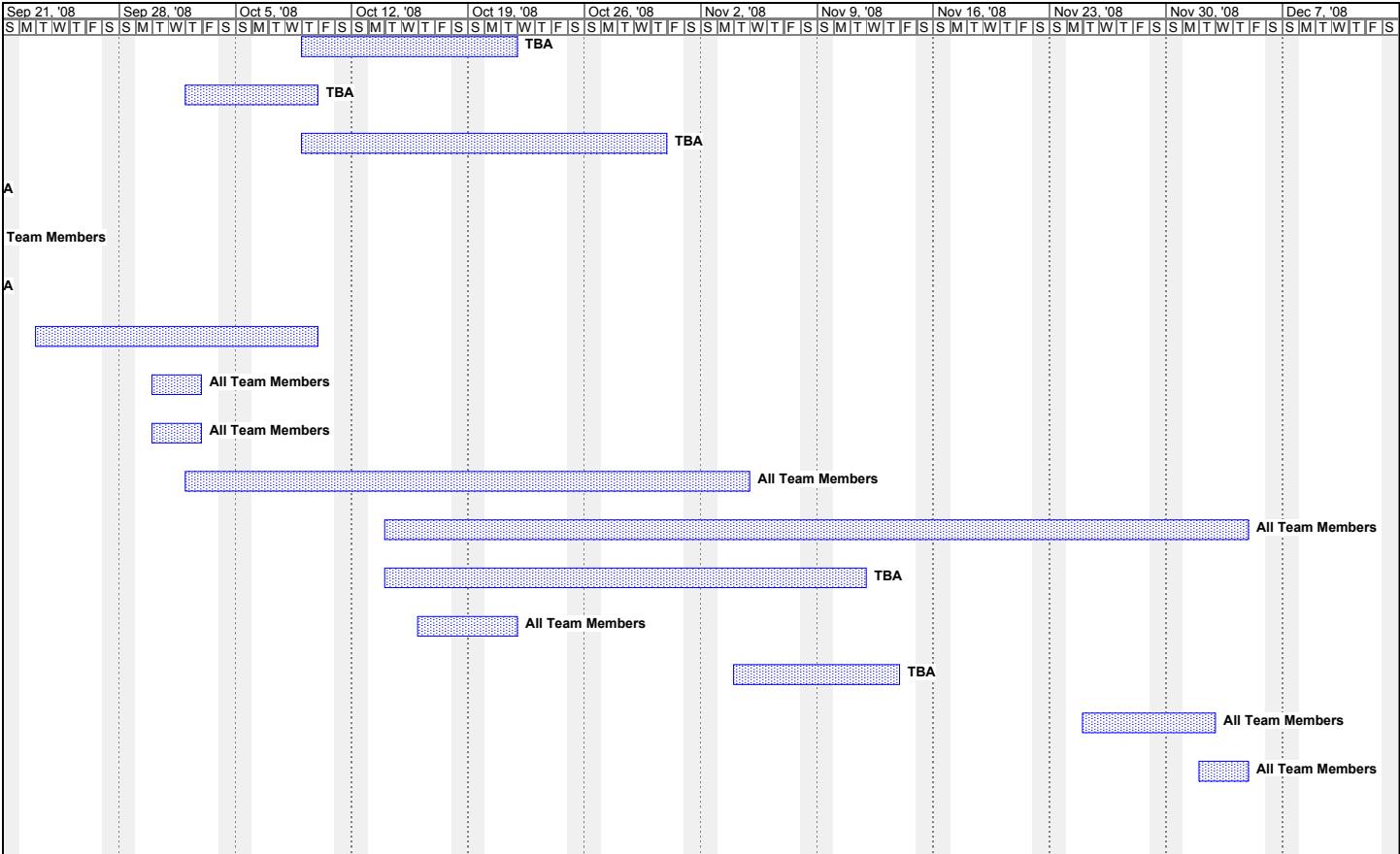
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Date: Fri 9/19/08






Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	



Project: GantChart
Date: Fri 9/19/08

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	



Project: GantChart Date: Fri 9/19/08	Task  Milestone	External Tasks 
	Split  Summary	External Milestone 
	Progress  Project Summary	Deadline 