IPRO It takes a team INTERPROFESSIONAL PROJECTS PROGRAM

ENPRO 359

Design of a Large Scale Structure for the 21st Century

ENPRO 359 Faculty Advisors

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Joshua Salisbury
Nathan Waisath

Amy Chun
Robert Knapczyk
Nam Nguyen
Bryan Slonski
Ruoxi Wang

I. TEAM CHARTER

1. Team information

IPRO 359 ROSTER			
Team Member	Major	Contact Info	
Erin Beardsley	Mechanical Engineering	ebeardsl@iit.edu	[redacted]
Austin Champlin	Mechanical Engineering	achampli@iit.edu	[redacted]
Amy Chun	Architecture	achun@iit.edu	[redacted]
Heather Grace	Architecture	hgrace@iit.edu	
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Rodolfh Masangkay	Civil Engineering	rmasangk@iit.edu	[redacted]
Maximillian Morgenthaler	Architectural Engineering	mmorgent@iit.edu	
Nam Nguyen	Civil Engineering	nnguye4@iit.edu	[redacted]
Patrick O'Brien	Civil Engineering	pobrien7@iit.edu	[redacted]
Joshua Salisbury	Civil Engineering	salijos@iit.edu	[redacted]
Bryan Slonski	Architecture	bslonski@iit.edu	
Justin Van Eaton	Civil Engineering	jvaneat@iit.edu	
Nathan Waisath	Architecture	nwaisath@iit.edu	[redacted]
Ruoxi Wang	Architecture	rwang26@iit.edu	[redacted]
Kathryn Weissman	Civil Engineering	kweissma@iit.edu	[redacted]

IPRO 359 Team Information				
Team member	Strengths	Weaknesses	Skills	Expectations for project
Erin Beardsley	Good team leader, creative problem solving	Not as developed in the knowledge of my major because am a sophomore	Microsoft Excel, Word, Powerpoint	To establish the knowledge required in a successful team project
Austin Champlin	Knowledge of thermal and mechanical systems, and the use of Microsoft Excel and eQuest. I have knowledge of alternative energy especially in solar energy.	My weaknesses are in relating with other majors and openly sharing my ideas in a large group environment.	Proficient at Microsoft word, excel and powerpoint, good writing skills, can connect different aspects of engineering/ design with the business side of things. Class and lab experience in mechanics of materials, can perform heat load calculations and use eQuest software for energy modeling of a building.	

Amy Chun	Communication programming, hard worker, persistent, familiar with many graphic programs	Lack of business knowledge, impatience, lack of presentation skills, time management	Autocad, 3DS Max, Microsoft Office, worked as an intern for two summers at an architecture firm so familiar with working with clients, projects, and field work.	I expect to work with a good dynamic, and produce a unique and interesting development.
Heather Grace	Communication, presentation skills	Time management	AutoCAD, 3D Studio, Photoshop, Illustrator, Microsoft Office, Networking, Presenting	Expect to design an effective development that is conscious of the community and has potential to grow.
Wesley Klockowski	Works well with others, Open mindedness, Critical Thinking, Leadership qualities, hard worker, positive attitude, punctual, and full commitment to my work	A weakness of mine would be the fact that I get nervous when speaking in front of groups. I have had a lot more experience with this over the past several years so I believe I am striding to overcome this.	Have skills in Civil Engineer aspects and also in the business threw my major and minor.	I expect our group to learn how to collaborate between the architects and engineers to solve the problem at hand and to work efficiently and effectively.
Robert Knapczyk	Good communication skills, good civil engineering skills, good in AutoCad, hard worker and good team member	Lack of business knowledge	Civil Engineering skills along with good knowledge in Autocad, Microsoft word, excel, and powerpoint.	My expectations for this project is to beat the other team and be successful in what we are trying to accomplish.
Rodolfh Masangkay	Does assigned job on time	Has trouble communicating effectively, not proficient with AutoCad	MS Office Proficient	That I will learn a lot from this IPRO (or how to plan a project for a construction site)

Maximillian Morgenthaler	Good researcher, graphic design, hard worker	Communication	Some knowledge of HVAC and electrical systems and building enclosure. Experience with AutoCAD, MathCAD, Adobe Photoshop, Illustrator, Golive and Indesign, Macromedia Freehand, Microsoft Office, Revit, AGI32. Graphic design experience.	To create a design for the former Michael Reese site that is both a draw to people of the community and for tourists and residents of other areas of the city.
Nam Nguyen	Team worker, ability to analyze information given by research, not afraid to speak up	Communication/ presentation skills	Graphic skills with various media, organization, design of presentation and tools.	Learn how to manage time and develop a structure project.
Patrick O'Brien	Hard worker, open minded, good team worker	Time management	Over the summer worked for a mechanical contractor. Learned skills in working with sub contractors, working with software that manages HVAC systems, and very proficient with Autocad.	Develop a well-planned project as well as overcoming time management difficulties.
Joshua Salisbury	Computer programming, problem solving, logic, organization.	Time management, non-technical communication.	Microsoft word, excel, powerpoint	Better team working skills, task focus, and business sense.
Bryan Slonski	Communication, thorough researcher, ability to keep a group moving	Time management	Google Sketchup, Google Earth, 3Ds Max, AutoCAD, Adobe Photoshop, Adobe Illustrator.	To work efficiently within the group and come up with a well thought out design/solution to the problems and issues proposed by the area

Justin Van Eaton	Ability to work with difficult people, ability to simplify complex problems	Likes to work alone, prefers not to suggest ideas	Structural Analysis, Structural Design, Concrete, Steel, Water, Computer Programming	Designing a building from the ground up effectively and logically.
Nathan Waisath	Graphic abilities, analyzing skills, team worker	Time management, communication	Graphic presentation through representation of ideas as well as physical structures/settings. Realizing built form through concept/scheme/ program/goals.	Expect us to win the competition and work well together.
Ruoxi Wang	Design knowledge, good team member	Communication, Responsiveness	Microsoft Word, Excel, and Powerpoint, AutoCad, and 3DS Max	I expect us to make a good project and work well together.
Kathryn Weissman	Communication, hard worker, good team worker, ability to analyze	Time Management	External Communication: making phone calls, writing e-mails to people or organizations outside of our IPRO Political Knowledge: Through political science courses and extracurricular activities, I have some knowledge of the Chicago and Illinois political systems Environmental Engineering: Through numerous elective courses, I have a limited understanding of air and water pollution treatment systems. Weakness includes no knowledge of soil treatment/remediation. Civil Engineering: Have taken courses in Cost Estimating, AutoCad, Foundations, Concrete and Steel design. Weaknesses include Structural Analysis and Design.	I expect us to work together as a team to design a building and create a business plan for the site of Michael Reese Hospital.

C. Team identity
Name: Reese's pieces
Logo: Seen on title page
Motto: "Taking a bite out of history."

2. Team Purpose and Objectives

Our team purpose is to develop a project on the site of the old Michael Reese Hospital that develops the community, brings in revenue, attracts development and revitalizes the surrounding areas. Our mission is to design something that attracts people and businesses through unique and innovative opportunities, as well as to establish a community where people can grow and develop leadership.

Objectives
Our team has set objectives concerning the project, our group, and beating the other team. Our project objective is to determine what the community needs, and to develop the local area to stimulate growth among the locality. That structure should comply with the most recent codes for the International Building Code, Chicago Building Code, and any other related guidelines.
Our team's objectives concerning the group itself is to improve on our teamwork, working to communicate our ideas and information in a more efficient way. We also aim to overcome the difficulties of communication barriers between strangers. In improving our team dynamic, we intend to create a competitive atmosphere that stimulates personal growth as students and as future engineers or architects. By creating an ethically-aware and competitive team, our group objective is to produce the better of two developments that suit the surrounding community as well as the purpose of this project.

3. Background

A. Include information about the customer/sponsor involved.
Although this project does not have a sponsor, our project objective is to propose an idea that developers could use as their beginning design for the Michael Reese campus site. This project may also inspire a prospective sponsor to further develop this project in the future.

B. Provide information about the user problem(s) the project is facing.
For our project, we are working with 37 acres of land owned and operated by the city of Chicago. This large amount of land has many benefits and challenges due to its location, zoning, surrounding neighborhood, and the lack of communication from the city concerning the site. It is difficult to decide how much of that land on which to propose a development, as well as what kind of development would potentially revitalize that area. The development must benefit the community, attract people and businesses through unique and innovative development, and establish a community where people can grow and develop leadership.

C. Present information about the technology or science involved or potentially involved in addressing the problem(s).
There are several potential technologies involved in the development of this project. They range from the technology needed for historical preservation to the actual structural design. Several technologies that need to be explored for this project are transportation technologies that suit the pedestrian and

vehicle flow as well as meet city codes concerning the roadways. We also plan to take advantage of technologies that enable us to redesign areas for safety as well as help keep that area safe. There will also be a lot of technology involved in the design and construction of the proposed building, using digital design software to simulation programs.

D. Offer information on the historical success or failure of previous attempts in addressing the problem(s)

In the 1930s, the Michael Reese Hospital faced the issue of relocation or remaining in the same location and revitalizing the community and surrounding areas. The hospital formed a committee called the Planning Staff of Michael Reese Hospital with the goal of solving the problems presented by the area through planning and development. A group of students and practicing architects headed by Walter Gropius undertook this project with the responsibilities of planning the hospital expansion and planning and stimulating private and public redevelopment of the slum sector of the city. As the hospital expanded, it started sponsoring the redevelopment of the surrounding areas, including Prairie Shores, and the redevelopment project called Lake Meadows. The hospital expansion was completed in 1958 and proceeded to become a well known research institute, as well as a hospital who served the community. The hospital closed it doors on June 30, 2009 as the city planned to use that site for the 2016 Olympic Village.

The city of Chicago had the goal of revitalizing this area by building the Olympic Village on this site for the 2016 Olympics. They obtained the permits, and began demolition in July of 2009. Several architectural critics said that the Olympic Village design itself, "lack[ed] creative sparkle," [1] and that the entire process in which the buildings of the hospital was bulldozed was an "act of cultural vandalism." [2] When the bid for the 2016 Olympics failed, the demolition of the hospital site ceased temporarily. There are no developers who are interested in this site right now, and there have been no steps taken by the city to make this site a viable outlet for any development.

E. Include any ethical issues that may be involved in investigating the problem(s).

Historical preservation is a main ethical issue. What few buildings of the hospital that remain standing are being fought for by historical preservationists. Many of the buildings that Walter Gropius designed around the world have been torn down and the few that remain are considered trademarks of the architect who founded the Bauhaus, and has been identified with starting a new era in architectural thought and history.

Another main ethical issue is associated with the design of the project. We face the ethical issue of determining who our audience is, and what their needs are. Because the development will serve such a large audience, not everyone will be satisfied with what would be done with the project. We face the ethical issue of interfering with the dynamic of the community as well as face the potential of breaching the trust of the community.

F. Provide information about the business or societal costs of the problem(s).

Cost Estimates		
Type	Estimated Square Feet	Estimated Cost
Small Scale Supermarket (ie Aldi)	18,000 SF	$2.6M
Large Scale Supermarket (ie Dominick's)	40,000 SF	$5.1M
Retail Store (ie Anything)	8,0000 SF	$1.1M
NOTE FOR RETAIL: More SF means less cost per SF, this is $138/SF		
Parking	150 Spaces	$600,000

For societal costs of the development, see 3E.

G. Offer details on the proposed implementation outline for any practical solutions developed by the project team.

1. *Research:* After doing the initial research to make a decision about what program is the most beneficial to the community more research must be done to determine zoning, potential developers, potential tenants, and for proposing options in how the masterplan could be designed. This stage also involves contacting community leaders, businesses, as well as contacting the current businesses that may look to expand. This step also establishes the design criteria imposed by codes and standards such as the International Building Code or ADA Guidelines.
2. *Location:* This step focuses on where the best location for our anchor program is on the overall site. In this, we study where the traffic and circulation flow would influence the transportation dynamics as well as how those patterns relate to where the program should go. This also helps us zone areas in the site so it can be broken down into further phases for future development.
3. *Design/ finance:* This the most important stage in which we design the building to hold our program. There will be groups planning different aspects of the building, from the structure to the actual aesthetic and logical design. There will be a more in-depth study concerning transportation. In this process there will be continuous cost estimating, with costs meeting standards as well as any unforeseen issues that occur. With this cost estimating, the business plan will be established.
4. *Presentation:* This aspect of the project is the most important part of the project. The sub - groups will be working together to determine what the most appropriate information will concisely and accurately reflect the ideas and design of the project. This presentation is what will be used in the future to attract developers, as well as future investors.

4. Team Values Statement

A. Ethically Tolerated Behaviors

In order to be an effective unit, the team has identified "ethically tolerated" behaviors detailed in the following. Members are responsible for:

- Attendance at class, meetings, and sub-group meetings
- Responding to emails in a timely manner
- Updating their profiles and current contact information
- Completing their assigned work
- Staying within the confines of the law and codes in the design
- Being honest and open minded within the group
- Being willing to discuss different ideas and objectives, or contributing to the group discussion

B. Conflict Resolution

The following steps will be taken when issues arise:

- First, attempt to resolve the problem within the subgroup.
- The second step would be to ask other IPRO group members for advice.
- As a last resort, contact IPRO instructors.

- No-shows/ incomplete tasks need to be recorded and addressed personally. If not resolved, then issue will be reported to the instructor in order to avoid any delays in the project.
- Resolve problems with time conflicts within individual subgroups on personal basis, for large group meetings outside of class, work to accommodate a majority of the team members.
- Promptly report time conflicts with weekly meeting to the instructor, report time conflicts with subgroup meetings to the group leader and instructor.

II. PROJECT METHODOLOGY

1. Work Breakdown Structure

A. Problem Solving Process

Familiarization with the Michael Reese campus and surrounding areas is a first priority for all team members. There are many factors that need to be considered when developing such a significant piece of property, and team members must all be aware of them. We will create a plan for development from a combination of economic, historic, public, and geographic analysis.

The open-ended goal of this project creates a very subjective work environment, and opportunities for real world testing will be limited. Potential solutions will be examined for suitability by the four sub-teams, by project faculty, and potentially by external agencies (e.g. developers, government).

The basic work flow will be as follows:

- Research will be conducted by all teams and brought to bear on major decisions.
- Field trips, e.g. to the Reese campus, will be taken as needed.
- Type of development will be chosen from all options presented by group members.
- Economic analysis will be conducted to determine viability and potentially interested businesses.
- Traffic analysis will be conducted to assess degree of development possible.
- Cost estimation will proceed in parallel with architectural and structural design.
- Business presentation will be created to summarize work on IPRO day.

Major tasks include:

- Identify businesses willing to open shop in the Michael Reese development.
- Conduct economic analysis to determine scope of initial development.
- Identify predominant needs and desires of surrounding community members.
- Maintain awareness of historic significance of Michael Reese campus.
- Design anchor architecturally and structurally.
- Create cost estimation for development.
- Create business presentation.

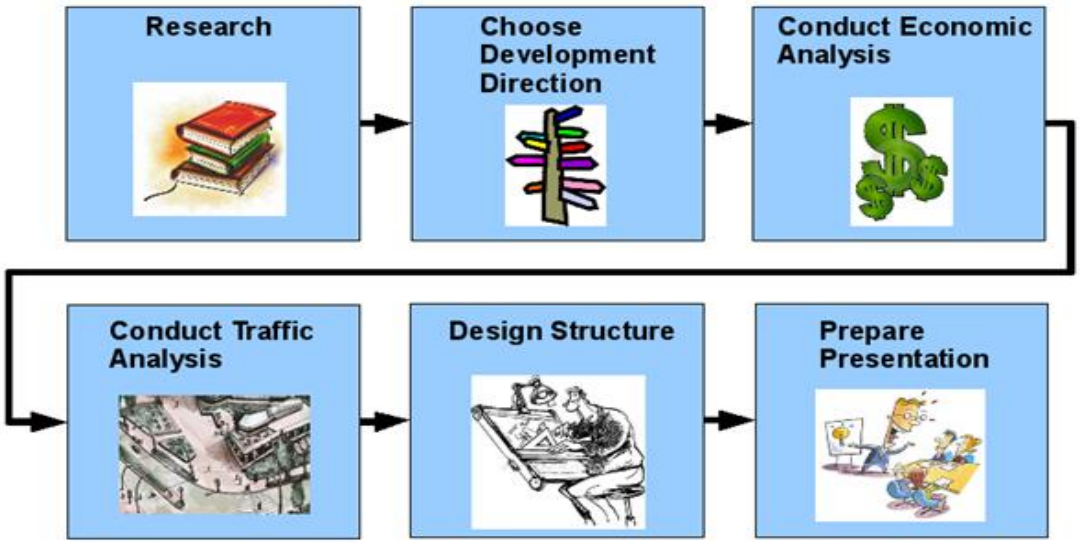
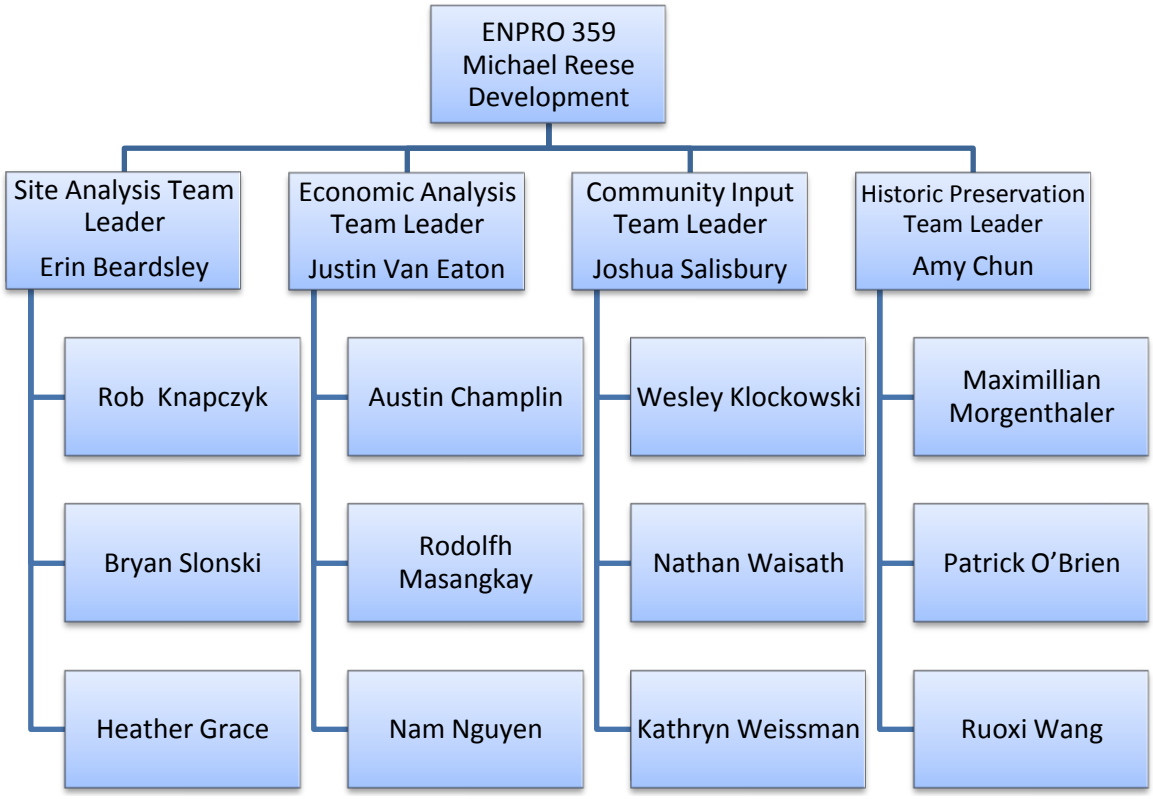


Diagram of Problem Solving Process

B. Team Structure



Site Analysis Team

The Site Analysis team's responsibilities will be to analyze the area around the Michael Reese site and to determine what is best needed at the site. This team will research the existing houses, schools, forms of transportation, and entertainment locations in the area.

Economic Analysis Team

The Economic Analysis team's responsibilities will be to analyze the economic aspects of the project. The team will research and estimate the cost of new construction of certain types of facilities in the area. Also, this team will research the average income of people in the community to help determine what kind of development should be built on the Michael Reese site.

Community Input Team

The Community Input team's responsibilities will be to identify what the community desires in this location. This team will contact community schools, churches, and businesses and get their opinion on what would help the community. The team will also ask people who live in the nearby residences for their opinion.

Historic Preservation Team

The Historic Preservation team's responsibilities will be to try and incorporate historic values and goals of the development of the Michael Reese Hospital into the project. This team will advise the other teams in historically-related decisions and help other teams as well.

C. Work Breakdown (Gantt Chart)

Available in Appx. A

2. Expected Results

A. IPRO 359 will involve Site Analysis, Economic Analysis, Community Input, Historic Preservation. These major research areas will provide the group with necessary information to pursue an informed development design. The facts brought by this research stage will come together in the design phase, where we try to reach a successful strategy and then implement this into our proposal.

B. We expect to collect data pertinent to the areas listed above. Site analysis will allow us to understand the surrounding content. If we find out what is there, we will know what is needed and in addition can understand what has succeeded in the area. Economic analysis will explore our problem in terms of possibility and profit. We will be building within the constraints of reality. We hope to reach the community and incorporate their interests and wants. It is a goal of ours to build something the community will use and possible cherish. In addition to the expected data from these specific areas, our problem also demands knowledge in historic preservation. We must understand preservation advantages, possibilities, and results. We have a chance, in the history of Michael Reese Hospital, to embark on preservation practices.

C. There is a great potential to design something informed from our research. We hope to produce something on the site that will have a great potential to expand over time. The design wants to be something of the community, but also a destination.

D. Some potential outputs we have discussed are anchor elements for a larger future development. Proposals have included: restaurants, food stores, a casino, a hotel, and housing. There must be detailed thought in not only the qualities of such an entity, but also the overall future master plan. It is important how this entity relates to the development and how the development may influence the entity.

E. The deliverable we hope to reach would be a development plan for the Michael Reese site. It would include a thoroughly designed anchor element, proposed as the first piece of the site. It will be placed within its context as a sole structure on the site, as well as addressed as the anchor for future expansion within our proposal. This anchor will be designed completely in terms of architecture, engineering, and business. It is the overall goal to encompass each of our individual expertise into the anchor. Showing the potential of this structure and our ability to create it, we hope to expose success of our future site development.

F. One major challenge we anticipate deals with the "legacy" of the Michael Reese site. There are many ways to go about addressing the issues within this particular site. We have been informed of the hand that Walter Gropius had in planning this site. His architectural presence has been argued within many of the Michael Reese buildings. We now face the decision on how this information may or may not influence our thinking. Another challenge arises in the importance of our ideals against the realities of

the site and community. Another challenge is the possibility of our conceptions to flourish in real world development circumstances. We also face the issues all groups encounter: incorporating the diverse knowledge/skills of each individual, allowing everyone to be heard and respected, and coming together as a whole to pursue one goal.

G. Each area of research will be analyzed in an approach to the solution. We will use all the pertinent information gathered to create the best design. The solution will not be specific to one area, but rather a collaboration of many fields and facts. We will have information to make educated design strategies in pursuit of a sustainable future at the Michael Reese site.

3. Project Budget

Category	Requested	Explanation and Details
Supplies	$500	Supplies for any type of development study including model materials, printing, and drawing supplies.
Presentation	$50	Cost of printing information to present to anyone who may have involvement in the development of our plan
Team/Guest Presenting	$150	Refreshments for guest speakers and students who will be presenting to us throughout the semester.
TOTAL	$700	

4. Designation of Roles

Role	Name	Role Description
Minute Taker	Kat	Records minutes and decisions made during meetings, including task assignments or changes under consideration. Submits a copy of the minutes on iGroups
Agenda Maker	Amy, Erin, Josh, Justin	Creates an agenda for each team and sub-team meeting, which provides structure to the meetings and offers a productive environment, as well as allows for additional items to be added on as needed
Time Keeper	Wesley	Responsible for making sure meetings go according to the agenda, helps regulate debates and discussions
iGroups Moderator	Patrick	Responsible for organizing the team's iGroups account and ensuring that it is updated regularly

Appendix A

ID	Task	Start Date	End Date		Week 1	
	Deliverables				12-Jan	14-Jan
0	Project Plan	12-Jan	5-Feb			
1	Midterm Reviews	18-Feb	4-Mar			
2	Ethics Reflective Report	11-Mar	26-Mar			
3	Final Project Report	25-Mar	9-Apr			
4	Abstract/Brochure	1-Apr	19-Apr			
5	Poster	1-Apr	19-Apr			
6	Final Presentation	8-Apr	22-Apr			
7	Final Project Report	15-Apr	30-Apr			
	Research					
8	Site Analysis	12-Jan	9-Feb			
9	Historical Preservation	12-Jan	9-Feb			
10	Economics	12-Jan	9-Feb			
11	Community Input	12-Jan	18-Feb			
	Marketing and Economics					
12	Potential Developers	9-Feb	13-Apr			
13	Funding	9-Feb	13-Apr			
14	Advertising	9-Feb	13-Apr			
	Design					
15	Plot Layout	16-Feb	2-Mar			
16	Accessibility	16-Feb	23-Mar			
17	Architectural Design	23-Feb	6-Apr			
18	Structural Design	23-Feb	6-Apr			
19	Future Development Plans	18-Mar	6-Apr			
20	Final Set of Plans	16-Mar	1-Apr			

Week 2		Week 3		Week 4		Week 5		Week 6		Week 7	
19-Jan	21-Jan	26-Jan	28-Jan	2-Feb	4-Feb	9-Feb	11-Feb	16-Feb	18-Feb	23-Feb	25-Feb

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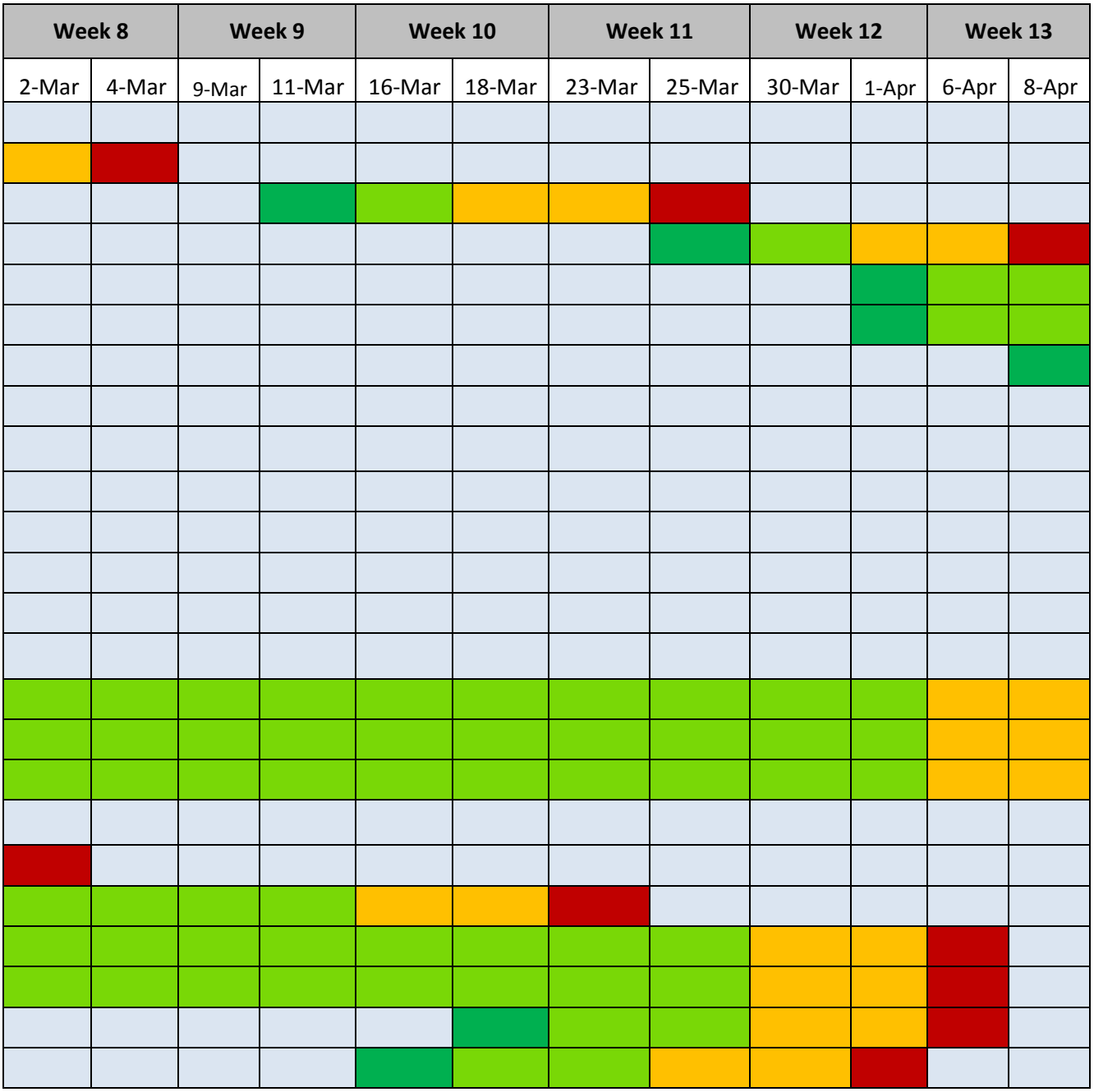

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Week 14		Week 15		Week 16	
13-Apr	15-Apr	20-Apr	22-Apr	27-Apr	29-Apr

Key	
	Start Date
	Continual Progress
	Finalizations
	End Date