

STEM² @ PERSHING

A revitalization of Pershing Square in Los Angeles, CA

Construction Budget

Construction Budget			
	Total	% of Project Total	\$/GSF
Direct Costs			
Demo	\$2,118,710		
Structure	\$144,918,200		
Interior Construction	\$6,309,870		
Interior Furnishings	\$736,694		
Stairs	\$405,000		
Conveying	\$950,000		
Special Construction	\$20,167,740		
Sitework	\$18,041,531		
Plumbing	\$15,491,820		
Mechanical	\$9,682,387		
Fire Protection	\$3,872,955		
Electrical	\$9,682,387		
Misc.	\$4,352,768		
Subtotal	\$236,730,061	60.3%	\$1,033
General Expense Costs			
Project Staff	\$14,677,264		
General Conditions	\$3,314,221		
General Requirements	\$14,677,264		
Major Construction Equipment	\$47,346,012		
Subtotal	\$80,014,761	20.4%	\$349
Contingency, Fee, Insurance, & Taxes			
Contingency	\$31,674,482	10%	
Fee	\$11,086,069	3.5%	
Insurance	\$3,167,448	1%	
Taxes	\$30,090,758	9.50%	
Subtotal	\$76,018,757	19.4%	\$332
TOTAL			\$392,763,579
	GSF		229161

Design Process Q & A

Question A: Define and/or describe the problems/challenges you faced when deciding on the project you chose to do for the competition

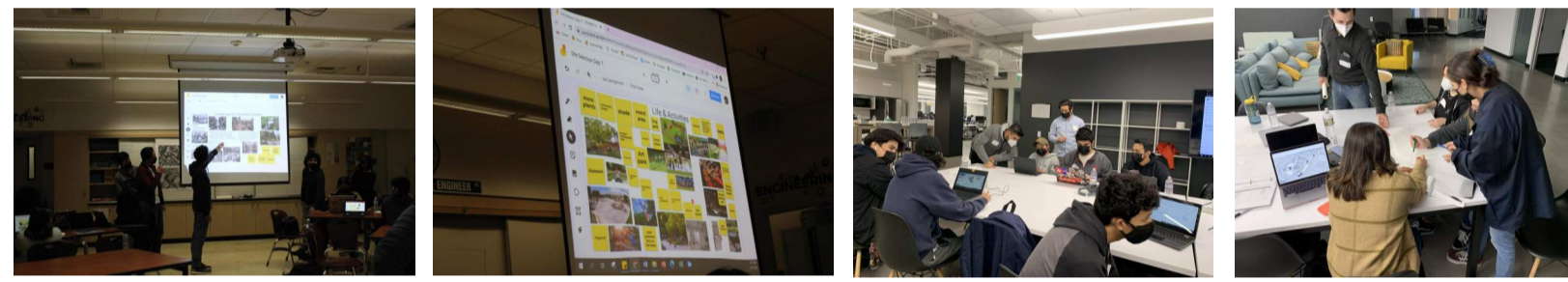
The majority of challenges we faced were found working with the design software (SketchUP) and coordinating within the group to have a comprehensive model. The difficulties we faced in the design were often found using the software when compiling and importing files into one program. When the group imported the design files into the main program, it would create an overlap that would not fit correctly. These issues would require complete remodel, and lead to applying different techniques between team-members to create a model that was "flush" in appearance.

Renovating a large parking and metro area was a challenge when trying to leave the least amount of empty area while at the same time leaving space for people to walk around. Each section created by a different person was difficult to compile into our final project. All sections were meant to look like they were created by one person. A lot of changes must have happened before our final compile was created.

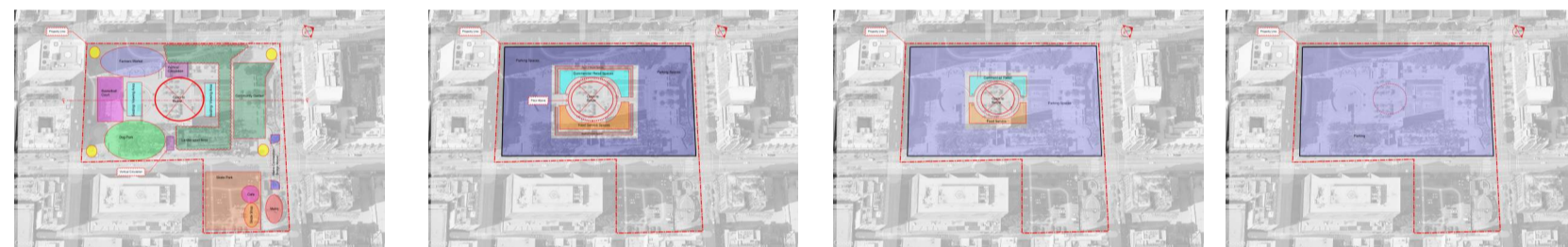
Question B: Thoroughly describe your process, in writing and through visuals (e.g., sketches, renderings, stepped process, before and after, budgets, timelines, workflow, etc.) that specifically and realistically meets the PRECISE or exact nature of the challenge and/or the client goals/needs.

The Design process began with a site selection that focused on upgrading existing infrastructure in the city that would promote community involvement from an urban renewal project. As a class we discussed different locations within the city where urban decay and population flight was observed. We discussed multiple locations; Leimert Park, Pershing Square, and parks in Pacoima. Then selected the site of Pershing Square.

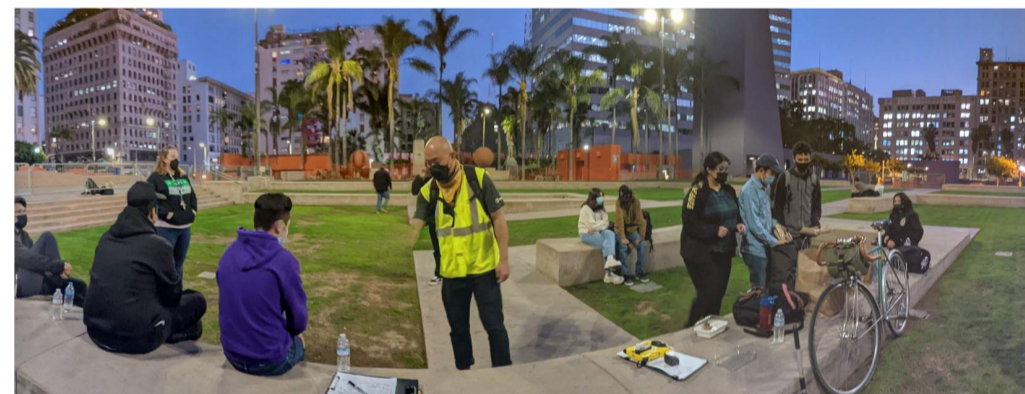
With the selection of Pershing Square we began a collaborative brainstorming session, using jamboard, to become familiar with the site's historic content, review previous designs, research materials, sustainable energy construction, and plan for the upgrade to give a urban rebirth to the Square (i.e. markets, skate parks, retail stores, basketball court, etc.).



After the brainstorming session, a simple design using a "bubble map system" to outline our ideas, and define locations on a Pershing Square site map. After researching the site, we discovered a 3-level parking garage beneath the park, an adjacent under-utilized parking lot, and metro station, to be incorporated into the design, that would add to the rebirth and upgrades to the site location. A bubble map was created for these additional locations and structural sections.



A site visit was made to take notes, measurements, and pictures of the existing structures, and surrounding area.



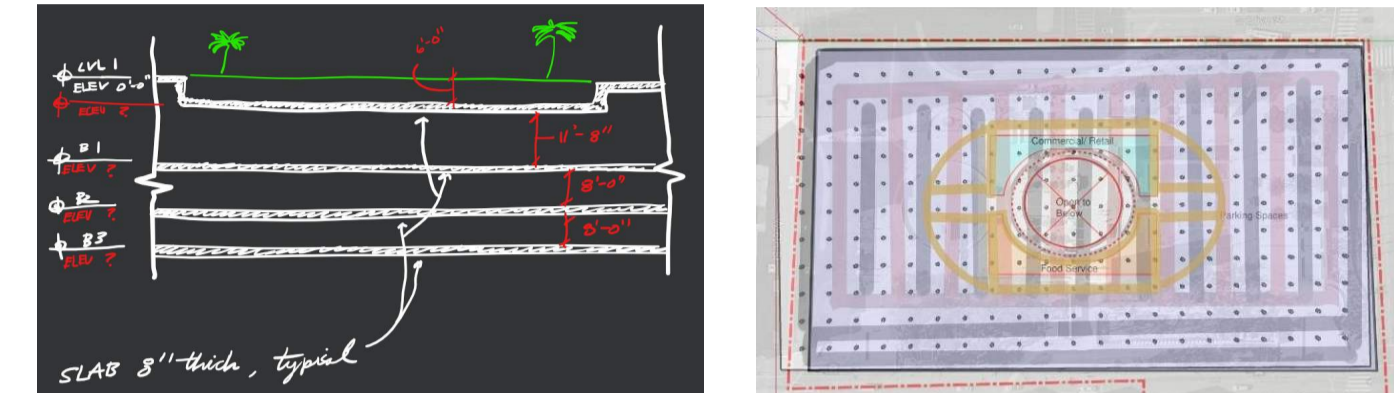
Then a comprehensive design was agreed upon for Pershing Square's ground level, parking garage, and the adjacent parking lot/metro stations. We decided to divide into three design teams, to distribute the work, and allow students to pursue their own interests.

Each team sketched ideas on paper, and modeled their design locations in SketchUp. Each team had to finalize their designs based on the important goals they previously developed, and the client criteria ("City of Los Angeles", the mentors acting as the client).

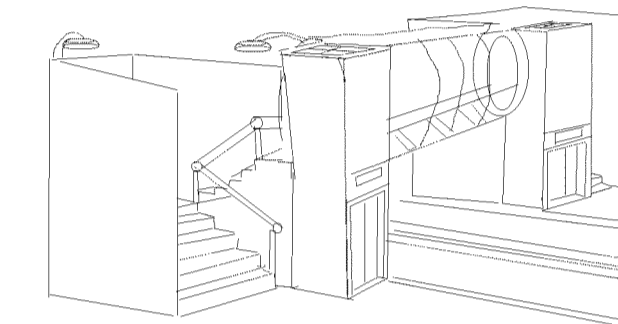
Pershing Square Ground Level: The ideas were adding more shade, before the redesign where there were more trees than concrete, renovating the dog park and sections we are deciding to keep adding areas for businesses above and below ground, adding activities to entertain those who chose to stay, and renovating the existing dog park.



Pershing Square Underground Parking Levels: open air connection to the ground level, retail/commercial space, and maintain parking spaces. project to help divide our work between each member. This allowed us to construct and design our final designs in Sketchup.



Adjacent Metro/Parking lot: Skate park, pedestrian bridge to connect Pershing square to adjacent location, metro stop design, and shop/restaurant



From the models a cost estimate and schedule was developed on Microsoft excel. The three teams came together to measure their quantities of square footage, tonnage of steel, cubic yards of concrete, determine cost of materials used in the redesign, and cost retail/commercial space.

A gantt chart schedule was devised based on a logistical construction phase diagram. Starting with site demolition, and beginning of construction in Pershing Square, then moving to the pedestrian bridge, adjacent metro station, and finally the construction of skate park.

Question C: [First Part] Explain how your approach is an appropriate, innovative solution that realistically responds to the precise project challenges (including use of materials/construction methods, etc.)

Our design is a more modern design, with a better atmosphere, than previous designs. The previous design felt like buildings were placed on property, just to be placed there, the design was not cohesive, and was very old and run down. Our design includes a centralized accessible area, with a spiraling staircase, that lets in natural light, remove most of the concrete on the ground and turn it into grass filled fields, and is welcoming to the public. We wanted to create a relaxing place for people of all ages by having a welcoming, non-abrasive design.

[Second Part] Explain how your entry is different from other approaches or processes, if such is the case; and/or meets budgetary constraints, timeline issues, or other construction challenges.

When deciding our location we benefited from living near a common location that complained about its aesthetic and usability. Our team began by using group sharing apps, google drive and Bluebeam Revu to work on the design and brainstorming to meet the deadline. After we switched into our groups we switched to sketchup where each individual worked on a part for their section. The google drive allowed us to share our individual parts but with limitations in different versions and different files making it difficult to make one larger file.

Question D: Describe any social/ecological or otherwise beneficial qualities of your solution. (For example, is it universally applicable? Is it environmentally friendly? Does it use cost-effective or recyclable materials? Etc.?)

We made our design not only to make Pershing Square look great again, but be more lively as well as help the environment with the addition of trees, grass, shade to make it more of a park, a community garden, maintaining the dog park, and an additional farmers market to bring people to the park. Not only that but we also make it accessible to disabled people and improve the overall architecture.

Question E: Describe what you learned from this competition.

We learned how to work under pressure, and work well as a team. This program showed me that it is important to work with everyone, because everyone is working on a different part of the project, and it makes things so much easier when everyone works together. We also learned more about upcoming college expectations, work life, and the work environment. This program was really helpful at showing us the engineering and architecture industry.

Project Schedule

TASK	START	END	2022				2023				2024				2025															
			7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6				
Design & Pre-Construction	7/1/22	6/30/24	[Gantt bars for Design & Pre-Construction]																											
Design	7/1/22	6/30/23	[Gantt bar for Design]																											
Permits	12/1/22	2/29/23	[Gantt bar for Permits]																											
Preconstruction	12/1/22	6/30/23	[Gantt bar for Preconstruction]																											
Submittals	6/1/23	6/30/24	[Gantt bar for Submittals]																											
Construction	3/1/23	10/31/24	[Gantt bars for Construction]																											
Demolition	3/1/23	4/30/23	[Gantt bar for Demolition]																											
MEP Rough-in	5/1/23	7/31/23	[Gantt bar for MEP Rough-in]																											
Deck/Columns	7/1/23	10/31/23	[Gantt bar for Deck/Columns]																											
Pedestrian Bridge	8/1/23	1/31/24	[Gantt bar for Pedestrian Bridge]																											
Stairs	8/1/23	11/30/23	[Gantt bar for Stairs]																											
Dog Park	2/1/24	6/30/24	[Gantt bar for Dog Park]																											
Basketball Court/Seating	2/1/24	6/30/24	[Gantt bar for Basketball Court/Seating]																											
Recreation Area	4/1/24	7/31/24	[Gantt bar for Recreation Area]																											
Shops	4/1/24	10/31/24	[Gantt bar for Shops]																											
Metro Station	7/1/23	12/31/24	[Gantt bars for Metro Station]																											
Demolition	7/1/23	8/31/23	[Gantt bar for Metro Station Demolition]																											
MEP Rough-in	9/1/23	11/30/23	[Gantt bar for Metro Station MEP Rough-in]																											
Concrete Work	11/1/23	2/29/24	[Gantt bar for Metro Station Concrete Work]																											
Escalators	1/1/24	6/30/24	[Gantt bar for Metro Station Escalators]																											
Elevator	1/1/24	6/30/24	[Gantt bar for Metro Station Elevator]																											
Finishes	7/1/24	12/31/24	[Gantt bar for Metro Station Finishes]																											
Completion	12/1/24	6/30/25	[Gantt bars for Completion]																											
MEP Start Ups	12/1/24	2/28/25	[Gantt bar for Completion MEP Start Ups]																											
TCO	2/1/25	2/28/25	[Gantt bar for Completion TCO]																											
Punch List/Close out	2/1/25	5/31/25	[Gantt bar for Completion Punch List/Close out]																											
Certificate of Occupancy	6/1/25	6/30/25	[Gantt bar for Completion Certificate of Occupancy]																											

Construction Phases

