

Research Paper Final Assignment: 5M Development, San Francisco

- I. Introduction
- II. Background Information
- III. City Profile
- IV. Project Objective
- V. Project Design Construction
- VI. Planning and Policy
- VII. Environmental Setting
- VIII. Project Development Issues
- IX. Project Current Condition
- X. Future Solution for Sustainability
- XI. Bibliography

I. Introduction

The 5M Development is a mixed-used project including offices, retail stores, residential areas, cultural and educational centers with open spaces located in the southwest quadrant of Fifth and Mission Streets in Downtown San Francisco. The project includes renovation of two old buildings, the destruction of six existing buildings, and the construction of four new buildings.

II. Background Information

The project selected its location within local public transit for people to have convenient access to transportation; Aimed to create a high quality housing area in order to meet the needs of potential residents; Saves the Chronicle building and the Dumpster Printing building as cultural marks for the community. The Buildings will be 400 feet in height and approximately 1850100 gross square feet of ground floor uses. The entire project was divided into two groups: The Residential Scheme and the Office Scheme. The Office Scheme has 914 residential units, the Residential Scheme consists of 1209 residential units.

The buildings incorporated inside of 5M development includes: M-1 the Chronicle building located at 901-933 street; M-2 located at 947-949 street, 941-945 street, 939 street; N-1 located at 110 fifth street; N-2 located at 110 fifth street and 430 Natoma street; N-3 Dempster Printing building located at 447-449 Minna street; H-1 located at 172 Fifth street, 190 Fifth street, 910 Howard St, 912 Howard Street, 924-926 Howard Street, 914-918 Howard Street; H-1-N-2 Connector located at Natoma Street. Shown in Figure 1.

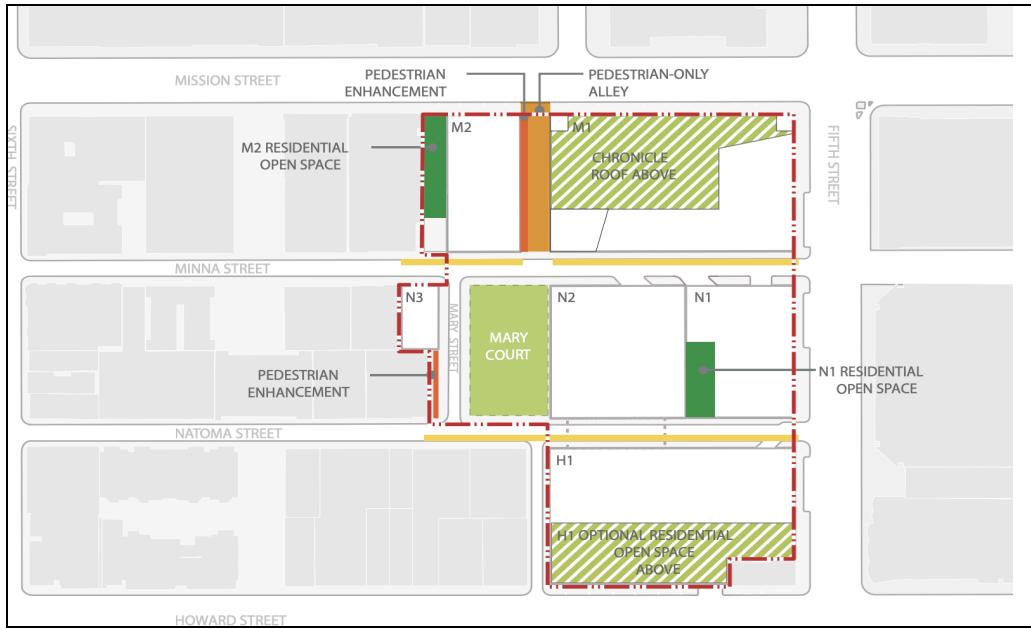


Figure 1: 5M Development Open Space Plan

Under new building construction: the Chronicle Building, M-1 will install a new public elevator and staircase which reaches the rooftop area. Adding additional rooftop space and new pedestrian entrances and exits. Upgrade the current mechanical, electrical, plumbing, and consolidation of the building system. The new Chronicle Building consists of 84800 gross square feet of office space, 42400 gross square feet of active ground floor space. The rooftop consists of 22000 square feet of a privately owned public space, and an enclosed area for small retail service business with approximately 5000 gross square feet of floor space.

The building M-2 that is located at the west of building M-1 is about 220 feet tall, with 256500 ground square feet building space and 288 units for residential space, and a gross floor area consisting of 13600 ground square feet.

The building N-1 that is located at the south of building M-1 is about 470 feet tall, with 577500 ground square feet building space and 17900 ground square feet of active ground floor space.

The building N-2 that is located at the west of building N-1 is about 195 feet tall and with 208400 ground square feet building space containing 28400 square feet of active ground floor space and 18000 square feet of office building space.

The connector building H-1 to H-2 is about 17800 ground square feet that serves as a connector between H-1 and H-2. The connector has a length of 90 feet, width of 30 feet, and the base of 105 feet, which connects to up to 6 floor plans between buildings. The connector provides building transition for workers and pedestrians.

The Dempster Printing building consists of 12000 ground square feet of office space. The building goes through a renovation to improve its structure and development of its interior and exterior infrastructure.

The building H-1 that is located at the south of building N-2 is about 434 feet tall with 627600 ground square feet of building space. Part of 577300 ground square feet will be used for office space and 50300 ground square feet will be used for ground floor space.

With the new renovation planning, the new building H-1 will be 411 feet tall with 688300 ground square feet of building space including 334100 ground square feet of residential space, 303900 of office space and 50300 square feet of ground floor space. An example can be shown in Figure 2.

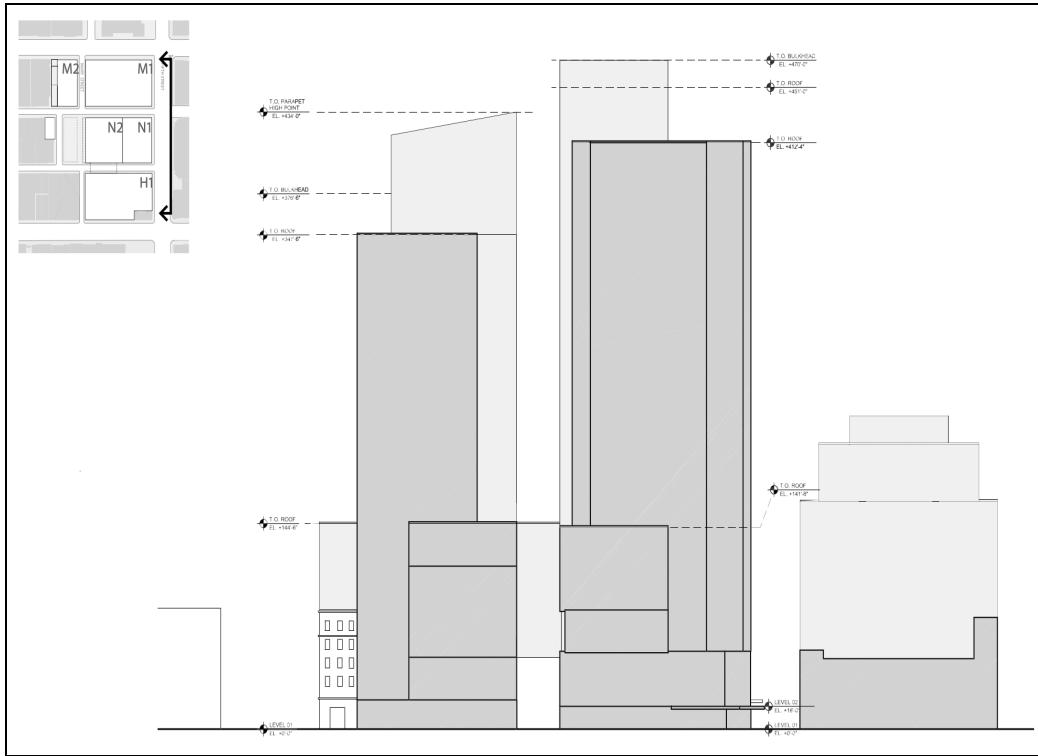


Figure 2: Example of building floor plan

III. City Profile

The total population of San Francisco City, California was around 873965 people. The median age of the population in San Francisco was 40.4 years old. The most type of language spoken in the city was English, which 56.7 percent of the population speaks; 10.4 percent of the population speaks spanish; 25 percent of the population speaks languages from Asia and Pacific Islanders; 6.9 percent of the population speaks European languages.

The total employment status and rate of the population was around 66.4 percent. Under the employment populations, 66.8 percent of the population are employed in a private company as workers; 3.5 percent of the population are self employed in their own business company; 10.2

percent are enrolled in private not profit companies; 12.9 percent are workers in local, state, and governmental systems.

The total household that supports the family and living arrangement of the population was around 361912 households. In those households, 35.3 percent are married coupled family households; 27.3 percent are male householders with no spouse present; 28.6 percent are female householders with no spouse present.

The average median household income of the residents of San Francisco was around 136692 dollars per year. Regular families tend to earn up to 167861 dollars per year, married couples and families tend to earn up to 203540 dollars per year, nonfamily households tend to earn up to 102409 dollars per year. Around 10.4 percent of the population in San Francisco are in poverty.

The total housing units around San Francisco was around 406628 housing units. The average median gross rent of housing in San Francisco was around 2308 dollars per month. 32 percent of the occupied units pays over 3000 dollar and more per month; 12.3 percent of the occupied units pays between 2500 to 2999 dollars per month; 14.9 percent of the occupied units pays between 2000 to 2499 dollars per month; 13.5 percent of the occupied units pays between 1500 to 1999 dollars per month; 11.8 percent of the occupied units pays between 1000 to 1499 dollars per month; 8.1 percent of the occupied units pays between 500 to 999 dollars per month; 7.4 percent of the population pays less than 500 dollars per month.

In San Francisco, around 61.4 percent of the population has attained higher education equivalent to and above a Bachelor's degree. 26.2 percent of the population attained a Graduate or Professional degree; 35.1 percent of the population attained a Bachelor's degree; 5.4 percent

of the population gained an Associate degree; 10.9 percent of the population gained a highschool or equivalent degree.

IV. Project Objective

The developer of this project wishes to build this mixed-use development with residential, commercial, and cultural properties in Downtown San Francisco. The South of Market Area would place urban designs, large scale buildings, a street wall aligned with buildings that provides transitions to large buildings. A commercial center with large floor plates would be built, considering open spaces connected horizontally with the workplace area. The project aims to provide more job opportunities in order to establish and promote the city's economic status. To promote sustainability using the Leadership in Energy and Environmental Design on sites.

The open spaces under the Office Scheme would be 44600 square feet of shared open space, the 36700 square feet of public space would be privately owned but accessible to the public and the other 7900 square feet of public space would be exclusively for residents. The open space under the Residential Scheme is 62100 square feet, the 36700 square feet of public space would be privately owned but accessible to the public and the other 25400 square feet of public space would be exclusively for residents.

The open space would be located at two locations: one is the court between Minna Street and Natoma Street, called the Mary Court. And the other one is the open space rooftop of the Chronicle building.

The Mary Court would serve as the project's central public space by vacating the current existing Mary Street segments. An overhead canopy or trellis shall be constructed occupying at least 50 percent of the area of the Mary Court. Thus Mary Court could accommodate events for local residents open to the public. On the northside of the Mary Street pedestrian section, a 1600 square feet of open space would be established to a pedestrian only alleyway. An example view of Mary Court street is shown in Figure 3.



Figure 3: An example view of Mary Court Street with overhead canopy

The Chronicle Rooftop would be approximately 22000 square feet of space open to the public. Along with other open spaces such as the west side building of M-2 The Stepped Terrace with approximately 4400 square feet of open space on the ground floor. The open space of N-1 building which is approximately 3500 square feet of open space . And the open space rooftop of the building H-1 with approximately 17500 square feet of open space.

The open space connection between the intersection of Mary Street, Mission Street, and Minna Streets converts to a pedestrian only walkway called the North Mary Pedestrian Alley. The new Mary Street between Minna Street and Natoma Street would align with the approximately 75 feet western boundary along the site. The new sidewalk would be 32 feet wide with 10 feet on both sides of the road in the middle section with traffic accommodating vehicles traffic. The new open space could serve multiple services such as cafe seating, pedestrian travels, and parking.

V. Project Design Construction

The project's design draws from diverse architectural elements of the downtown SoMa applying on site of the building N-1 and H-1. With the development controls of the Special Use District major governor and board of supervisors, the project receives permitted data such as land use, maximum allowable development, height, building separation, mass control, open space, vehicle limits.

The canopies design placed in the open space area would range from 6 inch to 2 feet as buildings architectural features, the highest design goes up to 15 feet. The visual simulation and development of the Office Scheme and Residential Scheme are prepared within the project site. An illustration of the visual simulation of the Office Scheme and Residential Scheme is shown in Figure 4.

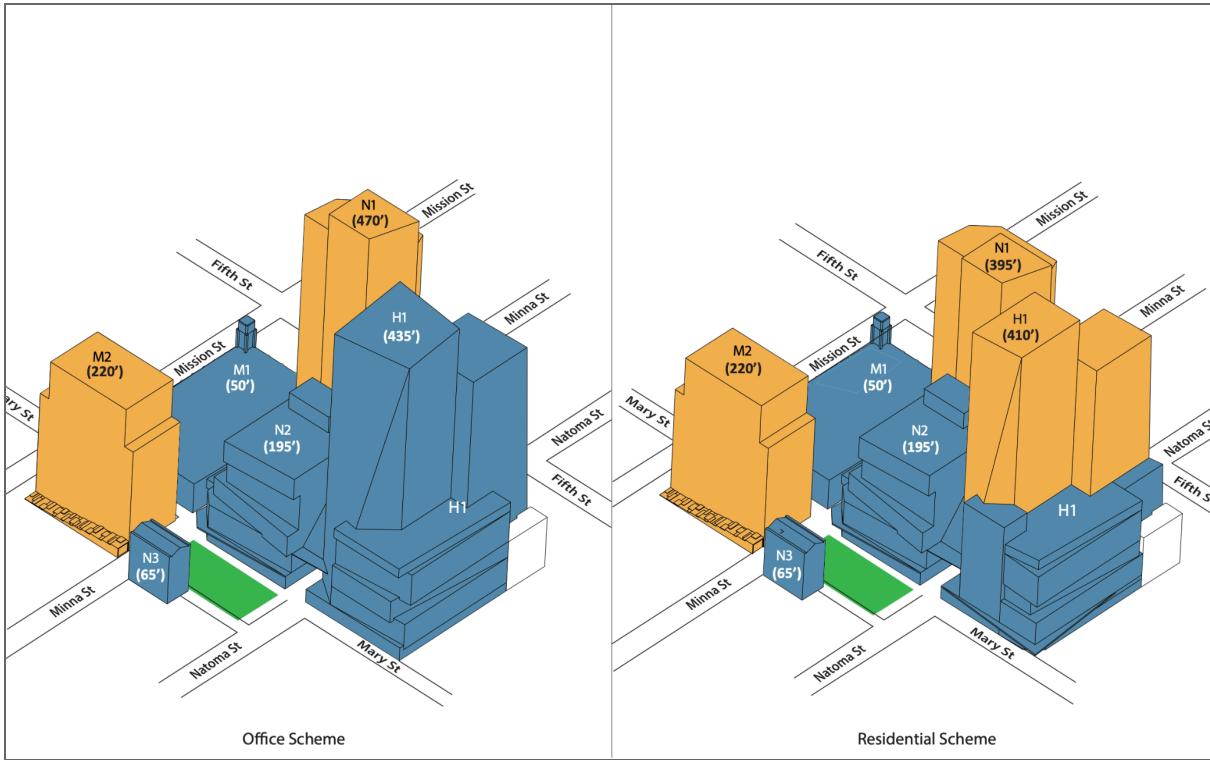


Figure 4: An illustration image of the Office Scheme and Residential Scheme

The construction for the project design requires: the demolition of four existing buildings that exist at 910, 912, and 924-926 Howard Street, and 190 Fifth street. The new construction of building M-2 and the new construction of building H-1. The renovation of the interior design and layout of building M-1 which is the Chronicle Building and the renovation plus rehabilitation of building N-3 which is the Dempster Printing Building. The commencement for the renovation was calculated towards approximately 48 months and extended to 60 months. The buildings needed to be demolished are the Examiner Building at 110 Fifth Street, the two story connector between Chronicle and Examiner Building and the existing Camelline building at 430 Natoma street. New additional features are added on building M-1, new public elevators and potential new staircase, secondary entrance, windows, interior structural and circulation changes, and an upgrade of the mechanical and electrical systems of the building.

VI. Planning and Policy

The policy consistency determination is made by the local planning commission and board of supervisors. The policy occurs during the independent process, as part of the decision to whether or not approve or reject a project. The main documents for guide planning and land use are: San Francisco Downtown Area Plan, South of Market Area Plan, Draft Central SoMa Plan, San Francisco Planning Code, Proposition M The Accountable Planning Initiative, Sustainability Plan, Climate Action Plan, Better Street Plan. Figure 5 shows the area of the planning take effect.

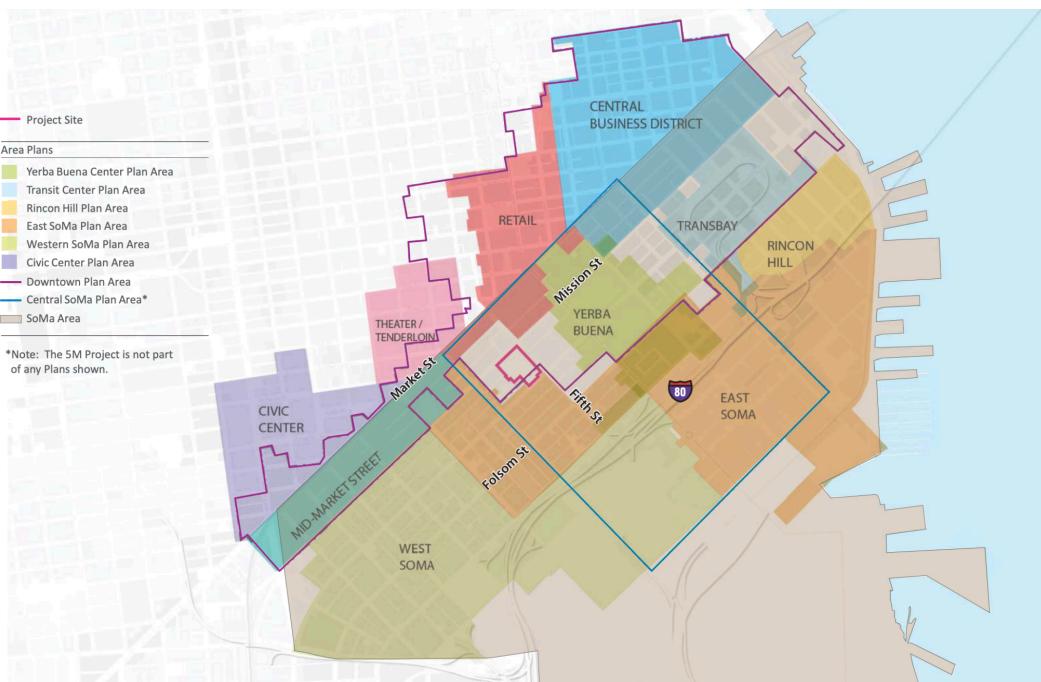


Figure 5: List of Planning and Policy take place on the project site

The San Francisco General Plan comprises ten elements, each pertains to a specific topic or resource area that is important throughout the city. The elements are: Air quality; Arts, Commerce and Industry; Community Facilities; Community Safety; Environmental Protection;

Housing; Recreation and open space; Transportation; and Urban Design. The General Plan also outlines goals for the specific geographic areas.

The commerce and Industry element addresses the economic activity that constitutes employment of San Francisco. The Urban Design element of the General Plan focuses on the development and preservation of the city.

There are potential conflicts with the policy that does not comply with Urban Design protocol such as Policy 2.4: “Preserve notable landmarks and areas of historic, architectural or aesthetic value, promote the preservation of other buildings features that provide continuity with past development.” The construction of the 5M development includes demolition of the Camelline Building located at 430 Natoma Street, considered a historical resource under CEQA, The California Environmental Quality Act. Therefore the demolition of the Camelline Building could have a potential conflict with Policy 2.4.

The Downtown area plan has conflict with policy 13.1: “Related to height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development.” When the project has new high rise buildings that are taller than other buildings in the vicinity.

The Demolition of buildings also violated policy 2.4 and has similar conflict with policy planning 12.1: “Preserve notable landmarks and areas of historic, architectural, or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.” because it all has physical and environmental impact.

The South of Market Area plan is part of the San Francisco General plan, bounded by Mission, Stevenson, and Natoma Streets on the North. The South of Market Area plan has been supplemented with new area plans that cover geographic areas in SoMa giving developmental

pressure. These plans are the Central SoMa plan, Western SoMa community plan, and East SoMa area plan.

The policy within the SoMa plan are policy 7.1: "Establish height and building intensity limits for new development which would preserve the existing scale and strengthen the physical form of areas appropriate for new development, enhance the character of adjacent landmark buildings, maintain sun exposure to open space resources, and preserve view corridors." and policy 7.4: "Preserve individual architecturally and/or historically significant buildings which contribute to the area's identity, give visual orientation, and which impart a sense of continuity with San Francisco's past."

The Camelline Building is outside the boundaries of the SoMa plan, therefore the demolition does not subject and conflict with the SoMa area plan.

The South of Market Redevelopment plan, established due to the Loma Prieta Earthquake occurred in 1989, and the city needed to repair the physical infrastructure damaged by the earthquake and provide economic development for neighborhood serving business and retail establishments.

The redevelopment plan focuses on the sixth street corridor with older residential and commercial buildings. The redevelopment plan aims to improve on five categories which are housing, business and jobs, community quality of life, transportation and parking, and neighborhood development and land use. The redevelopment plan does include goal E4: "Preserve historically and/or architecturally significant buildings that contribute to the area's identity, give visual orientation, and impart a sense of continuity with San Francisco's past." This goal conflicts with the project due to the demolition of the Camelline building, which is a historic resource.

VII. Environmental Setting

The open space in the vicinity is built with parks, recreation, and open space facilities.

The Boeddeker Park, located in the northwest of the site, located in the Tenderloin Neighborhood of the Downtown/Civic Center area. The park was built near low income housing and senior households. The park is currently undergoing renovation sponsored by the Trust for Public Land and the San Francisco Recreation and Park Department implementing improvements on site.

The park site is shaped like the letter “L” with Eddy, Jones, and Ellis Street. The northern portion of the park includes three levels of paved terraces with seating, the larger southern portion park has street frontage along the south and west side. An entry gate placed along Eddy Street, aligns with the new clubhouse building located at the south east corner of the park. An example image is shown in Figure 6.

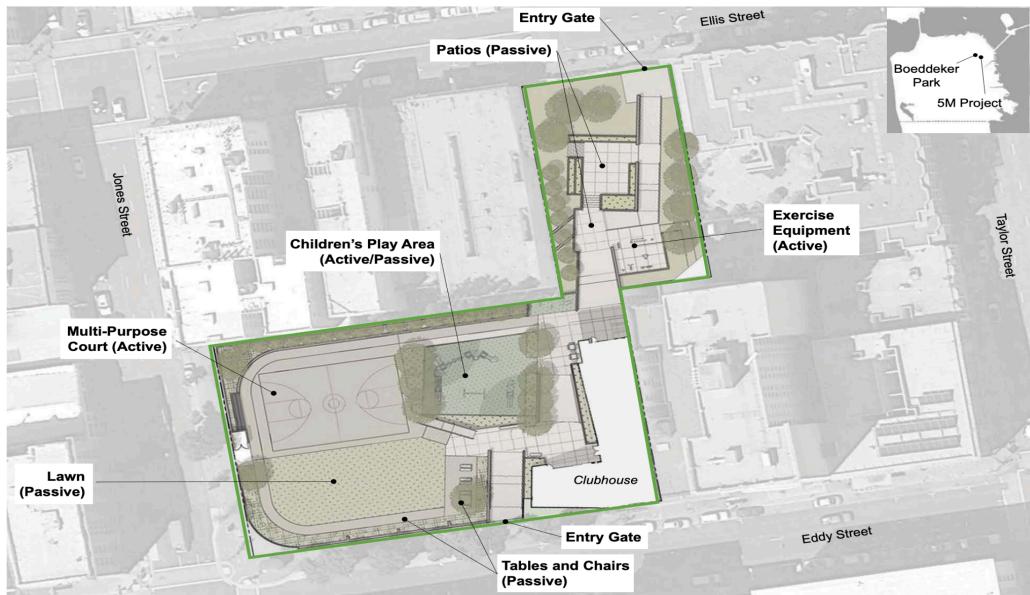


Figure 6: An image of the open space park

The southwest corner of the park has a lawn area measuring approximately 100 feet by 45 feet. On the north side of the wall along Jones Street are a multi-purpose court and a children's play area with climbing equipment located at the east of the corner.

The Yerba Buena Gardens and the Moscone Convention Center located on the east of the site, owned by the city of San Francisco in the SoMa neighborhood. The garden is split into two parts, the north part of the Yerba Buena Garden is located at the north of Howard Street and the Yerba Buena children play area is located at the south of the street. The area occupies approximately 5 acres and the upper portion area is covered with mature trees and surrounded with an "L" shape water feature. An image of the Yerba Buena Garden is shown in Figure 7.



Figure 7: A layout map of Yerba Buena Garden

The east garden walkway leads to the west to the main open space of Yerba Buena Garden, which is a central elliptical shaped undulating lawn area known as the Esplanade. The Esplanade is an encircled 10 feet wide paved pedestrian walkway with benched by the edge. The landscaping element at the east end is a butterfly garden, and at the west side are a series of concrete seating areas separating the walkway and lawn area.

VIII. Project Development Issues

The project development revolves around the Residential Scheme and Office Scheme includes the renovation of the Chronicle building and the Dempster Printing building. In which part of the project requires below ground excavation, and the substantial amount of vibration could cause damage to the historical building itself. One of the main construction methods commonly used is pile driving, which increases the potential impact done to the building itself. The historical Chronicle building was shown in Figure 8.



Figure 8: Image of The Chronicle building

The project requires a structural engineer to rehabilitate the historical building, and to see if the method of use on soil removal process has a potential impact on the foundation of the historic building. An architect to establish a training program to prevent construction workers damaging sensitive areas in the building when building was under construction.

Building N-2 requires the destruction of the Camelline building at 430 Natoma street and the city does not approve this plan because the Camelline building is registered as an historical resource, and the demolition of the building is not justified. The building N-2 also could not relocate because other locations do not fit the criteria such as the required ground square space as the Camelline building, and the space that is in the 5M project's site.

The Residential Scheme could cause substantial damage to the historic Dempster Printer building. In order for the property damage not to be executed when it comes to rebuilding, the project needs to follow the Interior Standard for Rehabilitation from the City Planning Department.

The project has to find ways to let the building material to comply with the historical resources of the Chronicle building. Which means there is limited substantial change the renovation could apply. Which means the new building has to comply with the protocol set for the streetwall setbacks, upper level setbacks, streetwall variations, ground floor articulation, ground floor entries, building facade articulation, the facade proportion, the materiality of the building, the color palettes of the building, strategies for the tower completion, the building ornamentation, and the building structure.

IX. Project Current Condition

The M5 Project development is currently finished. The office space building located at 405 Natoma street has finished its design and construction, the development has maximized productivity for efficiency by creating convenient access to transportation and freeway roads; the lobby was installed with retractable glass doors; most of the higher floors has a three hundred sixty degree view of the whole city; the ground floor parking area finished its construction; the building condition was powered by HVAC filtration system with Merv 14 filters; there are secure parking space for bikes; onsite restaurant located on ground floors; Office space was open to natural sunlight; the building has a total of 28000 square foot of private open outdoor space.

The entrance was installed with a bluetooth entry system. An image of the 5M Development was shown in Figure 9.



Figure 9: An example image of 5M Development

The community for the 5M development founded the Community Arts Stabilization Trust (CAST), a real estate organization for artists and workers to show its work though the San Francisco area. The Community Arts Stabilization Trust organization was located at the historic Dempster Printing building at 447 Minna Street. The space now provides performances, exhibitions, office spaces and open space areas for outdoor activities.

The open space gives the local community an opportunity to build organizations such as the Undiscovered Block Parties inspired by the night markets in Asia. Different varieties of events are hosted in this location such as live music and dance performances. The aim for this organization is to celebrate the different cultures through the arts, craftsmanship, and food.

The residential space is now open to the public. The apartment building is named The George, an urban living space apartment located in SoMa. The apartment comes with 24/7 concierge service; resident lounges as resting and work area; private event kitchen and dining spaces; coworking library; a private open air terraces with grill stations and dining area; fitness center; and a pet grooming station.

The George's apartment features includes: penalized dishwashers, kitchen counters from Caesarstone, washers and dryers from Bosch, walk in closets from Elfa, walk in showers and air conditioning, wall side window for residents to view the entire city, entry system built by Keyless Latch, and rolling shades from Hunter Douglas.

X. Future Solution for Sustainability

In order for the 5M development to be sustainable for itself to grow economically and culturally, the development needs valuable resources and experts to provide their strength to promote the communities network and culture. The potential environmental issues such as clean water supplies and air pollution needed to be aware of. The city needs to hold everyone with moral and ethical responsibility so positive values could be sustained within the community.

XI. Bibliography

- I. Jozsa, Evelyn. Top Projects That Will Reshape the San Francisco Bay Area.
<https://www.commercialsearch.com/news/top-projects-that-will-reshape-the-san-francisco-bay-area/>. November 22, 2021. Accessed 15 October 20, 2023.
- II. Ritz, Jessica. In San Francisco, the 5M Development Envisions Public and Private Space for the Future.
<https://metropolismag.com/projects/in-san-francisco-the-5m-development-envisions-public-and-private-space-for-the-future/>. April 14, 2022. Accessed October 20, 2023.
- III. 5M. Brookfield Properties. <https://5msf.com/>. Accessed October 22, 2023.
- IV. Jones, Sarah. 5M Project. San Francisco Planning Department. October 15, 2014.
https://sfplanning.s3.amazonaws.com/sfmea/2011.0409E_DEIR.pdf. Accessed October 21, 2023.

- V. A Genuine Urban Melting Pot. Brookfield Properties.
<https://www.brookfieldproperties.com/en/our-approach/case-studies/5M.html>. Accessed October 20, 2023.
- VI. 5M Project. Architizer.com. <https://architizer.com/projects/5m-project/>. Accessed October 20, 2023.
- VII. 5M, 415 Natoma Street. sgh.com. <https://www.sgh.com/project/5m-415-natoma-street/>. Accessed October 20, 2023.
- VIII. 5M Project. San Francisco Planning. <https://sfplanning.org/5m-project#about>. Accessed October 20, 2023.
- IX. Dreith, Ben. SITELAB integrates commercial and public space at 5M in San Francisco. dezeen.com. March 8, 2022.
<https://www.dezeen.com/2022/03/08/sitelab-urban-studio-5m-development-san-francisco/>. Accessed October 20, 2023.
- X. 415 Natoma Street. Ctbeh.org.
<https://www.skyscrapercenter.com/building/415-natoma-street/18747>. Accessed October 21, 2023.
- XI. United States Census Bureau, San Francisco city, California, data.census.gov.
https://data.census.gov/profile/San_Francisco_city,_California?g=160XX00US0667000#health Accessed October 22, 2023.