

**Emeryville High Rise Economic Study
Development Scenarios Summary
June 10, 2019**

Background

Planning Staff has requested programmatic plans and conceptual section drawings for three development scenarios to assist in studying the economic feasibility of high-rise residential housing in Emeryville. Plan and section diagrams for each scenario are intended to be sufficiently resolved to provide building and unit data in response to the study's goals of comparing building types and unit mixes. The main variables in the study are the building type (Mid-rise vs. High-rise) and unit mix (existing required unit ratios per zoning vs. an alternative unit ratio allowing less 2 and 3-bedroom units and more studio units).

Design program:

Site:	300' x 435.6' (one city block surrounded by streets on all sides)
Site Area:	130,680 square feet (3.0 acres)
Zoning:	MUR Mixed Use with Residential/Transit Hub Overlay
FAR:	3.0/6.0 maximum
Density:	85/170 du/acre maximum
Height:	75 feet/100+ feet for High-rise (note: Mid-rise limited building type to approx. 85-90')
Setbacks:	None
Total Units:	Zoning maximum (510 units for high-rise; maximum feasible for mid-rise)
Retail:	20,000 square feet
Parking:	Residential: 0.5 resident spaces per unit; 0.1 guest spaces per unit Commercial: 1.2 spaces per 1,000 square feet
Bike Parking:	Residential: 1 long term space per unit; 1 short term space per 4 guest car spaces Commercial: 2 long-term spaces; 2 short-term spaces
Open Space:	Residential: 40 SF private open space per unit as feasible 20 SF common open space per unit + 80 SF of common space for each unit without private space. Commercial: 1,000 SF common open space minimum
General:	Buildings, 2 and 3-bedroom units subject to Emeryville Design Guidelines for Family Friendly Design. Programmatic diagrams to consider functional and environmental characteristics consistent with location and development types including access, loading, typical amenity spaces, solar orientation, and westerly views.
Scenario 1:	Mid-Rise housing block — Type III construction (7 floors) Five levels of wood-frame over two-level concrete (Type I) podium Unit Mix: 15% 3-bedroom (min.), 35% 2-bedroom (min.), 40% 1-bedroom, 10% studio (max.)
Scenario 2a:	High-Rise housing point tower — Type I construction (40-50 floors) Steel-frame construction Unit Mix: 15% 3-bedroom (min.), 35% 2-bedroom (min.), 40% 1-bedroom, 10% studio (max.)
Scenario 2b:	High-Rise housing point tower — Type I construction (40-50 floors) Steel-frame construction Unit Mix: 5% 3-bedroom (min.), 25% 2-bedroom (min.), 50% 1-bedroom, 20% studio (max.)

Mid-Rise Scenario I Summary

As a design exercise the mid-rise housing type attempts to achieve housing density by providing as many units as feasible on each of the five levels above the podium structure plus adding units along the edge of the podium structure (i.e. surrounding the garage with units where retail, amenity, and utility spaces are not needed). The mid-rise building type frequently uses double-loaded corridors with some units facing the street and others facing a courtyard. On larger lots, multiple building forms and courtyard open spaces may be used with the layout largely dependent on the lot's size, shape, and proportions. Other than a fully enclosed courtyard approach to the housing layout, a layout with a spine or bar of units with wings of units and open spaces between would not be uncommon. This would provide for more open ends to courtyard open spaces above the podium structure as seen from the street. There may be other approaches to laying out a mid-rise housing block with units over a podium, but these two basic strategies are common for this building type and are seen in Emeryville.

This building type, which requires units to be fully accessible throughout except upper levels of two-level units, comes with constraints to manage in order to maximize unit density, while making units well designed and efficient in the use of floor area. Units that are shallow in depth but wide in building frontage use less floor area per given unit and allow for more wall surface for rooms needing windows. Shallow depth units are easier to make livable unit designs—corner units have this benefit too—and benefit from lower average unit size, without sacrificing unit quality. This, however, comes at a cost. Wider unit frontages make it harder to maximize project density. With the mid-rise building type, the challenge is to balance unit width with depth/size. The balance point based on adapting units from other projects in Emeryville and Family Friendly Guideline example units for units shown on building layouts is to use a unit depth of 30 to 32 feet on the double-loaded corridor floors.

In Scenario I units have varying layouts/designs to achieve unit diversity and meet the standard unit ratios. Units are placed in buildings with floor plates at most 70 feet wide and arranged around courtyards. Various configurations were studied to achieve maximum density with design adjustments made to facilitate the inclusion of two-story units, solar access to courtyards, amenity spaces, and variation in unit size or layout for unit subsets (i.e. studio, 1, 2, and 3-bedroom unit subsets).

The resulting yield for the mid-rise scenario is 350 units or about 117 units/acre. The average unit size is 1,043 square feet and the project floor area ratio is 3.67. 20 percent of the 2 and 3-bedroom family friendly units are 2-level/townhome units owing mostly to units being placed along the edge of the podium structure, but also to some two-level units being placed above the concrete podium. Getting a handful of additional units may have been possible, but it would have come with substantial sacrifice in project and unit quality. Additionally, 117 units per acre is similar or more in density than some seven-story comparison projects recently proposed in Emeryville.

Additionally, the design yields 283 parking spaces, which exceed slightly the required 234 spaces. The design also has two large open courtyard spaces for landscape and resident activities, a large communal roof terrace and some individual units with large terraces. The retail space is shown fronting the street on the west side with a retail plaza and sidewalk café area to either side of the building lobby.

Based on the design study, using the 5 over 2 mid-rise housing approach and the City's required unit mix, the zoning maximum of 170 units per acre would not be feasible. A target of 110 to 120 du/acre for mid-rise construction seems appropriate for the purpose of evaluating economic feasibility.

High-Rise Scenario 2a Summary

For Scenario 2a the objective is to use the City's standard unit mix and place all residential units in a single residential tower (i.e. not to mix unit placement between the tower and secondary structures such as the parking podium or smaller buildings on-site). Otherwise, the program is the same as Mid-Rise Scenario I (i.e., units that meet the City's family friendly guidelines, residential amenities, open spaces, retail, and parking). For the high-rise 2a the goal was 170 units per acre/510 total units within a 40 to 50 story tower and the 6.0 maximum FAR.

It was established for the study to use a “point tower”. A point tower would be considered to have one central core with a square to short rectangle as the basis for the floor plan layout. This is an important distinction as high-rise housing towers can be shaped with more elongated plan configurations, radial, chevron, or various other shapes, and slab like high-rise buildings which are not a distinct tower form could also be used to obtain the maximum allowed unit density.

The point tower, however, is not considered suitable as just a simple rectangle even for a feasibility study. The programmatic plans recognized a need for some shaping of the tower for aesthetic purposes and to consider bay views from units, penthouse units that would not be part of a mid-rise project, as well as other amenities specific to high rise housing (e.g. a sky terrace). The programmatic plans, therefore, describe a specific building shape or profile to simulate a design response, but is not intended to suggest an exact design response. It is noted that while the plan view of the study’s tower as well as the section view shape the rectangular form, the study design does not include dramatic angles, curves or similar possible form manipulations.

Even with 510 units the tower approach frees up an extensive amount of the ground plane for plaza and park space and allows for varying retail configurations. Most of the top of the parking structure is also freed up for resident open space and amenities. In some ways it is easier to design the block with a tower, but there are some drawbacks, such as in this example some of the garage structure is exposed to public view.

Scenario 2a yields 510 residential units with the required city unit mix. The average unit size, inclusive of the larger 15 penthouse units, is 1,048 square feet. The total number of stories is 48 not including the mechanical penthouse level. The floor area ratio is 5.55 (6.0 maximum) and the total building height is 569 feet. The garage is 3 levels with the first two combined equal in height to the tall first/lobby level of the tower.

The residential portion of the tower has three zones: lower tower, upper tower, penthouse. Penthouse levels are shown with taller floor heights. Most of the resident amenities and open space are shown at the garage roof level. The parking garage would have 354 total spaces. 330 would be required.

Unit and unit terraces are shown on the tower floor plans. The lower tower has 12 units per floor and houses most of the 3-bedroom units as well as the studio and 1 and 2-bedroom units. The lower tower’s total floor area is 15,512 square feet. The upper tower has no studio units and some 3-bedroom units, but it focuses more on 1 and 2-bedroom units. The floor area of upper tower is reduced to 14,388 square feet and has 11 units on some floors and 12 units on others to balance the unit mix per the City standard. There are three penthouse levels (the upper level has 2 story units). 11 of the units are 3-bedroom and 3 are 1-bedroom. The middle penthouse level has a sky deck with a pool and a residential amenity space for resident use.

High-Rise Scenario 2b Summary

For Scenario 2b the objective is to use a unit mix that reduces 3-bedroom units from 15 to 5 percent, reduces 2-bedroom units from 35 to 25 percent, increases 1-bedroom units from 40 to 50 percent, and increases studio units from 10 to 20 percent. Otherwise scenarios 2a and 2b would be similar. The change in unit mix would also lead to adjustments to the tower floor plans and changes in building height/stories and overall floor area.

Scenario 2b yields 510 residential units with the revised unit mix. The average unit size, inclusive of the larger 14 penthouse units, is 936 square feet. The total number of stories is 43 not including the mechanical penthouse level. The floor area ratio is 5.02 (6.0 maximum) and the total building height is 515’-8”. The garage is 3 levels with the first two combined equal in height to the tall first/lobby level of the tower.

The residential portion of the tower has three zones: lower tower, upper tower, penthouse. Penthouse levels are shown with taller floor heights. The lower section of the tower has 14 units per floor and 15,548 square feet. The upper section of the tower has 12 units per floor and 14,475 square feet. Most of the resident amenities and open space are shown at the garage roof level. The parking garage would have 354 total spaces. 330 would be required.

In summary, the main differences between scenario 2a and 2b are as follows:

Emeryville High Rise Economic Study — Development Scenarios Summary

Studio units:	2a: 51	2b: 97
1-bedroom:	2a: 196	2b: 239
2-bedroom:	2a: 186	2b: 138
3-bedroom:	2a: 77	2b: 36
Ave. Unit Size:	2a: 1,048 SF	2b: 936 SF
Net Residential:	2a: 534,398 SF	2b: 477,501 SF
FAR:	2a: 5.55	2b: 5.02
Height:	2a: 569'	2b: 515'-8"
Stories:	2a: 48	2b: 43

Analysis/Conclusions

The primary purpose of the High-Rise Economic Study is to look at whether the unit ratio should be adjusted for high rise housing.

One way to look at this is to see how Mid-Rise Scenario 1 compares to the High-Rise Scenario 2b. If Scenario 2b yields less family friendly 2 and 3-bedroom units than the Mid-rise Scenario 2b than this would reduce the overall number of family friendly units compared to a less intensive project. Per the study:

Studio units:	1: 32	2b: 97	
1-bedroom:	1: 136	2b: 239	
2-bedroom:	1: 129	2b: 138	(2b high rise gains 9 units)
3-bedroom:	1: 53	2b: 36	(2b high rise losses 17 units)

Another way to look at this is to see how Mid-Rise Scenario 1 compares to the High-Rise Scenario 2a. How many more family friendly 2 and 3-bedroom units are gained from going to a high-rise development with the required unit mix. Per the study:

Studio units:	1: 32	2a: 51	
1-bedroom:	1: 136	2a: 196	
2-bedroom:	1: 129	2a: 186	(2a high rise gains 57 units)
3-bedroom:	1: 53	2a: 77	(2a high rise gains 24 units)

A third way to look at this is to compare High-Rise 2a with 2b. How many family friendly units are lost to change the city standard. Per the study:

Studio units:	2a: 51	2b: 97	
1-bedroom:	2a: 196	2b: 239	
2-bedroom:	2a: 186	2b: 138	(2b high rise loses 48 units)
3-bedroom:	2a: 77	2b: 36	(2b high rise loses 41 units)

In summary, High-rise Scenario 2b would produce less family friendly units than with mid-rise development, and significantly less 3-bedroom units, even with increasing overall density by 53 units per acre.

It might be worthwhile to consider high rise unit ratio standards that require the standard city unit mix for the first 120 units per acre and allow flexibility for units above the 120 unit per acre threshold to either a. not meet the city unit mix requirements or b. provide a separate unit mix for units above the 120 unit per acre threshold.

Emeryville High-Rise Economic Study

Mid-Rise Scenario 1: Building Data Summary

Site area: 3.0 acres / 130,680 SF (300' x 435.6')

Building type: 5 stories Type III-A over 2 stories Type I-A

Unit mix: 15% 3-bdrm; 35% 2-bdrm; 40% 1-bdrm; 10% studio

BUILDING AREA SUMMARY									
Floor	Net Residential	Circulation	Gross Residential	Amenity	Utility/Trash	Retail	Gross Building	Parking & Loading	Total Building
1	15,887	8,960	24,847	9,000	10,200	20,000	64,047	56,450	120,497
2	19,578	5,170	24,748	8,200	4,340	0	37,288	53,000	90,288
3	65,986	9,150	75,136	1,216	400	0	76,752	0	76,752
4,5,6	202,242	27,540	229,782	0	1,200	0	230,982	0	230,982
7	61,312	8,640	69,952	450	400	0	70,802	0	70,802
Total	365,005	59,460	424,465	18,866	16,540	20,000	479,871	109,450	589,321
Total Units	350						Net Bike Area	6,650	
Ave Unit Size	1,043						Net Car Area	102,800	
FAR	3.67								
Density	116.6								

PARKING SUMMARY				
Floor	Non-Tandem	Tandem	Total	Bicycle
1	113	26	139	170
2	120	24	144	200
Total	233	50	283	370
Required			234	363

COMMON OPEN SPACE		
Floor	Area	Users
1	6,425	public/retail
2	1,800	residents
3	30,850	residents
6	4,500	residents
Total	43,575	

Notes:

1. Private open space: varies 40 to 350 SF; typical unit approximately 60 SF; 20% (53 units) with large patio / terraces 150 SF or greater
2. Height: 76' (to roof); 80' (to parapet); 85' (max at high roof locations)
3. Unit counts: See separate exhibit

Arnold Mammarella, Architecture + Consulting

May 2019 (For: City of Emeryville)

Emeryville High-Rise Economic Study

Mid-Rise Scenario 1: Unit Summary

UNIT COUNTS

Type / Unit	Size	Quantity	Net Rentable	% Total Units	FlexSpace/Den
STUDIO					
S.1	536	26	13,936		N
S.2	600	6	3,600		N
TOTAL / AVE	548	32	17,536	9.1%	0 (0%)
1 BEDROOM					
1.1	740	99	73,260		N
1.2	868	20	17,360		N
1.3	1,020	15	15,300		Y
1.4 (TH)	910	2	1,820		N
TOTAL / AVE	792	136	107,740	38.8%	15 (9%)
2 BEDROOM					
2.1	1,196	15	17,940		Y
2.2	1,180	35	41,300		N
2.3	1,236	30	37,080		Y
2.4	1,184	22	26,048		Y
2.5 (TH)	1,456	4	5,824		N
2.6 (TH)	1,315	23	30,245		N
TOTAL / AVE	1,228	129	158,437	36.8%	67 (52%)
3 BEDROOM					
3.1	1,432	31	44,392		N
3.2	1,644	10	16,440		Y
3.3	1,450	2	2,900		Y
3.4 (TH)	1,728	4	6,912		Y
3.5 (TH)	1,812	4	7,248		Y
3.6 (TH)	1,700	2	3,400		N
TOTAL / AVE	1,534	53	81,292	15.1%	20 (38%)
ALL UNITS	1,043	350	365,005		

Notes:

1. Total family-friendly units 182 of 350 units = 52%
2. Total family-friendly units with Flex Space / Den 87 of 182 = 48%
3. Townhome / 2-level units 39 of 350 = 11%
4. Family-friendly townhome / 2-level units 37 of 182 = 20%
5. Units in podium 27; units above podium 323
6. Flex Space / Den: 50 to 90 SF play area, study etc. (additional to main living area)
7. Family-friendly units have foyers (50-60 square feet) and in-unit W/D

Arnold Mammarella, Architecture + Consulting

May, 2019

(For: City of Emeryville)

MID-RISE SCENARIO 1: PROGRAMMATIC PLANS - UPPER LEVELS

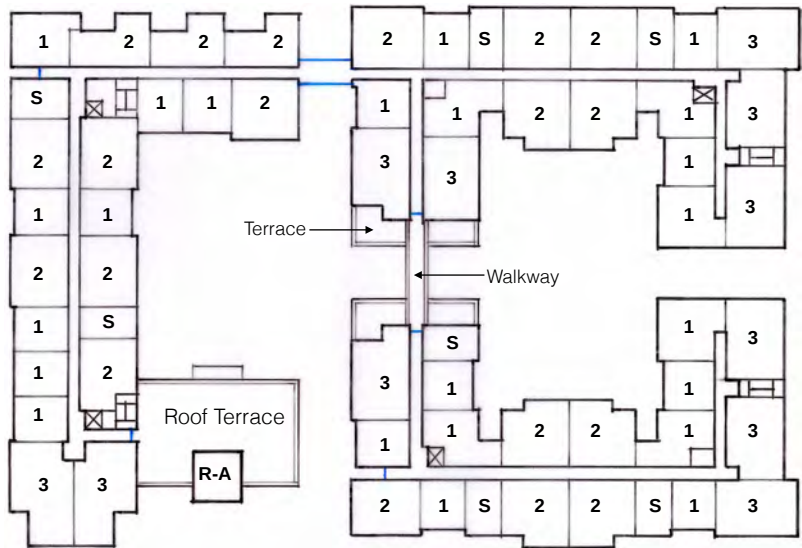
Note 1: Recessed or projecting private decks, bay windows, and podium level private patios not shown on diagrams.

Note 2: Two and Three bedroom units designed to Family Friendly Guidelines. Unit counts, areas and features shown on separate exhibit.

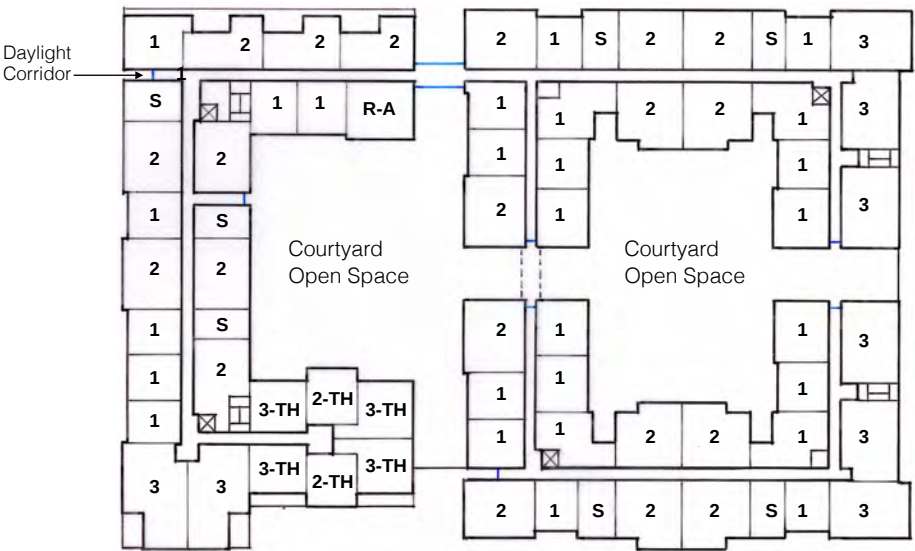
Note 3: Plan configuration considers solar access to courtyards and western direction views. See section for building height and profile.

Note 4: Typical floor plate depth 70' for double loaded corridor building. Common unit depths 30 to 32 feet.

Legend
R-A Residential Amenity Space

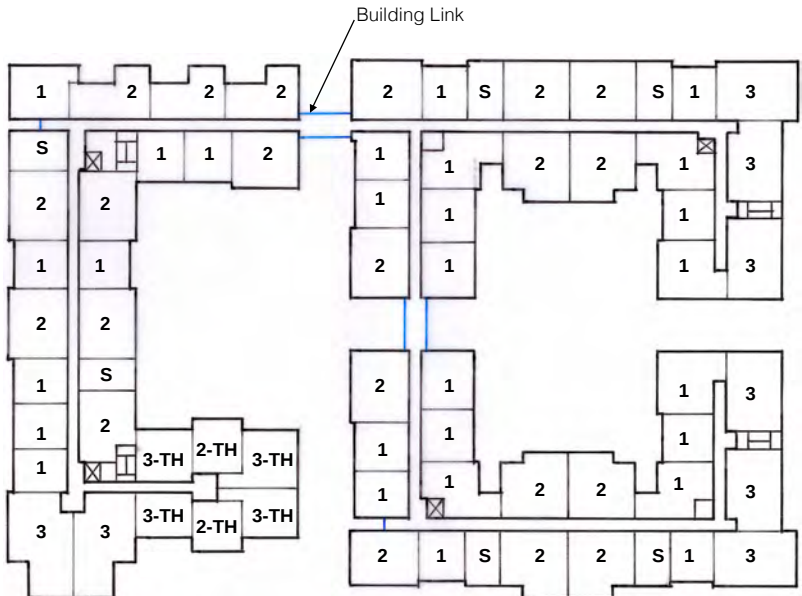


UPPER LEVEL (Floor 7)



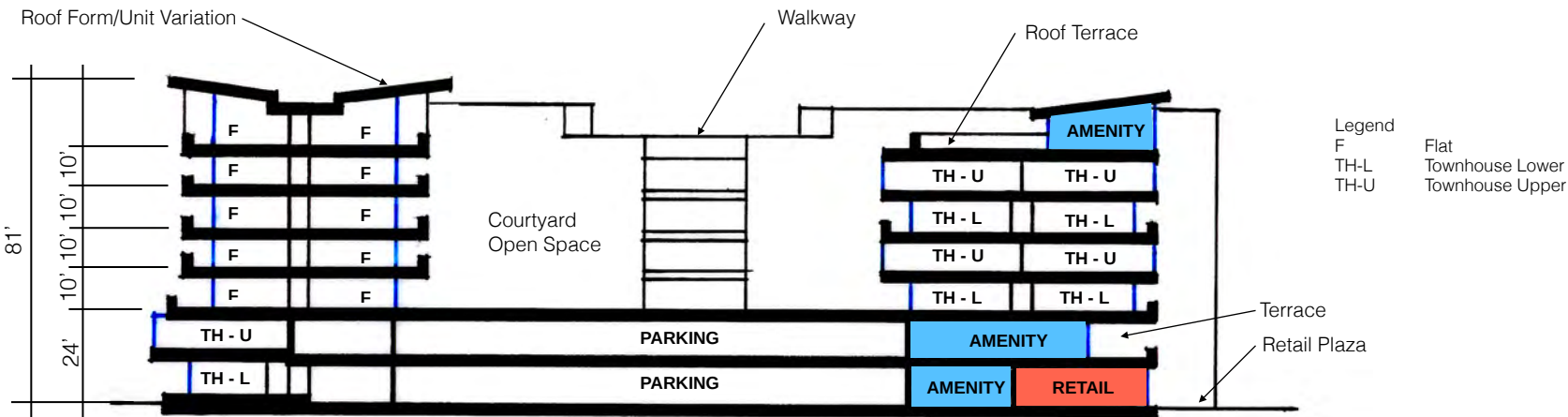
20'
0' 50'

PODIUM LEVEL (Floor 3)

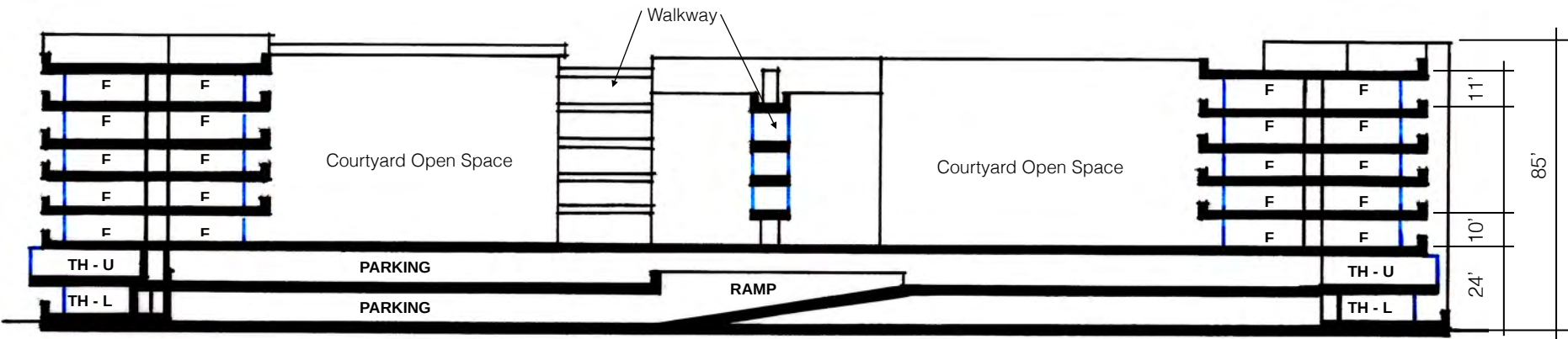


TYPICAL LEVELS (Floors 4 - 6)

MID-RISE SCENARIO 1: PROGRAMMATIC SECTIONS



CROSS SECTION



LONGITUDINAL SECTION

Emeryville High-Rise Economic Study

High-Rise Scenario 2a: Building Data Summary

Site area: 3.0 acres / 130,680 SF (300' x 435.6')

Building type: Type I-A

Unit mix: 15% 3-bdrm; 35% 2-bdrm; 40% 1-bdrm; 10% studio

BUILDING AREA SUMMARY									
Floor	Net Residential	Circulation	Gross Residential	Amenity	Utility/Trash	Retail	Gross Building	Parking & Loading	Total Building
T1/G1	0	2,740	2,740	3,528	3,047	20,000	29,315	41,473	70,788
TM/G2	0	460	460	0	648	0	1,108	39,607	40,715
T2/G3	0	3,705	3,705	9,337	798	0	13,840	39,607	53,447
T3	6,404	3,370	9,774	3,885	1,302	0	14,961	0	14,961
T4-28	311,300	74,000	385,300	0	2,500	0	387,800	0	387,800
T29-42	157,892	42,140	200,032	0	1,400	0	201,432	0	201,432
T43-45	33,834	9,030	42,864	0	300	0	43,164	0	43,164
T46 (PH1)	10,672	2,960	13,632	0	100	0	13,732	0	13,732
T47 (PH2)	6,572	2,545	9,117	1030	100	0	10,247	0	10,247
T48 (PH3)	7,724	2,545	10,269	0	100	0	10,369	0	10,369
Total	534,398	143,495	677,893	17,780	10,295	20,000	725,968	120,687	846,655
Total Units	510						Net Bike Area	3,490	
Ave Unit Size	1,043						Net Car Area	117,197	
FAR	5.55								
Density	170								

PARKING SUMMARY				
Floor	Uncovered	Covered	Total	Bicycle
T1/G1	10	112	122	440
G2	0	116	116	40
G3	0	116	116	40
Total	10	344	354	520
Required			330	518

COMMON OPEN SPACE		
Floor	Area	Users
1	51,812	public/retail
2	180	residents
3	37,426	residents
47	3,485	residents
Total	92,903	

Notes: 1. Total Building Height = 569'; 2. Rooftop Mechanical Penthouse floor area not included in building area summary.

Emeryville High-Rise Economic Study

High-Rise Scenario 2a: Unit Summary

UNIT COUNTS

Type / Unit	Size	Quantity	Net Rentable	% Total Units	FlexSpace/Den
STUDIO					
S.1	608	51	31,008		N
TOTAL / AVE	608	51	31,008	10.0%	0 (0%)
1 BEDROOM					
1.1	912	67	61,104		Y
1.2	856	52	44,512		N
1.3	704	6	4,224		N
1.4	648	34	22,032		N
1.5	759	34	25,806		N
1.6 (PH)	800	3	2,400		N
TOTAL / AVE	792	196	160,078	38.4%	67 (34%)
2 BEDROOM					
2.1	1,184	84	99,456		Y
2.2	1,248	85	106,080		Y
2.3	1,280	17	21,760		Y
TOTAL / AVE	1,222	186	227,296	36.5%	186 (100%)
3 BEDROOM					
3.1	1,418	52	73,736		N
3.2	1,408	14	19,712		N
3.3 (PH)	1,650	2	3,300		Y
3.4 (PH)	1,862	4	7,448		Y
3.5 (PH)	2,048	2	4,096		Y
3.6 (PH)	2,458	2	4,916		Y
3.7 (PH)	2,808	1	2,808		Y
TOTAL / AVE	1,507	77	116,016	15.1%	11 (14%)
ALL UNITS	1,048	510	534,398		

Notes:

1. Total family-friendly units 263 of 510 units = 52%
2. Total family-friendly units with Flex Space / Den 197 of 263 = 75%
3. 2-level units (penthouse upper level) 3 of 510 = 1%
4. Average unit size excluding penthouse units = 1,027 SF
5. Average 3-bedroom unit excluding penthouse units = 1,416 SF
6. Flex Space / Den: 50 to 90 SF play area, study etc. (additional to main living area)
7. Family-friendly units have foyers (50-60 square feet) and in-unit W/D

Arnold Mammarella, Architecture + Consulting

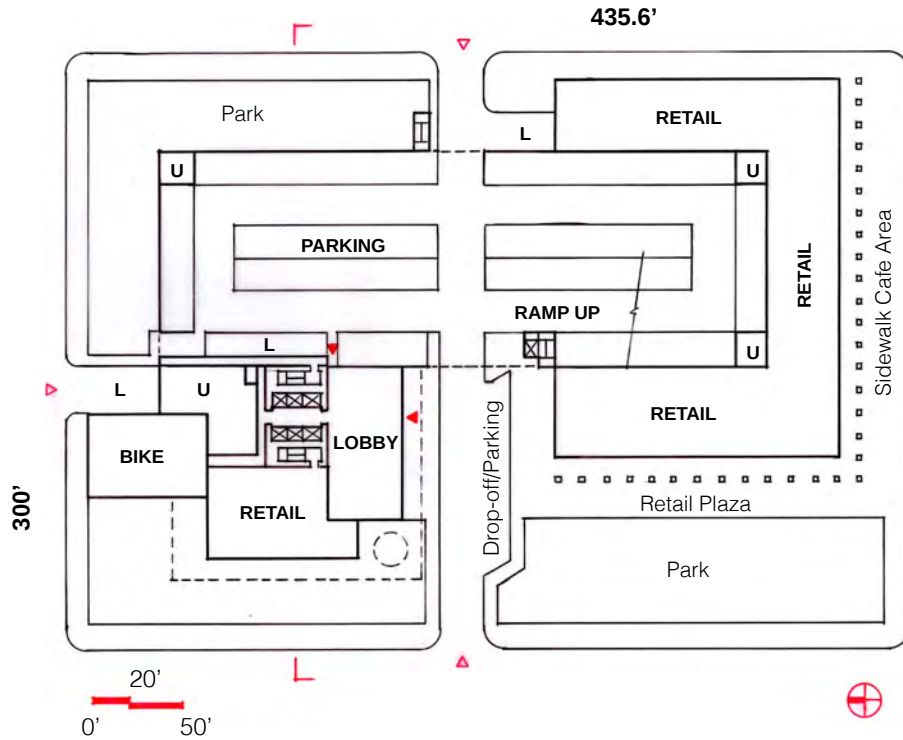
May, 2019

(For: City of Emeryville)

HIGH-RISE SCENARIO 2a: PROGRAMMATIC PLANS - LOWER LEVELS

Note 1: Garage level 2 with mezzanine tower level not shown.

Note 2: Building areas, parking counts, open space area, unit counts, unit areas and unit features are shown on separate exhibits.



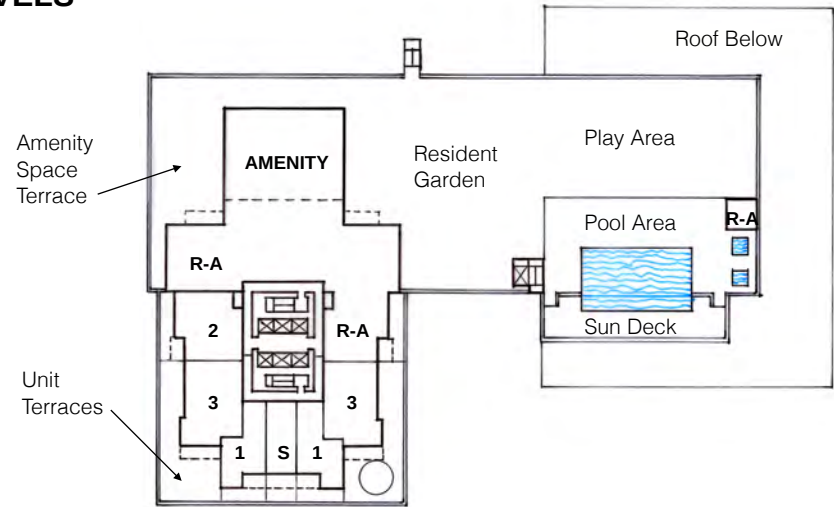
GROUND LEVEL (Floor 1) / SITE PLAN

Legend
 R-A Residential Amenity Space
 U Utility/Trash/Storage
 L Loading

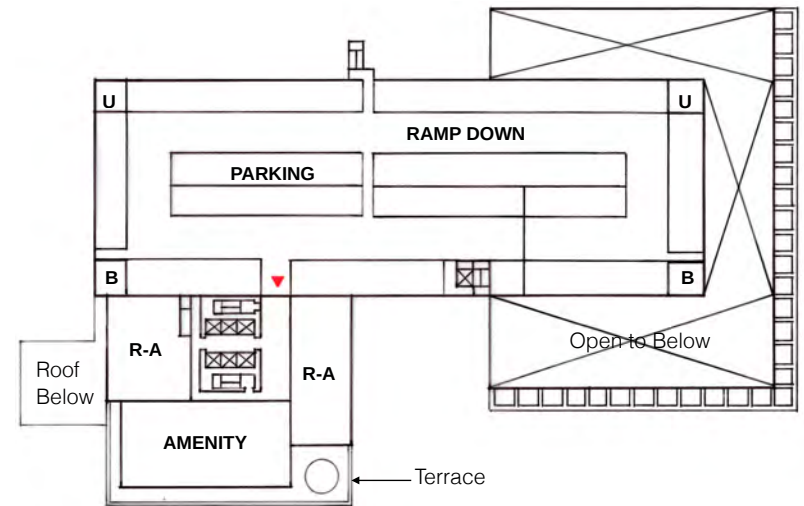
HIGH-RISE SCENARIO 2a:

This scenario shows a 48 story Type I-A residential high rise tower with a concrete podium parking structure on a three acre block. The residential tower would have the maximum allowed 510 units. The total FAR would be 5.5 (6.0 maximum allowed). The unit ratio would fit Emeryville's required unit ratios (minimum 15% 3-bedroom and 35% 2-bedroom/maximum 10% studios and 40% 1-bedroom) and conform to the City's family friendly building and unit design guidelines. Resident amenity space is provided within the tower and on top of the three level garage. Retail space is provided at 20,000 SF with public/retail open space and amenities (retail plaza, colonnade, landscaped areas, public park). The design approach chosen was a single "point" tower (i.e. as opposed to a wider slab-like tower, multiple towers, or a mix of tower and mid-rise units). The tower and amenities are sited to allow for solar access to opens spaces and to take advantage of westerly views.

PROJECT TYPE: POINT TOWER HIGH RISE WITH RESIDENTIAL AT CITY STANDARD UNIT MIX



PODIUM LEVEL (Floor Tower 3)



SECOND LEVEL (Floor Tower 2/Garage 3)

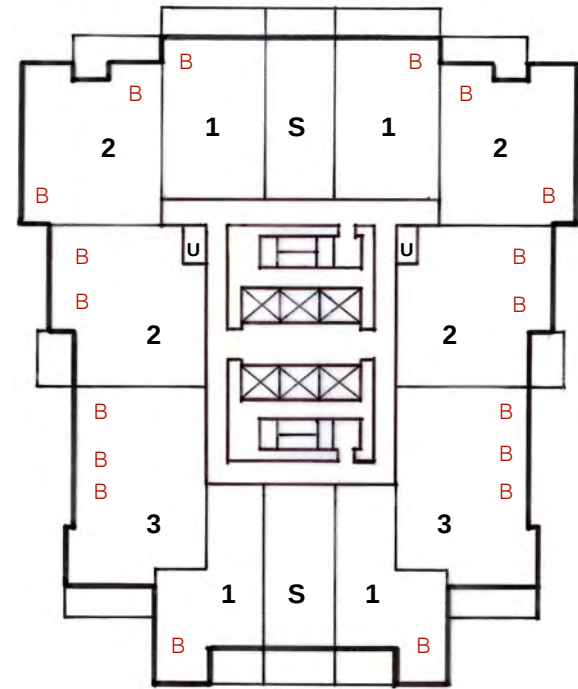
HIGH-RISE SCENARIO 2a: PROGRAMMATIC PLANS - RESIDENTIAL TOWER

Note 1: Floor plan layout informed by westerly bay views with offsets to enhance plan functionality and building form, while retaining basic rectangular point tower shape.

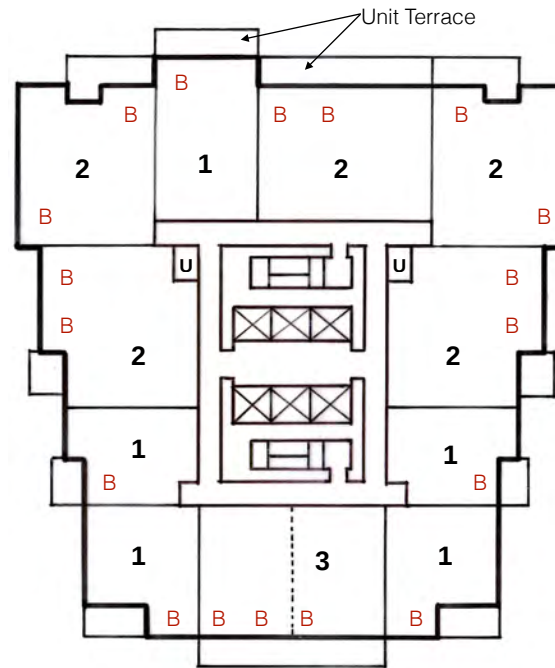
Note 2: Two and three bedroom units designed to meet Family Friendly Guidelines. Unit counts, areas and features shown on separate exhibit.

Note 3: Penthouse level units have taller ceilings or two-level layouts. See tower section drawing.

Legend
 R-A Residential Amenity Space
 U Utility/Trash/Storage
 PH Penthouse Unit
 PH (2L) 2-Level Penthouse Unit
 B Bedroom Location

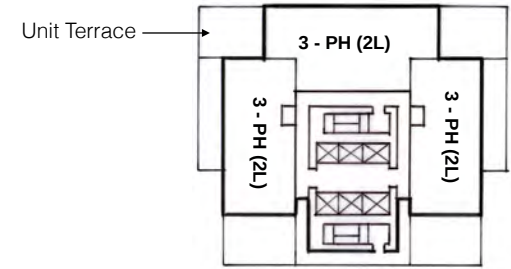


LOWER TOWER LEVELS (Floors T4-T28)

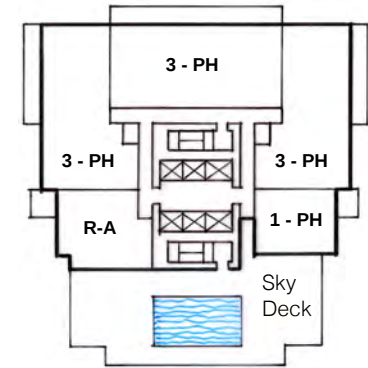


Note: Floors T43-T45;
 3-bedroom unit
 replaced with two 1-
 bedroom units.

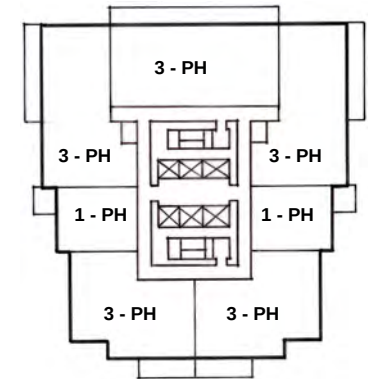
UPPER TOWER LEVELS (Floors T29-T45)



PENTHOUSE LEVELS 3-4 (T48)



PENTHOUSE LEVEL 2 (T46)

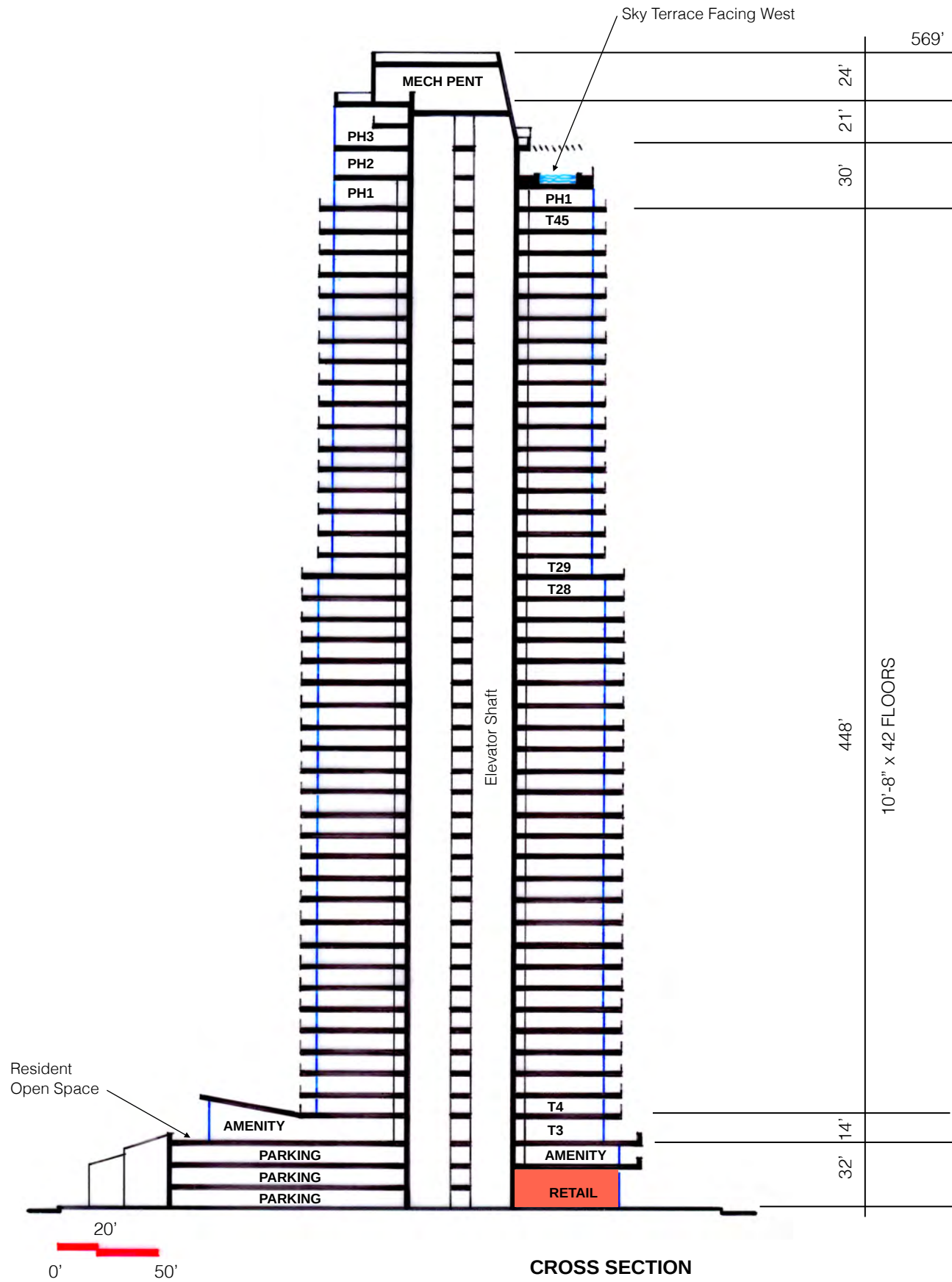


PENTHOUSE LEVEL 1 (T46)

PENTHOUSE LEVELS (Floors T46-T48)

HIGH-RISE SCENARIO 2a: PROGRAMMATIC SECTION

Legend
PH Penthouse
T-1 Tower Level



PROJECT TYPE: POINT TOWER HIGH RISE WITH RESIDENTIAL AT CITY STANDARD UNIT MIX

Emeryville High-Rise Economic Study

High-Rise Scenario 2b: Building Data Summary

Site area: 3.0 acres / 130,680 SF (300' x 435.6')

Building type: Type I-A

Unit mix: 5% 3-bdrm; 25% 2-bdrm; 50% 1-bdrm; 20% studio

BUILDING AREA SUMMARY									
Floor	Net Residential	Circulation	Gross Residential	Amenity	Utility/Trash	Retail	Gross Building	Parking & Loading	Total Building
T1/G1	0	2,740	2,740	3,528	3,047	20,000	29,315	41,473	70,788
TM/G2	0	460	460	0	648	0	1,108	39,607	40,715
T2/G3	0	3,705	3,705	9,337	798	0	13,840	39,607	53,447
T3	5,186	3,370	8,556	5,103	1,302	0	14,961	0	14,961
T4-27	300,672	71,040	371,712	0	2,400	0	374,112	0	374,112
T28-40	147,475	39,130	186,605	0	1,300	0	187,905	0	187,905
T41 (PH1)	10,672	2,960	13,632	0	100	0	13,732	0	13,732
T42 (PH2)	5,772	2,545	8,317	1830	100	0	10,247	0	10,247
T43 (PH3)	7,724	2,545	10,269	0	100	0	10,369	0	10,369
Total	477,501	128,495	605,996	19,798	9,795	20,000	655,589	120,687	776,276
Total Units	510						Net Bike Area	3,490	
Ave Unit Size	936						Net Car Area	117,197	
FAR	5.02								
Density	170								

PARKING SUMMARY				
Floor	Uncovered	Covered	Total	Bicycle
T1/G1	10	112	122	440
G2	0	116	116	40
G3	0	116	116	40
Total	10	344	354	520
Required			330	518

COMMON OPEN SPACE		
Floor	Area	Users
1	51,812	public/retail
2	180	residents
3	37,426	residents
47	3,485	residents
Total	92,903	

Notes: 1. Total Building Height = 515'-8"; 2. Rooftop Mechanical Penthouse floor area not included in building area summary.

Arnold Mammarella, Architecture + Consulting

May 2019 (For: City of Emeryville)

Emeryville High-Rise Economic Study

High-Rise Scenario 2b: Unit Summary

UNIT COUNTS

Type / Unit	Size	Quantity	Net Rentable	% Total Units	FlexSpace/Den
STUDIO					
S.1	608	49	29,792		N
S.2	528	48	25,344		N
TOTAL / AVE	568	97	55,136	19.0%	0 (0%)
1 BEDROOM					
1.1	912	61	55,632		Y
1.2	856	50	42,800		N
1.3	704	26	18,304		N
1.4	648	13	8,424		N
1.5	759	26	19,734		N
1.6	822	37	30,414		N
1.7	864	24	20,736		N
1.8 (PH)	800	2	1,600		N
TOTAL / AVE	827	239	197,644	47.0%	61 (25%)
2 BEDROOM					
2.1	1,184	74	87,616		Y
2.2	1,248	38	47,424		Y
2.3	1,280	13	16,640		Y
2.4	1,161	13	15,093		N
TOTAL / AVE	1,208	138	166,773	27.0%	125 (91%)
3 BEDROOM					
3.1	1,418	25	35,450		N
3.2 (PH)	1,650	2	3,300		Y
3.3 (PH)	1,862	4	7,448		Y
3.4 (PH)	2,048	2	4,096		Y
3.5 (PH)	2,458	2	4,916		Y
3.6 (PH)	2,808	1	2,808		Y
TOTAL / AVE	1,612	36	58,018	7.0%	11 (31%)
ALL UNITS	936	510	477,571		

Notes:

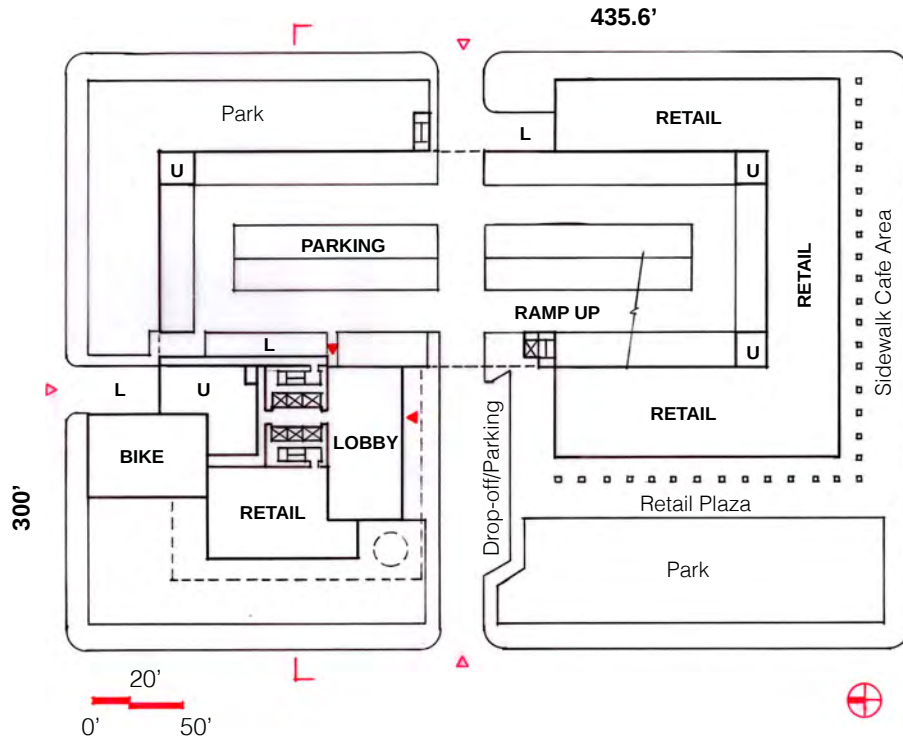
1. Total family-friendly units 174 of 510 units = 34%
2. Total family-friendly units with Flex Space / Den 136 of 174 = 78%
3. 2-level units (penthouse upper level) 3 of 510 = 1%
4. Average unit size excluding penthouse units = 912 SF
5. Average 3-bedroom unit excluding penthouse units = 1,418 SF
6. Flex Space / Den: 50 to 90 SF play area, study etc. (additional to main living area)
7. Family-friendly units have foyers (50-60 square feet) and in-unit W/D

Arnold Mammarella, Architecture + Consulting
 May, 2019
 (For: City of Emeryville)

HIGH-RISE SCENARIO 2b: PROGRAMMATIC PLANS - LOWER LEVELS

Note 1: Garage level 2 with mezzanine tower level not shown.

Note 2: Building areas, parking counts, open space area, unit counts, unit areas and unit features are shown on separate exhibits.



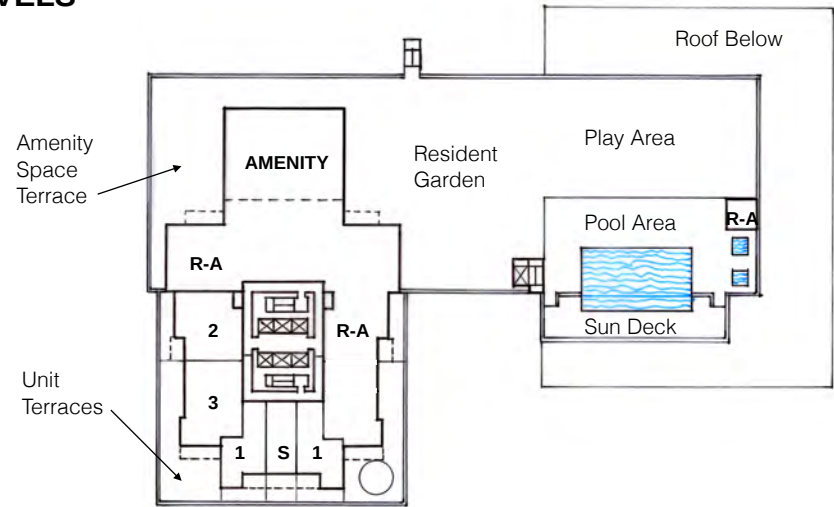
GROUND LEVEL (Floor 1) / SITE PLAN

Legend
 R-A Residential Amenity Space
 U Utility/Trash/Storage
 L Loading

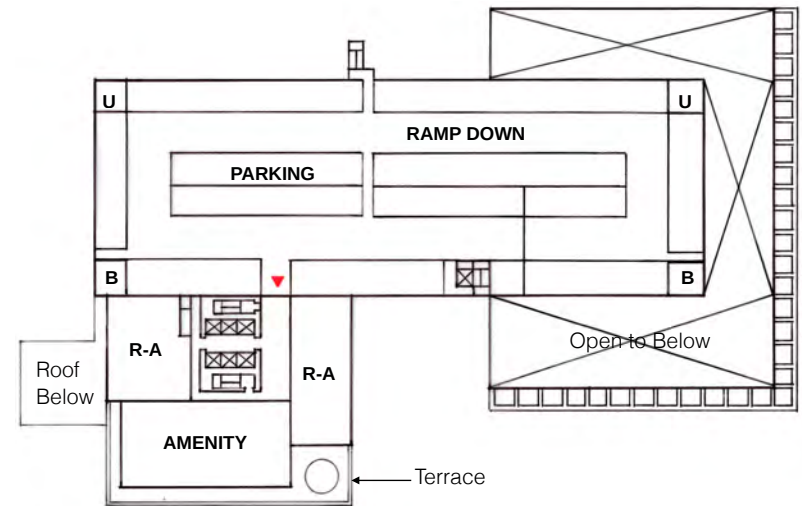
HIGH-RISE SCENARIO 2b:

This scenario shows a 43 story Type I-A residential high rise tower with a concrete podium parking structure on a three acre block. The residential tower would have the maximum allowed 510 units. The total FAR would be 5.0 (6.0 maximum allowed). The unit ratio (minimum 5% 3-bedroom and 25% 2-bedroom; maximum 20% studio and 50% 1-bedroom) would allow reduced numbers of 2 and 3 bedroom units and more studio and 1 bedroom units compared to Emeryville's required unit ratios (minimum 15% 3-bedroom and 35% 2-bedroom; maximum 10% studios and 40% 1-bedroom). The 2 and 3 bedroom units conform to the City's family friendly building and unit design guidelines. Resident amenity space is provided within the tower and on top of the three level garage. Retail space is provided at 20,000 SF with public/retail open space and amenities (retail plaza, colonnade, landscaped areas, public park). The design approach chosen was a single "point" tower (i.e. as opposed to a wider slab-like tower, multiple towers, or a mix of tower and mid-rise units). The tower and amenities are sited to allow for solar access to opens spaces and to take advantage of westerly views.

PROJECT TYPE: POINT TOWER HIGH RISE WITH RESIDENTIAL AT ALTERNATIVE UNIT MIX



PODIUM LEVEL (Floor Tower 3)



SECOND LEVEL (Floor Tower 2/Garage 3)

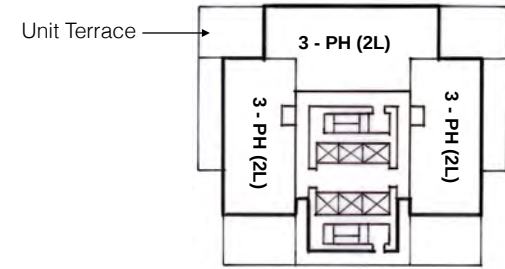
HIGH-RISE SCENARIO 2b: PROGRAMMATIC PLANS - RESIDENTIAL TOWER

Note 1: Floor plan layout informed by westerly bay views with offsets to enhance plan functionality and building form, while retaining basic rectangular point tower shape.

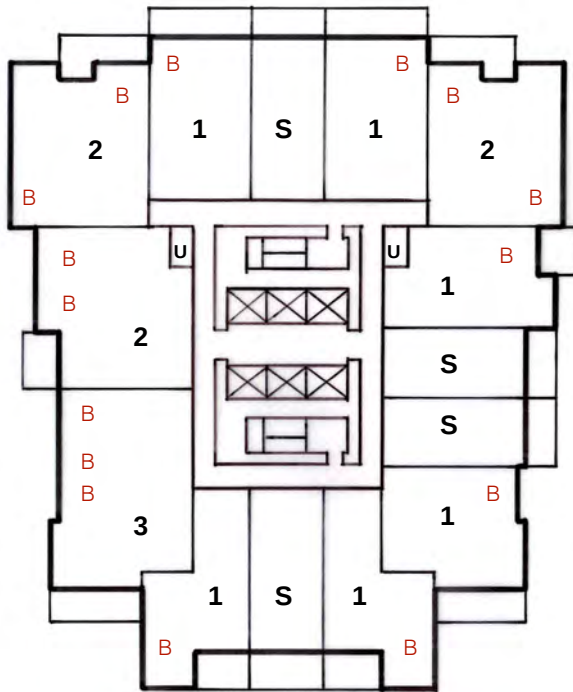
Note 2: Two and three bedroom units designed to meet Family Friendly Guidelines. Unit counts, areas and features shown on separate exhibit.

Note 3: Penthouse level units have taller ceilings or two-level layouts. See tower section drawing.

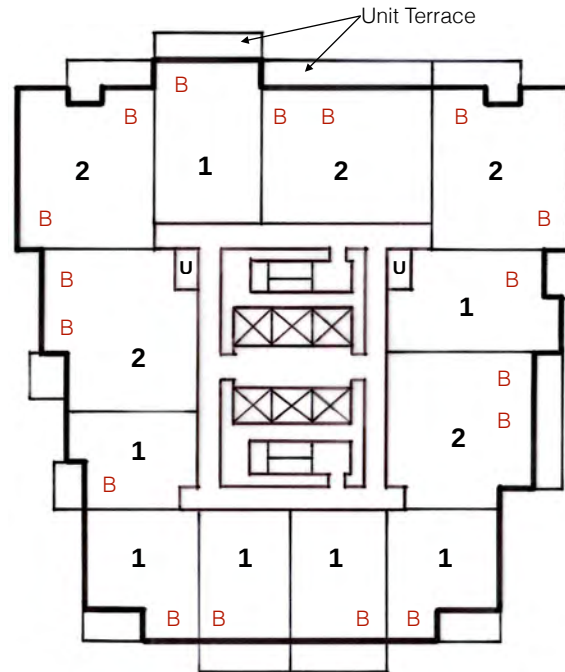
Legend
R-A Residential Amenity Space
U Utility/Trash/Storage
PH Penthouse Unit
PH (2L) 2-Level Penthouse Unit
B Bedroom Location



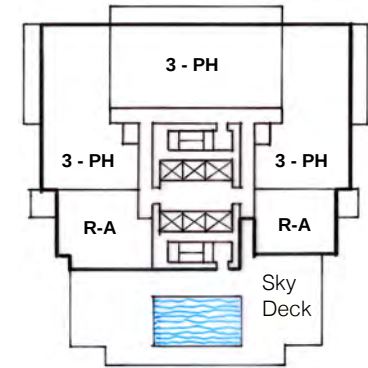
PENTHOUSE LEVELS 3-4 (T43)



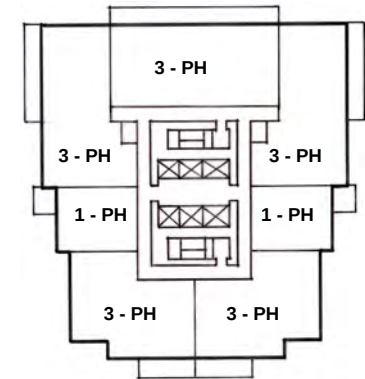
LOWER TOWER LEVELS (Floors T4-T27)



UPPER TOWER LEVELS (Floors T28-T40)



PENTHOUSE LEVEL 2 (T42)



PENTHOUSE LEVEL 1 (T41)

PENTHOUSE LEVELS (Floors T41-T43)

HIGH-RISE SCENARIO 2b: PROGRAMMATIC SECTION

Legend
PH Penthouse
T-1 Tower Level



PROJECT TYPE: POINT TOWER HIGH RISE WITH RESIDENTIAL AT ALTERNATIVE UNIT MIX