

Gresham City Hall- programming document

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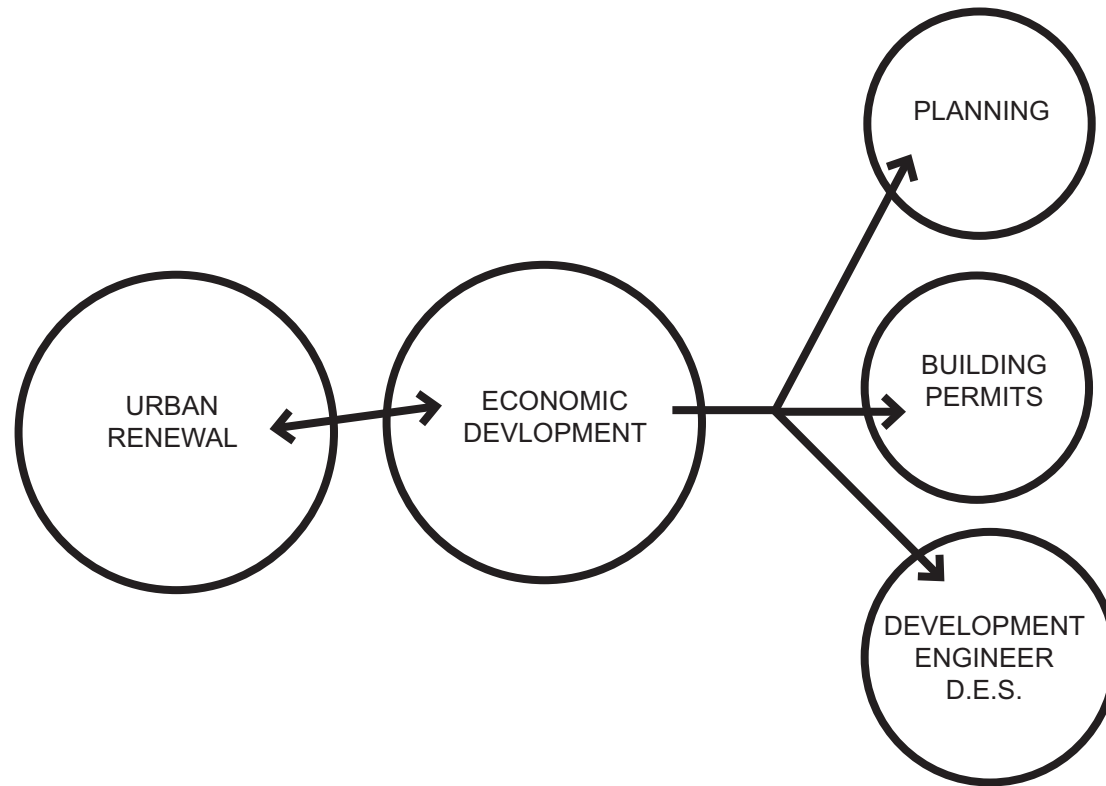
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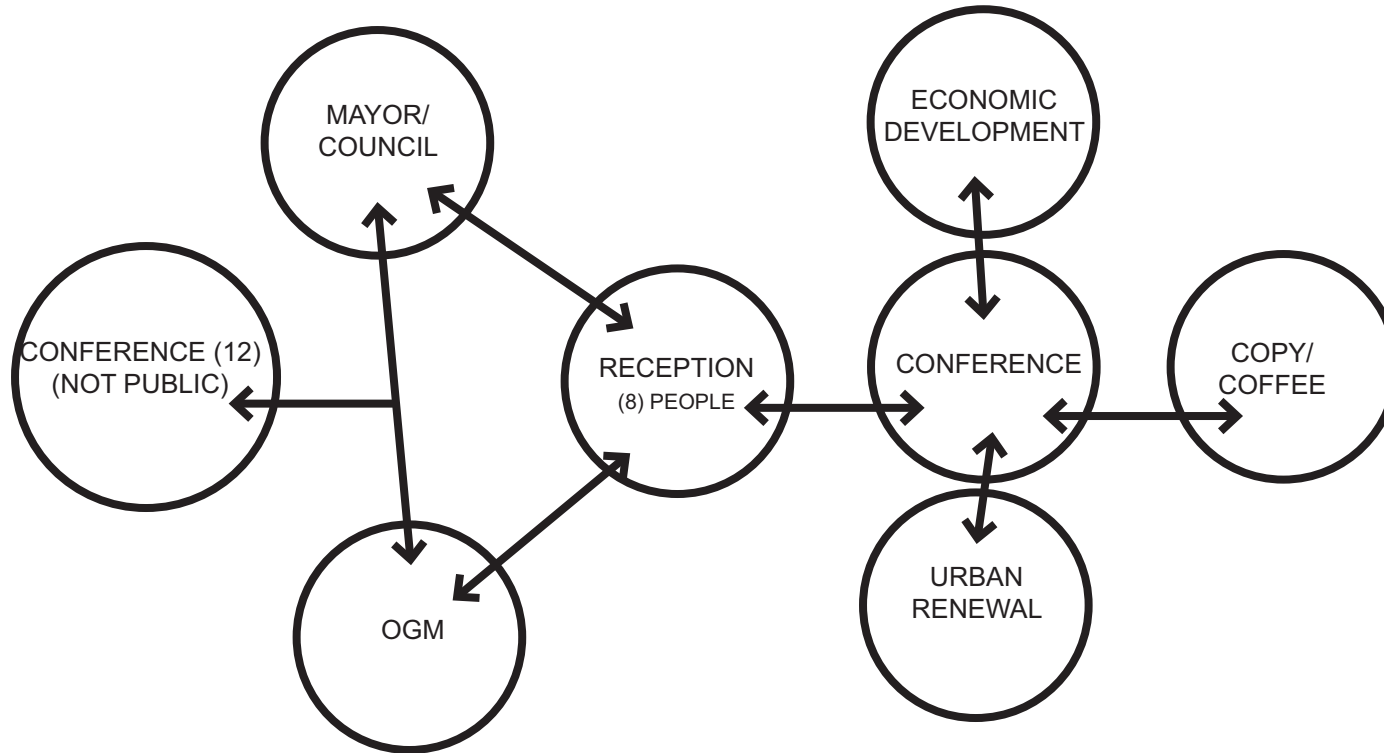
Economic Development

Values	Goals	Facts	Needs	Ideas
Human				
	Interaction with other departments	-Work closely with other departments	-Adjacency to other departments and common areas in which to meet	-Share space with Urban Renewal
	Comfort in the work environment	-They do not have control over their work environment	-Comfortable environment in order to get more work done	-HVAC controls in each office
Technological				
	Work more efficiently using technology	-Use technology on a daily basis	-Plug power control	-Place plugs near workspaces with easy accessibility
Safety				
	Protect confidential information	-No designated, secure storage -No designated, secure conference room	-Access to secure storage fairly frequently -Separate, confidential conference room in order to handle private information	-Lock on storage area -Keep out of public realm -Provide separate, secure conference room
Temporal				
	Efficiency in managing spaces	-Conference rooms are double booked regularly as there is no central booking	-Central system for consistency throughout city hall to manage booking	-Online system to sign out conference rooms

Economic Development



Economic Development



GRESHAM CITY DEPARTMENT OF ECONOMIC DEVELOPMENT PLAN AREAS- CURRENT FUTURE

	EXISTING	FUTURE	ROOM DIMS	TYP. AREA	TOTAL CURRENT	TOTAL FUTURE	NOTES
	no. of rooms	no. of rooms	feet	SF	SF	SF	
Office	1	1	10' x 12'	130	130	125	
Conference Room	0	1	16' x 11'	160	160*	180	*shared space (UR)
Staff Cubicles	1	1	22' x 21'	462	462	462	4 occupants
Copy/Coffee Room	0	1	5' x 10'	50	0	50	
Reception	1	1		120*	120*	135*	*shared space (UR)
Total				922	872	1,052	

Fire Department

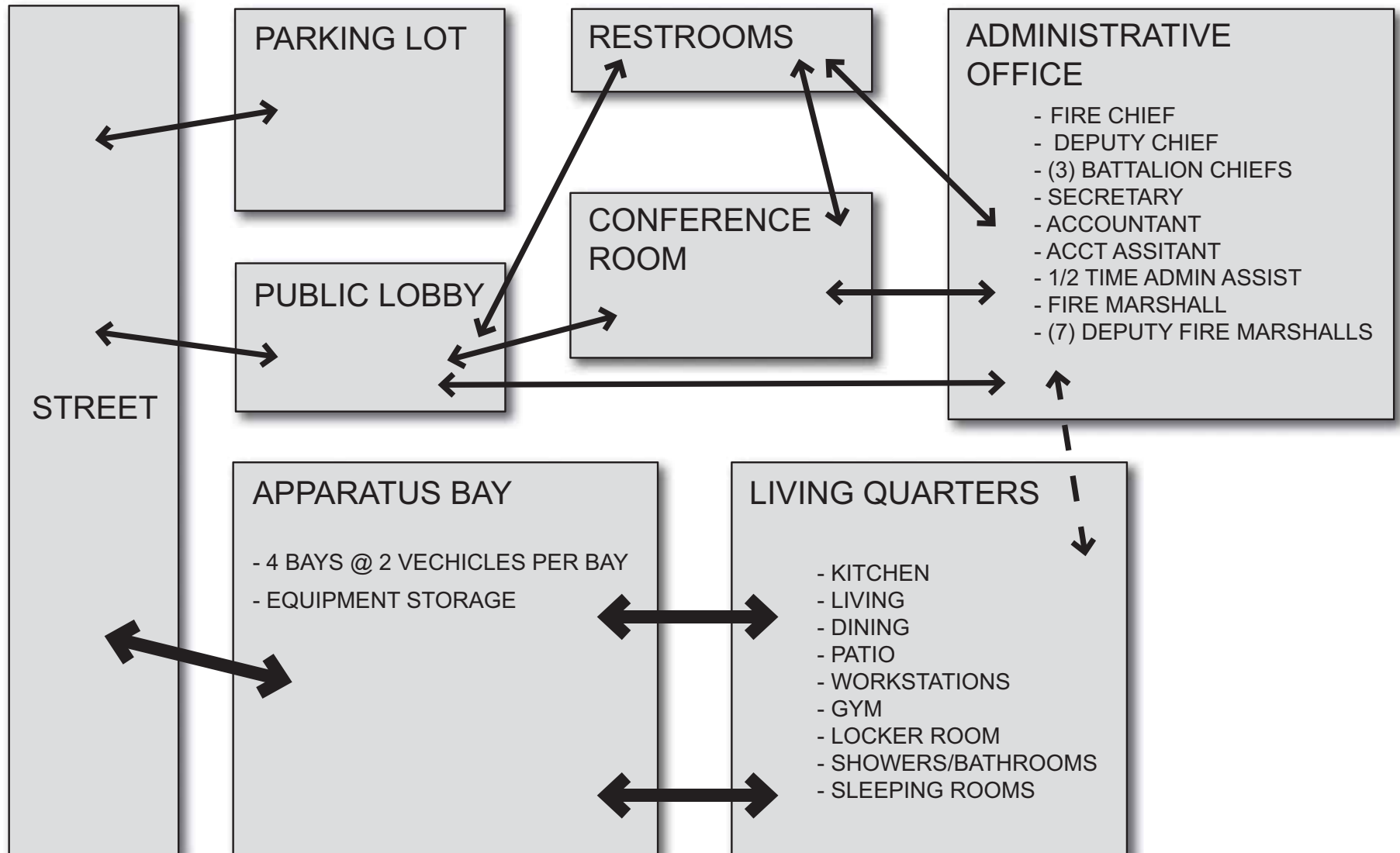
Values	Goals	Facts	Needs	Ideas
Human				
	Efficient layout of built space	<ul style="list-style-type: none"> - Existing triangular layout produces inefficient space & dissatisfaction among occupants - Public/Private not well defined 	<ul style="list-style-type: none"> - Maximize usable space through planning - Plan which clearly delineates public/admin/ apparatus bays/ living quarters 	<ul style="list-style-type: none"> - Primarily rectilinear plan - Create dedicated community conference room accessible to the public
	Provide gender specific facilities	<ul style="list-style-type: none"> - Currently minimal space dedicated to female firefighters 	<ul style="list-style-type: none"> - Dedicated locker room/bathrooms - Facilities of comparable quality for both genders 	<ul style="list-style-type: none"> - Construct 2 sets of gender specific locker room/ bathroom facilities
	Secure separation of public/administrative space	<ul style="list-style-type: none"> - Current facility shares lobby with police station - Lobby not currently secure - Confusing building organization 	<ul style="list-style-type: none"> - Clear organization and way finding - Dedicated facilities 	<ul style="list-style-type: none"> - Transparent division directly between lobby & public - Group like functions together w/ circulation around them
Technological				
	Clear & unified organization of space and equipment	<ul style="list-style-type: none"> - Currently firefighter equipment is distributed haphazardly 	<ul style="list-style-type: none"> - Consolidated space allowing for all special requirements - Smaller storage divisions for specific uses 	<ul style="list-style-type: none"> - Open section in apparatus bay with subdivided storage cabinets and ventilation - Archive for paperwork - Proper ventilation
Temporal				
	Provide for increased capacity	<ul style="list-style-type: none"> - Storms + weather emergencies, shift changes require more personnel on site - Economic improvements will increase staff 	<ul style="list-style-type: none"> - Spare generator to account for electrical/data - Expandable space - More showers 	<ul style="list-style-type: none"> - Have certain spaces be adaptable during times of crisis - Provide more showers per bathroom
	Improve emergency response time	<ul style="list-style-type: none"> - Emergency response requires 5-minute response time - Current facility too far from right of way 	<ul style="list-style-type: none"> - Fast route to apparatus bays from living quarters - Close proximity to main driving route 	<ul style="list-style-type: none"> - Place building on site adjacent to main arterial - Avoid placing building next to light rail stop - Overdesign for systems

Fire Department

Economic			
Durability of Facilities	<ul style="list-style-type: none"> - Firefighting lifestyle produces heavy wear on a building - Residential grade equipment is insufficient - Tennis balls on chairs/boot scuffs on floors 	<ul style="list-style-type: none"> - Low maintenance materials that last as long as possible under heavy use conditions 	<ul style="list-style-type: none"> - Concrete flooring - Commercial grade appliances & finishes
Aesthetic			
Create presence/identity of building public	<ul style="list-style-type: none"> - Fire department wants a recognizable presence without suggesting exorbitant spending - Building will be visible to the public 	<ul style="list-style-type: none"> - Appearance that is agreeable to the public - Community space 	<ul style="list-style-type: none"> - Historically evocative materials - Downplay expense of materials
Home-like atmosphere	<ul style="list-style-type: none"> - Firefighters spend a 24-hr shift in the living quarters every 3 days 	<ul style="list-style-type: none"> - Flexible lounge space - Cooking, laundry, sleeping quarters - Exterior gathering space 	<ul style="list-style-type: none"> - Scale spaces to domestic-style use - Open plan within communal spaces - Natural light & ventilation

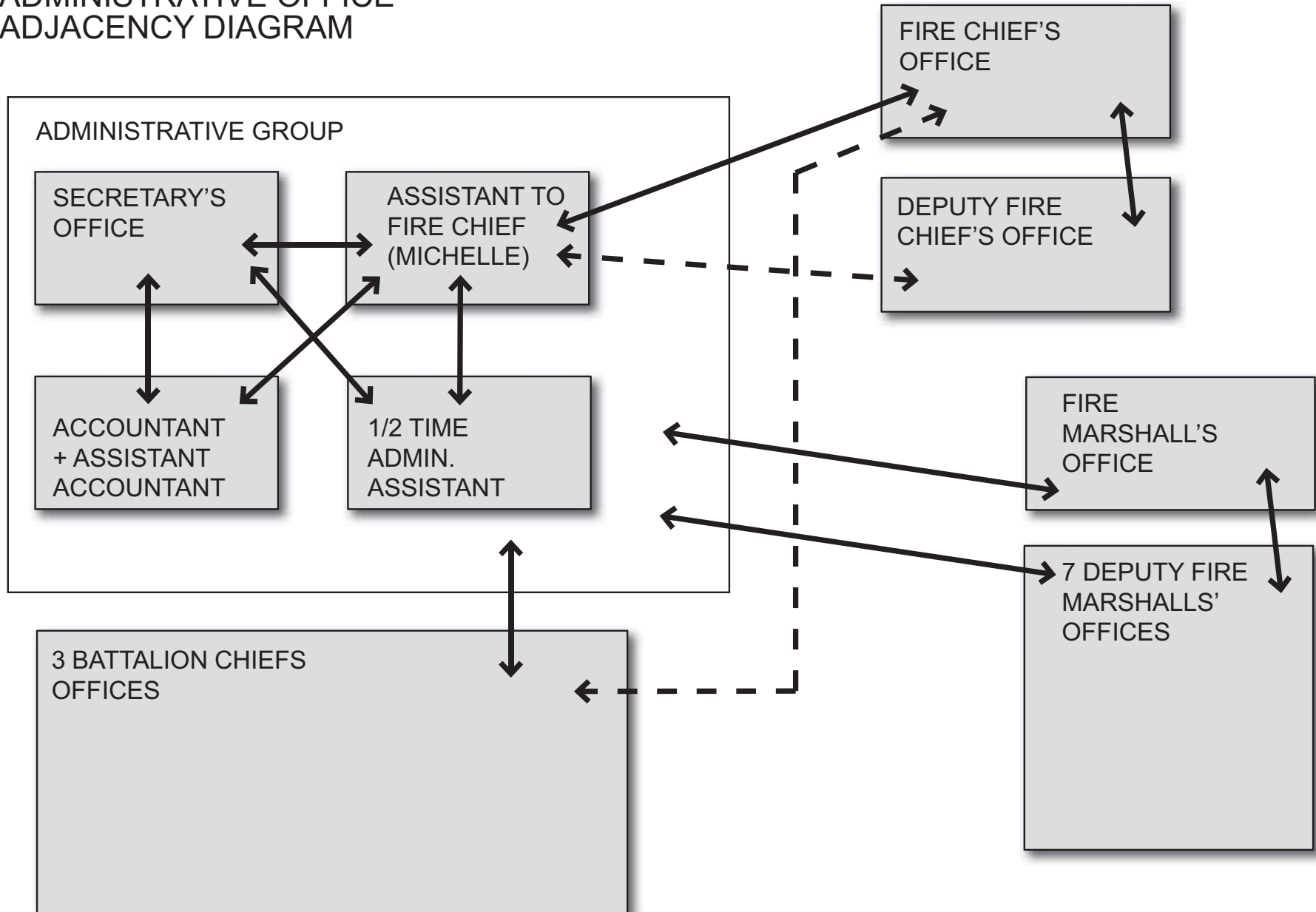
Fire Department

OVERALL ADJACENCY DIAGRAM



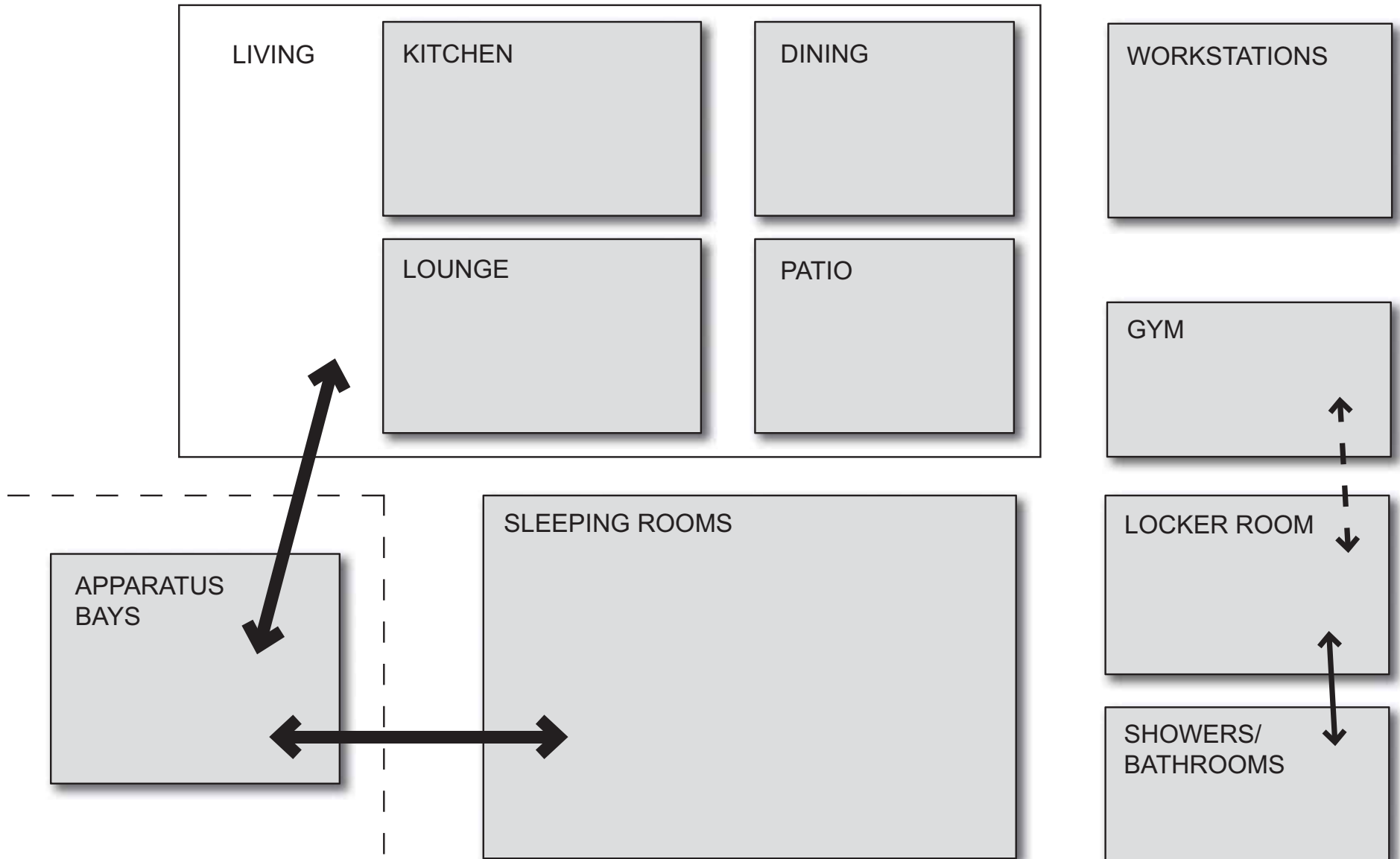
Fire Department

ADMINISTRATIVE OFFICE ADJACENCY DIAGRAM



Fire Department

LIVING QUARTERS ADJACENCY DIAGRAM



GRESHAM CITY FIRE DEPARTMENT PLAN AREAS- CURRENT FUTURE

	EXISTING	FUTURE	ROOM DIMS	TYP. AREA	TOTAL CURRENT	TOTAL FUTURE	NOTES
	no. of rooms	no. of rooms	feet	SF	SF	SF	
Fire Reception Area	1	0	34'x 23'	782	782	0	
Public Lobby	0	1	25'x12'	300	0	300	
Admin. Offices	0	1	34'x 23'	782	0	782	
Admin. Reception & Work Area	1	0	25' x 20'	500	500	0	
Fire Chief's Office	1	1	17'x 12'	204	204	204	
Fire Chief's Assistant	0	1	15'x 10'	150	0	150	
Fire Marshal Office	1	1	15'x 10'	150	150	150	
Deputy Fire Chief Office	1	1	17'x 10'	170	170	170	
Battalion Chief Office	1	1	17'x 12'	204	204	400	
Deputy Fire Marshal Office	4	4	15'x 12'	180	720	720	
Storage	4	2	13'x 10'	130	520	520	Admin. & General
Break Room	1	1	19'x 10'	190	190	190	
Management Analyst Office	1	1	14 x 10'	140	140	140	
Conference Room	1	1	20'x20'	400	400	400	Flexible space, public use?
Service Area	3	3	20'x 10'	200	600	600	
Wash Room	1	1	10'x 10'	100	100	100	
Apparatus Bays (double width)	3	4	69'x 18'	1,242	3,726	4,968	
Exercise Room	1	1	18'x 13'	234	234	700	
Day Room/ Open Office Area	1	1	25'x 21'	525	525	525	
TV Area	1	1	25'x 20'	500	500	500	
Kitchen/ Eating Area	1	1	30'x 20'	600	600	800	Pantry space & comm. fridge
Office	1	0	12'x 10'	120	120	0	
Report/ Emergency Command Room	0	1	30'x 20'	600	0	600	Flexible space
Bedroom	8	10	11'x 9'	99	792	990	
Locker Room/ Showers	1	2	30'x 13'	390	390	780	
Bathroom	2	2	18'x 10'	180	360	360	
Subtotal					11,927	15,049	
Circulation 15% of total					1,789	2,257	
Total					13,716	17,306	

EXISTING BUILDING ANALYSIS:

- BUILDING NOT PROMINENTLY LOCATED, ENTRY HARD TO FIND
- WAYFINDING IS DIFFICULT THROUGHOUT THE BUILDING
- LONG, BLANK CORRIDORS ARE UNINSPIRING
- PUBLIC AND PRIVATE SPACE NOT CLEARLY DEFINED
- FLEET VEHICLES ARE TOO FAR AWAY
- NOT ALL SPACE IS USED EFFICIENTLY

- SKYLIGHTS ENHANCE STAIRWELLS
- NEAR MAX LINE
- PROXIMITY TO OTHER LOCAL GOVERNMENT FUNCTIONS

GOALS FOR CITY HALL:

- ACCESS TO NATURAL LIGHT
- ACCESS TO FRESH AIR
- AESTHETICALLY PLEASING COMMON SPACES
- ENCOURAGE CREATIVITY
- BETTER CONNECTION TO THE PUBLIC
- ACCESSIBILITY
- KEEP DEPARTMENTS TOGETHER
- SECURITY & SAFETY
- ENCOURAGE HEALTHY LIFESTYLE

DESIGN GOALS:

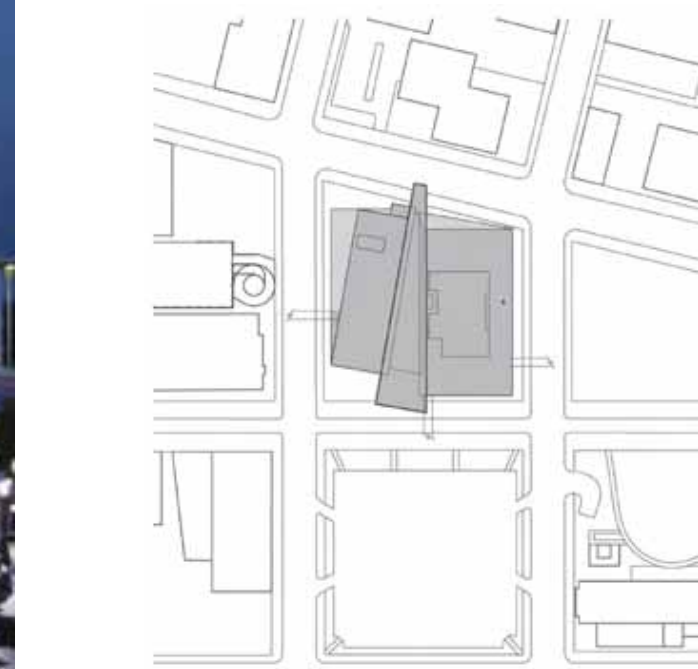
- LOCATE THE CITY HALL IN A PLACE OF PROMINANCE
- RESPOND TO SITE AND CLIMATIC CONDITIONS
- APPLY THE SAME DEVELOPMENT GOALS FOR DOWNTOWN GRESHAM TO THE CITY HALL

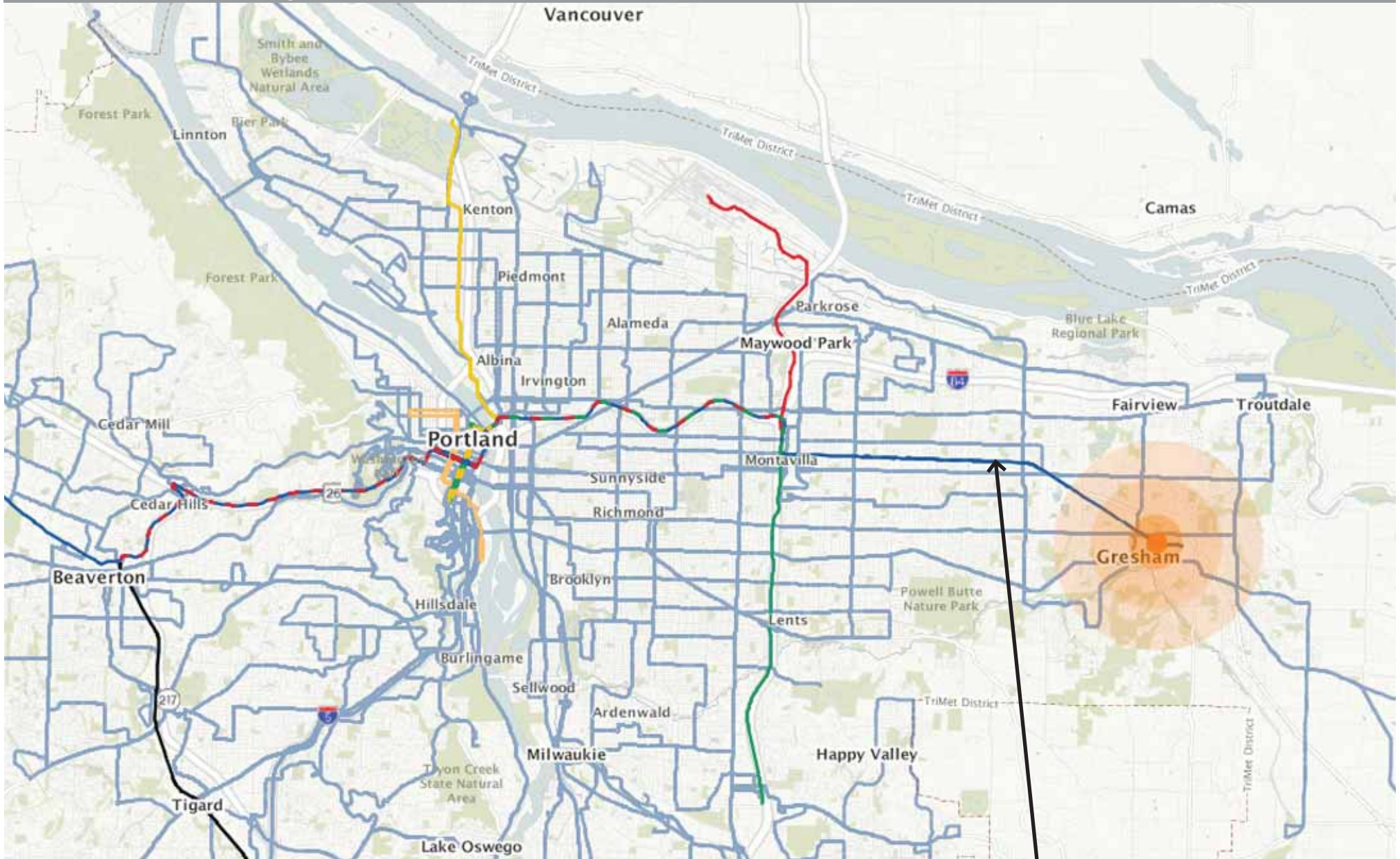
GRESHAM CITY HALL WILL HAVE A STRONG CIVIC IDENTITY AND RESPONSIBLY DRIVE FUTURE DEVELOPMENT WITHIN THE CITY.

Civic Presence
Positive Work Environment
Physical Interaction Among People



BUILDING PRECEDENT:
Minneapolis Central Library
Pelli Clarke Pelli Architects





Connection to Surroundings

MAX TRANSIT LINE



CURRENT
CITY HALL

SITE #4

TRANSIT
LINES

HISTORIC
DOWNTOWN



ZONING ANALYSIS: SITE 4

DRL-1:

- single family homes/ duplexes
- distinct neighborhoods
- walkable

DTM:

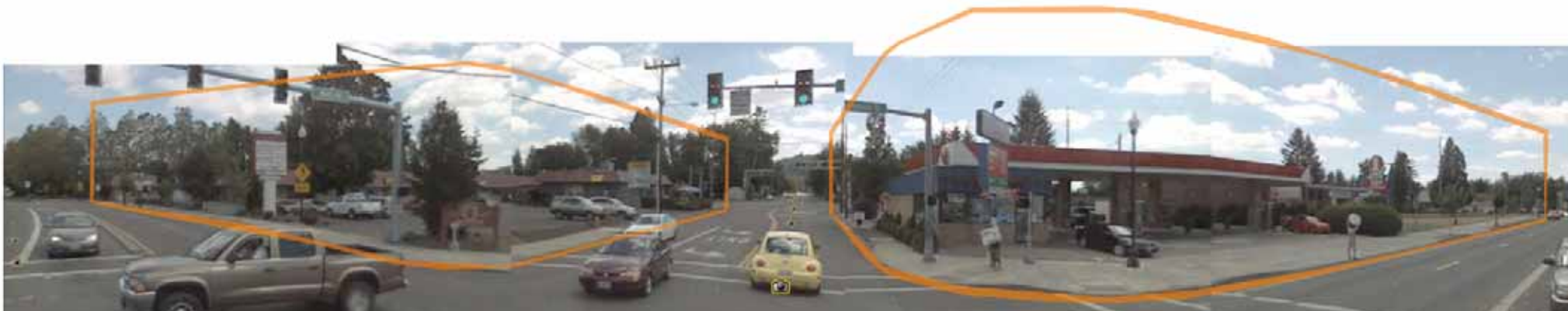
- near transit
- commercial
- promote transit use

DCC:

- small scale
- walkable
- mix of old and new

DMU:

- mix of uses
- connection between pedestrians & vehicles



ARCH 549

University of Oregon



Site Context



ARCH 549



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Site Context

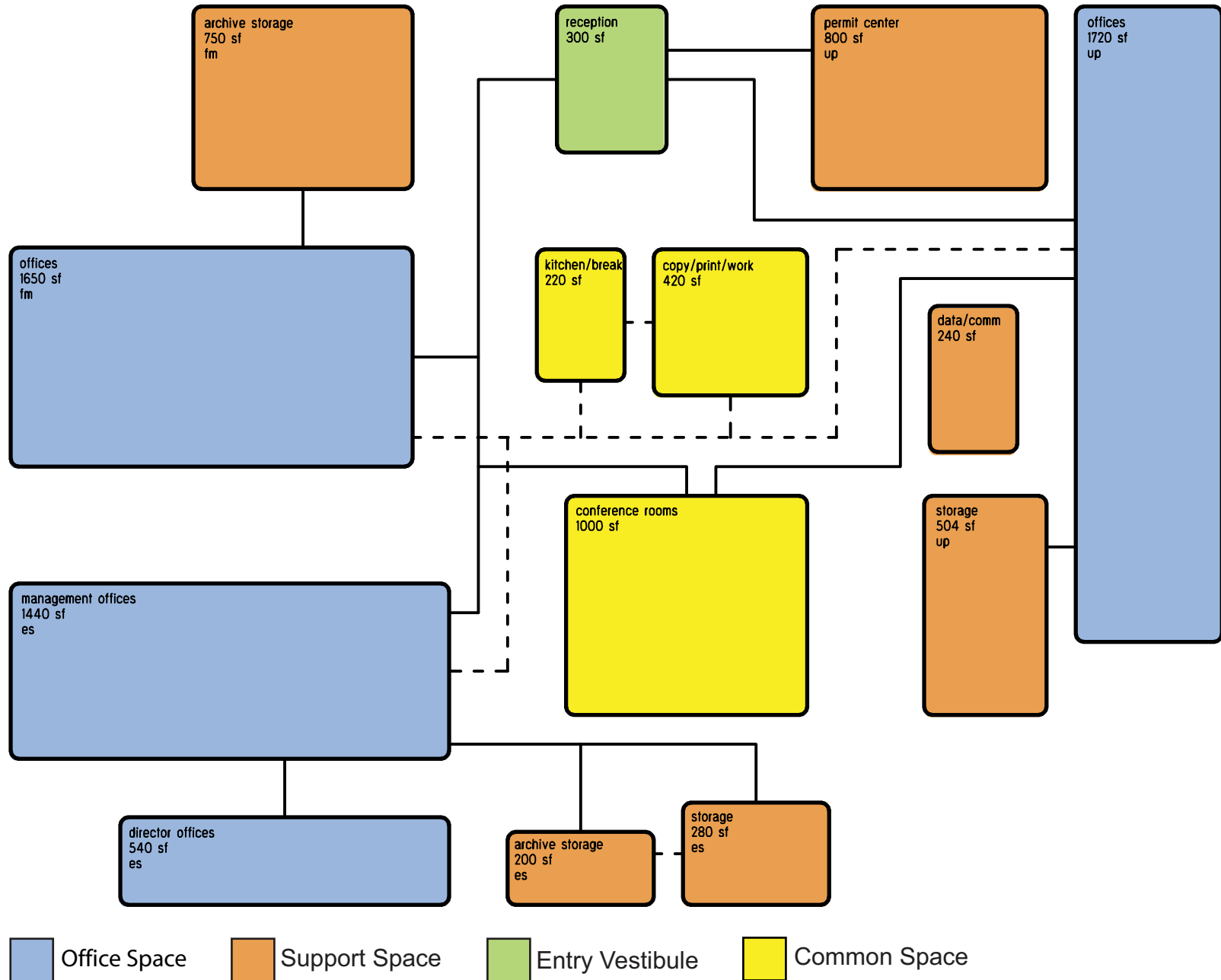


ARCH 549

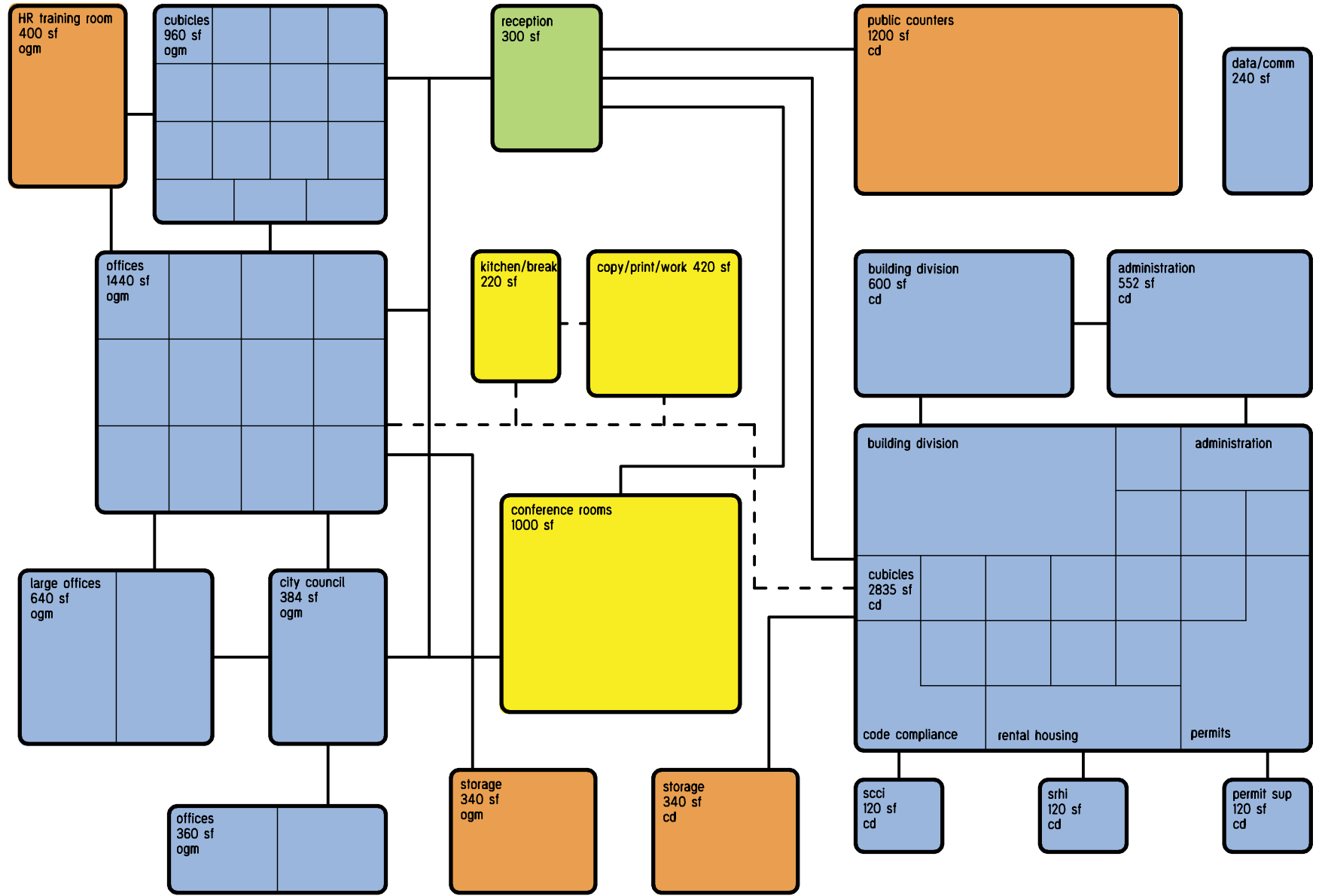


University of Oregon

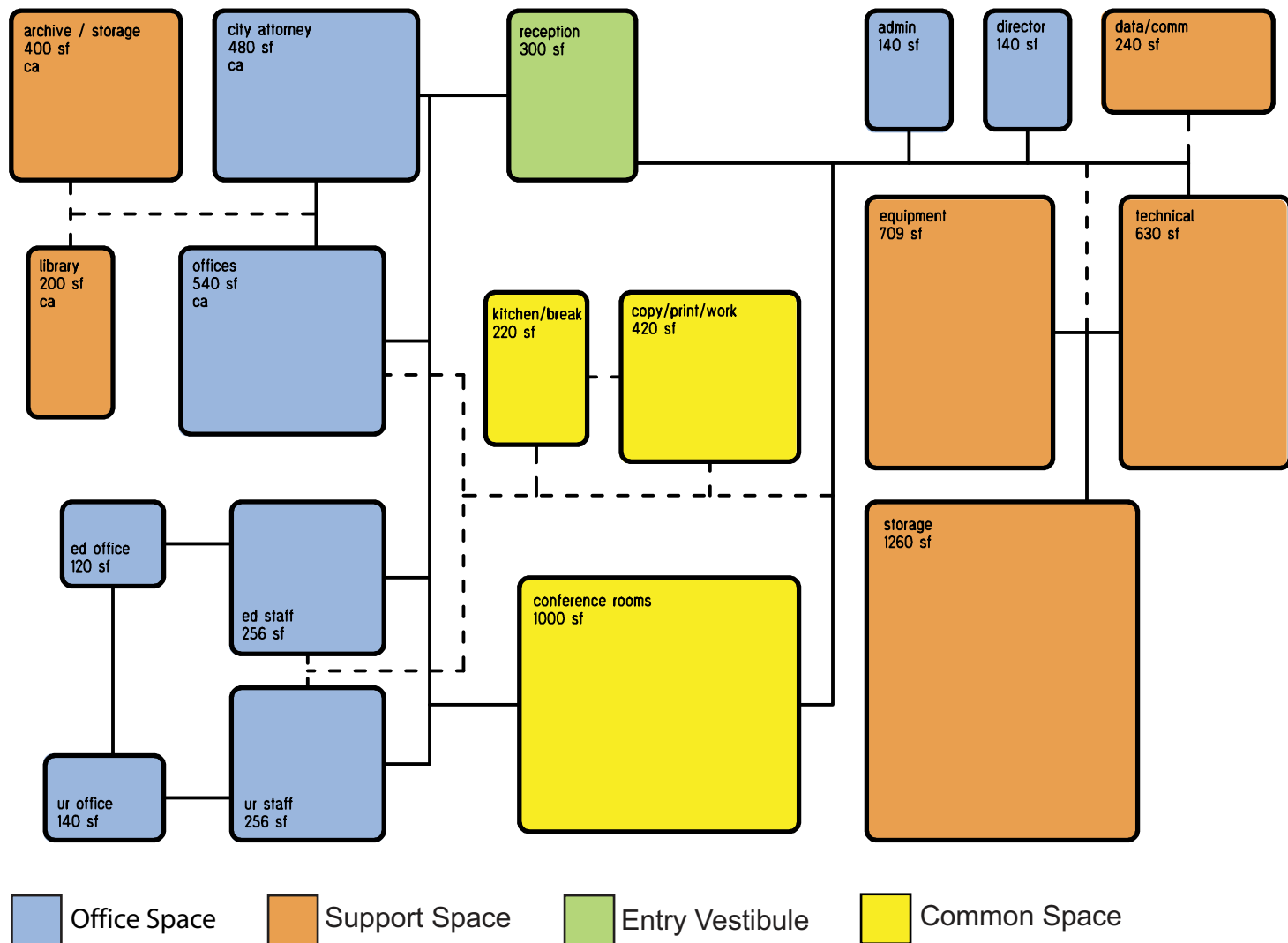
FINANCE AND MANAGEMENT / URBAN PLANNING / ENVIRONMENTAL SERVICES FIRST FLOOR



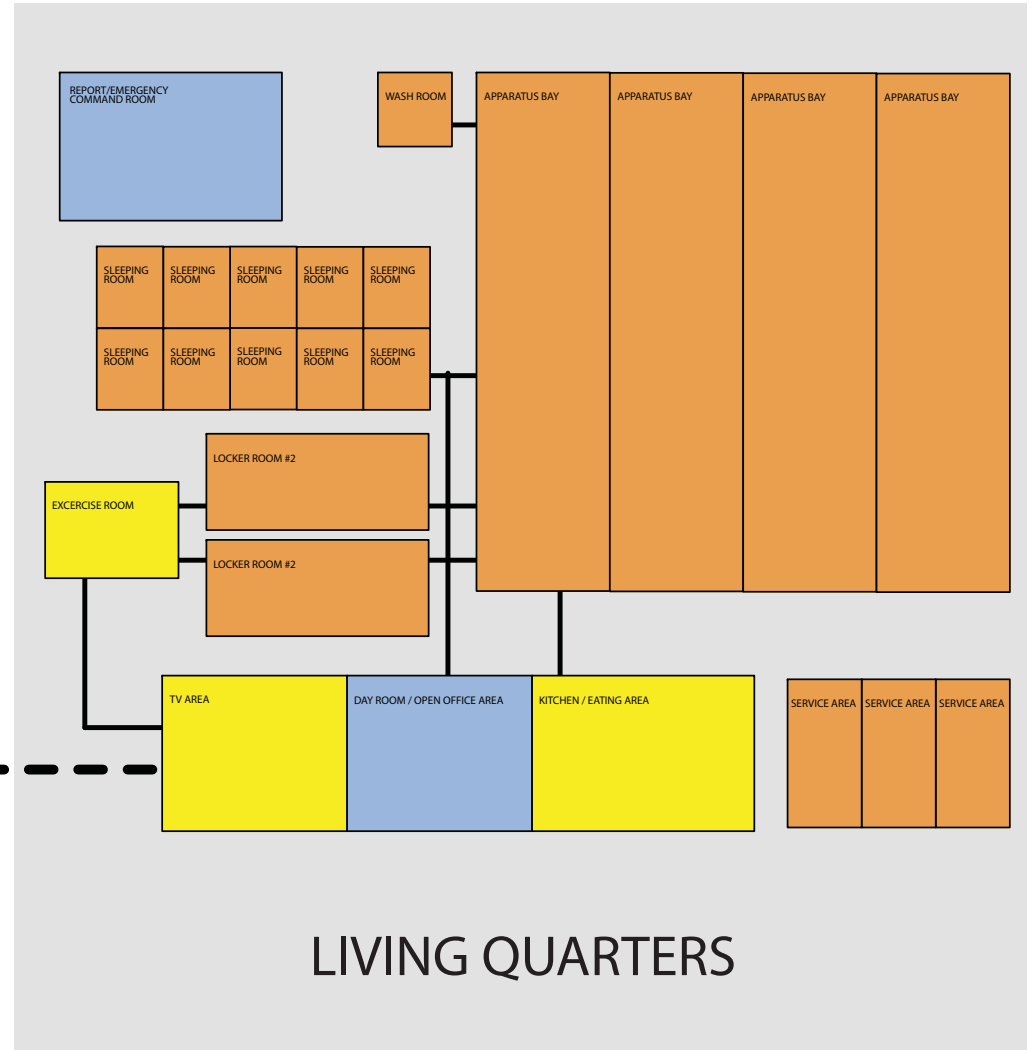
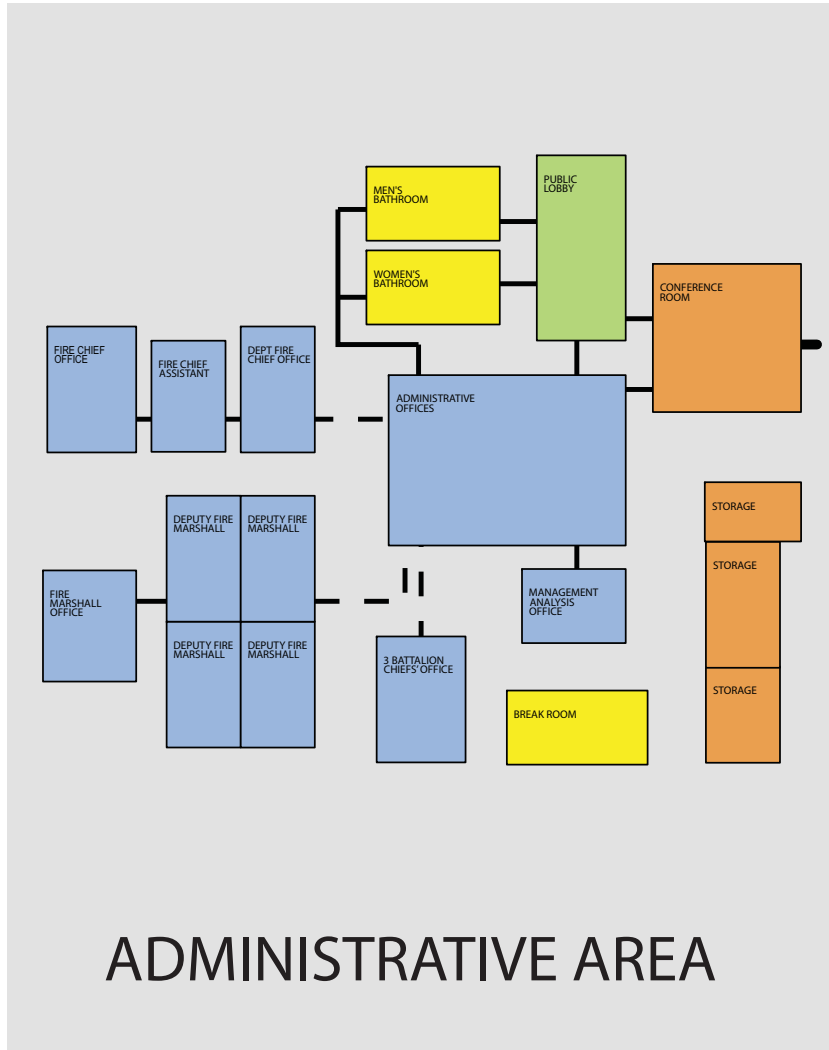
OFFICE OF GOVERNANCE AND MANAGEMENT / COMMUNITY DEVELOPMENT SECOND FLOOR



ECONOMIC DEVELOPMENT / URBAN RENEWAL / INFORMATION TECHNOLOGY / CITY ATTORNEY THIRD FLOOR

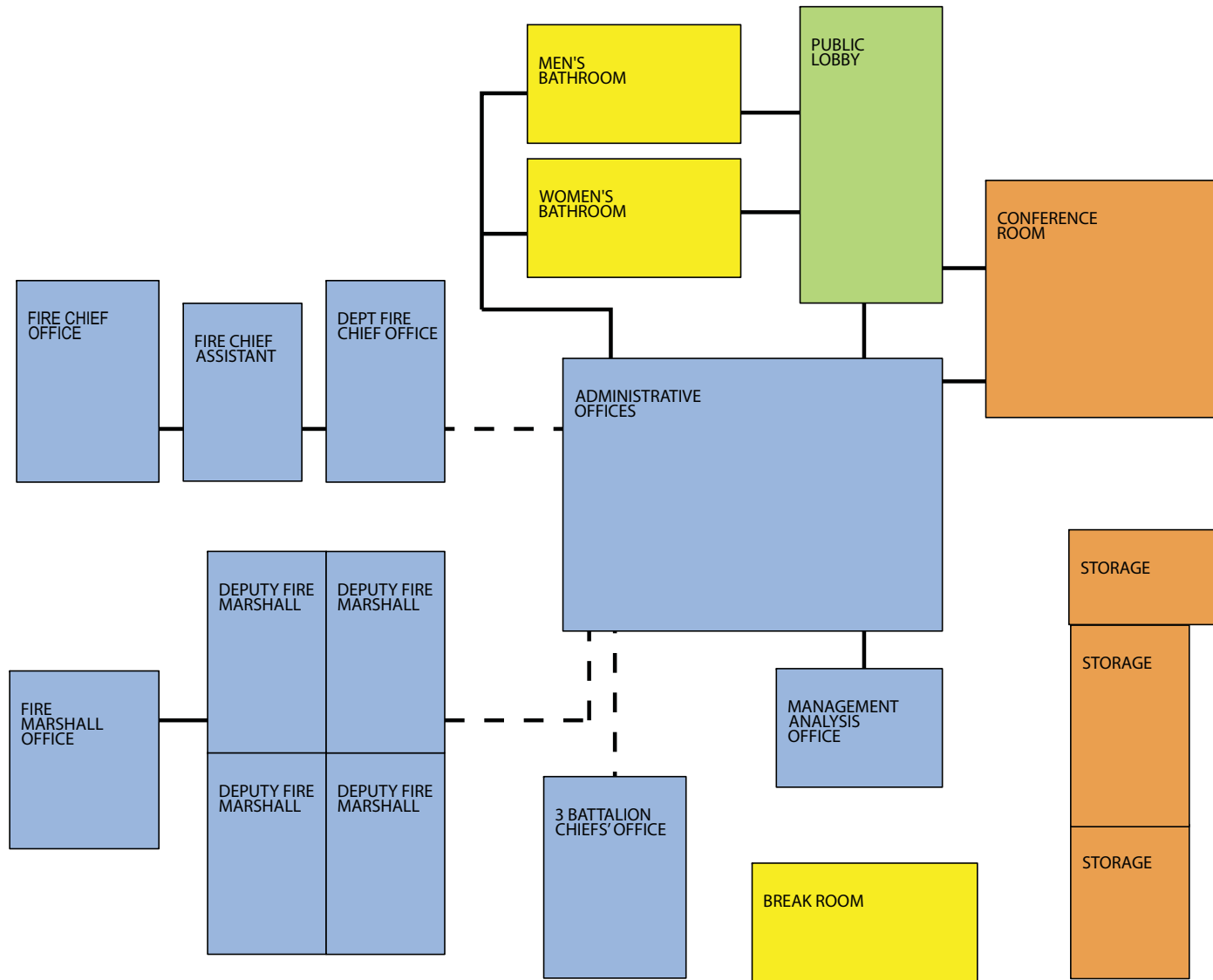


FIRE DEPARTMENT

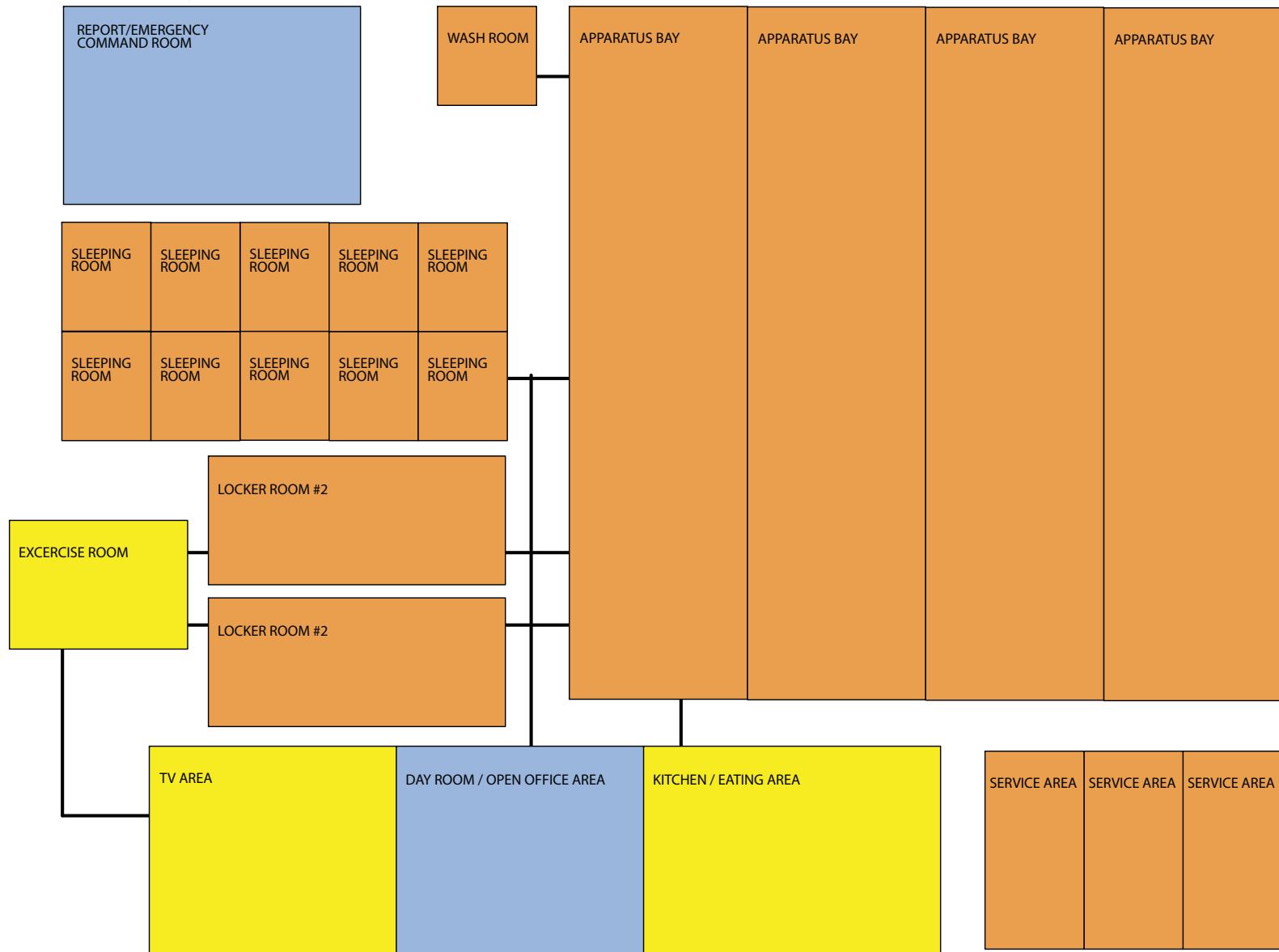


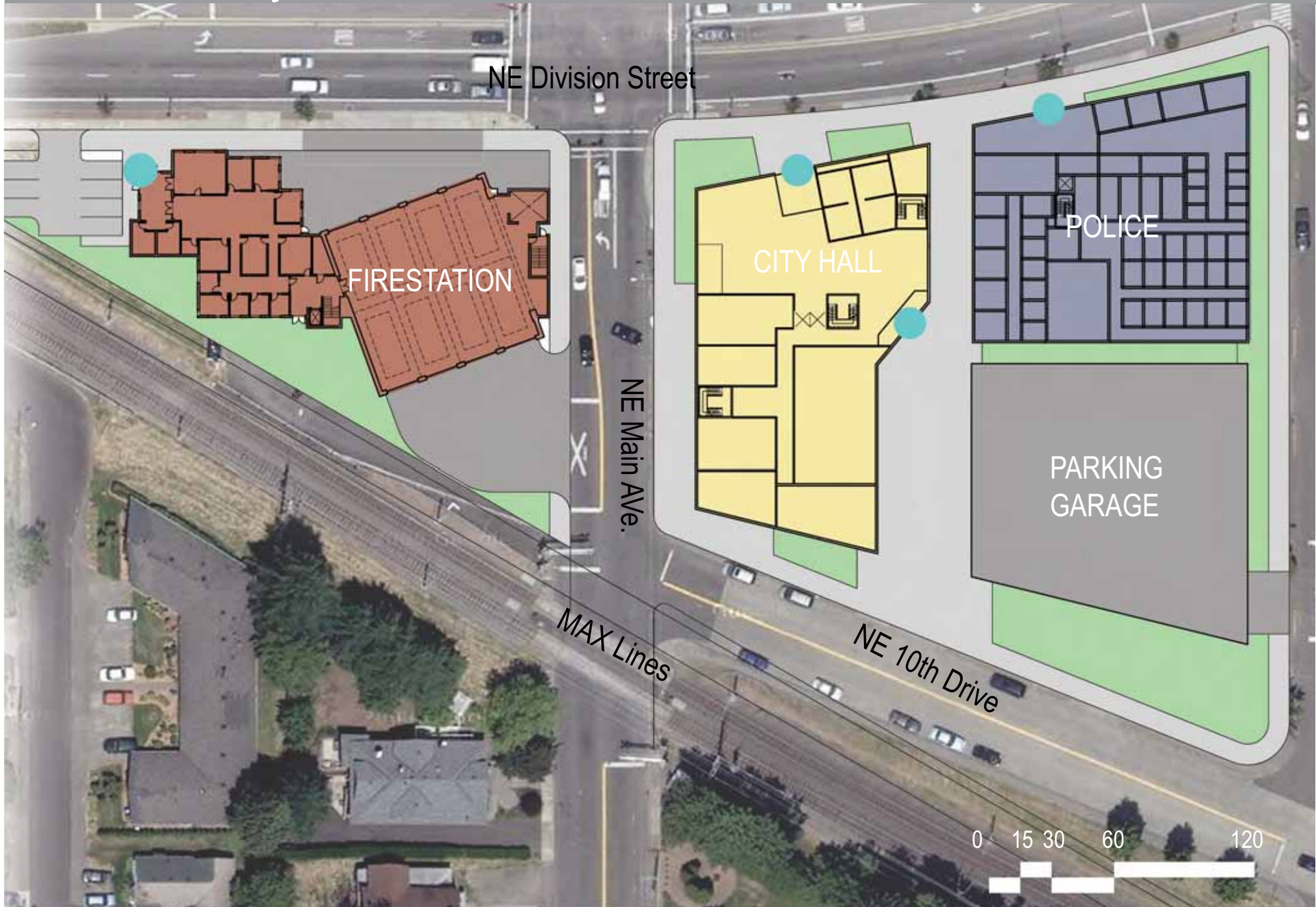
-  Office Space
-  Support Space
-  Entry Vestibule
-  Common Space

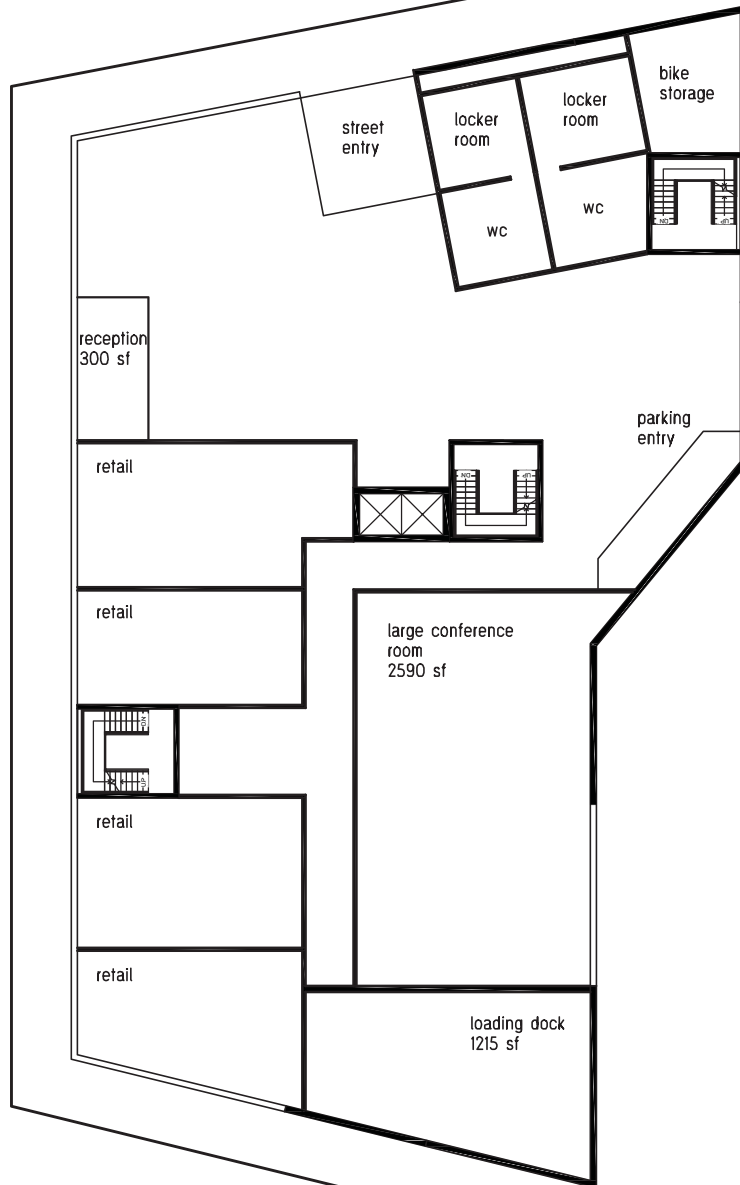
FIRE DEPARTMENT: ADMINISTRATIVE AREA



FIRE DEPARTMENT: LIVING AREA





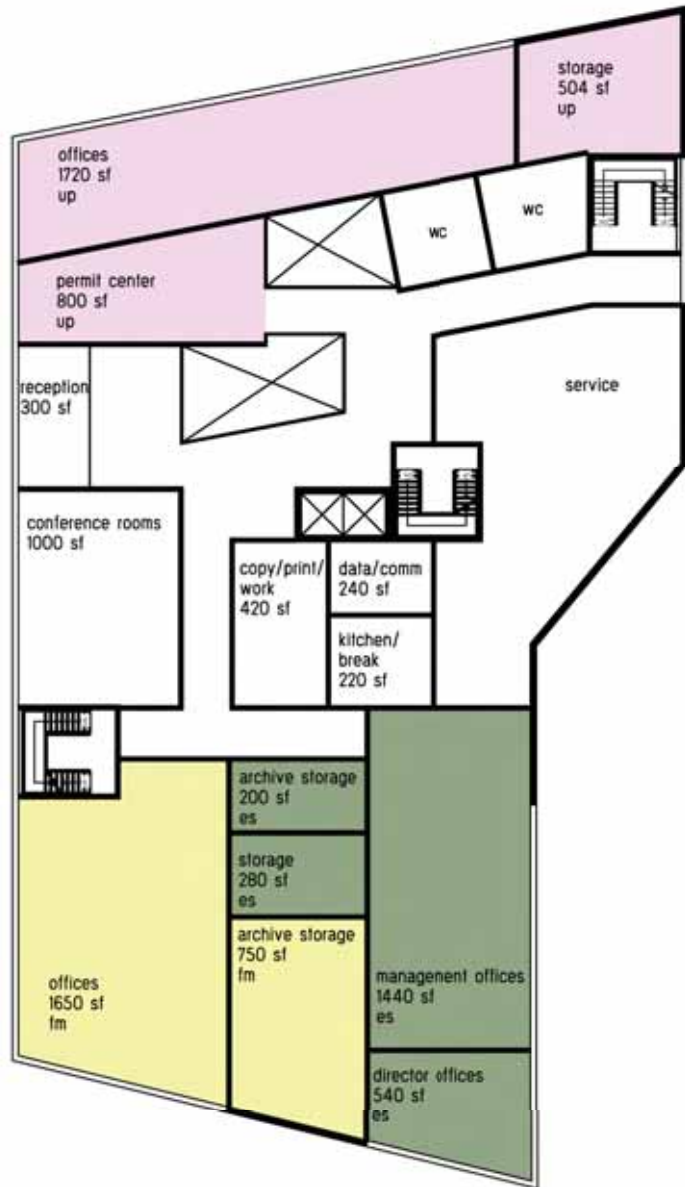


police GROUND FLOOR PLAN

parking
garage

SCALE: 1/32 in = 1 ft



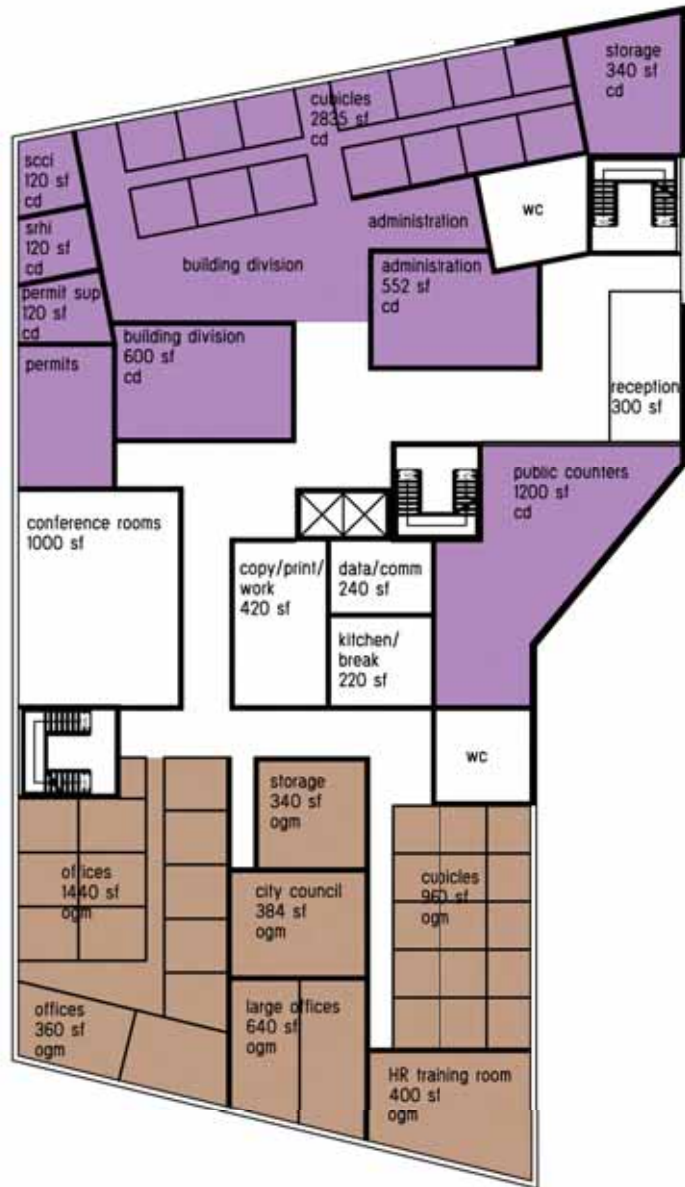


2ND FLOOR PLAN

- Urban Planning
- Finance and Management
- Environmental Services

SCALE: 1/32 in = 1 ft



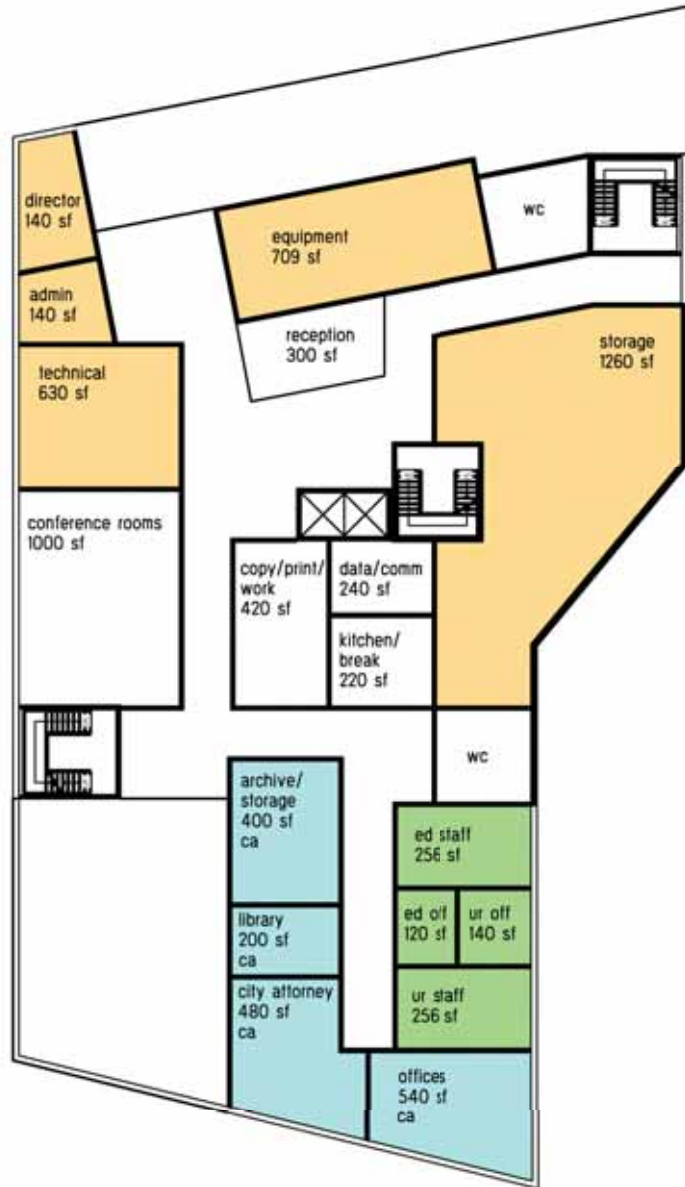


3RD FLOOR PLAN

- Community Development
- Office of Governance and Management

SCALE: 1/32 in = 1 ft



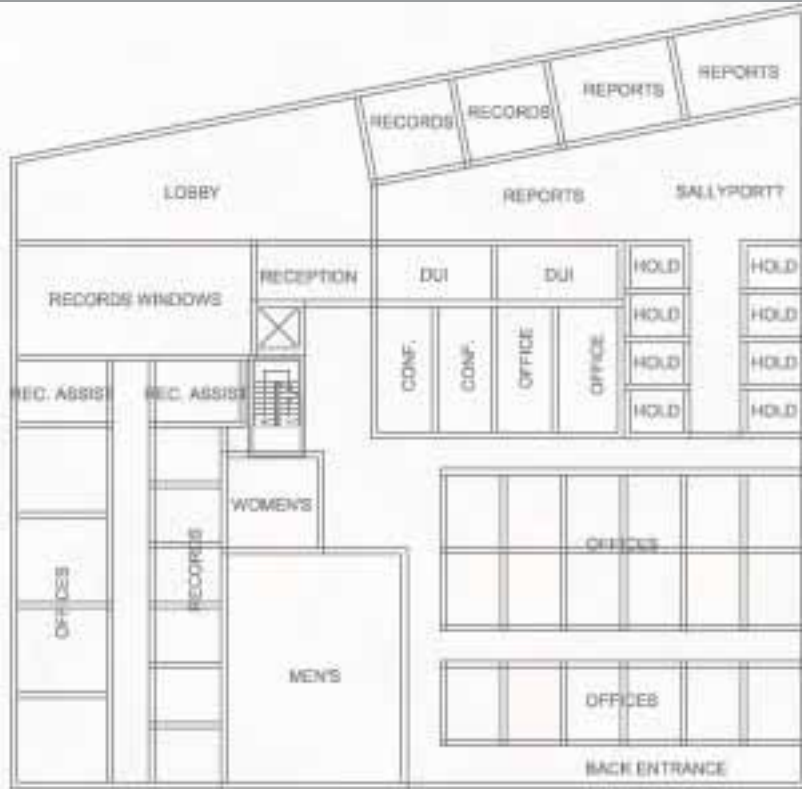


4TH FLOOR PLAN

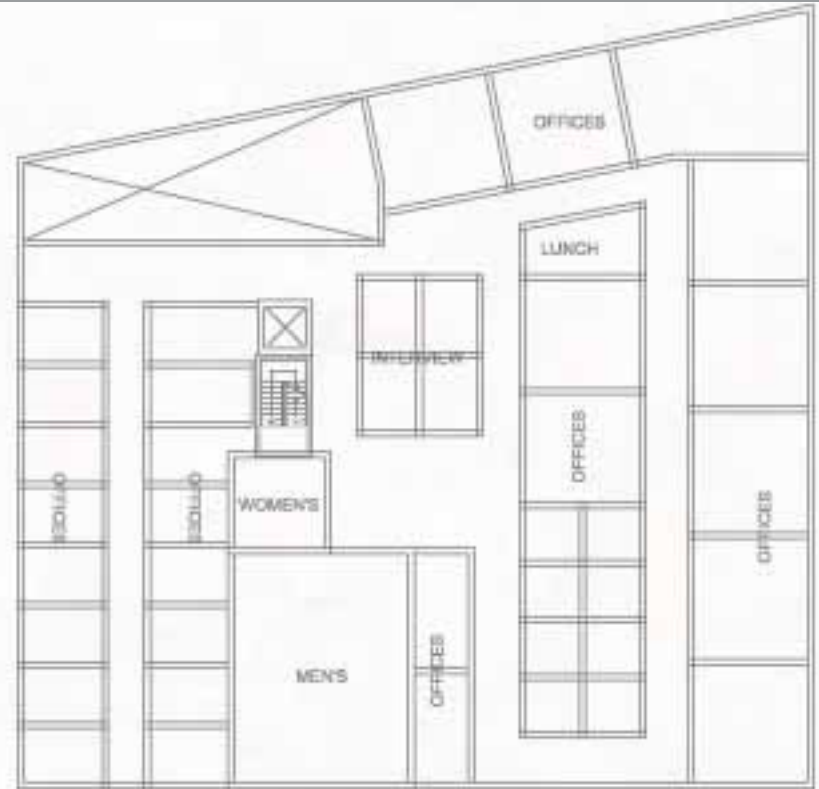
- Information Technology
- City Attorney
- Economic Development/Urban Renewal

SCALE: 1/32 in = 1 ft

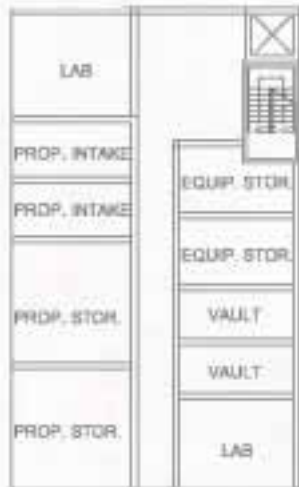




1ST FLOOR

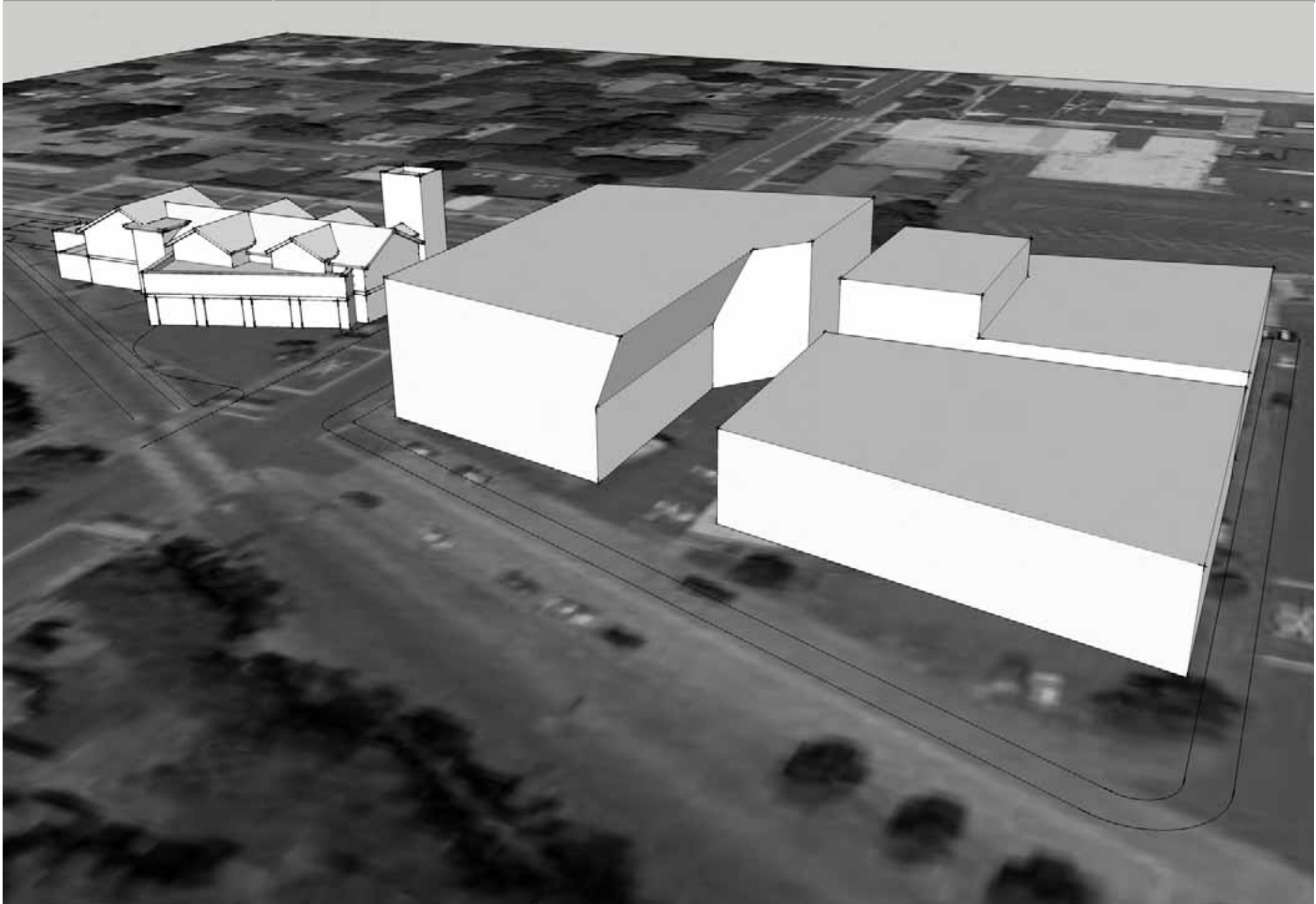


2ND FLOOR



3RD FLOOR

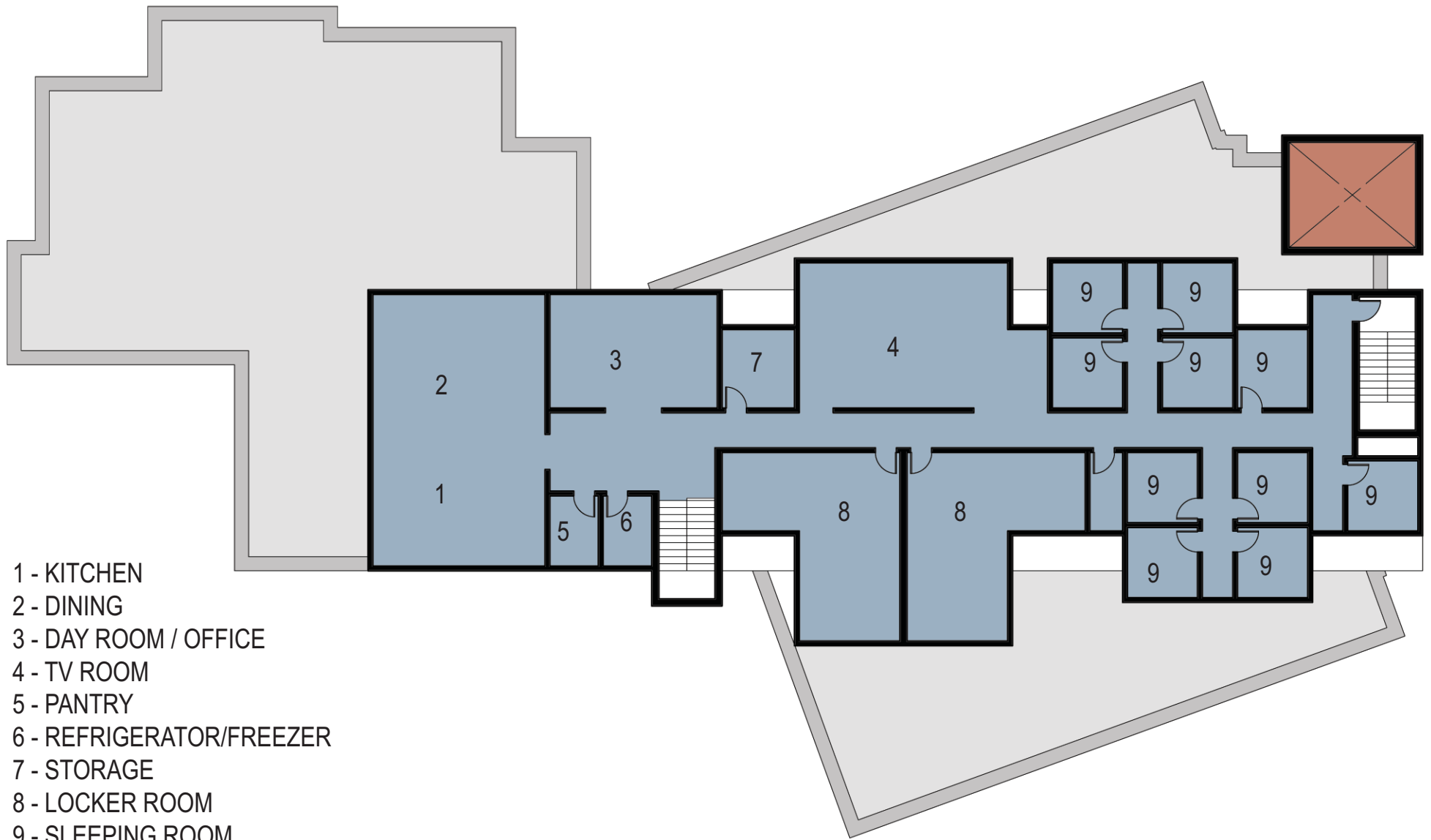
POLICE STATION PLANS

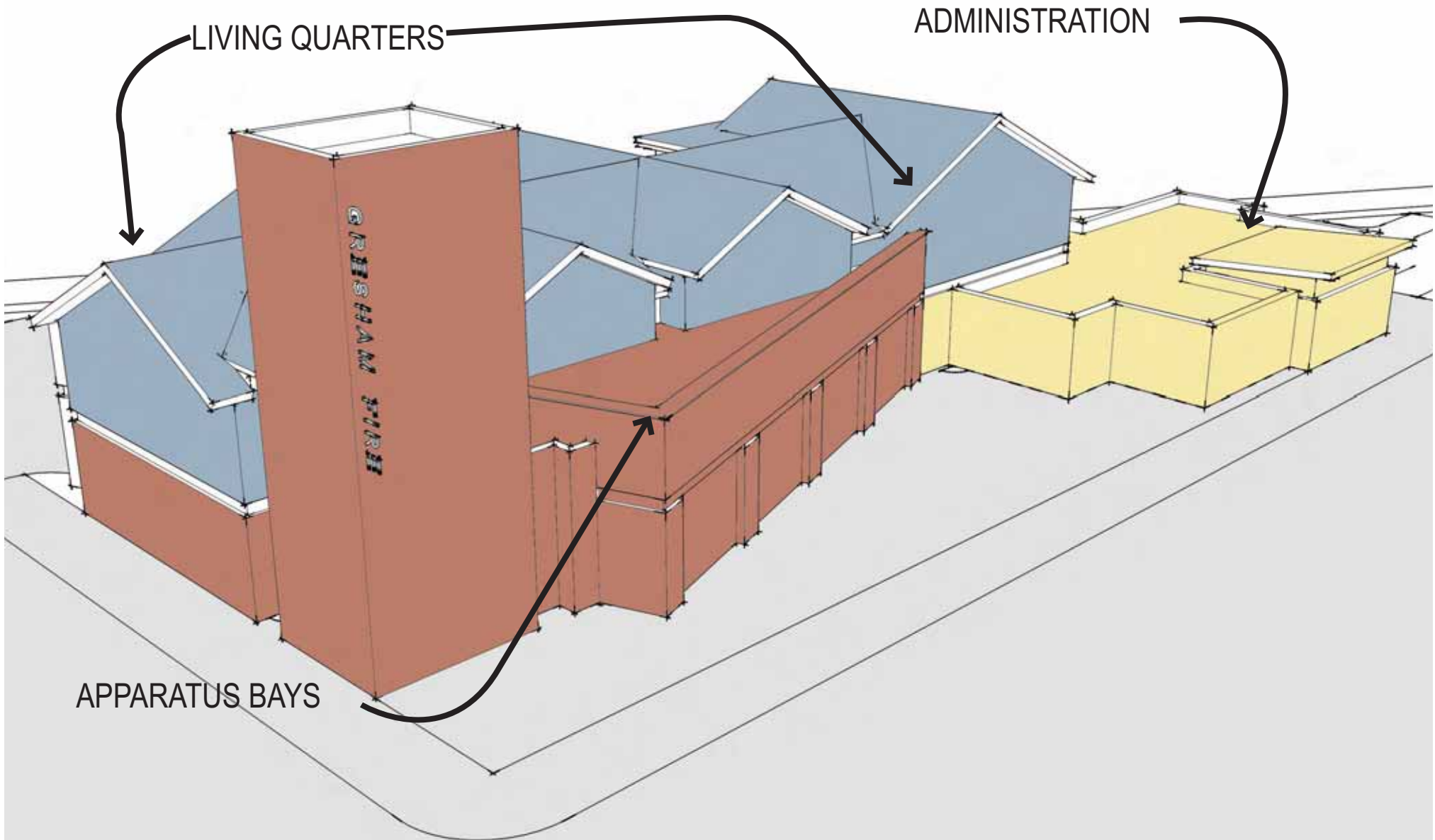




- 1 - LOBBY
- 2 - CONFERENCE
- 3 - RESTROOM
- 4 - OPEN OFFICE
- 5 - ASSISTANT TO FIRE CHIEF
- 6 - FIRE CHIEF
- 7 - DEPUTY FIRE CHIEF
- 8 - BATTALION CHIEF
- 9 - FIRE MARSHALL
- 10 - DEPUTY FIRE MARSHALL
- 11 - REPORT / COMMAND CENTER
- 12 - STORAGE
- 13 - BREAK ROOM
- 14 - APPARATUS BAY
- 15 - TRAINING TOWER







Energy Program

Gresham City Hall acts as a public face to the City of Gresham. Thus, the building should act as a catalyst for change and improvement. One place that the new city hall can encourage change is in energy usage. Emphasizing sustainable practices, Gresham has the opportunity to set a standard for other building projects in the area. By adhering to certain standards and calculating energy usage, Gresham City Hall would act as a benchmark and would encourage other buildings to set sustainability goals.

Currently, there are many sustainability standards to help evaluate energy consumption. The 2030 Challenge is a call for buildings to reduce their energy usage by 50% of the area's average consumption. The existing Gresham City Hall, in order to meet the 2030 Challenge, would need to reduce its energy consumption by 55%, as the city hall currently uses \$160, 403.29 per year on energy, which is more than an average building in the area. This can be seen in the Figure 1 Energy Start Target Finder Chart, as the Target and Average Building annual energy costs are lower than the current city hall. Our proposed design does not yet meet the 2030 Challenge either, but through more development of the building envelope and mechanical systems it could reach the target (Figure 5).

Target Energy Performance Results (estimated)			
Energy	Design	Target	Average Building
Energy Performance Rating (1-100)	N/A	93	50
Energy Reduction (%)	N/A	50	0
Source Energy Use Intensity (kBtu/Sq. Ft./yr)	N/A	121	241
Site Energy Use Intensity (kBtu/Sq. Ft./yr)	N/A	45	91
Total Annual Source Energy (kBtu)	N/A	10,051,077	20,102,155
Total Annual Site Energy (kBtu)	N/A	3,783,314	7,566,628
Total Annual Energy Cost (\$)	N/A	\$ 71,841	\$ 143,683
Pollution Emissions			
CO2-eq Emissions (metric tons/year)	N/A	380	761
CO2-eq Emissions Reduction (%)	N/A	50%	0%

Figure 1

In general terms, energy consumption for Gresham City Hall is equivalent to an office building the same size. During business hours lights and air temperatures need to be controlled. After hours, the loads are lessened, as employees are not there. Many Gresham City Hall employees feel they need a comfortable work environment in order to be successful. Also, being an image of the city to the public, the employees want the city hall to uphold their views. This leads to needing energy efficient facilities that provide a sustainable, more comfortable work environment.

There are many strategies for keeping energy use low while still creating a comfortable work environment. Due to site restrictions, the proposed building is elongated in a north-south direction. By using low-e glass and blinds, light and heat gain can be controlled by the user, creating a more comfortable work environment. In studying annual energy usage, the primary way to save energy would be to use a joint natural ventilation cooling and mechanical heating instead of a conventional mechanical heating and cooling system (Figure 2: Maximum Efficiency compared

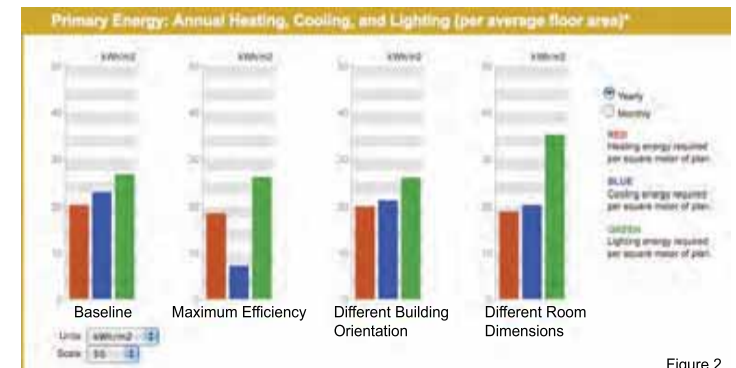
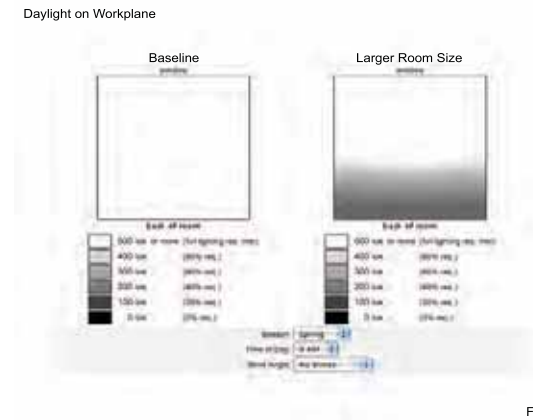
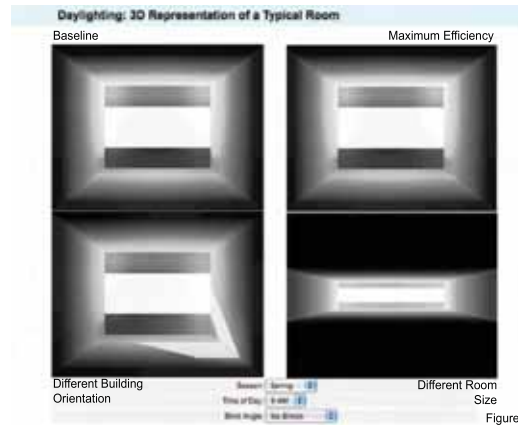


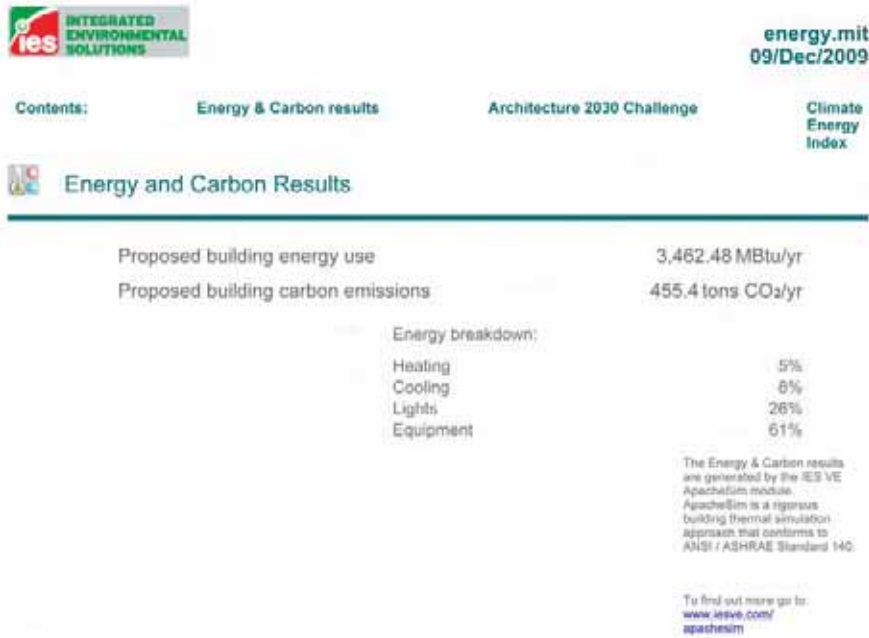
Figure 2

to the Baseline). Simply changing the orientation from a primary western exposure to a southern exposure only lessened the need for lighting a small amount (Figure 3). By placing workspaces near windows, employees have access to natural light throughout the day. To optimize natural daylight, the depth of the floor plates should be small, no more than 50 feet, so that daylight can reach the center of the space (Figure 4). Keeping workspaces near windows can also give more control to one's personal climate, as windows can be opened at certain times of day to provide natural ventilation.



A more sustainable city hall not only creates a more productive work environment for the employees, but also encourages other local businesses to adopt sustainable practices. Sustainable cities are important to the future of our natural environment and thus our world. Therefore, making Gresham City Hall a sustainable catalyst will help not only the residents of Gresham but also the environment.

Figure 5



The AIA 2030 Challenge provides a roadmap of targets for LDC building projects culminating in being carbon neutral by 2030.

Implementation of the Challenge requires the use of targets by building type derived from current building stock benchmarks.

Challenge targets for selected building type:

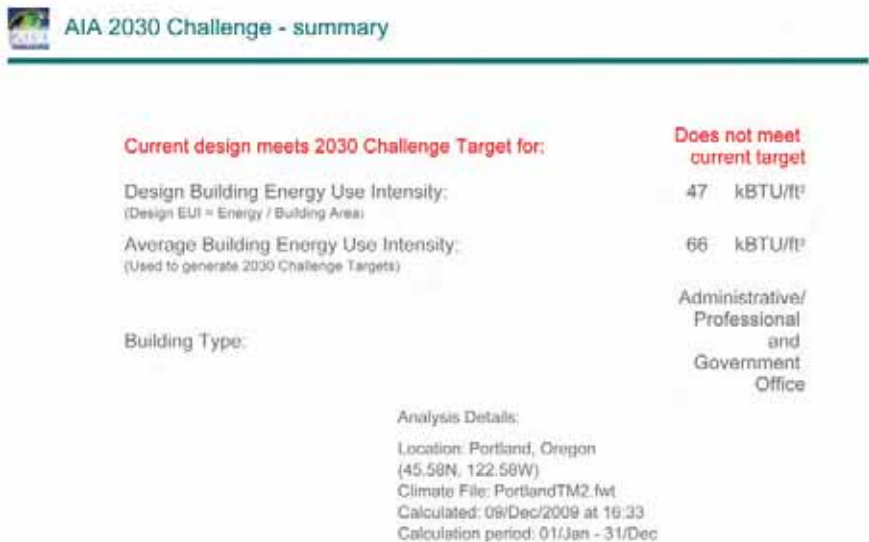
Year	% reduction	kBTU/ft ²
Current	50	35
2010	60	27
2015	70	23
2020	80	20
2025	90	20
2030	100	0

For certain building types targets are calculated using Energy Star methodology where energy consumption is not direct % reduction against average.

Climate Energy Metric

Climate Energy Metric	24 hour use	2,996.1 Btu/yr
	Proposed hours of use Using the local fuel mix	1,004.7 Btu/yr 0.1 lbCO ₂ /yr

Building simulation results can be compared with the Index to provide a simple measure of performance in the context of global climate.



Building Area Allocations

Fire Dept. Total	21880 sf
Apparatus Bays	8085 sf
Administration	5865 sf
Living Quarters	6430 sf
Gym / Exercise	1500 sf
Police Dept. Total	35135 sf
City Hall Total	67500 sf
Public / Retail / Service	27286 sf
Common Dept. Space	5820 sf
Finance and Management	2400 sf
Urban Planning	3264 sf
Environmental Services	2460 sf
Office of Governance and Management	4524 sf
Community Development	5547 sf
Economic Dev./Urban Renewal	772 sf
Information Technology	2879 sf
City Attorney	1620 sf