

Energy Program: Intel Research Portland, Lablet Facility

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Introduction

Currently Intel Corporation in Oregon consists of loosely knitted campuses and office buildings scattered throughout the Portland area. In an effort to streamline Intel's regional structure within the metro area Intel should move its research and development operations into downtown Portland. The proposed site would consist of a new high-density campus consisting of high-rise buildings and a new "Lablet" facility for use between Intel and local universities. The facility would be in the vicinity of Rose Quarter and Lloyd Center. By moving a "Lablet" into downtown Intel will increase its visibility and have a greater influence on Portland, namely downtown commerce, development and education. In the same manner by moving into downtown Intel will be igniting Lloyd Center District and help establish new avenues of livability within city center. Intel will become a catalyst that will transform the face of the eastside.

As part of a larger redevelopment plan for the eastside and Lloyd Center District, Intel will be the beginning of a new community consisting of high-tech infrastructure and commerce. Lloyd Center will become a hub for professionals and students which in turn will energize Lloyd Center into a new vibrant mixed-use center. Research and Development for Intel consists of roughly one thousand employees alone which doesn't include supporting operations of a new "Lablet" facility; therefore, a new urban plan will focus on providing services and infrastructure to support a new residential base and community. (Bramlett)

Energy Consumption

Intel Corporation's life blood is energy. Of course this is true of any business but Intel's products are energy consumers on varying levels. Not only do the employees themselves consume but the products of Intel Corporation are also reliant on energy. In terms of carbon footprint Intel would be assumed to have a large one indeed. In this case it becomes evident that Intel would benefit both in terms of economics and reputation by adopting energy saving practices. In general Intel is a wired company that has almost no down time in energy consumption among its computer systems and back-up support; however, Intel has remained a leader in energy conservation. Intel is currently the largest purchaser of wind power in Oregon. Not only do they purchase the greatest amount of

renewable energy sources in the state, but they also strive for energy efficiency in their products and workplace environments. (Intel 4)

The carbon footprint created by Intel in its current state may also be a point of interest for energy conservation. Although a “Lablet” facility is a new addition to Portland it is part of a larger program that includes moving all of research and development downtown. Currently the multiple campus system scattered throughout Hillsboro and Portland metro creates more car trips and extended commute time resulting in wasted energy. Although Intel strives for energy conservation this tactic of site placement proposes a problem for research and development.

Energy Conservation Strategies

Given Intel’s current multiple detached site placement strategy it is logical to infer that by moving a large portion of operations back into city center, over time, will create a more reasonable energy footprint. Other energy saving measures can be achieved through intelligent architectural design strategies both passive and active.

Passive Energy Strategies:

Since this new building will most likely be a high-rise structure there is the intention to use the stack effect to move fresh air through the building along with slim profile floor plate design to improve natural light in work spaces. In attempt to achieve these strategies effectively the building will be orientated with the majority of its facades to the north and south, which have the highest degree of control. There will also be a central atrium space for air to move up and out of the building allowing for movement of fresh air without the use of mechanical equipment.

Active Energy Strategies:

There is also the potential need to create energy on site through various renewable resources. Some energy generation could be created by solar collectors or by wind turbines placed in strategic locations on the structure. In turn the new campus could offset some of its energy requirements by implementing these methods. In attempt create an efficient heating environment the building will utilize radiant flooring to allow for even heating.

PROGRAM SPACES

INTEL RESEARCH PORTLAND: LABLET OFFICES	FUTURE	ROOM	ROOM DIMS.	TYPICAL AREA SF.	TOTAL FUTURE SF.	NOTES
Lab Director	1	office	12X12	144	144	THESE SPACES ARE USED PRIMARILY BY INTEL STAFF.
Associate Director	1	office	12X12	144	144	
Lab Administrator	1	office	10X12	120	120	
Operations Manager	1	office	10X12	120	120	
Intel Researcher	15	office	10X12	120	1800	
Intel Affiliate Researcher	10	office	10X12	120	1200	
Subtotal					3528	
Circulation 25% of total					882	
Total					4410	

INTEL RESEARCH PORTLAND: LABLET OPEN OFFICE CUBICLES	FUTURE	ROOM	ROOM DIMS.	TYPICAL AREA SF.	TOTAL FUTURE SF.	NOTES
Intern	10	Cube	9X9	81	810	THESE SPACES USED BY BOTH INTEL AND UNIVERSITY SYSTEM STAFF.
Affiliated Faculty	20	Cube	9X9	81	1620	
Subtotal					2430	
Circulation 25% of total					607	
Total					3037	

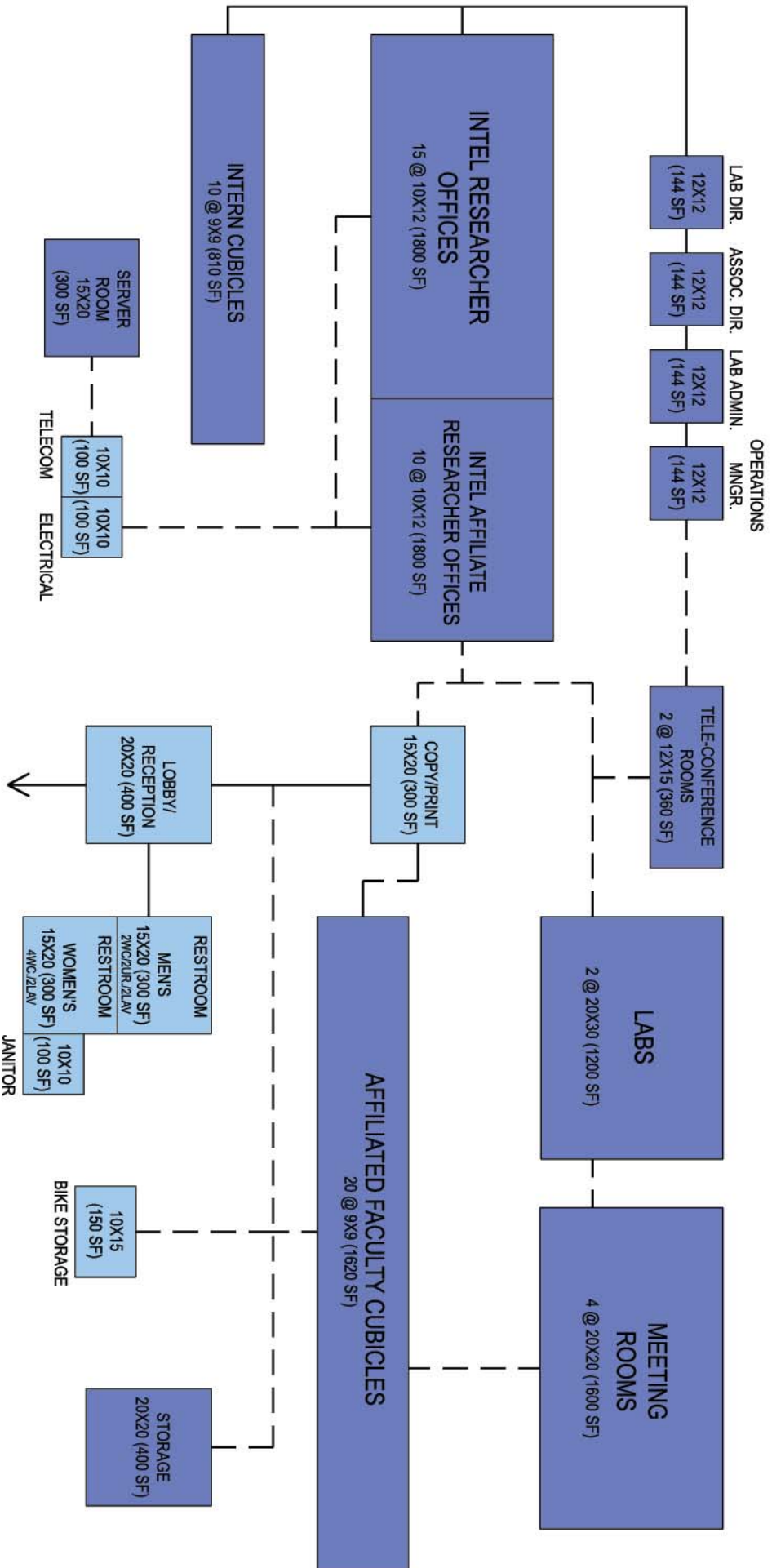
INTEL RESEARCH PORTLAND: LABLET TELE-CONFERENCE/MEETING/LABS	FUTURE	ROOM	ROOM DIMS.	TYPICAL AREA SF.	TOTAL FUTURE SF.	NOTES
Tele-conference rooms	2		12X15	180	360	THESE SPACES USED BY BOTH INTEL AND UNIVERSITY SYSTEM STAFF.
Meeting rooms	4		20X20	400	1600	
Labs	2		20X30	600	1200	
Subtotal					3160	
Circulation 25% of total					790	
Total					3950	

PROGRAM SPACES

	FUTURE	ROOM	ROOM DIMS.	TYPICAL AREA SF.	TOTAL FUTURE SF.	NOTES
INTEL RESEARCH PORTLAND: LABLET						
STORAGE / PRINT / SERVER						
Storage	1		20X20	400	400	THESE SPACES USED BY BOTH INTEL AND UNIVERSITY SYSTEM STAFF.
Copy/Print	1		15X20	300	300	
Server Room	1		15X20	300	300	
	Subtotal				1000	
Circulation 25% of total					250	
	Total				1250	

	FUTURE	ROOM	ROOM DIMS.	TYPICAL AREA SF.	TOTAL FUTURE SF.	NOTES
INTEL RESEARCH PORTLAND: LABLET						
COMMON AND SUPPORT SPACES						
Reception + Lobby	1		20X20	400	400	CEILING HEIGHTS TO BE 10'
Restrooms	2		15X20	300	600	
Bike Storage	1		10X15	150	150	
Telecom	1		10X10	100	100	
Electrical	1		10X10	100	100	
Janitor Closet	1		10X10	100	100	
	Subtotal				1450	
Circulation 25% of total					362	
	Total				1812	

SCALED PROGRAM DIAGRAM INTEL RESEARCH PORTLAND: LABLET



KEY



DIRECT ADJACENCY



LABLET



SUPPORT SPACE



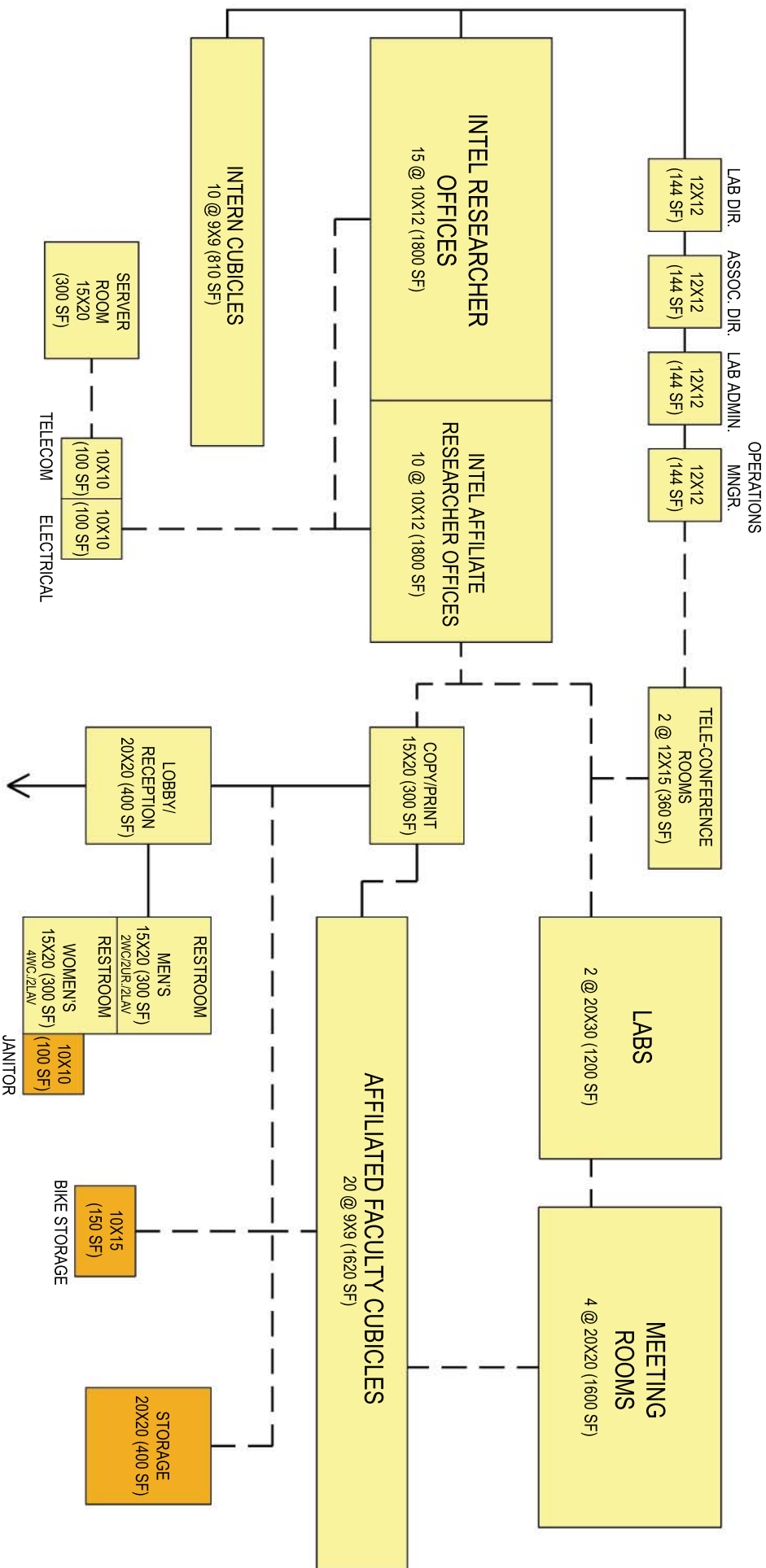
HARD CONNECTION



SOFT CONNECTION

TEMP. RANGE DIAGRAM

INTEL RESEARCH PORTLAND: LABLET

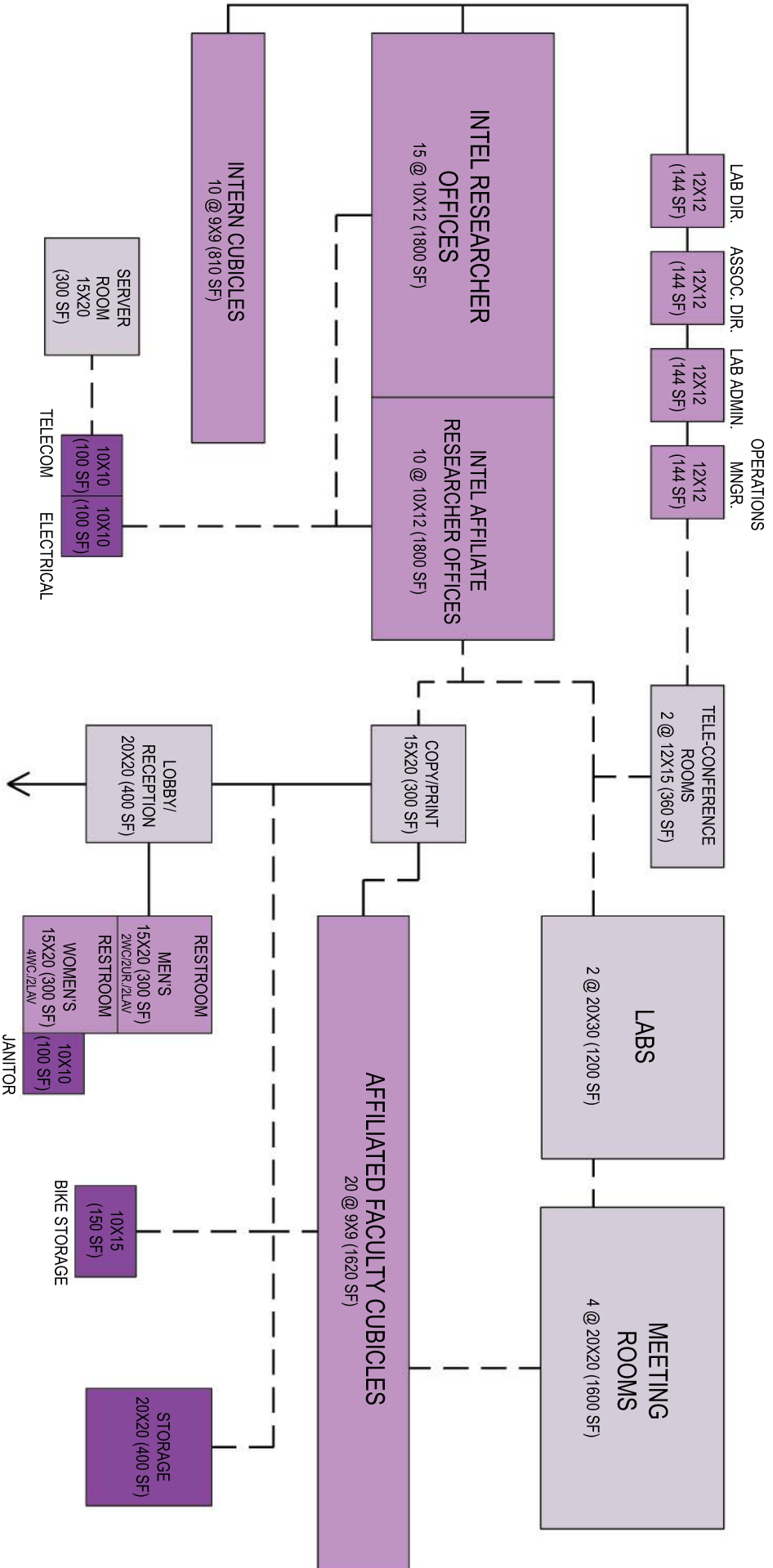


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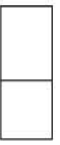
- DIRECT ADJACENCY
- SMALL RANGE +/- 70 DEG.
- LARGE RANGE - FREEZE PROTECT
- HARD CONNECTION
- SOFT CONNECTION

LIGHTING DIAGRAM

INTEL RESEARCH PORTLAND: LABLET



KEY



DIRECT ADJACENCY



LOW AMBIENT/
LOW TASK



LOW AMBIENT/
HIGH TASK



HIGH AMBIENT/
LOW TASK

HARD CONNECTION

SOFT CONNECTION

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