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Arch 549 Architectural Programming

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Community Center for Immigration Services Energy Program

Intro: Immigrants and refugees face many challenges when immigrating to the United States. The Community Center for Immigration Services (CCSI) in Lents will help to ease their transition. The CCSI campus is home to four buildings: a community center, a service center, a job skills center, and 75 units of temporary housing.

Energy: This project is run by a non-profit organization therefore lower operating costs equal more funds to programs. The CCSI campus allows for multiple smaller buildings to be arranged in such a way as to take advantage on many passive solar strategies. The buildings will be situated to take advantage of the summer southern breeze for natural ventilation and cooling.

The CCSI campus is broken down into five blocks of space; classrooms, offices, recreation, multi-purpose, and housing. These blocks correspond programmatically, operationally, and though their energy consumption.

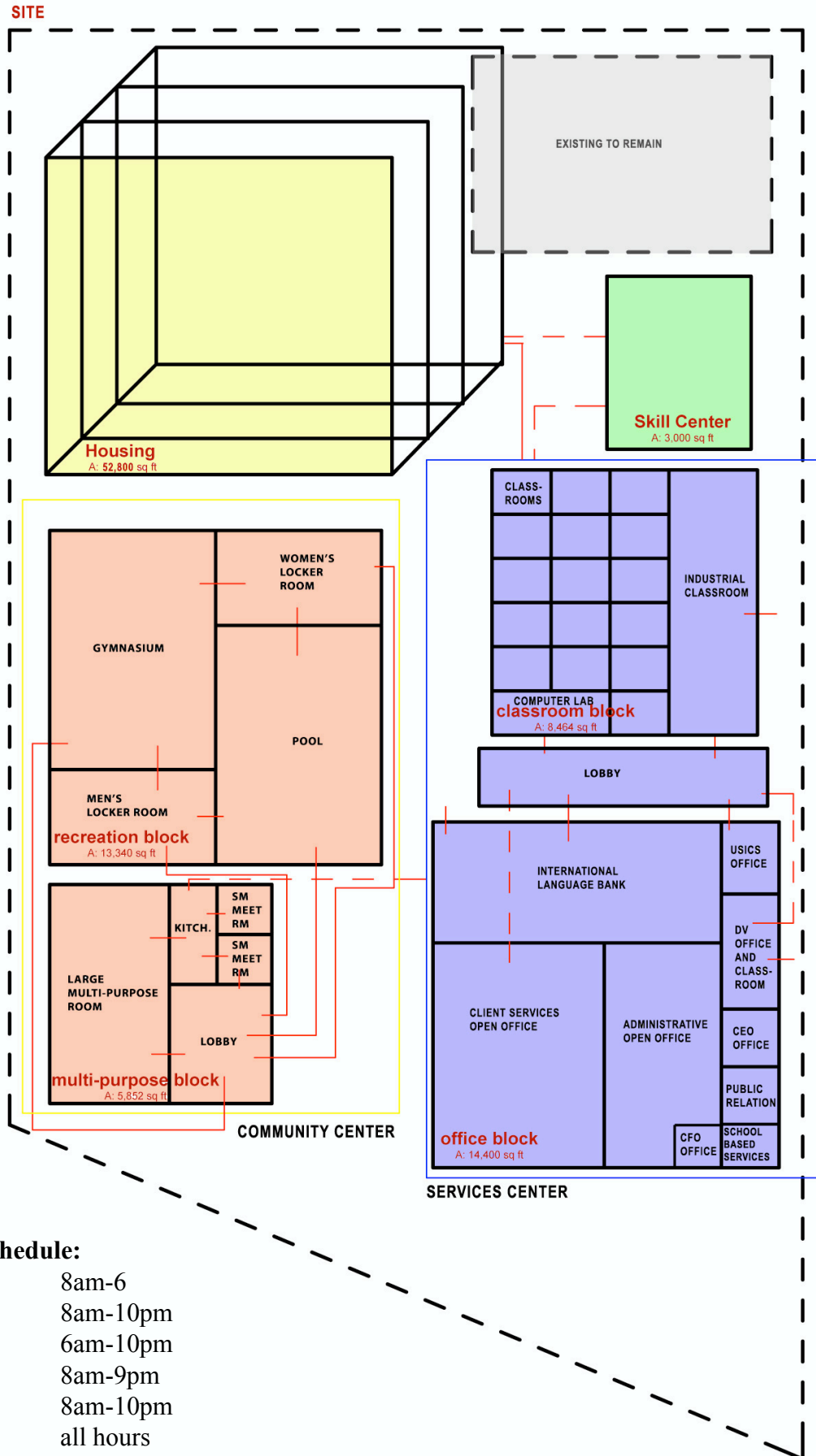
The recreation block is the most problematic, as it has the longest operating hours and uses the most energy. The recreation block houses a pool, a gymnasium, and locker rooms. These all create high humidity. These spaces will have extra high ceilings to collect the warm humid air and vent it away from the building naturally. In the winter months this area of high heat can be used to pre-warm the fresh intake air on its way to the mechanical system. The extra tall space also allows these functions to be placed in the interior of the community center while still having access to plenty of natural light through clerestory windows.

The service center will be two stories tall to reduce the footprint of the building and to reduce heat loss in the winter months. All space blocks will use as much day lighting as possible. This conforms the buildings to either thinner profiles or pushing the center mass up to make use of roof monitor or clerestory windows. All buildings will have operable windows and be arranged to take advantage of the breezes.

Program Spaces	Function	Area (SF) net	Occupancy	Equipment	ECS Criteria
Community Center					
Lobby	To orient a person to the various activities of the community and the center	1000	200 people, 1 staff member	reception desk, seating, tables, and community announcement board	day lighting, natural ventilation
Large Multi Purpose Room	To conduct large meetings and gatherings for both the Service Center and the Community of Lents	3000	200 people	tables and chairs, A/V and other equipment for presentations	day lighting, ventilation, view of outside
Small Meeting Rooms (2)	to conduct small groups and meetings for the Service center and the Community	300 ea.	15 people	tables and chairs, A/V and other equipment for presentations	access to day light if possible
Café / snack bar	to serve beverages and limited food items	400	Seating for 25 people	chairs and tables, serving counter with pastry cabinet, coffee and tea services, cashier, and limited cooking ability.	view to the outdoors and day lighting
Locker Rooms (2)	To provide a place to shower and change for use by the community and people working at the service center	1000 ea. (gross)	20 people per locker room at one time	lockers benches, toilets, showers, sinks, and mirrors	humidity control is important, some daylight, natural ventilation
Kitchen	To provide food preparation for various function in the center	800 (gross)	4 to 5 users at one time	Industrial dishwasher stove refrigerator and food preparation surfaces.	proper ventilation for cooking as well as natural ventilation and day light
Gymnasium	To provide a space for recreational games of all sorts for all ages	5500	50 - 100+	various sporting equipment	Ventilation and humidity control, acoustic separation from the rest of the center
Pool	to provide a place for swimming either leisurely or competitively as well as water aerobics and swimming lessons	4036	according to code 80 people can occupancy this pool at one time	See Pool Mechanical room	acoustic separation from the rest of the center, humidity control and ventilation, good lighting in both the day and the evening.
pool Deck	provides for movement and seating around the pool	1200	80 per code.	n/a	Ventilation, humidity control and good lighting
Life Guard/ Pool Managers Office	Provide a place for life guards and pool managers to keep an eye on the pool as well as perform their daily functions	200 (gross)	2-3 persons	desk, chair, various life saving apparatus and first aid equipment	lighting to be able to clearly see first aid and emergency equipment
Pool mechanical	house equipment to run the pool	300	0	filters and pumps	n/a
Storage	provide storage for the many functions of the Center	3807	0	chairs, tables, gym equipment, and pool equipment	n/a
Services Center					
Lobby	To welcome people to the service center and direct them to where they need to go	2000	1 full time staff member	reception desk, seating, information about the Service center	Views to the outside, day lighting if possible and natural ventilation
International Language Bank (ILB)					
translation and interpretation services	To provide translation and interpretation services for a small fee	2500 (gross)		desks, computers, fax, copiers	view to out side natural ventilation, sound isolation from the rest of the center
Client Based Offices and Services					
~Government Offices					
U.S. Immigration and citizenship Services Office	To provide services dealing with immigration and naturalization to immigrants and refugees	500	2 full time staff members from U.S. immigration and citizenship services department	desks, reception seating with form distribution	access to day light, indirect ambient lighting and task lighting.
~Non-Profit Offices					
Intensive Services Offices	Provide services for refugees/ immigrants (R/I) who can not work due to physical or mental handicaps	400	4 staff personnel	desk, computers, phones, and client seating	good lighting, views would be nice
Job Placement/ Employment Services Offices	Provides a job coach and job developer for each (R/I). Offers English language and culture classes, determines job skills. Job coach helps then get a job and continues to check up on them on a regular basis, also helps them develop a career path.	600	6 full time staff members	desk, computers, phones, and client seating	good lighting, views would be nice
Business Developers Offices	Create connections with employers	400	4 people who spend most of their day on the phone	desks computers and phones	good lighting, views would be nice
Established Employment Services Offices	work with second migration (R/I) or seasonal workers whose jobs have ended. These people have been in the country between 12 and 60 months. No cultural workshops or English classes	600	6 full time employees	desk, computers, phones, and client seating	natural daylight with views if possible natural ventilation if possible
Coordinated Assistance Offices	takes care of purchases that new employees can not handle right now.	400	4 full time personnel	desk, computers, phones, and client seating	good lighting, natural ventilation if possible

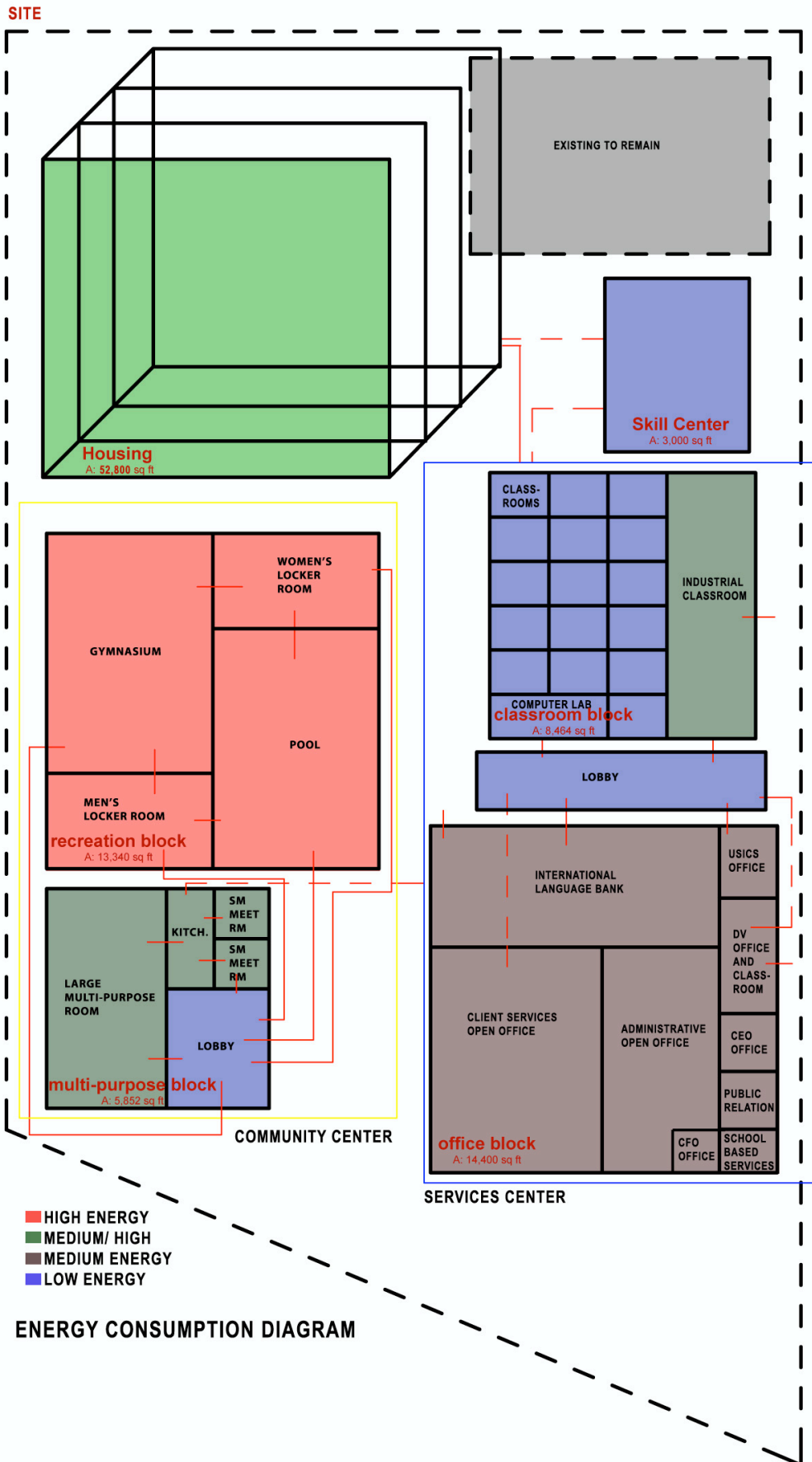
Youth Employment office-	provides academic support, OMSI visits, college tours, summer jobs, and help navigating financial aid. Takes and interest in the future of the youth helps them plan a career path based on interests. High school to 20 years of age	500	5 full time staff personnel,	desk, computers, phones, and client seating,	good lighting, views if possible
Early Childhood Development and parenting office	provides classes and training in early childhood development and parenting	500	4 full time staff members	desks, computers, phones, storage for class materials for early childhood and parenting	good lighting
Domestic Violence Services office and classroom	empowers immigrant and refugee families experiencing domestic and sexual violence and exploitation	1000	8 staff members and 10 to 15 students per class plus peer discussion groups	desks, computer, storage for files, pamphlets, and advocacy information	day lighting, natural ventilation
School Based Services administration Office	The services are carried out at the school so this office is for administration work only	350	4 staff members	desks, computer, and storage for files	good lighting and ventilation.
Community Development Services Office	Provides assistants to immigrant and refugee community and faith based organizations	600	6 staff members	desks, computer, storage, phones, and client seating	good lighting and view if possible
English Literacy Teachers Offices	to house the preparations for the classes	350	4 full time personnel	desks, computer, storage	good lighting
Administrative Offices					
Finance office	To handle the finances for the non-profit organization	600	one CFO and 5 staff personnel	desks, computers, phones, file cabinets	views and natural ventilation would be nice. Good lighting
CEO Office	To handle the need of the organization and keep it heading in the right direction	300	One CEO	Executive desk, computer, phone, seating for visitor, small conference table	day lighting, operable windows, natural ventilation, views to the outside
Public Relations	To promote the organization and the work that it does. Handles all outside inquiries about the organization	200	One public Relations director	Desk, computer, seating for visitors. Storage for public relations pamphlets	good lighting, views and natural ventilation if possible
Administration Offices	to provide the administration support that is required to make this organization run	500	5 staff members	desk, computers, phones, and storage	day lighting, operable windows, natural ventilation, views to the outside
Grant Writers Office	to write grants for the funding of the various services provided by the organization	400	4 staff members	desk, computers, phones, and storage	day lighting, operable windows, natural ventilation, views to the outside
Human Resources	to take care of the needs and benefits of the 170 employees	300	3 staff members	desk, computers, phones, and storage	day lighting, operable windows, natural ventilation, views to the outside
Board Room	to hold board meetings and conferences	600	9 board members when in use, up to 15 employees for conferences	large table and chairs, A/V equipment for giving presentations, white board	a/v equipment requires easily darkened lighting
I.T. Office	to handle the computer and networking needs of the service center, the jobs skill center, and the community center	200	two full time staff members	desks, computers, phones, storage for spare computing equipment	good lighting, and task lighting for working on equipment, good ventilation
Server Room	to house the server units to run the complex	150	0	racks of servers	this is a climate controlled environment
Classrooms					
English Proficiency Classrooms (12)	to provide classes that teach English on various levels	300-500	10 to 15 students and one instructor	desks, projection equipment and various other equipment for teaching language and cultural classes	delighting, indirect up lighting, easily darkened for A/V equipment use
Computer Lab	to teach basic computing skills to newly arrived I/R	600	10 -15 students and one instructor	12 to 15 computers, desks, and chairs	need to reduce glare on equipment, need to see protection equipment
Industrial Training Classroom	to provide training in the metals industry	2000	classes of 10-15 people and instructor	machinery and equipment for training in the metals industry, welding equipment, CNC Equipment, Ect.	well lit, air exchange, noise isolation
Job Skill Center					
	Skills training employment and youth employment training take place in this facility	3000	several full time staff members as well as multiple classes at once	health equipment for training in patient care, child care, and advanced food prep	good lighting, day lighting with views to outdoor, natural ventilation
Temporary Housing					
Studio Units	Provide temporary housing for newly arrived immigrants and refugees	500 (gross)	1-2	kitchen equipment and basic furniture	day lighting, operable windows, and passive heating and cooling strategies
One Bedroom Units	Provide temporary housing for newly arrived immigrants and refugee families	700 (gross)	2-3	kitchen equipment and basic furniture	day lighting, operable windows, and passive heating and cooling strategies
Two Bedroom Units	Provide temporary housing for newly arrived immigrants and refugee families	900 (gross)	3-4	kitchen equipment and basic furniture	day lighting, operable windows, and passive heating and cooling strategies

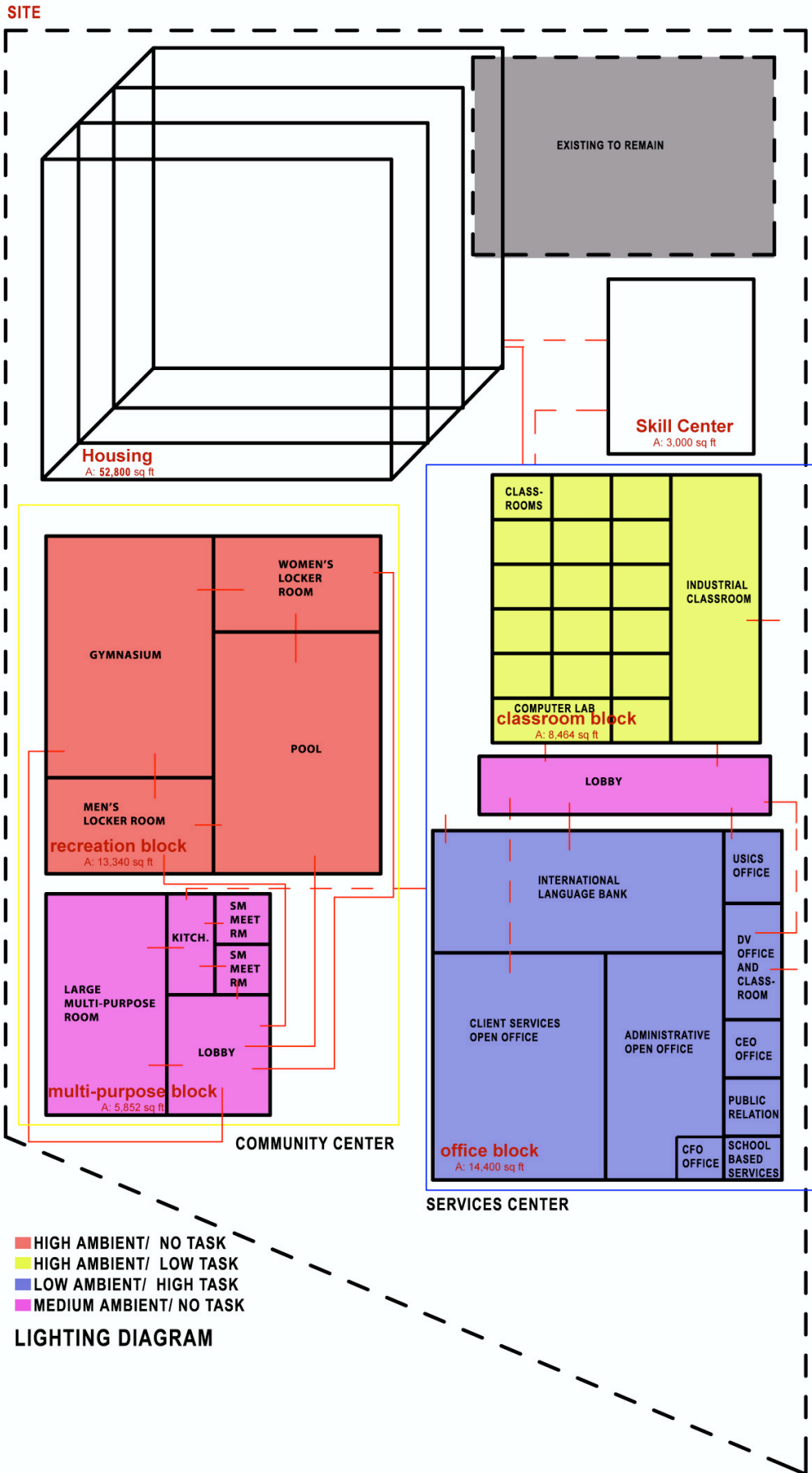
Scaled Program Space Adjacency Diagram



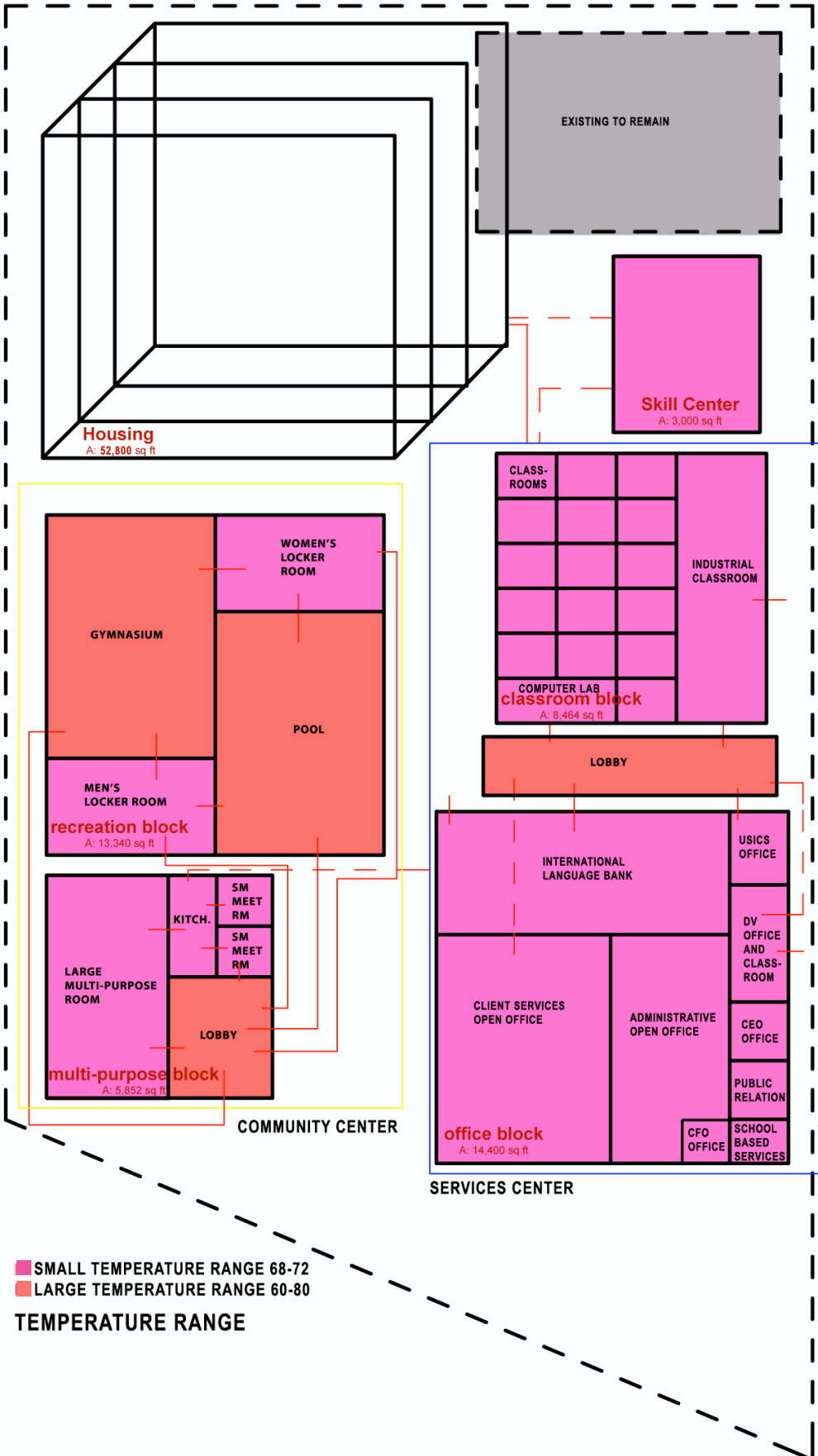
Hours of Operation Schedule:

Office Block	8am-6
Class Room Block	8am-10pm
Recreation Block	6am-10pm
Multi-purpose Block	8am-9pm
Job Skills Center	8am-10pm
Residential Housing	all hours





SITE



■ SMALL TEMPERATURE RANGE 68-72
■ LARGE TEMPERATURE RANGE 60-80
TEMPERATURE RANGE

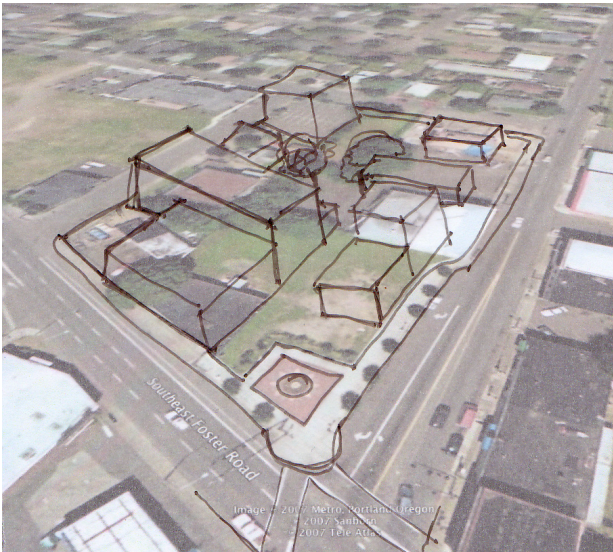
Space Block Summary Sheets

Name: Multi-Purpose Block SF: 5,800	
Use: Multi-purpose room for the gatherings of large and small groups + a kitchen	
Lighting	
Medium Ambient / No Task	
Allowable Temperature Range	
Small 68 F - 72 F	
Occupant Load	
High	
Internal Gain	
High	

Name: Office Block SF: 14,350	
Use: Open and Private Offices for Clients and Administration	
Lighting	
Low Ambient / High Task	
Allowable Temperature Range	
Small 68 F - 72 F	
Occupant Load	
Low	
Internal Gain	
Low	

Name: Classroom Block SF: 8,400	
Use: Classrooms and computer labs for teaching English language, culture, and job training	
Lighting	
High Ambient / Low Task	
Allowable Temperature Range	
Small 68 F-72 F	
Occupant Load	
High	
Internal Gain	
High	

Name: Recreation Block SF: 13,236	
Use: Physical recreation	
Lighting	
High Ambient / No Task	
Allowable Temperature Range	
Large 60 F - 80 F	
Occupant Load	
High	
Internal Gain	
Extremely high due to humidity	



Strategies for reducing energy consumption

- Campus lay out helps to maximize north south breezes.
 - Capture summer breeze to aid in cooling and ventilation.
 - Use breeze to help remove humid air from swimming pool and gymnasium.
- Use High ceilings in Gymnasium and pool to capture warm air to be used to pre heat intake air in the winter months.
- Make service center two stories to reduce the footprint and to reduce heat loss
- Place bio-swale between community center and temporary housing.
- Campus layout has endless opportunities to create beautiful landscaping with native low water plantings.
 - These have the opportunity to teach both immigrants and community members about Oregon's native plants.
- Use permeable paving for all of the hard surfaces on the campus.
- Use low energy consumption lighting and natural day lighting to light both the service center and the community center.
- Capture rain water on roofs of all structures for use in bathrooms.
- Arrange apartment building mass and apartments to make use of natural lighting and natural ventilation.
- Group open offices in center of building, use clearstories and roof monitor to help bring natural lighting in.
- Use sun shading devices on southern side to reduce solar heat gain. This could be done with an architectural expression on the building or a landscaping expression.