CENTRAL EASTSIDE INDUSTRIAL CO-OP ENERGY PROGRAM

Scott Grbavac
University of Oregon
Architectural Programming
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Company towns of the Industrial Revolution housed thousands of factory workers, but often included schools, churches, stores, and other services that helped transform these neighborhoods into vibrant communities.[1] *An urban adaptation of the "company town" typology would contribute to an inhabitable Central Eastside Industrial District.* The infusion of new industry into Portland's historic industrial sanctuary would result in job growth within the central city, and additional housing would help accommodate the region's anticipated population growth. The type also has ecological implications. Because very little of the workforce would require motorized transportation, the increase in density would not necessarily mean an increase in automobile traffic. Also, by re-industrializing cities within the United States, emissions generated by international shipping would be drastically reduced.

Energy consumption is an important part of this project for several reasons. In industry, the most significant benefit in energy conservation is financial. The manufacturing process involves a lot of (expensive) energy, and the success of future industry depends on the ability to use that energy as efficiency as possible. Focusing all the energy on manufacturing, rather than shipping materials and products from other countries would maximize energy use.[2] The residential part of this project would also benefit from responsible energy usage. Housing for workers in a sort of urban "company town" would have to be affordable in order to be a reasonable option. Eliminating the costs associated with energy consumption would make living much cheaper for the workers, especially when combined with the proximity of their workplace. The conservation of energy is also important ecologically, because it is difficult to create sustainable energy inexpensively, it is likely that much of the energy will be produced through traditional methods. By using energy efficiently, the environmental impact of the industrial process use may be curtailed. Socially, energy conservation can be a good generator of other sustainable practices, like recycling, bicycling, or even urban farming:

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[1] Nelson, David. The Rise of the Company Town. The Industrial Revolution. Editor: Scalup, Brenda. The Green Haven Press. San Diego. 2002.

[2] Healy, Robert. America's Industrial Future: An Environmental Perspective. The Conservation Foundation. Washington, D.C. 1982.

activities that have the potential for social interaction. By emphasizing sustainability and the efficient use of energy at this project, like-minded people throughout Portland would have sort of a forum for their environmental interests.

The site that has been chosen for this project is two blocks at the intersection of SE 2nd Ave. and SW Morrison St. in the Central Eastside Industrial District. One of the blocks is vacant, with the other occupied by the 8-story Portland Storage Building. The existing building is made of brick, which can act as a thermal mass to prevent overheating in the summer, and promote heat gains in the winter. Unfortunately natural light is an issue for the Portland Storage Building. There are no windows on the east side, and the windows on the other sides are fairly small openings. The elevated Morrison Bridge segment that runs to the south of both blocks is another problem. This makes day lighting on the first two floors difficult. However, because of the relatively low buildings surrounding the site, there is a lot of solar access above the Morrison Bridge level, making the south face of the existing building and that of a potential new high(er)rise building ideal locations for solar arrays. In general, new industrial facilities are usually more efficient due to the advancements in machine technology and ergonomics.[3] If combined with appropriate site and climate responses, the efficiency of a modern factory can demonstrate the positive contribution that re-industrialization can have in the city and environment.

[3] Healy, Robert. America's Industrial Future: An Environmental Perspective.

Works Cited

Healy, Robert. America's Industrial Future: An Environmental Perspective. The Conservation Foundation. Washington, D.C. 1982.

Nelson, David. *The Rise of the Company Town*. The Industrial Revolution. Editor: Scalup, Brenda. The Green Haven Press. San Diego. 2002.

PRODUCTION FACILITY

SPATIAL REQUIREMENTS

Size	20,000 sq. ft.
Occupancy	50 employees
Function	Manufacturing and shipping
Adjacencies	Connected to office space and street

OCCUPANTS

Hours of Occupation	12 hours
Frequency	Weekdays
Number	50+ employees

USE / ACTIVITIES

Types of activities	Active assembly, and fabrication
Frequency	Weekdays
Special Issues	Health and safety, ventilation and light

AMENITIES

Restrooms	2 fixtures for men, 4 for women
Kitchen	Breakroom
Conference Space	Meeting space for assignments
Media	Wireless internet

STORAGE

Size	10,000 sq. ft. warehouse
Equipment	Lumber, recyclables, scrap metal, machinery
Supplies	Large racks and automated storage

LIGHTING

Task Lighting	Task lighting at work spaces
Ambient Lighting	Direct/indirect lighting in larger volumes

EQUIPMENT

- Refrigerator
- Microwave
- Computers
- Printers
- Machinery
- Fork Lifts
- Trucks

OFFICES SPACE

SPATIAL REQUIREMENTS

Size	10,000 sq. ft. 25+ units
Occupancy	50 employees
Function	Creative and administrative
Adjacencies	Connected to factory

OCCUPANTS

Hours of Occupation	12 hours
Frequency	Weekdays
Number	50+ employees

USE / ACTIVITIES

Types of activities	Computer work, drawing, modelling
Frequency	Weekdays
Special Issues	Design collaboration, social work space

AMENITIES

Restrooms	2 fixtures for men, 4 for women
Kitchen	Breakroom
Conference Space	Meeting space for presentations
Media	Wireless internet and multimedia accessibility

STORAGE

Size	500 sq. ft.
Equipment	Computers, office supplies
Supplies	Shelving and cabinets

LIGHTING

Task Lighting	Task lighting at work spaces
Ambient Lighting	Indirect lighting in communal spaces

EQUIPMENT

- Refrigerator
- Microwave
- Computers
- Printers
- Projectors
- Stereo Equipment

RESIDENTIAL TOWER

SPATIAL REQUIREMENTS

Size	150,000 sq ft in 100+ units over several stories
Occupancy	1-4 residents
Function	Living
Adjacencies	Above factory and community center

OCCUPANTS

Hours of Occupation	24 hours
Frequency	Daily
Number	200+ Residents

USE / ACTIVITIES

Types of activites	Eating, sleeping, gathering, etc
Frequency	Daily
Special Issues	Elevator and stair access, street connection

AMENITIES

Restrooms	1 per unit
Kitchen	Fully functional
Outdoors	Balconies in some of the units
Media	Wireless internet throughout tower

STORAGE

Size	Food stuff, dishes, table settings
Equipment	Furniture, workshop machines, A/V equipment
Supplies	Shelving and cabinetry to prevent children's mischief

LIGHTING

Task Lighting	Trakc lighting for gallery, task lighting in kitchen
Ambient Lighting	Direct/indirect, dimmable for performances and dining

EQUIPMENTS

- Oven
- Stove
- Refrigerator
- Microwave
- Computers
- Projectors
- Stereo Equipment
- Wood Shop Machinery

COMMUNITY CENTER

SPATIAL REQUIREMENTS

Size	10,000 sq. ft, high volume
Occupancy	Residents, children and visitors
Function	Dining Hall, day care, workshop, performance space
Adjacencies	Street entrance and a connection to residential tower

OCCUPANTS

Hours of Occupation	Morning-Evening, plus additional scheduled use
Frequency	Daily with periodic special events
Number	Over 200

USE / ACTIVITIES

Types of activities	Social activities involving members of the Co-op
Frequency	Daily day-care and kitchen activity, weekly events
Special Issues	Fully accessible, acoustic consideration, ventilation

AMENITIES

Restrooms	2 fixtures for men, 4 for women
Kitchen	Fully functional, accommodating large groups
Outdoors	Elevated terrace and street level space
Media	Audio and visual presentations customizable

STORAGE

Size	500 sq. ft.
Equipment	Furniture, workshop machines, A/V equipment
Supplies	Shelving and cabinets to prevent children's mischief

LIGHTING

Task Lighting	Track lighting for gallery, task lighting in kitchen
Ambient Lighting	Direct/indirect, dimmable for performances and dining

EQUIPMENT

- Oven
- Stove
- Refrigerator
- Microwave
- Computers
- Projectors
- Stereo Equipment
- Wood Shop Machinery

RETAIL OUTLET

SPATIAL REQUIREMENTS

Size	5,000 sq. ft.
Occupancy	10 employees
Function	Marketing and sales
Adjacencies	Connected to office space, factory, and street

OCCUPANTS

Hours of Occupation	12 hours
Frequency	Weekdays
Number	5 employees at a time

USE / ACTIVITIES

Types of activities	Sales and distribution
Frequency	Weekdays
Special Issues	Exposure to public

AMENITIES

Restrooms	1 fixture for men, 2 for women
Showroom	Displays products
Media	Informative installations, exterior signage

STORAGE

Size	1,000 sq. ft. warehouse
Equipment	Producct Stock and packaging
Supplies	Shelving and storage racks

LIGHTING

Task Lighting	Task lighting at counters
Ambient Lighting	Direct at displays, indirect lighting in larger volumes

EQUIPMENT

- Computers
- Printers
- Signage

GENERAL STORE

SPATIAL REQUIREMENTS

Size	5,000 sq. ft.
Occupancy	10 employees
Function	Grocery and supply sales
Adjacencies	Connected to residence tower and street

OCCUPANTS

Hours of Occupation	24 hours
Frequency	Daily
Number	5 employees at a time

USE / ACTIVITIES

Types of activities	Sales, stocking
Frequency	Daily
Special Issues	Correct sizing to support specific community

AMENITIES

Restrooms	1 fixture for men, 2 for women
Kitchen	Baking and food preparation
Produce	Basic natural foods and stapes
Media	Informative installations, exterior signage

STORAGE

Size	1,000 sq. ft. warehouse
Equipment	Product stock and packaging
Supplies	Shelving and storage racks

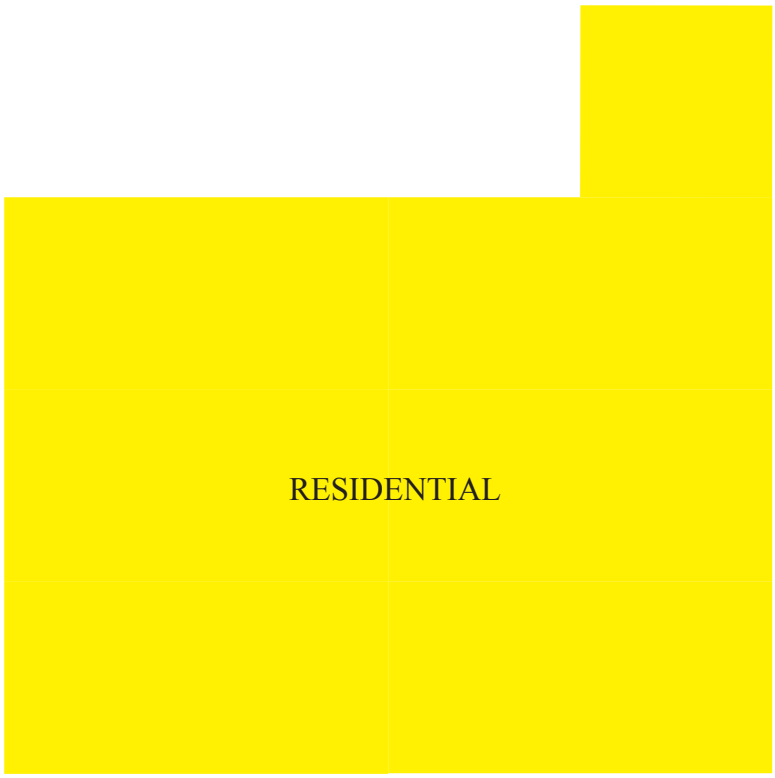
LIGHTING

Task Lighting	Task lighting at counters
Ambient Lighting	Direct at displays, indirect lighting in larger volumes

EQUIPMENT

- Computers
- Refrigerators
- Oven
- Stove
- Signage

FUNTIONAL GROUPING

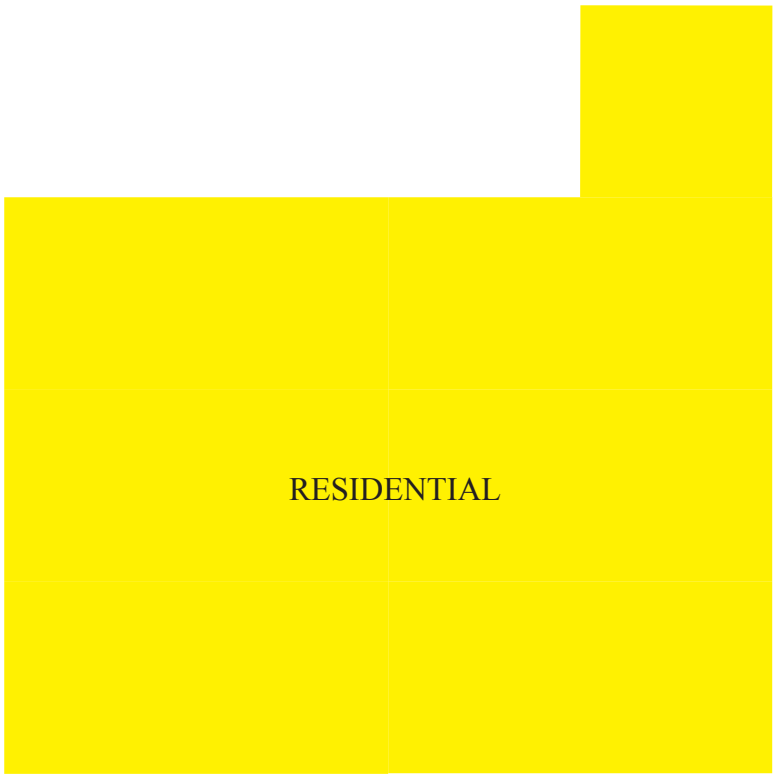


Community Living

Community Amenities

Community Employment

ENERGY NEEDS GROUPING



Low Usage

High Usage

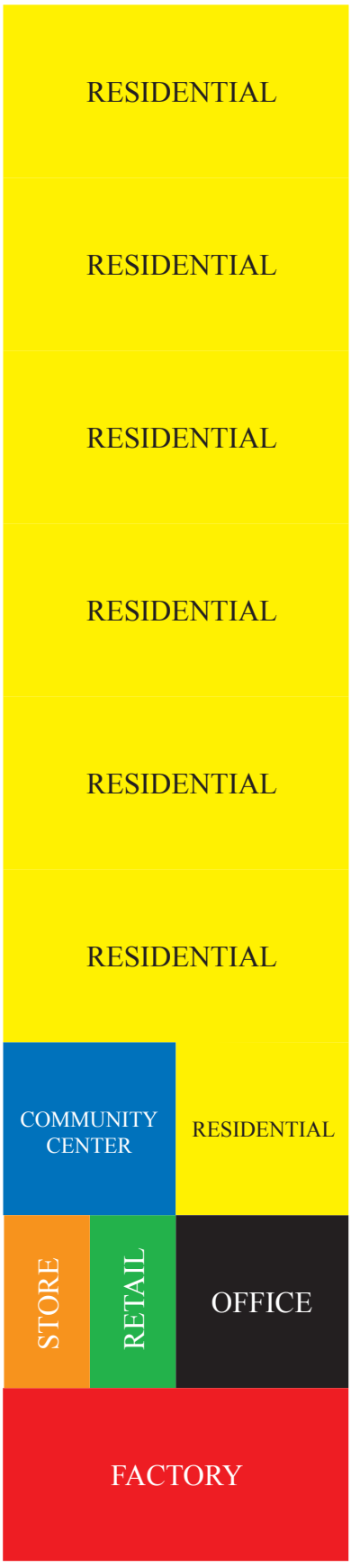
Very High Usage

SCHEDULING NEEDS

Daily/Nightly

Weekdays

SPATIAL ORGANIZATION



Vertical Community