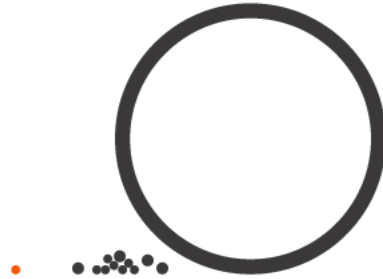


Richard H Wilson

www.rhwdesigns.com



Architecture



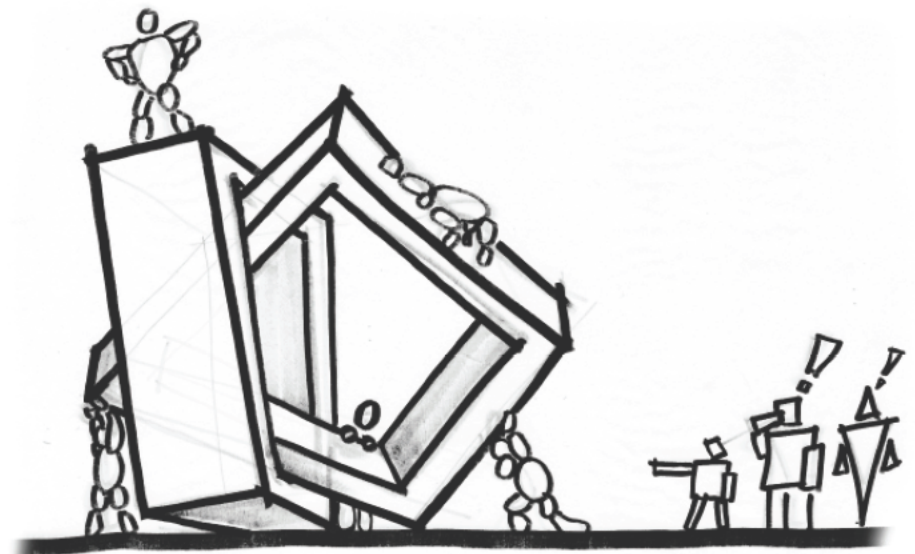
Library, Outreach & Technology Center Monograph - Fall 2013

Program Document **Concept**

Strength emerges from the roots of Gresham, Oregon to be the place-making anchor for a city that lacks definition. A gang and community outreach center will serve as a secondary major function within the library. And for the youngsters who call this place "home," they will receive that spark of opportunity from the highly flexible and technological amenities provided under the skin of a dynamic facade.

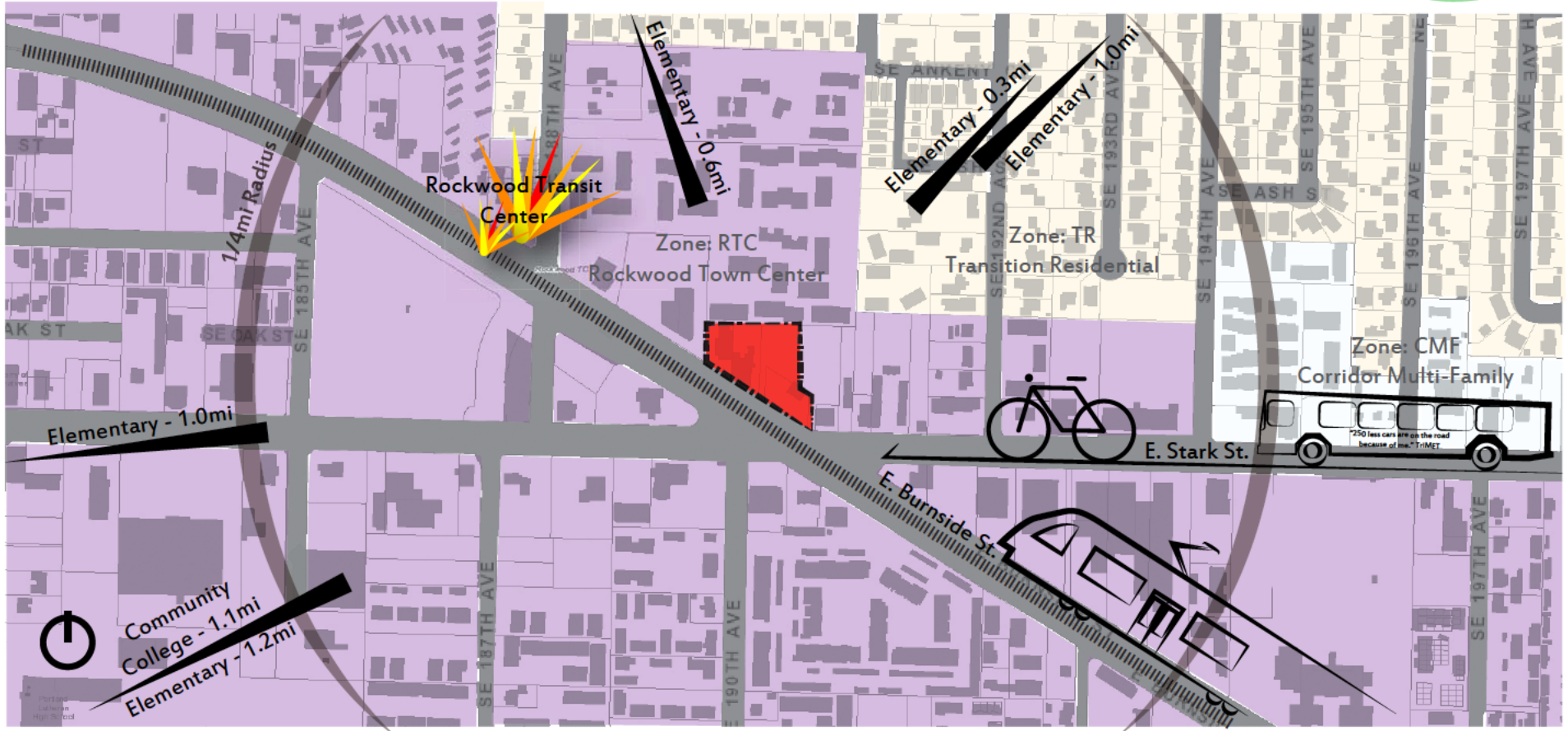
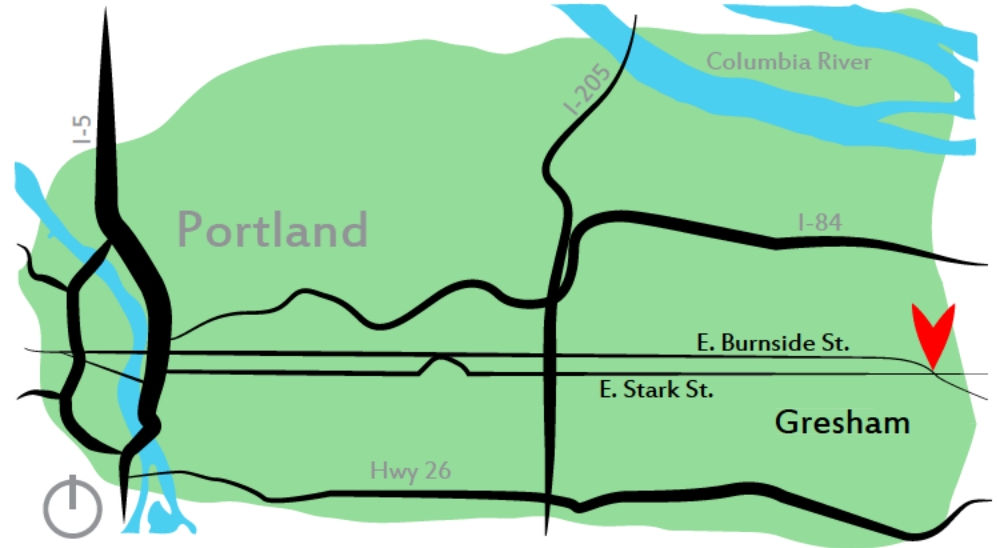
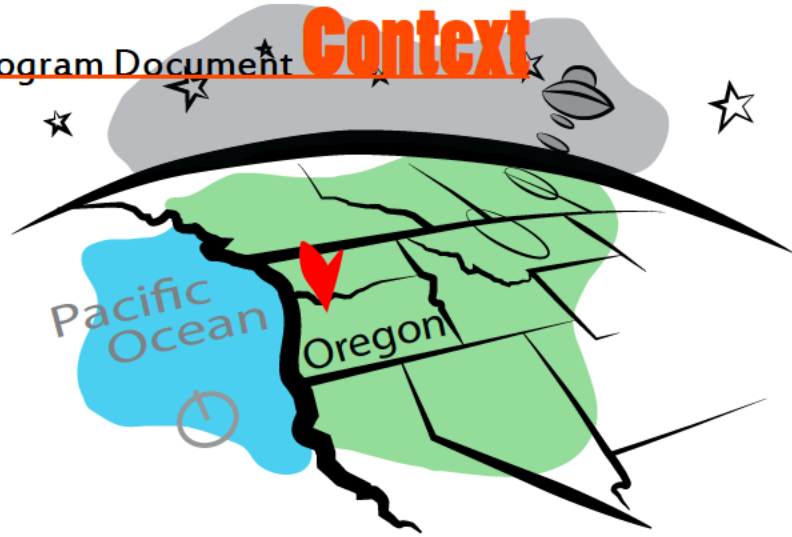
In step with these three items, the library must follow Vitruvius' main tenants:

Strength - Delight - Commodity.



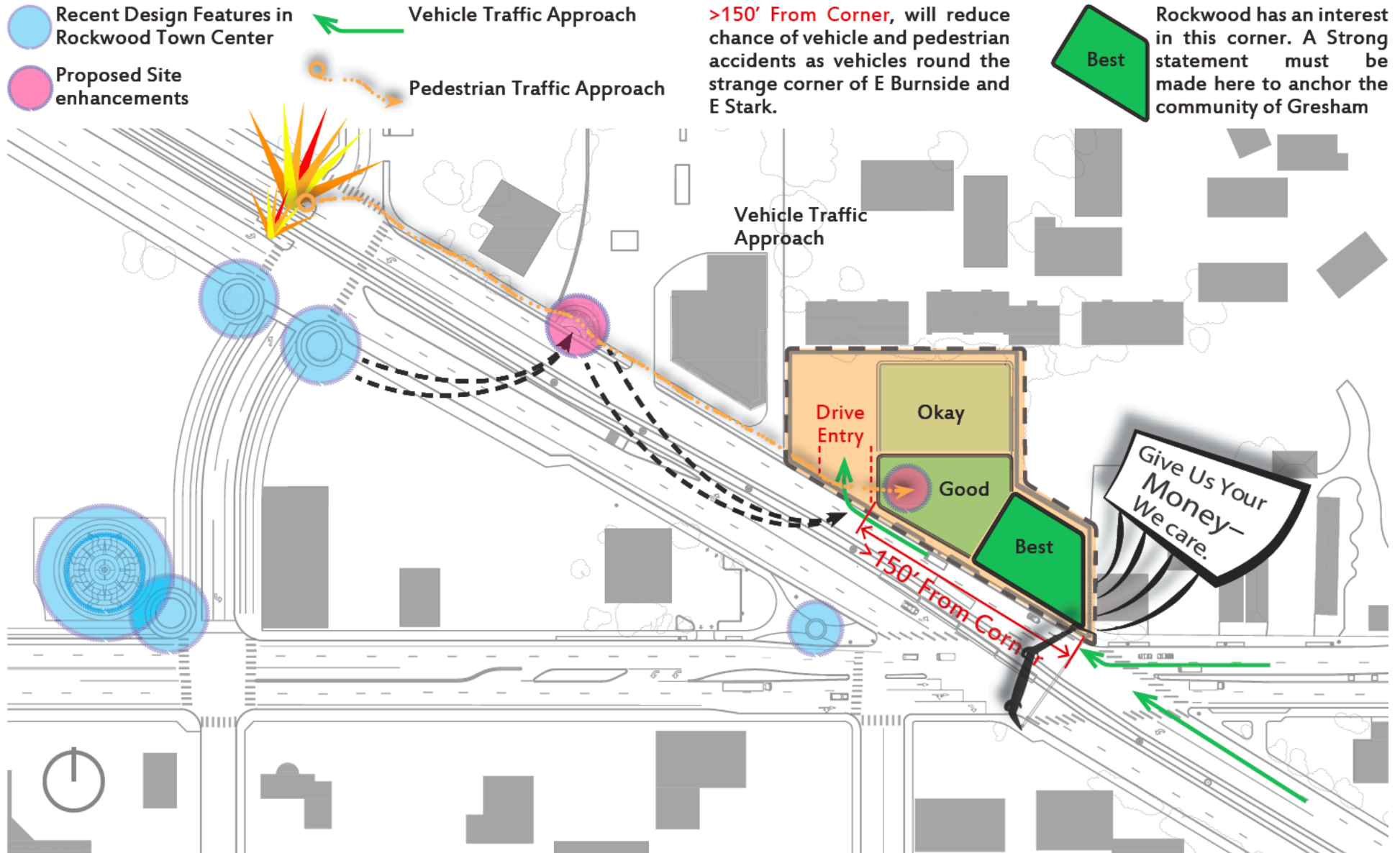
"Architecture is a social action; what can *we* do for others?"
Frank Jacobus

Program Document **Context**



Program Document **Site Specifics**

Every site comes with particular constraints. Here are visual descriptions of only a few of the unique site issues which were considered during the design process. This site requires an FAR of 1:5, no setbacks, and is zoned for Mixed-Use. However for this project, a community library and outreach center has been proposed instead.



Program Document **Place**

Image depicting the site vicinity.



Program Document **Values**

Over time my background as a designer has fostered several major personal goals that show through time and again. This library is a continuation of these values. Precision craft, and care to detail enhance the design of this library in an attempt to make it to last for many generations. I consistently focus on the future of societies, and always attempt to harness new high-technology and efficiently beautiful systems. While at the same time, I see communities as the strongest part of every design, because without the people who occupy these spaces, the architecture would be nothing!

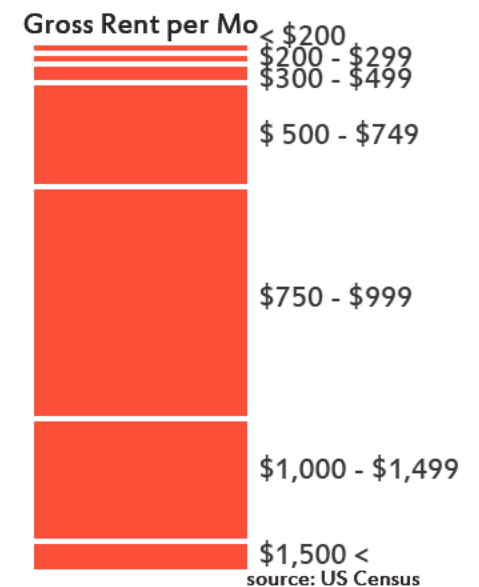
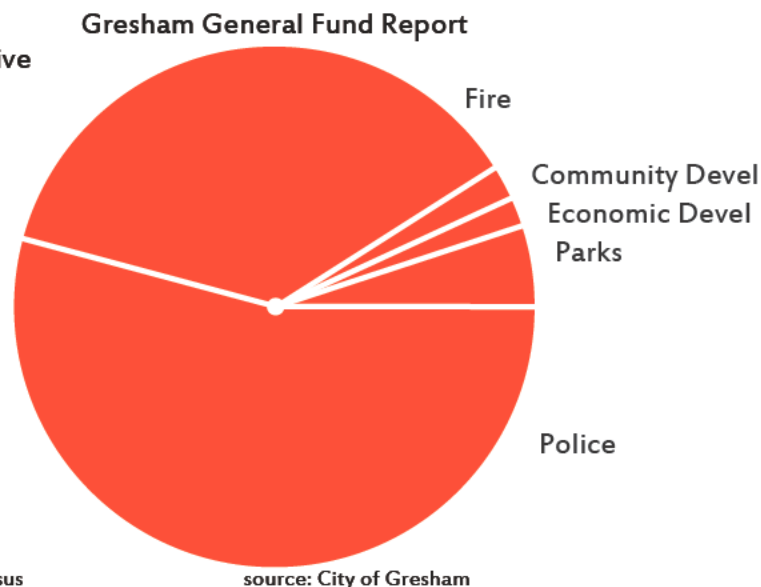
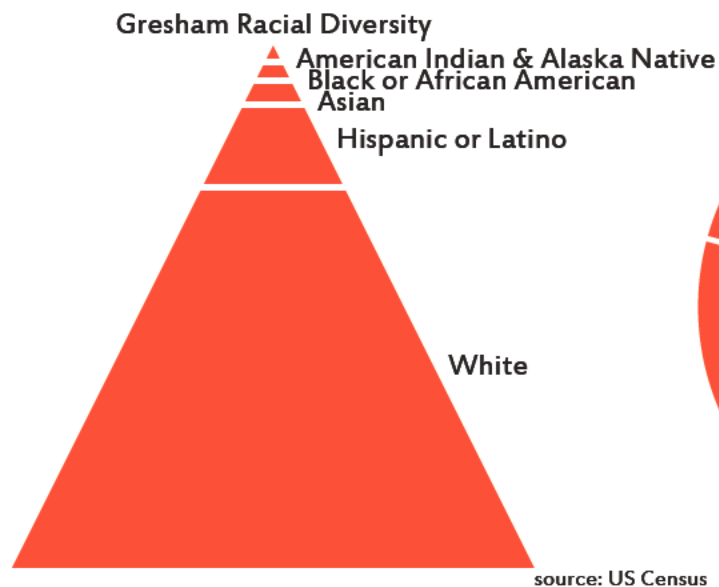
The following is a list of values that define this library and outreach center.

Human	Environmental	Cultural	Technological	Temporal	Economic	Aesthetic	Safety
Functional Social Physical Physiological Psychological Circulation	Site Climate Context Resources Waste	Historical Institutional Political Legal	Materials Systems Processes	Growth Change Permanence	Finance Construction Operations Maintenance Energy	Form Space Color Meaning	Structural Fire Chemical Personal Criminal



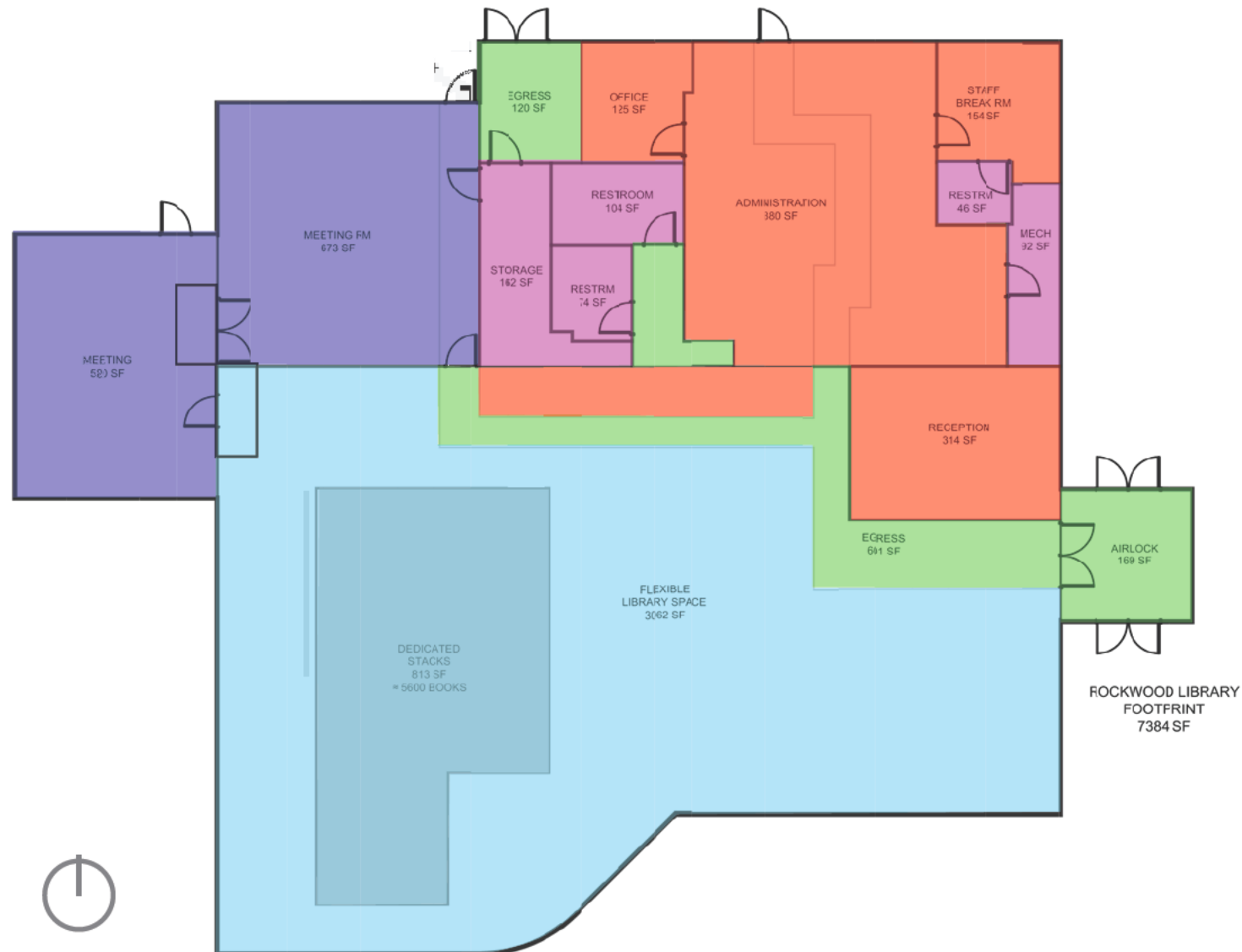
Program Document In-Your-Face Demographics

A proportional graphic representation of the population type, city funds allocation, and the range of housing costs within the Gresham area.



Program Document **Existing Rockwood Library**

Delineated here is the existing Rockwood Library, which is only a few blocks west of the proposed site, shown on the second page. Notice how the spaces break down, and the open format floor plan in light blue; in this space is where most of the public functions occur. There are also event rooms to the west, for access after hours.

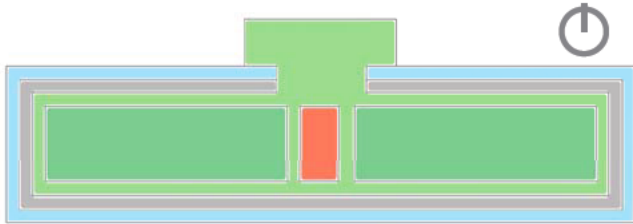


Program Document **Precedents**

Each of these projects was selected for their specific uses. Intended to be evaluated for their program spaces as a guide to select the appropriate square footage for circulation, efficiency, comfort, and flexibility.

Note that the below graphic floor plan representations are not equal in scale.

Precedent **Ste. Genevieve**



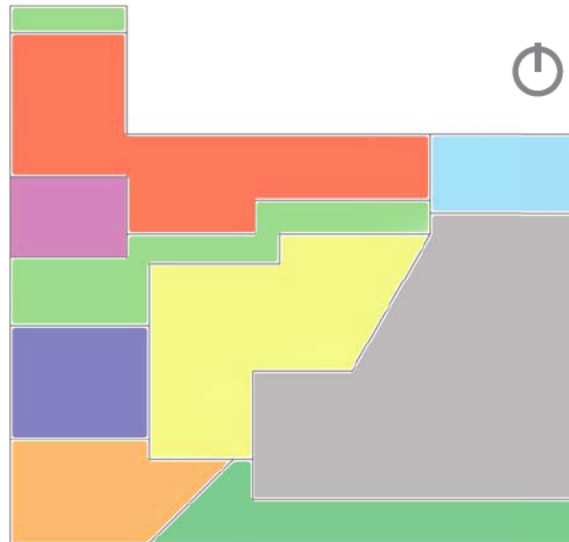
Program Spaces: 20,900sf

● Group Study	7400sf
● Admin.	610sf
● Circulation	5800sf
● Stacks	3400sf
● Quiet Study	3700sf

Facts:

- Slender Plan
- Large Windows
- User-Controlled Lighting
- Light Material Colors
- Open Floor Plan
- Ideal Sun Orientation
- Beautiful use of Metal
- Non-Boastful Exterior
- Subtle & Strong Materials
- Not All Accessible

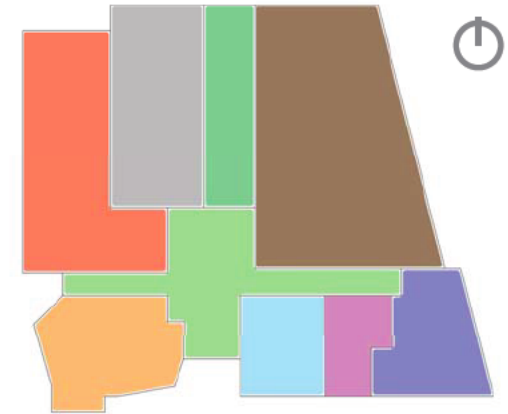
Precedent **Asotin Library**



Program Spaces: 11,800sf

● Circulation	700sf
● Admin.	1275sf
● Utility	300sf
● Event Space	500sf
● Children's	560sf
● Computers	1200sf
● Young Adult	370sf
● Main Stacks	2200sf
● Study Desks	630sf
● Basement	1000sf

Precedent **Ingleside Lib**



Program Spaces: 5,400sf

● Circulation	875sf
● Admin.	1200sf
● Utility	280sf
● Event Space	560sf
● Children's	670sf
● Young Adult	700sf
● Main Stacks	900sf
● Study Desks	500sf
● Outdoor	2000sf

Goals

Define Gresham, OR

Be a solid functioning monument to knowledge and learning.

Lasting materials

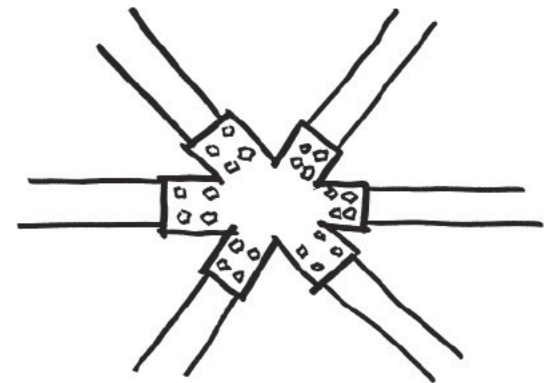
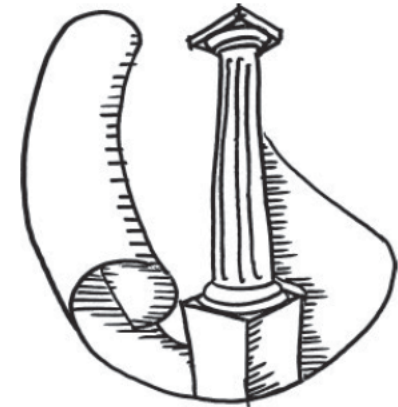
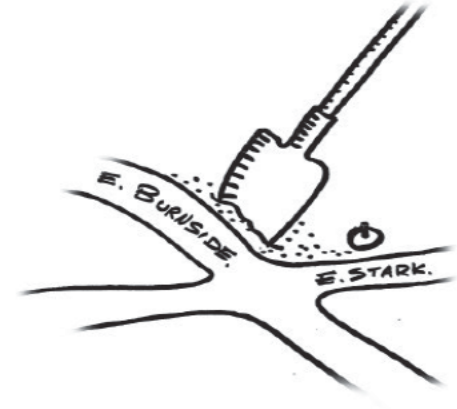
Performance Reqs

Rockwood Town Center, centered on the intersection of Stark and Burnside, is planned to be the center of Gresham's future development. It is only appropriate for this particular site to be that defining language for the rest of the city's development.

Historically libraries have been embodied strong architectural expression - this library will be no exception. It will utilize obviously strong construction language both in its structure choices and care to quality craft.

The facility must last for 50-100 years. With modern technologies in mind, Steel or Concrete are obvious material choices. One, or both, will be examined in this project, and selected.

Concepts



Goals

Crime prevention.

Flexible community gathering space.

Open for discussion.

Performance Reqs.-

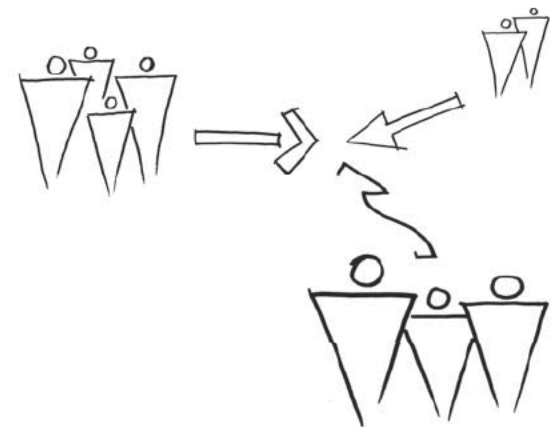
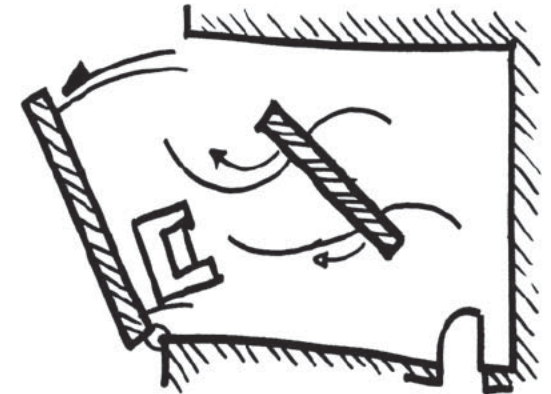
Gresham is ridden with crime and gang violence. The city lacks a great amount of resources to mitigate this violence, the library will incorporate into its purpose a Crime and Gang Prevention Outreach function.

Gathering spaces have been the tradition place for communities to group together and resolve problems throughout history (whether aggressively or friendly). This library must provide the space for these gathering functions that allow them to be an alternative outreach source.

Many libraries boast intimate spaces for person knowledge growth. Although this library will support individual brain expansion, the main function will allow people to mingle with each other, with no separation of culture or race. Encouraging this mix is one of the simple best ways of reducing inter-racial violence - allowing people to be who they are with each other.

Concepts

PRIME



Goals

Automated systems.

Sustainable practices and materials.

Celebrated waste recycling strategies.

Respect the past, while moving forward.

Performance Reqs.

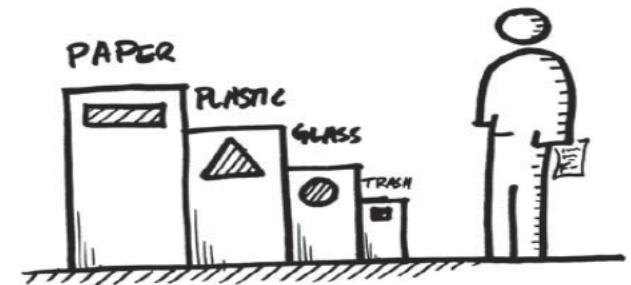
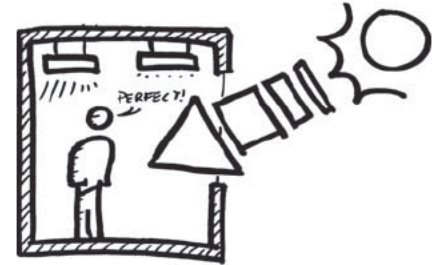
The post construction cost of this facility will be reduced with properly programmed lighting, HVAC, and other electric systems that are mechanical in nature.

Use of energy-saving products, and passive systems. Incorporate 'green energy' strategies when possible, as well as environmentally responsible materials.

Easily discernible differences for proper disposal of waste.

Books and stationary are the mediums that transferred knowledge from one mind to another for the last two millennia. Although we may be moving away from this medium in the next century, room will be made for books.

Concepts



Goals

ADA accessible.

Easily navigable plan.

A desirable place to seek refuge.

Free to all users.

Performance Reqs.

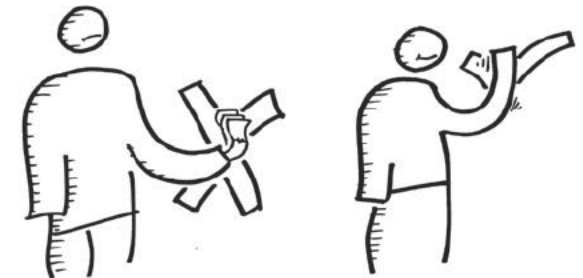
This library should provide accessibility to the mobility, sight, and hearing impaired. It will be important to make accommodations for children and elderly, i.e. seating more fit for their needs, etc.

There should be clear visibility between circulation spaces. This library will avoid extraneous material usage to prevent confusion for the sight impaired.

Day, night, sun, or rain, the spaces where relaxation and study take place must encourage occupant use by visually linking their experience to the exterior or interior depending on the conditions.

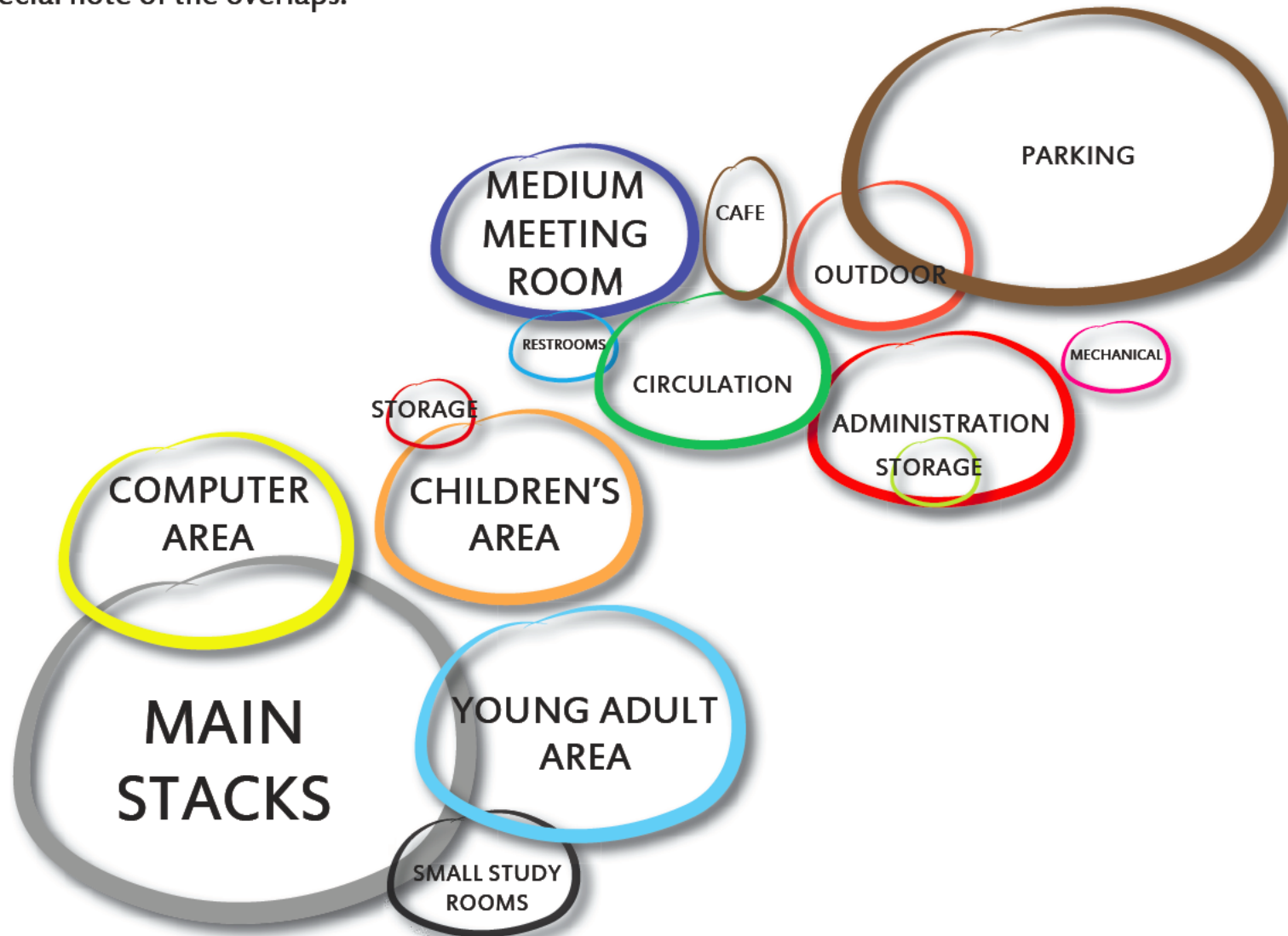
It will be important for this facility to remain free to users. Without this component, individuals may be discouraged from occupying the intended spaces.

Concepts



Program Document **Spatial Bubble Diagram**

A Spacial Diagram delineates the relationship of spaces between program areas. How two spaces relate to each other is very important, especially when considering the connections between public and private. Although a library does not necessarily carry a significant amount of sensitive data, the public must not interact with the private zones. The library operators must be able to function in their administrative spaces without receiving interruption from a customer searching for a book, for example. Below is just one option for how these different spaces may relate to one another. Take special note of the overlaps.



Program Document **Brown Sheet**

The 'Brown Sheet' provides a quick view to determine program spaces. Each square is 10'x10' (100sf). Below is a delineation of program requirements based on precedent analysis, then adjusted to fit the program for the Rockwood Public Library & Outreach Center. The project square footage goal was 10,000sf.

Site = 46,825sf

Parking & Driveways = 24,112sf

Entry Patio = 1,645sf

Rear Patio & Pond = 2,325sf

Roof Area = 13,400sf

Building Footprint = 10,142sf

Meeting Rm = 800sf

Mech. = 315sf

Restrooms (Men & Women) = 150sf each

Bike Carousel & Entry Hall = 1,118sf

Kids Area = 674sf

Computer Areas (combined) = 1,090sf

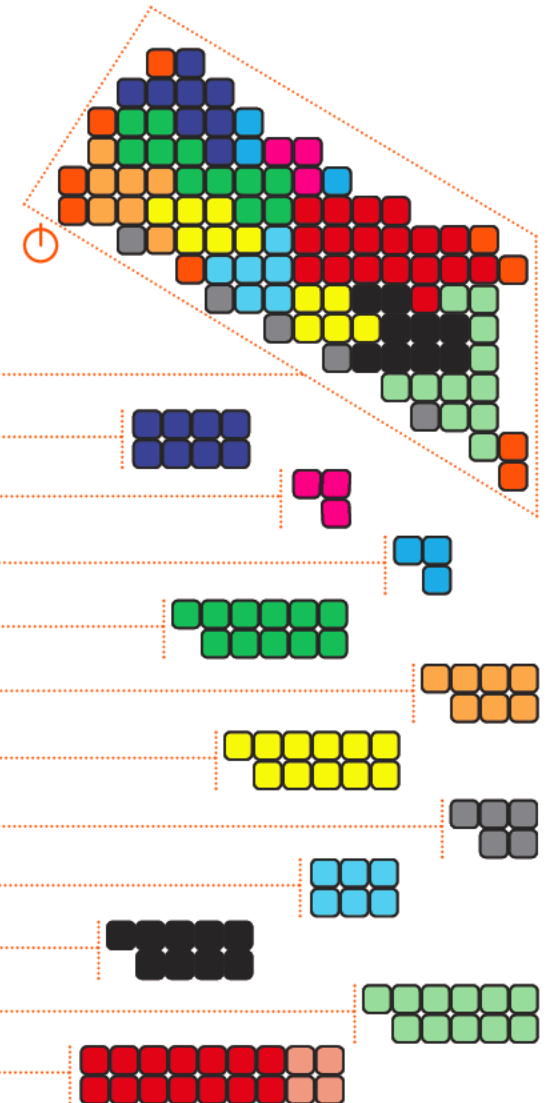
Book Carousel = 462sf (994 shelves x 11 books/shelf = 10,934 books)

Teen Area = 600sf

Point Gravity Zone = 850sf

Flex Space (Around Point Grav to the Southeast) = 1,070sf

Administration, Outreach, & Reception = 1773sf



100sf (Typical Office)

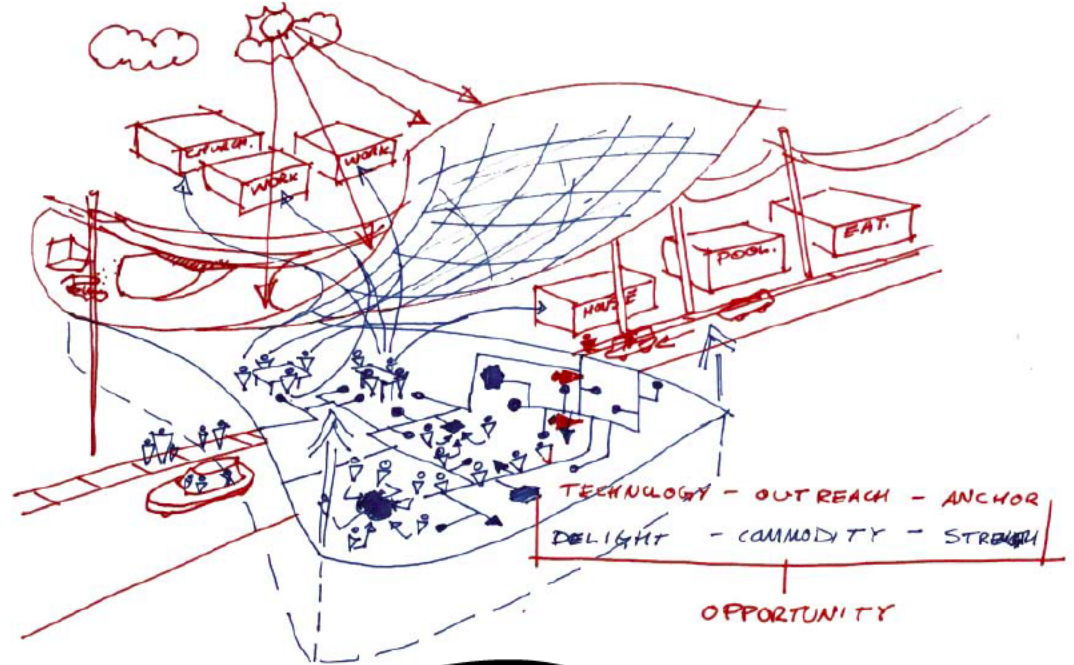


Program Spaces



Program Document **Progression of Concept Diagrams**

Although the "parti" or "concept diagram" should hold a firm grasp over the design from start to end, this project has undergone continual improvement - open to change. Here are a few of the many concept diagrams for this project.





⑤ SITE
 1/16" *PKC*
 2/13/10/11

• NO VIEWS
 LD CREATE THEM!

• BUFFER ⑤ FROM STREET.

• BUFFER BLDG FROM SIDEWALK.

• COMPUTERS DON'T NEED TO BE NEAR DAYLIGHT LIKE OTHER ACTIVITIES DO.

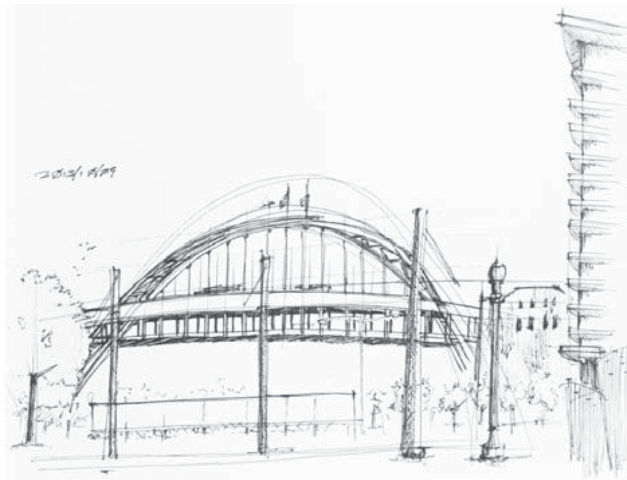
Program Document **Influences**

A background in science, technology and community interests was the primary value brought into this project. These values are present in the new Rockwood Public Library, Outreach & Technology Center. Strong architectonic forms, a broad overhang for public events, and spaces for high-technology intended to be used by the public.

One integral influence in terms of bike storage was how to keep bikes from being stolen. The librarians at the existing library claimed that most of the youngsters who hang out there, do not bring their bike, because they know the high likelihood for it being stolen. (Design Philadelphia, 2013)

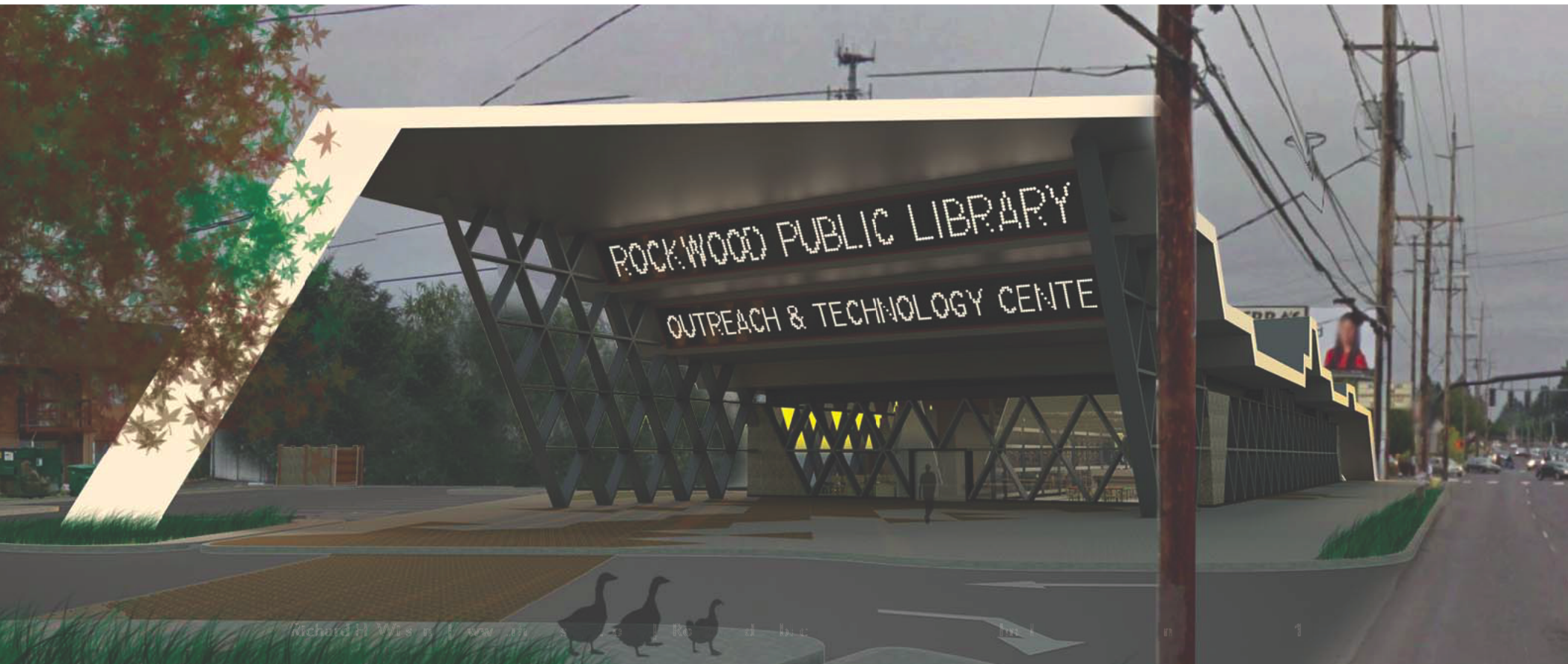
Portland is a beautiful city from the right angles. The structural influence for this library comes from the strong structures seen throughout the city, such as the Fremont Bridge.

And The form of the new library partially came from the need to generate a lasting, heavy, anchored aesthetic. As mentioned earlier, Rockwood lacks any real identifying characteristics, outside of its diversity culture. One means of achieving such an impressive presence, was to see what other buildings have successfully created human scale buildings, with monolithic appearance.



Program Document **Final Design**

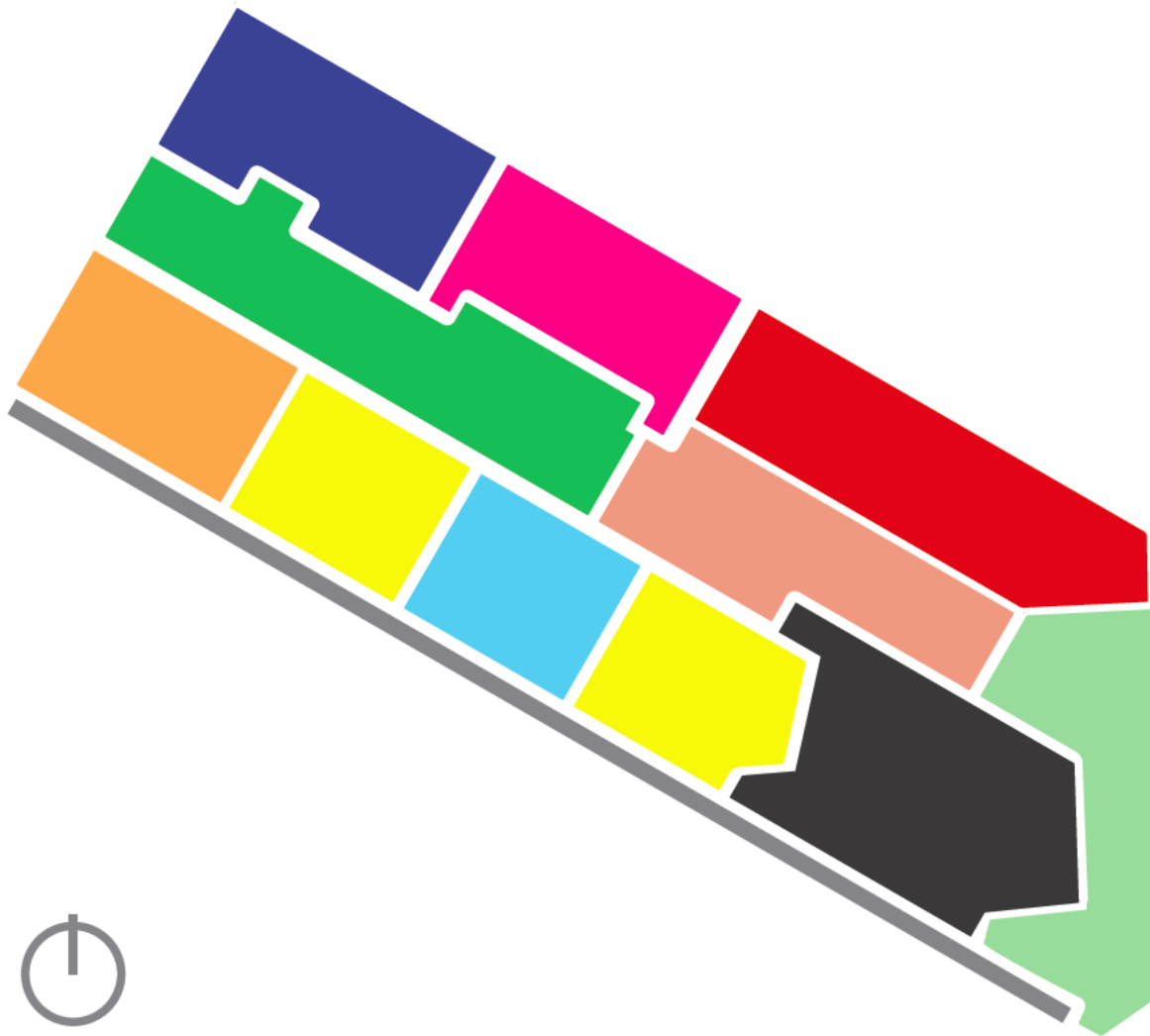
At last, the final design, the new library came to fruition.



Program Document **Program Spaces**

Here are the program spaces are organized in colorized fashion. This diagram may be used in reference to the following page. The most important spaces for the design were:

- 1) Outreach Center, mixed into the Administration space, in red,
- 2) "Point Gravity Zone" (Maker Space), where creative ideas happen, in black,
- 3) Book Carousel, the autotronic mechanized revolving bookwall, in gray,
- 4) Bike Carousel, also with a mechanized motif, to carry the machine aesthetic throughout the library, in dark green.



Site = 46,827sf

Parking & Driveways = 16,362sf

34 Parking Spaces

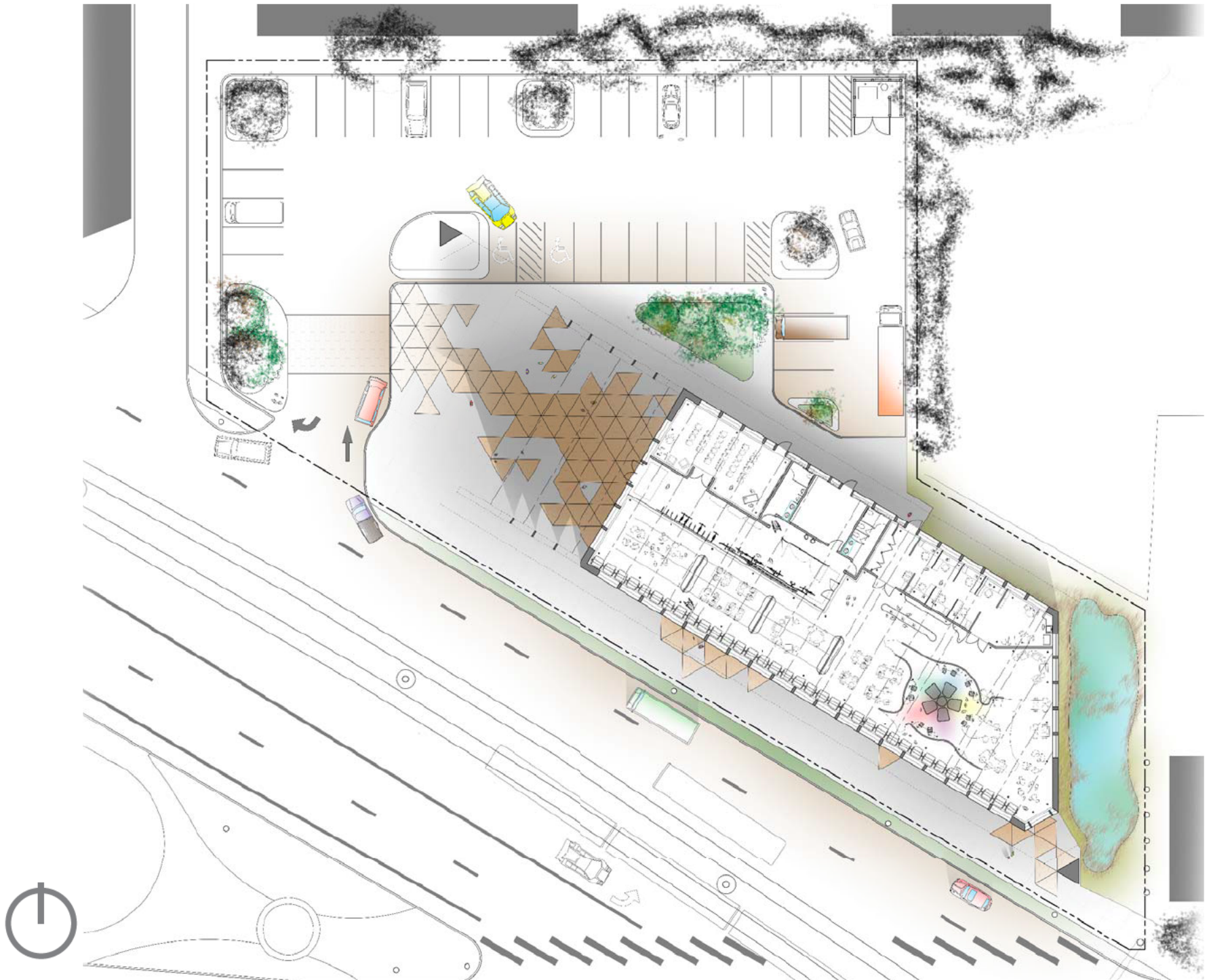
Entry Patio = 12,111sf

Landscaping & Swales = 8,207sf

Roof Area = 17,979sf

Building Footprint = 10,076sf

● Meeting Rm	800sf
● Mech & Rest	610sf
● Bike Carousel	1,100
● Kids Area	660sf
● Computer Area	1,080sf
● Book Carousel	554sf (5,800 books)
● Teen Area	540sf
● Maker Space	860sf
● Flex Space	1,040sf
● Reception	220sf
● Administration	800sf



Program Document **Sustainability & Comfort Strategies**

Stormwater Collection

These specialty curb cuts will direct the water around the site paving to prevent the need for sewer grates to be located where cyclists, pedestrians, or folks in wheelchairs may be impeded in case of heavy rainfall.

Large Overhang

With an area of 5,400sf over the entry, the roof provides ample protection from precipitation in the winter, and blocks the majority of summer sunshine during the summer from overheating hardscape as patrons enter the library. Surrounding the building is a minimum 6ft overhang to provide pedestrians refuge from inclement weather, for at least some of their walk along E. Burnside.

Photovoltaics

1,740sf of PV panels fill the Southeastern facing roof slopes. Although they will only receive about 50% efficiency compared to southern-facing PVs, the system will collect:

$(27.6\text{Wh/sqft}) \times (1,740\text{sf}) \times (50\%) = 24,012\text{Watt-hours per year}$
Which means two things:

- 1) Sustainable choice,
 - 2) Public Money Saved.
- (Brown & DeKay, 2001)

Siliconized Polyester - Partially Reflective Roof

In hot climates, a designer may consider a bright white coating, or bioroof. In cold climates, one may find a dark roof, or a bioroof, to be of value.

Here a darker-than-white material was chosen to partially reflect sunlight. Since Gresham is between a Hot and Cold climate, this roof material choice will help reduce unwanted solar collection in Summer, but increase heat-storage in Winter.

(Brown & DeKay, 2001)

Evapotranspiration

"Cools the plants, soil, and contiguous air." A valuable sustainability effort to help reduce the heat island effect, especially in major cities. (Lechner, 2009)

Bioswale

"Designed to attenuate and treat stormwater runoff." This catchment system will help clean water of contaminants from the site and roof before it gets into local streams and the sewer.

(Kwok & Grondzik, 2011)

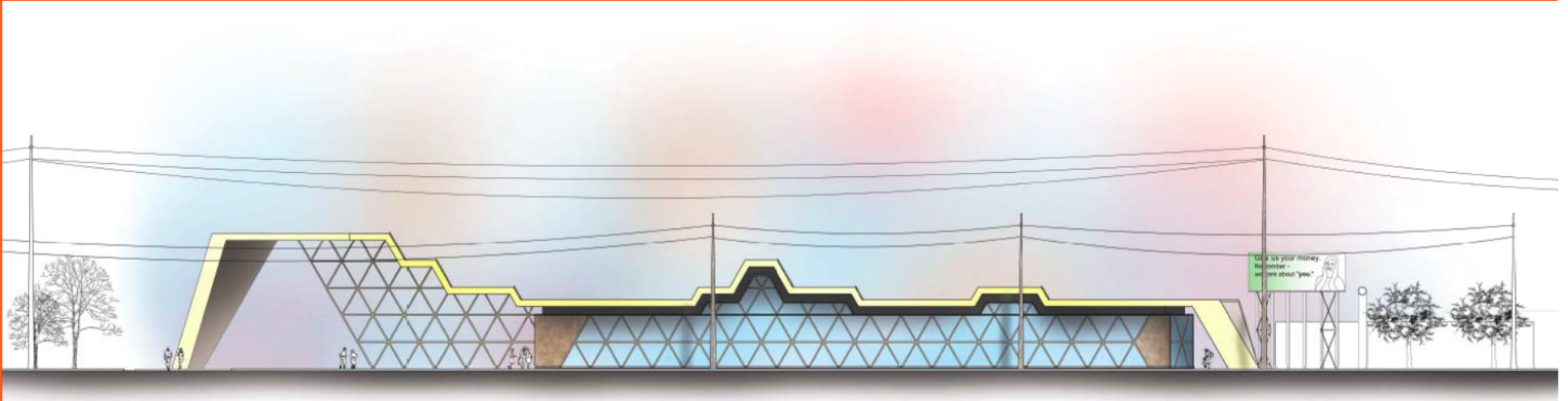
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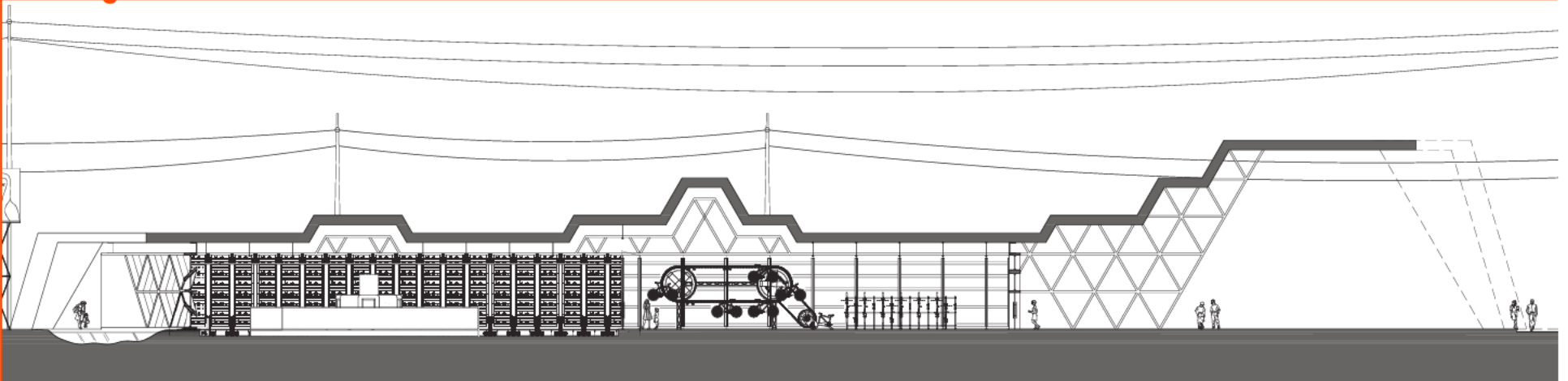
Program Document **Elevation and Section**

The triangular exterior form helped provide a strong, honest, lasting facade. The structure is intended to allow for two different forms of construction: the first option being Steel, the second being 3-D Printing. Since this is a library of the future, and a highly technological facility, being the first building to be 3-D printed would be a significant step in architectural evolution. The roof and simple shell of the building would be printed, then the interior functions and hyper-glazing inserted after.

Elevation - E. Burnside St



Building Section - Southeast to Northwest



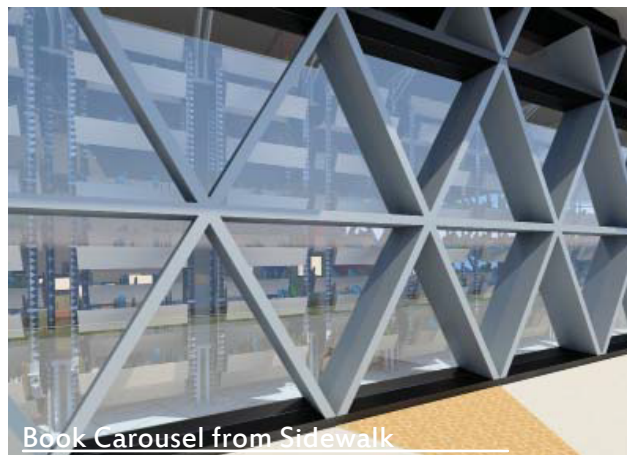
Program Document **Exterior Views**



Southeast Street View - Light Panels at Dusk



Overhang Entry



Book Carousel from Sidewalk



Admin. & Mechanical Access

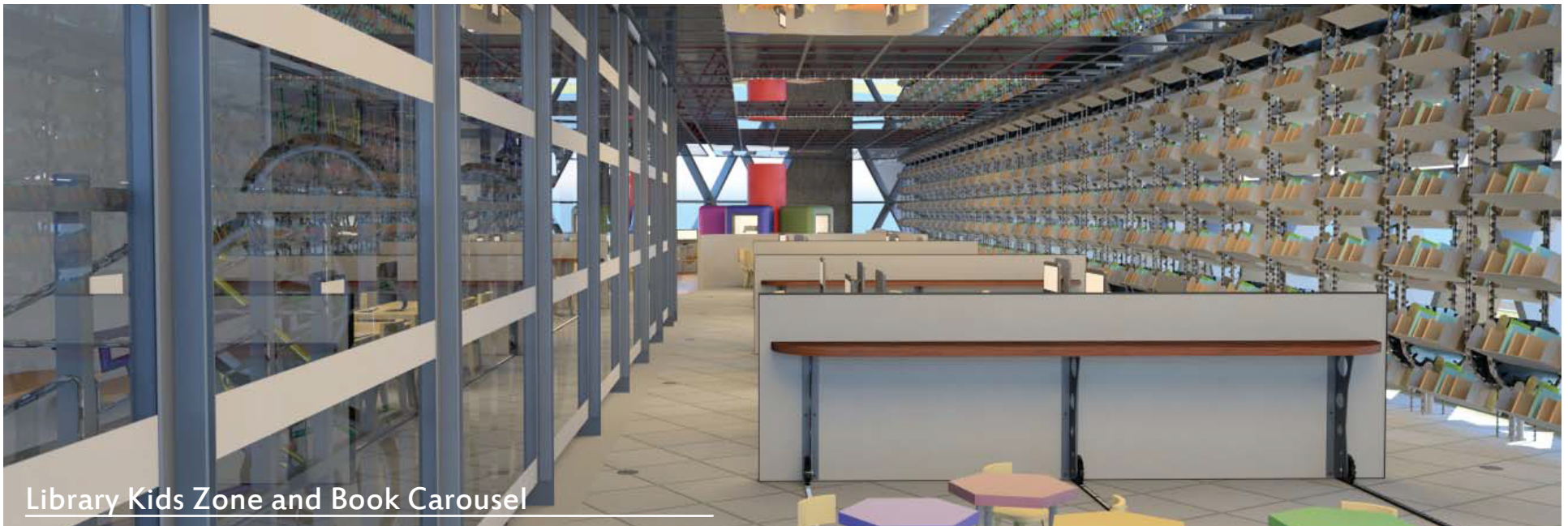
Program Document **Interior Views**



Bike Carousel



"Point Gravity Zone"



Library Kids Zone and Book Carousel

Program Document **Learning Lessons**

The values that I learned from this design exercise are as follows. I realize now that there is a specific order in which design must move forward successfully.

- 1) The design process should start with the intent of the project, form the client;
- 2) Following intent, the site analysis commences. This investigation must be very thorough and involve in-depth context analysis and research;
- 3) In tandem with site analysis, the sustainability goals must be realized, to best match strategies with the intentions;
- 4) A design concept statement, drawing, and or model must be developed to commence designing.

From there, the rest of the design should be successful. In the future, I will test the above model and make observations of its success.

Overall this project was a success. Although some design choices were overlooked, the lessons will be carried into future design. -Thank you Gerry Gast and Suenn Ho, Professors of Architecture, University of Oregon, PDX

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