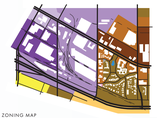
0 SITE + ANALYSIS

SITE LOCATION

Midway, Saint Paul, Minnesota, USA

CURRENT OCCUPANTS

Breakthru Beverage
Northwest Packaging



ZONING MAP

This site is located on the edge of a largely residential zoned area. The industrial zones stretch from Interstate 94 all the way north to the border of St. Paul. Along the light rail, the city has rezoned for Traditional Neighborhoods. These are classified as higher-density pedestrian- and transit-oriented mixed-use development. Redevelopment of this block must better transition from the Traditional Neighborhoods and Multiple Family residential to the Industrial areas to the west and north. Currently, it is very apparent where the zones change from one to another by mere scale of the buildings.

SUN PATH DIAGRAM

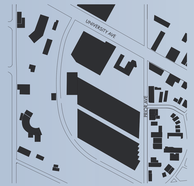
Minnesota sees a wide swing of temperature throughout the calendar year. In the warmest month, July, the temperature highs average 85 degrees Fahrenheit and the coldest month, January, the temperature lows average 7 degrees Fahrenheit. Snow and cold, northwest winds are not uncommon in the northern Midwest of the United States. These factors, along with sub-freezing temperatures dramatically affect how pedestrians interact with outdoor spaces. It requires special attention to the areas furthest from the transit to encourage year round use of the spaces.

PUBLIC TRANSIT AND BIKE PATH

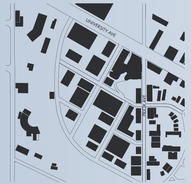
Access to a variety of public transportation options is an important aspect of sustainable urban design. This site has close proximity to multiple bus routes and stops. These run in all directions, and are both local and limited stop bus routes. Also serviced near the site is a bike rack for the Nice Ride public bike share program. Although University is not currently very bike friendly, there are many side streets that lead to and away from that docking station. Most importantly, this site is located near the Metro Transit Green Line, running from downtown Minneapolis to the west all the way to downtown St. Paul.

TRAFFIC LOAD DIAGRAM

The site is located between two very high-trafficked roads; University Avenue to the north and Interstate 94 to the south. These both bridge the gap between Minneapolis and St. Paul. Other main arterial roads surrounding the site include Vandalia Street, Cleveland Avenue, Prior Avenue, and Fairview Avenue, all generally running north-south. The intersections of these main roads are all stoplights. Not only is this because they are extremely traversed, they must help direct traffic around the light rail that runs through University.



EXISTING BUILDINGS ON SITE
1" = 400'



PROPOSED MASTER PLAN
1" = 400'

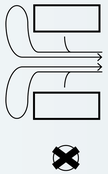
Redevelopment of this block must better transition from the Traditional Neighborhoods and Multiple Family residential to the Industrial areas to the west and north. Currently, it is very apparent where the zones change from one to another, which is largely due to the lack of sustainably designed and integrated industrial buildings. The small businesses on the east side of Prior Avenue are alienated from high pedestrian traffic, because the face large parking lots and industrial buildings. The goal would be to pull features of the redevelopment of the Traditional Neighborhoods along University Avenue down Prior Avenue, better linking this neighborhood to those to the south.

SEMI TRUCK AND AUTOMOBILE PARKING CIRCULATION
1" = 160'

Circulation plays a big role in the programming because of the industrial and manufacturing processes themselves. Raw materials or goods need to have a clear path from entering the site to the warehousing and manufacturing spaces, and the finished products need a clear path to the warehousing and off the site.

Providing parking for employees is important too. This one way ramp keeps the traffic moving while pulling the cars off of University, where they are more likely to be coming from.

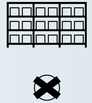
1 MAXIMIZING UTILITY + DESIGN



TWO WAY - 90° PARKING

ONE WAY - 45° PARKING

The traditional method of truck and other delivery vehicle circulation requires vast paving around the building's exterior to allow for turn-around clearance. By creating a one way flow of traffic around the building, one can reduce the amount of paving around it and provide an easier back in for truck drivers.

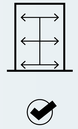


TRADITIONAL WAREHOUSING

ROBOTIC WAREHOUSING

When using traditional shelving for warehousing purposes in a one story facility, one is limited by the maximum height that forklifts can reach and the weight of the items being stored. It also takes up a large percentage of the building footprint. With a built-in vertical robotic warehousing system, the area necessary for warehousing can be reduced by over two-thirds.

HORIZONTAL MANUFACTURING



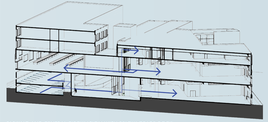
VERTICAL MANUFACTURING

In most industrial parks, the layout of the buildings have one story, spread out on large plots. While inexpensive to build, it creates inefficient interior circulation where forklifts move everything from area to area. By stacking the manufacturing spaces, we can create custom paths of interior circulation and move goods and people more efficiently along a vertical axis.

RAISED DOCK FLOOR

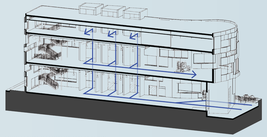
BELOW GRADE DOCK

Due to the height of semi truck beds, the floor on the interior of many industrial buildings is raised off of the ground to account for the difference. In order to preserve the ground level, the semi truck path can be redirected below grade. This also improves walkability around the site.



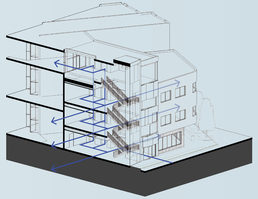
PARKING AND CENTRAL CIRCULATION WITH BELOW GRADE DOCK

The elevator located in the middle of the building serves mainly the employees from the parking garage on the west side. It provides access to all floors. This section also illustrates the recessed dock and how it allows for the street access to remain on the ground level.



SOUTH FREIGHT ELEVATOR CIRCULATION

The freight elevators on the south side of the industrial building provide an opportunity to both increase efficiency and to create a design element that displays the vertical circulation. The elevators interrupt the facade for a visual cue that vertical circulation is happening.



PRIOR AVENUE CIRCULATION FOR INDUSTRIAL AND MIXED USE

The center unit on Prior Avenue provides vertical circulation for the mixed use units on either side and a visitor entrance for the industrial building behind. Again, the vertical element is pushed to the facade to indicate an interruption of the horizontal circulation.