



Architekton + Otak

Designing Tempe's New Transit Shelters

Public Meetings
September 21 & 25, 2019



Transit Shelter Design Steering Committee



Purpose: to provide their experience & knowledge about Tempe's transit system & shelters, as members who:



- have specific skills in design, art, materials research;
- use the shelters, ride or drive the bus, or manage bus systems;
- participate on related city commissions;
- are residents, local businesses, students & property owners;
- represent ASU Transit & Planning, Valley Metro, & First Transit

Value: to assist in developing & finalizing the best solutions for Tempe's new transit shelters

Transit Shelter Design Project



What makes for a good transit shelter?

convenient?

comfortable?

safe?

functional?

easy to fabricate & maintain?

attractive?

iconic?



does it consider the local environment?
are the materials appropriate?

Transit shelter design goals



maximize shade!

architecturally unique
to the City of Tempe

sustainability focused

good investment for long life

comfortable and safe

flexible modular design
for variety of sites

cool

easy to install
& maintain



Consultant Team



Team Goal: use a collaborative process to create an iconic new Transit Shelter Design that is unique to Tempe while being practical, easy to fabricate/maintain and adaptable.



TY·LIN INTERNATIONAL

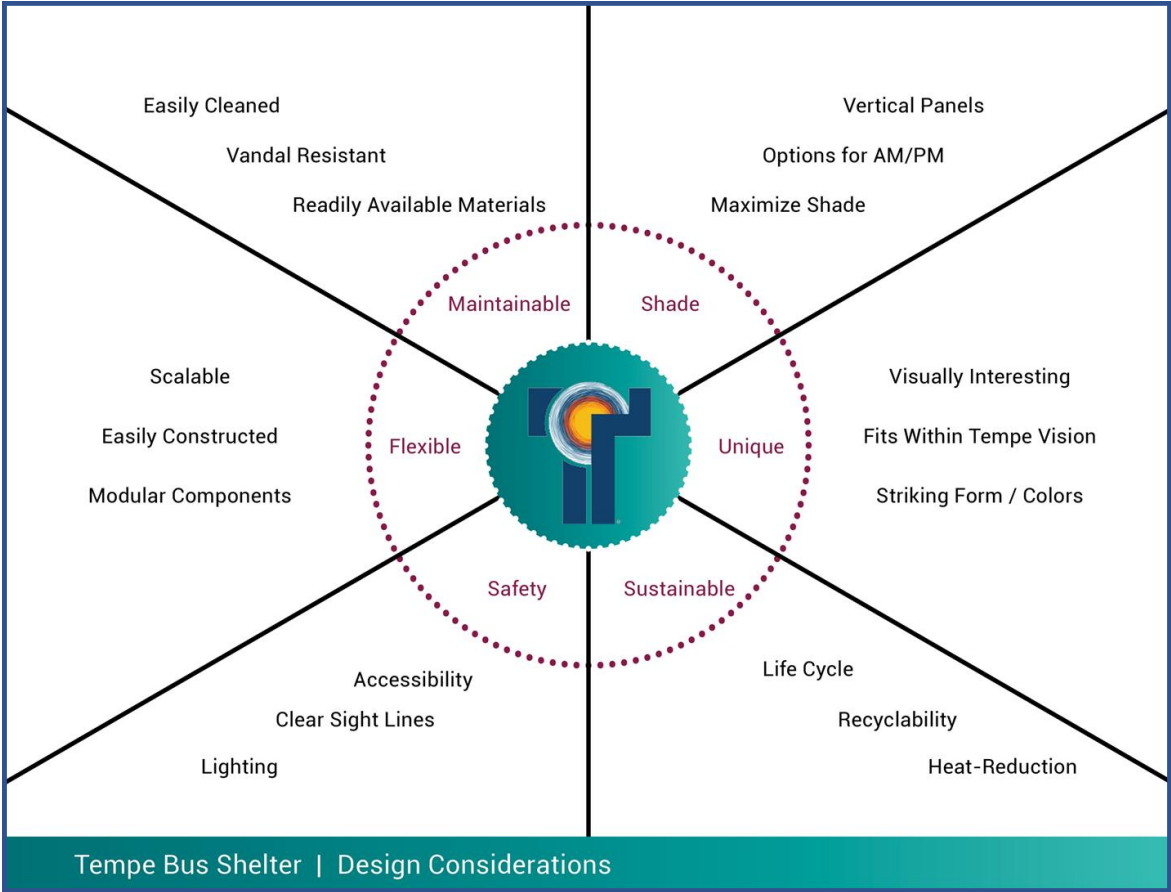


engineering and
environmental design



LEE ENGINEERING

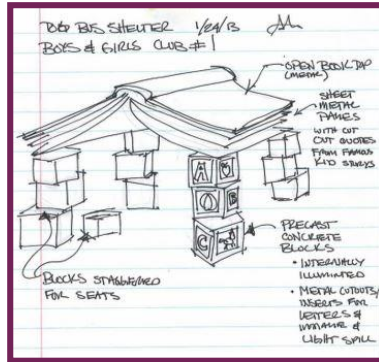
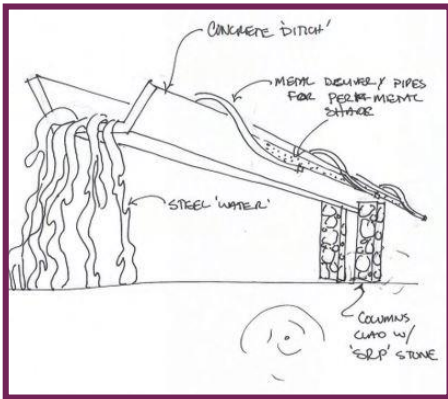
Process – Design Considerations



Process – Concept Stage



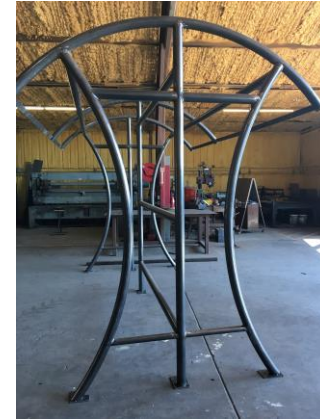
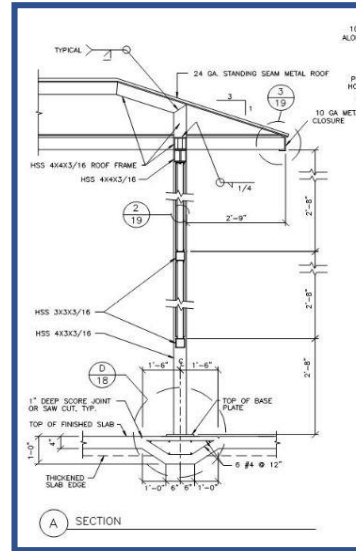
- 8 initial concept sketches
- 3 recommended alternatives
- time-of-day shade analysis
- 1 preferred concept



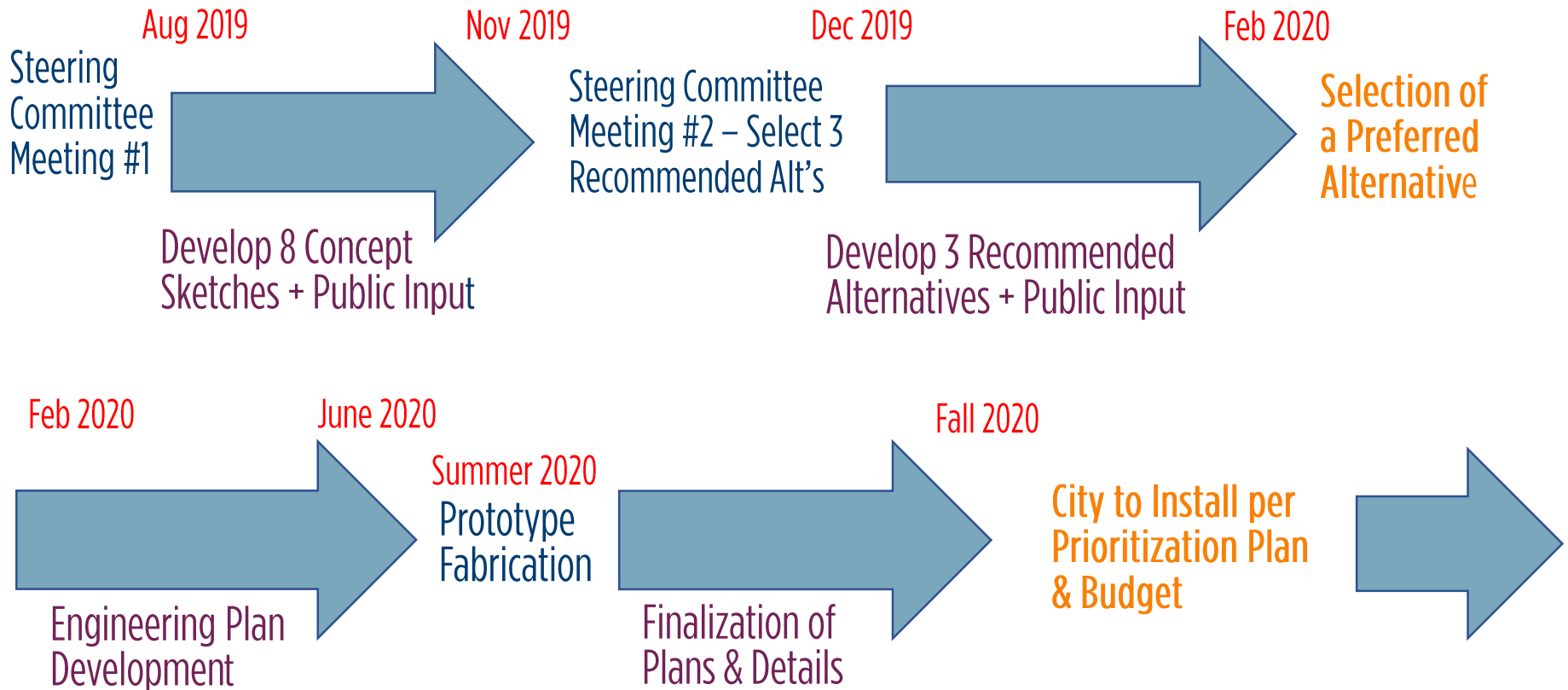
Process – Final Design



- detailed plan development
- fabrication of a prototype
- new Tempe details finalized
- installation



The Timeline



Tempe: what are we known for...



ASU / Tempe Town Lake / Mill Avenue

Innovative / Smart / Progressive / Creative

Compassionate Problem Solvers

Outspoken and Engaged

Friendly / Diverse / Active / Outgoing

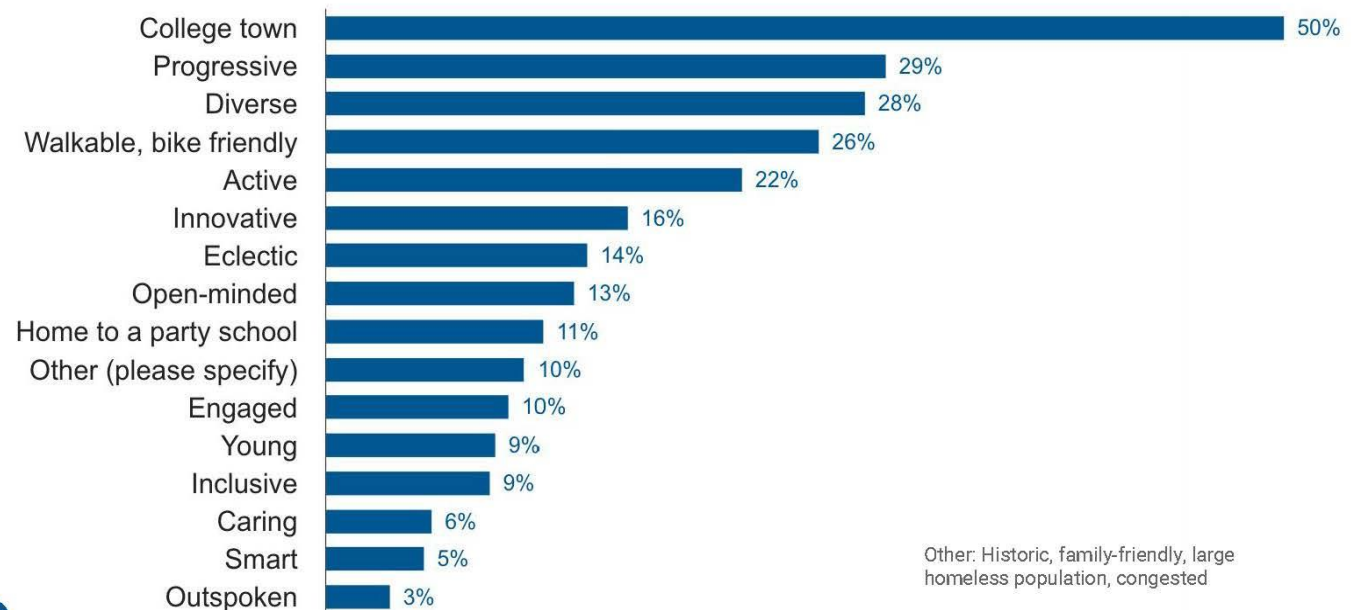
Tempe community survey



From Northstar community survey “In your opinion, what TWO things are most important to Tempe’s identity...”

Community Survey

Which of the following are the best descriptors for Tempe?
Choose two answers.

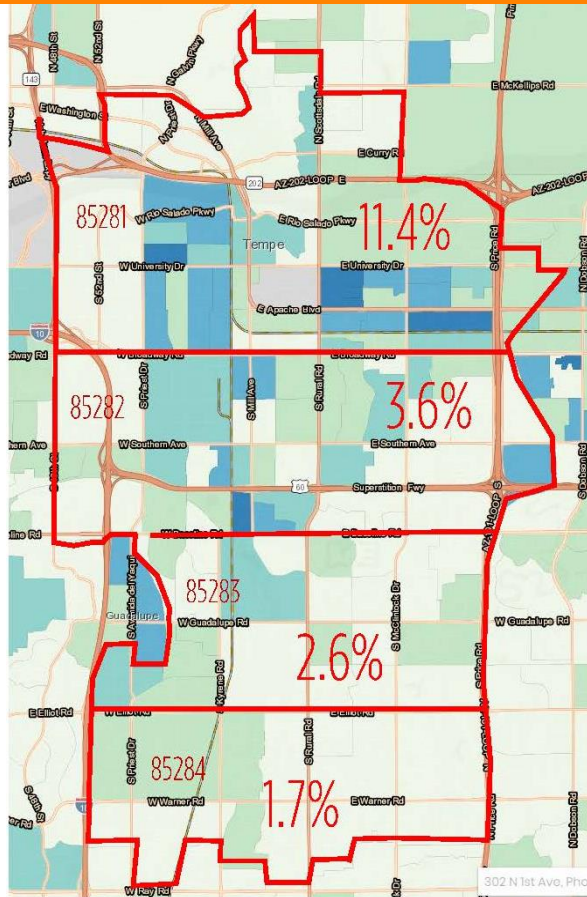


Tempe: a snapshot

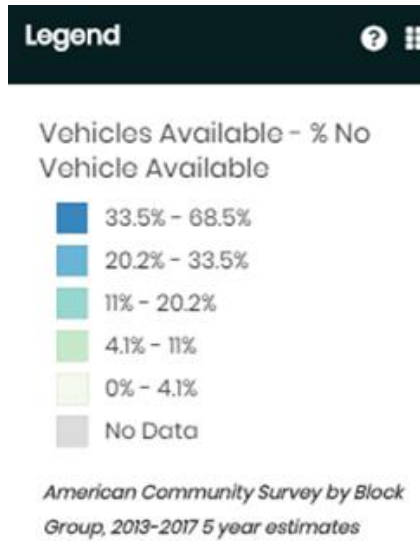


- Tempe is among youngest cities in nation
- Average resident age: 28.1
- Most populous age group: 20-34
- 46 percent of residents own homes
- 49.5 percent live in non-family households
- About 29 percent of households have kids under 18
- **Highest percentage of transit users in Valley**

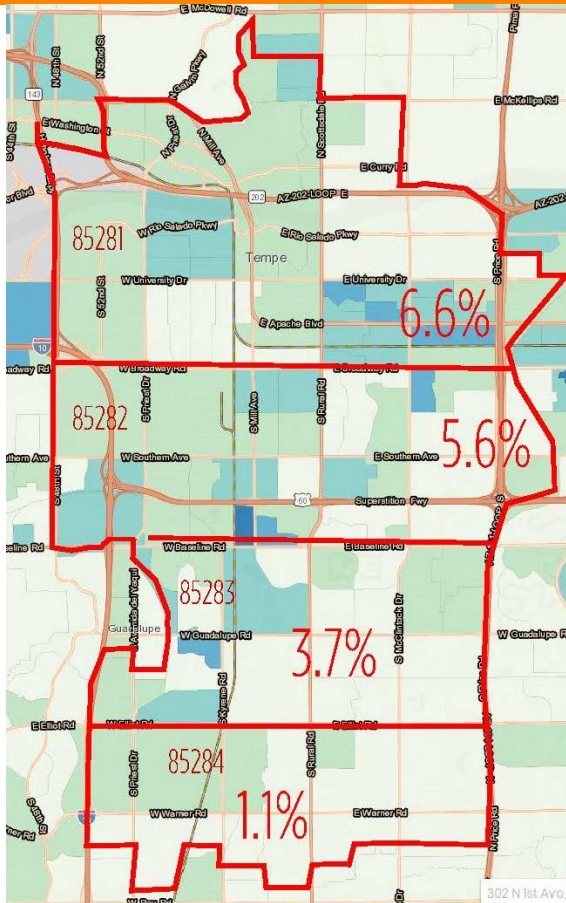
Households with no vehicles



9.4%



Percentage using transit as means to work



5%

Legend

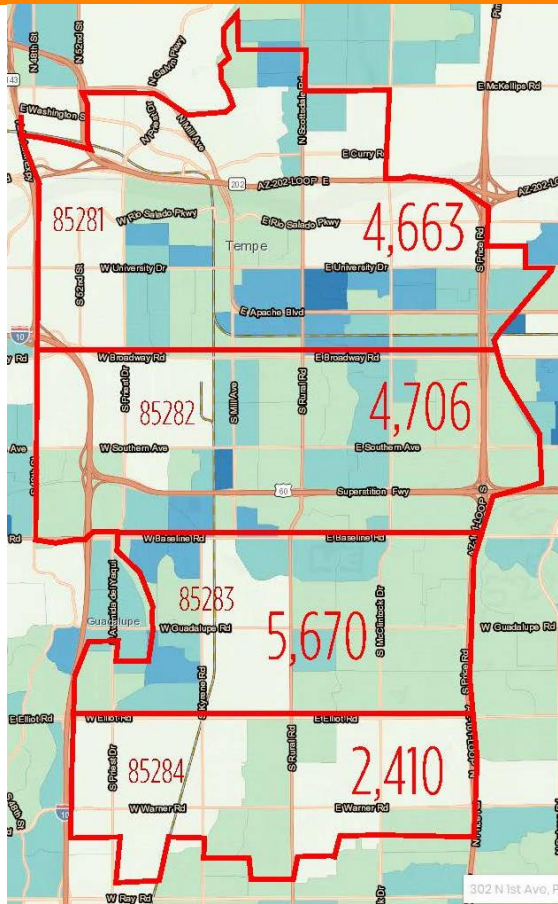
Commuting to Work -
Percent Public
Transportation

- 25.8% - 52.1%
- 13.4% - 25.8%
- 6.4% - 13.4%
- 1.9% - 6.4%
- 0% - 1.9%
- No Data

American Community Survey by Block
Group, 2013-2017 5 year estimates



Population density: people per square mile



4,050

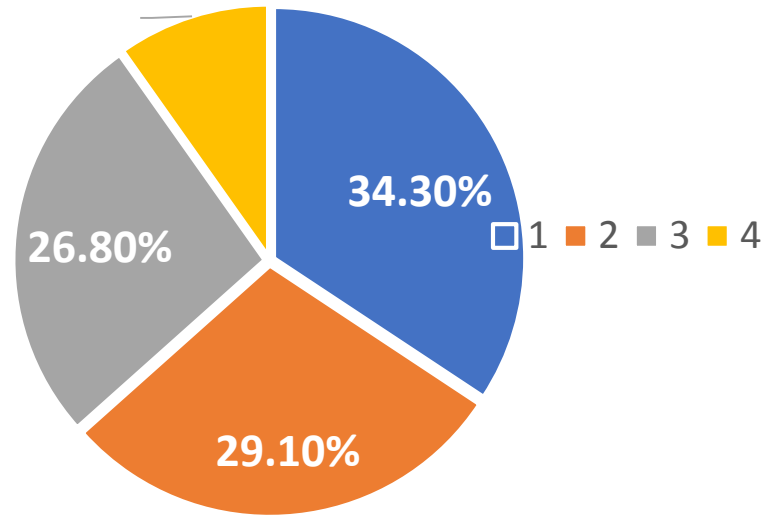
Legend ⓘ ☰

General - Total Population Per Sq Mile

- 18,595 - 40,397
- 10,706 - 18,595
- 6,048 - 10,706
- 2,603 - 6,048
- 0 - 2,603
- No Data

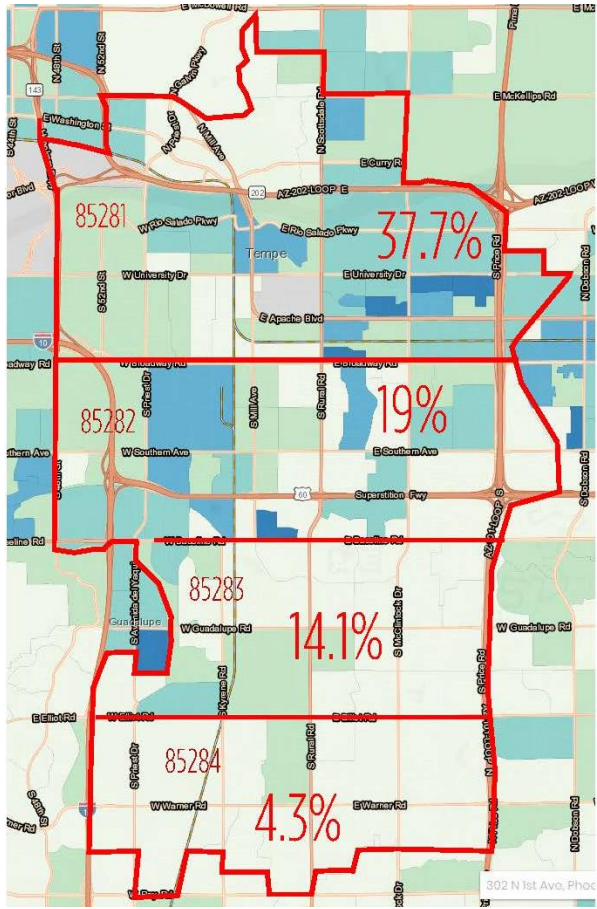
American Community Survey by Block Group, 2013-2017 5 year estimates

Total population



192,364 (U.S. Census Bureau, 2018 Population Estimate)

Households living below poverty



21%

Legend

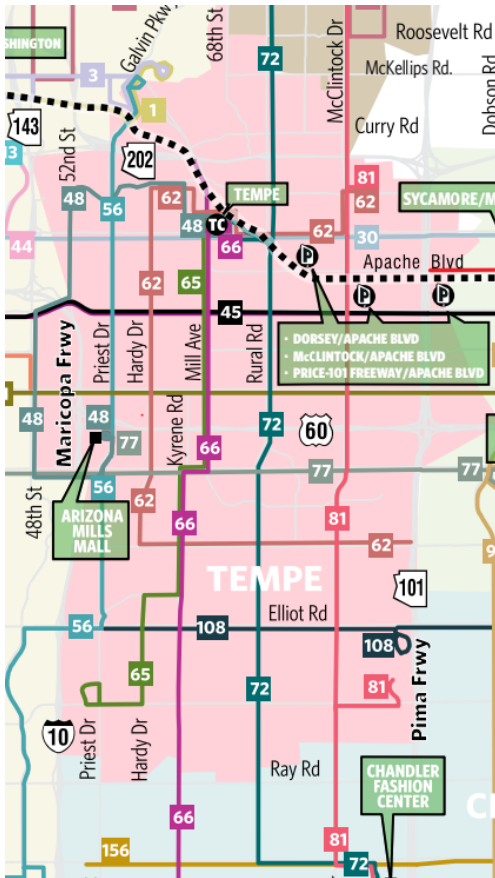
Poverty Status in the Past 12 Months - Percent Families below poverty level

- 46.3% - 100%
- 29.9% - 46.3%
- 16.9% - 29.9%
- 6.6% - 16.9%
- 0% - 6.6%
- No Data

American Community Survey by Block Group, 2013-2017 5 year estimates



Site Selection Matrix



Site selection matrix will be used to prioritize which transit stops merit further study using factors such as:



- ridership
- percentage of households without a vehicle
- population density
- percentage of households commuting to work using transit

What makes a Tempe transit shelter 'iconic'?



design approach

city-wide system

regional system

origami?
subtle?
bold?

branding

Tempe values



consistent shape
with
different colors

different shapes
with
same color

????????????



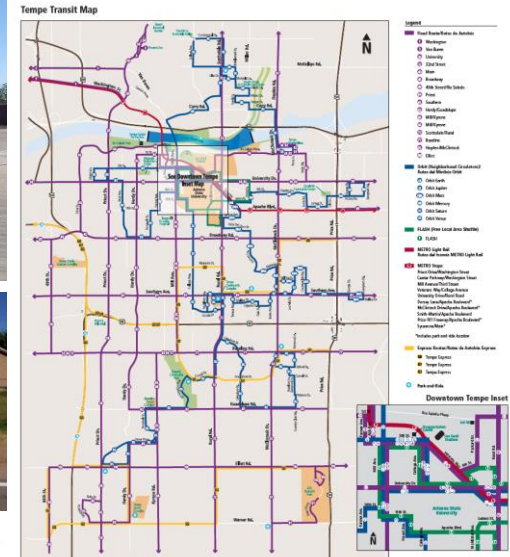
Tempe Transit System



- Multi-Modal

- Light Rail
- 16 local bus routes
- 3 commuter express routes
- 7 neighborhood circulator routes (Orbit + FLASH)
- Tempe Streetcar (May, 2021)
- Paratransit and RideChoice

- Dedicated transit sales tax



Tempe Transit System



- **9 Million+** annual boardings
- 5.1 million annual miles of transit service
- 2 LEED-certified transit facilities
- **806 bus stops, 308 have shelters**
- 124 buses
- Partnership with Valley Metro for transit service operations



Tempe Key Transit Stop Locations



- **high ridership locations**

1. Tempe Transportation Center
2. Southbound Priest at Washington
3. Tempe Marketplace
4. Westbound Baseline at Priest
5. Southbound McClintock at Southern
6. University/Rural Transit Center
7. Northbound McClintock at Southern
8. Northbound McClintock at Apache
9. Northbound Rural at Southern
10. Southbound Mill at Southern

- **right-of-way constraints**

- **physical constraints**



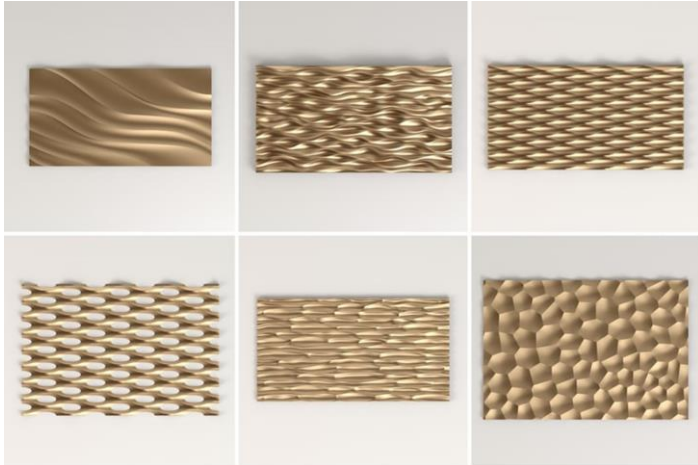
Tempe Transit - Perceptions



Public Transit Market Research Survey – 2018, biannually



Looking around for inspiration

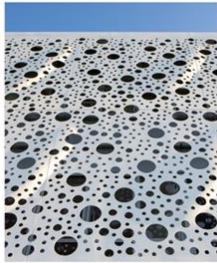


nature
buildings
infrastructure
art, sculpture
materials

other cities
countries



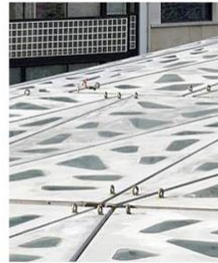
Looking around for inspiration



Corian Panels



Architectural Mesh



Cement Panels



Architectural Color Mesh



Gabion Basket w/ Glass Mulch



Perforated Corrugated Panels



Patterned Metal Panels



Perforated Panels



Bar Grating



Vine Screen



Patterned Metal Panels



Fabric Panels



Solar Panels



HDPE Panels



3form Panel

Tempe Bus Shelter | Proposed Materials

Looking around for inspiration



- existing City of Tempe shelters
- copper roof
- locally manufactured



Looking around for inspiration

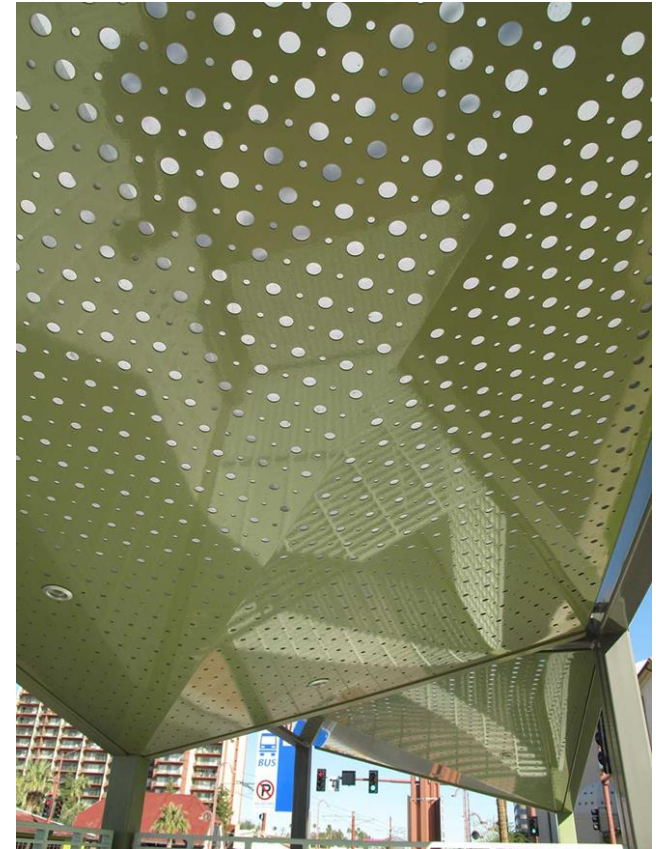


- variety in vertical screens
- modular
- good visibility
- colorful perforated roof



Darren Petrucci, A-I-R
With TranSystems

Looking around for inspiration



- heat reducing materials
- air movement
- unique lighting at night
- colorful perforated roof

Looking around for inspiration



Good Ideas:

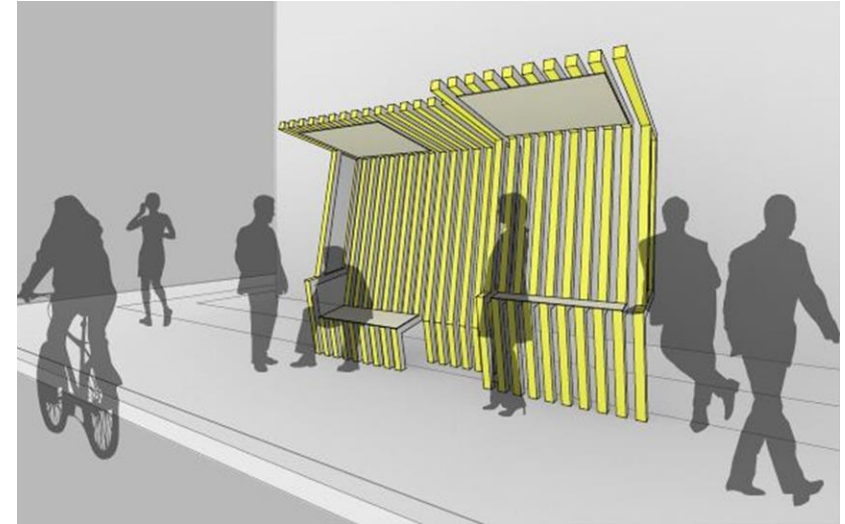
- design screen separate from shelter
- mount on a pin system & adjust to the specific site, then lock in place
- attach seating to structure



- sleek, simple
- integrated seating
- bus schedules on post, matching shelter



Looking around for inspiration



- design competitions
- simple, small shelters
- modular

Looking around for inspiration



- flexible placement
- provides more personal, individual spaces
- colorful

Looking around for inspiration



- light, translucent materials
- constructed canopy within tree canopy
- light, airy



Looking around for inspiration



- green living roof
- reduces heat under structure
- use of low water native plants
- requires drip irrigation in early years



Looking around for inspiration



- variety of materials
- harvests water
- sustainability concept

Climate Adapted People
Shelters (CAPS)

Looking around for inspiration

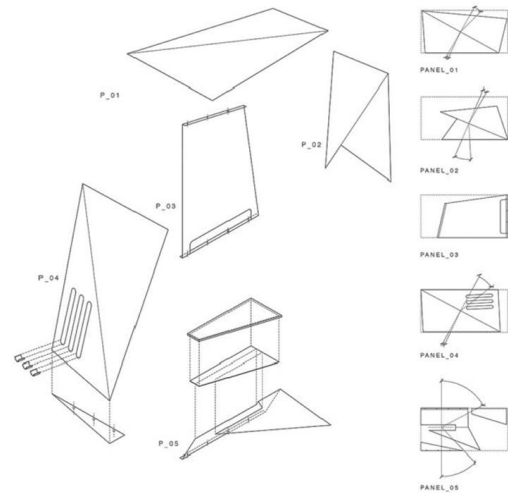


- interesting structure
- sleek, clean design
- set in vegetated site

Looking around for inspiration



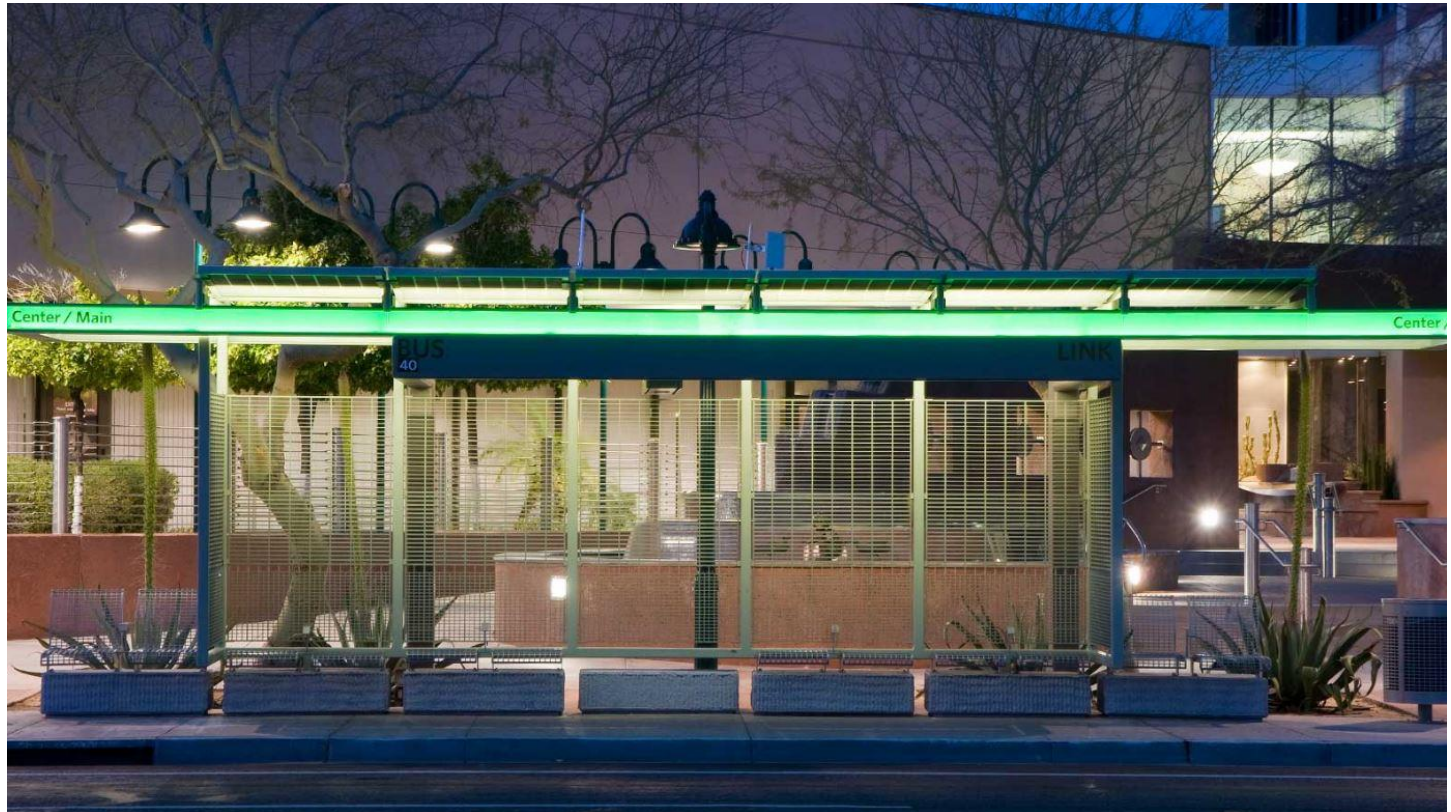
- origami inspired design
- same structure, different colors
- same color, different folds
- fits shallow sites
- integrated seating



Looking around for inspiration

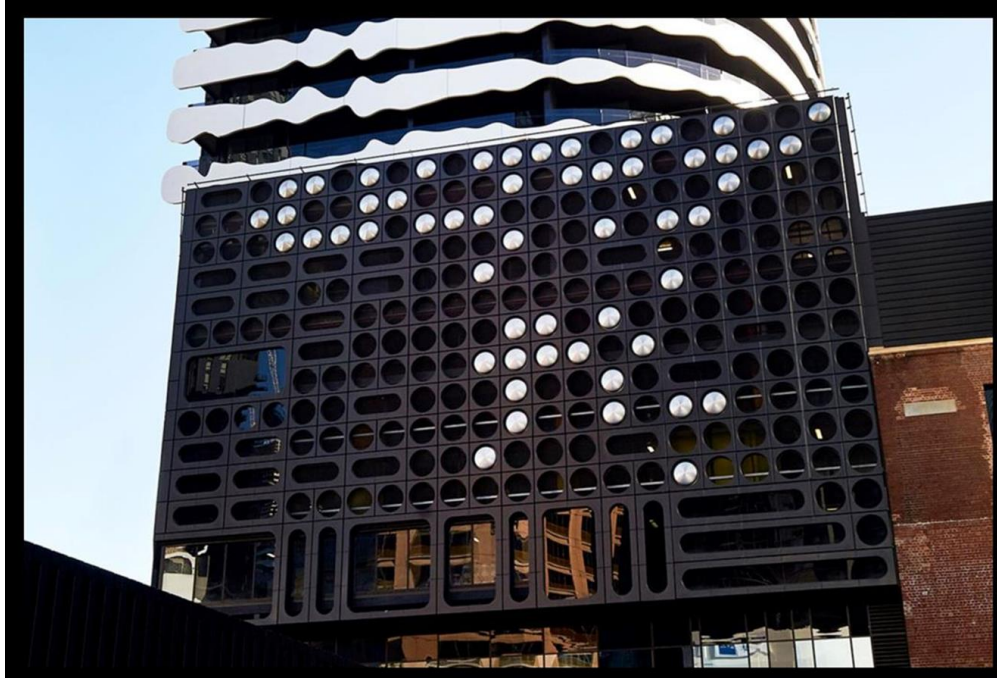


- transparent screen
- dramatic green light bar
- contemporary



Darren Petrucci, A-I-R

Looking around for inspiration – screens



Looking around for inspiration – materials



smog eating concrete

- Titanium dioxide (TiO_2) catalyzes the decomposition of dirt = self cleaning
- reduces certain pollutants by 25 – 45% (NO_x)
- cool surface
- flexible design

smog eating pavement

- same properties as above
- appropriate for shelter pads, bike lanes

Looking around for inspiration - materials



Fundermax -
energy efficient



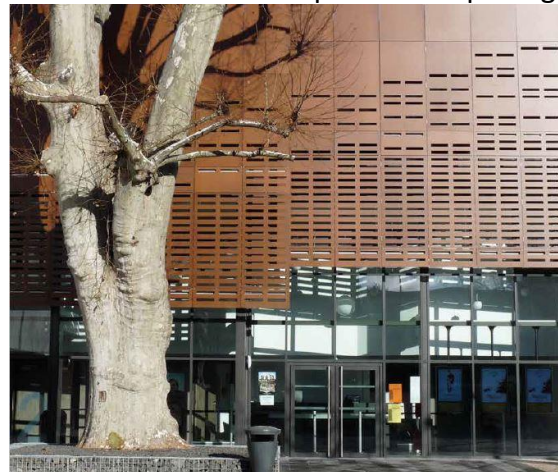
green
seating

new materials

color variety



tilting shade



patterned openings



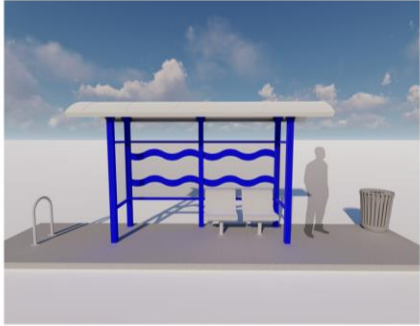
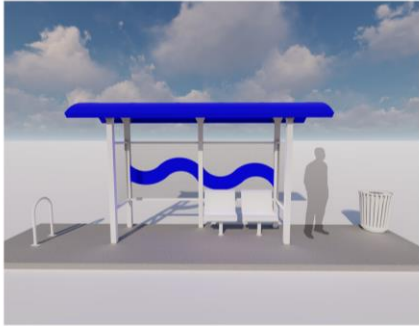
Components of a Shelter



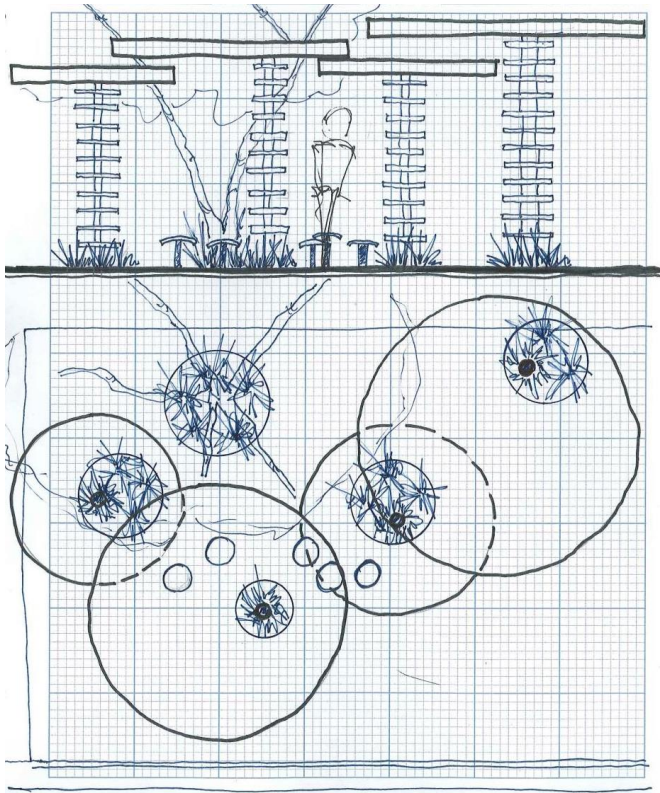
- roof
- seating
- panels
- lighting/battery
- structures
- bike racks
- trash receptacles
- bus signage



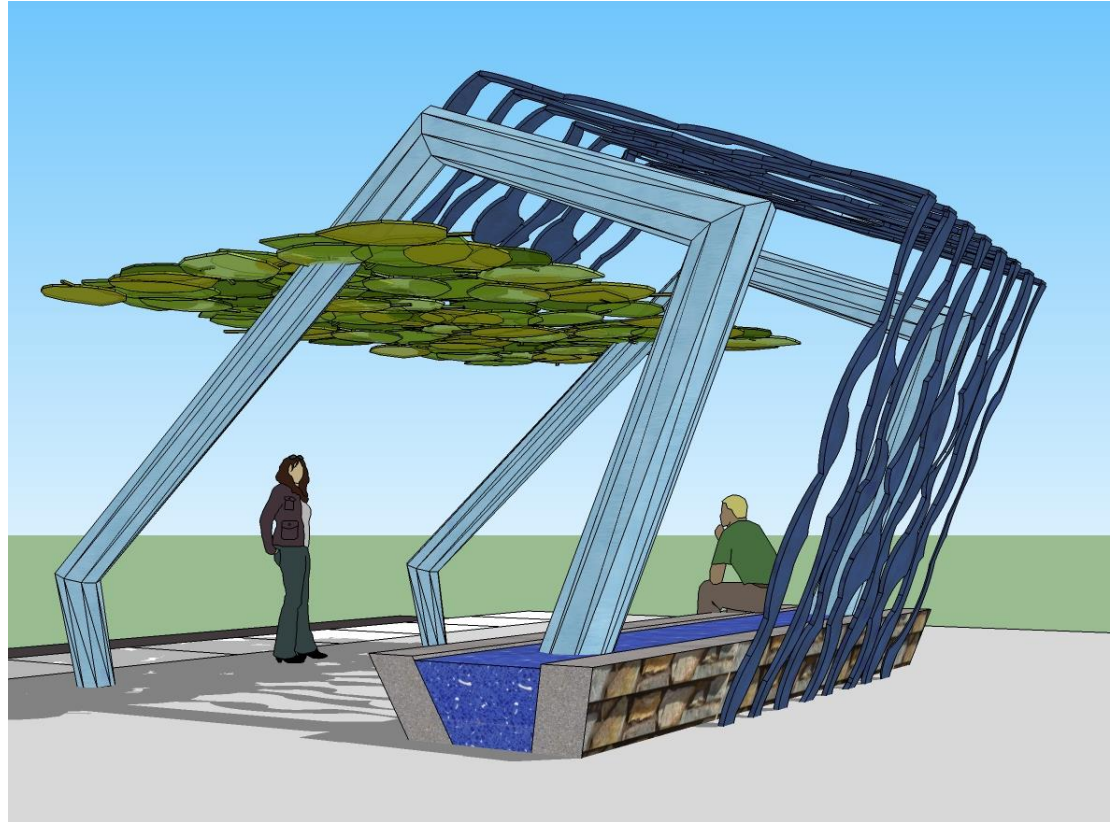
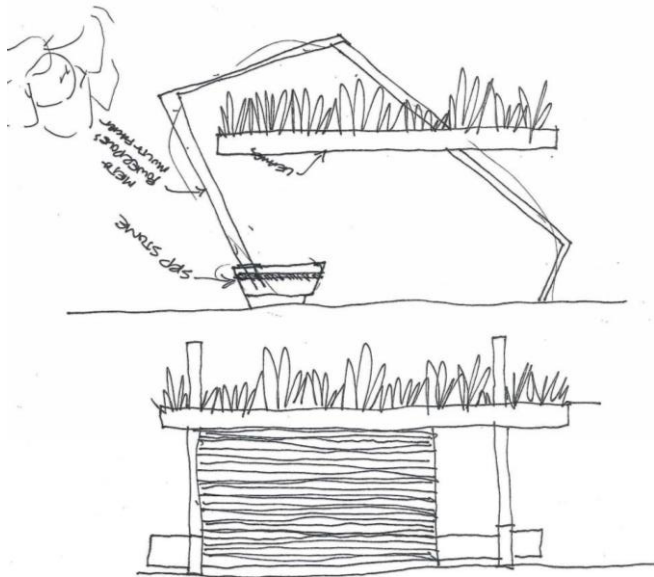
Design Ideas – Built and Unbuilt



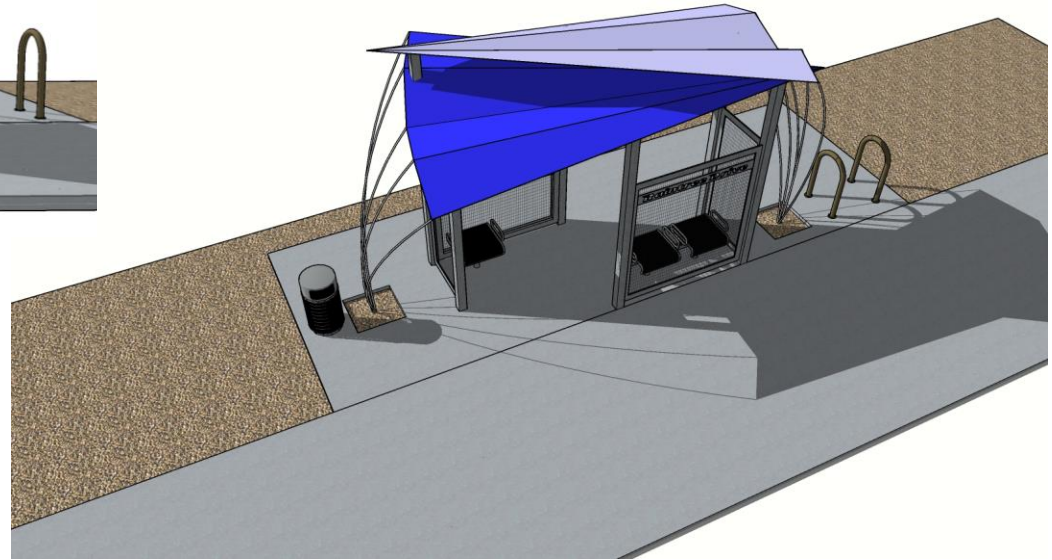
Design Ideas – Built and Unbuilt



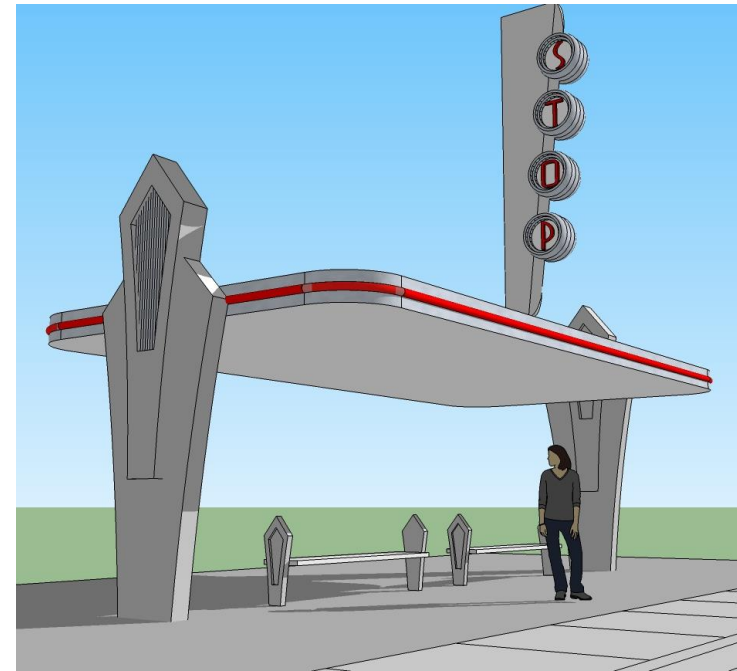
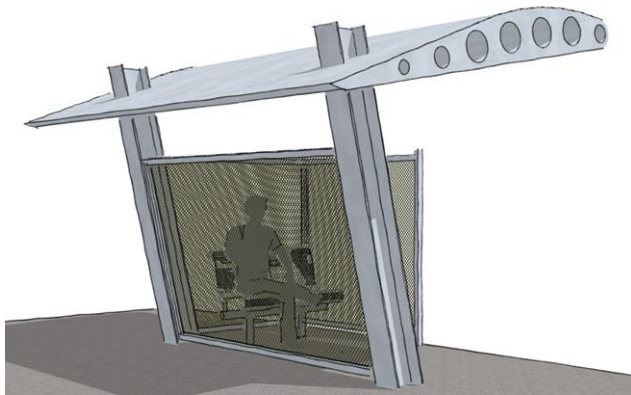
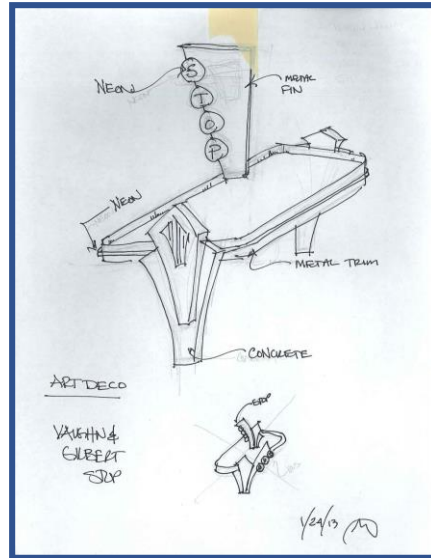
Design Ideas – Built and Unbuilt



Design Ideas – Built and Unbuilt



Design Ideas – Built and Unbuilt



Design Ideas – Built and Unbuilt



Discussion & questions



- What do you like/dislike about our existing shelters?
- What features do you think we're missing?
- What ideas did you like in this presentation?

Community Outreach



PUBLIC MEETINGS

Sept. 21, 2019 - from 9-10:30 a.m. at MAC6 located at 1438 W. Broadway Road #101, Tempe

Sept. 25, 2019 - from 5:30-7 p.m. at the Tempe Public Library, Meeting Room A, located at 3500 S. Rural Road, Tempe

Online comment will be taken from Sept. 21 to Oct. 16, 2019
tempe.gov/TransitShelters

Jan./Feb. 2020 – public meetings to review design options



Contact:
Bonnie Richardson
Architect/Urban Planner
City of Tempe Transportation

480-350-8628
bonnie_richardson@tempe.gov