Smith Innovation Hub

Design Guidelines

Tempe.

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MAY 2022


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ACKNOWLEDGEMENTS

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0.0 PREFACE

The following design guidelines are created in keeping with the strategies included in the General Plan (GP) 2040 and the Innovation Hub Initiative which was approved by Tempe City Council on March 1, 2018. The Hub Initiative is an economic development initiative to enhance key employment corridors to promote new investment, job creation, and placemaking that attracts and retains a quality workforce.

Eight hubs were identified, and the Smith Innovation Hub (SIH) was chosen as the pilot project. See Figure 1 below for a diagram illustrating the different hubs in Tempe and their relative locations.

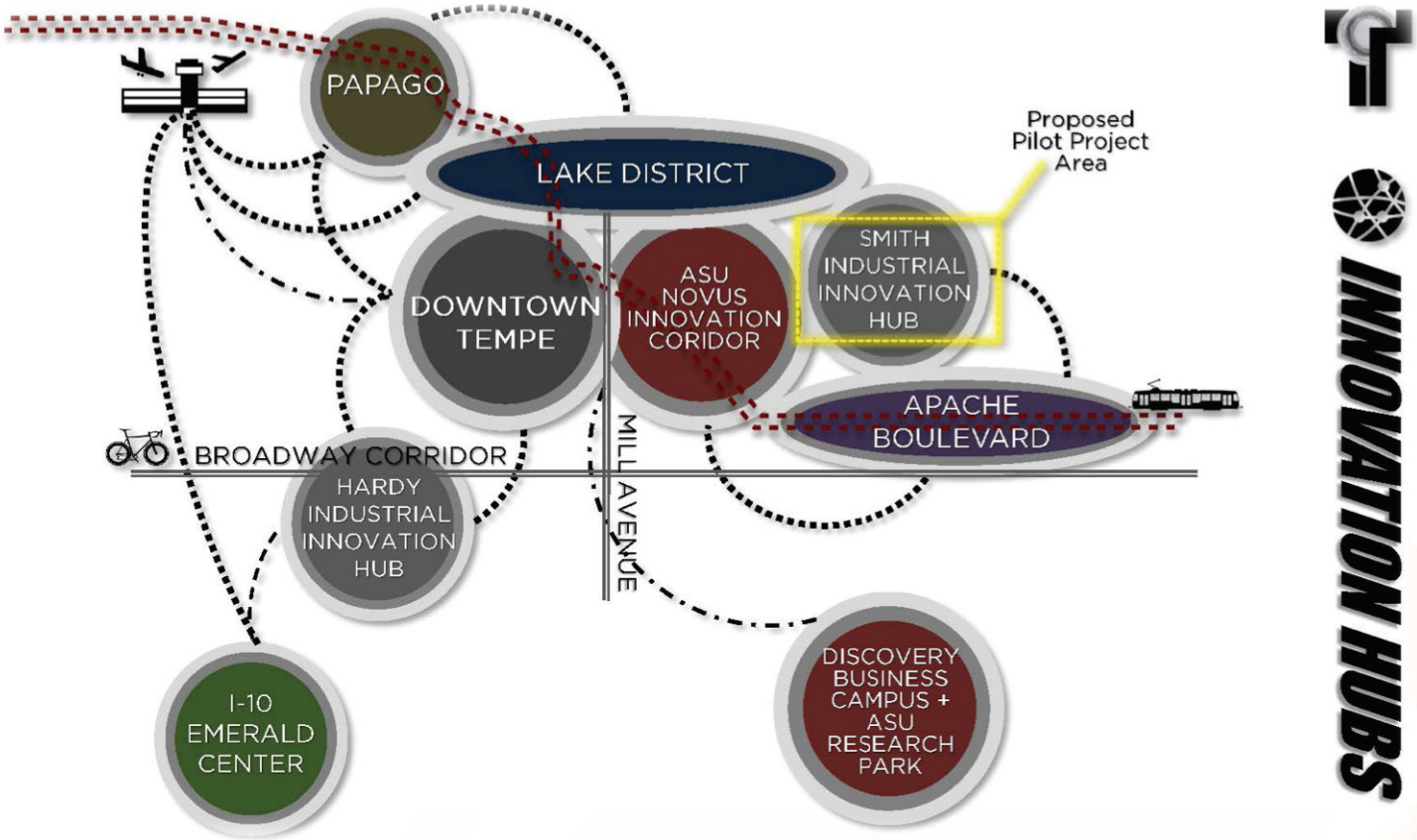


Figure 1

0.1 About the Guidelines

This is a policy-level document which provides design and development principles without prescribing any regulatory requirements. This document is designed to provide short-term and long-term opportunities, goals, strategies, and solutions for existing property owners, developers, and new businesses to rethink and optimize the development of the Smith Innovation Hub as it evolves over time. The light industrial zoning near a myriad of Tempe's businesses, institutions, neighborhoods, and infrastructure creates a unique opportunity to transform this 1/2 square mile into a synergetic innovation hub that can aesthetically blend light industry with arts, fabrication, work force/artisan housing, entertainment, and other unique uses.

Beneath each section is a series of design approaches and strategies to consider on a variety of topics, along with photos and/or diagrams to offer inspiration and guidance. The topics covered under each guideline represent issues specifically relevant to

understanding and complying with the broader guideline and usually contain more detailed suggestions to consider. Design guidelines provide reference for developers, designers and staff to review the site plan and building design of a project. Operational guidelines advise the building management, City or other agencies to help devise long term policies and programs to achieve the goals of the guidelines are meant to achieve. While all projects are expected to meet and address the guidelines as a whole, every single guideline may not be applicable to every project and while some of the content in the guidelines can be applied to many of the Innovation Hubs, some of it will be unique to the Smith Innovation Hub.

The design guidelines synthesize existing studies and city programs to provide guidance for design and planning in the hubs. They include a description of the character of the area and provide design and development principles and strategies to encourage new development to be consistent with the specific vision for the hub, to align with the City of Tempe's priorities, and to be sustainable. In essence, the design guidelines prescribe goals towards a standard of design excellence. Not all the approaches and strategies will be relevant to every project. Applicants, staff, Design Review Boards, and other reviewers should use their judgement and discretion in determining which approaches and strategies are particularly applicable to a given project.

These guidelines address a variety of elements such as adaptive reuse, sustainability, and tactical infill housing that can be used to enhance and amplify the true potential of the existing properties within the Hub. Many of the elements within this document achieve more than one objective and emphasize innovation and creativity.

The goal is to promote a transformation of the existing light industrial character into an energetic, innovative mixed-use ecosystem by maintaining and building upon the hub's unique characteristics, and encouraging new uses that are complementary. It is not about displacing existing businesses; therefore, it purposefully incorporates, communicates, and celebrates existing and future successes in the hub.

0.2 Planned Vision + Purpose

Smith Hub, much like Nashville's WeHo medium industrial neighborhood once did, stands today as an area at the threshold of transforming into what may be called a "makerhood"- a place where a mix of 21st century creative businesses, small-scale, high value manufacturing, and maker spaces for artists and craftspeople become the driving force for both the local economy and the community at large.

As an homage to Wedgewood-Houston's industrial past, a crane arm is being repurposed as a decorative sculpture outside Kirby, a former welding shop transformed into a mixed-use building. (DAAD)

Source: https://urbanland.uli.org/development-business/the-making-of-a-makerhood/

The Making of a Makerhood:

Wedgewood-Houston, also known as Weho, has retained much of its old industrial-age essence by remaining a place that makes and fixes things, except now instead of sausage and sock factories it houses creative people who want to live and work in the same building. Today the new neighborhood aims to become pedestrian-friendly and keep makers, artists, and longtime residents from being priced out of the neighborhood.

The path to get there will lie largely in cultivating the character and ideals of the existing community and promoting their vision for the future by providing them with the necessary tools and platform for their success. This vision looks at short and long-term strategies that will begin to transform and unify the residents of Smith Innovation Hub by creating opportunities for neighboring businesses to collaborate and innovate. In addition to promoting Tempe's vision for a sustainable, resilient, and walkable city, this document was created with the concerns and hopes of the community in mind. When the Urban Land Institute's Arizona Technical Assistance Program (ULI AzTAP) Committee members and panelists engaged with more than 20 stakeholders of the SIH, several themes emerged, such as concerns of displacement and gentrification. Placemaking was also a central conversation and consisted of topics surrounding land use, economy, infrastructure, and housing.

Define what is working	"Keep the grit" Pay Attention to scale and fit
Add a mix of compatible uses	Dynamic mix of residential and commercial Support specialized workforce/creative economy Adaptive reuse
Curate a creative experience and vibe	Focus on "maker" signature market Brand the hub Maintain the unexpected mystique Add art
Activate public life	Focus on connective tissue of public places Add placemaking infrastructure Increase options and destination Think about how parking is managed

As a result of these conversations, the City of Tempe and ULI AzTAP identified the major challenges, goals, and strategies of the area as it redevelops over time. Lack of infrastructure, changing zoning, pedestrian modality, and the desire for a greater variety of uses and public art are relevant issues that need to be addressed.

Ultimately, it is of paramount importance to honor the community, not only by creating a stronger sense of place but also by ensuring that the process results in the revitalization of the area without compromising its authenticity. The design guidelines in this document are crafted to assist in communicating Smith's core values.

Challenges
Lack of infrastructure (storm, curb + gutter, waste water capacity)
Almost entirely zoned General Industrial District (GID)
No light rail access and little pedestrian modality
Older stock structures, primarily single-story buildings

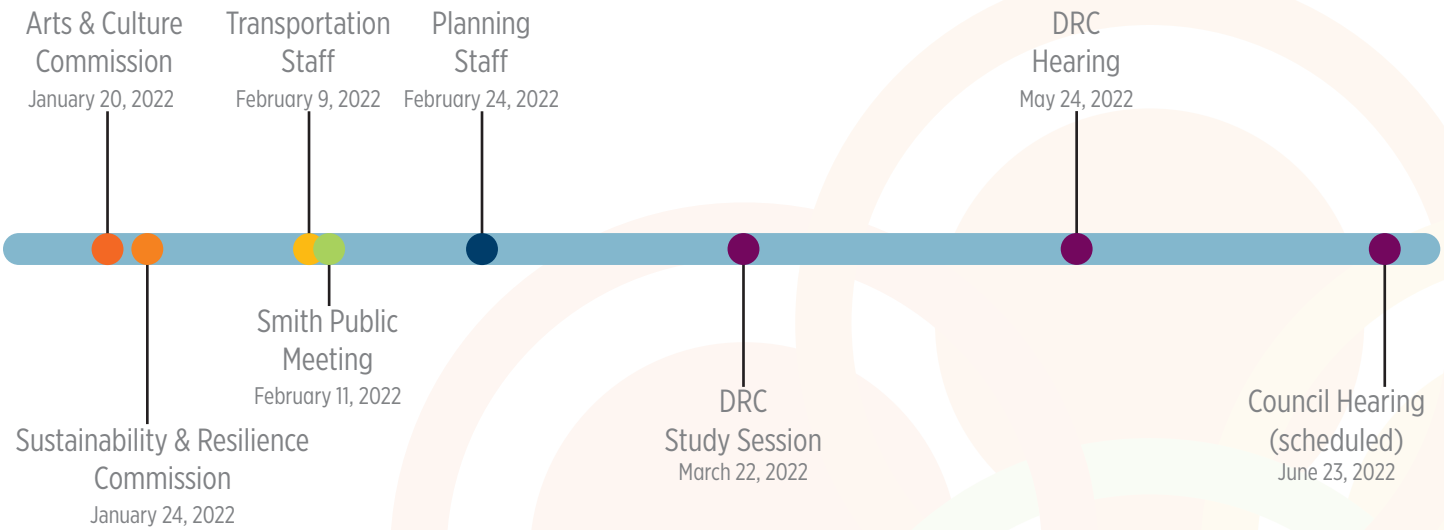
Strategies
Allow for a wider variety of uses such as housing, retail, light industrial, office, etc.
Encourage more density and height; creating additional available space for new residents and businesses
Attract educational and training institutions to build the talent pipeline for area businesses in alignment with Tempe Achieves 65 workforce development goals
Apply for grants/identify City or other funding to enhance the area gateway features, public art, green space, bike lanes, sidewalks/streetscape

0.3 Public Outreach + Preceding Studies

These design guidelines tie/reference a myriad of relevent reports, studies, plans, etc. into the document to optimize past efforts, including the following:

- Apache Character Area Plan, January 2016
- BIKEiT Presentation, May 2018
- City of Tempe General Plan 2040, October 2020
- City of Tempe Urban Forestry Master Plan, September 2017
- Climate Action Plan, 2019
- Climate Action Plan, 2021 Update
- Innovate Tempe Presentation
- Smith Industrial Innovation Hub Development Guidelines, October 2020
- Smith Innovation Hub Infrastructure Master Plan, March 2022
- Smith Innovation Hub Public Input Summary, July/August 2021
- Tempe Arts and Culture Plan, 2014
- Tempe Transportation Master Plan, 2015
- ASU Design Thinking Study "The Future of Smith Industrial Innovation Hub Final Report", November 2019
- ULI AzTAP Summary Report, June 2019

They are also informed by input from a number of meetings with various City of Tempe commissions and staff, as well as community input gathered during a public meeting.



Public Survey Responses (68 public attendees, 37 survey responses):

Which new mixed uses do you think would work best?	Breweries, restaurants, etc.	45.9%
	Small Scale residential infill	16.2%
	Other	16.2%
What is the best way to integrate art?	Public art installations	32.5%
	Promote artist studio space	16.2%
	Create performance spaces	16.2%
Which Building Guidelines do you support?	Designs to improve walkability	81.1%
	Sustainable building practices	59.5%
	Maintain/enhance existing buildings	51.4%

0.4 Existing Character of Smith Innovation Hub

The Smith Innovation Hub was a county island before the City of Tempe annexed it in phases between 1950 and 2000. Most of the existing buildings in SIH were constructed between 1950 and 1970 and the area was known for its industrial uses. Today it is home to light industrial, office, and retail uses consisting of high-tech manufacturing, construction, transportation/distribution, consumer services (primarily auto-related), advanced business, and retail services. It is now planned to be redeveloped into an innovation ecosystem designed to maintain affordability for local entrepreneurs and residents, include multimodal access to public transportation, achieve seamless connectivity, and attract and develop a strong workforce. The special character of this area and its low property taxes are attractive to tradespeople, artists, fabricators, and craftspeople, and has already attracted creative developers, owners, and investors. Both long-established businesses and new non-traditional businesses already call it home.

Smith Innovation Hub is uniquely positioned within an extensive transportation network consisting of the nearby Phoenix Sky Harbor Airport, the intersection of two major highways (the 101 and the 202), numerous bus routes that converge at Tempe Marketplace, a proposed extension of the Tempe streetcar, the Metro light rail, major bike paths, and pedestrian paths. It also boasts proximity to large educational institutions (the most immediate being ASU) and residential, retail, entertainment, grocery, food, and drink establishments.

Smith Innovation Hub (SIH) is bounded by Rio Salado Parkway to the north, University Drive to the south, McClintock Road to the west, and Price Road/the 101 Highway to the east.

SIH exhibits characteristics that can support an efficient transition to an attractive mixed-use industrial district. Some of these existing features include an eclectic mix of private and public art, existing model/case study projects, simple and open building plans that are easily adaptable into second generation buildings, an underlying suburban texture of small parcels and alleyways, wide streets and a strong vehicular street network that can support multimodal transportation, mature trees heavily shading some areas that can support the Urban Forestry Master Plan, and potential infill use of setback and parking surfaces.

For more information on land use, densities, and heights refer to the City of Tempe Smith Industrial Innovation Hub Development Guidelines and for more information about the character of desired growth for SIH please refer to City of Tempe ULI AzTAP technical assistance panel report.

0.5 Connectivity + Street Enhancements

While some deficiencies in infrastructure within SIH are a current challenge, transportation and connectivity ideas were first elaborated in the City of Tempe ULI AzTAP technical assistance panel report and improvements are now planned and have been addressed in the Infrastructure Master Plan .

ULI AzTap: Transportation and Connectivity Ideas

- Consider micro-blocks
- Finish the sidewalks
- Focus on the edges and streetscapes
- Promote transit
- Add shade
- Manage demand and congestion
- Promote carpool apps
- Improve circulation
- Connect to the water
- Consider a ferry system
- Use ROW differently
- Address alleys
- Program a parking district solution

6. “Keeping the Grit”

“Keeping the Grit” is the motto for the redevelopment strategies of SIH. These strategies are heavily in favor for smaller-scaled, fine-grained, and integrative improvements that seek to honor its roots as a working industrial economy to elevate the eclectic, industrial atmosphere into a creative place for people to live in and explore.

The belief of the community is that the character of SIH is at risk of being irrevocably damaged if too much is demolished and scraped. New development and redevelopment should guided by a clear, thoughtful, flexible framework. By not being prescriptive, the design guidelines can distinguish a context-sensitive style of growth for SIH and nurture an innovative environment while setting the foundation for desired development.

With most of SIH’s buildings being single-story, the area’s scale is well-established and 3-5 story buildings are suggested while redevelopment into large super-blocks, commercial projects with drive-throughs, and parking lots are discouraged. Due diligence should be taken in developing mixed-use projects and densities in strategic locations so that quality buildings at the right locations can define the public realm and add a mix of essential services. Another aim of the guidelines is to facilitate tactical infill residential projects, including live-work/artist lofts, to help meet the rising demand for affordable housing and to increase street life, foot traffic, and vibrancy in the hub.

0.7 Smith Innovation Hub Goals + Opportunities

- Recycling/ upcycling of light industrial by-products to art
- Bringing vibrancy and activating otherwise unsuable spaces
- Creating visibility and awareness for artisans and fabricators
- Leverage opportunities for synergies with local artisans, fabricators, transportation masterplans, and sustainability initiatives

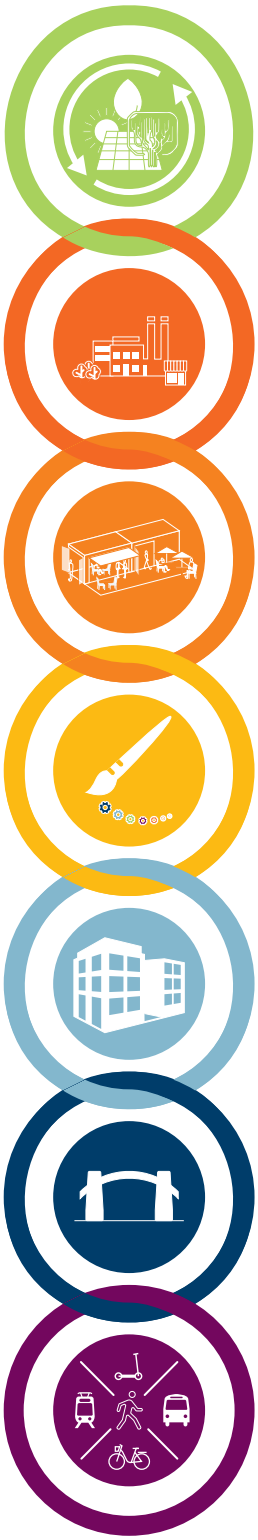
0.8 Smith Innovation Hub Catalytic Strategies

- Harness public and private investments
- Create business community associations
- Create pilot demonstration projects
- Storytelling and communication of pilot project successes and opportunities

Circa '78 (top left), Chasse (top right), and Circuit (left) are great examples of developments which have transformed existing light industrial buildings into places that house office, retail, or other creative uses.

For more background of the Smith Innovation Hub please refer to the City of Tempe ULI AzTAP technical assistance panel report.

SMITH INNOVATION HUB OVERVIEW



1.0 SUSTAINABILITY

The sustainability guidelines are meant to align the development of SIH with the City of Tempe's Climate Action Plan, Urban Forestry Plan, 20-Minute City Program and other sustainability-related plans and policies of the city. The aim is to minimize greenhouse gas emissions in a way that maximizes the latent potential of existing infrastructure and by-products.

2.0 MIXED-USE

The mixed-use guidelines align the development of SIH with the City of Tempe's General Plan. While the Hub already contains a diversity of land uses, there are opportunities for improvement without losing this valuable attribute. This will require addressing concerns like safety, aesthetic, or environmental quality for the people who live, work, and visit.

3.0 ACTIVATING PUBLIC + PRIVATE SPACES

One of the best strategies to develop SIH into a vibrant neighborhood is to create outdoor places where residents, business owners, tenants, and visitors can meet spontaneously, or at scheduled events. Active spaces invite people out when amenities such as benches, tables, refuse containers, etc. and are paired with protective microclimates through shading, building adjacencies, landscape, and other design elements.

4.0 ART INTEGRATION

This section communicates the value Tempe places on artists' work and their ability to support grassroots interventions that empower a community to express their own authentic culture. It builds on the Tempe's Arts and Culture Plan that describes the value artists bring to our community. Integrating art into design and development goes beyond art as a static product and values artist input as a means of energizing an innovative ecosystem.

5.0 BUILDING DESIGN

The objective of this chapter is to provide a variety of strategies and ideas to enhance and celebrate the existing light industrial building stock and define the qualities for new construction that will be compatible with the existing buildings within the Smith Innovation Hub. Since the most sustainable strategy is to retain and reuse existing buildings, these guidelines recommend strategies that preserve as much of the existing buildings as possible.

6.0 GATEWAYS + SIGNAGE

Gateways and signage are placemaking elements that can make SIH more legible, easier to navigate, establish a sense of arrival, and provide visual interest. Done correctly, they can express the unique character of SIH to create a sense of identity and be a source of community pride.

7.0 MULTIMODAL TRANSPORTATION + PEDESTRIANS

These guidelines serve as basic principles for transportation and pedestrian safety and comfort planning specific to the SIH area. They are meant to complement the Infrastructure Master Plan and Transportation Master Plan while providing additional methods for planning adequate amounts of mobility options that can serve diverse demands and support the 20-Minute City program as well as recommendations for infrastructure improvements conducive to a multimodal neighborhood.

1.0 SUSTAINABILITY

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1.1 Goals

- **Reusing existing buildings and reducing their impact on the environment is a valuable investment in both the future and eliminating waste.**
- **Create a public infrastructure using more sustainable solutions that improve and leverage stormwater and other resources.**
- **Expand the transportation network from the existing vehicle-centric streets to include and encourage multi-model and pedestrian options that link people and places within the Hub and to the adjacent resources outside the SIH to leverage the synergies they offer.**
- **Promote environmental justice by creating a healthy environment available to everyone regardless of socio-economic status.**

1.2 Guidelines

A. Green infrastructure

Green infrastructure refers to ecological systems, both natural and engineered, that act as living infrastructure. The elements can be planned and managed primarily for stormwater control but also exhibit social, economic, and environmental benefits. Green infrastructure practices can be integrated into existing features of the built environment, including streets, parking lots, and landscaped areas which makes it a viable option for managing stormwater in infill situations where development density is desired.

Design Guidelines

a. Reclaim retention water and utilize rainwater and condensation to irrigate the landscape.

b. Create surfaces to capture and direct overland flow to areas with landscaped zones or permeable paving. Some examples include usable retention courtyards, bioswales, and parks.

c. Use drought-tolerant and low water-use plants that can withstand intense solar exposure.

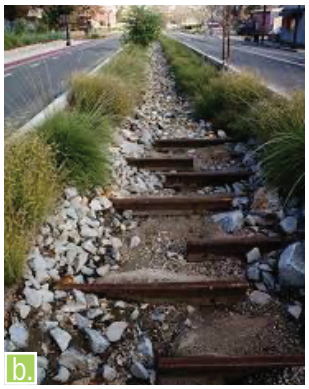
d. Use locally available plants that correspond with the City of Tempe's recommended plant list (Arizona Department of Water Resources) or plants identified as xeric by landscape architects registered in the State of Arizona.

e. Incorporate edible plants into the landscape for both humans and wildlife.

f. If applicable, create rainwater harvesting opportunities through grading manipulation of paved surfaces and overflow drains from surrounding buildings to help achieve a system of bioswales running within linear parks in a north-south direction on Smith Road and/or an east-west direction on 5th Street.

Operational Guidelines

g. Set up water management goals to provide environmental and community benefits while increasing community resiliency to extreme climate variations.


b.


a.


d.

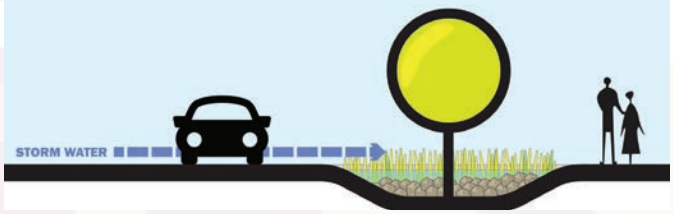

a.


f.


f.


b.

b. Bioswales are aesthetically-pleasing and environmentally friendly. They can help reduce heat stress and improve air quality in an area.



B. Support car-reduced living, walkability, and transportation options

The City of Tempe has a goal of becoming a 20-Minute City- one with a vibrant mix of commercial, recreational, civic, and residential establishments that for most residents are within a one-mile walking distance, a four-mile bicycle ride, or a 20-minute transit trip. By improving walkability and transportation options and encouraging residents to use public transportation, rideshare, and non-motorized travel, we can move more people into fewer cars, provide a more affordable alternative to car ownership, reduce traffic congestion, and reduce environmental pollution.

Design Guidelines

a. Encourage mixed-use development to integrate complementary land uses like artist housing, studios, makerspace, material supply stores, entertainment, and food options like restaurants, breweries, food trucks, and grocery stores within a "20-Minute" reach.

b. Incorporate micromobility options at targeted service areas for "first- and last-mile" connections to complete trips made via other modes, including transit. Provide locations for shared use micromobility options like bicycles, e-bikes, and electric scooters. Space should also be provided for secure storage for personal devices, preferably with weather protection.

c. Identify any mobility hubs in both private and public developments. Mobility hubs are nexuses of multiple transportation types and are usually located in areas with adjacent mixed-uses. They can be created at underutilized parking spaces, parks, public-owned land, and excess street right-of-way, or integrated at transit stops. In some cases, mobility hubs can happen in partnership with the owner of an existing building or structure by pledging to provide mobility hub services.

Mobility hubs support first-last mile solutions by providing multimodal transportation services and activities around transit stations to maximize connectivity and access for transit riders and pedestrians (top).

c.

Since different locations present unique opportunities and challenges based on its context and transportation functions, there is not a definitive description for what mobility hubs look like, such as this parking structure which ASU pledged as a mobility hub, but it should ultimately reflect the varying needs of transit users and the realities of the existing built environment (above).

Micromobility options can be placed along streets or on repurposed parking spaces. They can promote an effective interaction and balance between transportation, land use, and placemaking functions (below).

b.

b.

C. Reduce generation of solid waste and life-cycle impact

Life Cycle Assessment (LCA) is a tool for identifying the impacts of a product or system on the environment throughout its entire life cycle or, in other words, from cradle-to-grave, including: the extraction of raw materials, the processing of raw materials in order to fabricate a product, the transportation and distribution of the product to the consumer, the use of the product by the consumer, and finally the disposal of the product's materials after its use (Demmers&Lewis,1996). Practicing low impact development can spur creative and innovative endeavors both before, during, and after the construction of a building.

Design Guidelines

a. Encourage the upcycle of material for art or other creative uses, especially industrial by-products of businesses in SIH.

b. Prioritize adaptive reuse to preserve existing buildings and promote placemaking consistent with SIH's character which emphasizes repurposing.

c. Encourage the salvage of materials during demolition to be reused, recycled, upcycled, or repurposed in new construction, signage, art.

d. Sort construction and demo debris as much as possible. Recycling material may reduce demand-supply gaps and can create opportunities for innovation.

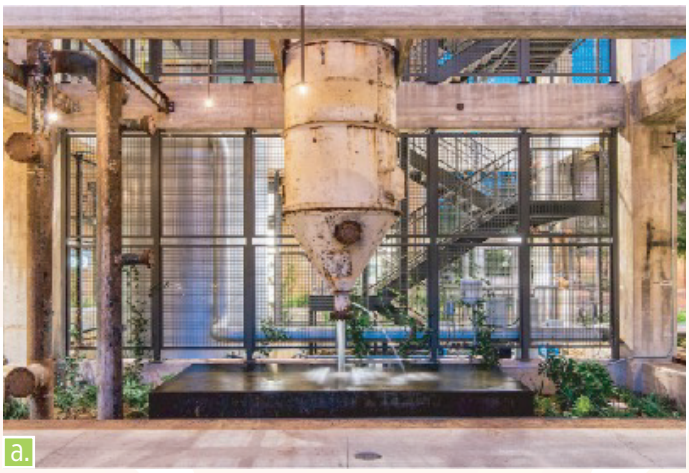
e. Consider designing building systems to be easily disassembled by using connection and assembly techniques that will allow the reuse of materials.

f. Consider alternative construction methods like 3D printed construction and alternative building materials like the shipping containers commonly used in "cargotecture" (see page 24 for more information on cargotecture).

Operational Guidelines

g. Donate reusable materials to artists and artisans in SIH to support their development, as well as to contribute to the unique industrial character of the area through their work with those materials.


a.


a.

The sustainable reuse of industrial byproducts provide unique opportunities for creative placemaking and artist involvement (top, above, and below).


a.

CLOSER

Chesapeake Bay Foundation Brock Environmental Center


c.

"Encourage the reuse of as many discarded materials as possible in the building process."

To meet LEED Platinum and Living Building Challenge sustainability standards the Brock Environmental Center was able to rely on the community for numerous school, business, government, and citizen contributions. Some noteworthy transformations were the reuse of a middle school's bleachers as trim for doors and windows, the repurposing of an elementary school's gym flooring, and the reuse of champagne corks as drawer handles.


e.

Cellophane House Experiment

"Consider designing building systems to be easily disassembled by using connection and assembly techniques that will allow the reuse of materials."

The Cellophane House was designed for ease of assembly, disassembly and re-assembly with the aim of helping to offset the millions of tons of construction and demolition debris generated in the United States each year. Eighty percent of the construction was completed in six days, it was dissassembled in two, virtually no waste was generated, and 100 percent of the energy embodied in materials was recovered.

Habitat for Humanity 3D Printed Home


f.

"Consider alternative construction methods like 3D printed construction..."

The custom, single-story home, constructed on a lot purchased from the City of Tempe, combines 3D printing and traditional construction to create an innovative model for the future: a scalable, cost-effective home ownership solution to address the affordable housing crisis facing communities nationwide. Seventy to eighty percent of it is 3D printed and the remainder of it, including the roof, is traditional construction.


f.

Cargotecture

"Consider... alternative building materials like [...] shipping containers..."

Cargotecture refers to the repurposing of old cargo containers for efficient and sustainable living, business, and industrial buildings. The buildings economically utilize used shipping containers, which would have otherwise simply been discarded, eliminating the need for expensive raw materials that often require environmentally destructive processes to extract and refine.

LOOK

D. Low embodied carbon footprint

According to the U.S. Energy Information Administration, about 40 percent of the energy consumed in the United States in 2015 was directly or indirectly for operating buildings. When embodied carbon is added– the energy and emissions from materials and construction– that number is almost 50 percent. Taking steps to minimize the embodied carbon footprint upfront can make a big impact.

Design Guidelines

a. Encourage the use of local materials, suppliers, and craftspeople as much as possible to reduce the carbon footprint usually associated with outsourcing materials and products as well as to create an opportunity to establish relationships with the residents and businesses within SIH.

b. Encourage the use of reclaimed materials from the region as an alternative to new materials.

E. Urban Forestry

The Tempe Urban Forestry Master Plan indicates a goal of 25% coverage by 2040 through a focus on three key types of public spaces- parks and open spaces, streets, and urban hubs that also support the 20-Minute City Program. SIH is intended to become a core of commercial and civic activity that supports Tempe's 20-Minute City goals, and thus new development should adhere to actions supporting the urban forestry master plan to allow pedestrains to comfortably walk and bike within and through these areas. This includes both private property and street right of ways. SIH makes up one of the three lowest percentages of existing canopy coverage, based on a 2012 census tract, at 6.8% coverage, well below the 25% goal.

Design Guidelines

a. Promote the use of trees and landscape as a means of reducing air and water pollution (including carbon sequestration).

b. Promote the use of trees to create resilience to extreme heat and mitigate heat island effects.

c. Promote the use of trees to create a cool and comfortable environment for pedestrian foot and bike traffic, especially in consideration for residents from the neighborhoods south of SIH using Smith Road to travel to and from Tempe Market Place for food and groceries.


d.

d.

d. Encourage planting trees to increase existing tree canopies, like the one on 5th Street, to create a pleasant street environment which can be especially conducive for future Adaptive Streets applications.

e. Promote the use of trees to foster active living where mixed-use residential is implemented.

f. Promote the use of trees to increase the use of parks, open spaces, and public spaces and foster a vibrant environment.

g. Promote planting trees near retention areas that could serve as small parks, seating, and recreation areas.

h. Using a “right tree, right place” strategy, plant and maintain trees that are compatible with infrastructure (i.e. street lighting, underground utilities, and power lines).

F. Green buildings

Alternative energy is generated in ways that do not deplete natural resources or harm the environment. Being located in the heart of the Sonoran Desert means that the overabundance of sunlight as a natural resource is a prime opportunity that should be taken advantage of. Alternative energy solutions can replace demand from the existing electrical grid that relies on fossil fuels. In the best case scenario, solar renewable energy can even be sold back to the grid, providing a great monetary and environmental return on investment.

Design Guidelines

a. Encourage the use of photovoltaic (PV) panels with proper orientation, whether on rooftops or shade structures.

b. Incorporate solar systems into the building design (thermal, energy, air, lighting, etc.) to reduce reliance on the grid and reduce cost of operation from energy use.

c. Implement solar readiness, for example through photovoltaic-ready roofs, “clean roofs” with upgraded structure and electrical raceways to electrical distribution section.

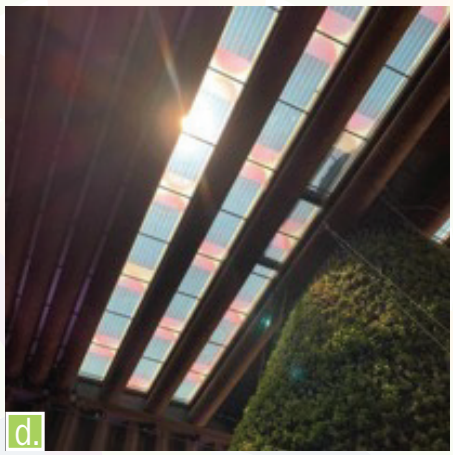
d. Incorporate operable windows that can open and allow for natural cross-ventilation to passively cool the interior spaces while bringing in fresh air. In consideration of the possible future pandemics or public health crises, operable windows can prove integral to the health of building inhabitants.

A great community example is Tempe Solar Park at The 6th Street Commercial Center which has panels installed on the building’s roof, a parking shade structure made primarily of panels, and panel-covered exterior walkways (top).

e. Prioritize natural daylighting through placement of windows, skylights, and solar tubes to create a healthy environment for building inhabitants, possibly eliminating the need for artificial lighting during the day.

f. Design with open floor plans to minimize mechanical heating, ventilation, and air conditioning components, where possible.

g. Design for at least 50% shading on all glass during the four hottest months of the year using shade structures like vegetated shade screens, louvers, shutters, and vegetative shade.



h. Provide adequate shade, particularly over windows facing south and west which are the most exposed to direct sunlight and can be a significant source of undesired heat absorption during the summer.

G. Shade network, urban heat island effect reduction, and environmental justice

Shade can be provided through vegetation, structural elements, colonnades, trellises, and covered structures on walkways, sidewalks, public gathering spaces, multi-use trails and all areas where people need to gather or walk. Mitigating urban heat island effects reduces the risk vulnerable individuals and communities face when higher temperatures compound factors like bad air quality, financial burden, and limited personal resources to deal with extreme heat such as mobility and income. A sufficient shade network supports the goals of the Tempe Urban Forestry Master Plan, the Tempe 20-Minute City Program, and the mixed-use strategies outlined in this document and it promotes environmental justice.

Design Guidelines

a. Support walkability by creating pleasing microclimates in continuous networks that link neighborhood destinations with special consideration for residents from the neighborhoods south of SIH using Smith Road to travel to and from Tempe Marketplace for groceries.

b. Support the creation of a shade network that connects public paths and places (plazas, playgrounds, and neighborhood parks).

c. Foster a mixed-use environment through the creation of a synergy between public and private spaces with shading.

d. Design/use shade structures that have more than one purpose such as doubling as signage or an aesthetic element, further contributing to SIH's unique character.

e. Encourage mitigating heat island effects by shading paving and building facades with trees and/or shade structures.

f. Encourage replacing paving with suitable groundcover that can include trees for shading pedestrian paths and buildings.

g. When feasible, consider using green walls and green roofs to mitigate heat island effects. Green roofs will help reduce water runoff and alleviate on-street ponding, especially along Perry Lane and 5th Street.


b.


c.


g.


g.

Tempe Transportation Center near Forest and College Avenues at the base of A-Mountain has an exterior shaded courtyard at the ground floor and a green vegetated desert roof (above).

h. Encourage mindful placement of low and high reflective materials/elements with special attention to the south and west elevations of buildings to mitigate heat island effects.

i. Encourage the use of cool roofing (roofs that contain reflective materials that direct sunlight away from buildings) to minimize solar heat absorption and the use of photovoltaic-ready roofs that facilitate the future installation of solar photovoltaic panels.

j. Increase the moisture content of the air during the dry season by using vegetation and/or a sustainable water feature.

H. Mixed-use and strategic infill housing

Mixed-use is practical and sustainable at both the individual level and at the level of the larger society. It reduces an individual's dependence on expensive or time-consuming transportation modes; and it does not require owing a car, and it plays a crucial role in supporting the local economy and social cohesion. Housing is a crucial objective for creating a sustainable and mixed-use neighborhood. However, the limited amount of available land for new developments requires a strategic approach to infill housing that prioritizes smaller, neighborhood-scaled buildings to help fill in the gaps in the urban blocks.

a. Encourage residential uses like lofts, artist/artisan housing, workforce housing, and mixed-use projects by incorporating it into or near commercial and light industrial uses that complement SIH's existing industrial uses and character. See Mixed-Use section 'A. Mixed-use Ecosystem: complementary residential' for more goals and strategies related to housing in SIH.

1.3 Opportunities for City Engagement

a. Conduct an initial pilot project for infrastructure such as the addition of bioswales along Perry Lane and 5th Street proposed by the Smith Innovation Hub Infrastructure Masterplan.

2.0 MIXED-USE

The mixed-use guidelines align the development of SIH with the City of Tempe's General Plan. While the Hub already contains a diversity of land uses, there are opportunities for improvement without losing this valuable attribute. Planned projects for large-scale multi-family housing on the perimeter of the district adds much needed housing to the Hub and the increased use of streets and public places after business hours. These guidelines suggest promoting smaller scale infill workforce and artist housing in the interior of SIH. This will require addressing concerns like safety, aesthetic, or environmental quality for the people who live, work, and visit.

In addition, several mixed-use resources exist just outside of the boundaries of SIH. Providing multi-modal links to encourage the use of the retail, entertainment, and public parks will also improve the living and working environment of the Hub.

2.1 Goals

- **Make this a grassroots effort to retain and build upon the character that grew spontaneously. To be successful, it has to be driven from within with support from the city.**
- **Augment the existing innovative vibrant character of the community to retain and attract the types of varied uses that will make the Hub even more attractive for existing and potential users.**
- **Reduce reliance on individual automobiles to obtain the typical day-to-day services needed by employers, employees, and residents.**
- **Promote the values and options included in the new "Mixed-Use/Industrial" land use designation in the General Plan.**

2.2 Guidelines

A. Mixed-use Ecosystem: complementary residential

SIH's new Mixed-use/Industrial land use designation provides the opportunity to add a unique mix of residential uses. Maintaining variety and not letting residential use dominate is important in maintaining a live/work balance. Residential design should support the lifestyle of the people working here.

Design Guidelines

a. Adding residential uses that are complementary with nearby existing businesses and catered to fabricators, artisans, and employees that work within SIH is encouraged.

b. Adding housing as part of an infill or a remodel project is encouraged. Care should be taken to not demolish buildings just for the sake of adding housing.

c. Carefully consider adjacent uses when placing residential uses to avoid noise, light pollution, and vibration.

d. Design new projects to facilitate flexibility through spaces that are readily adaptable to new uses over time.

Operational Guidelines

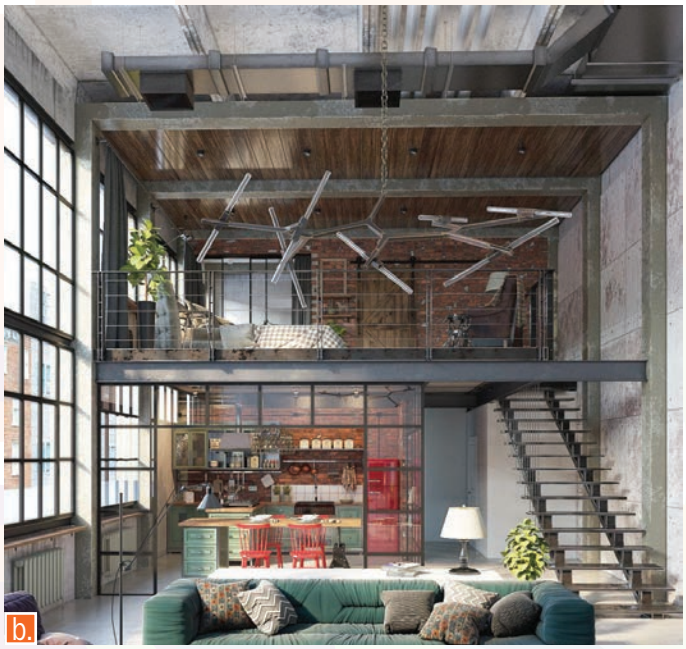
e. Promote the creation of a low-carbon neighborhood by prioritizing land use efficiency through compact, efficient mixed-use design, reducing private vehicle use through improved urban layout, and creating and maintaining more quality public spaces for the general public that are easily accessible, functional, and environmentally friendly.

f. Any large market rate residential development should occur at the extremities and not within the core of the district to maintain the existing character.

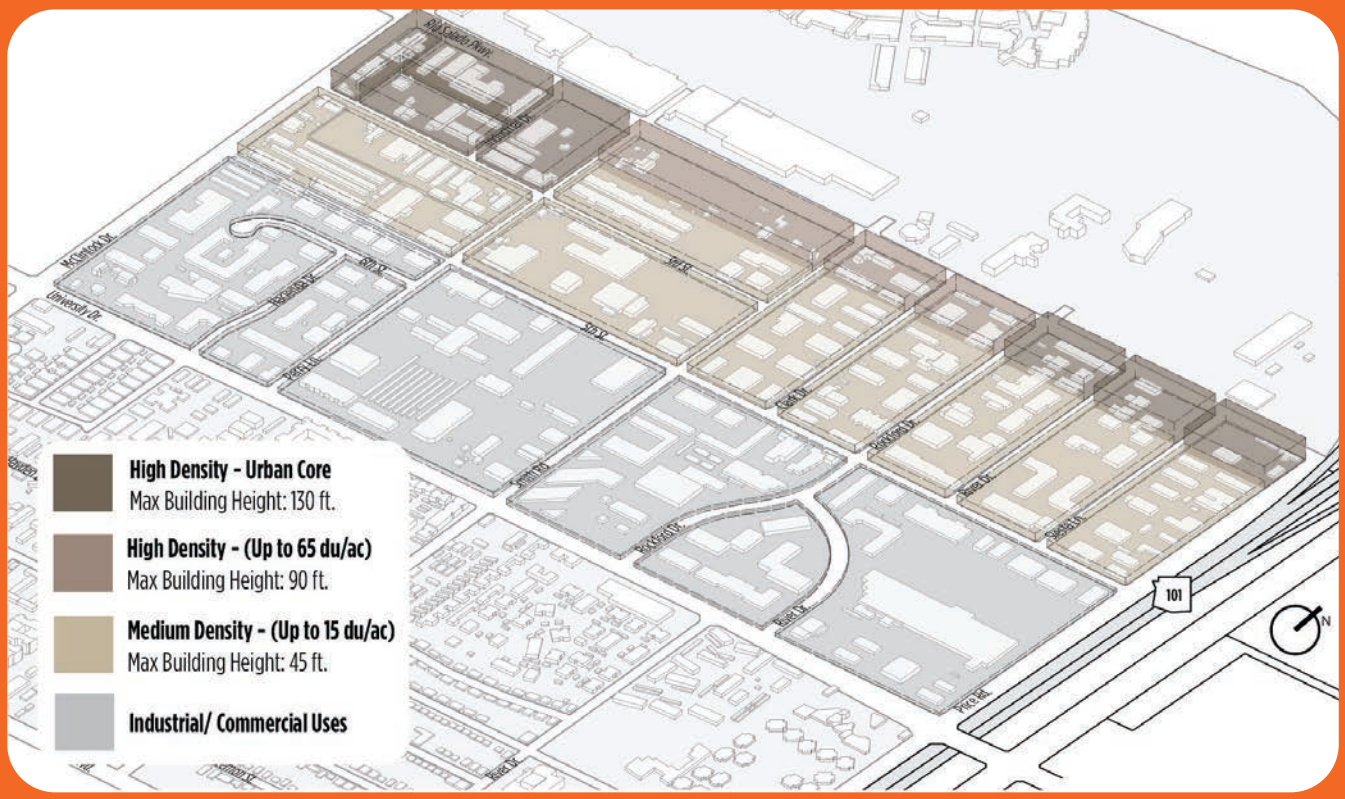
g. Encourage smaller scale (<15 du/ac) infill, multi-family workforce and affordable housing per the General Plan density map.


a.

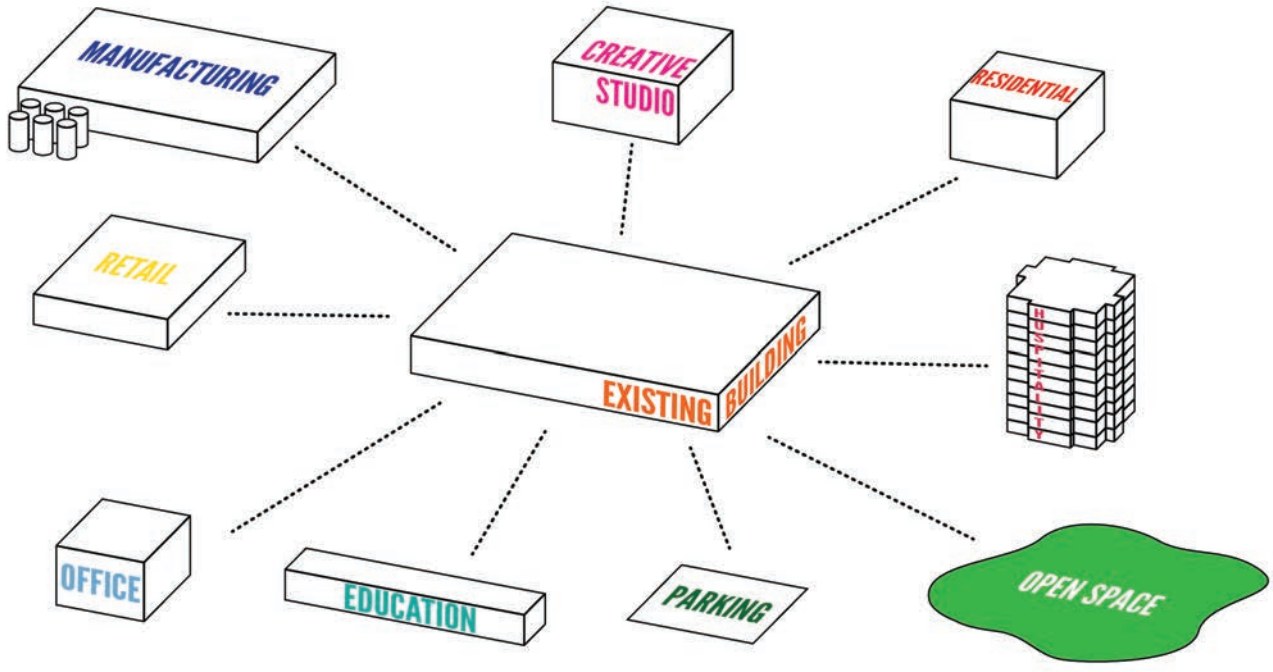

b.


b.

Smith Innovation Hub Density-Height Map



Mixed-use Ecosystem



B. Mixed-use Ecosystem: complementary mixed-uses

Complementary mixed uses are needed to achieve a vibrant mixed-use ecosystem that can provide for establishments that are vital to a year-round working community, promote the economic stability of the area, and provide for residential dwellings. When a multitude of uses exist in the same environment, residents can routinely walk, bike, or use public transportation to reach their destinations.

Design Guidelines

a. Consider mixed-use development vertically and horizontally.

b. Promote land uses that create a new, or enhance an existing, synergetic relationship between other land uses (e.g. artist/artisan housing, studios, material suppliers, etc.).

c. Promote land use that serves the greater community and enhances SIH's character.

d. Encourage land use that promotes a balance between office spaces, grocery stores, hospitality, and retail entities.

e. Encourage land use that provides a cultural value for the community such as a music venue, an art gallery, or a performance space.

f. Encourage land use that provides services that contribute to a vibrant community outside of work hours including dining, entertainment, and others such as a coffee shop, a local craft brewery, a taproom, a restaurant, and/or a beer garden.

SIH is home to a unique mix of uses that could develop synergetic relationships with the addition of other complementary uses like coffee shops, grocery stores, and material suppliers (below right).

Encouraging land uses which provide services and entertainment to all ages can promote a dynamic environment that reinforces Smith's character by involving both the community within the district and the surrounding communities (below).

C. Innovation, community, and vibrancy

Shared spaces bring about feelings of belonging and neighborhood culture which can bring people out from the relative isolation of their work environments.

Design Guidelines

a. Provide amenities like pocket parks and public gathering spaces that encourage interaction among businesses and residents.

b. Promote strong connections between SIH and the surrounding commercial, residential, and institutional land uses.

c. Promote the vision of SIH as a central networking location and facilitate the convergence of entrepreneurs, industry leaders, artists, makers, academics, and the community.

d. Promote collaboration, cross-creativity, and entrepreneurship and celebrate the unique mix of spaces within SIH, especially those that allow people to interact and work together in ways that cannot be done in traditional office or living situations.

e. Contribute to a 24-hour live-work-play environment by promoting uses that serve residents and employees within the SIH. For example day care, pet care, services uses.

f. Leverage the proximity to existing mixed-use like Tempe Marketplace by strengthening connectivity and establish walkable corridors to increase local commercial activity while lessening the necessity for driving.

Operational Guidelines

g. Recognize and be supportive of valued places and land uses that contribute to Smith's existing character and make it special, such as longtime and unique businesses/tenants.

h. Promote a sharing economy where businesses can share resources, often through online or mobile platforms, to establish strong relationships.


a.

a.


d.

SIH attracts innovative entrepreneurs who need space for emerging new uses like a Youtube channel recording studio (above).

SIH has many unique tenants and buildings that can be leveraged to foster special events and relationships (below).


g.

D. Infill and enhanced mobility

Mixed-use development caters to people whose preference is to live, work, and play where public transportation is viable and shopping, food, and entertainment is easily accessible. The density and interconnectedness of mixed-use neighborhoods promotes the feasibility of multi-modal transportation, thus reducing the environmental impact of an automobile-based commuter culture.

Design Guidelines

a. Prioritize infill and redevelopment to take advantage of existing infrastructure, minimize the need for new facilities, and enhance the existing character of the area.

b. Encourage infill by adding buildings in the spaces "in-between" like large parking lots and retention areas where feasible.

c. Promote a compact neighborhood which encourages a wide variety of housing types including smaller-scaled artisan lofts that may provide cost savings to residents.

d. Note that parking competes with industrial uses for ground floor space. Utilize innovative approaches to parking management such as:

   i. Reduce parking requirements for projects through a justified analysis.

   ii. Consider various shared parking models, such as time-of-use and carpool parking, to optimize parking spaces and to allow additional uses on site.

   iii. Incorporate bicycle parking/storage into the design.

   iv. Parking shall be provided behind buildings to make the parking less aesthetically prominent when seen from the street.

e. Promote pedestrian-oriented design by targeting development opportunities to nearby, compatible land uses to shorten trips and facilitate alternative modes of transportation, such as walking, bicycling, and public transit.


c.


b.

f. Promote a walkable neighborhood that features a variety of uses and locates jobs, shops, and transit stations within walking distance of housing, allowing residents to access goods and services without being required to own or use a car and encourages social connections.

g. Create a pedestrian-friendly environment by providing direct paths of travel between destinations and shade.

h. Ensure site design of buildings include pedestrian-oriented public spaces.

i. Enhance streets with bike lanes and wide sidewalks that allow for increased pedestrian safety when feasible.

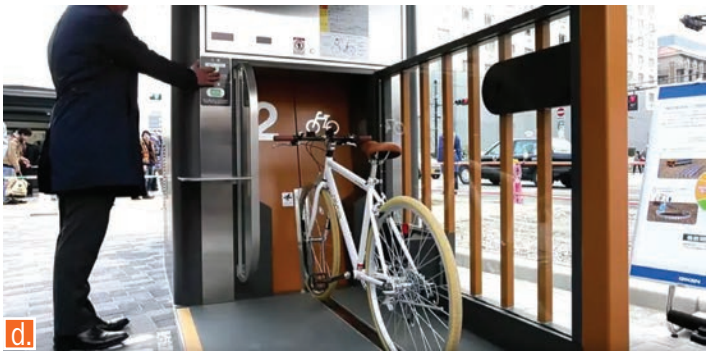
j. Enchance accessiblity by providing shade for transit stops.

Operational Guidelines

k. Encourage the use of carpool apps.

l. Encourage the use of shared cars.

m. Incentivize carpooling and transit use with employees.



d.

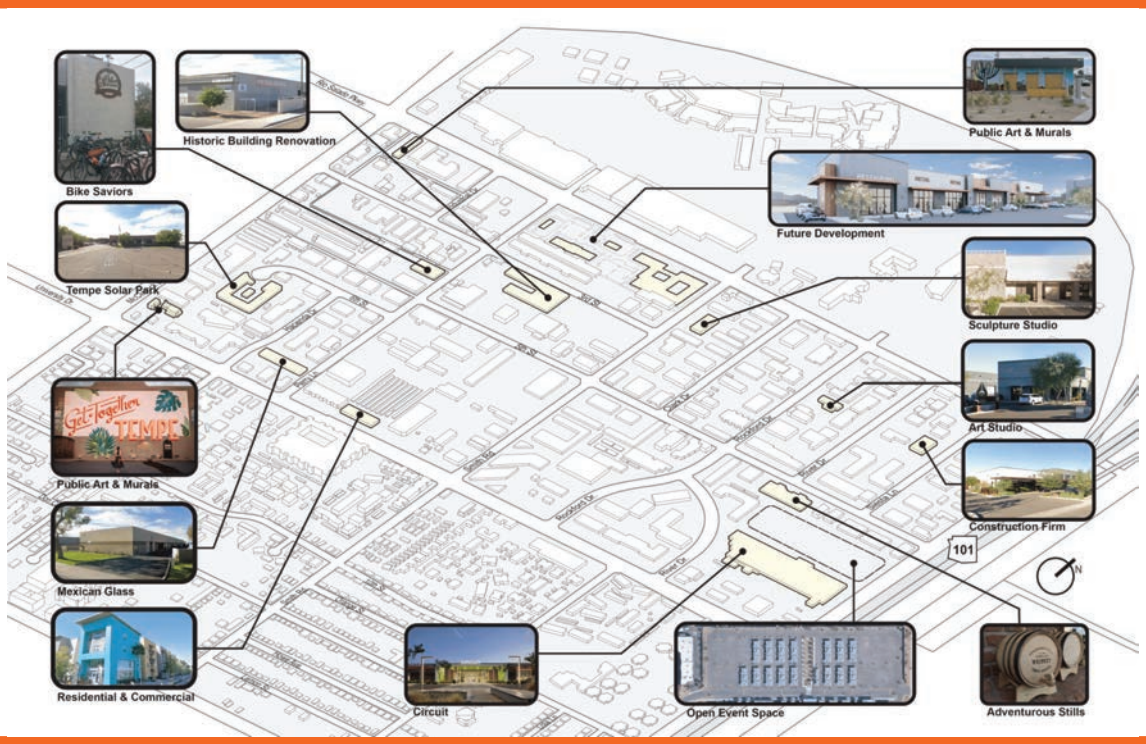
Integrating secure and shaded bicycle storage into a project's design is an effective means of incentivizing and increasing bicycle usage which can ameliorate the need for excessive parking (above, below).

d.

j.

E. Map of internal assets

There is a variety of existing businesses and infrastructures within the Smith Innovation Hub that can serve as assets for new businesses, residential projects, grassroots efforts, and city engagement as it transforms due to its new Mixed-Use/Industrial land use designation.



2.3 Opportunities for City Engagement

a. Conduct initial pilot projects for live/work and adaptive re-use with more sustainable design principles.

b. Provide support to start-up incubator spaces and food services by leveraging new multi-family project space.

c. Encourage collaboration among government entities so that regulations and funding priorities for housing, transportation, public health, and environmental issues create more livable communities.

d. Use the Health Impact Assesment (HIA) framework as a tool to study future plans, projects, and policies before projects get built or plans are put into place to help decision-makers understand how people's health and quality of life is affected (physical activity, location affordability, access to employment/ education/ healthcare facilities, traffic/ pedestrian safety, and access to food options).

e. Implement objectives and strategies outlines in the GP2040 "101/202 Interchange Growth Area Goal" section.

f. Consider amending zoning text to increase building heights in the district to 65', and reduce parking requirements.

3.0 ACTIVATING PUBLIC + PRIVATE SPACES

One of the best strategies to develop SIH into a vibrant neighborhood is to create outdoor places where residents, business owners, tenants, and visitors can meet spontaneously, or at scheduled events. Active spaces invite people out when amenities such as benches, tables, refuse containers, etc. and are paired with protective microclimates through shading, building adjacencies, landscape, and other design elements.

3.1 Goals

- **Create meaningful spaces that residents and visitors will take ownership of and will find new unexpected uses for.**
- **Activate public spaces by enhancing the pedestrian experience and link transportation nodes to encourage a walkable neighborhood.**
- **Develop innovative strategies by engaging residents, the workforce, and business owners to create contextually appropriate spaces.**
- **Look for opportunities to develop public and private spaces that fulfill more than one function.**

3.2 Guidelines

A. Increasing public open space through linear parks

"Creating a Village" is an idea that emerged from a commitment to strengthen the sense of community in the SIH area. This idea reevaluates the elements necessary for a village common and explores the potential of a system of linear parks to act as the heart of the neighborhood where people can gather to meet, share ideas, and socialize.

Design Guidelines

a. Use the following elements to create linear parks along Smith Road and 5th Street to reinforce the pedestrian experience:

   i. Trees and protective microclimates per Urban Forestry Master Plan

   ii. Public art and publically accessible private art

   iii. Shades protecting walkways and biking lanes

   iv. Amenities such as pedestrian seating and tables

Linear Park Area Map

B. Streetscape

Further elaborating on the strategy of increasing open space through linear parks, embrace the underlying concept of "streets as open space" to balance existing open space and help unify Smith Innovation Hub. Streets should be embellished with abundant shade, trees, landscape elements, street furniture, engaging storefronts, art, etc.

Design Guidelines

a. Enhance streets to maximize safe and efficient use by all users such as pedestrians, bicyclists, transit riders, and motorists.

b. As residential units, restaurant, and retail options in an area increase, the need for open space becomes more important. Encourage the use of landscaped courtyards, street/sidewalk pocket parks, curb extensions, outdoor seating areas, and patios to increase activation of open space opportunities.

c. Sidewalk zones along the Linear Park Areas (refer to diagram) should provide for a variety of active and social functions, including outdoor seating, cafe tables, and pocket gardens.

d. Using shade of all types (natural and structural) and textures is encouraged.

e. Use the framework of Tempe City Council's Resolution for a Walkable City (refer to resolution number R2015.08) and the Tempe Urban Forestry Master Plan as sources for overarching goals for shade.


a.


b.


c.


b.

Development and redevelopment along the Linear Park Areas should communicate a pedestrian-oriented approach that makes pedestrian circulation more convenient and attractive. This strategy encourages comfortable walking and a relaxed atmosphere with engaging building fronts, pedestrian weather protection, and other elements that improve pedestrian conditions along the sidewalk.

C. Landscape

The Smith Innovation Hub is comprised of a diverse palette of plant species and does not have a dominant tree species on any street. Landscape schemes on individual properties that ranges from water intensive landscapes with lawns and non-indigenous plant species to xeriscapes with drought-tolerant indigenous species. New projects and remodels that include site upgrades should therefore consider replacing water intensive landscapes with a drought-tolerant plant palette. The Sonoran Desert's unique landscape should be used to create identity with its rich texture and forms.

Design Guidelines

a. Use drought-tolerant and low water-use plants that can withstand intense solar exposure.

b. Use locally available plants that correspond with the City of Tempe's recommended plant list (Arizona Department of Water Resources) or plants identified as xeric by landscape architects registered in the State of Arizona.

c. Incorporate edible plants into the landscape for both humans and wildlife.

d. Promote the use of trees to create a cool and comfortable environment for pedestrian and bike traffic.

e. Establish or reinforce the gateway experience (see Gateways and Signage section "Gateways") through trees and landscaping that collectively express the area's visual character. It is desirable to have common elements in all gateways.

As referenced in the Apache Character Plan:

f. Promote biodiversity throughout landscapes to help prevent single-species die-off, disease, infestations, etc. and promote sustainable crop pollination, nutrient cycling, healthy soils, and bird and insect diversity.

g. Support a consistent plant palette with flowering trees, shrubs, and ground covers to foster community identity within SIH.

h. Promote a maintenance plan that does not over-groom or over-prune arid plants, which causes shock and reduces flowering/pollination.

The Western Hackberry (*Celtis reticulata*) is a low water-use Sonoran Desert Native tree (above).

The Yellow Orchid Vine (*Callaeum macropterum*) does extremely well in high temperatures (right).

The Chuparosa (*Justicia californica*) is used by butterflies as a larval food plant, visited by hummingbirds for their nectar, and fed on by other birds for their sugar-rich flower centers (below).

i. Support trees which are high enough to provide habitat to birds of prey (hawks, owls, etc.) as part of a healthy and balanced urban forestry program.

j. Look for opportunities to establish a dominant street tree when possible to help unify that particular street.

D. Unique programs

Events and activities unique to SIH can allow people to interact and work together in ways that can not be done in traditional office settings by bringing businesses outdoors and breaking the walls that separate them. This can also generate interest in the area and provide creative opportunities for chance encounters and conversations.

Design Guidelines

a. Incorporate the capacity to help host unique programs like:

   i. Street fairs (car shows, art fairs, tastings, etc.)

   ii. Pop-up food trucks

   iii. Open houses

   iv. Block parties

E. Promote grassroots efforts

Living environments typically reflect and reinforce the behaviors and values for which they were built to suit. Activating public spaces therefore must recognize the different needs of different groups of people during the creation of a cultural environment that aims to bind them together.

Design Guidelines

a. Increase flexibility in use of an environment by designing to accommodate a wide range of individual preferences and abilities.

b. Create settings that encourage cooperation and facilitate social support.

c. Encourage the integration of mixed uses within walking distance to increase pedestrian presence.

d. Optimize underused, open properties (parking lots, setbacks, retention basins, leftover spaces, etc.) and convert them into multi-use spaces.

e. Use Universal Design Principles alongside ADA requirements to achieve relevant disability and accessibility standards for site and structure design that communicate necessary information effectively to the user, can be used efficiently and comfortably, and provide appropriate size and space for approach, reach, manipulation, and use, regardless of the user's body size, posture, mobility, or sensory abilities.

f. Explore the possibility to activate local streets and alleyways safely and appropriately, like the first alley east of McClintock Road and south of Rio Salado Parkway, as intimately scaled environments that host community programs and cultivate special interactions.

Operational Guidelines

g. Promote the use of streets as platforms for community engagement.


f.


f.

Narrow alleys and large setbacks and parking lots have the potential to be activated into multi-use spaces through grassroots efforts and artistic interventions (above, below).


g.

h. Program cultural activities to attract diverse community members.

3.3 Opportunities for City Engagement

a. Implement pilot projects for Adaptive Street Applications.

4.0 ART INTEGRATION

This section communicates the value Tempe places on artists' work and their ability to support grassroots interventions that empower a community to express their own authentic culture. It builds on the Tempe's Arts and Culture Plan that describes the value artists bring to our community. The Hub already includes artisanal manufacturing within the existing industrial context. Including artist input is integral to energizing an innovative and walkable light industrial mixed-use district.

Integrating art into design and development goes beyond art as a static product and values artist input as a means of energizing an innovative ecosystem. Art as a living process supports grassroots interventions that empower a community to express their own authentic culture through the built landscape. Meaningful steps to provide workspace, display space, rehearsal halls, presentation spaces and housing to support arts needs to be a part of the discussion. This section explores what makes this mix work now and identifies opportunities to augment it.

4.1 Goals

- **Promoting the existing artist presence in the Hub while enhancing the infrastructure to support additional artists and art display/performance spaces.**
- **Drive economic development and animate the Hub through art and the role of artists.**
- **Encourage the creation of spaces where artists can live, create, source material, and perform or display art.**
- **Foster the exchanging of ideas, cross-pollination, accidental discovery, and a sense of community that includes artists, fabricators, light industrial users, and other businesses within SIH.**
- **Increase equity and inclusion for all arts and artists regardless of status.**

4.2 Guidelines

A. Integrate spaces for artists

Tempe's emphasis on arts and culture makes it an attractive city for many of its residents. Creating spaces for artists to live and work will keep Tempe fascinating for residents and visitors alike and is a crucial component of keeping artists in Tempe.

Design Guidelines

a. Encourage the integration of a wide variety of artist-focused housing into the light industrial fabric such as artisan lofts over or adjacent to light industrial uses (see Mixed-Use section "Mixed-use Ecosystem: complementary residential" and Building Design chapter).

b. Create performance and studio spaces at a range of sizes, including:

   i. Space for assembling art

   ii. Space, such as an incubator, to be shared by several artists

   iii. Studio space for props and photographers, filmmakers, advertising firms, etc.

   iv. Space for hosting artists

   v. Rehearsal and/or performance space (one-time performances and ongoing performances)

   vi. Space for pop-ups, emerging artists, mixed art, etc.

   vii. Communal art maker space with basic specialized tools like kilns, spray booths welders, etc.

B. Celebrate the genius of making art and elevate the visibility of artists

Tempe is a city that is often under a national spotlight due to its innovative and entrepreneurial culture. Artist involvement and partnership in other fields can provide a platform for increasing the individuality, uniqueness, and attractiveness of everyone involved.

Operational Guidelines

a. As a business or developer, give some space to an artist. It can be in exchange for visibility.

b. As a business owner, developer, or city staff member, collaborate with an artist. It can be to create visibility (i.e., instead of direct marketing, commission an artist for signage or a mural) or any of the following:

   i. Websites

   ii. Banners

   iii. Street surface activation (e.g. unique street features, chalk art, painting the Right of Way, etc.)

   iv. Custom bus stop perforated screens

c. Encourage the upcycle of material for art and craft, especially industrial by-products of businesses in SIH, in a way that is consistent with SIH's character, emphasizes the idea of repurposing, and that promotes authentic placemaking.

d. Create temporary pop-up and longer-term solutions.


d.


b.


b.


b.


c.

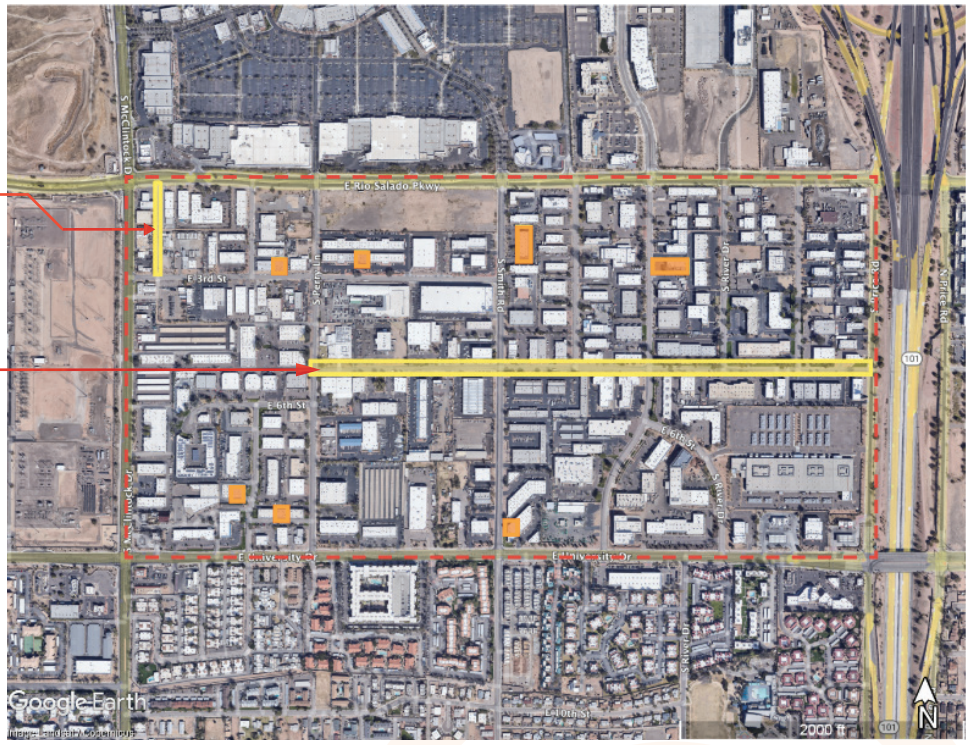
C. Map of spaces conducive to art integration

Public spaces can be designed to accommodate art in a number of ways, such us by providing locations for static art like in galleries or as murals and functional art such as unique seating or signage. They can also be designed to support small performances, pop-up galleries, and art fairs. This map identifies potential locations for these interventions.

a. First alley east of McClintock Road and south of Rio Salado Parkway

b. Wide Right of Way on 5th Street for possible Adaptive Streets elements, events, and pop-up spaces

c. Existing/anchor artists (shown in orange)



4.3 Opportunities for City Engagement

a. Smith Innovation Hub needs branding and a distinctive name that can foster neighborhood cohesion and identity.

b. Identify champions passionate for the arts who can provide aid and resources during SIH's transformation to an integrated light industrial mixed-use neighborhood.

c. Explore creating pilot projects or providing incentives for permanent and temporary spaces.

d. Achieve the development of a business model that incentivizes integrated artist housing and/or artist residency.

e. Provide city support by budgeting more city staff and allowing the use of city meeting spaces for community efforts that promote the goals of these guidelines.

f. Explore the possibility of the City of Tempe helping artists qualify as tenants for studio or live-work space.

g. For immediate needs, a seed project that invites an artist/s to come into the district and start working could potentially show the opportunities and create the synergy for the arts community to grow organically.

h. Create a tool to help integrate art to leverage Art in Private Development funds in new ways like allowing smaller projects to combine contributions to create a larger impact by funding a community art studio or maker space.

i. Creating tools to help integrate art could include utilizing the city's resident artist program.

j. Propose a requirement for affordable studio space or collective art making space in future city Request for Proposals in SIH.

k. SIH needs a mechanism like a business owners' association to identify where opportunities are that the city can then fund or provide resources from the Arts and Culture Committee.

5.0 BUILDING DESIGN

The objective of this chapter is to provide a variety of strategies and ideas to enhance and celebrate the existing light industrial building stock and define the qualities for new construction that will be compatible with the existing buildings within the Smith Innovation Hub. Since the most sustainable strategy is to retain and reuse existing buildings, these guidelines recommend strategies that preserve as much of the existing buildings as possible.

New projects should consider remodeling and adding on to existing buildings. New buildings can be located within setbacks, over existing structures, on existing parking lots, or other unused portions of the site. Smith Hub is primarily made up of an eclectic collection of small and medium scaled light industrial buildings. The buildings are constructed primarily of concrete masonry and concrete tilt-up panels of approximately 1 and 2 stories high. Each existing building is unique, so when remodeling or adding on to existing structures, identify and enhance the unique aspects (materials, architectural form, structural systems, etc.) that can create visual interest and unique aesthetic opportunities that add authenticity to the Hub.

5.1 Goals

- Create a unified aesthetic that will help express the unique character of the Smith Innovation Hub.
- Maintain existing buildings and industrial character as much as possible through re-purposing, renovation, and building additions to reinforce the authentic qualities that make this an identifiable neighborhood.
- Reduce energy and water use for all buildings within the Hub through renovation projects that increase exterior envelope insulation, upgrade mechanical systems, reduce the heat island effect, and provide new opportunities for renewable energy production.
- Infill and intensification of sites with existing and new mixed-uses to reinforce a walkable neighborhood with safe streets at all hours of the day and night, and to provide shade and dedicated places to walk.
- Increase equity and inclusion by providing employment, recreation, and housing opportunities across the socio-economic continuum.
- Align with Tempe Climate Action Plan to reduce the dependance on private vehicle use through design that supports multimodal transportation.

5.2 Guidelines

A. Building materials

The eclectic nature of the Smith Innovation Hub should be emulated and enhanced by any new projects within the Hub. Building materials should resonate with SIH's artistic, yet industrial quality. The building façades should contribute to shaping inviting spaces for walking, create an interesting environment to be a part of, incorporate features that hold meaning to the community, and build upon the history of the Smith Innovation Hub.

Design Guidelines

a. Use exposed, low maintenance materials such as concrete masonry units, exposed concrete, raw, unfinished steel, galvanized metal, etc. as the primary building materials.

b. Innovative re-use/up-cycling of materials for building facades are encouraged whenever possible.

c. Textures like sand-blasted concrete masonry units and ribbed or corrugated metal should be considered to reinforce and enhance the unique character of the district and act as counterpoints to the large, unadorned walls that are predominate in the area.

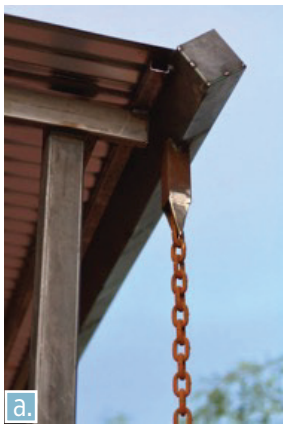
d. Landscape elements, such as vines and trellis should also be considered as part of the material palette.

e. Durable, pedestrian-scaled materials such as concrete masonry units or texture steel panels should be used at least on the first level. Less durable materials such as exterior insulated finish systems (EIFS) are recommended above the ground level where they are less likely to wear from pedestrian activities.

f. Building systems, such as rain water conveyance, electrical equipment, mechanical systems, structural systems, etc. should not be hidden or concealed but used as an aesthetic strategy to help celebrate and express the industrial nature of the components that are in every building.

g. Use color to help activate the facade and give it identity. It could be a detail, part of a wall, or a whole wall. Super graphics should be scaled to individual façades. Care should be taken of painted surfaces to minimize UV degradation due to the desert environment's extreme solar exposure.


b.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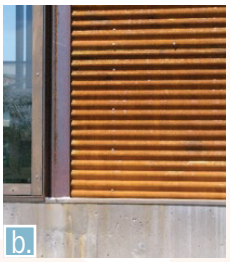
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f.

B. Building form

Each site will have unique adjacencies and consideration should be given to adjacent uses, acoustics, solar orientation, and building height. Additional building height could be considered on a case by case basis with the goal for extra height that helps internal functionality or for artisan/work force housing that helps activate and transform the street frontage. Refer to recommended height map for suggested height limitations.

Design Guidelines

a. To promote pedestrian engagement, place active uses and pedestrian amenities on ground floors.

b. Increase engagement with the sidewalk through building frontage, points of access/entry, and streetscape elements.

c. Increase engagement with the sidewalk by creating courtyards and microclimates. The use of vines and landscape as an aesthetic and functional shade envelope is encouraged.

d. Design for a minimum of 75% façade transparency for ground floor retail.

e. Design for a minimum of 30% façade translucency for ground floor residential.

f. Within the same building, develop important spatial relationships to adequately integrate uses and functions. These relationships are informed by the ground floor height, parking access, points of access/entry, and location of uses that become apparent in the building section.

g. Parking shall be provided behind buildings to make the parking less aesthetically prominent when seen from the street.

h. When possible, orient residential towards local streets that are safer and orient industry towards truck heavy industrial streets with appropriate widths for turning movements.

i. When possible, orient primary industrial delivery/loading access to sides and rear of the site, or along industrial alleys. Residential entrances can occur along local and neighborhood streets.

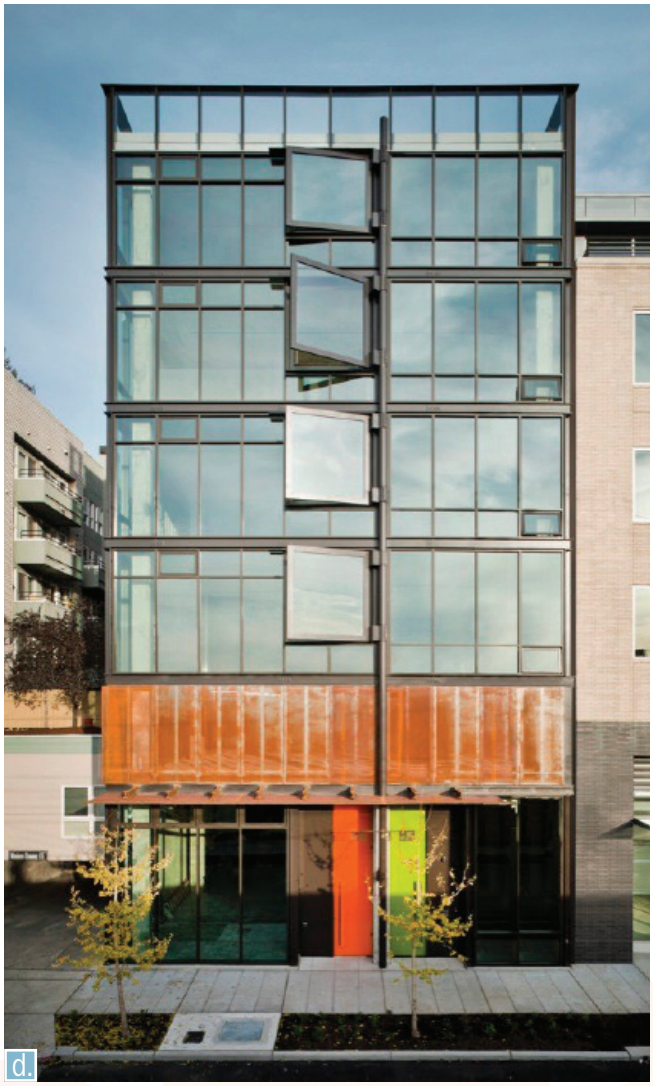
An active use such as a restaurant can liven the streetfront (above).

This building's point of entry creates an engaging frontage (above).

j. Ground floor residential units should be separated from the sidewalks though setbacks, patios, threshold walls, elevation change.

k. Use Universal Design principles alongside ADA requirements to exceed accessibility standards for site and structure design that can be used efficiently and comfortably by all users without the use of separate paths of travel. The design should communicate information necessary to effectively access the site, building, and functional elements of the project. It should provide appropriate size and space for approach, reach, manipulation, and use regardless of the user's body size, posture, mobility, or sensory abilities.

g.



d.

Providing the sufficient amount of window area at the ground floor level will achieve adequate facade transparency to host retail uses. (top).

A tall ground floor height can provide the flexibility to host various functions, such as a maker space or wood shop that may involve large equipment and supplies (bottom).

f.

C. Complementary mixed-use opportunities

Creatively integrate complementary uses into the area's existing light industrial character to activate the area and knit the existing urban fabric as it transforms into a walkable area with a 24-hour live-work-play dynamic. Some examples include:

a. Retail: art and fabricator supply stores, grocery and convenience stores, galleries, maker spaces

b. Residential: live/work lofts, artisan housing, workforce housing

c. Food/Drink: restaurants, breweries/distilleries, food trucks, etc.

d. Entertainment: paintball, fitness/climbing gyms, performing arts venues, photography studios, art film house

e. Work: office, artist studios, fabricators, content creators, makers

f. Community: meeting space, community gardens, parklets, plazas, temporary pedestrian engagements

D. Additions to existing buildings and intensification of the site

Many of the existing sites have buildings that are set back from the street and may have unused areas of land and underutilized parking lots. Building over existing parking is another potential option to intensify existing sites. Parking should be revaluated using shared parking models, time-of-use parking, and use of other available modes of transportation. Adaptively reusing existing buildings is also a fundamental value-capturing option.

Design Guidelines

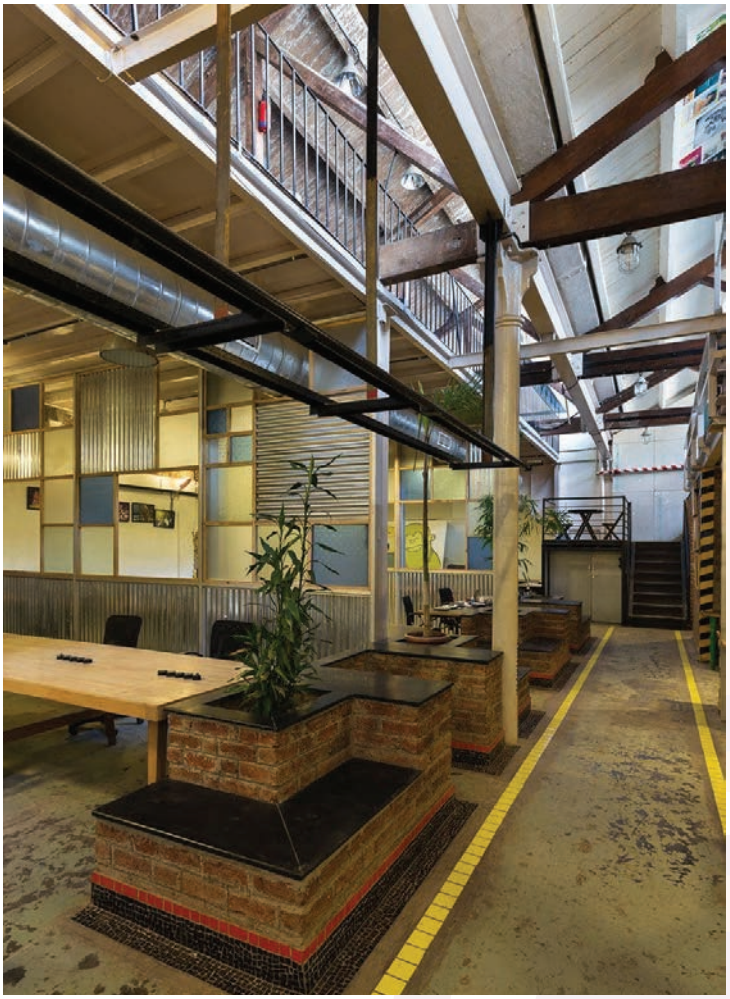
a. Adding new building(s) and/or outdoor spaces on existings sites is encouraged to help infill and transform the light industrial environment into a more active, pedestrian-friendly environment.

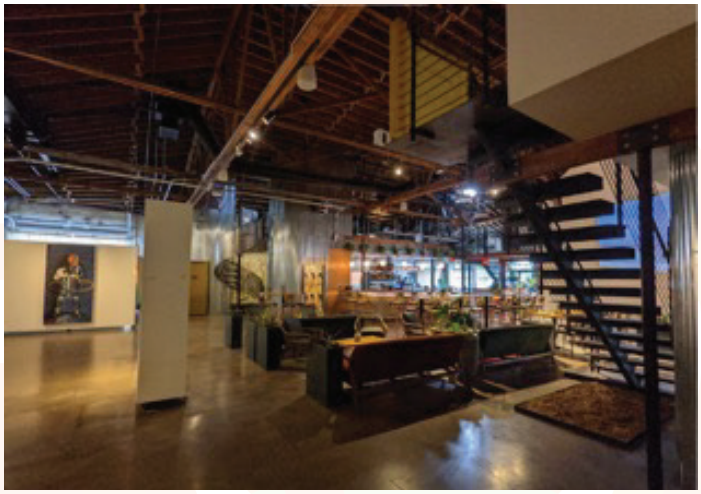
b. New structures over existing parking and buildings and infilling large existing setbacks with work force and/or artisan housing will help provide affordable housing for people who already work in the hub and help transform hub into 24/7 environment.

As land uses change over time, so will their site requirements. This will increase opportunities to infill empty spaces with outdoor amenities or additions to existing buildings (above).

E. Adaptive reuse

Most of the existing light industrial buildings, with their large structural spans and high internal volumes, are perfectly suited to allow different uses within the existing building shells, including more dynamic work or living environments not typically found in contemporary projects. New uses such as offices, galleries, breweries, performance spaces, artist studios, fitness spaces, will also fit well into existing structures while contributing to the desired overall mix of uses in the Hub.





F. Sustainable upgrades

Projects should consider life-cycle costs when building new or modifying existing structures. Existing buildings were typically built with less energy-efficient technology/fewer energy-efficiency standards than today and any new modifications should consider a variety of upgrades to improve sustainablity and reduce operating costs.

Design Guidelines

a. A variety of sustainable strategies to reduce energy cost include, but are not limited to:

   i. Shade windows based on building orientation to reduce the amount of direct heat gain while preserving daylighting and views.

   ii. Strategically place trees to help shade buildings, particularly on the east and west sides.

b. A reduction in the use of potable water can be achieved using the following strategies:

   i. Encourge replacing existing plants with low water-use indigenous and adapted landscape palettes.

   ii. Capture and reuse storm water from roofs and hardscape for landscape irrigation.

   iii. Capture condensate from heating, ventilation, and air conditioning systems for landscape irrigation and water features.

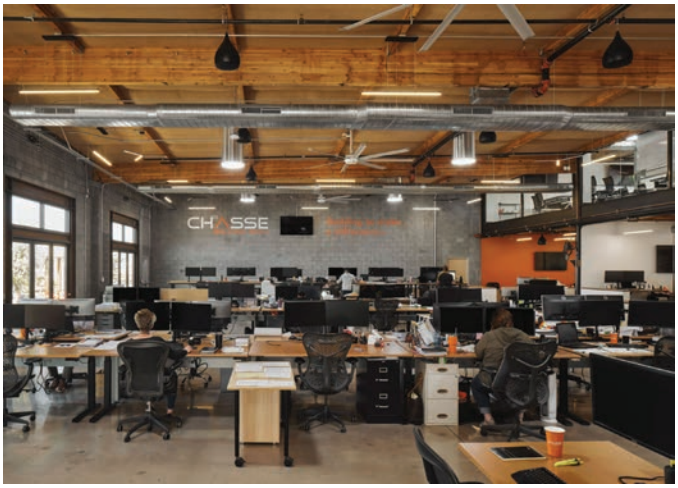
   iv. Consider replacing plumbing fixtures with higher efficiency low-flow plumbing fixtures.

   v. Install grey water collection systems to reduce reliance on city supplied potable water.

c. Reducing heat Island effect with the following strategies:

   i. Install hi-emissivity (reflective) roofing or design vegetative/green roofs.

   ii. Use light and medium building colors instead of dark heat absorbing colors.



Both of the above projects are great examples of existing buildings that have been adaptively reused and retrofitted with numerous outstanding sustainable upgrades (top and above).

Redirecting condensate and rainwater from the roof to irrigate landscape and to supply water features is sustainable and aesthetic (right).

iii. Minimize hardscape, use pervious paving materials, and use light colors.

iv. Shade paving using trees, landscape, and structures.

v. Increase the quantity of low-water use or indigenous tree quantities on the site.

d. Other sustainable strategies that would lower maintenance and operating costs and contribute to a more sustainable, resilient community include:

i. Innovatively reuse/upcycle materials for the facade and other finishes.

ii. Add solar photovoltaic panels to roofs and/or shade canopies.

iii. Add controlled daylighting for interior spaces to reduce the need for electric lighting during the day.

iv. Utilize passive design strategies which optimize orientation, shading, indoor/outdoor functions, capture prevailing breezes, etc.

v. Use durable, low maintenance materials which don't need to be painted or replaced frequently.

<u>Operational Guidelines</u>

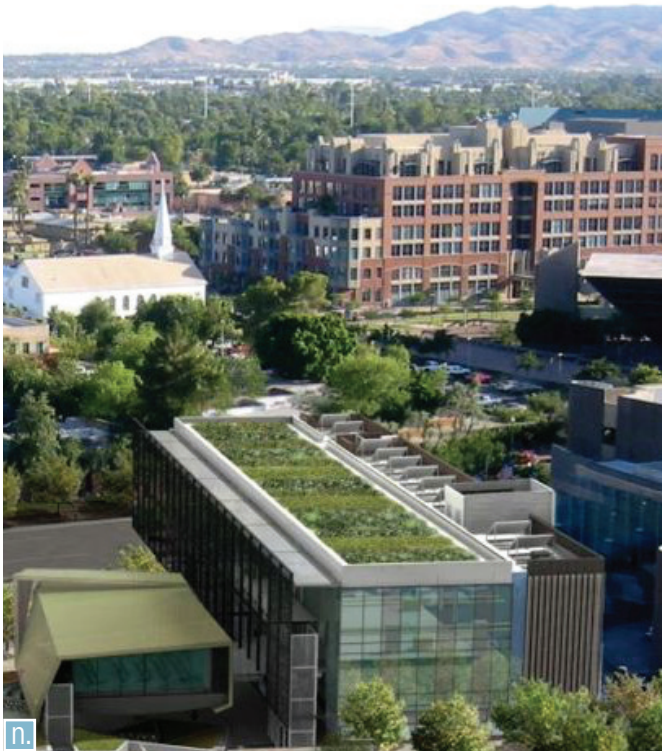
e. Consider upgrading the exterior envelope with continuous insulation outside of the mass walls.

f. Increase insulation values in wall and roof construction.

g. Encourage converting to LED lighting.

h. Consider replacing mechanical units with energy-efficient units with high seasonal energy efficiency ratio values.

i. Consider upgrading single-pane windows with double-paned or similarly insulated glazing.



n.

s.

This project managed to reuse 95% of the existing building, including the building skin, which was turned inside-out to reveal the original metal finish and industrial exhaust fans that were used as decorative details (above).

j. Consider converting from gas to electricity for heating, water-heating, and cooking.

k. Parking will need to serve residential tenants and the staff and customers for the industrial and retail uses. Consider utilizing modern approaches to reduce parking by encouraging:

   i. carpooling

   ii. ride sharing

   iii. alternate vehicle options

   iv. providing secure bicycle storage and showers for employees

   v. shared time-of-use parking models

   vi. optimizing nearby alternate transportation modes

l. To improve the walkability of the Hub incorporate requirements of Crime Prevention Through Environmental Design (CPTED) Principles such as access control and "eyes on the street."

5.3 Opportunities for City Engagement

a. Allow adaptive reuse projects relief from other city design guidelines.

b. Allow adaptive reuse projects relief to screening and parking lot requirements.

c. Consider allowing uses that will improve SIH character to be granted height increases. Improvement should be regarded as anything that will help activate the area with more pedestrian activity, including increasing the amount of residential and retail in the area.

6.0 GATEWAYS + SIGNAGE

Gateways and signage are placemaking elements that can make SIH more legible, easier to navigate, establish a sense of arrival, and provide visual interest. Done correctly, they can express the unique character of SIH to create a sense of identity and be a source of community pride.

6.1 Goals

- Create an identity that reflects the unique character of the Hub.
- Connect the Hub to create a coherent and identifiable district.
- Highlight the creativity of the businesses and residents that make up the Hub.
- Utilize gateways and place identifiers as a storytellers to communicate the history and the future of the Hub.

6.2 Guidelines

A. Gateways

Gateways placed along the edges (on private property versus right of way) serve as markers delineating the main entry and exit points. They provide a clear sense of arrival through their iconic representation of the area's characteristics and the community's identity. Gateways can be established in the built environment in a variety of ways, including the overall visual character of a streetscape, distinctive landscaping and vegetation, and through art or other visual elements that express the identity of the area.

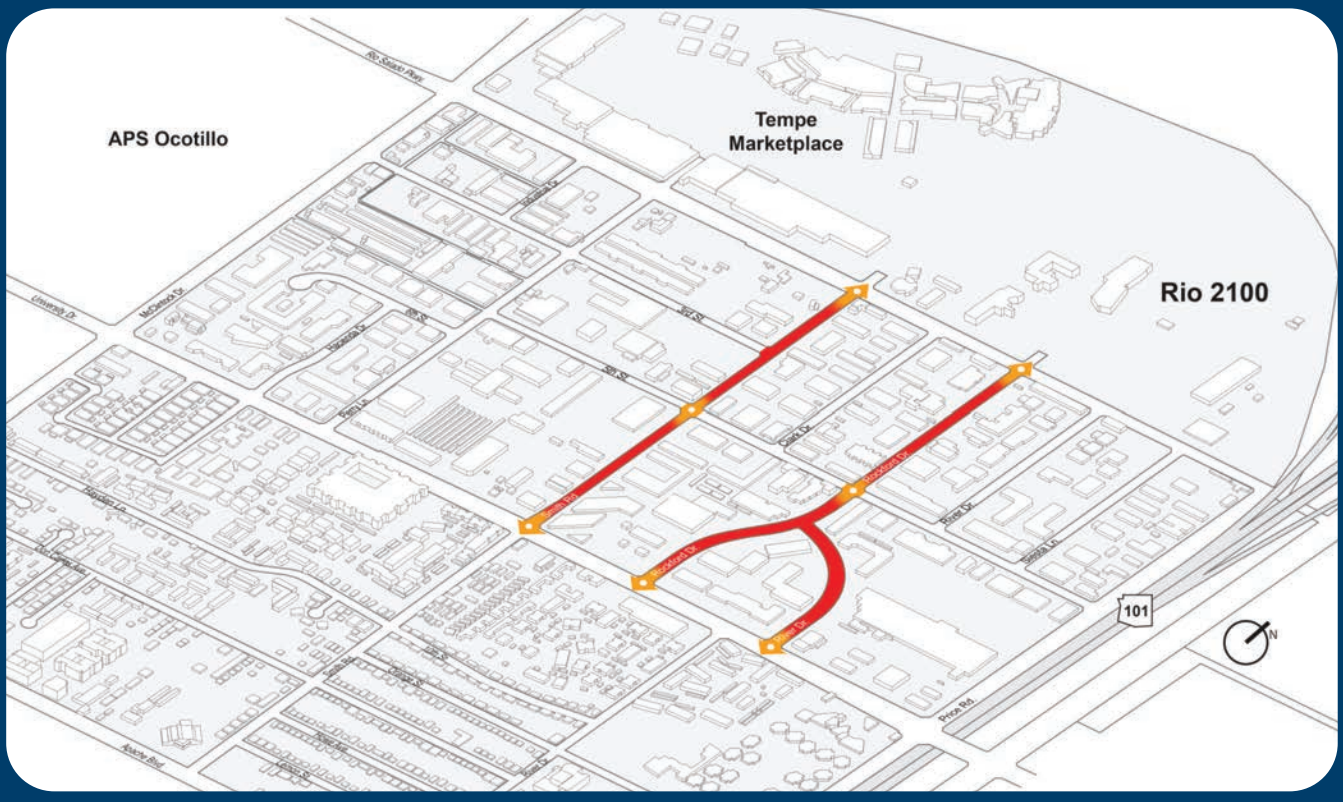
Design Guidelines

a. Establish gateways features at prominent points that foster SIH's identity where elements can be clearly visible to both vehicles and pedestrians:

   i. Perry Lane, Smith Street, Rockford Drive, and 5th Street (refer to diagram)

b. The overall scale of gateway features should be appropriate to the gateway's location, context, and function. All nearby private signage should be smaller in size.

Gateway Feature Locations



c Encourage buildings along arterial streets, like McClintock Road, University Drive, and Rio Salado Parkway, to reinforce the gateway experience through prominent architectural features, sign forms, landscape, and public art.

d. Encourage buildings along multimodal transportation corridors, such as Smith Street, to include prominent art and branding elements, specialty lighting, and landscaping features.

e. Encourage streetscape design which establishes or reinforces the gateway experience through distinctive paving, furnishings, lighting, trees, and landscaping that collectively express the area's discernable design language and visual character.

f. Encourage highly visible landmark plazas and other open spaces, such as the intersection of Smith Street and 5th Street, to function as gateway elements. In certain locations, smaller public spaces and outdoor seating areas on street corners, such as the intersection of Rockford Drive and 5th Street, can also serve a gateway function and provide a transition to a more pedestrian-oriented environment.

g. Public art, boundary markers, area signage, and other location-specific elements should be incorporated where appropriate to foster a sense of arrival, connote the area's history and context, and help build community identity. If it is appropriate, include a special feature for Indigenous Land Acknowledgement.

c.


d.


c.

These buildings are found on McClintock Road (top), Smith Road (above), and Rio Salado Parkway (right).

B. General and wayfinding signage

General signage can provide a recognizable identity and a unified character for SIH. It also serves as pedestrian wayfinding through specialty street signage, maps, and other graphics designed to help visitors navigate an individual site or an entire community. Wayfinding informs people about where they are and their immediate surroundings. By strategically placing wayfinding information, people can be guided to key destinations, including public facilities, special streets, and parks.

a. Design public signage in a comprehensive and coordinated manner that complements the area's character.

b. Design public signage aesthetic to be consistent with the site furnishings used to build a sense of place.

c. All general signage does not need to be identical but should be designed so that it is complementary to other signage, street furnishings, and area character.

d. Wayfinding signage can be incorporated in creative ways including murals, adaptive street graphics, public art, etc.

e. Wayfinding signage should include community logos or other unique branding features, when appropriate, that further distinguish the area. Signs in gateway areas, in particular, should include community logos.

f. Provide clear, consistent information through a variety of media.

g. Promote a comprehensive, clear, and consistent visual communication system with concise messaging.

h. Wayfinding may include static signs with maps, text, and distances, or dynamic options.

i. Use Universal Design principles alongside ADA requirements to achieve relevant disability and accessibility standards for wayfinding design that communicate necessary information effectively to the user, can be used efficiently and comfortably, and provide size and space for approach, reach, manipulation, and use, regardless of the user's body size, posture, mobility, or sensory abilities, including the visually and hearing impaired.

j. Wayfinding signs should be coordinated with the development's pedestrian and vehicular circulation plan to ensure that signage is located at the most appropriate locations for pedestrians and motorists.

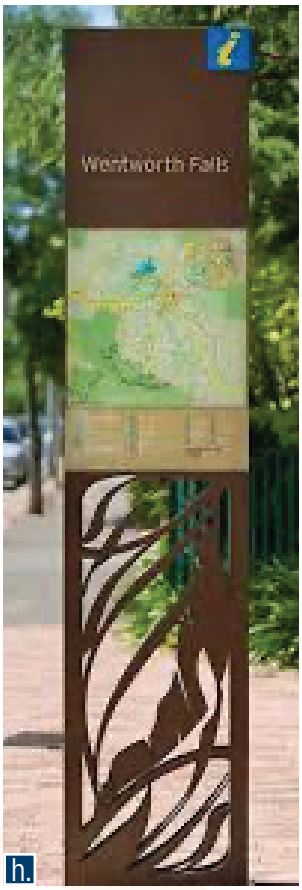
k. Promote the use of streetlight-mounted banners that advertise public events, seasonal or other area attractions.

l. Promote the use of streetlight-mounted banners that integrate art into the banner design (see Art Integration section "Celebrate the genius of making art and elevate the visibility of artists").

m. Promote the use of an additional sign to the street sign that identifies SIH.

n. Gateway and location marker signs should be designed as art pieces.


d.



h.


i.

o. Wayfinding signs should be well organized, neat, well-maintained, and legible.

p. Signs should be able to withstand weather conditions and should be constructed from durable materials and replaced as needed to maintain a high-quality appearance. Structural components should complement the color and finish of street furnishings.

q. Signs should use local materials, suppliers, and craftspeople as much as possible.

r. If appropriate, ornamental plantings should be provided at the base of signs to enhance their overall appearance without blocking the view of the sign.

s. Overly lit wayfinding signs that create light pollution or distract drivers should be avoided.

t. Unnecessary signage that results in visual clutter of the public realm should not be included. Signs should not impede pedestrian movement or line-of-sight of drivers.

u. The size, typeface, graphics, illustrations and orientation of signs should be designed for the intended user based on where the sign will be viewed from (e.g. by a pedestrian, by a driver, or by a passenger in a moving vehicle). International wayfinding symbols should be incorporated, where possible.

k.


l.

n.

C. Building signage

The sign design for projects in SIH should reflect the integration of sustainable strategies, enhance the building's architectural design, focus on material simplicity, and provide creative, high-quality signage that positively contributes to the improvement of the visual environment, expression of local character, and development of a distinctive industrial mixed-use image.

a. Building and freestanding signs should be compatible with the predominant visual elements of the project architecture.

b. Sign size should be complementary to the proportion and scale of the building and its elements.

c. Creative wall and freestanding signage which identifies and accentuates building entries is encouraged, especially if it is art or supergraphics (large-scale painted or applied decorative art in bold colors and typically in geometric or typographic designs).

d. The use of figurative signage is encouraged if it relates to the kind of product/service a business provides, especially if it is art.

e. Sign colors and materials should be selected to contribute to the sign's legibility.

f. Signs should use local materials, suppliers, and craftspeople as much as possible.

g. Freestanding signs should be placed within landscaped area(s) and positioned to maintain clear line of sight at intersections and driveway approaches.

h. The use of colors is one of the primary means of visual communication. Uncoordinated use of colors in sign design can confuse and/or negate the message of a sign. Careful consideration in the use of colors is encouraged.

i. Sign design should consider the visual impacts of color contrast in achieving legible and aesthetically pleasing signage.

j. Color accents should be used to create unique and attractive signage and enhance sign legibility.

d.

c.

c.

i.

k. Colors and color combinations that interfere with the legibility of the sign copy should be avoided. Multi-tenant freestanding signs should utilize one uniform sign background color for all tenant signage.

l. Bright fluorescent colors are distracting and should generally be avoided. Limited use of fluorescent colors may be acceptable if they are well integrated within the overall sign design.

m. The following materials are recommended for creating signs in SIH:

   i. Metal (formed, etched, cast, engraved)

   ii. Found or upcycled materials, objects that embody the creative industrial nature of SIH

   iii. Custom neon tubing; when used as an accent in conjunction with sign types

n. Signs with brief succinct messages are encouraged because they can be read quickly and are more attractive.

o. Use symbols and logos in the place of words when appropriate and allowable in sign code. Pictographic images usually register more quickly in the viewer's mind than a written message.

p. Architecturally compatible indirect sign lighting is encouraged.

q. Whenever indirect lighting fixtures are used, care should be taken to properly shield the light source to prevent glare from spilling over into residential areas and any public right-of-way.

r. Signs comprised of individual letters are better integrated with building architecture. Individually illuminated letters (reverse channel) are encouraged. Internally illuminated cabinet signs are discouraged.

s. Wall sign placement should be coordinated with architectural features.

t. Sign supports and brackets should be compatible with the design and scale of the sign.


m.


m.


m.


m.

r.

u. Internal illumination of projecting signs is encouraged.

v. Window signs should be limited to individual letter signs and logos. Glass-mounted graphic logos may be applied by silk screening or pre-spaced vinyl die-cut forms.

D. Temporary signage

The vision for the Smith Innovation Hub will continue to evolve over many years while development and redevelopment occurs. As a result, we can expect interim development conditions to exist in SIH until it is ultimately completed. The sites that are in transition provide opportunities for creative temporary signage that can lay the groundwork for permanent changes while improving the visual appearance and promoting the Hub's identity.

Design Guidelines

a. Using the Adaptive Street program, consider working with local artists to create graphics that can be painted on street surfaces.

b. Phasing plans and interim developments should consider temporary or permanent placemaking efforts and how the site can contribute to SIH's vitality while using temporary signage.

c. Encourage artwork or other facade applications like supergraphics (large-scale painted or applied decorative art in bold colors and typically in geometric or typographic designs) as interim conditions for blank facades or on partially constructed buildings.

d. Encourage the cladding of construction fences with public art pieces, photographs, or other aesthetic elements.


a.


b.

d.

6.3 Opportunities for City Engagement

a. Special signage design onto local streets within the Smith Innovation Hub is a great way to solidify the area's identity.

7.0 MULTIMODAL TRANSPORTATION + PEDESTRIANS

These guidelines serve as basic principles for transportation and pedestrian safety and comfort planning specific to the SIH area. They are meant to complement the Infrastructure Master Plan and Transportation Master Plan while providing additional methods for planning adequate amounts of mobility options that can serve diverse demands and support the 20-Minute City program as well as recommendations for infrastructure improvements conducive to a multimodal neighborhood.

7.1 Goals

- **Align the transportation system with Tempe's Climate Action Plan, Transportation Master Plan, BikeIt Program, and 20-Minute City Program.**
- **Support pedestrian and alternate transit options while maintaining the main corridors for large truck traffic vital to support existing and future businesses.**
- **Use streets and adjacent right-of-ways to help with community-building and placemaking through landscaping and amenities like seating, lighting, WiFi, and signage.**

7.2 Guidelines

A. Mobility

The 20-Minute City premise is at the core of many city-wide planning programs. Important themes involve enhancing connections for pedestrian, bike, and transit; creating a safe and comfortable pedestrian and cycling environment; and connecting parks, plazas and open spaces as rest stops for 20-minute walks or bike rides. The following diagram illustrates current and future conditions relevant to SIH as the City of Tempe works to promote use of and amenities for multimodal transportation and a safe pedestrian environment for current & future residents, workers, and visitors.

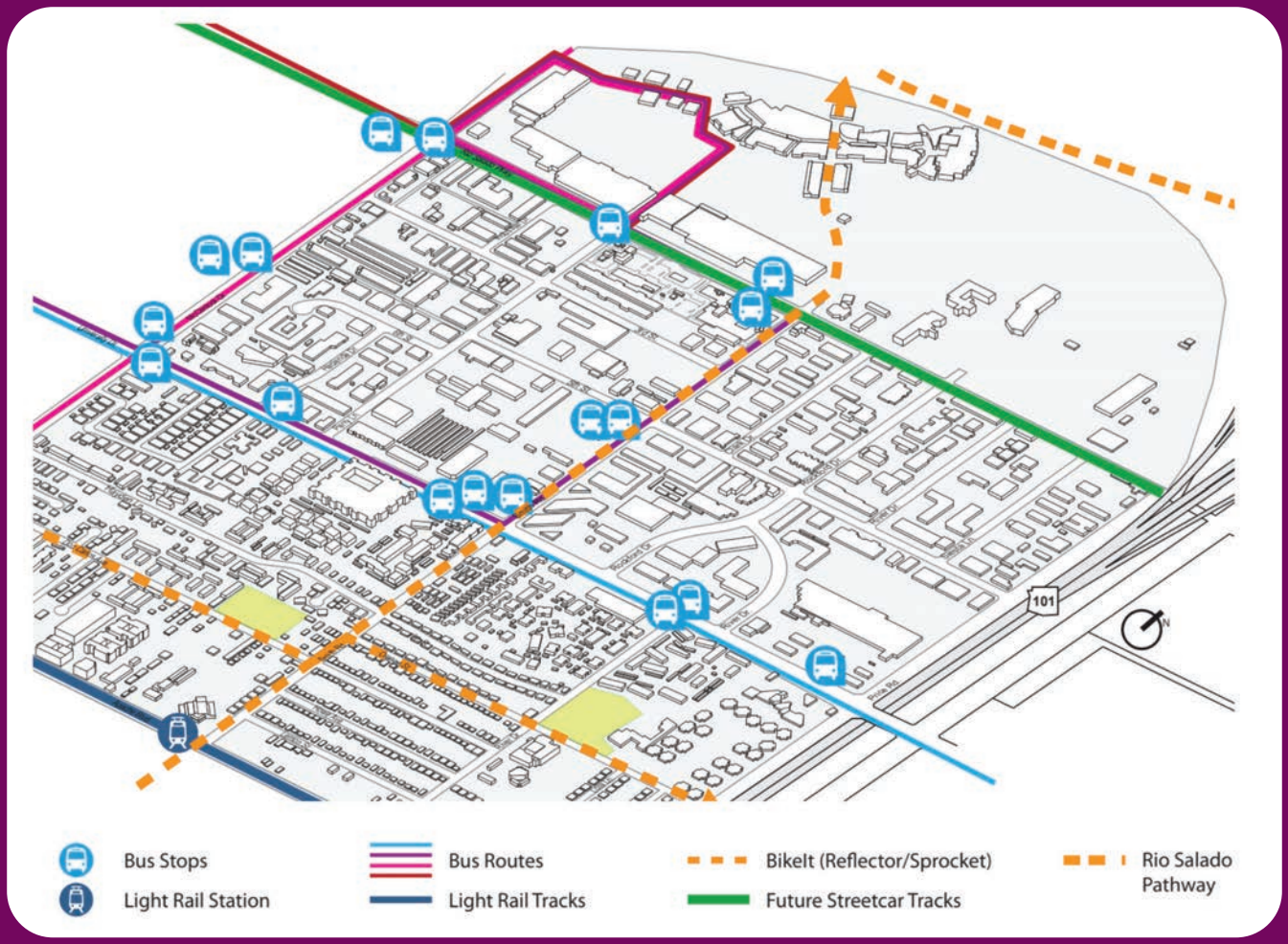
a. Multimodal Transportation:

i. Light rail and streetcar

ii. Bus routes and stops

iii. BikeIt (Reflector on Smith Road and Sprocket on Orange Street/Don Carlos Avenue)

Multimodal Transportation



b. Streetscape Improvements:

i. Add or improve sidewalks that are sized properly for pedestrian load and provide surface texture to indicate specific conditions like vehicle crossings, rest areas, public art, etc.

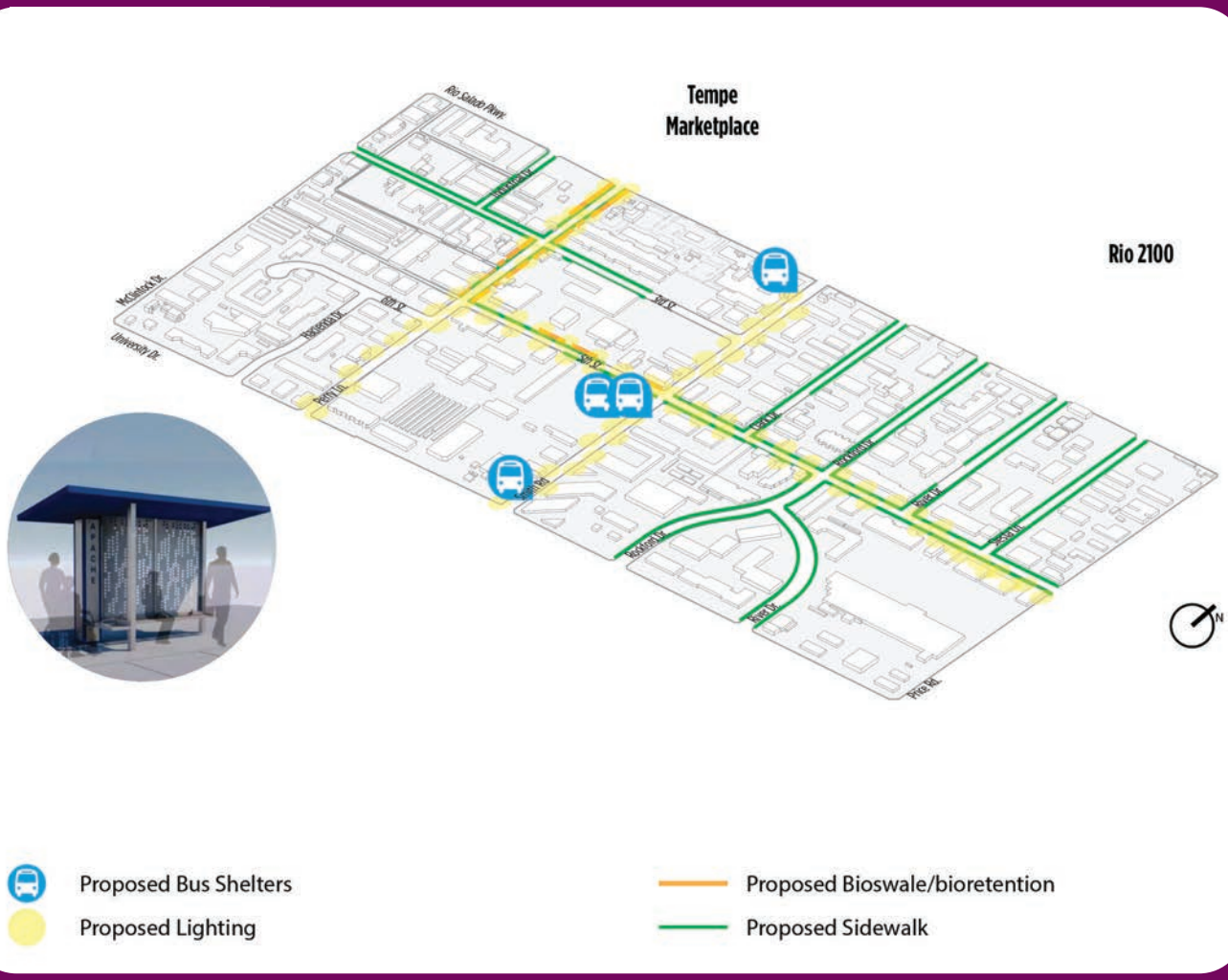
ii. Storm water management improvements that double as amenities to support landscape and shade like bioswales and permeable paving.

iii. Upgraded street lighting to improve safety and support infrastructure like WiFi, smart street technology, public art, and banners.

iv. Bus shelters to create micro-climates using shade and passive evaporative cooling. They can also support public art and place-making graphics.

v. Add infrastructure to support both private and shared micromobility options like wider bike lanes, dedicated parking areas, and recharging stations.

Proposed Short-term Improvements



B. Mobility hubs and micromobilty options

A mobility hub is a location where people can access and transfer between modes of transportation, such as between light rail to bus or bus to micromobility devices. The Smith Innovation Hub Infrastructure Master Plan considers the integration of these mobility hubs into bus stops in SIH as well as stand-alone and collocated micromobility hubs to further increase mobility options and potentially reduce personal vehicle trips within SIH and to make connections to nearby destinations.

Operational Guidelines

a. Identify any mobility hubs in both private and public developments. Mobility hubs are nexuses of multiple transportation types and are usually located in areas with adjacent mixed-uses. They can be created at underutilized parking spaces, parks, public-owned land, and excess street right-of-way, or integrated at transit stops. In some cases, mobility hubs can happen in partnership with the owner of an existing building or structure by pledging to provide mobility hub services.


a.

b. Incorporate micromobility options at targeted service areas for "first- and last-mile" connections to complete trips made via other modes, including transit. Provide locations for shared use micromobility options like bicycles, e-bikes, and electric scooters. Space should also be provided for secure storage for personal micromobility devices, preferably with weather protection.


a.

C. Electric vehicle charging and parking

Electric Vehicle Supply Equipment, or EVSE, is an increasingly important element that can be integrated into new development and new infrastructure to encourage the use of EVs and further expand sustainable mobility options.

Design Guidelines

As mentioned in the Smith Innovation Hub Infrastructure Master Plan:

a. Encourage new developments, or significantly improved developments, to update the power supply to be ready for level 2 EVSE installation

b. Encourage new developments to include dedicated EV charging spaces and EVSE if the number of parking spaces exceeds an established threshold

c. Encourage incorporating a mix of EVSE types, such as Level 2 charging stations used for half-day time periods (while someone is at work) and Level 3 charging stations used to provide a quick charge (while a customer is visiting a shop).

d. EVSE charging stations are encouraged along key corridors or as part of mobility hubs

e. To enable this technology, when new infrastructure such as streetlighting is added, the power supply and required metering should be included in the project design to support charging needs.

f. Promote including dedicated conduits into streetlight poles to enable the addition of EVSE on the poles with the charging power separated from the lighting power.

D. Adaptive street options

In response to the changing demands and opportunities on SIH's street space, the implementation of various strategies to readily adapt public right-of-way can promote the extended use of these spaces.

Design Guidelines

a. Encourage the use of accent paving at pedestrian crossings to provide visual and audible cues for motorists to slow down and become aware of pedestrian traffic as well as special paving to delineate temporary plazas at key street intersections for community gathering and events. Textures such as pavers or stamped, textured colored concrete can characterize pavement effectively.


a.

b. Promote the use of the City's Adaptive Street Applications for low cost and temporary strategies to address changing community needs, whether for specific reasons or long-term infrastructure changes.

b.

As mentioned in the Infrastructure Master Plan:

c. Variable or smart curb space is a designated area for commercial vehicles, food trucks, TNCs (Transportation Network Companies) such as Uber or Lyft, to use parking spaces. For example, a delivery truck could book a space to load or unload a delivery for the time they plan to be there. It's implementation using a small fraction of the current proposed on-street parking areas by adding pavement markings, signage, and smart metering devices is encouraged.

d. Encourage community-scale street design to include infrastructure enhancements, such as new LED light poles that contain public WiFi and opportunities for banners to promote Hub events and to reinforce character and identity, sidewalks and paths that support pedestrians and joggers, and the development of the ROW with bioswales, microparks with exercise stations and shaded seating, paths for micromobility options, and other community amenities.


c.

E. Technological improvements

The city is already working to make infrastructure upgrades to increase access to new technologies in the Hub. These guidelines support the integration of that technology with other projects to create an overall system that works together and is not just a conglomeration of separate pieces. It also supports designing the infrastructure to accommodate the rapid pace of change to reduce the cost and improve the timing of making future upgrades.

Design Guidelines

As mentioned in the infrastructure Master Plan:

a. Encourage new developments or improvement projects with open public spaces to incorporate Wi-Fi as part of their public amenities.

b. Encourage the use of smart street lighting as a component of street lighting improvements, including the use of 7-pin photocells lighting technology that allows the ability to control each luminaire individually and dim the light levels as needed.

c. Encourage the installation of 5G-capable luminaires to allow for greater internet connectivity for public Wi-Fi users.

7.3 Opportunities for City Engagement

a. As per the Infrastructure Master Plan, consider integrating passive pedestrian detection at signalized intersections or at mid-block crossings to advance the City's goal of safe, convenient, and comfortable crossings.

b. As per the Infrastructure Master Plan, consider implementing positive pedestrian guidance through the use of landscaping, street furniture, pedestrian scale signing and pavement markings to enhance pedestrian access and help guide pedestrians to safe areas.

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City of Tempe

Smith Innovation Hub Design Guidelines