
Passive House Affordable Housing

A Collaboration between UMA Architecture,
Maine State Housing Authority,
and the Augusta Housing Authority





Who we are

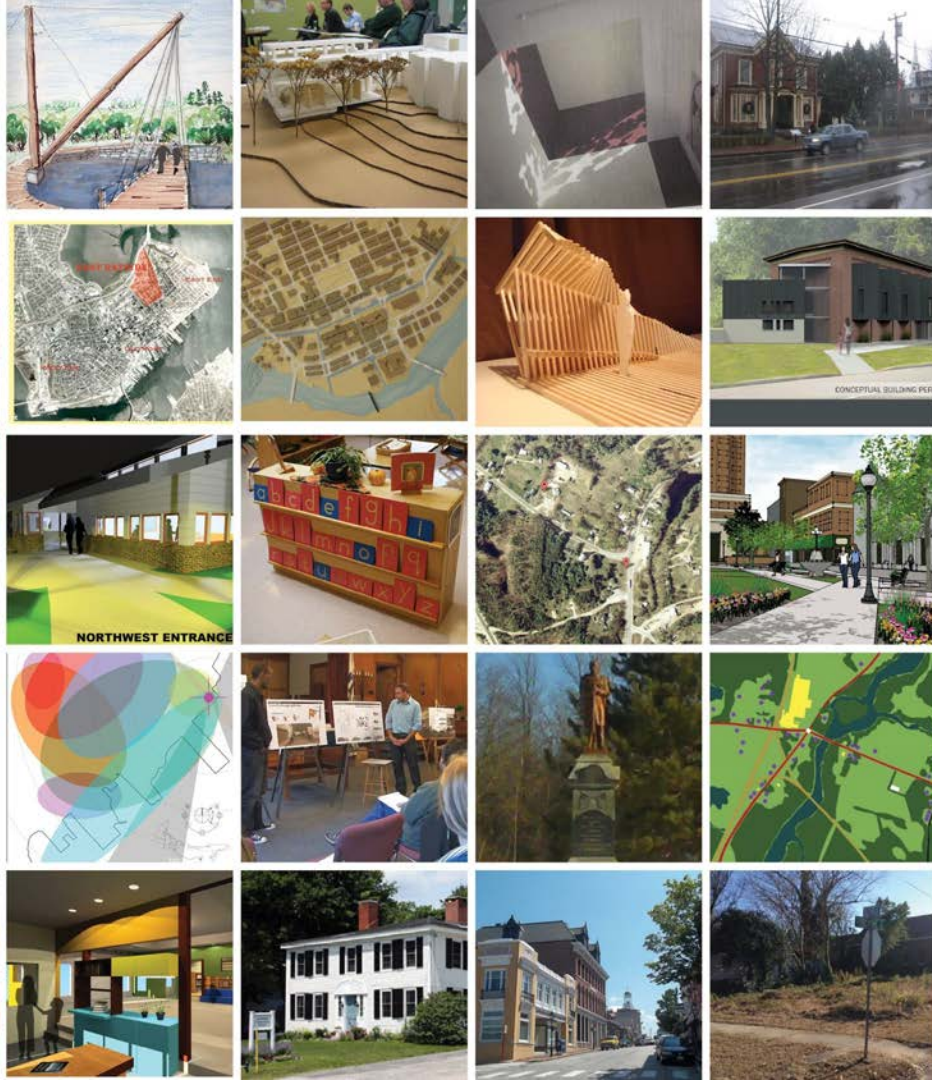
UMA Architecture

ARCHITECTURE through ENGAGEMENT

UMA's Bachelor of Architecture (B.Arch.) program offers the only professional architecture degree in Maine and the only public 5-year professional degree in northern New England.

Our mission expresses who we are: *SMALL...
INTEGRATED... HANDS-ON.*





Why community-based design work?

Community Collaboration

SMALL... INTEGRATED... HANDS-ON

35+ projects over the past 8 years



Passive House Affordable Housing

The Partners





MaineHousing
Maine State Housing Authority

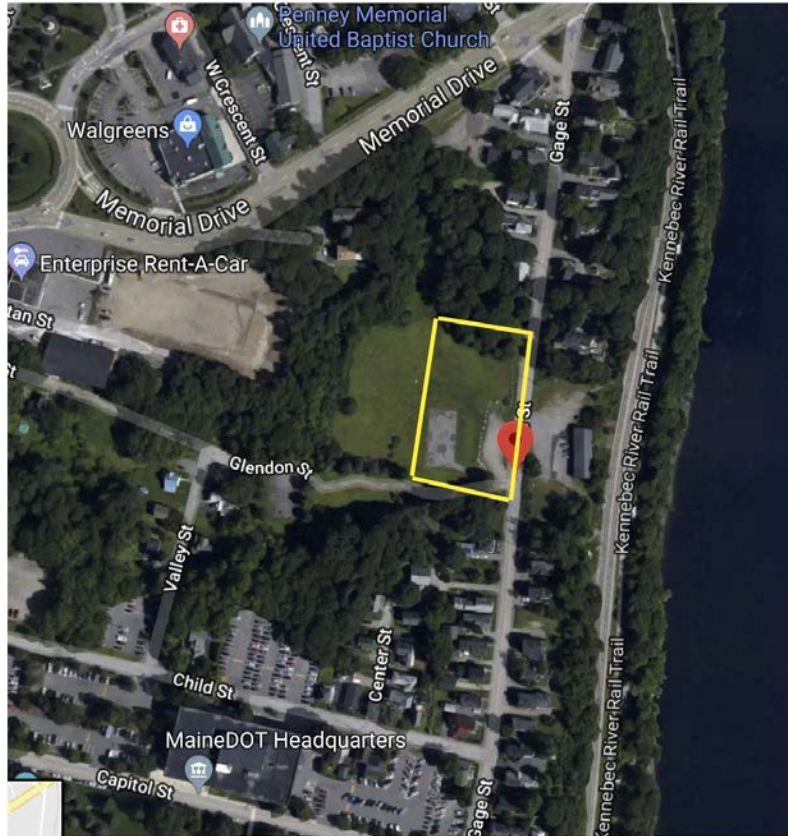
Maine State Housing & Augusta Housing Authorities



Mark Wiesendanger, MSHA
Don McGilvery, MSHA
Clyde Barr, MSHA
Michael Baran, MSHA
Amanda Olson, AHA



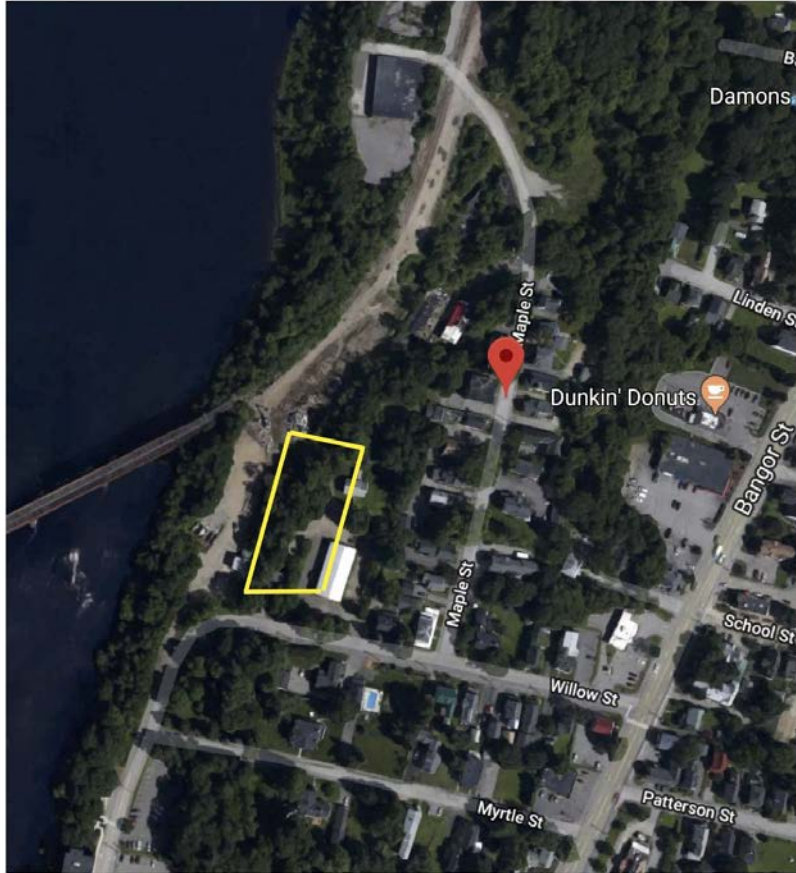
SITE: Gage Street



Maine State Housing & Augusta Housing Authorities



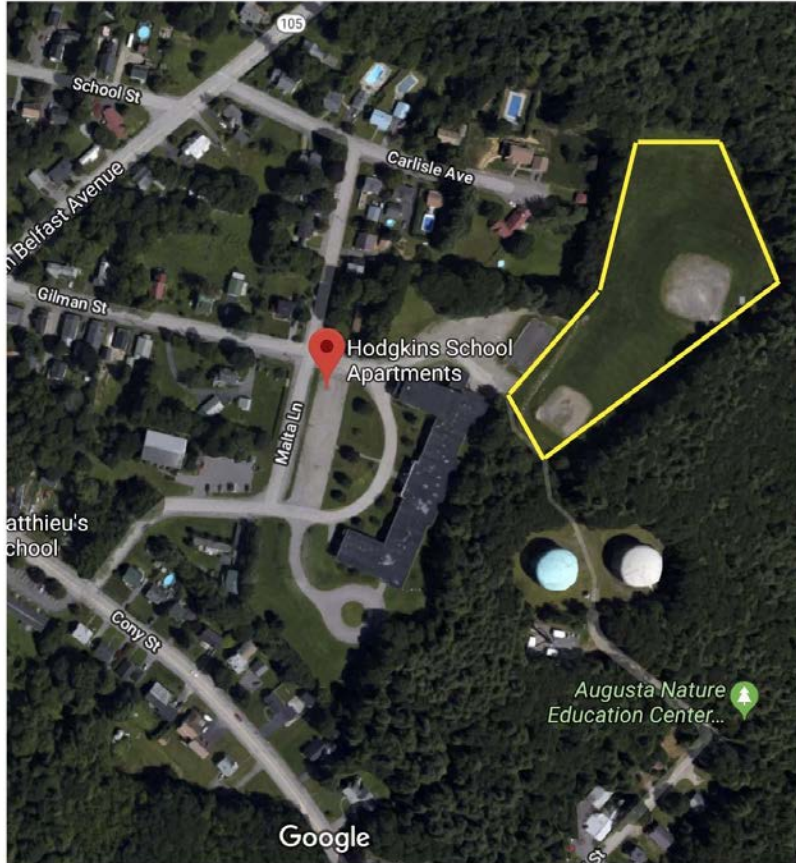
SITE: Willow Street



Maine State Housing & Augusta Housing Authorities



SITE: Hodgkins School



Maine State Housing & Augusta Housing Authorities





UMA.ARC Students

Andrew Treworgy

Arturo Lizano-Ulloa

Ben Hitchcock

KC Breed

Keegan Smith

Matt Holland

Noah Jacques

Ryan Chapman

Sam Gerken

Thomas Stinson





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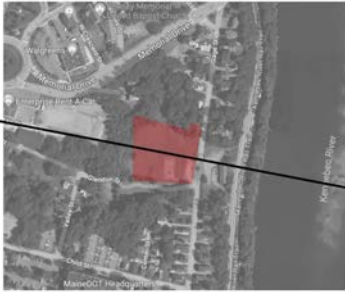
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UMA.ARC Students

MSHA SITE COMPARISONS ARTURO LIZANO-ULLOA

GAGE STREET



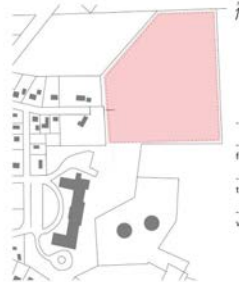
- Flat site in the middle of a "bowl"; three downward slopes
- Sewage lines located on site; can either be worked with or need to be moved
- Possible entry through Glendon St (non-main road)
- Possibilities for different unit orientations

WILLOW STREET



- Too narrow for clustering units; can only work for putting units in rows
- Great view of Kennebec River; site position is steep from river, however
- Possible erosion issue if units built too close to river edge
- Accessible from about three different positions

HODGKINS SCHOOL

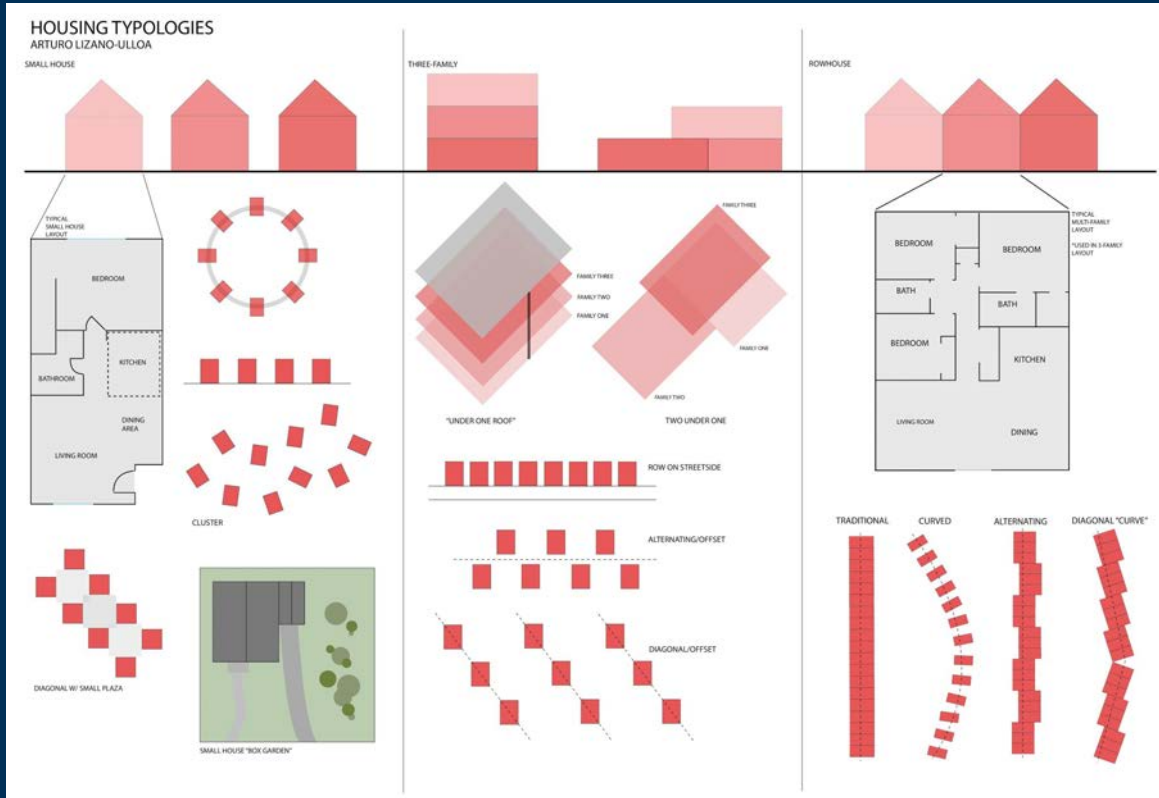


- Site with the largest SQFTG
- Flat site with slopes that direct away from site
- Location is quieter than the previous two (varying on tenant type)
- Easy pedestrian accessibility, difficult vehicular access to site

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Passive House Design & Analysis

Ryan Kanteres
Scott Simons Architects



Open Daylighting Visualization

Update Analysis

Residenti in Augusta, ME, US,...

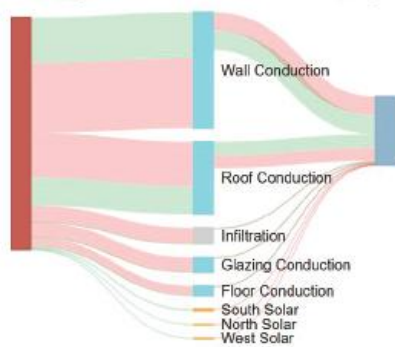
Properties

Total Floor Area 1,402 ft²



Gains & Losses Guidance

Impact on Heating Impact on Cooling



Include active gains and losses

Energy Segments

kBTU/yr	
Heating:	12111
Cooling:	106
Lighting:	1984
Equipment:	1543
Fans:	492
Pumps:	248

Residenti

Total Floor Area 1,402 ft²



Residenti in Augusta

Properties

Total Floor Area

Daylighting

% of floor area (annual)

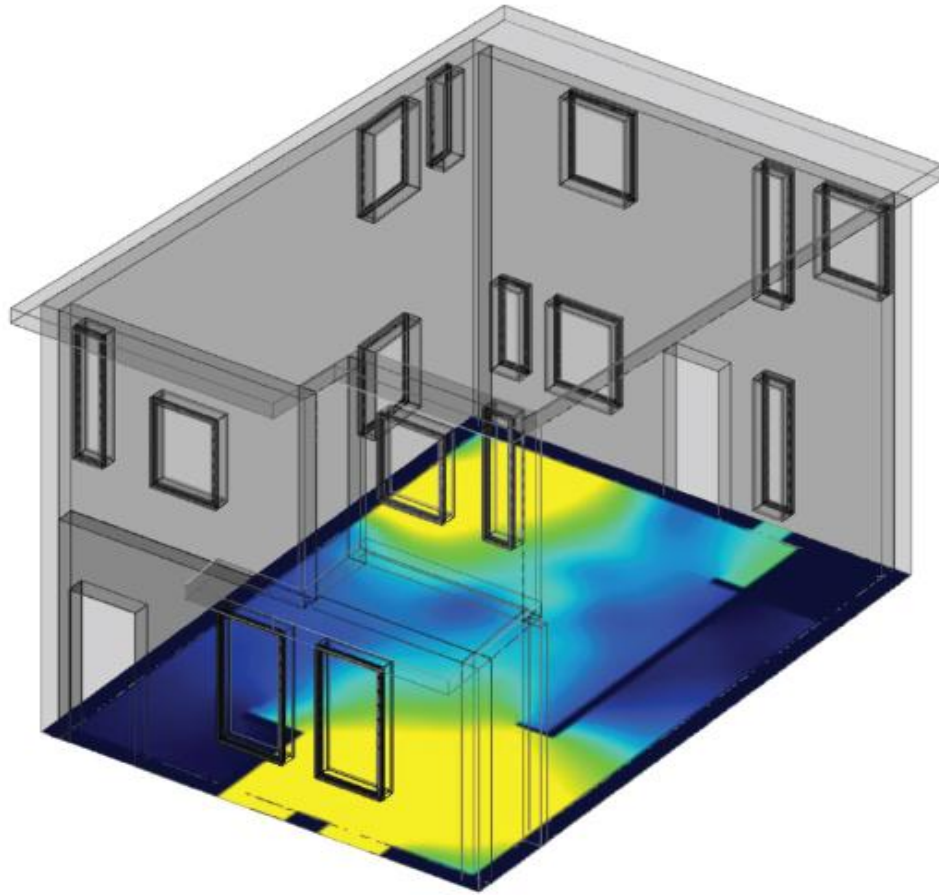
Underlit:	47
Well Lit:	29
Overlit:	24



Gains & Losses Guidance

Passive House Design & Analysis

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Scott Simons Architects



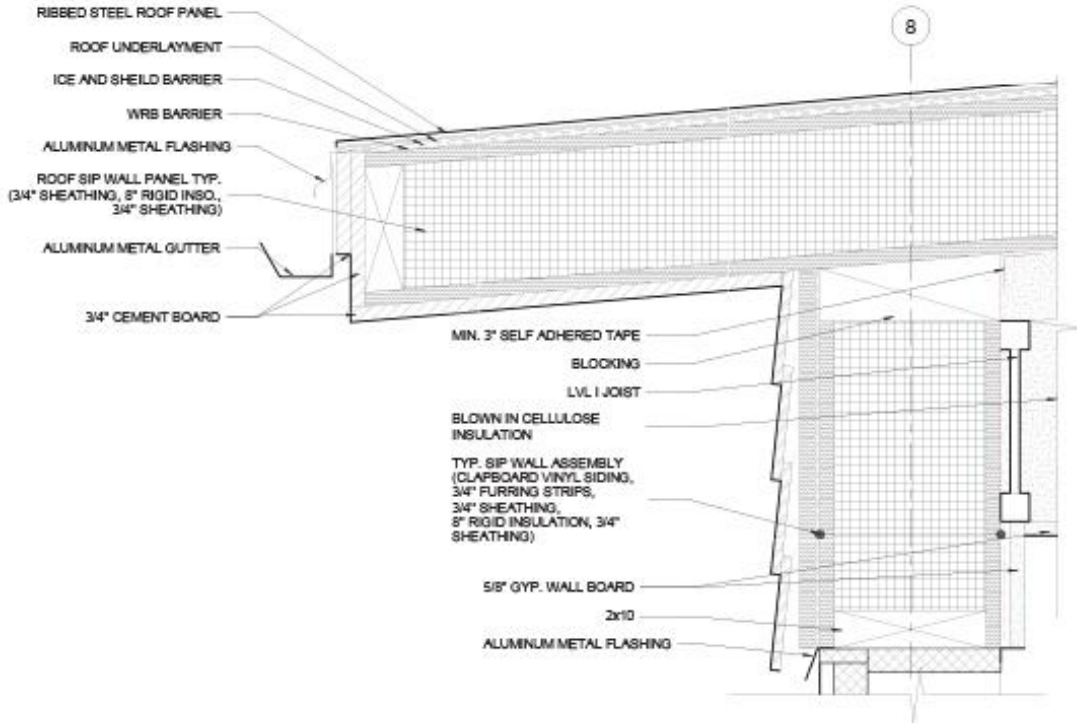
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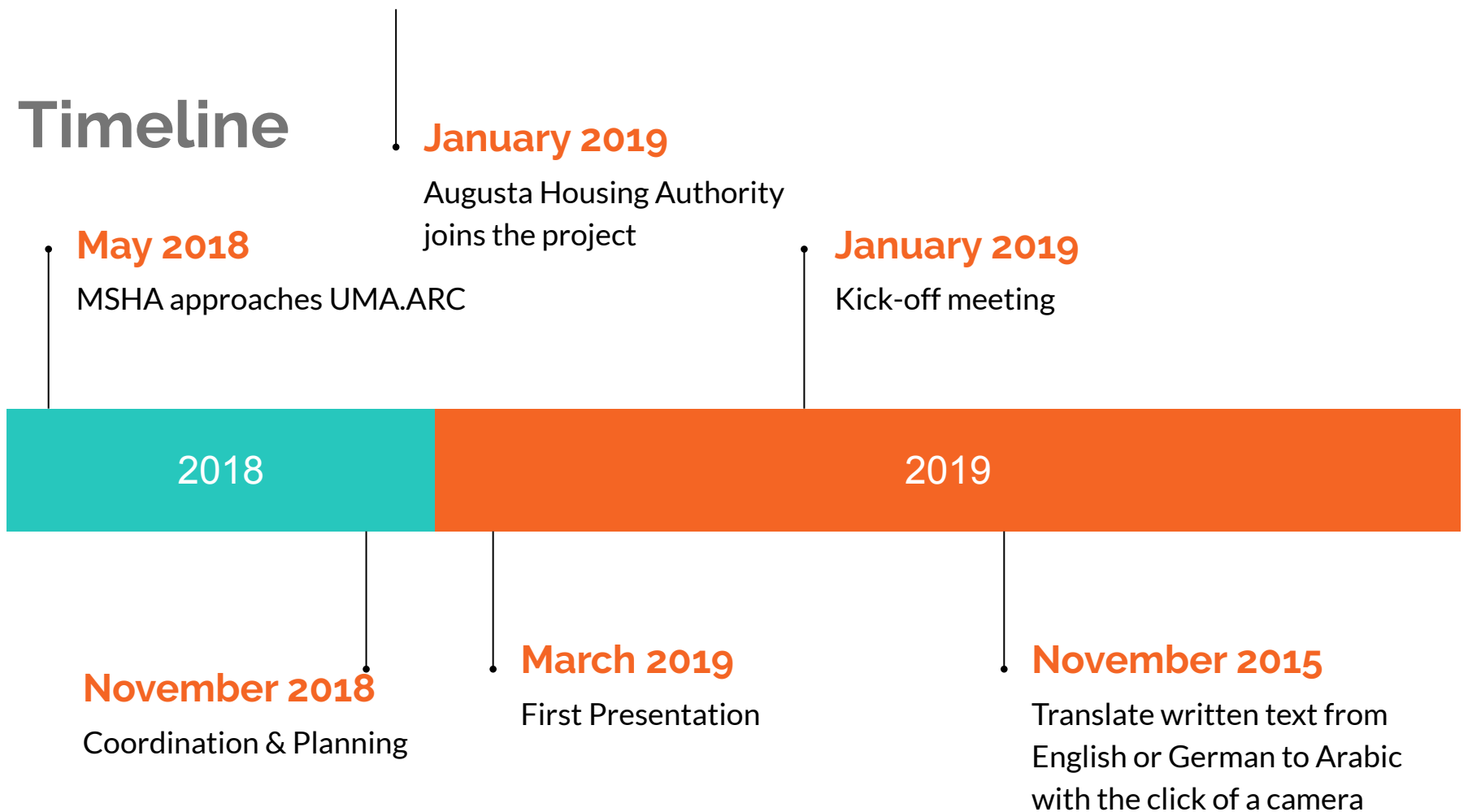
Ryan Kanteres
Scott Simons Architects



2 LOWER ROOF DETAIL
3" = 1'-0"



Timeline



Passive House Affordable Housing

The Results

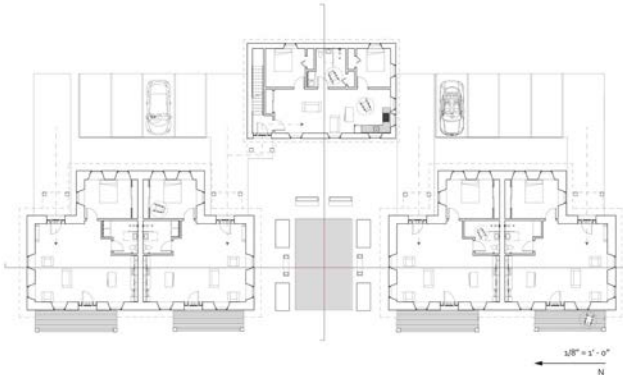
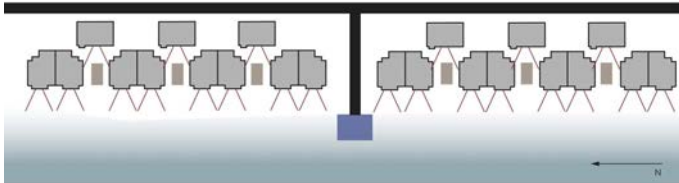
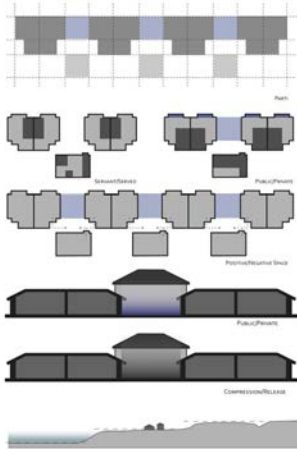




Elderly housing tends to have a bad reputation due to the number of negative stereotypes associated with it, like being lonely, but can architecture change this stereotype?

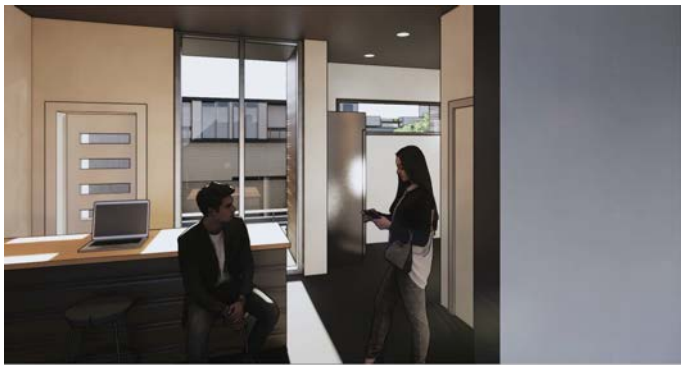
The intent of this project is to create spaces that give seniors a sense of belonging and draw them into the community created by the project.

This will be achieved by creating warm, comfortable spaces where seniors can enjoy alone time as well as family visits, while simultaneously having an energetic community space which encourages interaction with others and their surroundings. Finding a way to create these homes at an affordable costs will help alleviate any financial strain seniors may already be feeling.



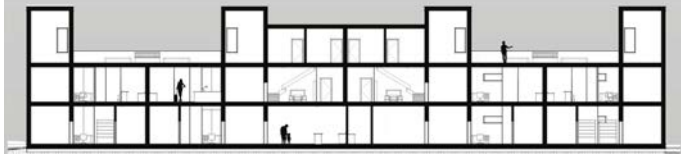
Roberta Trafton Community on the Kennebec

Straw bale
construction &
building senior
community



Andrew Treworgy

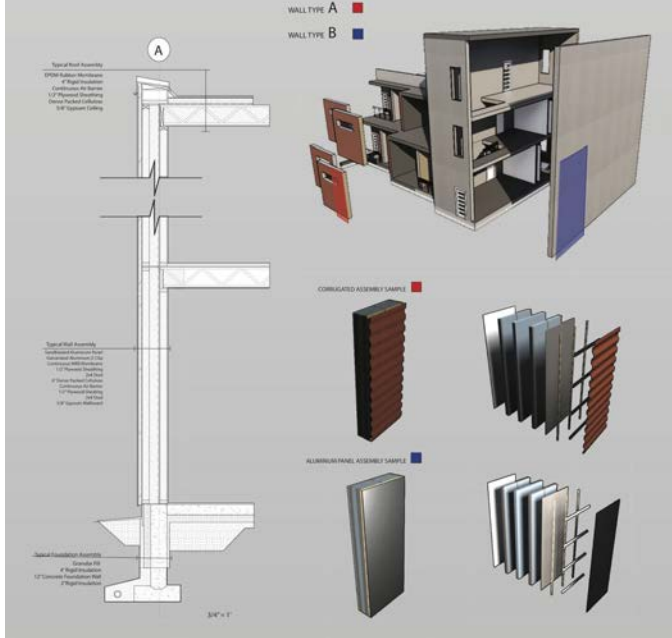
The Woven Environment



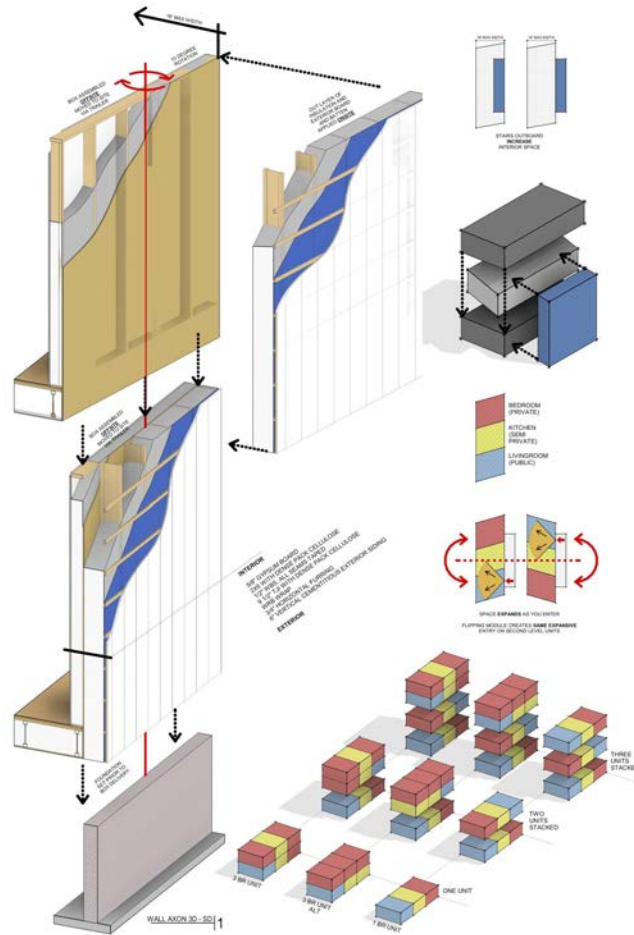
A 1/8" = 1'



B 1/8" = 1' C 1/8" = 1'



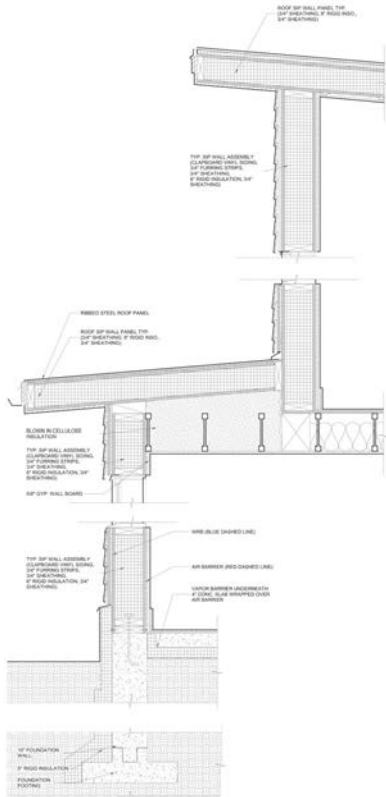
Panelized
Assembly &
weaving
community



Matt Holland Blending Community

Modular
construction &
on-site passive
house construction

WALL SECTION



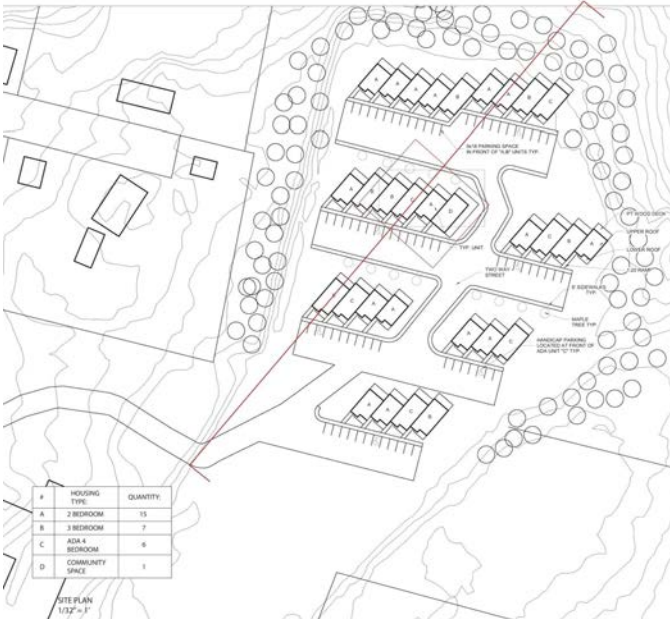
WALL SECTION
1 1/2" = 1"



SITE



SITE SECTION
1/32" = 1"

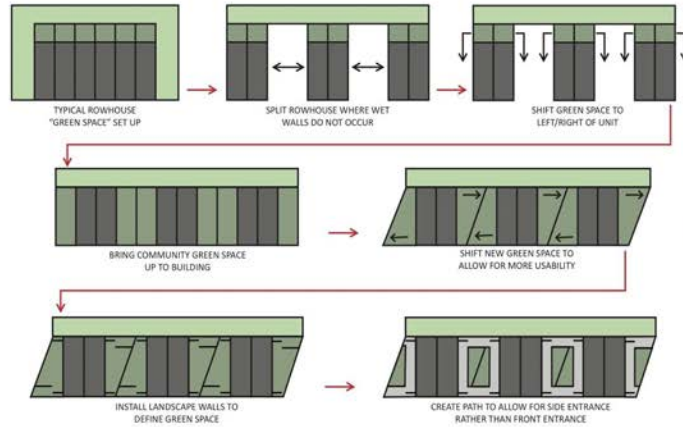


Keegan Smith Hodgkins Homes

Structural Insulated Panel Construction



Noah Jacques Outdoor Ownership



Personal outdoor
green space for
all



Sam Gerken
**Communicating
with those in
Need**

**Empowering an
Individual's
Humanity**

What people are saying

Having worked in affordable housing for well over a decade, it was refreshing to see so much engagement, innovation, and passion.

Amanda Olson, AHA

The students were very thoughtful and you could tell that they truly care about this project.

Mark Wiesendanger, MSHA

Our community partners gave their time and input generously. It was an amazing learning experience for these future architects.

Eric Stark, UMA.ARC

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THANK YOU!

