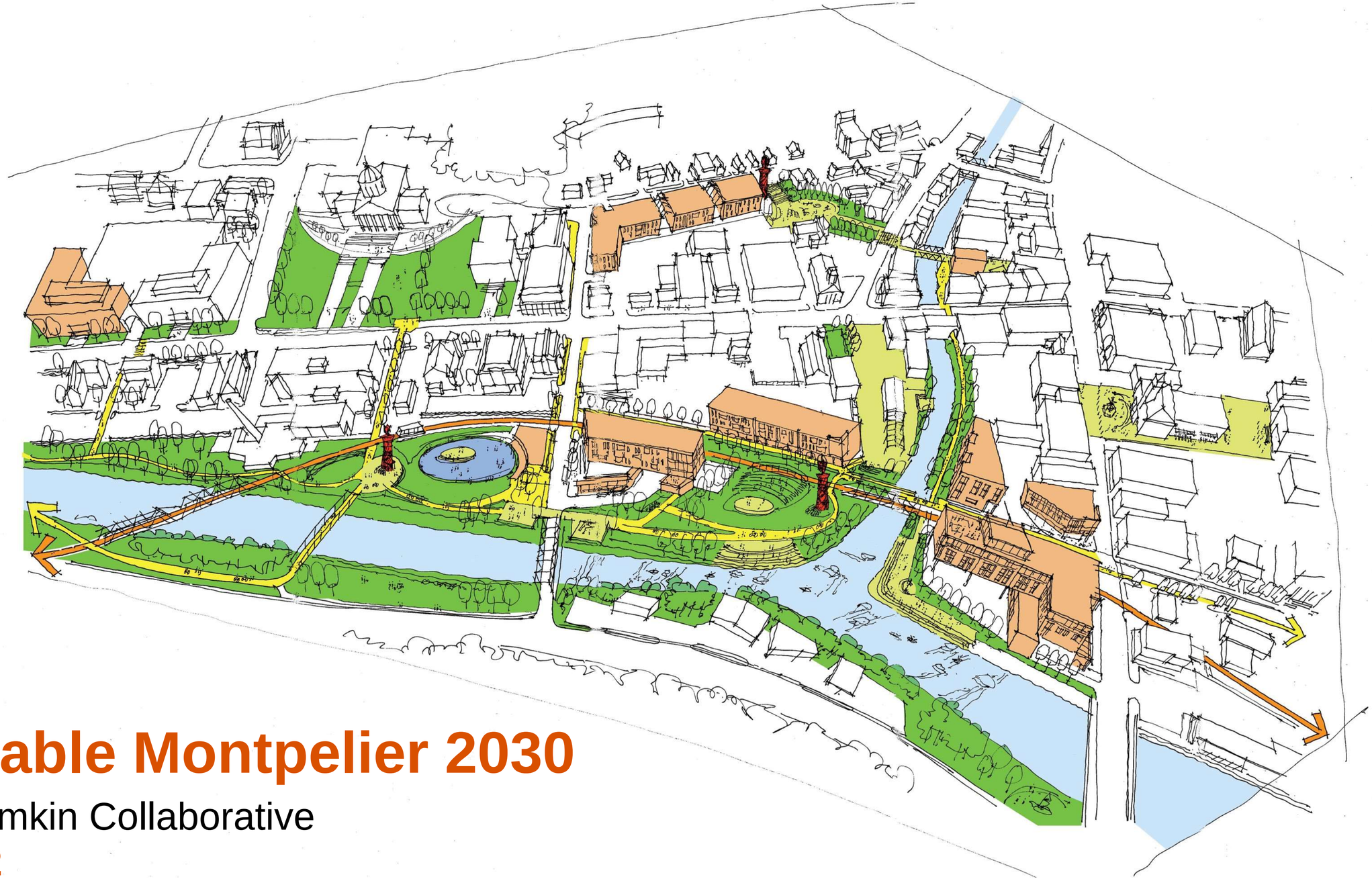


Sustainable Montpelier 2030

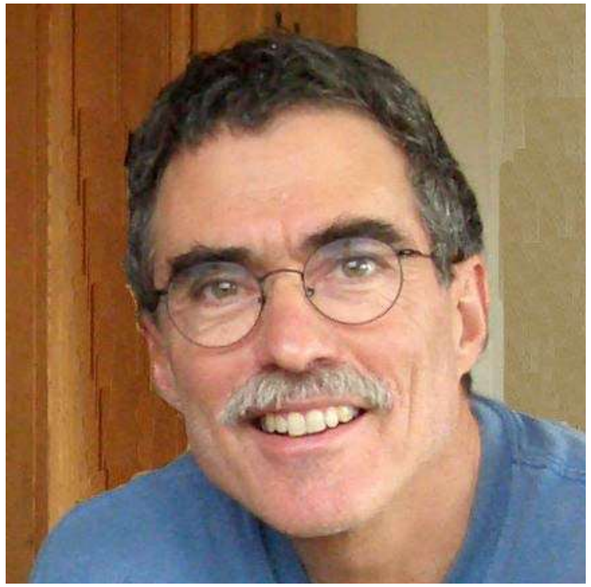
Gossens Temkin Collaborative

Team 80242

About us

Gregg Gossens

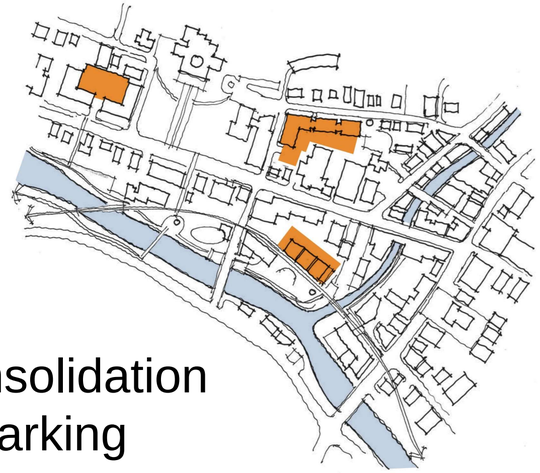
Aron Temkin



Andy Shapiro

David Burke

Four strategies



Consolidation of parking

Engaging with the rivers

Place making

Knitting places together

Four strategies

Engaging with
the rivers

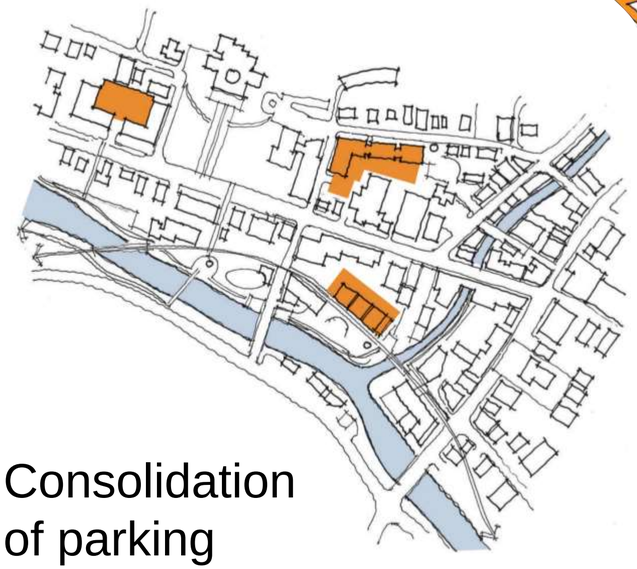
Four strategies

Place making

Four strategies

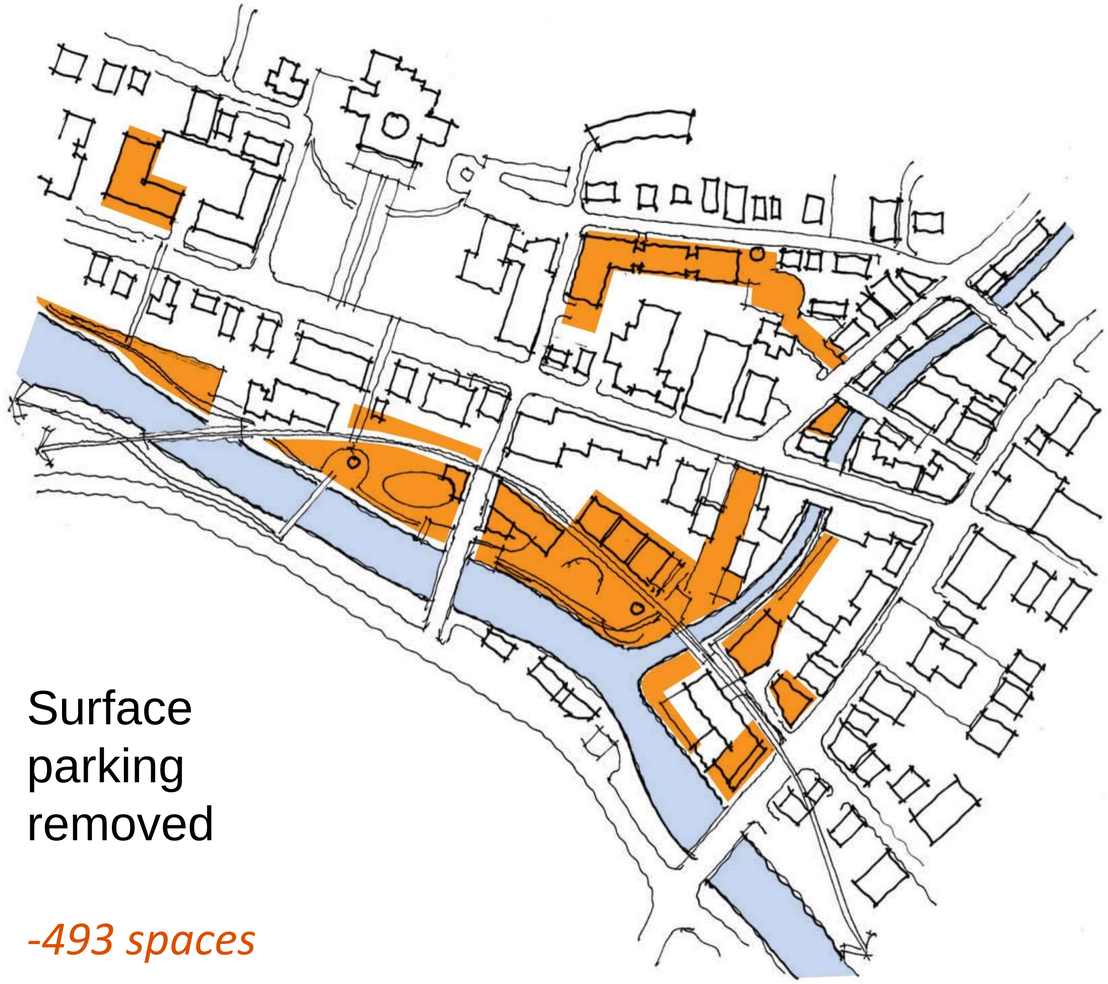
Knitting places together

Four strategies



Consolidation
of parking

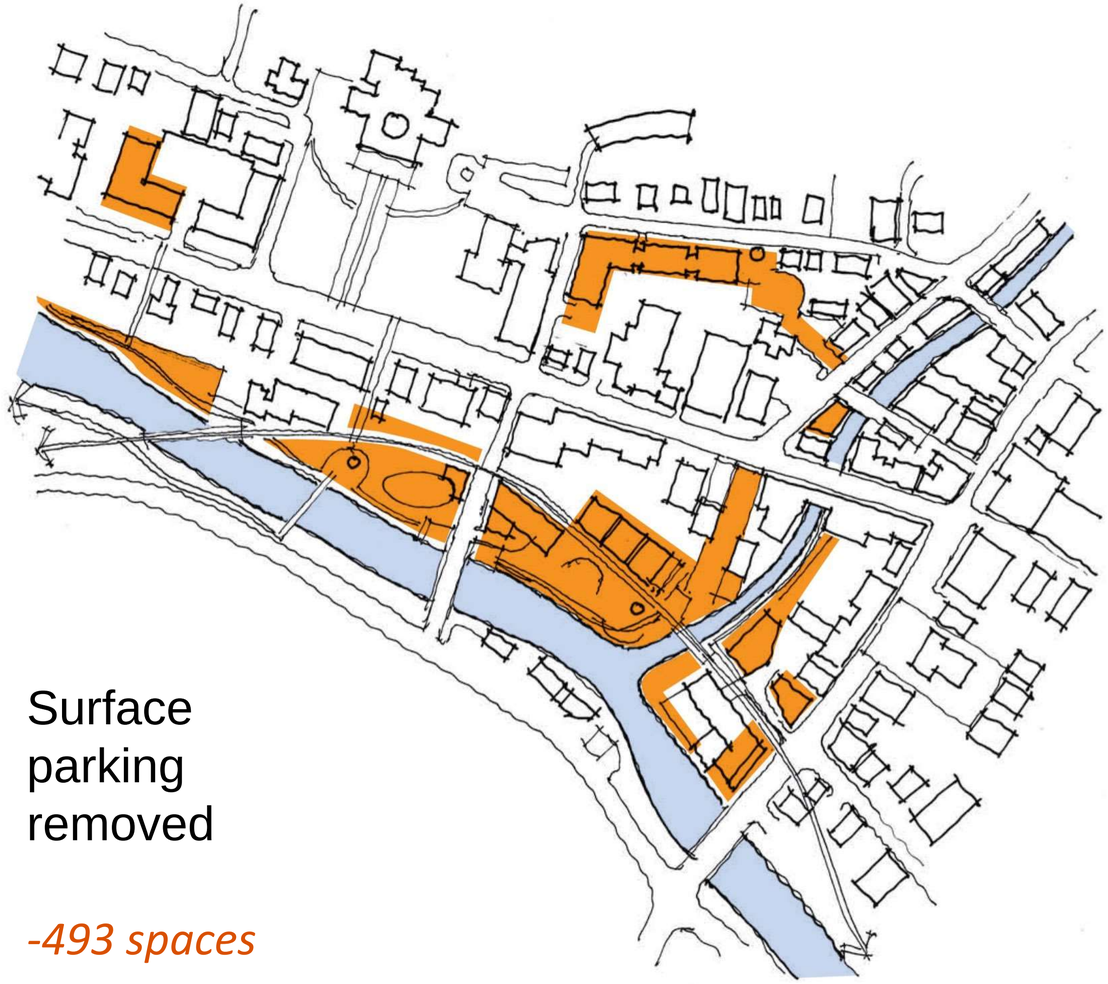
How to provide enough parking while reducing paving



Surface parking removed

-493 spaces

How to provide enough parking while reducing paving



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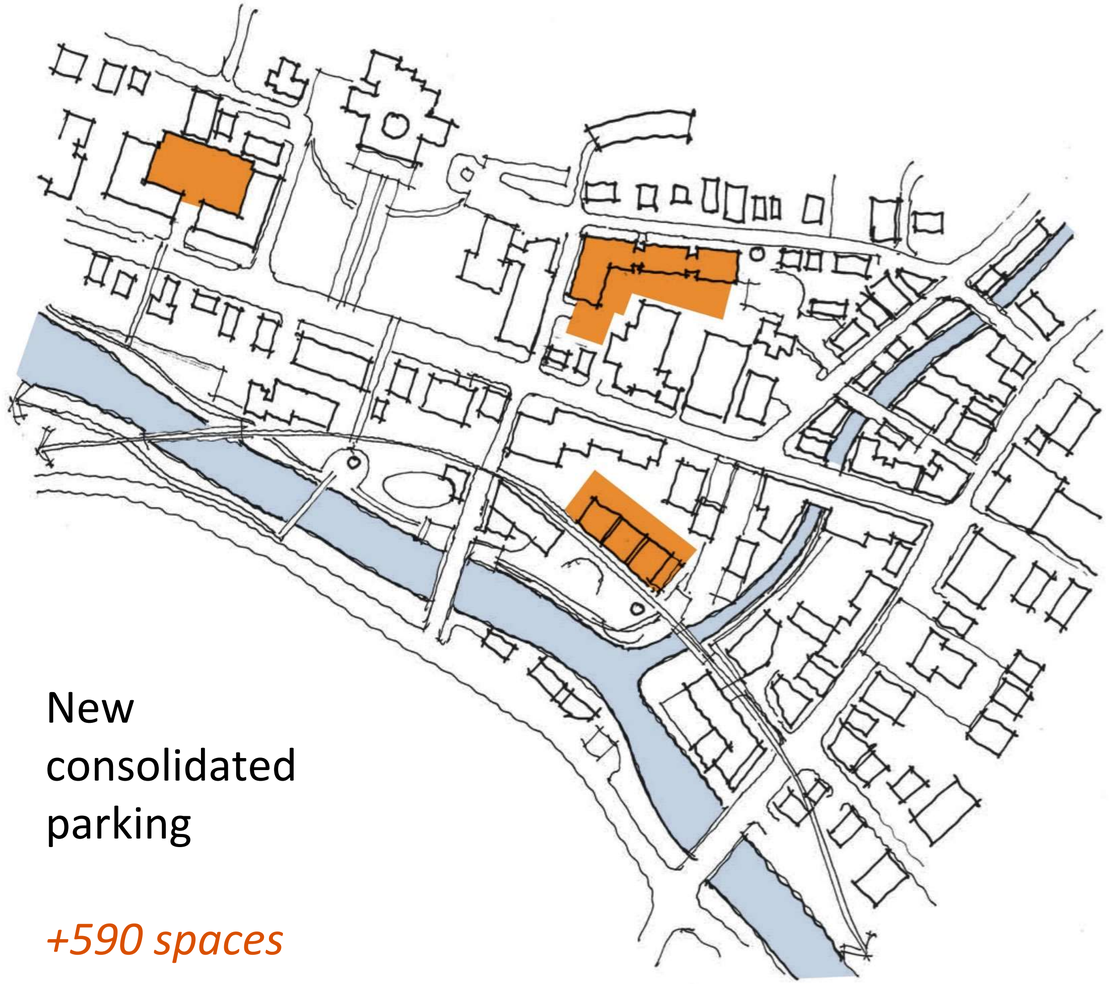


New consolidated parking

+590 spaces

How to provide enough parking while reducing paving

Surface parking *removed*

Behind state buildings along State St.	-125 spaces
Large river front state lot	-170 spaces
Heney lot	-70 spaces
French Block/Jacobs lot	-50 spaces
City Hall lot	-24 space
Post Office lot	-32 spaces
County Court lot	-22 spaces
	493 spaces removed

Parking spaces *added*

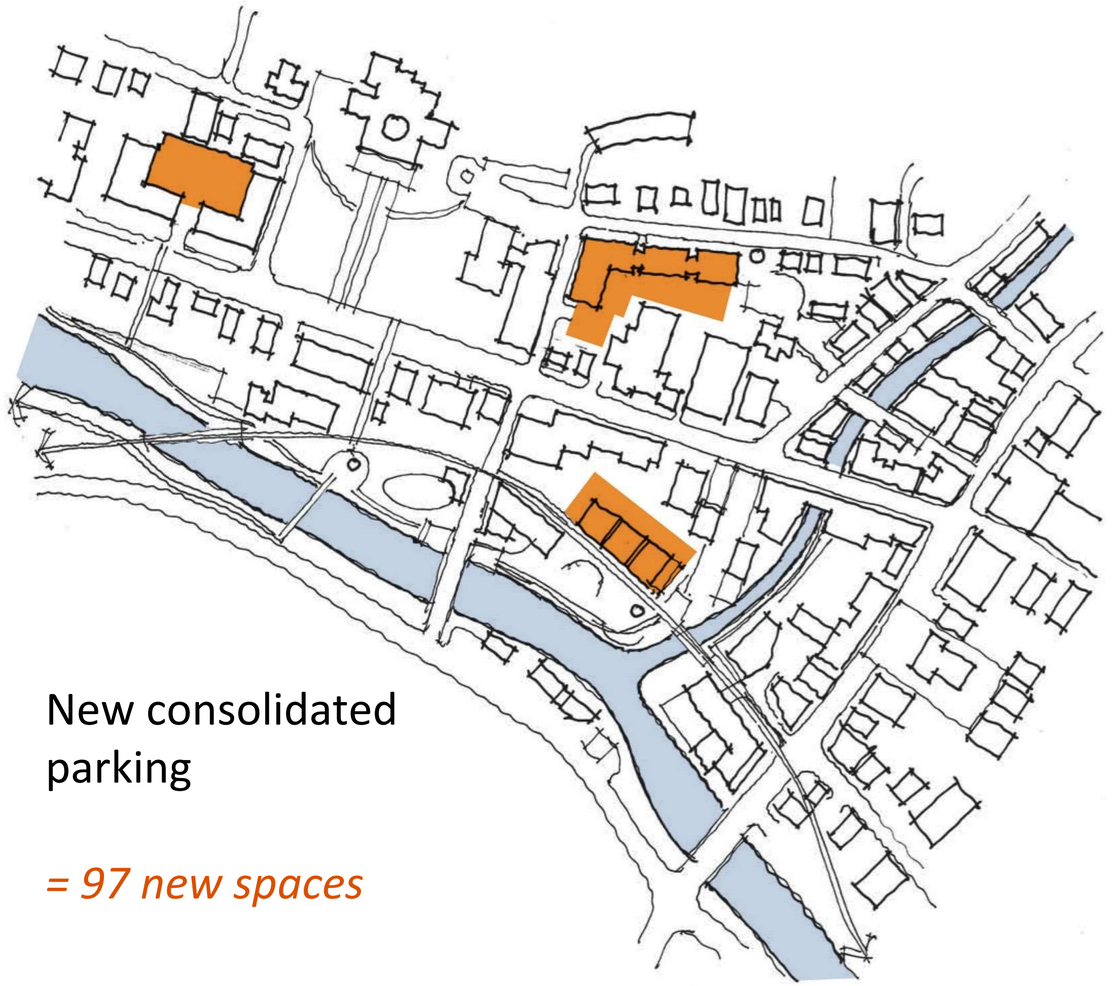
Court Street garage	+340 new spaces
133 State Street garage	+160 new spaces
Capital Plaza garage	+90 new spaces
	590 spaces created

Net effect: 6.6 acres less paving

290,000 sf of paving removed = **6.6 acres less**

97 new parking spaces added to downtown

360 (61%) new parking spaces downtown protected from snowfall in the winter and heat during the summer



New consolidated parking

= 97 new spaces

How to add more housing

Housing in proposed buildings = 350 new units

Other downtown sites = 220 new units

Accessory Dwelling Units (ADU's) = 100 new units

There are 480 existing large (≥ 2500 square feet) homes within a 15 minute walk of downtown. If 20% of these added Accessory Dwelling Units that would provide 100 new housing with minimal impact on the existing infrastructure or energy use profile of the City. And, this provides an additional income stream for homeowners.

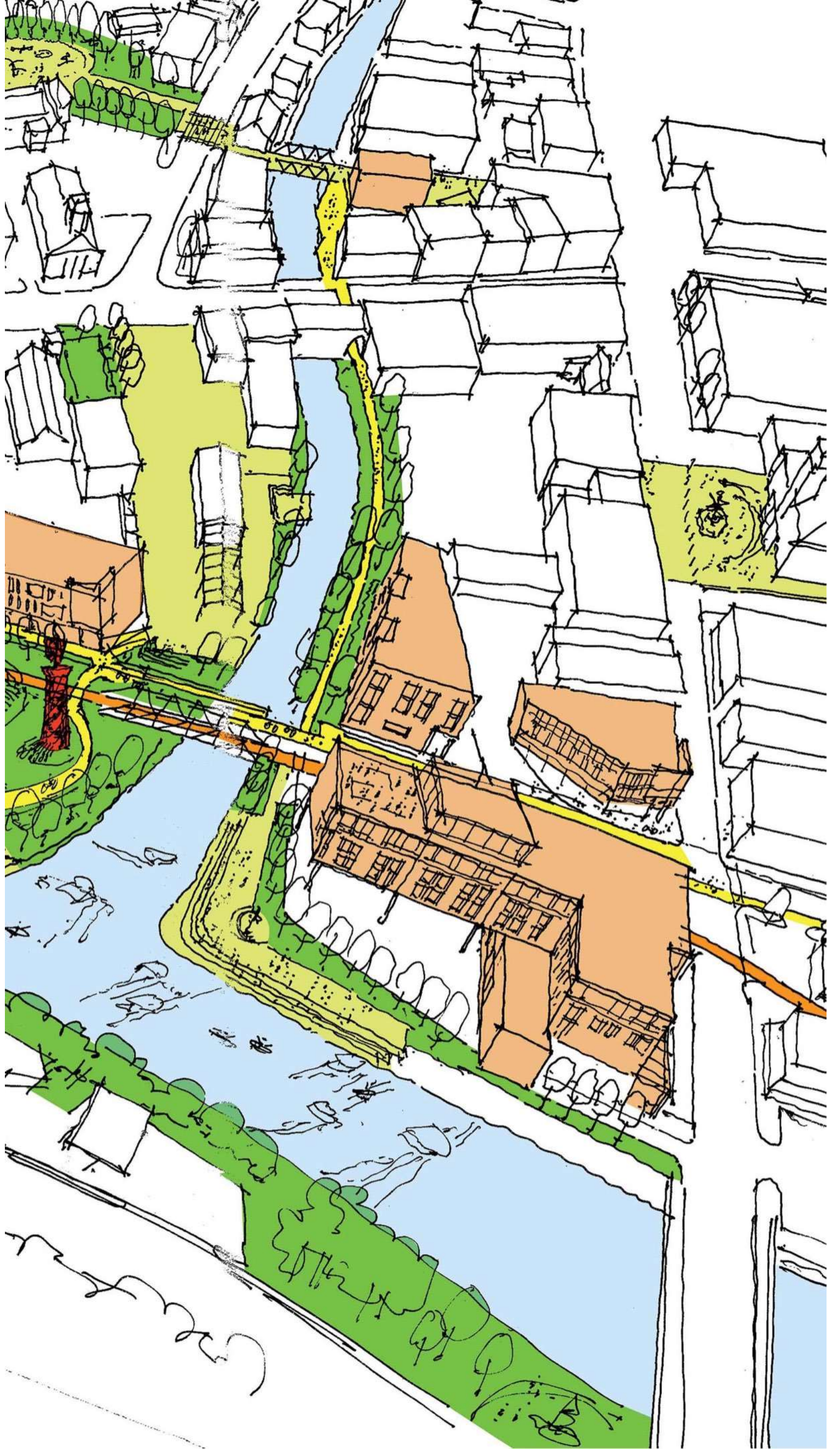
Infill sites = 115 new units

Within a 15 minute walk of downtown there are infill development sites enough to accommodate 115 units of housing while keeping the existing neighborhood scale and character.

Barre Street Enterprise Zone = 200 new units

A neighborhood in Sabin's Pasture = 140 new units

1,125 new homes developable within a 15 minute walk of downtown



How to add more housing

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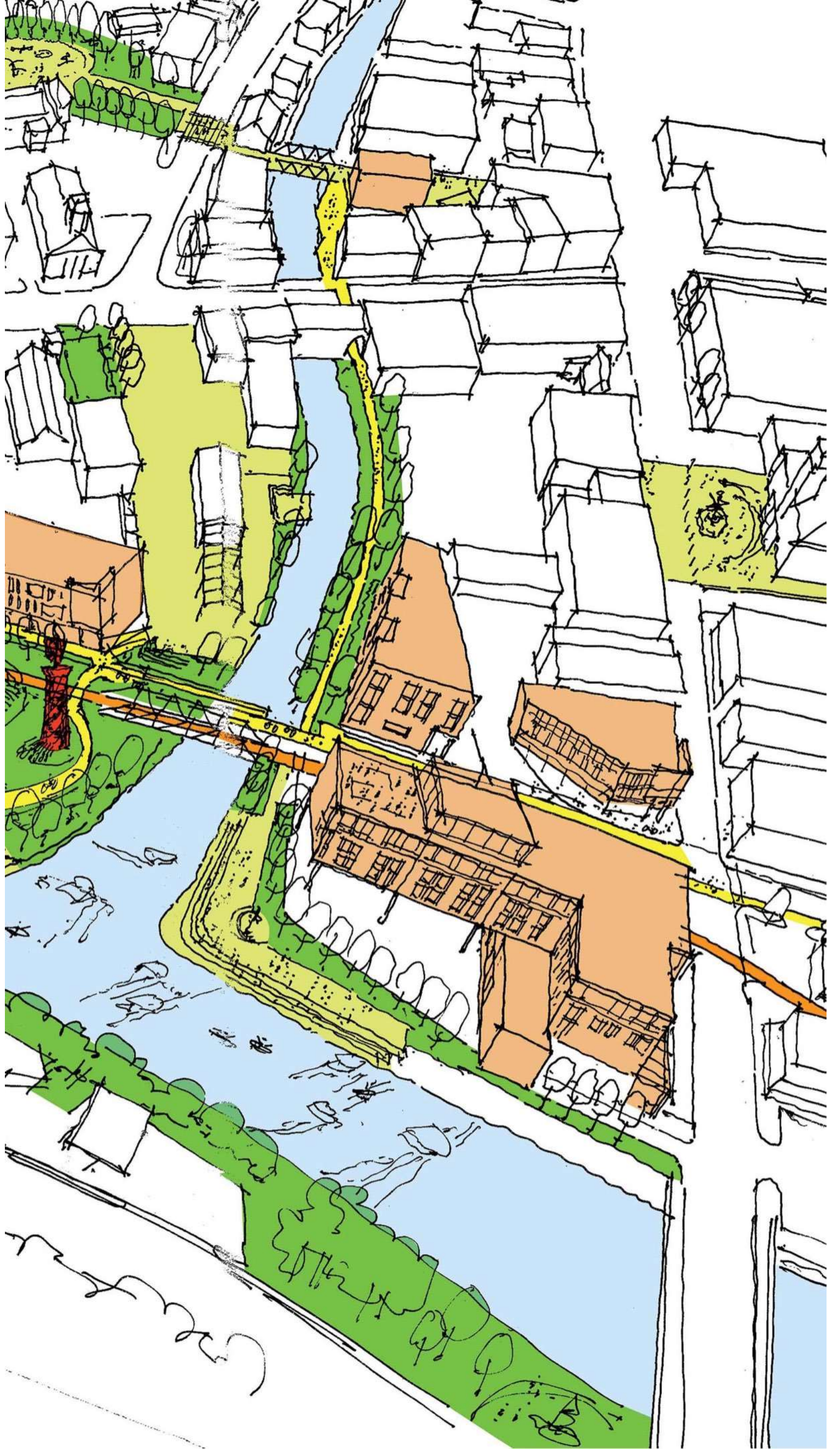
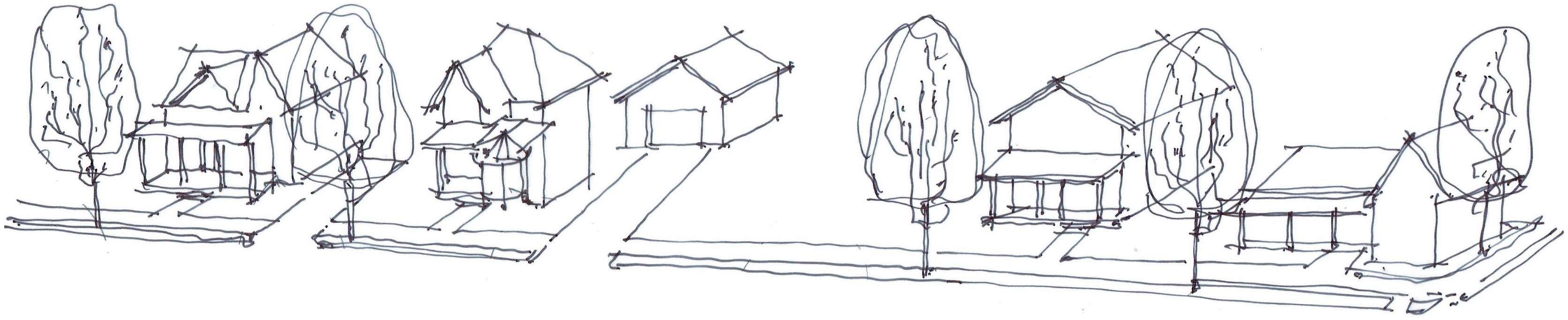


How to add more housing

via Accessory Dwelling Units



How to add more housing

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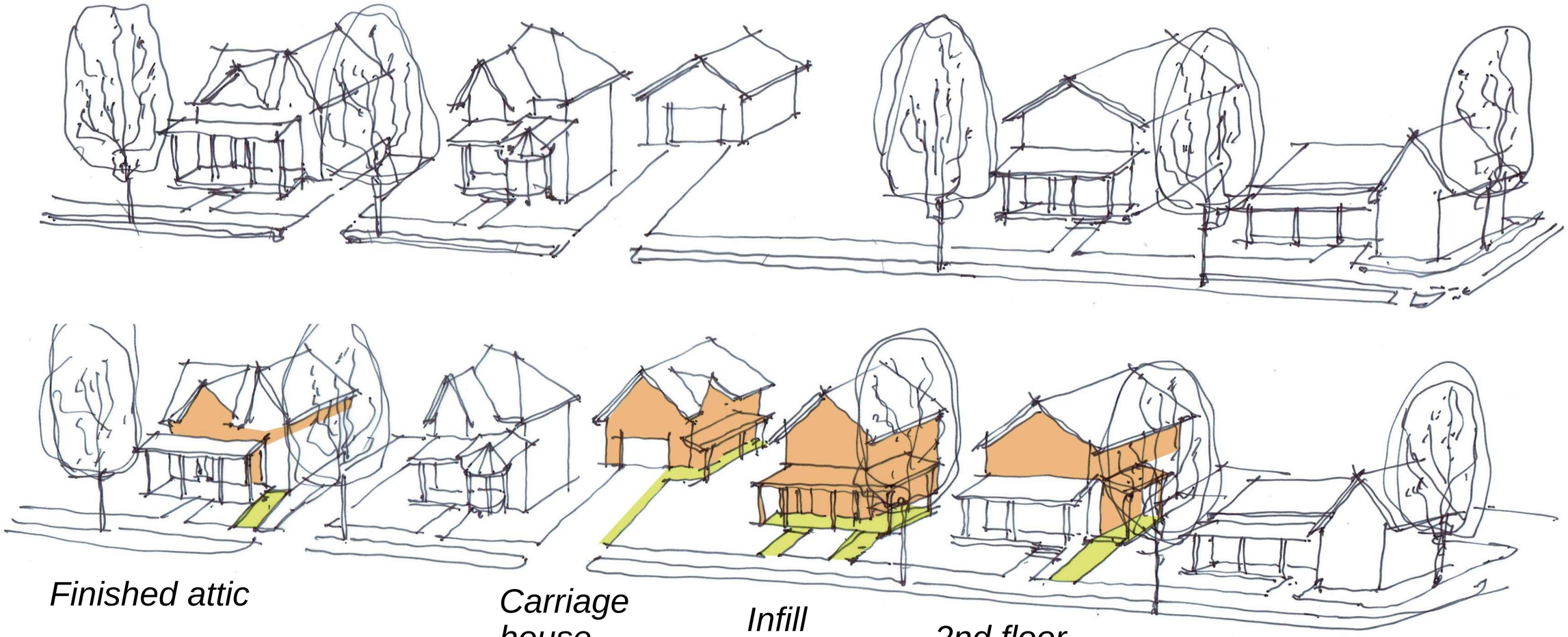


Finished attic

Carriage house conversion

Infill duplex

2nd floor unit

How to generate enough new energy

Summary of energy loads and sources

Total new load required 4,300,000 kWh/yr

Net Zero ready new building load	4,200,000 kWh/yr
Trolley annual load	84,000 kWh/yr

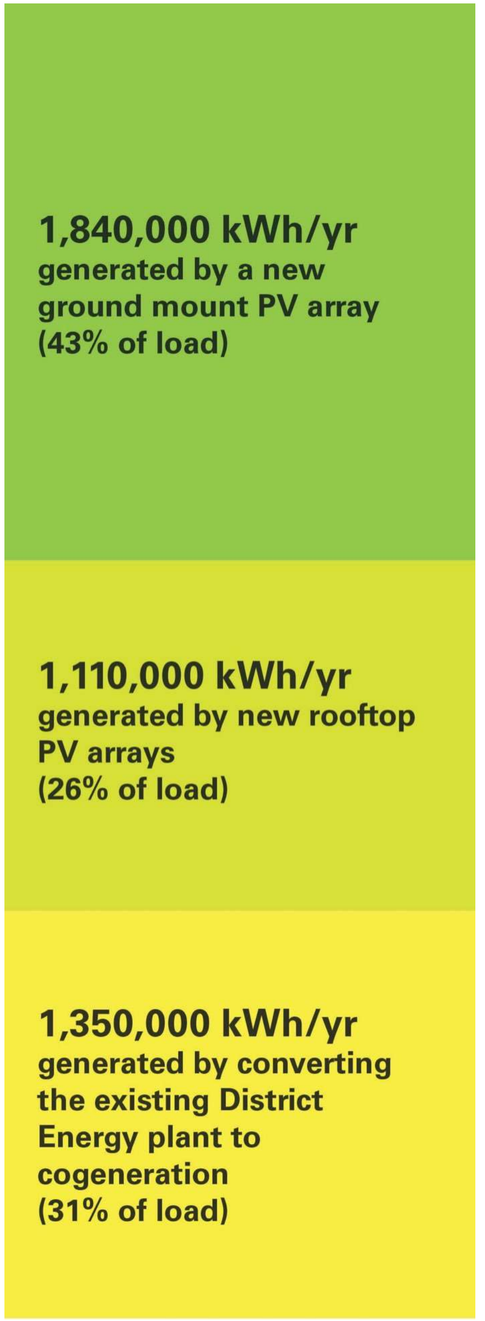
Cogeneration from the District Energy plant

Cogeneration output	1,350,000 kWh/yr

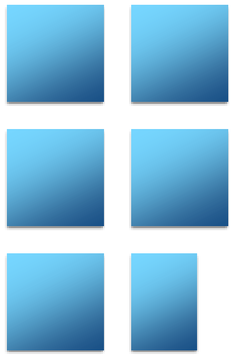
Photovoltaic generation

Rooftop capacity: 1,010 kWp, like:	1,161,500 kWh/yr
Ground mount PV array: 1,600 kWp, like:	1,840,000 kWh/yr

Area needed for ground mount PV = 9 acres



How to generate enough new energy



Rooftop PV downtown

Ground-mounted PV

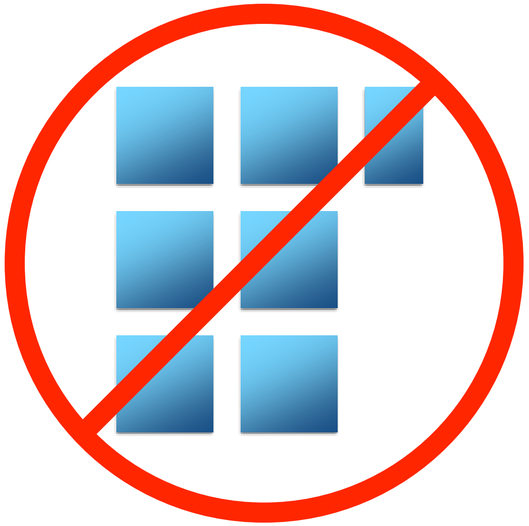
Additional demand required

= 1 acre of photovoltaic panels

How to generate enough new energy

Rooftop PV downtown

Ground-mounted PV

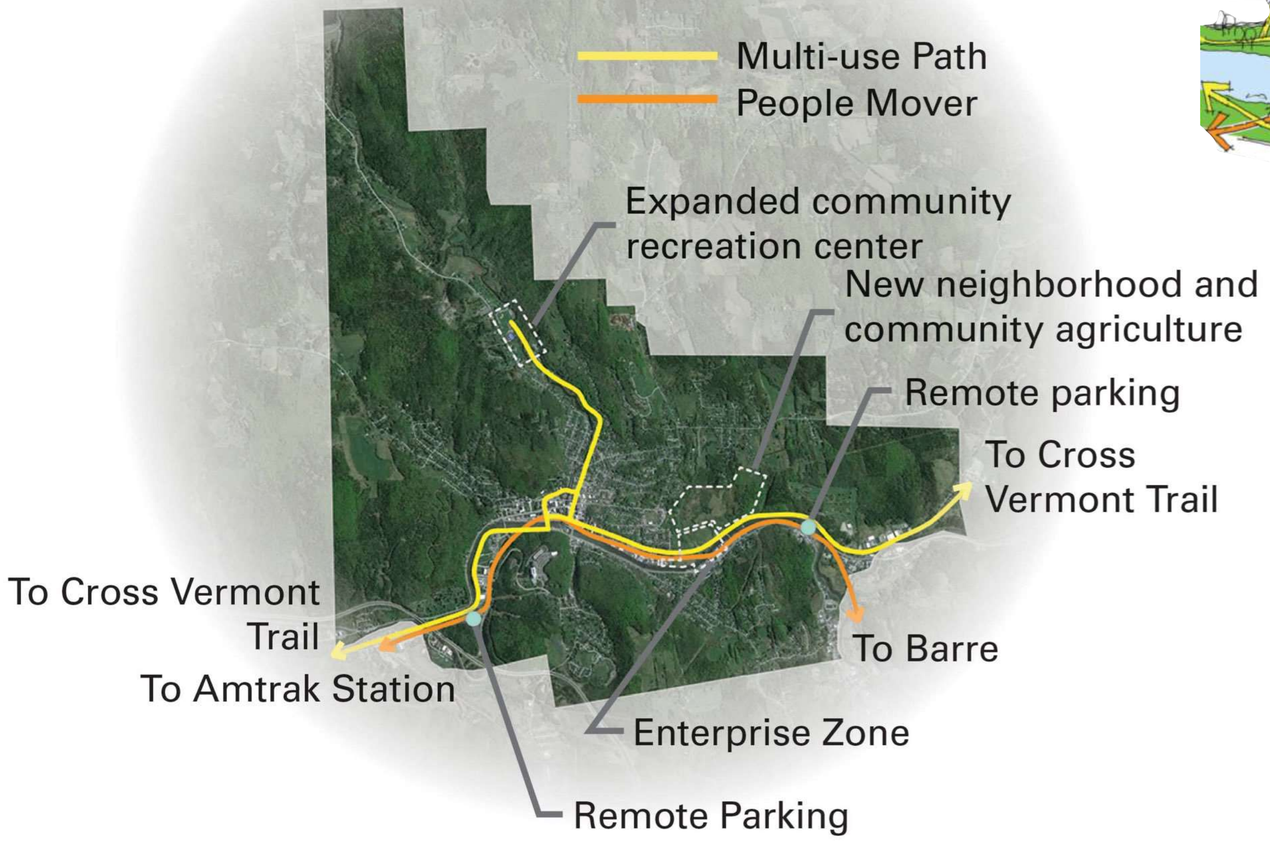


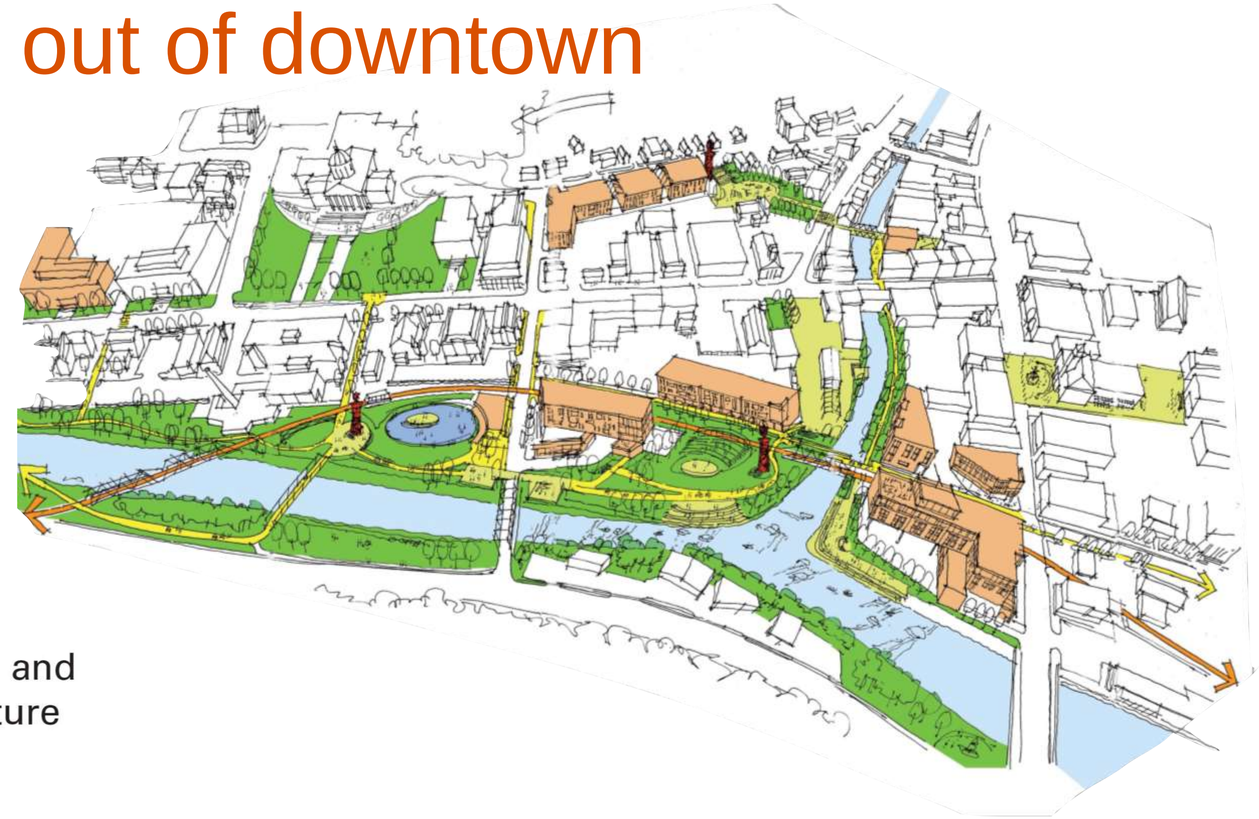
Offset by adapting the District Energy Plant to CoGeneration

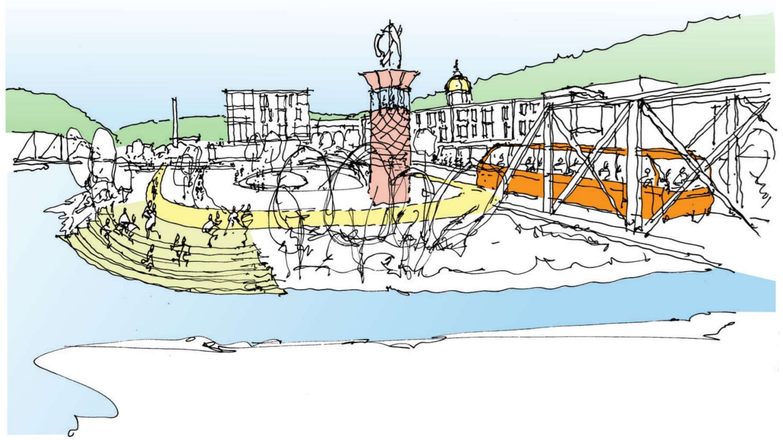
Photo of the District Energy Plant by Gary Hall, courtesy of gbA

= 1 acre of photovoltaic panels

How to move people in and out of downtown







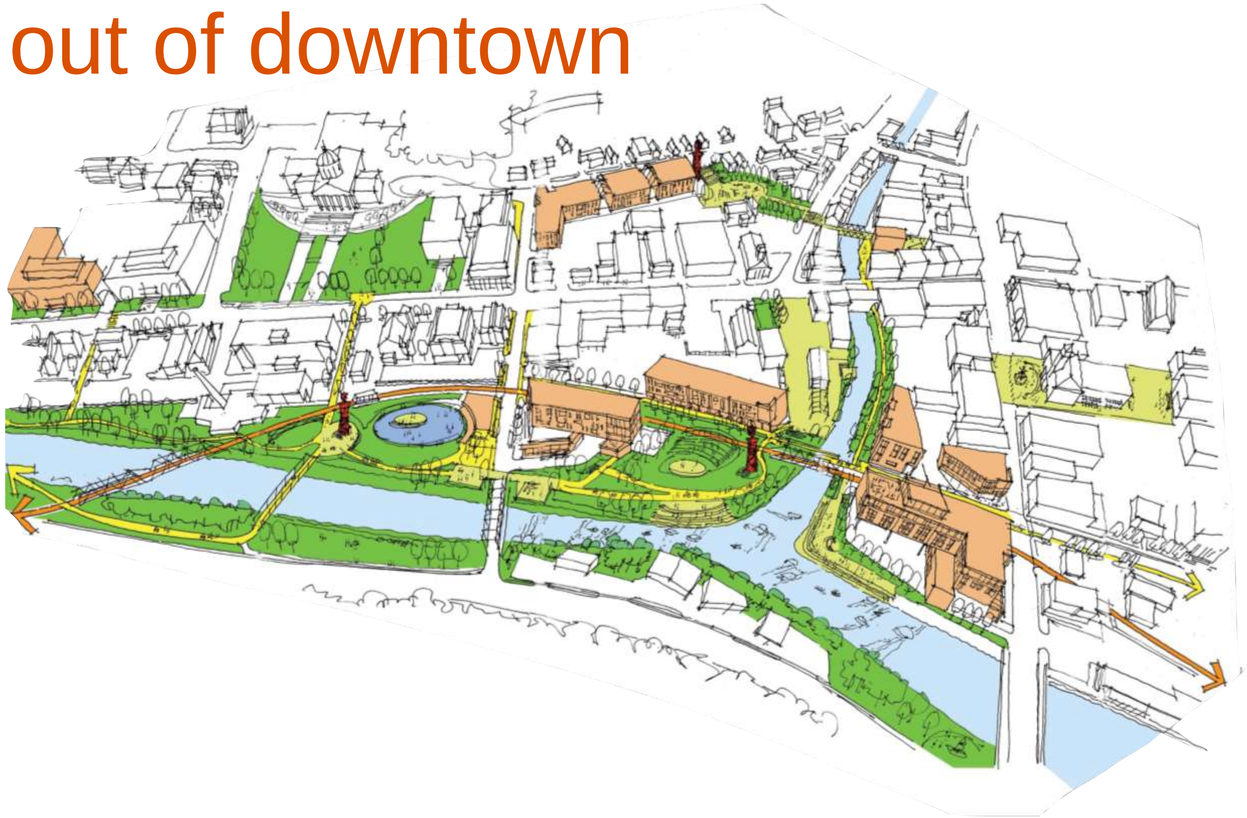
How to move people in and out of downtown

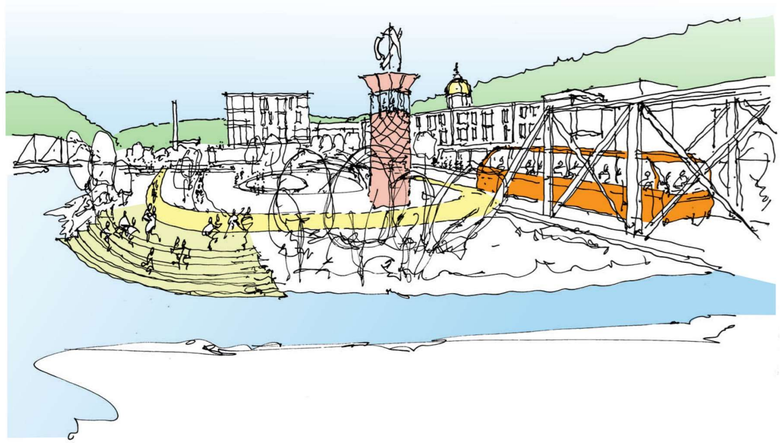
Energy cost of public transportation up to National Life

Gondola running 8 hours per day = 220,000 kWh/year = 1.4 acres of PV

vs.
Electric bus running 12 hours per day = 33,000 kWh/year = 0.2 acres of PV

An electric bus can run 50% more hours, stop in more locations, and uses 14% as much energy.



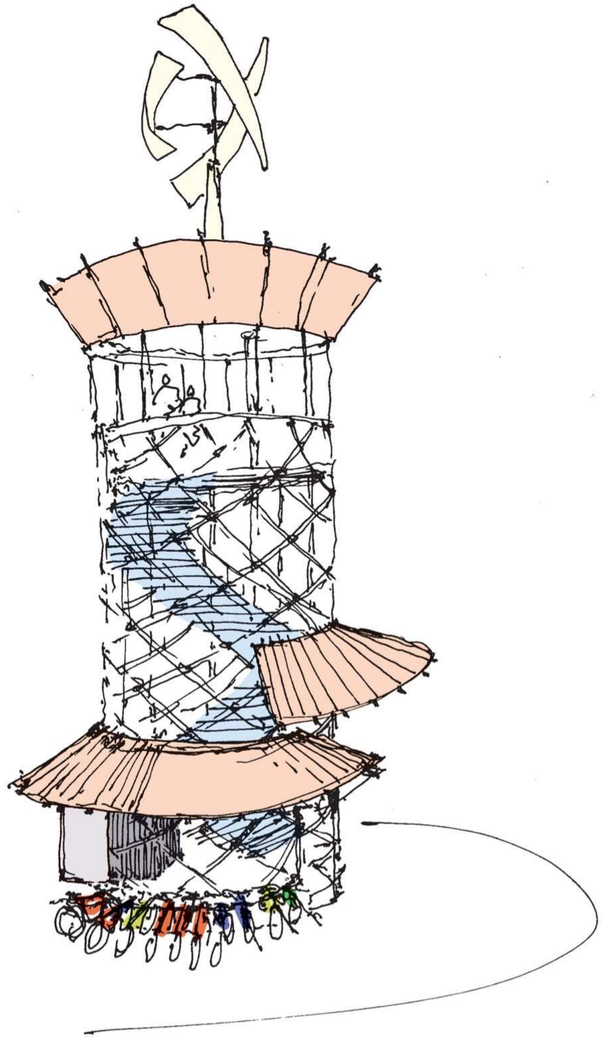


How to make vibrant public space

How to protect and enhance our rivers

Three Hub Towers

a place to meet, to refresh, to recharge



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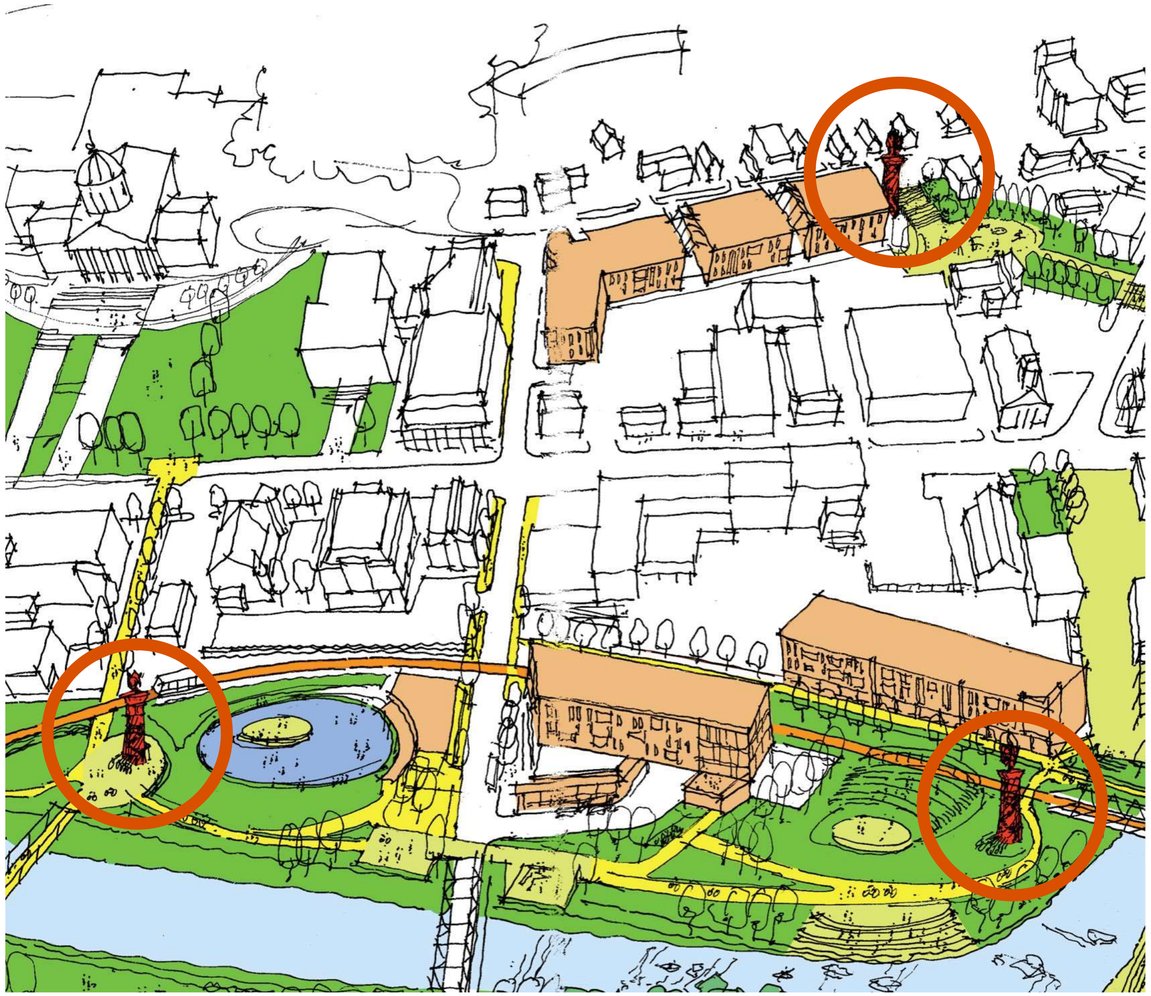

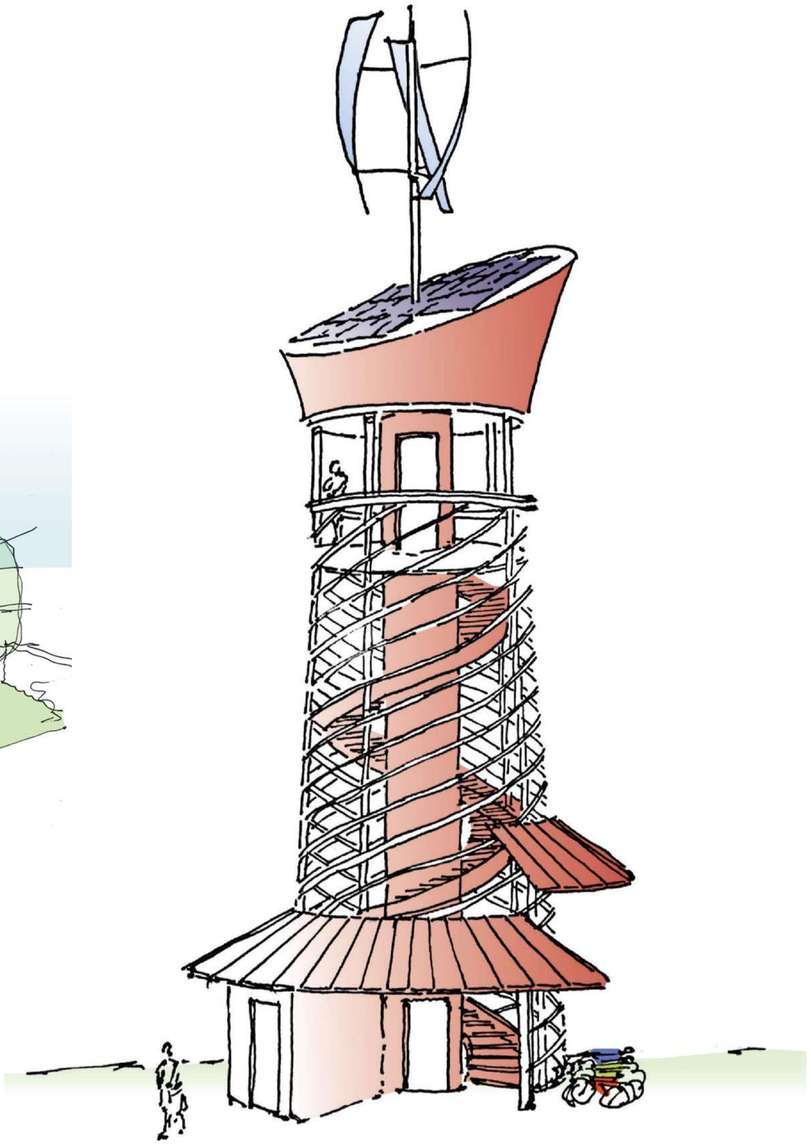

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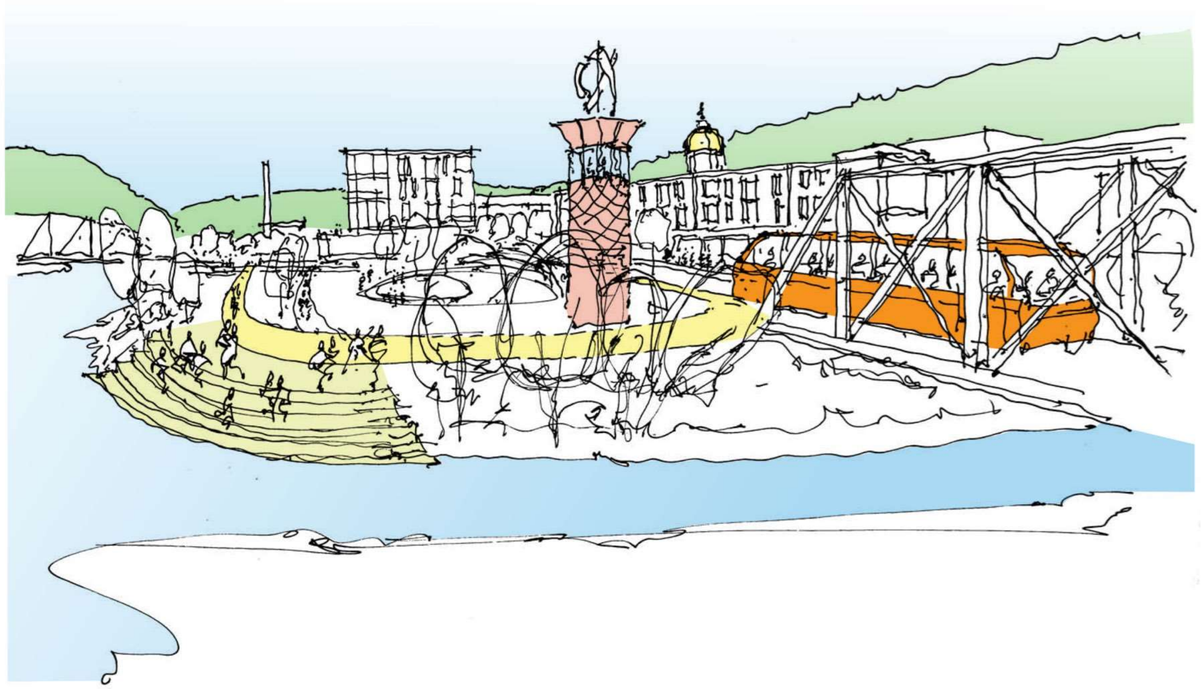
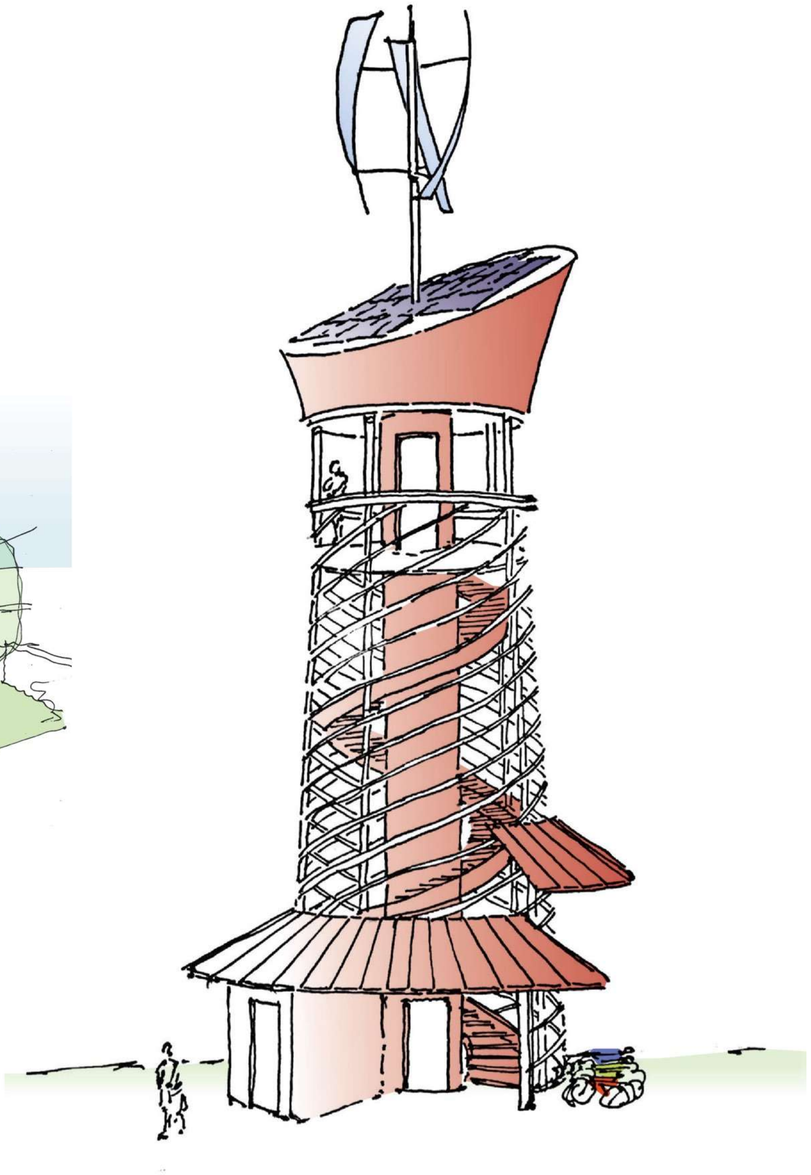
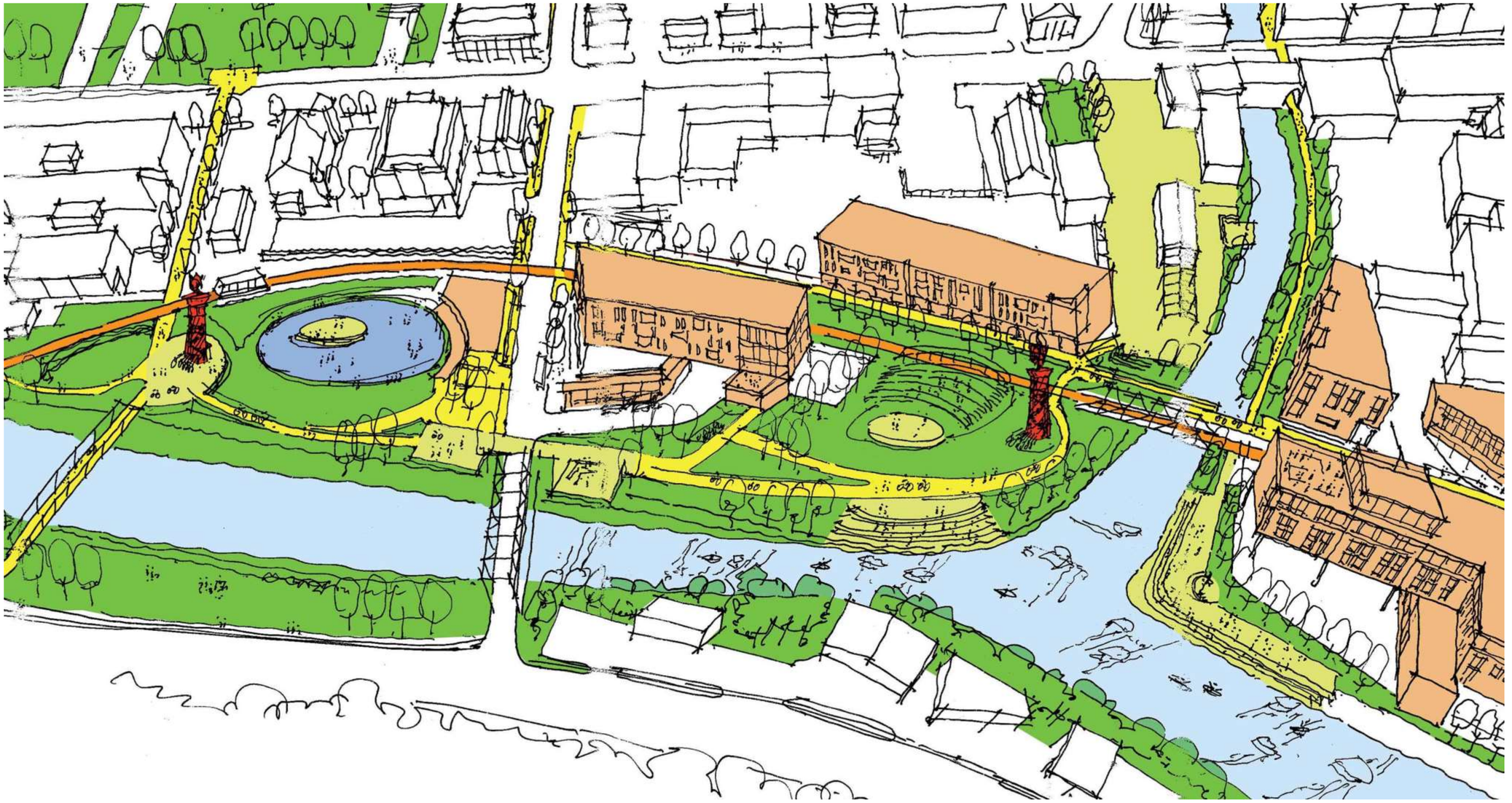




Our four season city



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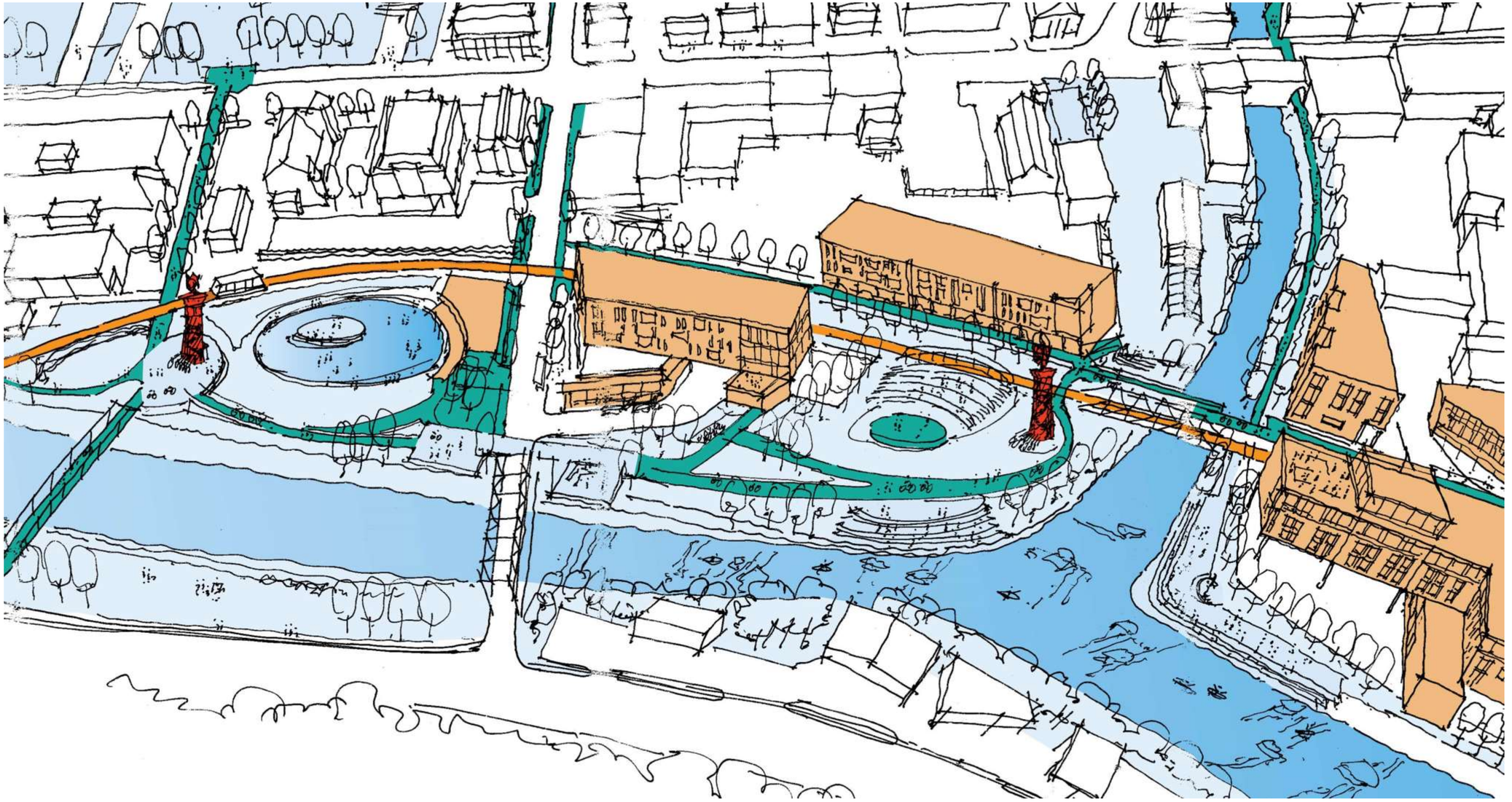

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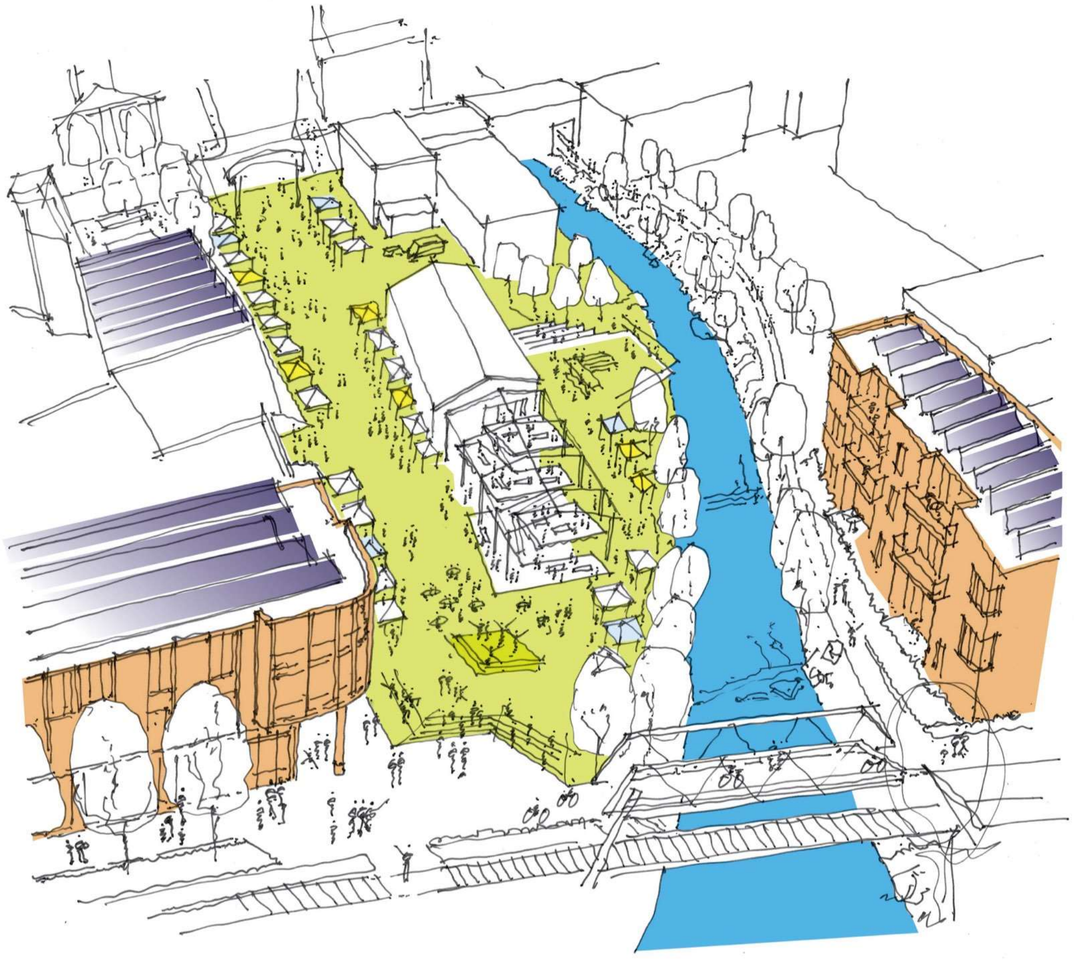
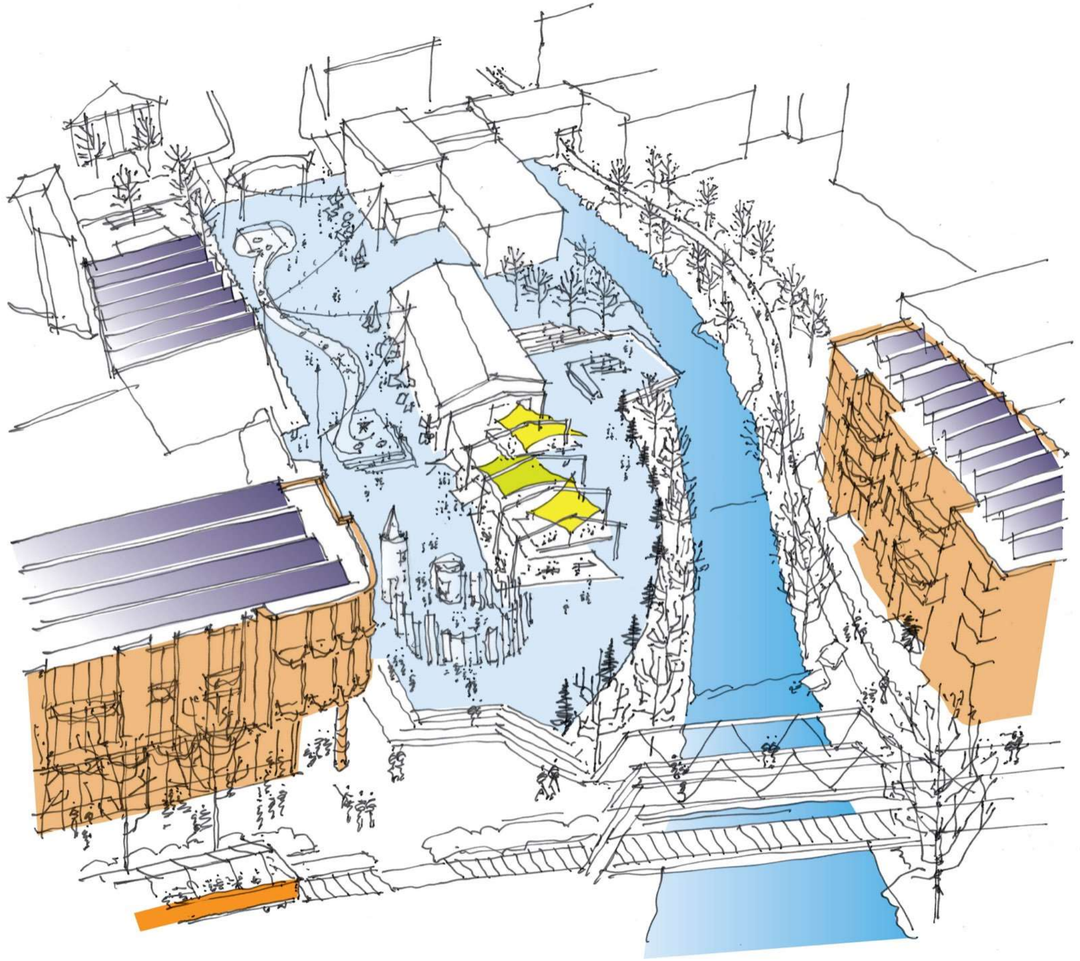


Summer outdoor market



Winter recreation plaza

Some key facts

***+570** units of housing downtown*

***+1,125** new housing units within a 15-minute walk of downtown*

***+120,000 sf** of new State offices*

***+157,000 sf** of new retail, hotel, conference space*

***6.6 acres less** surface parking*

***+97** new parking spaces overall*

***4 acres** of new public space*

***2600 lineal feet** of riparian buffer to protect our rivers*

A community-enabled plan.

A realizable plan to reach Net Zero!

Sustainable Montpelier 2030

Gossens Temkin Collaborative

Team 80242