

6

Resiliency Guidelines

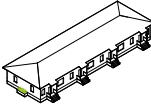
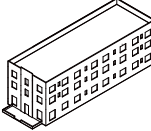
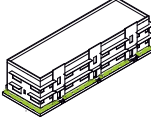
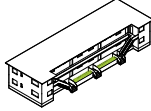
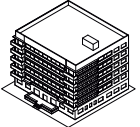
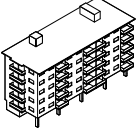
6.1 Strategy Matrix by Type	294
6.2 Guidelines by Type & Strategy	296
Take Action Now	296
Strategy 1A	314
Strategy 1B	320
Strategy 1C	334
Strategy 2A & 2B	340



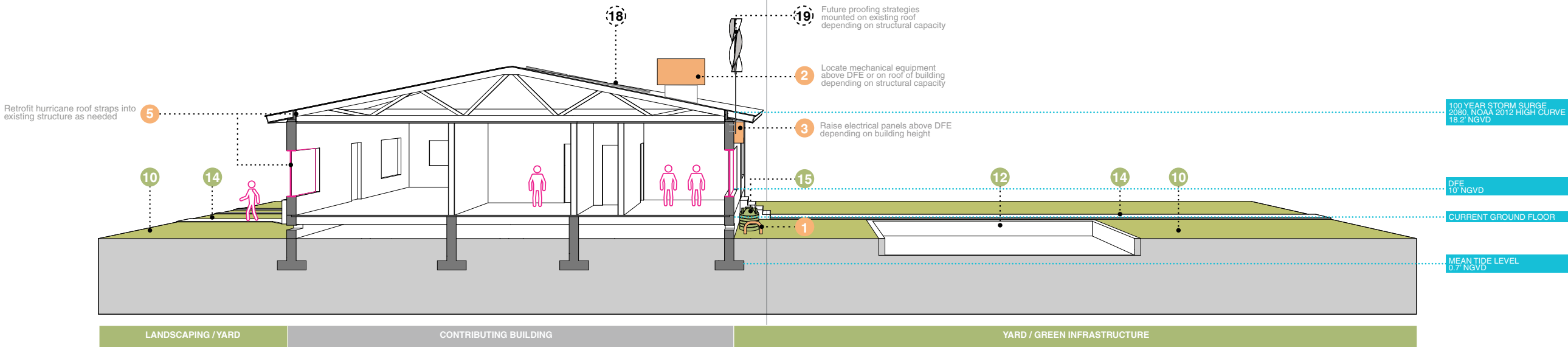
“ An important cultural value of the historic city rests precisely upon its ability to be in a constant evolution, where forms, space and uses are always adapting to replace obsolescence with functionality. This gives rises to the paradox – or perhaps the oxymoron – of the concept of preserving the ability to change.”

Gustavo F. Araoz, Preserving Heritage Places Under a New Paradigm

6.1. STRATEGY MATRIX BY TYPE

		FLAMINGO PARK ADAPT IN PLACE				COLLINS WATERFRONT: RAISE	
		TAKE ACTION NOW	STRATEGY 1A	STRATEGY 1B	STRATEGY 1C	STRATEGY 2A & 2B	
TYPOLOGY							
COTTAGE / HOUSE		P. 300		P. 324		P. 344	
URBAN VILLA		P. 302		P. 326		P. 346	
RAMBLER		P. 304		P. 328		P. 348	
INTERIOR CORRIDOR		P. 306	P. 318	P. 330	P. 338	P. 350	
WALK-UP		P. 308	P. 320	P. 332	P. 340	P. 352	
CATWALK		P. 310		P. 334	P. 342	P. 354	
LOW-RISE HOTEL		P. 312	P. 322	P. 336		P. 356	
HIGH-RISE HOTEL		P. 314					
DINGBAT		P. 316					

COTTAGE / HOUSE
Take Action Now



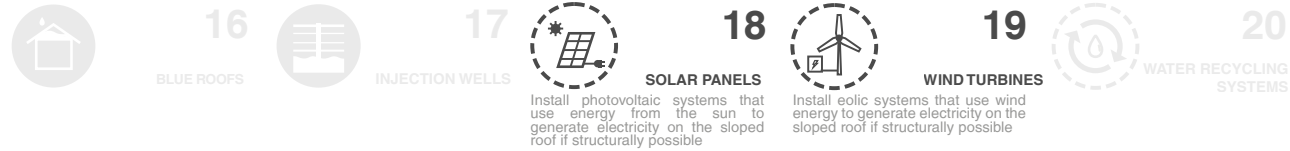
BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

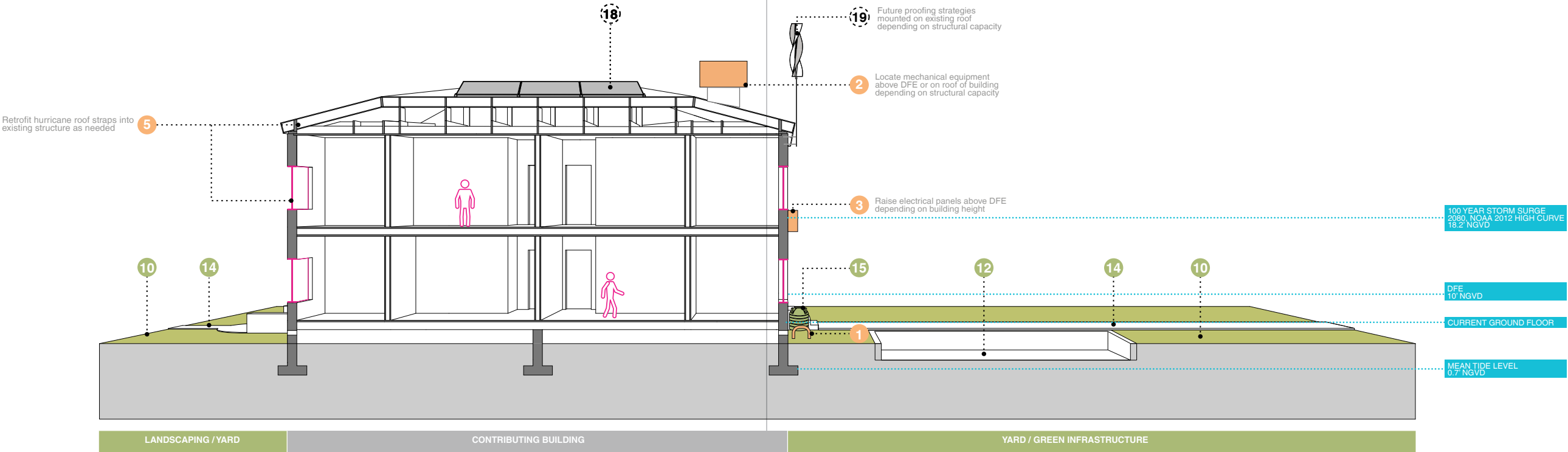


STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING



URBAN VILLA
Take Action Now



BUILDING & SYSTEMS STRATEGIES

- 1**
BACKFLOW PREVENTION
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2**
MECHANICAL SYSTEMS FLOOD PROTECTION
Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3**
POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4**
DRY FLOODPROOFING
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 5**
WIND MITIGATION
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed

- 11**
GREEN ROOFS
Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 12**
SUNKEN PLAZA & PATIOS
Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 13**
UNDERGROUND RETENTION STORAGE SYSTEMS
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 14**
PERMEABLE PAVEMENT
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 15**
CISTERNS
Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes.

GREEN INFRASTRUCTURE

- 6**
SEEPAGE & WATERPROOFING
- 7**
WET FLOODPROOFING
- 8**
FLOOD RESISTANT BUILDING MATERIALS
- 9**
ADA ACCESSIBILITY FEATURES
- 10**
RAIN GARDENS
Provide planting areas designed to capture and store rainwater in the front and rear yards of the property

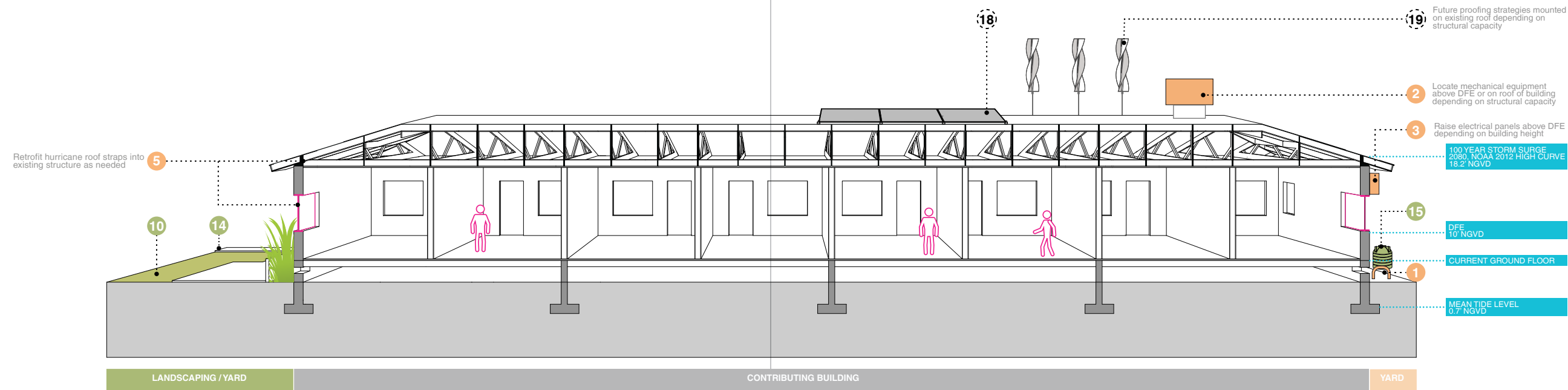
STORMWATER MANAGEMENT STRATEGIES

- 16**
BLUE ROOFS
- 17**
INJECTION WELLS

FUTURE PROOFING

- 18**
SOLAR PANELS
Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19**
WIND TURBINES
Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20**
WATER RECYCLING SYSTEMS

RAMBLER
Take Action Now



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1** **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible

3 **POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed

11 **GREEN ROOFS**

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible

15 **CISTERNS**
Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes.

- 6** **SEEPAGE & WATERPROOFING**

7 **WET FLOODPROOFING**

8 **FLOOD RESISTANT BUILDING MATERIALS**

9 **ADA ACCESSIBILITY FEATURES**

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

16 **BLUE ROOFS**

17 **INJECTION WELLS**

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible

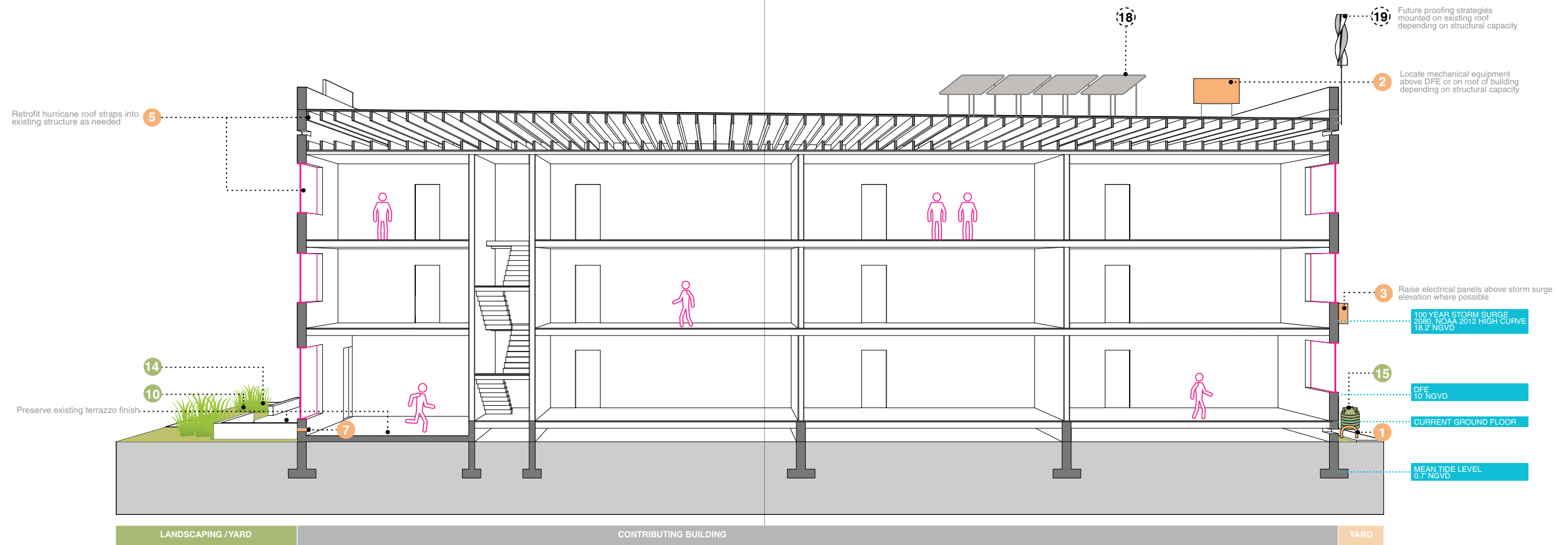
19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible

20 **WATER RECYCLING SYSTEMS**

STORMWATER MANAGEMENT STRATEGIES

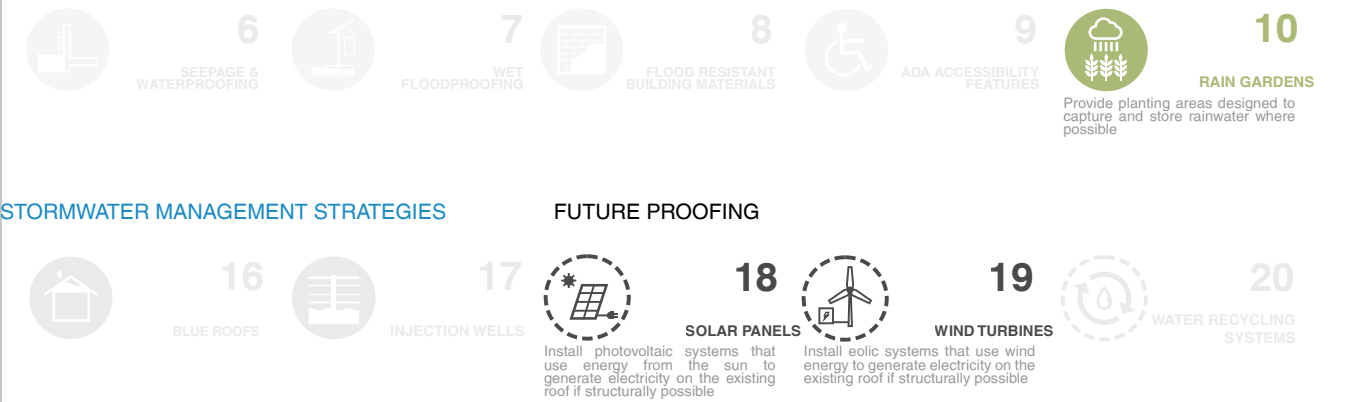
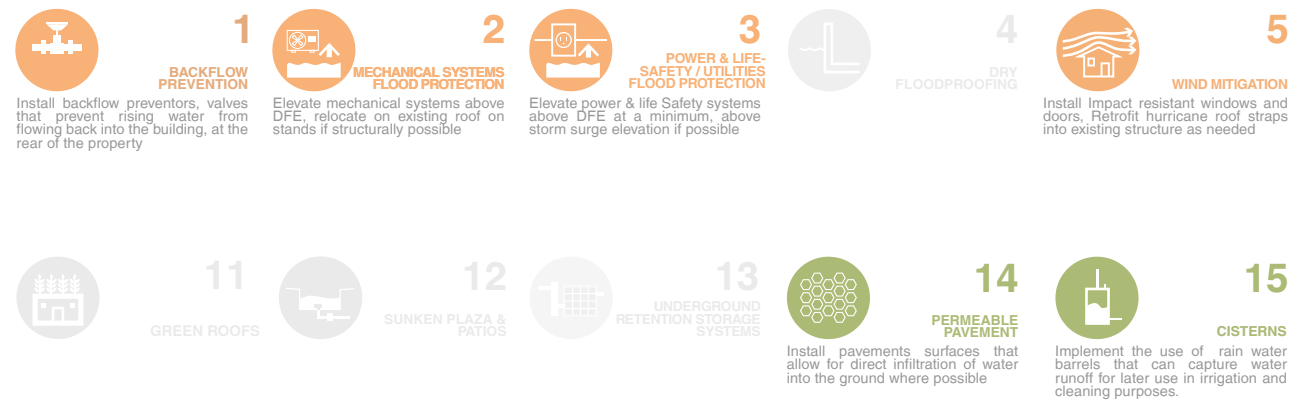
FUTURE PROOFING

INTERIOR CORRIDOR
Take Action Now



BUILDING & SYSTEMS STRATEGIES

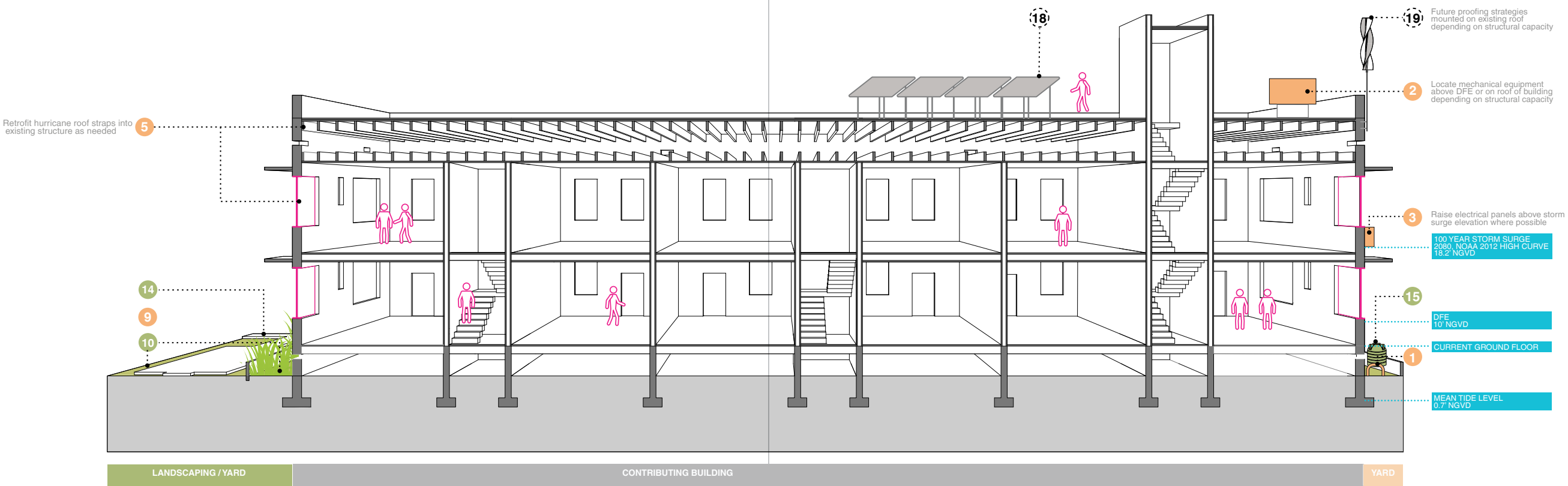
GREEN INFRASTRUCTURE



STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

WALK-UP
Take Action Now



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

1 **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible

3 **POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed, Consider reinforcing roof & roofing

11 **GREEN ROOFS**

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**
Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes

6 **SEEPAGE & WATERPROOFING**

7 **WET FLOODPROOFING**

8 **FLOOD RESISTANT BUILDING MATERIALS**

9 **ADA ACCESSIBILITY FEATURES**

10 **RAIN GARDENS**
Special planting areas located within a small depression in a property, designed to capture and store rainwater

16 **BLUE ROOFS**

17 **INJECTION WELLS**

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible

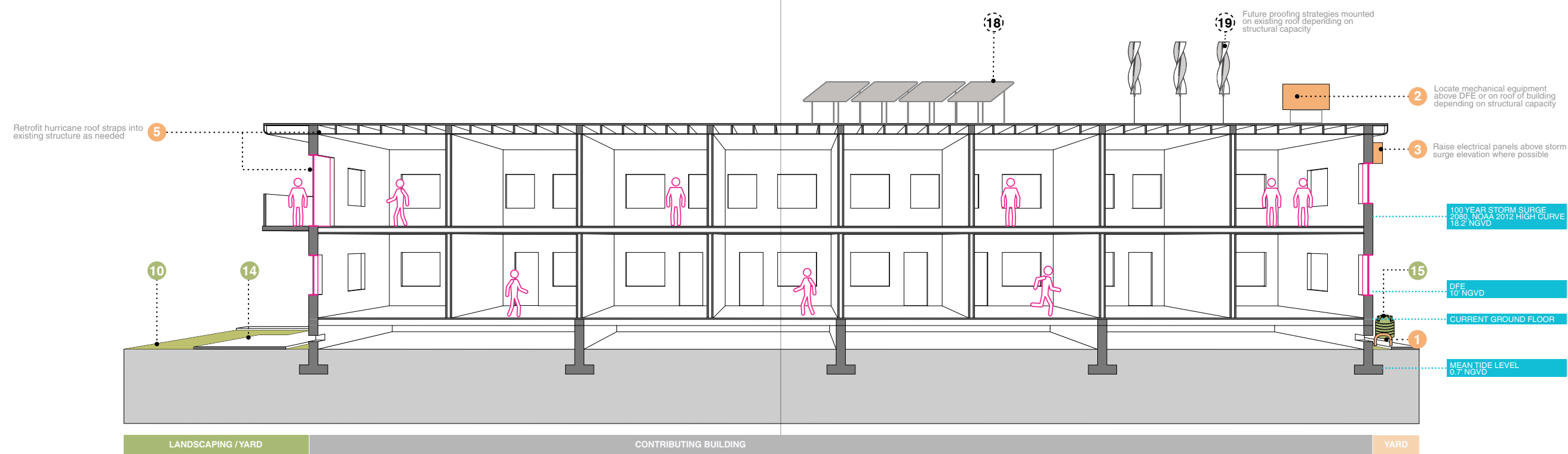
19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible

20 **WATER RECYCLING SYSTEMS**

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

CATWALK
Take Action Now



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1

BACKFLOW PREVENTION

Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2

MECHANICAL SYSTEMS FLOOD PROTECTION

Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3

POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION

Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4

DRY FLOODPROOFING
- 5

WIND MITIGATION

Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed.
- 11

GREEN ROOFS
- 12

SUNKEN PLAZA & PATIOS
- 13

UNDERGROUND RETENTION STORAGE SYSTEMS
- 14

PERMEABLE PAVEMENT

Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15

CISTERNS

Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes

- 6

SEEPAGE & WATERPROOFING
- 7

WET FLOODPROOFING
- 8

FLOOD RESISTANT BUILDING MATERIALS
- 9

ADA ACCESSIBILITY FEATURES
- 10

RAIN GARDENS

Provide planting areas designed to capture and store rainwater where possible
- 16

BLUE ROOFS
- 17

INJECTION WELLS
- 18

SOLAR PANELS

Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19

WIND TURBINES

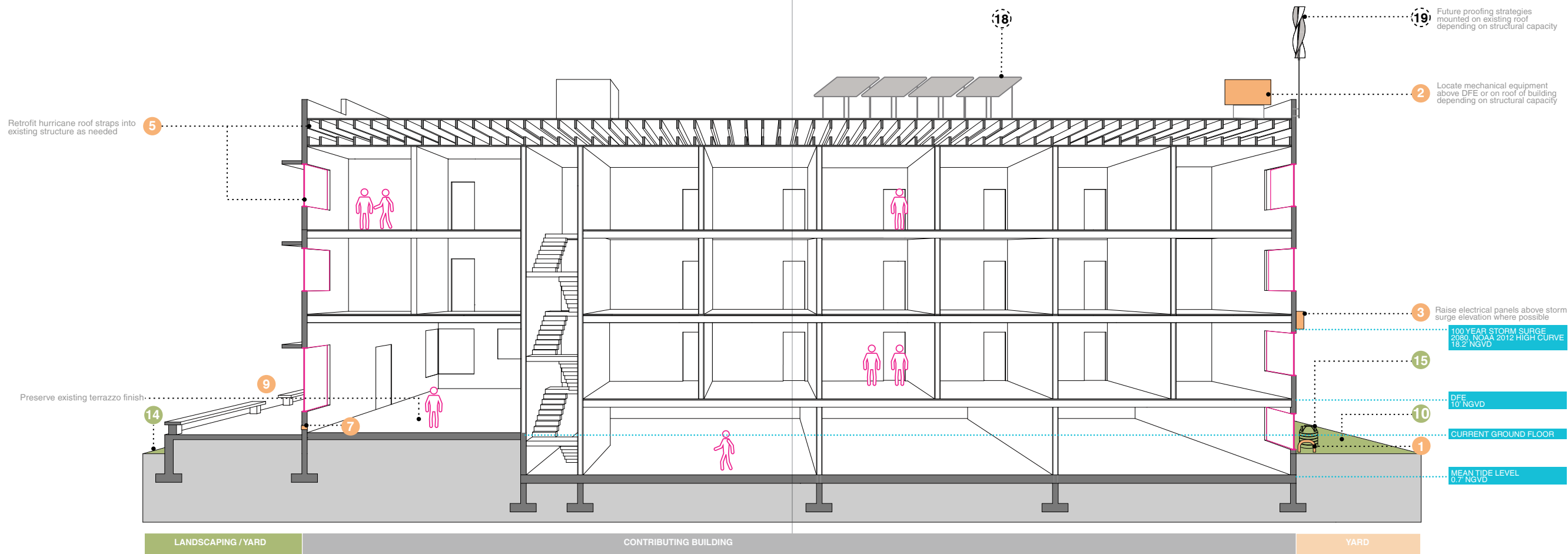
Devices used to convert the wind's kinetic energy into electrical energy.
- 20

WATER RECYCLING SYSTEMS

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

LOW-RISE HOTEL
Take Action Now



BUILDING & SYSTEMS STRATEGIES

- 1

BACKFLOW PREVENTION

Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2

MECHANICAL SYSTEMS FLOOD PROTECTION

Elevate mechanical systems above DFE, relocate on existing roof stands if structurally possible
- 3

POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION

Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4

DRY FLOODPROOFING
- 5

WIND MITIGATION

Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing
- 6

SEEPAGE & WATERPROOFING
- 7

WET FLOODPROOFING

Measures that allow water to move in the enclosed parts of a building's lower area and then out when water recedes.
- 8

FLOOD RESISTANT BUILDING MATERIALS
- 9

ADA ACCESSIBILITY FEATURES

Install ramps or lifts in order to provide accessible routes to the hotel lobby area
- 10

RAIN GARDENS

Provide planting areas designed to capture and store rainwater where possible
- 11

GREEN ROOFS
- 12

SUNKEN PLAZA & PATIOS
- 13

UNDERGROUND RETENTION STORAGE SYSTEMS
- 14

PERMEABLE PAVEMENT

Install pavements, surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15

CISTERNS

Rain barrels that can capture that water for later use in irrigation or even cleaning purposes.

GREEN INFRASTRUCTURE

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 16

BLUE ROOFS
- 17

INJECTION WELLS
- 18

SOLAR PANELS

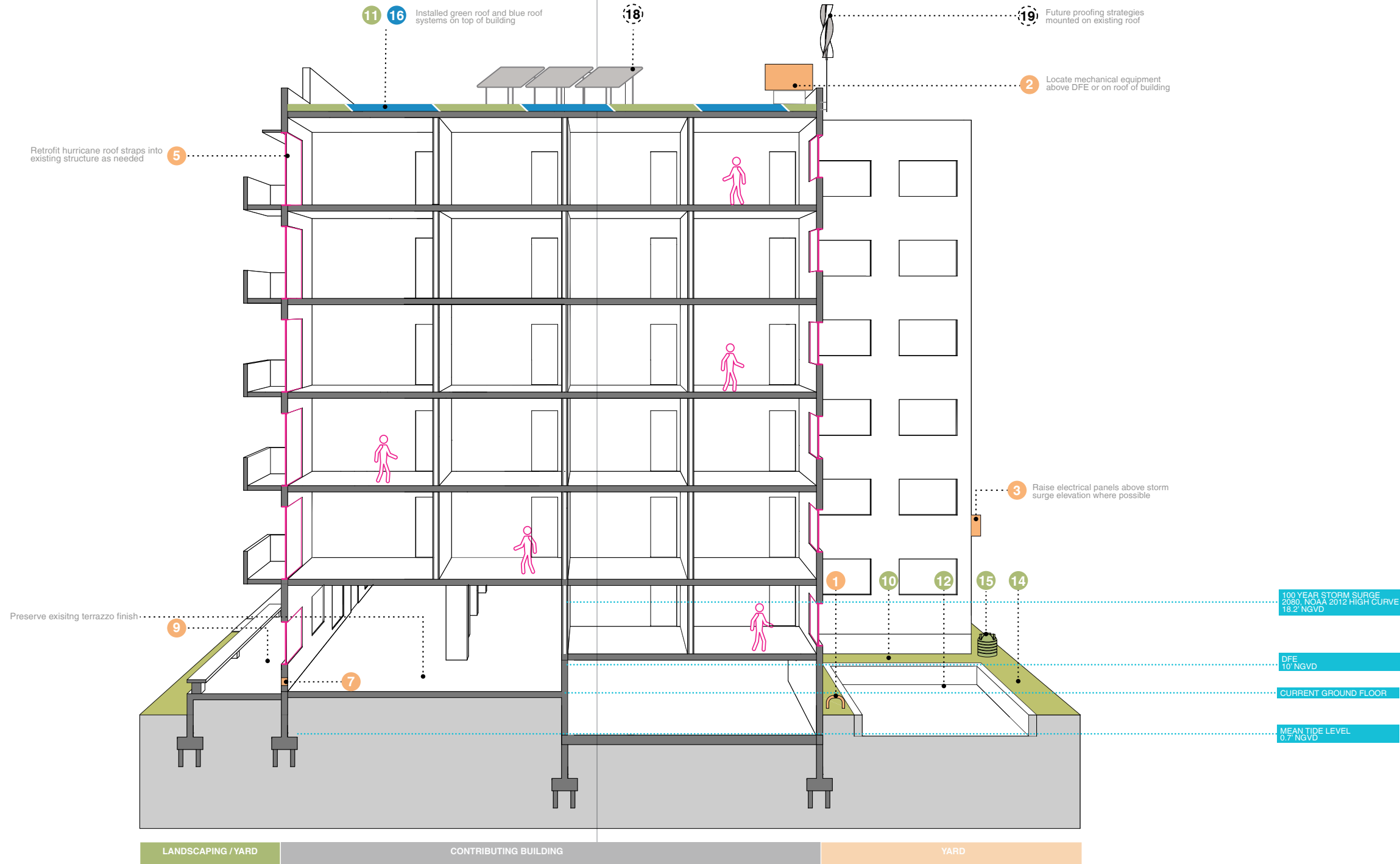
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19

WIND TURBINES

Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20

WATER RECYCLING SYSTEMS

HIGH-RISE HOTEL
Take Action Now



BUILDING & SYSTEMS STRATEGIES

- 1** **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Relocate mechanical systems to the roof of the building if not located there currently

3 **POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure as needed.

11 **GREEN ROOFS**
Roofs that are covered with vegetation and a growing medium, planted over a waterproofing membrane.

12 **SUNKEN PLAZA & PATIOS**
Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**
Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes.

STORMWATER MANAGEMENT STRATEGIES

- 6** **SEEPAGE & WATERPROOFING**

7 **WET FLOODPROOFING**
Install flood vents in existing lobby area below base flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**

16 **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building where structurally possible

17 **INJECTION WELLS**

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof

FUTURE PROOFING

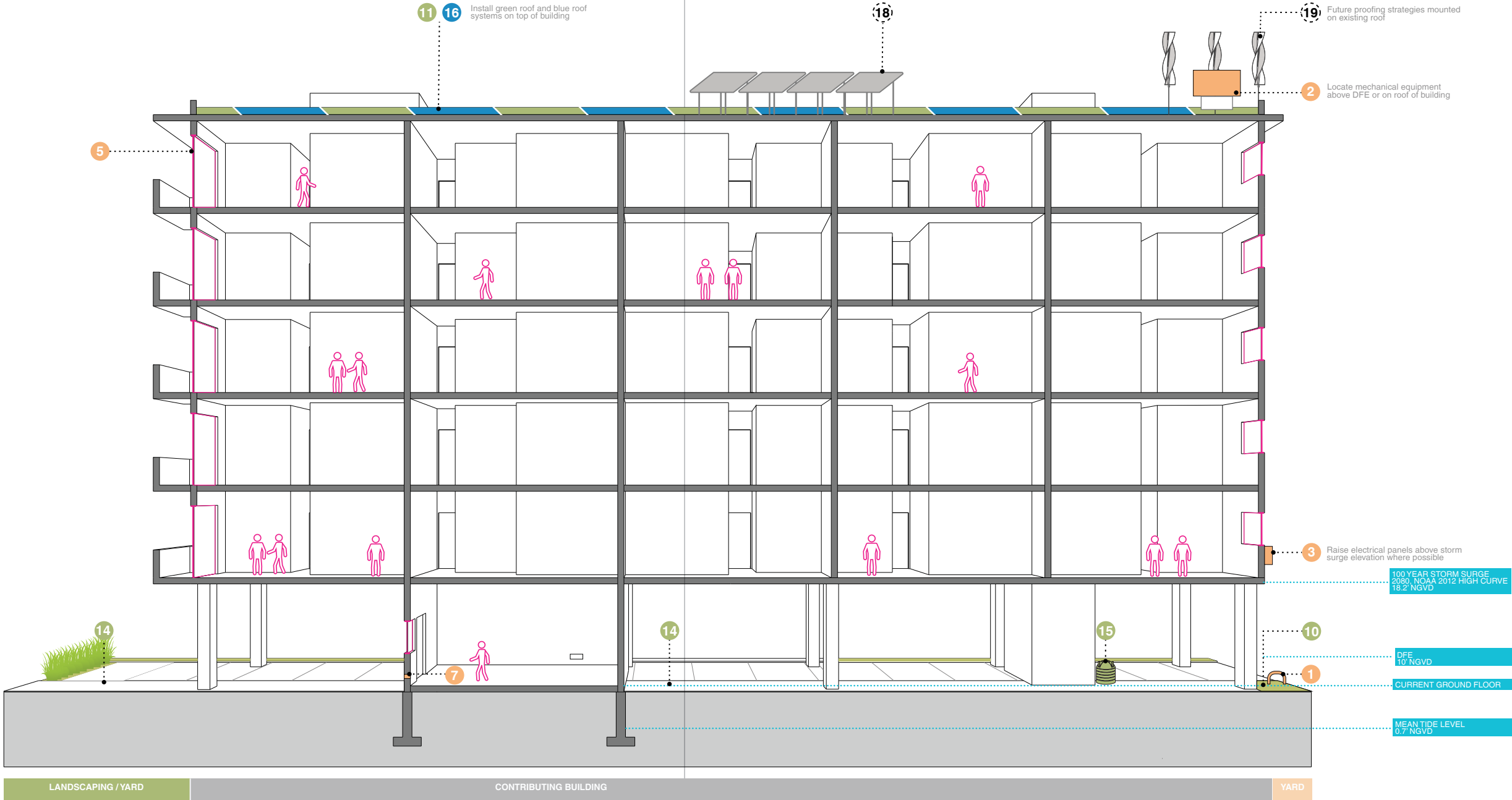
- 9** **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to the hotel lobby area

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof

20 **WATER RECYCLING SYSTEMS**

DINGBAT
Take Action Now



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

1 **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Relocate mechanical systems to the roof of the building if not located there currently

3 **POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed.

11 **GREEN ROOFS**
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane where structurally possible

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**
Implement the use of rain water barrels that can capture water runoff for later use in irrigation and cleaning purposes.

6 **SEEPAGE & WATERPROOFING**

7 **WET FLOODPROOFING**
Install flood vents in existing lobby area below base flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**

9 **ADA ACCESSIBILITY FEATURES**

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

16 **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building where structurally possible.

17 **INJECTION WELLS**

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof

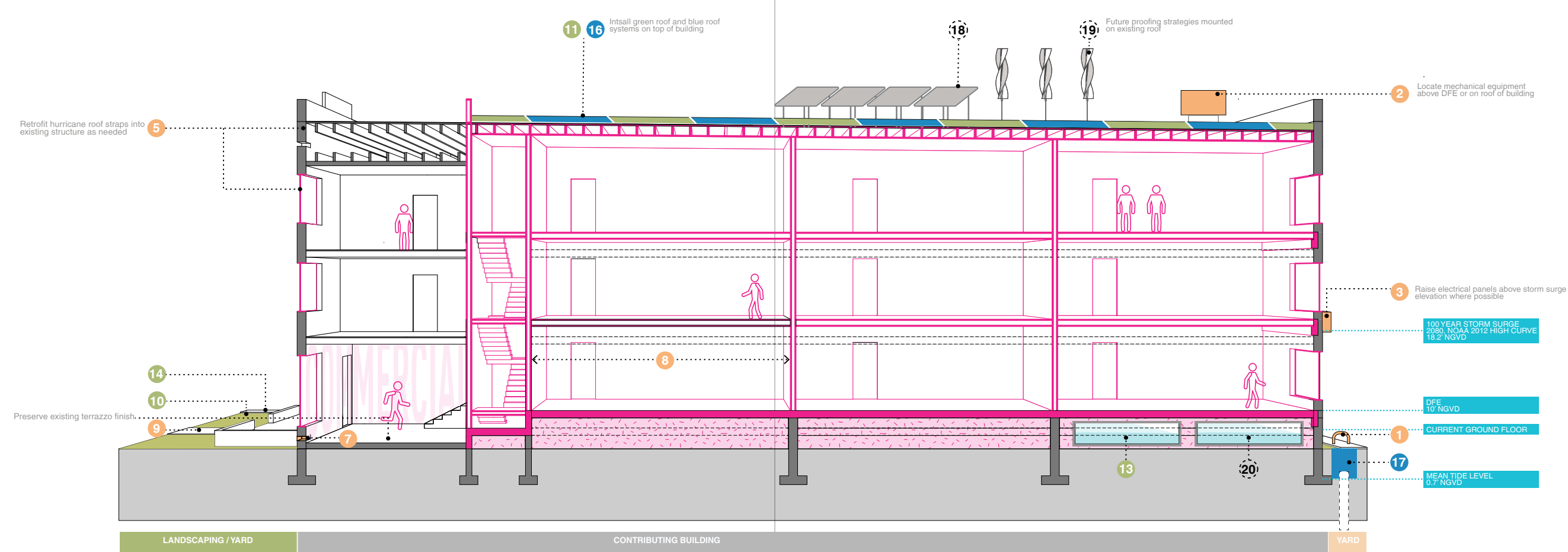
19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof

20 **WATER RECYCLING SYSTEMS**

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

INTERIOR CORRIDOR
Strategy 1A



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

1
BACKFLOW PREVENTION
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2
MECHANICAL SYSTEMS FLOOD PROTECTION
Elevate mechanical systems above DFE, relocate to roof of new structure

3
POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4
DRY FLOODPROOFING

5
WIND MITIGATION
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure to remain as needed. All new construction to meet wind and impact requirements. Consider reinforcing roof & roofing

11
GREEN ROOFS
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane where structurally possible

12
SUNKEN PLAZA & PATIOS

13
UNDERGROUND RETENTION STORAGE SYSTEMS
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14
PERMEABLE PAVEMENT
Install pavements surfaces that allow for direct infiltration of water into the ground where possible

15
CISTERNS

6
SEEPAGE & WATERPROOFING
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7
WET FLOODPROOFING
Install flood vents in existing lobby area or commercial space below design flood elevation

8
FLOOD RESISTANT BUILDING MATERIALS
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9
ADA ACCESSIBILITY FEATURES
Install ramps or lifts in order to provide accessible routes to and from commercial areas

10
RAIN GARDENS
Provide planting areas designed to capture and store rainwater where possible

STORMWATER MANAGEMENT STRATEGIES

16
BLUE ROOFS
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building where structurally possible

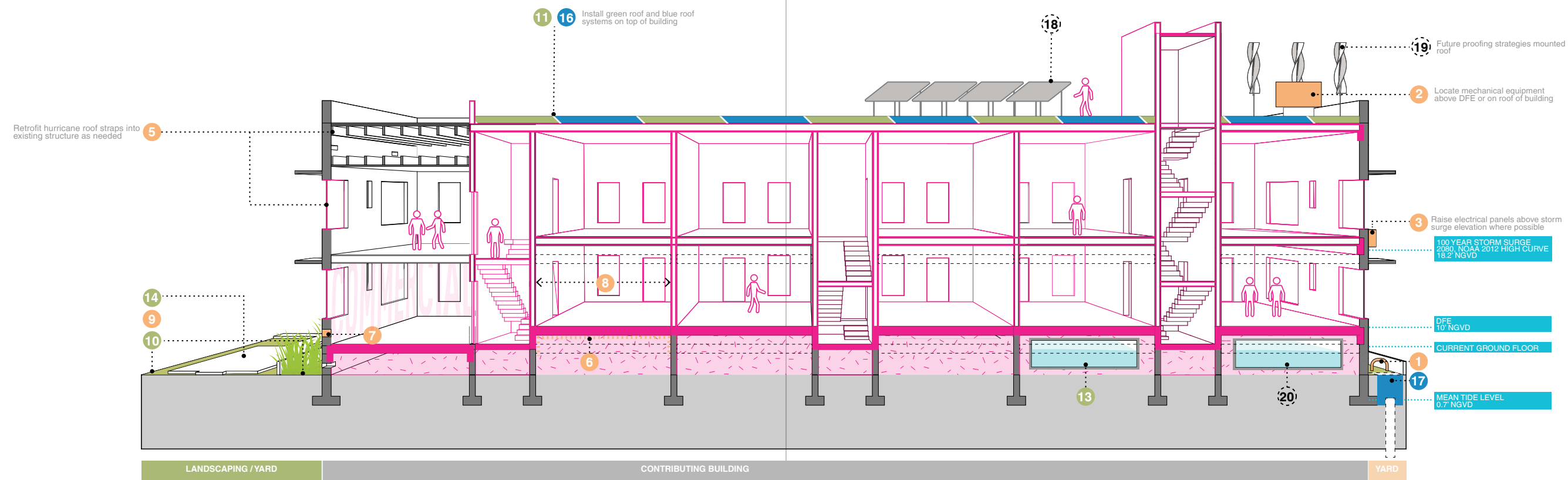
17
INJECTION WELLS
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18
SOLAR PANELS
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible

19
WIND TURBINES
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible

20
WATER RECYCLING SYSTEMS
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

WALK-UP
Strategy 1A



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1** **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible

3 **POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing

11 **GREEN ROOFS**
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**

- 6** **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7 **FLOODPROOFING WET**
Install flood vents in commercial areas located below design flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9 **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from commercial areas

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

16 **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building

17 **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the roof of the building

19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the roof of the building

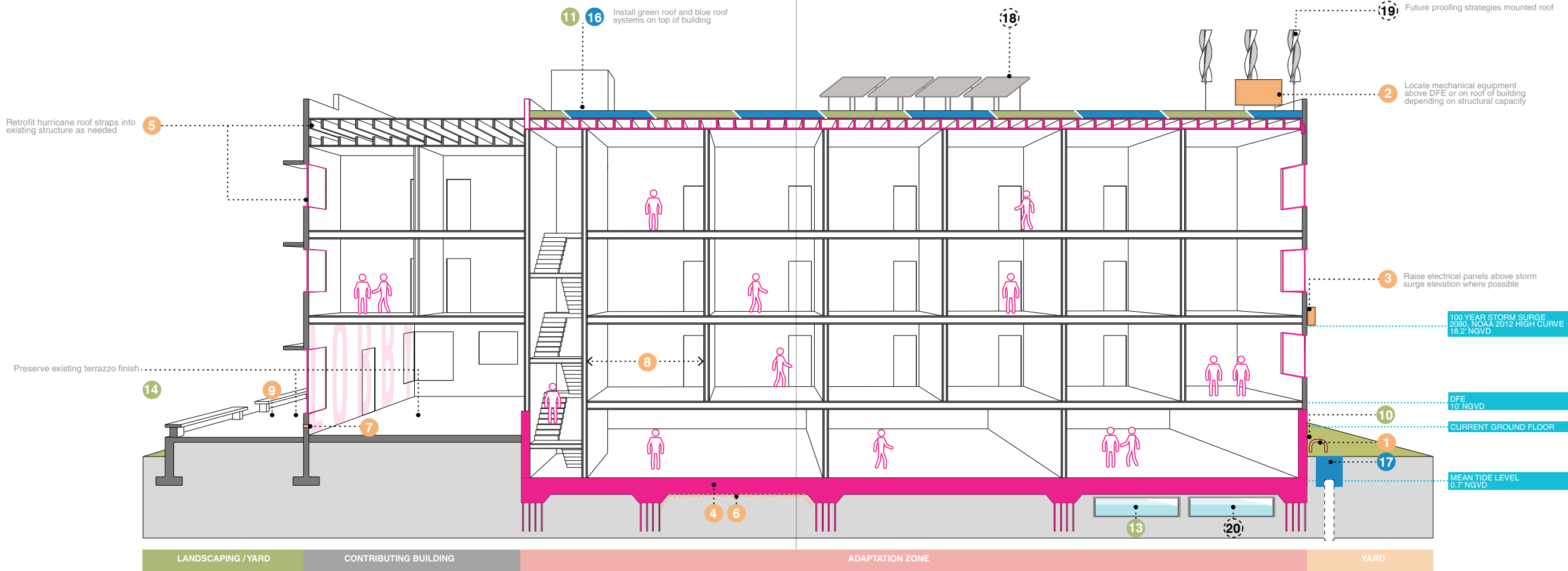
20 **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

LOW-RISE HOTEL

Strategy 1A



BUILDING & SYSTEMS STRATEGIES

- 

1

BACKFLOW PREVENTION

Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
 - 

2

MECHANICAL SYSTEMS FLOOD PROTECTION

Elevate mechanical systems above DFE, relocate to roof of building
 - 

3

POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION

Elevate power & life safety systems above storm surge elevation
 - 

4

FLOODPROOFING

Where the lowest floor elevation is located below DFE, implement measures to make the building watertight and prevent entry of water. These include flood barriers and hydrostatic slabs
 - 

5

WIND MITIGATION

Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure to remain as needed. Consider reinforcing roof & roofing
 - 

11

GREEN ROOFS

Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane where structurally possible
 - 

12

SUNKEN PLAZA & PATIOS

Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
 - 

13

UNDERGROUND RETENTION STORAGE SYSTEMS

Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
 - 

14

PERMEABLE PAVEMENT
 - 

15

CISTERNS

GREEN INFRASTRUCTURE

- 

6

SEEPAGE & WATERPROOFING

Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
 - 

7

FLOODPROOFING

Install flood vents in existing lobby area below base flood elevation
 - 

8

WET BUILDING MATERIALS

Materials can reduce the damage caused by floodwaters and make cleanup easier following a flooding event (Basement & GF flood resistant materials)
 - 

9

ADA ACCESSIBILITY FEATURES

Install ramps or lifts in order to provide accessible routes to and from commercial and lobby areas
 - 

10

RAIN GARDENS

Provide planting areas designed to capture and store rainwater where possible

STORMWATER MANAGEMENT STRATEGIES

- 

16 BLUE ROOFS

Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building where structurally possible



17 INJECTION WELLS

Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

FUTURE PROOFING

- 

18 SOLAR PANELS

Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible



19 WIND TURBINES

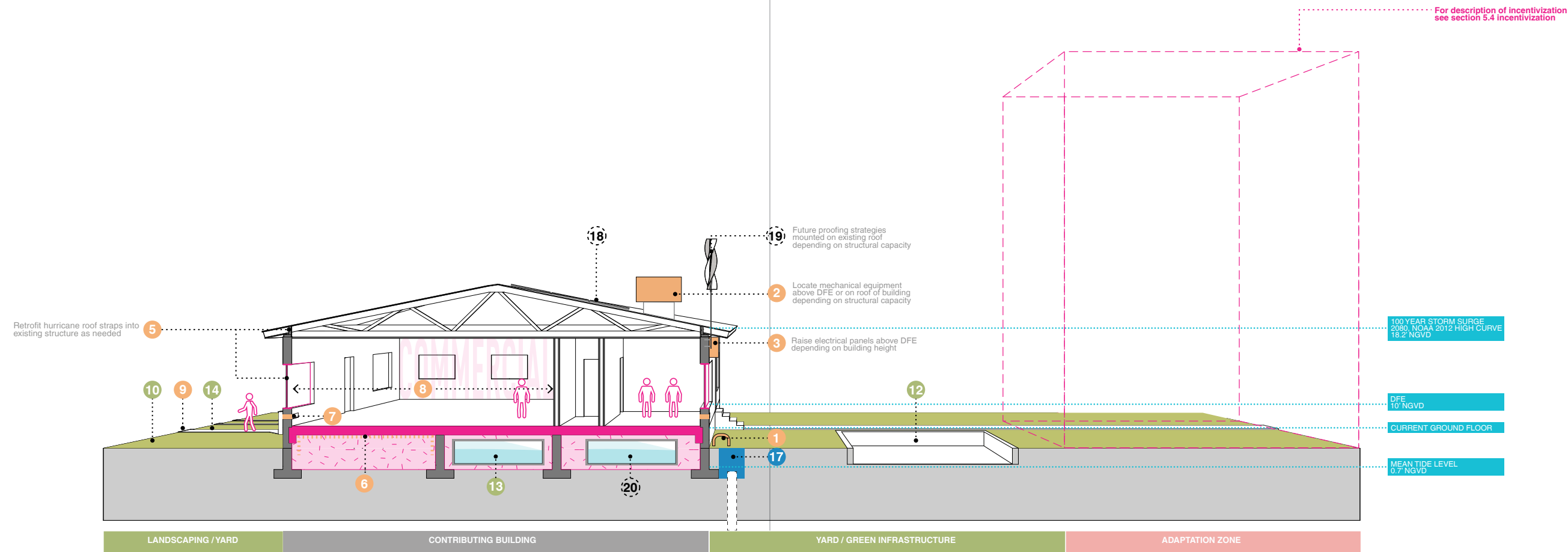
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible



20 WATER RECYCLING SYSTEMS

Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

COTTAGE / HOUSE
Strategy 1B

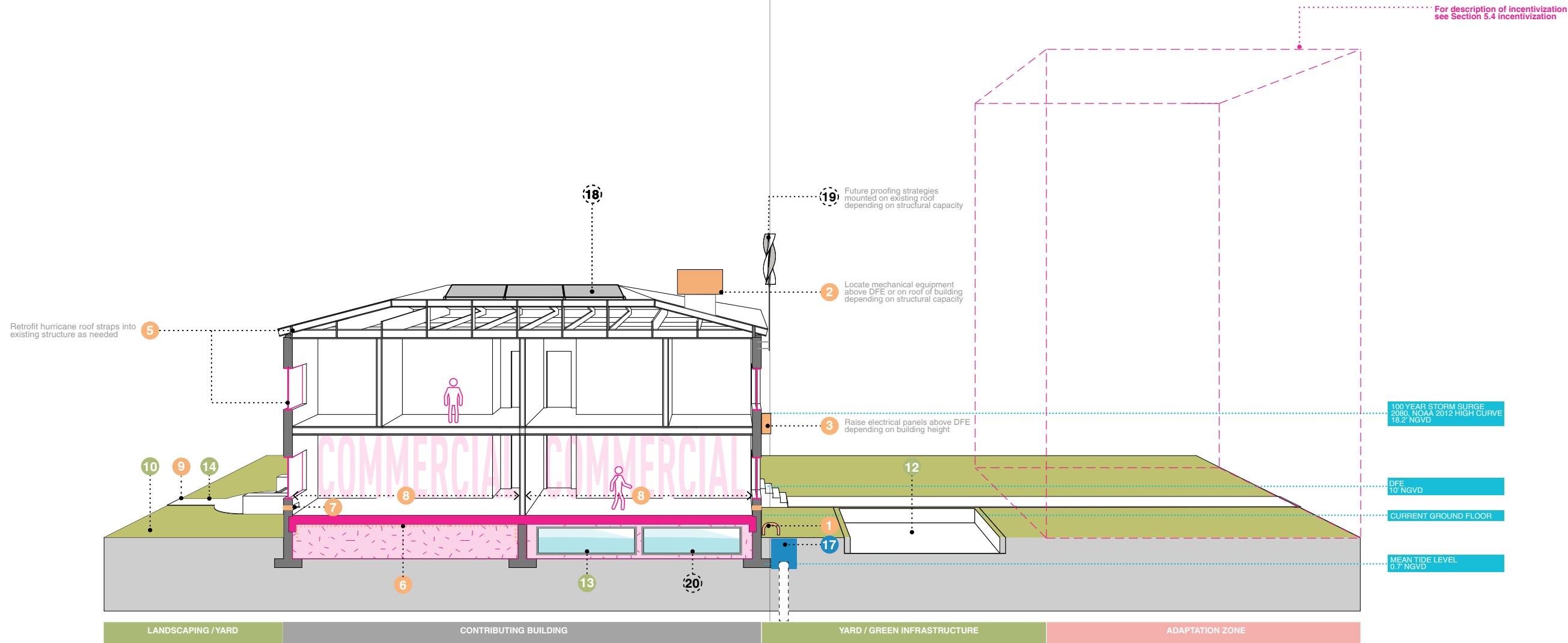


BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1**
BACKFLOW PREVENTION
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2**
MECHANICAL SYSTEMS FLOOD PROTECTION
Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3**
POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION
Elevate power & life safety systems above DFE or as much as the existing building height allows
- 4**
DRY FLOODPROOFING
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 5**
WIND MITIGATION
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 6**
SEEPAGE & WATERPROOFING
Install flood vents in commercial areas located below design flood elevation
- 7**
WET FLOODPROOFING
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 8**
FLOOD RESISTANT BUILDING MATERIALS
Install ramps or lifts in order to provide accessible routes to and from commercial areas
- 9**
ADA ACCESSIBILITY FEATURES
Provide planting areas designed to capture and store rainwater in the front and rear yards of the property
- 10**
RAIN GARDENS
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes
- 11**
GREEN ROOFS
Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 12**
SUNKEN PLAZA & PATIOS
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 13**
UNDERGROUND RETENTION STORAGE SYSTEMS
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 14**
PERMEABLE PAVEMENT
Cisterns
- 15**
CISTERNS
Blue roofs
- 16**
BLUE ROOFS
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 17**
INJECTION WELLS
Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 18**
SOLAR PANELS
Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 19**
WIND TURBINES
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes
- 20**
WATER RECYCLING SYSTEMS

URBAN Villa
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1 BACKFLOW PREVENTION: Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION: Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION: Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING
- 5 WIND MITIGATION: Install impact resistant windows and doors, retrofit hurricane roof straps into existing structure as needed

- 6 SEEPAGE & WATERPROOFING: Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING: Install flood vents in commercial areas located below design flood elevation
- 8 FLOOD RESISTANT BUILDING MATERIALS: Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES: Install ramps or lifts in order to provide accessible routes to and from commercial areas
- 10 RAIN GARDENS: Provide planting areas designed to capture and store rainwater in the front and rear yards of the property

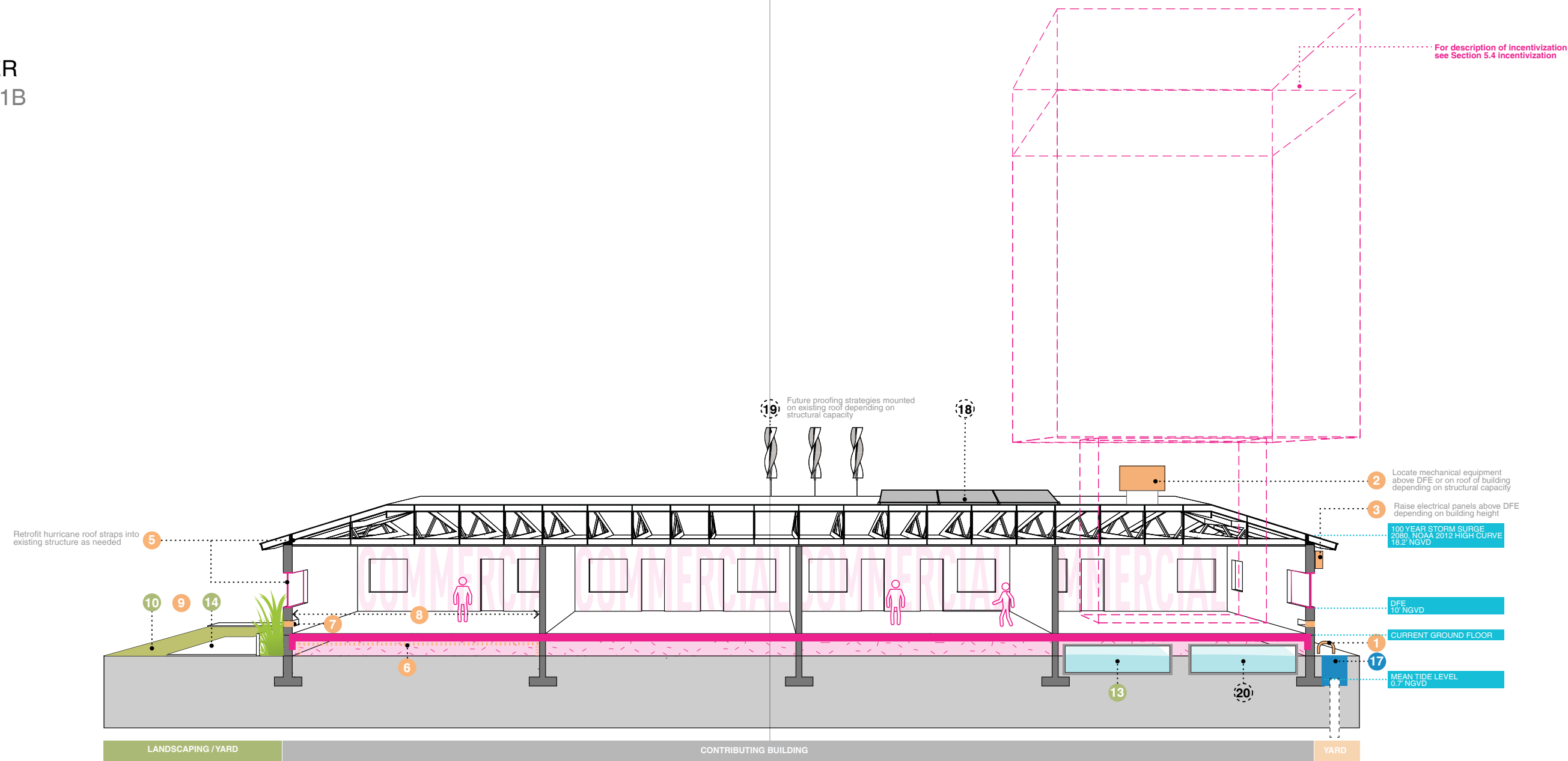
STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 11 GREEN ROOFS: Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 12 SUNKEN PLAZA & PATIOS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS: Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 14 PERMEABLE PAVEMENT
- 15 CISTERNS

- 16 BLUE ROOFS
- 17 INJECTION WELLS: Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS: Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19 WIND TURBINES: Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20 WATER RECYCLING SYSTEMS: Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

RAMBLER
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1

BACKFLOW PREVENTION

Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2

MECHANICAL SYSTEMS FLOOD PROTECTION

Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3

POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION

Elevate power & life safety systems above DFE or as much as the existing building height allows
- 4

DRY FLOODPROOFING
- 5

WIND MITIGATION

Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 6

SEEPAGE & WATERPROOFING

Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7

WET FLOODPROOFING

Install flood vents in commercial areas located below design flood elevation
- 8

FLOOD RESISTANT BUILDING MATERIALS

Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9

ADA ACCESSIBILITY FEATURES

Install ramps or lifts in order to provide accessible routes to and from commercial areas
- 10

RAIN GARDENS

Provide planting areas designed to capture and store rainwater where possible
- 11

GREEN ROOFS
- 12

SUNKEN PLAZA & PATIOS
- 13

UNDERGROUND RETENTION STORAGE SYSTEMS

Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14

PERMEABLE PAVEMENT

Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 15

CISTERNS
- 16

BLUE ROOFS
- 17

INJECTION WELLS

Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18

SOLAR PANELS

Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19

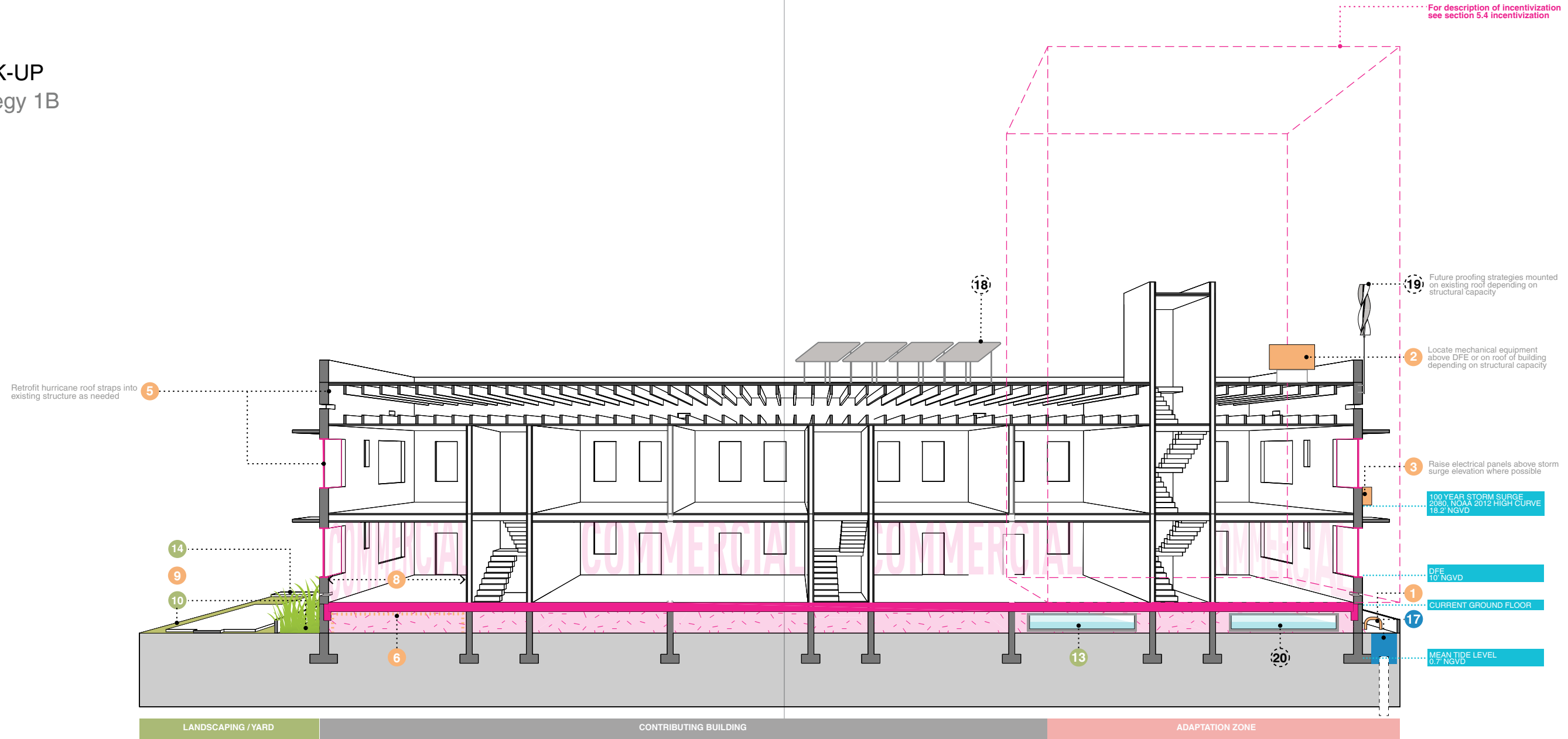
WIND TURBINES

Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20

WATER RECYCLING SYSTEMS

Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

WALK-UP
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

- 1 BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING**
- 5 WIND MITIGATION**
Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing

- 11 GREEN ROOFS**
- 12 SUNKEN PLAZA & PATIOS**
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15 CISTERNS**

GREEN INFRASTRUCTURE

- 10 RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

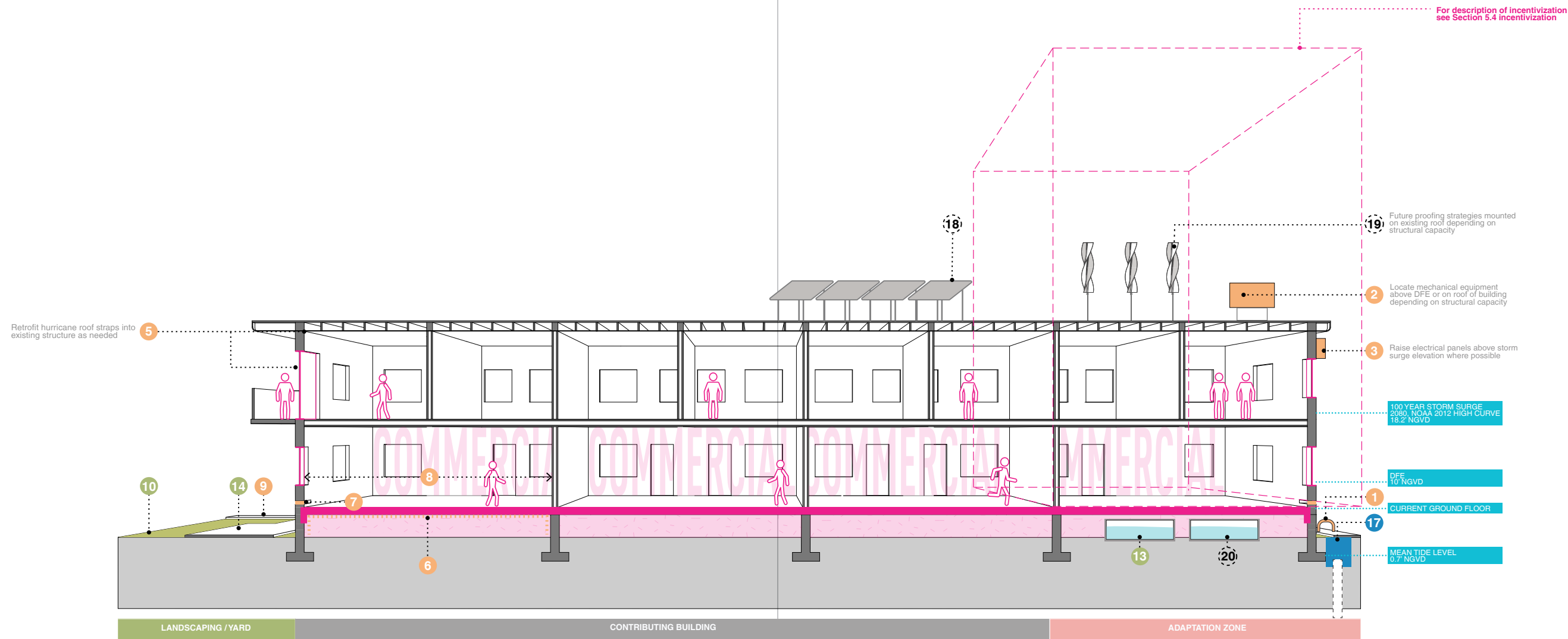
STORMWATER MANAGEMENT STRATEGIES

- 16 BLUE ROOFS**
- 17 INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

FUTURE PROOFING

- 18 SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19 WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20 WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

CATWALK
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1 BACKFLOW PREVENTION: Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION: Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION: Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING
- 5 WIND MITIGATION: Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing

- 6 SEEPAGE & WATERPROOFING: Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING: Install flood vents in commercial areas located below design flood elevation
- 8 FLOOD RESISTANT BUILDING MATERIALS: Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES: Install ramps or lifts in order to provide accessible routes to and from commercial areas
- 10 RAIN GARDENS: Provide planting areas designed to capture and store rainwater where possible

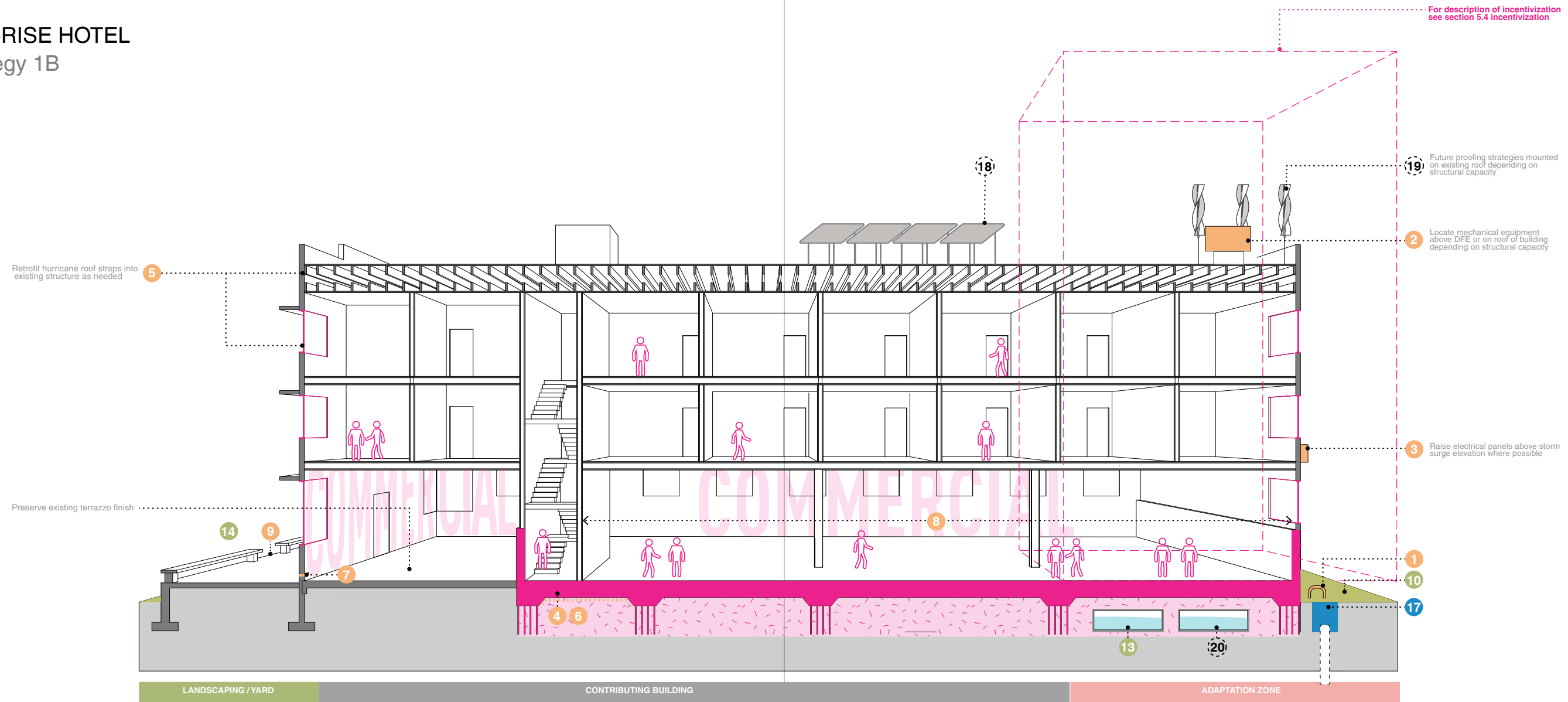
STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 11 GREEN ROOFS
- 12 SUNKEN PLAZA & PATIOS
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT: Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15 CISTERNS

- 16 BLUE ROOFS
- 17 INJECTION WELLS: Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS: Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19 WIND TURBINES: Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20 WATER RECYCLING SYSTEMS: Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

LOW-RISE HOTEL
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

1 **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible

3 **POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**
Where the lowest floor elevation is located below DFE, implement measures to make the building watertight and prevent entry of water. These include flood barriers and hydrostatic slabs

5 **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing

11 **GREEN ROOFS**

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**

6 **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7 **WET FLOODPROOFING**
Install flood vents in existing lobby area located below design flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9 **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from the commercial and hotel lobby areas

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

16 **BLUE ROOFS**

17 **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible

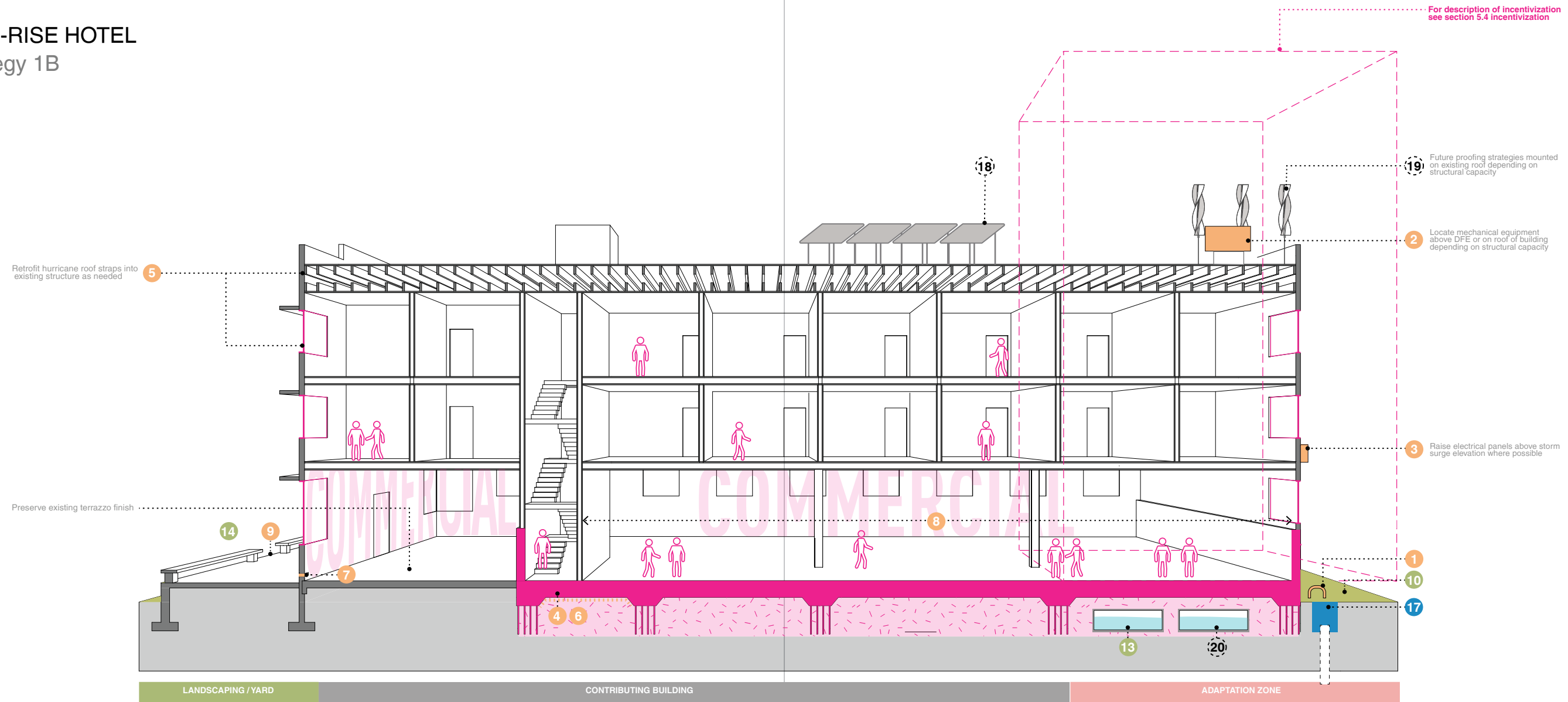
19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible

20 **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

HIGH-RISE HOTEL
Strategy 1B



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

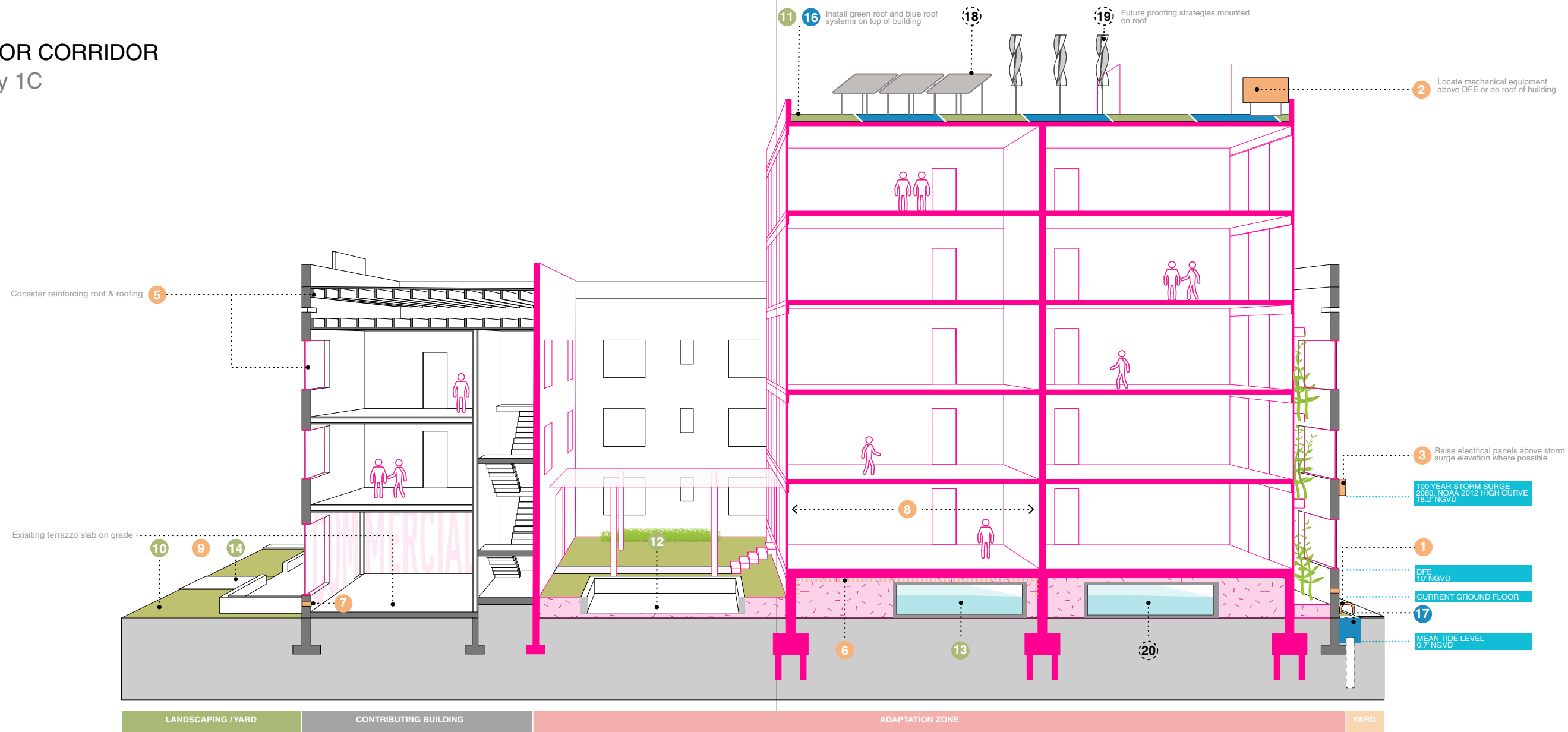
- 1** **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2** **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3** **POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4** **DRY FLOODPROOFING**
Where the lowest floor elevation is located below DFE, implement measures to make the building watertight and prevent entry of water. These include flood barriers and hydrostatic slabs
- 5** **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing
- 11** **GREEN ROOFS**
- 12** **SUNKEN PLAZA & PATIOS**
- 13** **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14** **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15** **CISTERNS**

- 6** **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7** **WET FLOODPROOFING**
Install flood vents in existing lobby area located below design flood elevation
- 8** **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9** **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from the commercial and hotel lobby areas
- 10** **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible
- 16** **BLUE ROOFS**
- 17** **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18** **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19** **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20** **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

INTERIOR CORRIDOR
Strategy 1C



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

1 **BACKFLOW PREVENTION**
Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate to roof of new structure

3 **POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure to remain as needed. All new construction to meet wind and impact requirements.

11 **GREEN ROOFS**
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane

12 **SUNKEN PLAZA & PATIOS**
Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**

6 **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7 **WET FLOODPROOFING**
Install flood vents in commercial areas located below design flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9 **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from commercial areas

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

16 **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building

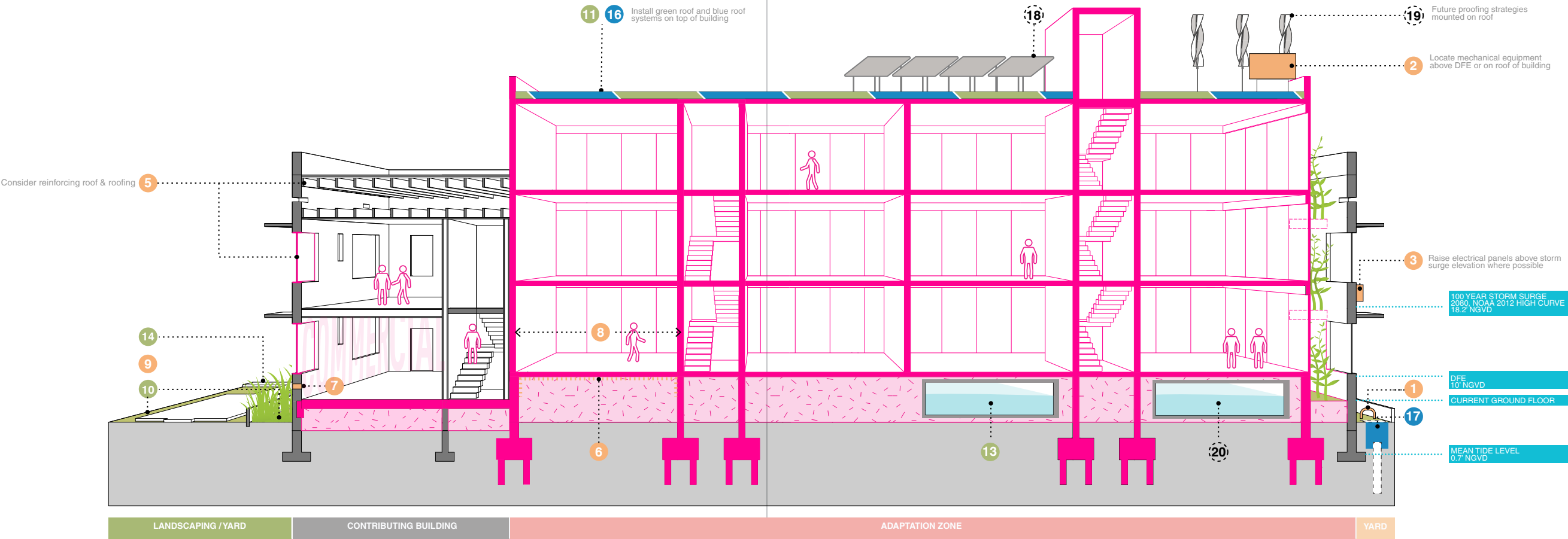
17 **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the roof of the building

19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the roof of the building

20 **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

WALK-UP
Strategy 1C



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1** **BACKFLOW PREVENTION**
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above design flood elevation. Relocate on roof if structurally possible.

3 **POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure to remain as needed. All new construction to meet wind and impact requirements.
- 11** **GREEN ROOFS**
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**

- 6** **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7 **WET FLOODPROOFING**
Install flood vents in commercial areas located below design flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9 **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from commercial areas

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

STORMWATER MANAGEMENT STRATEGIES FUTURE PROOFING

- 16** **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building

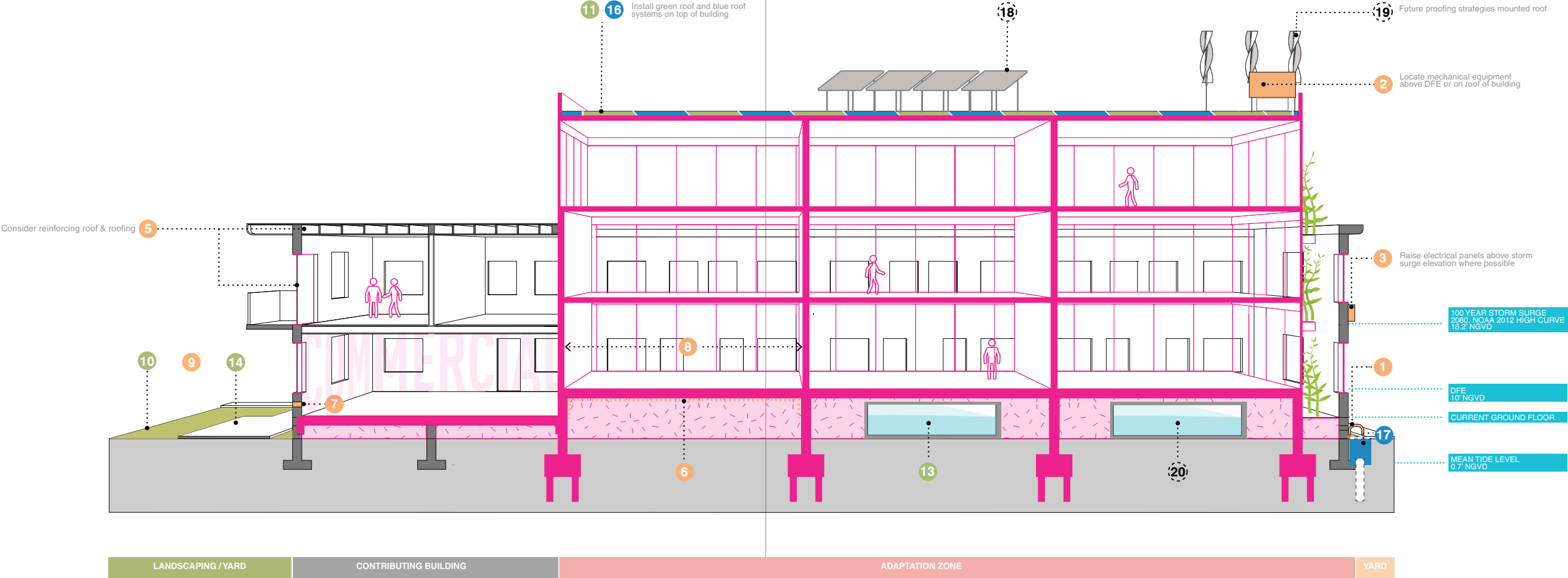
17 **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the roof of the building

19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the roof of the building

20 **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

CATWALK
Strategy 1C



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

- 1** **BACKFLOW PREVENTION**
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property

2 **MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate to roof of new structure

3 **POWER & LIFE-SAFETY/UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible

4 **DRY FLOODPROOFING**

5 **WIND MITIGATION**
Install impact resistant windows and doors. Retrofit hurricane roof straps into existing structure to remain as needed. All new construction to meet wind and impact requirements

11 **GREEN ROOFS**
Install roofing systems covered with vegetation and a growing medium over a waterproofing membrane

12 **SUNKEN PLAZA & PATIOS**

13 **UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property

14 **PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements

15 **CISTERNS**

- 6** **SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants

7 **WET FLOODPROOFING**
Install flood vents in commercial areas located below design flood elevation

8 **FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event

9 **ADA ACCESSIBILITY FEATURES**
Install ramps or lifts in order to provide accessible routes to and from commercial areas

10 **RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible

16 **BLUE ROOFS**
Install roofing systems that capture rainwater functioning as a tank-like structure for re-use within the building

17 **INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate

18 **SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the roof of the building

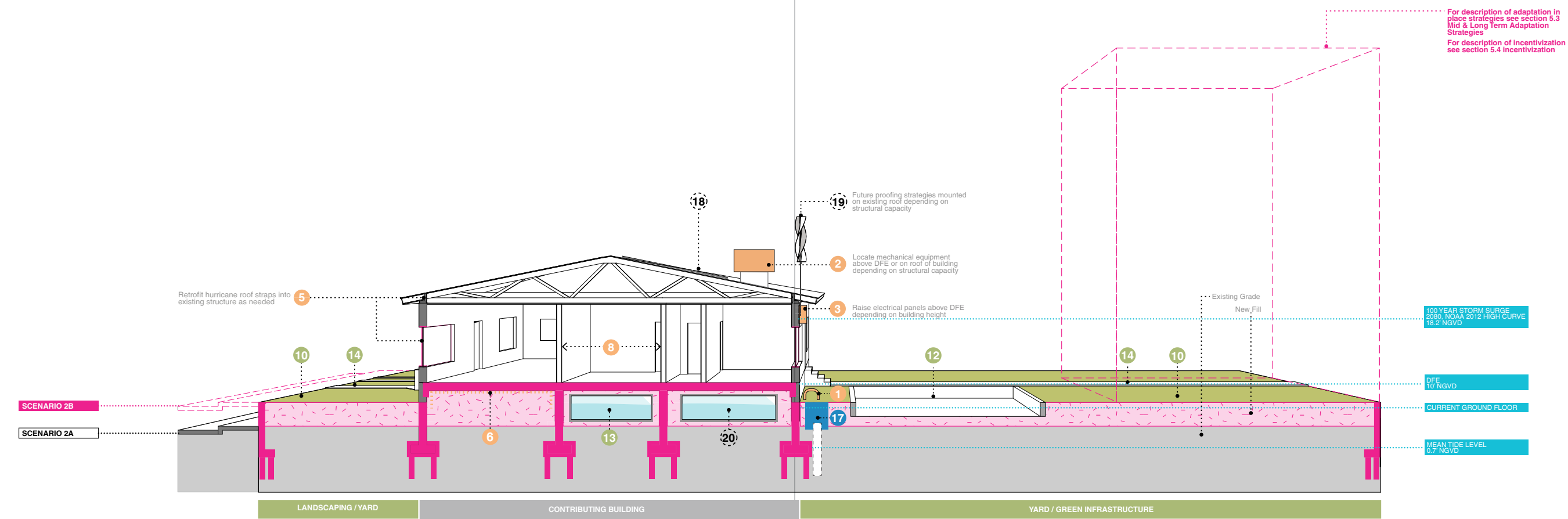
19 **WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the roof of the building

20 **WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

COTTAGE / HOUSE
Strategy 2A



BUILDING & SYSTEMS STRATEGIES

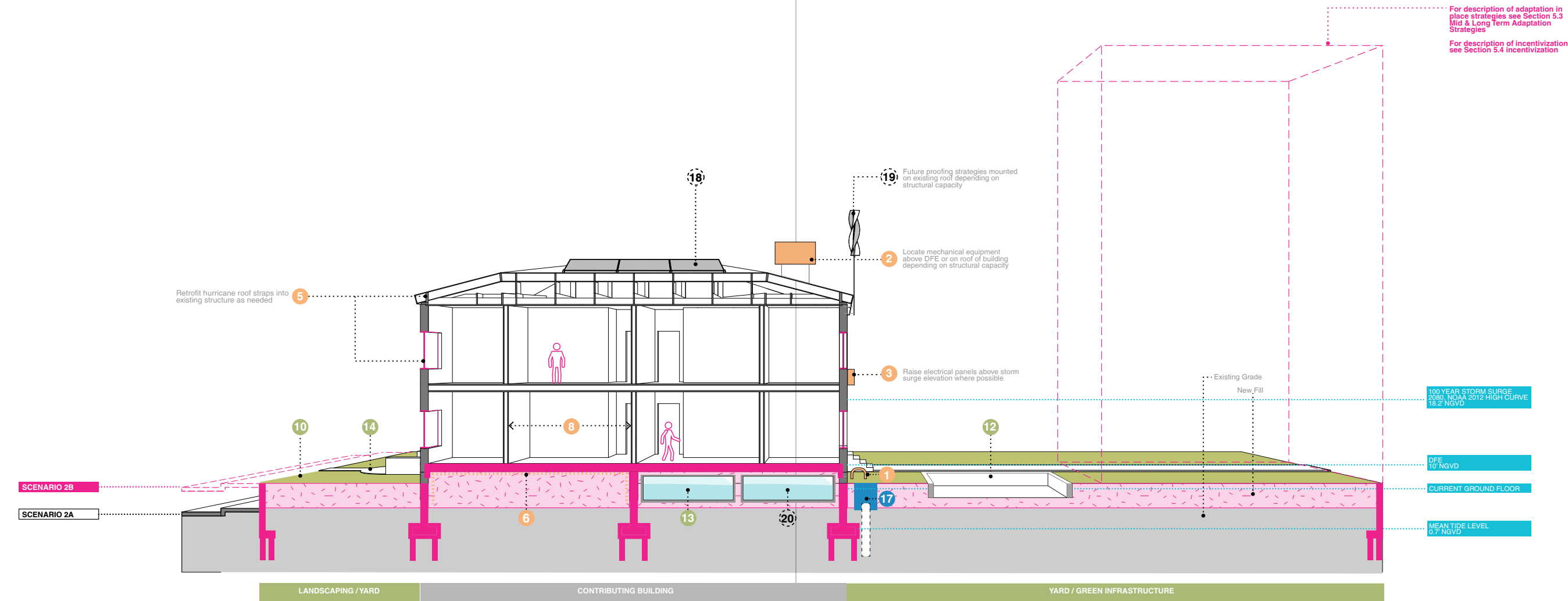
- 1 BACKFLOW PREVENTION: Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION: Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION: Elevate power & life safety systems above DFE or as much as the existing building height allows
- 4 DRY FLOODPROOFING
- 5 WIND MITIGATION: Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 6 SEEPAGE & WATERPROOFING: Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING
- 8 FLOOD RESISTANT BUILDING MATERIALS: Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES
- 10 RAIN GARDENS: Provide planting areas designed to capture and store rainwater in the front and rear yards of the property
- 11 GREEN ROOFS
- 12 SUNKEN PLAZA & PATIOS: Create courtyards or plazas with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT: Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 15 CISTERNS

STORMWATER MANAGEMENT STRATEGIES FUTURE PROOFING

- 16 BLUE ROOFS
- 17 INJECTION WELLS: Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS: Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19 WIND TURBINES: Install solar systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20 WATER RECYCLING SYSTEMS: Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

GREEN INFRASTRUCTURE

URBAN Villa
Strategy 2A



BUILDING & SYSTEMS STRATEGIES

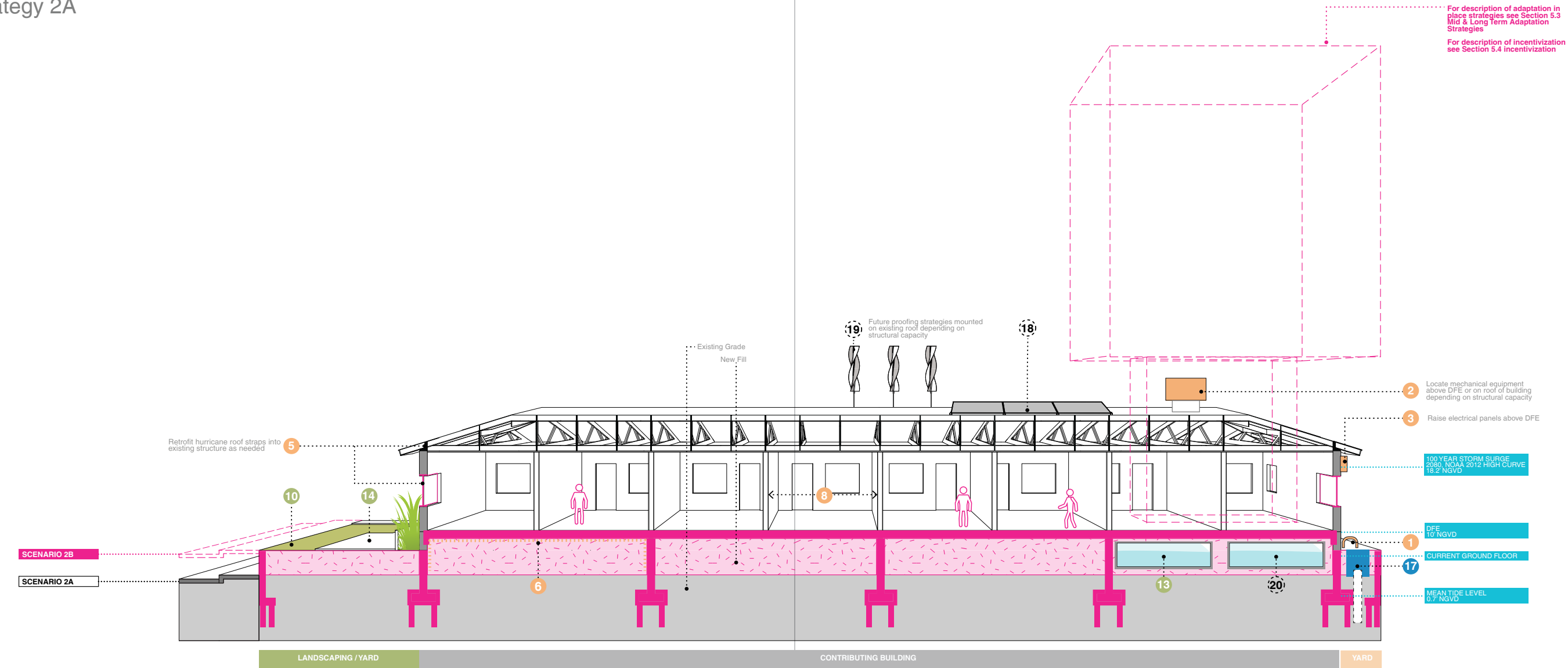
- 1 BACKFLOW PREVENTION**
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING**
- 5 WIND MITIGATION**
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 6 SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING**
- 8 FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES**
- 10 RAIN GARDENS**
Provide planting areas designed to capture and store rainwater in the front and rear yards of the property
- 11 GREEN ROOFS**
Create courtyards or patios with impervious surfaces that temporarily store water during extreme rain events in the rear yard
- 12 SUNKEN PLAZA & PATIOS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 14 PERMEABLE PAVEMENT**
- 15 CISTERNS**

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 16 BLUE ROOFS**
- 17 INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19 WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20 WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

RAMBLER
Strategy 2A



BUILDING & SYSTEMS STRATEGIES

- 1 BACKFLOW PREVENTION**
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on sloped roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE or as much as the existing building height allows
- 4 DRY FLOODPROOFING**
- 5 WIND MITIGATION**
Install Impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed
- 6 SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING**
- 8 FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES**
- 10 RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible
- 11 GREEN ROOFS**
- 12 SUNKEN PLAZA & PATIOS**
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 15 CISTERNS**

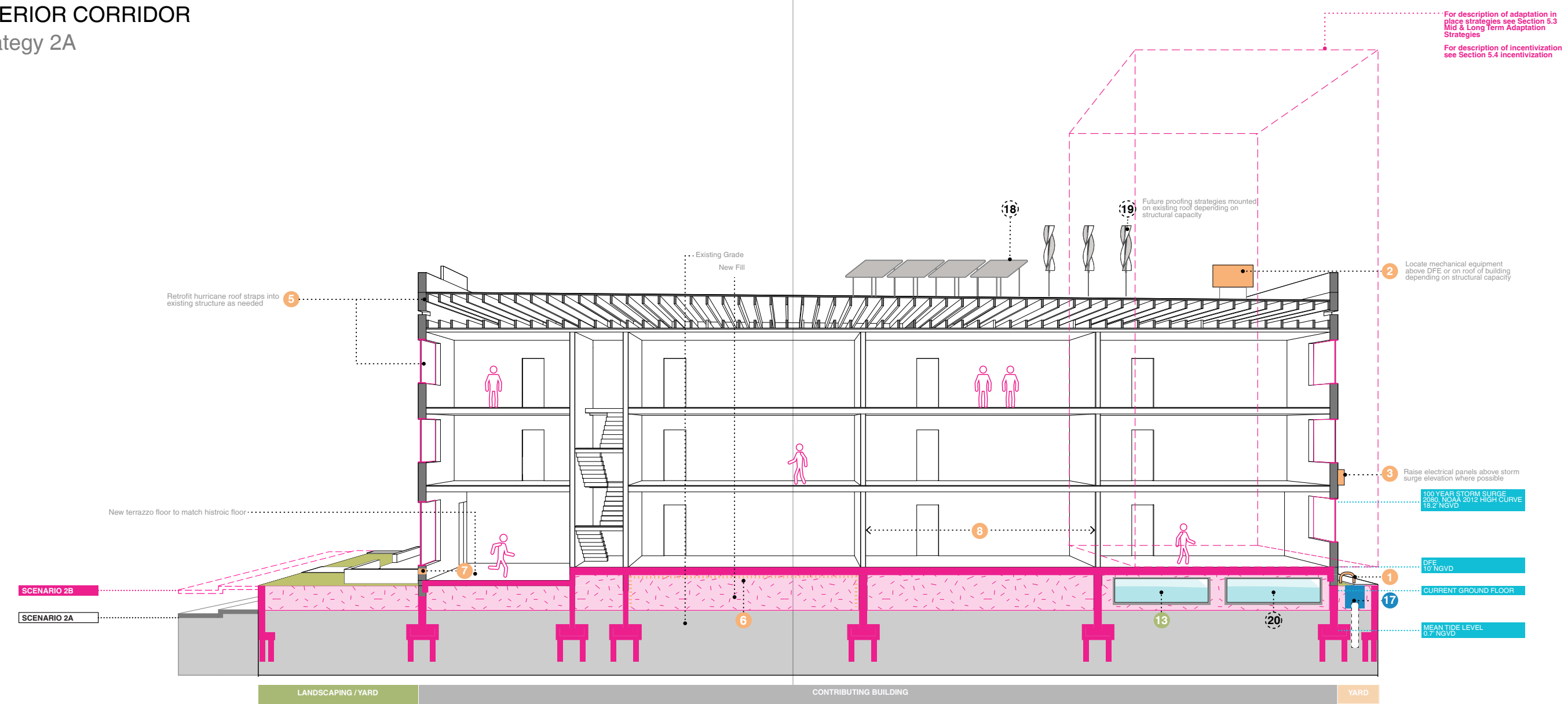
STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 16 BLUE ROOFS**
- 17 INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the sloped roof if structurally possible
- 19 WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the sloped roof if structurally possible
- 20 WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

GREEN INFRASTRUCTURE

INTERIOR CORRIDOR
Strategy 2A



BUILDING & SYSTEMS STRATEGIES

- 1 BACKFLOW PREVENTION
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING
- 5 WIND MITIGATION
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed. Consider reinforcing roof & roofing
- 6 SEEPAGE & WATERPROOFING
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 FLOODPROOFING WET
Install flood vents in existing lobby area below base flood elevation
- 8 FLOOD RESISTANT BUILDING MATERIALS
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES
- 10 RAIN GARDENS
Provide planting areas designed to capture and store rainwater where possible
- 11 GREEN ROOFS
- 12 SUNKEN PLAZA & PATIOS
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT
Install pavements surfaces that allow for direct infiltration of water into the ground where possible
- 15 CISTERNS

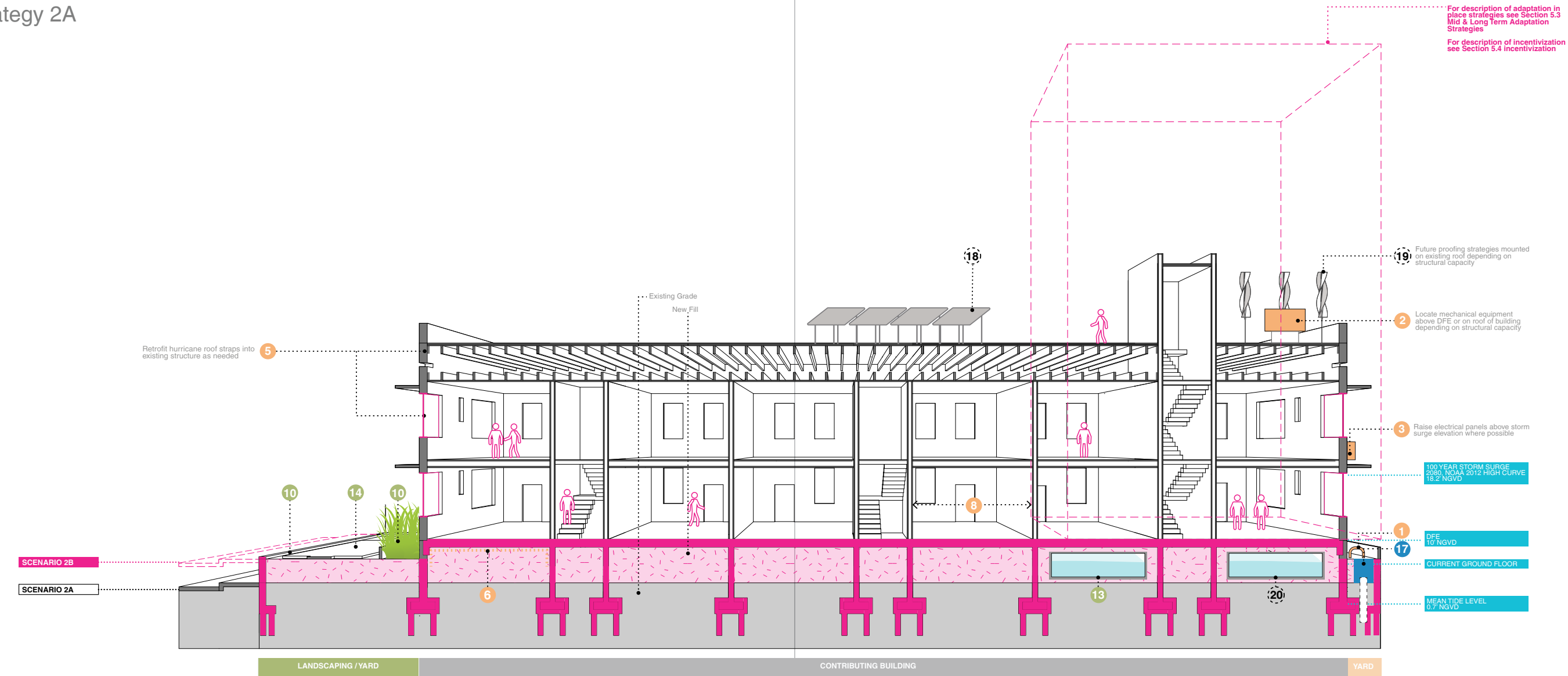
GREEN INFRASTRUCTURE

STORMWATER MANAGEMENT STRATEGIES

FUTURE PROOFING

- 16 BLUE ROOFS
- 17 INJECTION WELLS
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19 WIND TURBINES
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20 WATER RECYCLING SYSTEMS
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

WALK-UP
Strategy 2A



BUILDING & SYSTEMS STRATEGIES

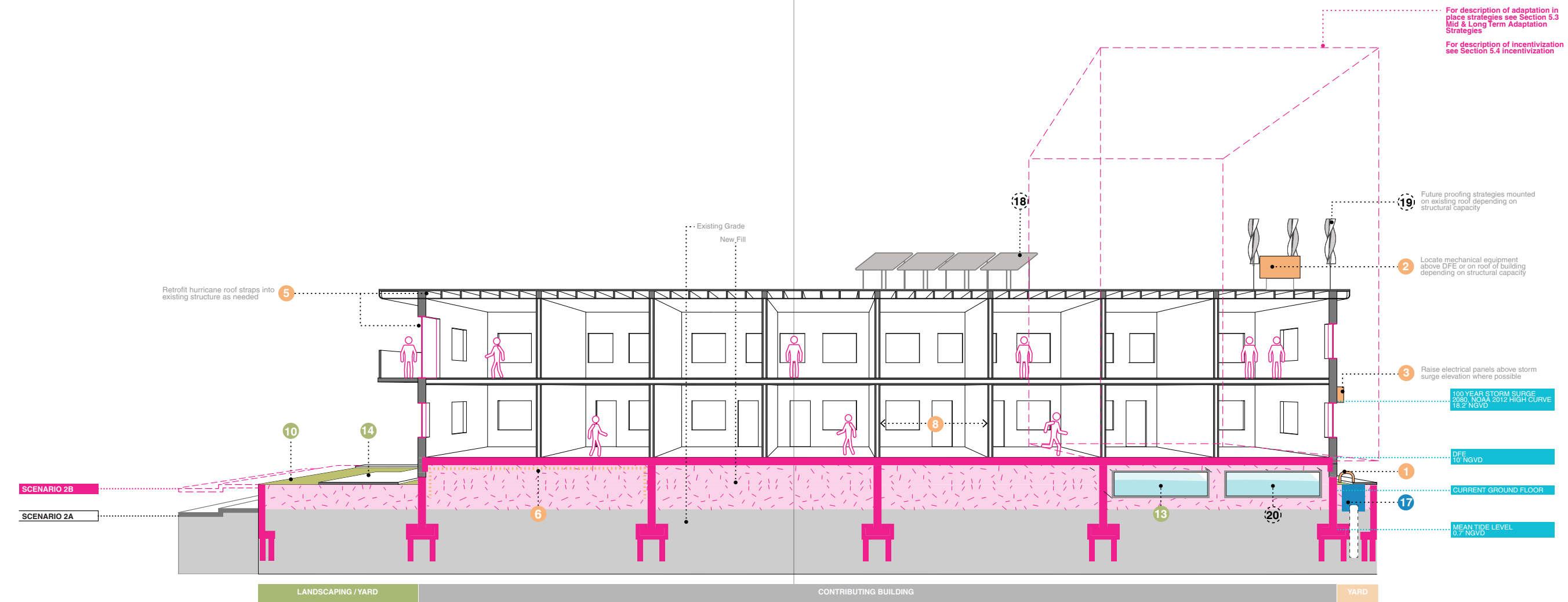
- 1. BACKFLOW PREVENTION: Install backflow preventors, valves that prevent rising water from flowing back into the building, at the rear of the property.
- 2. MECHANICAL SYSTEMS FLOOD PROTECTION: Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible.
- 3. POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION: Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible.
- 4. DRY FLOODPROOFING: Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed, Consider reinforcing roof & roofing.
- 5. WIND MITIGATION: Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed, Consider reinforcing roof & roofing.
- 6. SEEPAGE & WATERPROOFING: Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants.
- 7. FLOODPROOFING (WET): Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event.
- 8. FLOOD RESISTANT BUILDING MATERIALS: Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event.
- 9. ADA ACCESSIBILITY FEATURES: Provide planting areas designed to capture and store rainwater where possible.
- 10. RAIN GARDENS: Provide planting areas designed to capture and store rainwater where possible.
- 11. GREEN ROOFS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property.
- 12. SUNKEN PLAZA & PATIOS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property.
- 13. UNDERGROUND RETENTION STORAGE SYSTEMS: Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements.
- 14. PERMEABLE PAVEMENT: Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements.
- 15. CISTERNS: Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property.

STORMWATER MANAGEMENT STRATEGIES FUTURE PROOFING

- 16. BLUE ROOFS: Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate.
- 17. INJECTION WELLS: Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate.
- 18. SOLAR PANELS: Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible.
- 19. WIND TURBINES: Install solar systems that use wind energy to generate electricity on the existing roof if structurally possible.
- 20. WATER RECYCLING SYSTEMS: Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes.

GREEN INFRASTRUCTURE

CATWALK
Strategy 2A



For description of adaptation in place strategies see Section 5.3 Mid & Long Term Adaptation Strategies

For description of incentivization see Section 5.4 Incentivization

BUILDING & SYSTEMS STRATEGIES

- 1 BACKFLOW PREVENTION**
Install backflow preventers, valves that prevent rising water from flowing back into the building, at the rear of the property
- 2 MECHANICAL SYSTEMS FLOOD PROTECTION**
Elevate mechanical systems above DFE, relocate on existing roof on stands if structurally possible
- 3 POWER & LIFE-SAFETY / UTILITIES FLOOD PROTECTION**
Elevate power & life safety systems above DFE at a minimum, above storm surge elevation if possible
- 4 DRY FLOODPROOFING**
- 5 WIND MITIGATION**
Install impact resistant windows and doors, Retrofit hurricane roof straps into existing structure as needed, Consider reinforcing roof & roofing
- 6 SEEPAGE & WATERPROOFING**
Where new slabs are proposed, use materials that prevent water from penetrating the building envelope, such as waterproof membranes and sealants
- 7 WET FLOODPROOFING**
- 8 FLOOD RESISTANT BUILDING MATERIALS**
Where new construction occurs below storm surge elevation, use materials that reduce the damage caused by floodwaters and make cleanup easier after a flood event
- 9 ADA ACCESSIBILITY FEATURES**
- 10 RAIN GARDENS**
Provide planting areas designed to capture and store rainwater where possible
- 11 GREEN ROOFS**
- 12 SUNKEN PLAZA & PATIOS**
- 13 UNDERGROUND RETENTION STORAGE SYSTEMS**
Implement systems below grade that temporarily provide a place for water to collect during a storm event rather than flooding a property
- 14 PERMEABLE PAVEMENT**
Install pavements surfaces that allow for direct infiltration of water into the ground where possible. Preserve terrazzo pavements
- 15 CISTERNS**

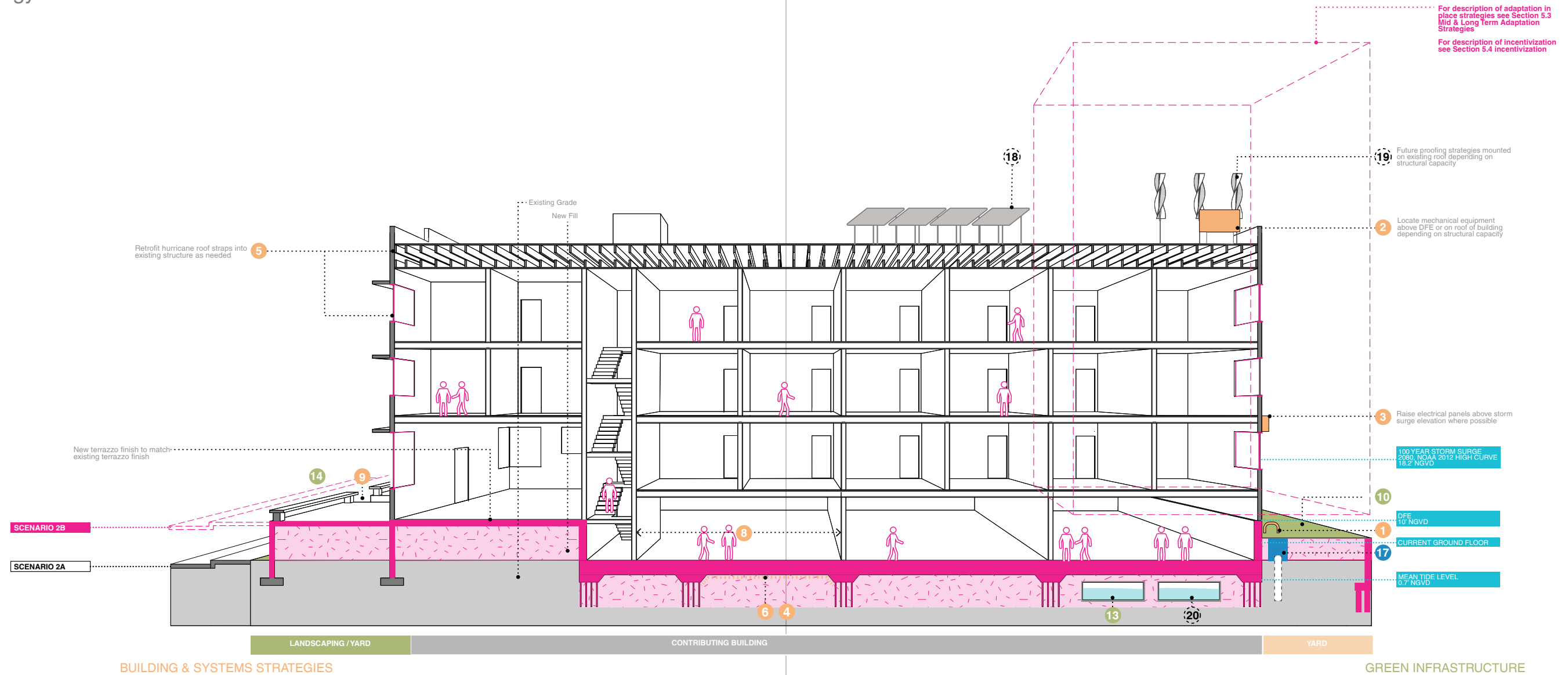
GREEN INFRASTRUCTURE

STORMWATER MANAGEMENT STRATEGIES FUTURE PROOFING

- 16 BLUE ROOFS**
- 17 INJECTION WELLS**
Where feasible, install injection wells. Devices that send water below the shallow soil deep into an area of the ground with more space for water to infiltrate
- 18 SOLAR PANELS**
Install photovoltaic systems that use energy from the sun to generate electricity on the existing roof if structurally possible
- 19 WIND TURBINES**
Install eolic systems that use wind energy to generate electricity on the existing roof if structurally possible
- 20 WATER RECYCLING SYSTEMS**
Implement systems for treating waste water and reusing it for irrigation, sanitary and cleaning purposes

LOW-RISE HOTEL

Strategy 2A



BUILDING & SYSTEMS STRATEGIES

GREEN INFRASTRUCTURE

