

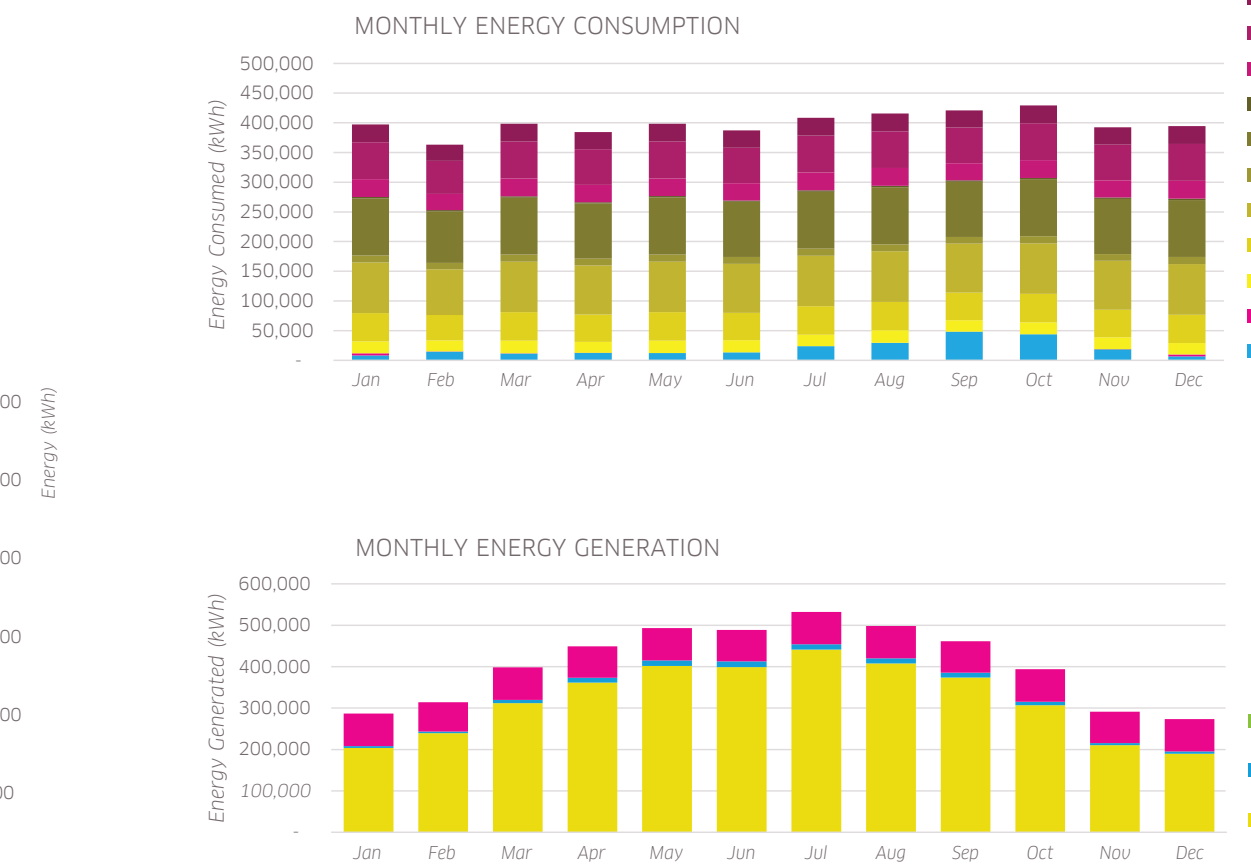
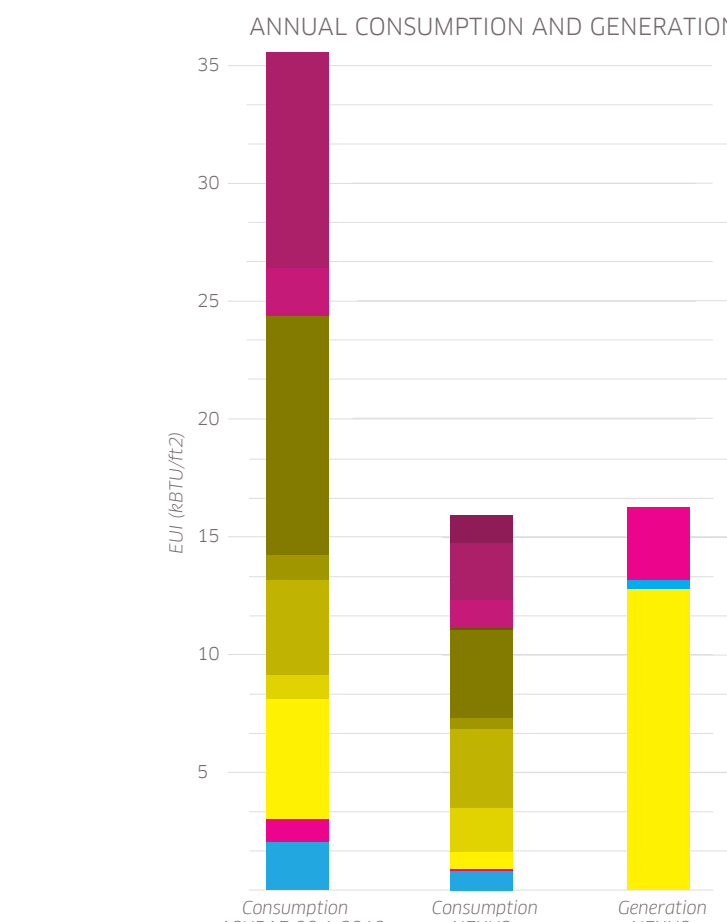
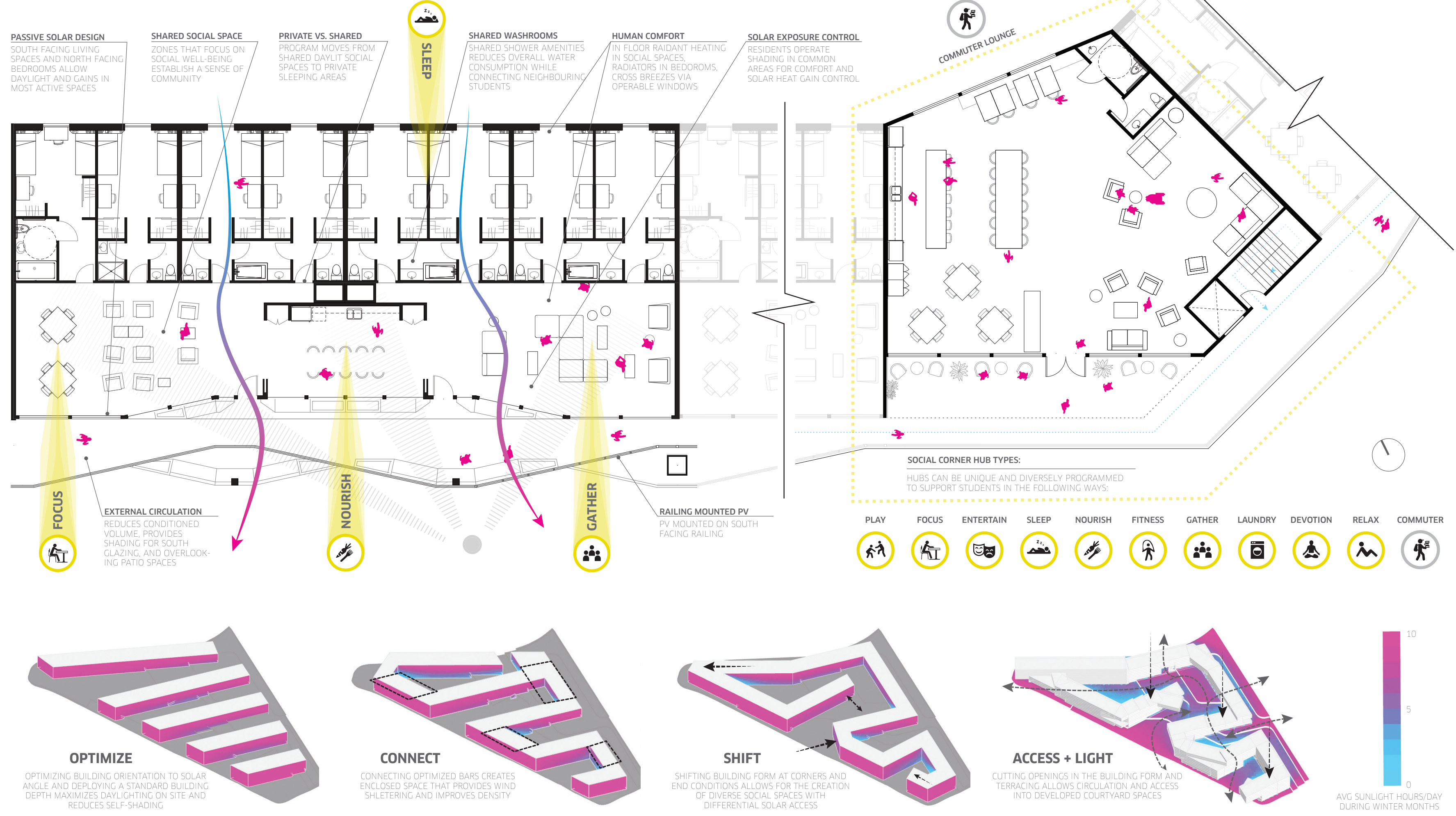
AN ARCHITECTURE OF PEOPLE AND PLACE

NEXUS demonstrates the mutual benefits when architecture considers the complex climate and social systems of a place and its people, and follows a net positive approach to design. As our cities place excessive burdens on our climate, universities place escalating pressure on students. Academic load, peer competition, and financial security, coupled with a disconnection from familiar social support structures has been shown to cause significant negative impacts on the mental health and wellness of students across North America.

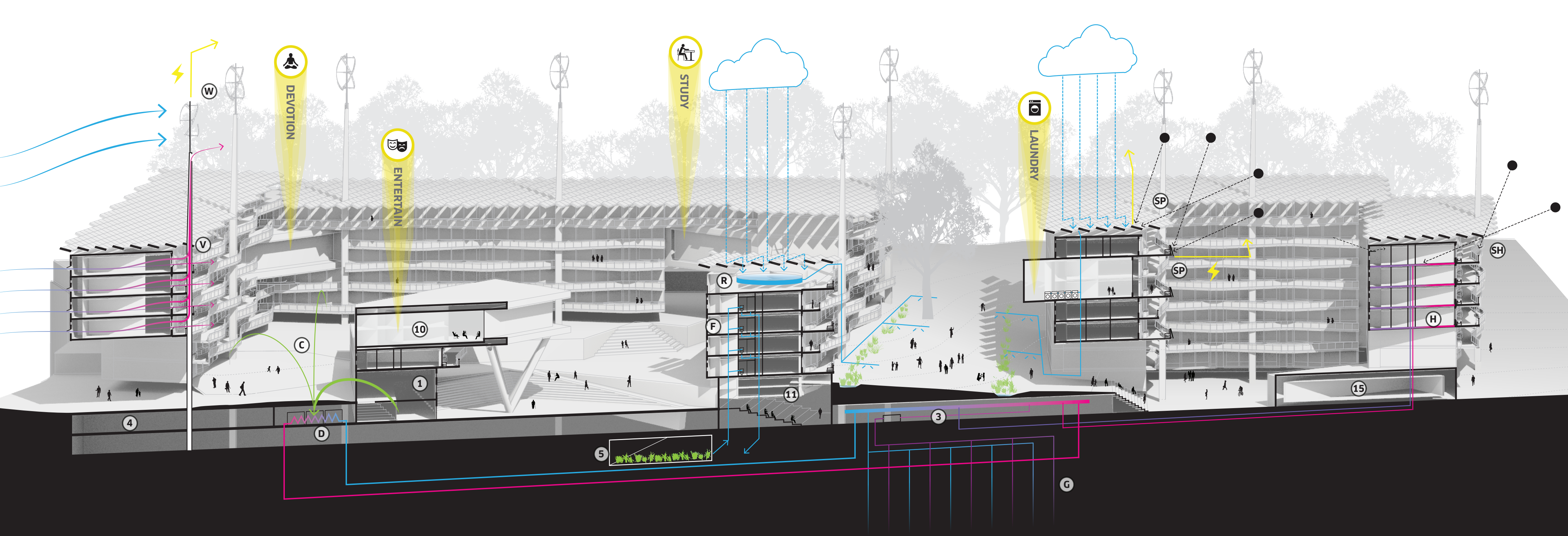
The aim of NEXUS is to not only create a net zero energy high-performance building, but also utilize design as a catalyst in the formation and maintenance of social support networks for resident and commuter students. With a design driven by renewable energy generation, system efficiency and social connectivity, the resulting program organization and building form creates an architecture which mutually benefits people and place at multiple scales of operation.

At the unit scale, a strong North/South orientation bias is established within a single-loaded corridor model. Sleeping quarters are condensed to the northern edges to relinquish more open and shared social spaces to the south. Units are nested in expanding communal spaces to balance fostering social networks with providing personal retreat.

At the site scale, the aggregation of this unit typology manifests as a serpentine structure strongly informed through analysis of optimal orientation to improve passive solar heat gain and natural lighting. The continuous structure also creates a series of diversely programmed courtyards with connections to the greater campus and city.



NET ZERO STRATEGY				SOCIAL STRATEGY AND BENEFITS	
ENERGY GENERATION		LOAD REDUCTION		SOCIAL HEALTH	
ENERGY SOURCE	SYSTEM	LOAD	REDUCTION STRATEGY	DESIGN STRATEGY	SOCIAL BENEFIT
GROUND	GROUND SOURCE HEAT PUMP	SPACE HEATING	8% GLAZING TO NORTH	BEDROOMS TO NORTH	REDUCED ANXIETY
ORGANICS	AEROBIC DIGESTERS	SPACE COOLING	70% GLAZING TO SOUTH	SHARED LIVING TO SOUTH	REDUCED LONELINESS
WASTEWATER	SEWAGE HEAT RECOVERY	HOT WATER	INCREASED COMFORT BAND	PLANTING & VIEWS	CLIMATE EDUCATION
EXHAUST AIR	HRV	FRESH AIR	DIMMABLE LED LIGHTING	NESTED SOCIAL SPACES	ACTIVE INHABITANT
SOLAR	HIGH MASS SLAB	LIGHTING	DEDICATED PLUG LOADS	SHARED AMENITIES	CONSUMPTION EDUCATION
WIND	CROSS VENTILATION	PLUG LOADS	HORIZONTAL SHADING	EXTERNAL CIRCULATION	UNIT EQUALITY
RAIN WATER	STACK VENTILATION	FANS	OPERABLE WINDOWS	VARIABLE LIGHTING, GAINS	
	PHOTOVOLTAIC	LAUNDRY	LESS CONDITIONED VOLUME		
	WAV TURBINE	FLUSHING	DAYLIGHTING		
	LIVING MACHINE	IRRIGATION	CONSUMPTION FEEDBACK		
	RAIN WATER STORAGE				



SYSTEMS

- V: cross + stack ventilation for cooling
- W: vertical axis wind turbine
- C: compost collection
- D: aerobic digesters with heat recovery
- R: rainwater storage
- F: flushing from recaptured water
- L: living machine wastewater treatment
- SP: solar pv
- H: radiant heating and cooling
- G: geoscape borefield
- SH: solar gains
- B: bioswale

COURTYARDS

- (A) PLAZA GATHER**
- a1) stage / performance
 - a2) ramps to provide wheelchair accessibility
 - a3) first stairs with sitting features
 - a4) outdoor seating, roofed
 - a5) link to courtyard C and child care facility
 - a6) link to mall
 - a7) north entrance
 - a8) even access to dining
- (B) COURTYARD RECREATIONAL**
- b1) basketball court
 - b2) outdoor seating 3rd floor
 - b3) landscape surfaces with drought tolerant planting
 - b4) pathway to connect nw-corner & plaza level (3rd fl)
- (C) COURTYARD CONTEMPLATION**
- c1) sloped terrain to accommodate cascading floors below
 - c2) extended eucalyptus canopy
- (D) COURTYARD PLAY**
- d1) link to main plaza (3rd fl)
 - d2) playground
- (E) LANDSCAPE FEATURES**
- e1) retaining trees along Winston Drive
 - e2) eucalyptus canopy
 - e3) pedestrian bridge to make connection to mall
 - e4) swale / planting



ARCHITECTURE AT ZERO 2016