

# WELCOME

## WELCOME TO THE DISTRICT ENERGY PLANT OPEN HOUSE INFORMATION SESSION

### PURPOSE

The purpose of this open house is to present information and answer your questions regarding the new District Energy Plant, the campus heating system and the project development approval process.

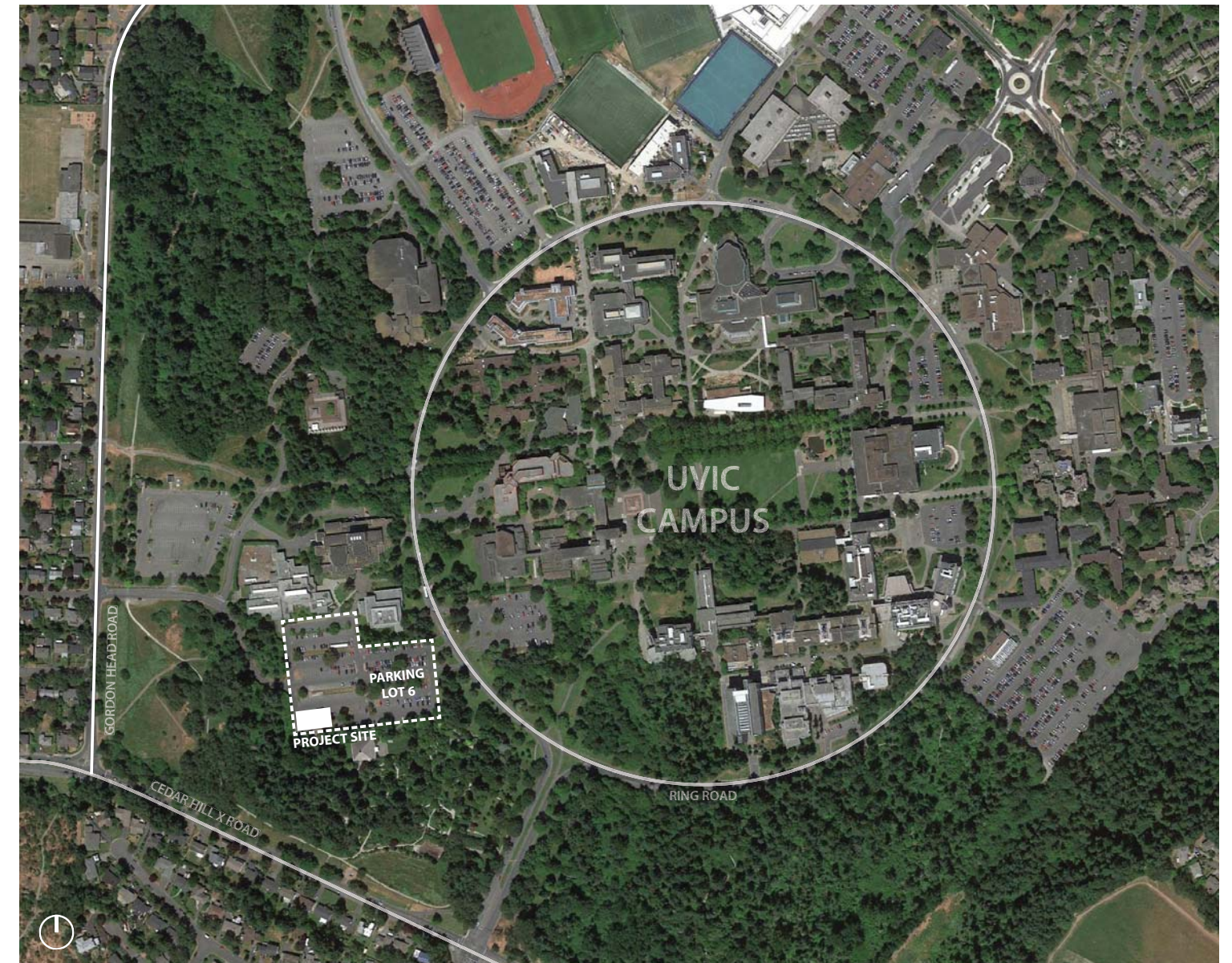
**INFORM:** Provide information about the project and related implications

**EDUCATE:** Explain the importance of the district energy system

**INPUT:** Gather your comments and feedback



ARTIST RENDERING OF NEW ENERGY PLANT



UVIC CAMPUS AND PROJECT SITE LOCATION

# PROJECT GOALS

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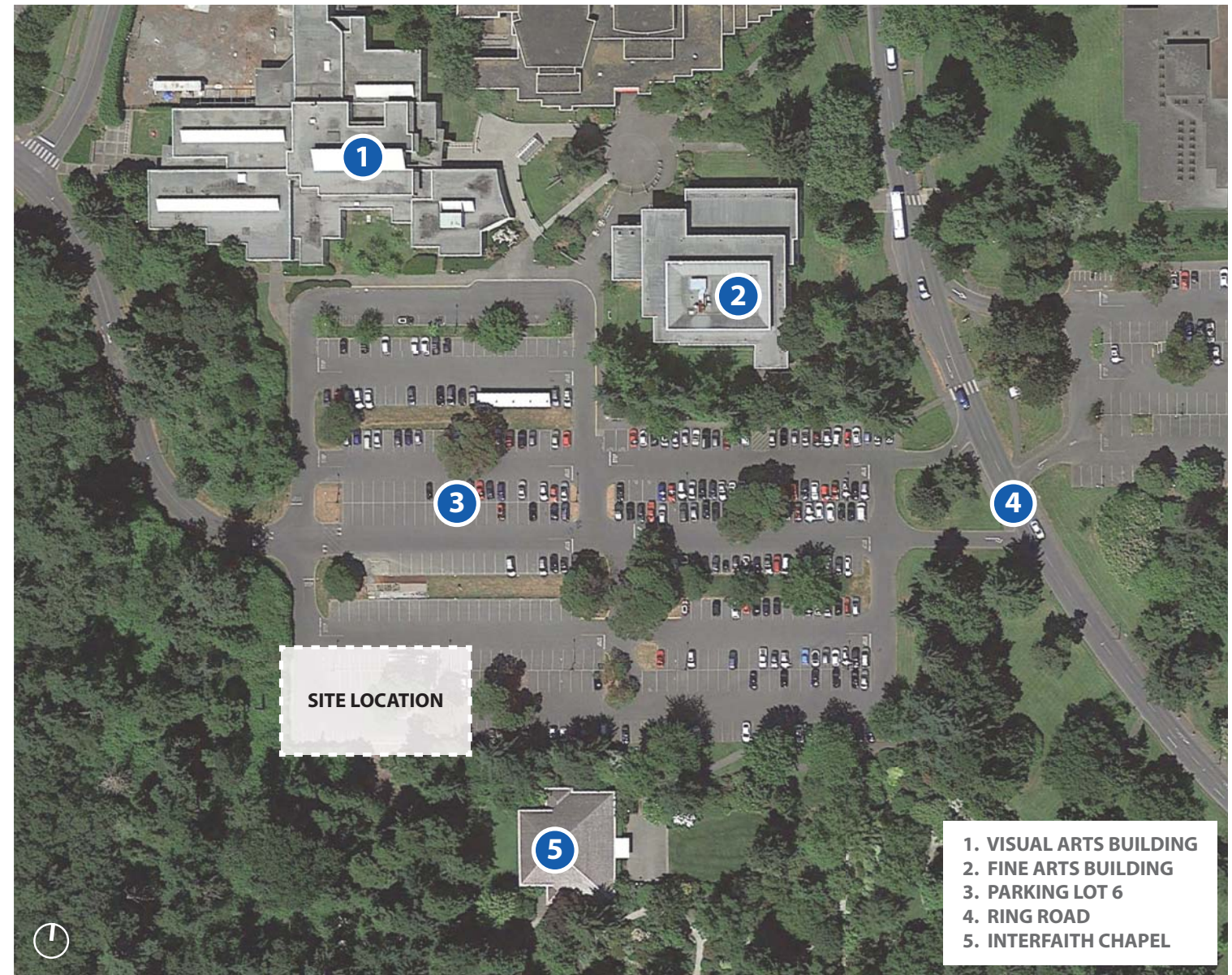
The University of Victoria plans to build a new district energy plant to replace its aging energy heating infrastructure. The new natural gas-fired plant will boast more efficient boilers which, in combination with new control systems and ultra-efficient energy transfer stations across the campus, will produce significant energy savings. The plant will be in the southwest corner of Parking Lot 6, north of the Interfaith Chapel and Finnerty Gardens. Construction of the new plant is slated to begin in the Spring of 2017.

## SUSTAINABILITY

The University of Victoria is committed to upholding a high level of leadership in sustainability through the development of green buildings and sustainable campus practices. The district energy plant is a registered Leadership In Energy and Environmental Design (LEED®) project targeting the Gold certification standard.

### SUSTAINABILITY STRATEGIES:

1. Compact Development and Parking Lot Use as Site
2. LEED® Gold Target
3. Energy Efficiency
4. Daylit Interior
5. Natural Ventilation
6. Rainwater Harvesting
7. Structural Wood Use (CLT)
8. Electric Vehicle Charging Station



PARKING LOT 6 AND PROJECT SITE LOCATION

# DISTRICT ENERGY SYSTEM

## SYSTEM UPGRADES AND CHANGES

The heating system for much of the campus is comprised of a loop of piping, providing heat to 32 buildings via hot water and heat exchangers. Water is heated by natural gas-fired boilers located in the Engineering Lab Wing, McKinnon building and Cadboro Commons building. The existing plants, built in 1994, 1974 and 1968 respectively, have reached the end of their operational lives and require refurbishing or replacing. A fourth plant in the Clearihue building was decommissioned several years ago.



Engineering Lab wing

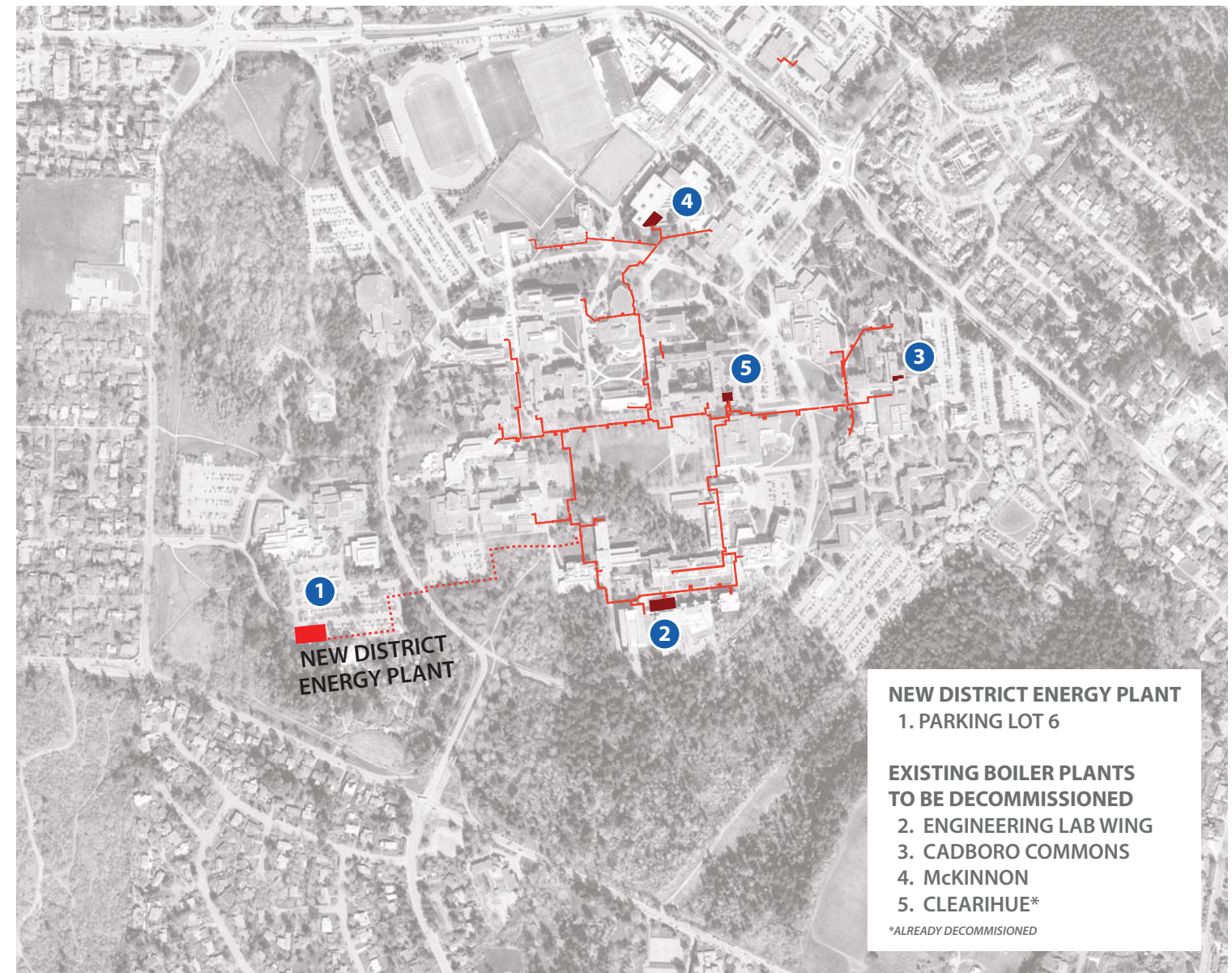


Cadboro Commons Building



McKinnon Building

The need for a new power plant to replace the aging infrastructure and prepare for future growth was identified in the 2015-16 Five Year Capital Plan. It was also highlighted in the recent update to the Campus Plan, which discussed the importance of advancing efficient energy use and greenhouse reduction strategies for the district heating system. The initial energy efficiency improvement and greenhouse gas reduction is estimated to be a minimum of 10%, with potential for higher future reductions through the ongoing efficiency improvements and energy delivery strategies pursued by the Facility Management Dept. at UVic.



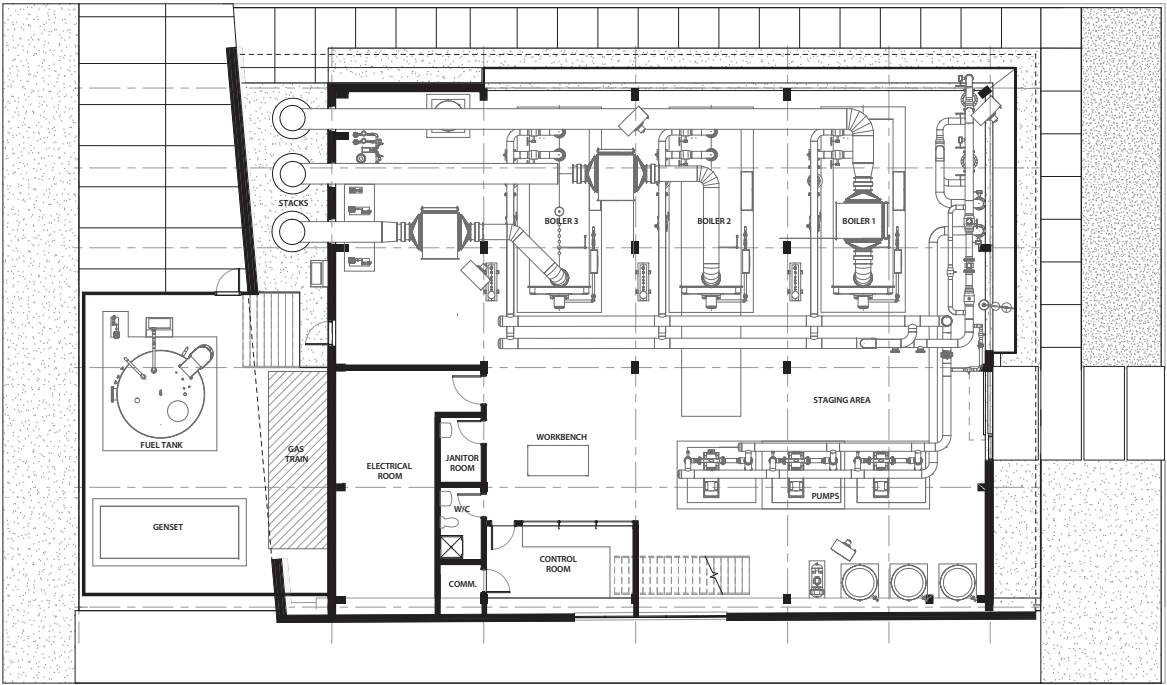
- NEW DISTRICT ENERGY PLANT**  
1. PARKING LOT 6
- EXISTING BOILER PLANTS TO BE DECOMMISSIONED**  
2. ENGINEERING LAB WING  
3. CADBORO COMMONS  
4. MCKINNON  
5. CLEARIHUE\*
- \*ALREADY DECOMMISSIONED

DISTRICT ENERGY SYSTEM MAP

# BUILDING DESIGN

## DESIGN

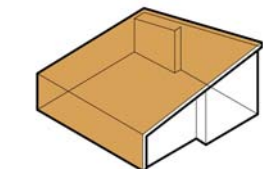
Wanting to avoid an industrial appearance, the design features an attractive sloped-roof inspired by the pyramidal form of the Interfaith Chapel. It will also feature exterior walls clad in wood, large expanses of glass to provide views to the boilers and pipes, enhanced ventilation, and a system to divert rainwater from the roof down to a collection cistern and rain garden.



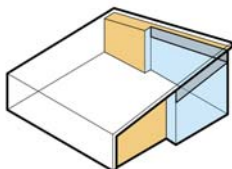
PLAN



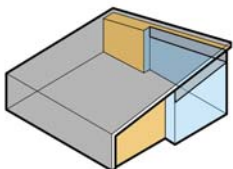
PERSPECTIVE RENDER  
VIEW LOOKING SOUTHWEST



CROSS-LAMINATED TIMBER STRUCTURE



WOOD CLADDING + GLAZED OPENINGS

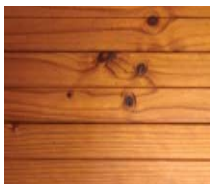


METAL-CLAD ROOF

DESIGN FEATURES



STANDING SEAM ROOF



CEDAR CLADDING



GLASS



WOOD CLT STRUCTURE



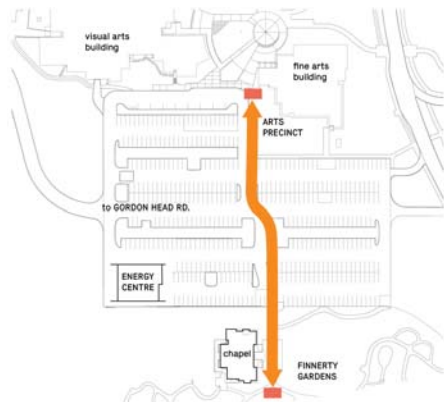
PROCESS PIPING



PROCESS EQUIPMENT

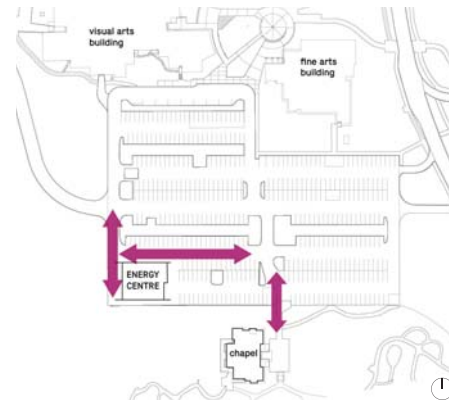
MATERIALS

# LANDSCAPE ELEMENTS



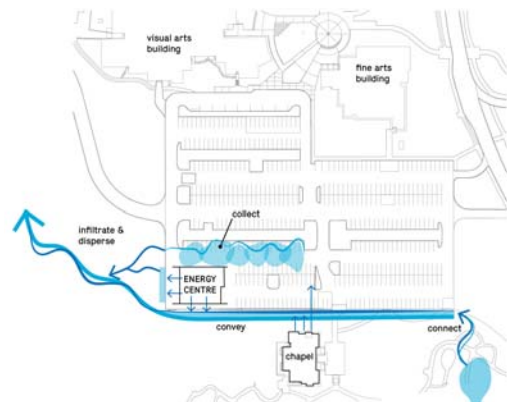
## PEDESTRIAN CONNECTIONS

Pedestrian routes intersecting the site include the access spine between the Arts Precinct and Finnerty Gardens as well as access via the West Campus Gate off of Gordon Head Road



## SERVICE CONNECTIONS

Service access to the site is provided along the western edge of Parking Lot 6 with vehicular access via the West Campus Gate



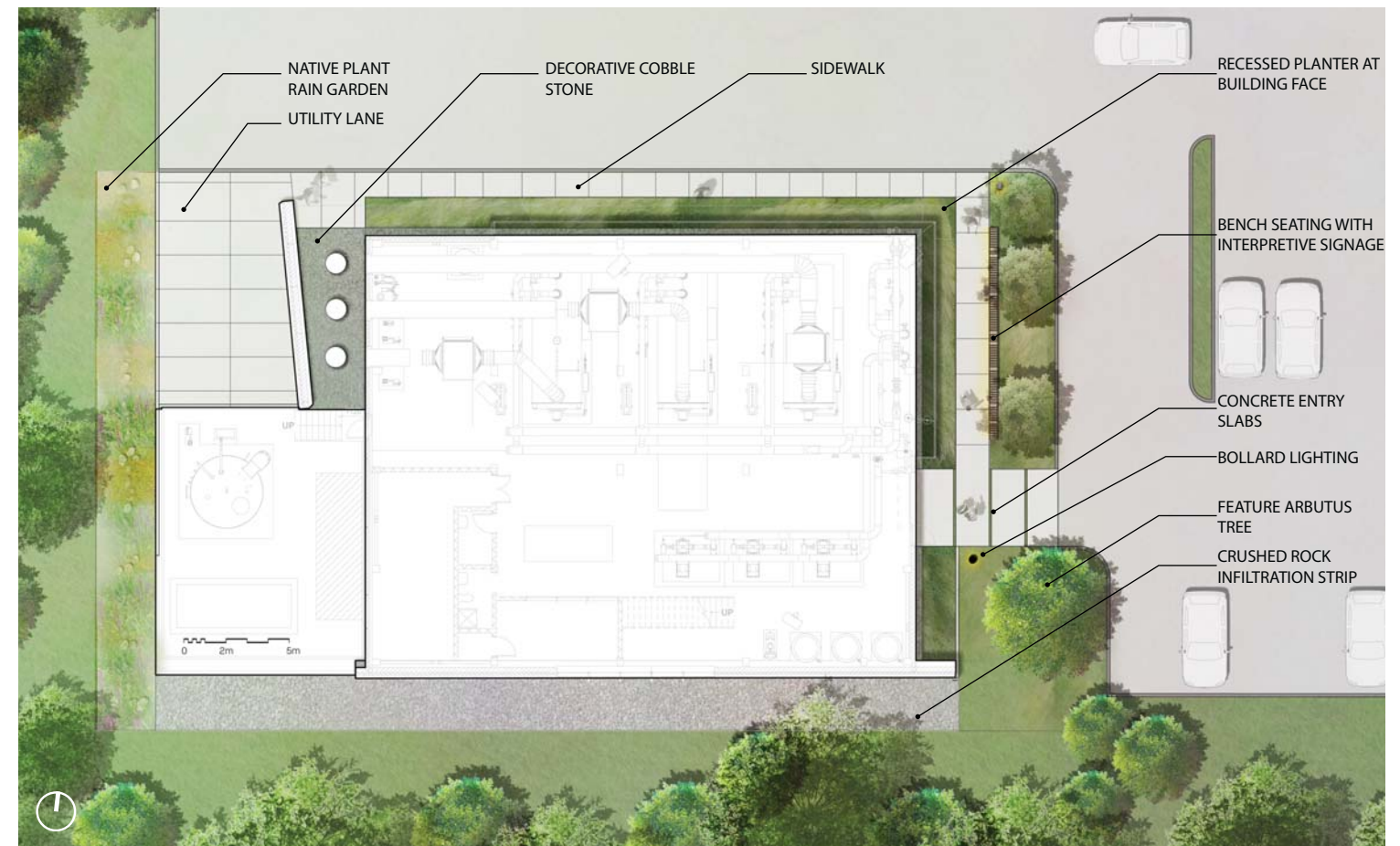
## STORMWATER MANAGEMENT

Water diverted from building roof and paved area is managed on site via collection, conveyance, infiltration and dispersion



## GREEN SPACE AND VEGETATION

The forested area to the south and west of the site are retained and act as a biophilic backdrop to the new energy plant. Several new plantings will act to complement the existing landscape and assist in biofiltration and habitat provision



RENDERED LANDSCAPE PLAN

# OPERATIONAL FACTS

## SYSTEM OPERATION AND PHASING

The hot water production system will provide increased capacity and redundancy to the campus heating system. The full design capacity will be 22.5 MW of thermal heat—enough heat for over 3 million square feet of building space or 2000 single family homes. Heating equipment will be installed in phases, with provisions for future equipment space and tie-in points for piping.

The hot water boilers will be fired using natural gas as the primary fuel supply and will also be capable of operating on fuel oil in the event of a natural gas interruption. The new plant will lead to a minimum of 10% energy savings in the heating system and the new boilers will be fitted with low nitrous oxide (NO<sub>x</sub>) burners to additionally reduce emissions impact. With future expansion, including potential connection to other existing buildings not currently serviced by the district system, the overall campus energy use would be reduced even further.

Acoustic noise produced by the mechanical equipment will be dampened by the building enclosure and offer no significant impacts to the surrounding area.



RENDERED ELEVATION OF NORTH FACADE

# SITE SERVICING

## TREE REMOVAL

One tree that currently exists within the building footprint will need to be removed and will be replaced with 3 new trees as part of a landscaping plan for the project. A tree removal permit from Oak Bay is not required.

The removal of 10 trees and some low-lying shrubs will be required to accommodate the installation of pipes that lead from the new District Energy Plant to the existing campus energy loop, north of the Medical Sciences Building. The majority of the route follows the edge of Parking Lot 6 and Lot E but a section in the corridor, south of the MacLaurin Building is in a partially vegetated area. The locations and species of trees to be removed are shown to the right.

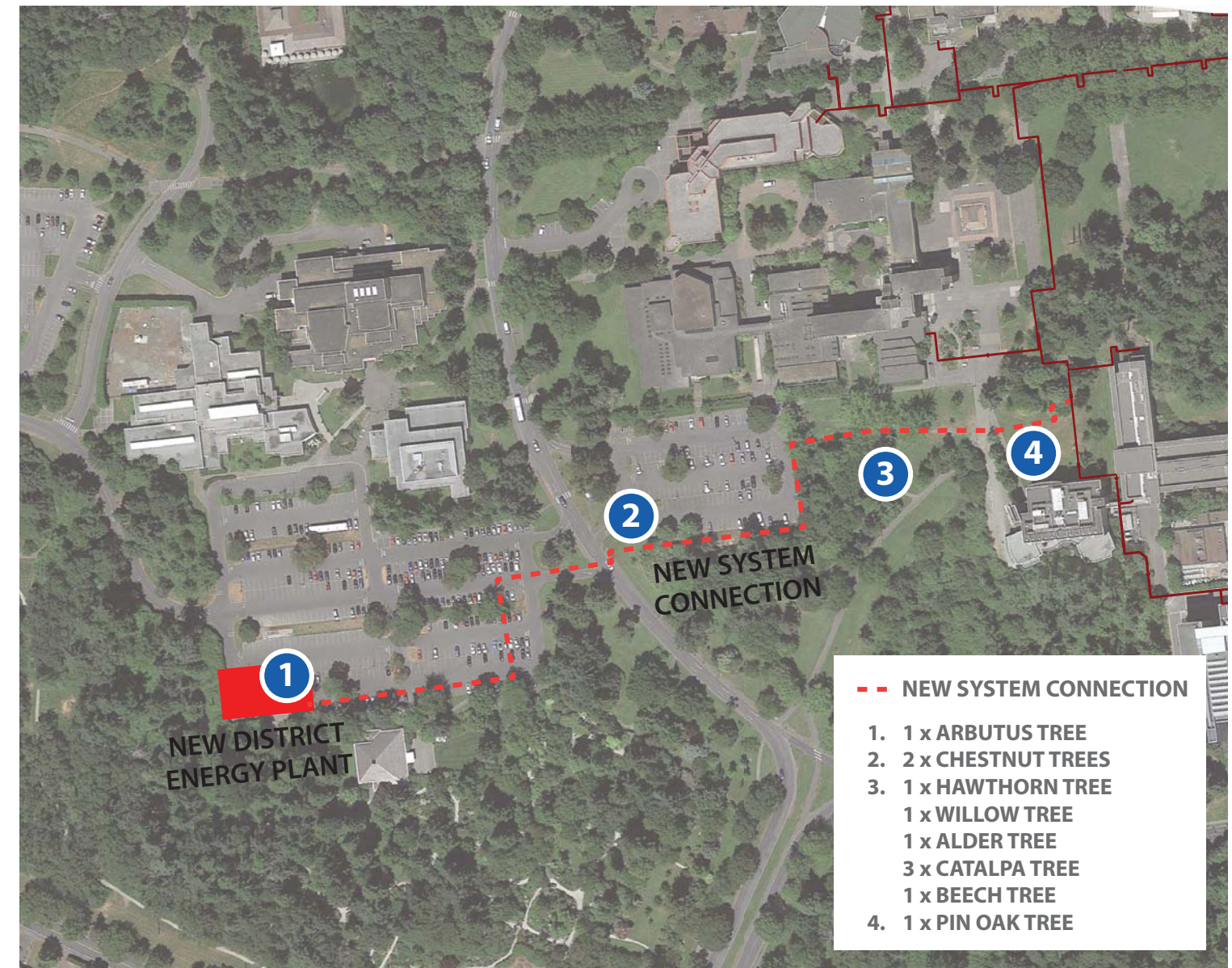


Area Near Parking Lot E

Area Near Parking Lot E

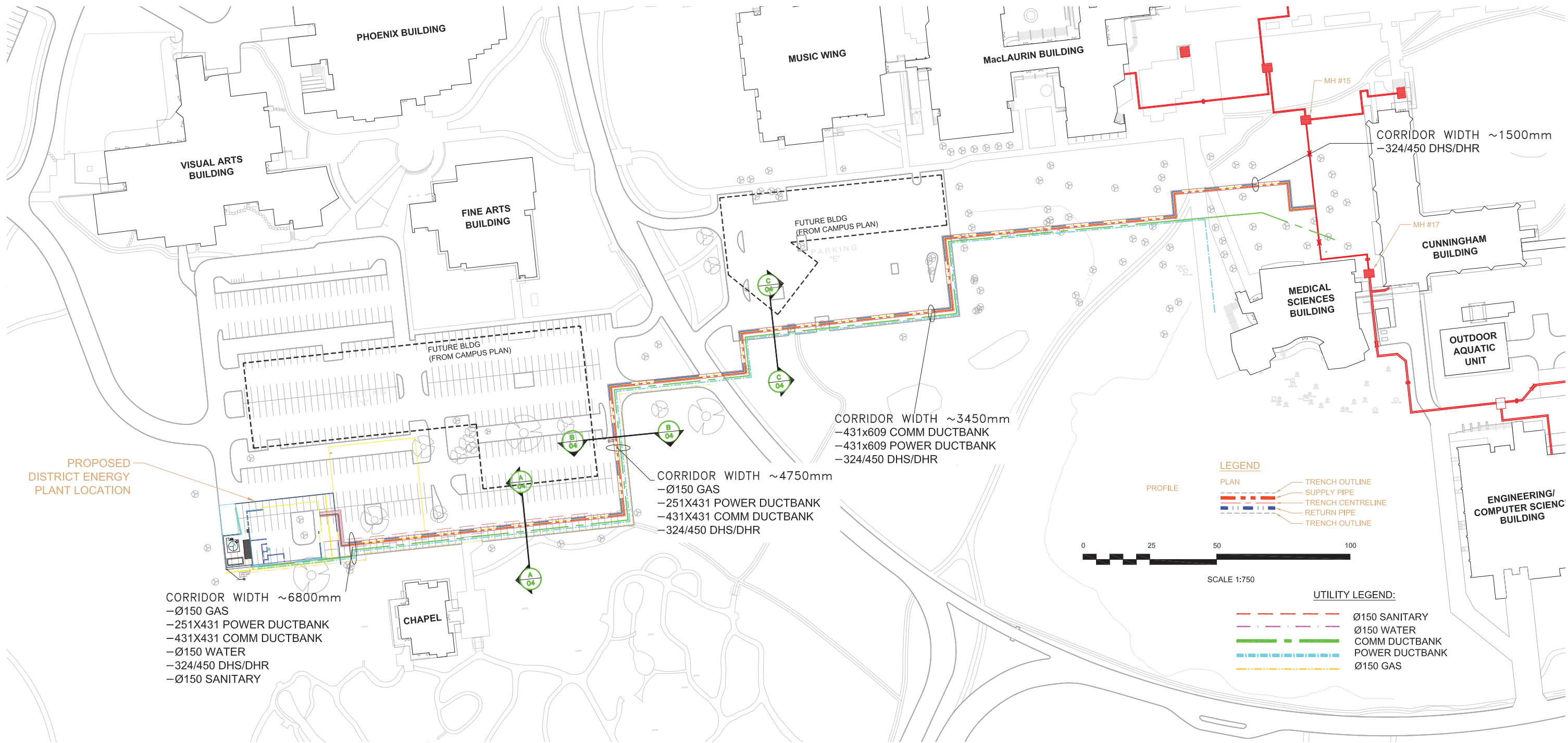
Area Near Medical Sciences Building

The university will provide for a landscaping plan that replaces the 10 trees with the planting of 30 new ones to enhance the campus open space and natural areas. In addition, leading up to and during the construction work to provide for the 12 ft. wide trench, the university will engage an arborist to provide advice on measures to minimize the impact and potential distribution to the trees adjacent to the energy distribution line route. Pipe installation work is scheduled for the January to March period in 2017.



DISTRICT ENERGY SYSTEM MAP SHOWING NEW CONNECTION LINE

# NEW CONNECTION LINE





# SUSTAINABLE TRANSPORTATION

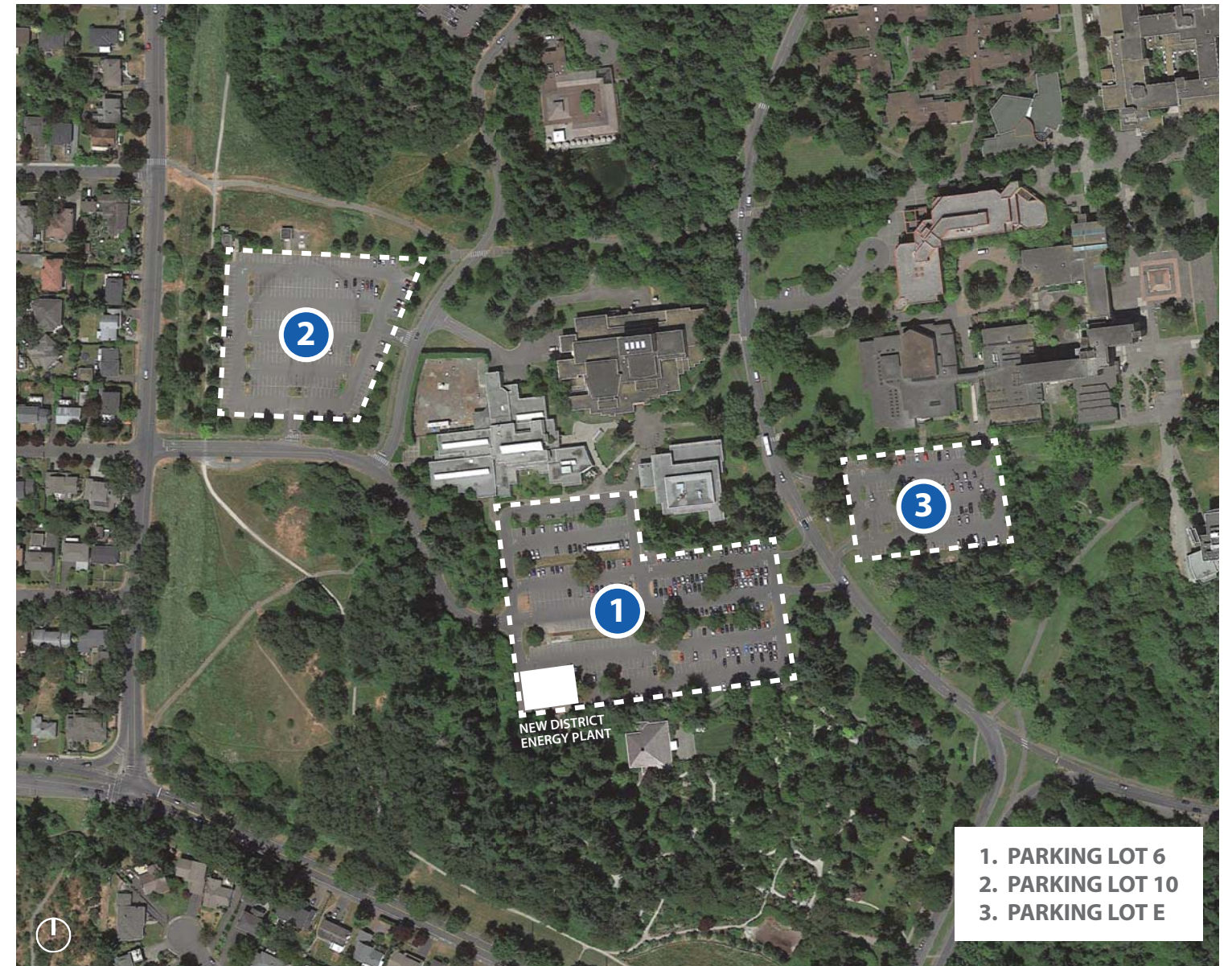
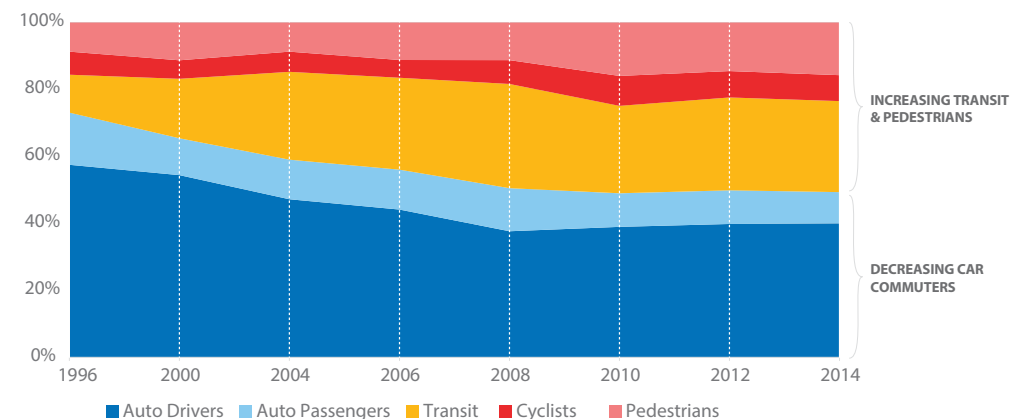
## PARKING IMPACT

The project will displace 36 existing parking stalls in Parking Lot 6 for the new building and associated service lane with none of the remaining parking stalls dedicated solely for building use. Alternative parking spaces are available in the area with 389 spaces remaining in Lot 6, 310 in Lot 10 and 135 in Lot E. As the Oak Bay zoning bylaw does not address parking for a project of this nature, the District is planning to review its parking regulations for future projects on campus.

## TRAVEL CHOICES

The University has an active Travel Choices program to encourage the use of sustainable travel options. It includes the student transit UPass, support for cycling, walking, car sharing and car-pooling, along with a subsidized employee bus pass program. A campus Sustainability Action Plan goal is to increase the use of transit, cycling, walking and car-pooling to 70% of the transportation modal split by 2019 (currently 60%).

UVic Travel Mode Survey Results:



NEARBY PARKING LOTS

# ENGAGEMENT

## ENGAGEMENT APPROACH

The University is following its Community Engagement Framework and Campus Engagement Process to provide information and engage stakeholders on the project throughout the various stages of the planning process. Possible project impacts have been assessed as part of the process of confirming the 'inform' engagement approach as outlined in the table to the right.



ENGAGEMENT APPROACH CRITERIA TABLE

	INFORM	CONSULT	INVOLVE
Project Location	Located within Ring Road or not close to public roadway or neighbours	Located between Ring Road, adjacent to a public roadway or residential housing	Located on a site that is non-contiguous to the main campus
Building Height	Less than 10m (Saanich) or 14m (Oak Bay)	Up to six stories (22m-28m range)	Greater than six stories
Traffic Generation	The project does not generate new traffic or is addressed by UVic's Transportation Demand Management program.	The project generates additional traffic in a new location or along an existing or new route but new traffic management facilities are not required.	The project generates additional traffic in a new location or along an existing or new route and new traffic management facilities are required.
Parking	The project does not generate new parking demands or parking is readily available in the parking lots that serve the area.	The project generates new parking demand and or a <u>minor</u> parking variance is being sought.	The project generates new parking demand and a major parking variance is being sought.
Open Space	Project is located on developed or cleared land and/or that is a building site identified in the Campus Plan.	Natural areas or open space used by the public is modified for a portion of the site.	Natural areas or open space used by the public is modified for a majority of the site.
Noise	Minimum amount of noise is generated.	Minimum amount of noise is generated	The project generates significant new noise through processes (e.g., additional mechanical) or special activities (e.g., events).
Lighting	Standard building or street/sidewalk lighting	Special outdoor lighting not facing residential areas	Special outdoor lighting facing residential areas
Heritage	No or minor impacts	Buildings that are listed in the heritage registry	Buildings that are listed in the heritage registry
Project Scale	Single building or building extension	Multiple buildings	Comprehensive site plan for multiple buildings and/or site improvements.
Campus Policy	Consistent with Campus Plan policy directions	Consistent with Campus Plan policy directions	Not consistent with Campus Plan policy directions
Municipal Approval	Within bylaw requirements	Project requires <u>minor</u> exemptions to bylaw regulations	Project requires major exemptions to bylaw regulations or rezoning

# THANK YOU

## THANK YOU FOR ATTENDING!

We welcome your comments on the project. Feedback is very helpful and will be taken into consideration during the continued project planning process.



## QUESTIONS OR COMMENTS?

Please contact Neil Connelly, Director of Campus Planning and Sustainability

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Email: [ocpsdir@uvic.ca](mailto:ocpsdir@uvic.ca)

More information online: [www.uvic.ca/campusplanning/current-projects/Plant](http://www.uvic.ca/campusplanning/current-projects/Plant)