Annacis Research Centre: Vision & Values

The Annacis Research Centre (ARC), which was built in partnership with federal and provincial agencies, provides a space for research, training, and education initiatives in partnership with academia, the private sector, government, and other organizations. ARC contributes to Metro Vancouver’s vision for collaborative, proactive wastewater research and development. Innovative and collaborative research efforts are needed to respond to the many challenges ahead for treating wastewater, including managing wastewater as a resource, promoting energy reduction, reuse and recovery of materials, and mitigating environmental impacts.

ARC has facilities for research, including access to in-plant wastewater streams for pilot-scale projects and technology assessments. It also provides meeting spaces for training, conferences, and education.

ARC provides long-term benefits for Canadians by enabling utilities and partners from academia, government, private industry and other organizations to actively engage in addressing innovative challenges.
Sustainable Building Features

The Annacis Research Centre has achieved LEED Platinum status by incorporating many different technologies, features, design criteria and construction practices. Key LEED features are:

• Building heating and cooling provided from wastewater piped from the Annacis Island Wastewater Treatment Plant
• Energy optimization
• Green power
• On-site storm water management
• Rainwater is collected and stored for use in toilet flushing, conserving water
• Industrial land restored to native vegetation
• Day-lighting for all workspaces
• ‘Wood First’ Building
• Living green roof at entrance
• Construction waste management
The Annacis Research Centre is a 1,600 m² (17,000 ft²) facility designed to meet the changing needs of the wastewater sector.

RECEPTION/LOBBY AREA
The reception lobby serves both as a gathering space during events and as a gateway to the building’s meeting, training, and research facilities. The lobby area and kitchen are designed to support catering at events. Large glass sliding doors to the Multipurpose Room create a large, seamless space when needed.

MEETING SPACES FOR TRAINING AND EDUCATION
A variety of sizes of meeting rooms are available to meet different needs. All rooms are equipped with built-in audio-visual equipment.

The Multipurpose Room accommodates a variety of functions and configurations:

- The space is large and rectangular, with two sets of fully retractable theatre-style bleacher seating
- With the theatre seating retracted, the room may be configured as a conference-type facility with seating at tables
- With the theatre seating extended, the space may be used as a large assembly hall suitable for lectures and presentations

The Science Classroom is designed for classroom instruction and training, or hosting smaller meetings. The room is equipped with:

- Instructor’s demonstration station equipped with lab fixtures
- Science lab stations to meet secondary school laboratory design guidelines
- A prep room

Two smaller meeting rooms are also available.

OBSERVATION AREAS
The Research Hall observation area enable visitors to read about and observe activities in the Research Hall. The observation glass partition for the mechanical room enables visitors to learn about the various components of the mechanical, heating, and rainwater recovery systems.
The Research Hall is designed to be a flexible industrial-quality space capable of accommodating pilot-scale research projects and technology testing and demonstration by utilities, academia, and industry. The Research Hall is equipped with:

**WASTEWATER PROCESS COMMODITIES FROM THE ANNACIS ISLAND WASTEWATER TREATMENT PLANT**

<table>
<thead>
<tr>
<th>COMMODITY</th>
<th>FLOW RATE</th>
<th>PRESSURE</th>
<th>CONNECTION STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Effluent</td>
<td>100 L/m</td>
<td>470 kPa</td>
<td>3&quot; Cam-lock</td>
</tr>
<tr>
<td>Secondary Effluent</td>
<td>570 L/m</td>
<td>570 kPa</td>
<td>2&quot; Cam-lock</td>
</tr>
<tr>
<td>Centrate</td>
<td>50 L/m</td>
<td>350 kPa</td>
<td>3&quot; Cam-lock</td>
</tr>
<tr>
<td>Waste Secondary Sludge</td>
<td>50 L/m</td>
<td>350 kPa</td>
<td>3&quot; Cam-lock</td>
</tr>
</tbody>
</table>

- Each of the four commodities are available at 5 stations as well as at the Exterior Research Area
- 600V – 3 phase, 208V – 3 phase, and 120V – single phase power
- Roll-up bay door and overhead bridge crane (5 ton)
- Wireless Internet throughout
- Potable water hose bibs in each quadrant

**RESEARCH LAB**

The Research Lab, which is adjacent to the Research Hall, enables researchers and technicians to monitor and analyse data on site.

**EXTERIOR RESEARCH AREA**

- The exterior research area accommodates projects by providing access to the four wastewater commodities and to power for trailer-based projects, allowing protection of intellectual property and materials. The area is designed to service multiple trailers at any given time.

**OFFICES AND WORKSTATIONS**

Offices for students and researchers provide convenient space for analysing and writing up results, communicating with other researchers, and storing and locking materials.
Research and Development Opportunities

The Annacis Research Centre provides the opportunity for utilities, academia and private industry to conduct research and technology development in a variety of cross-disciplinary areas including:

• Integrated resource recovery
• Using waste to generate renewable energy
• Nutrient removal and recovery
• Biogas production enhancement
• Process optimization
• Odour control
• Greenhouse gas reduction
• Contaminant removal
• Bioremediation
• Biosolids management
• Effluent heat extraction

Through its facilities, ARC provides access and services to research and development market sectors, helping to create employment and establish key markets for Canadian technologies.