

OVERVIEW

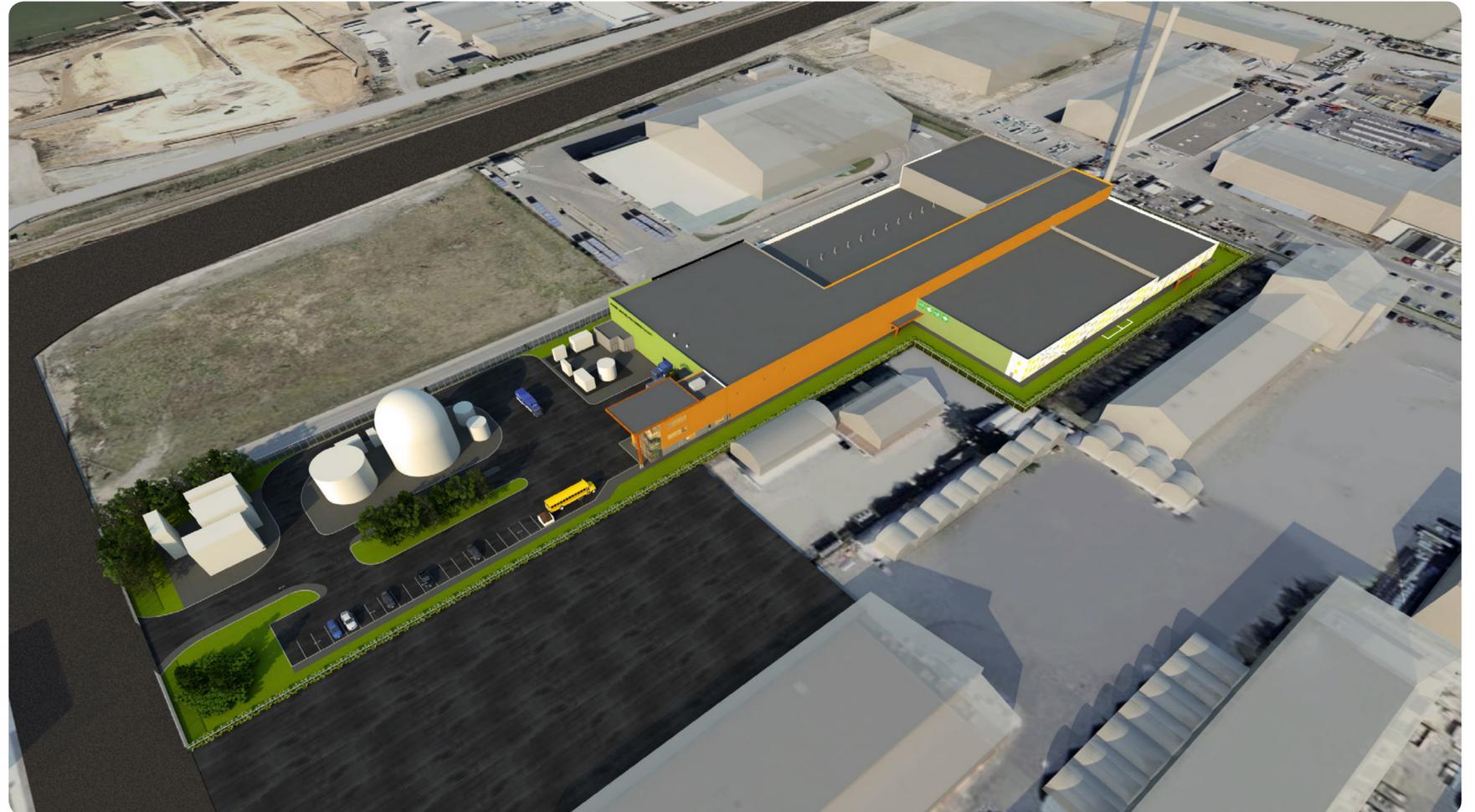
PROJECT OVERVIEW



SURREY SUSTAINABILITY CHARTER

In 2007, when Surrey wrote their Sustainable Charter, they set a high mandate creating a 'comprehensive framework for implementing a progressive, long term, 50 year vision to be a champion of sustainable cities'. Our design for the Surrey Biofuel Facility builds on and aligns the values, innovative thinking and communication strategy that Surrey has committed to as it provides public education about Green Infrastructure Pilot Projects for residents.

Through the building design, we convey and connect visually the communication strategy Surrey undertook to gain consensus before undertaking an innovative project of this nature. The "Rethink Waste Collection Program" mail out to Surrey residents carried a message that was featured throughout the communication strategy on billboards, advertising, websites and stories on the City news.



14,323

gross building area
in square metres

80,000

tonnes per year of
Surrey Residential Organics
waste processed

+25,000

tonnes per year of
Industrial, Commercial &
Institutional waste processed

Early 2017

service commencement

35,000

tonnes of Class A compost
produced per year

+/-3,000,000

cubic metres of gas produced per year
(55% methane)

+20

waste trucks at peak
site capacity

PROJECT PARTNERS

The City of Surrey is developing the facility as a Public-Private Partnership and has engaged **Orgaworld Surrey Ltd.** to undertake the design, build, finance, maintenance and operation of the Facility.

Orgaworld Surrey Ltd. has engaged:

- **Orgaworld Canada Ltd.** to work on the Design-Build and Services contract for the Facility.
- **Stantec Architecture Ltd.** to work with Orgaworld Canada on the Design-Build services.
- **Smith Bros. & Wilson (B.C.) Ltd.** to prepare the Site, procure the equipment and materials, construct infrastructure and building components and install the equipment required.

SURREY BIOFUEL PROCESSING FACILITY



PPP Canada



CONTEXT

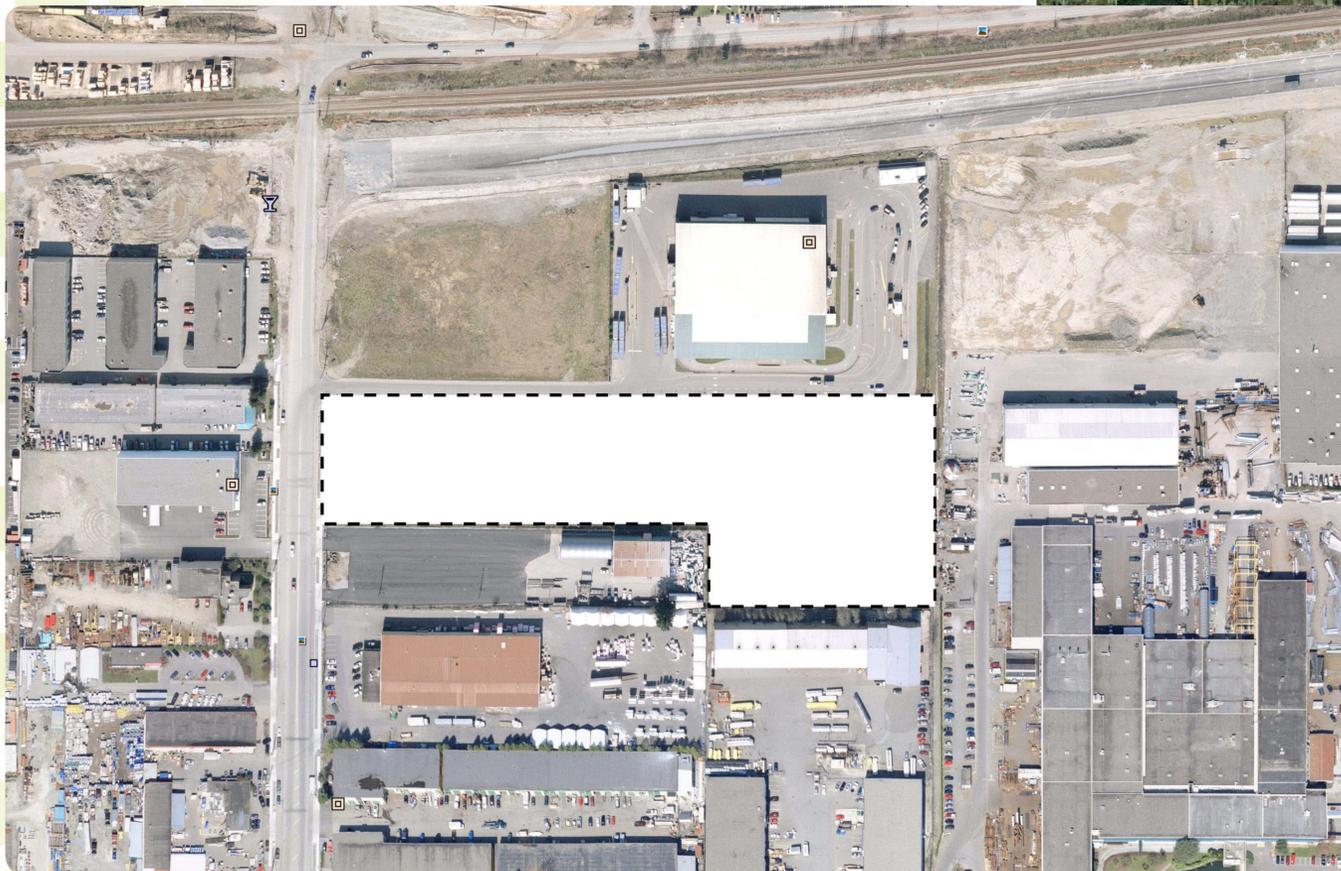
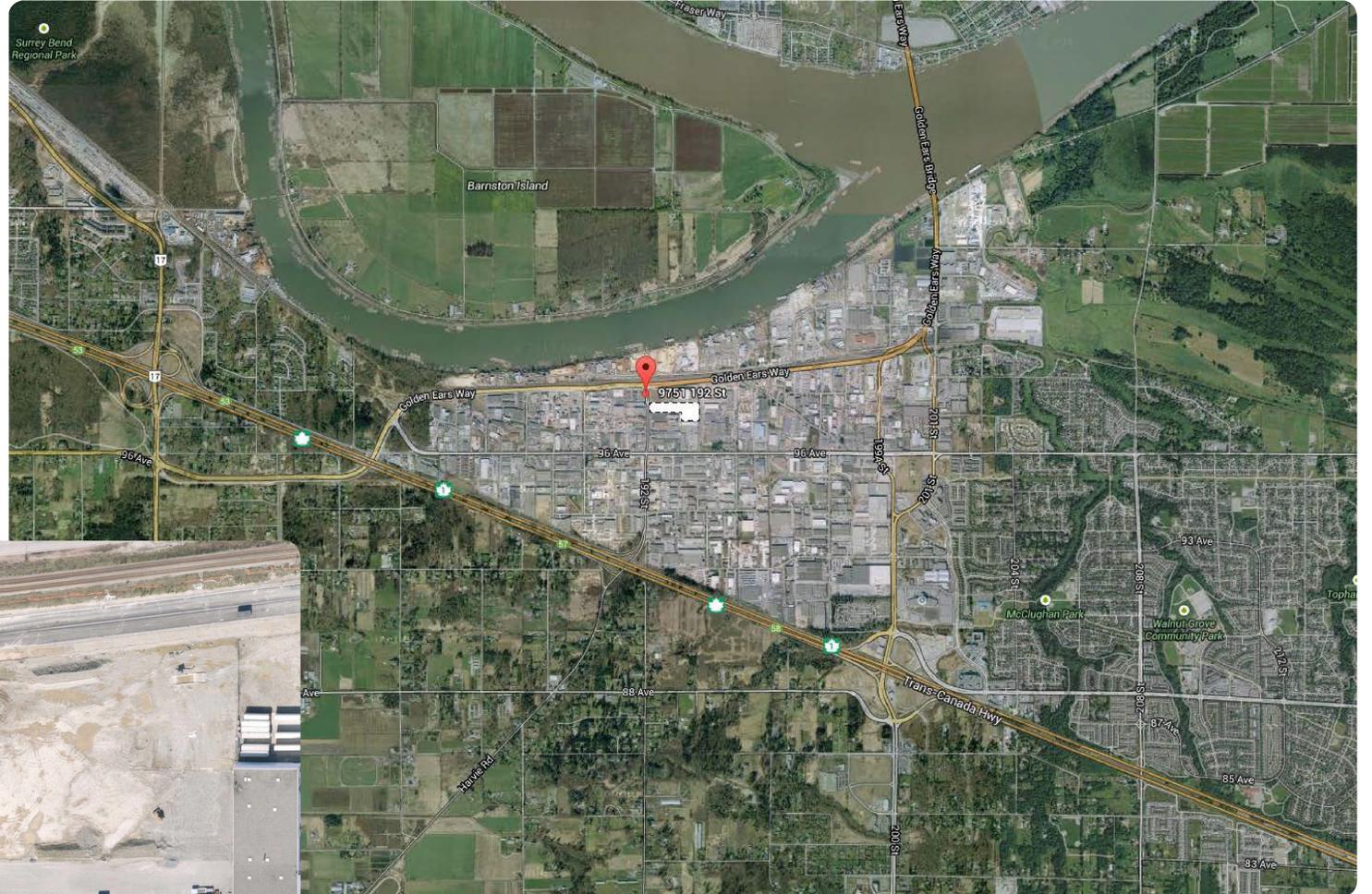
SITE CONTEXT

PROJECT LOCATION

The proposed development site is located at 9752 192nd Street. This property, in its present state, consists of temporary storage, truck parking and some natural grass area.

The project involves construction of an organic waste processing facility, a truck turning area as well as a passenger vehicle parking lot. It is expected that the site will be utilized by City garbage trucks, large oil/chemical semitrailer trucks, small passenger vehicles and occasional visitor buses.

The main vehicular access to the site will be provided from 192nd Street through a new entrance.



SITE LAYOUT

Site configuration, operational movement, and building design has been tailored to suit the current site and aligns with its strong north-south direction and its main site entry from the west.

The efficiency of the building footprint, as illustrated on the drawing, shows how we fully utilize the current site, including landscape scope beyond requirements, and does not require the optional additional site area. The white hatched area in the site plan indicates the building footprint for the biofuel processing facility.

As you move from east to west, the majority of the building is toward the east end of the site with the west end taken up by the process equipment, tanks, waste truck queuing and staff/visitor parking.

From a safety perspective, we have separated the operational movement of vehicles from the employee and visitor vehicular movement. Parking stalls have been created for employees, visitors, a school bus (for educational purposes) and a barrier-free stall and an additional area for selling compost to the community.

DESIGN FACILITY DESIGN



FUNCTIONAL PROGRAM

The Facility

The Surrey Biofuel Facility has two primary components:

- Primary biofuel process area which covers most of the building foot print.
- Secondary administrative area which is at the building entry

Biofuel Processing Area

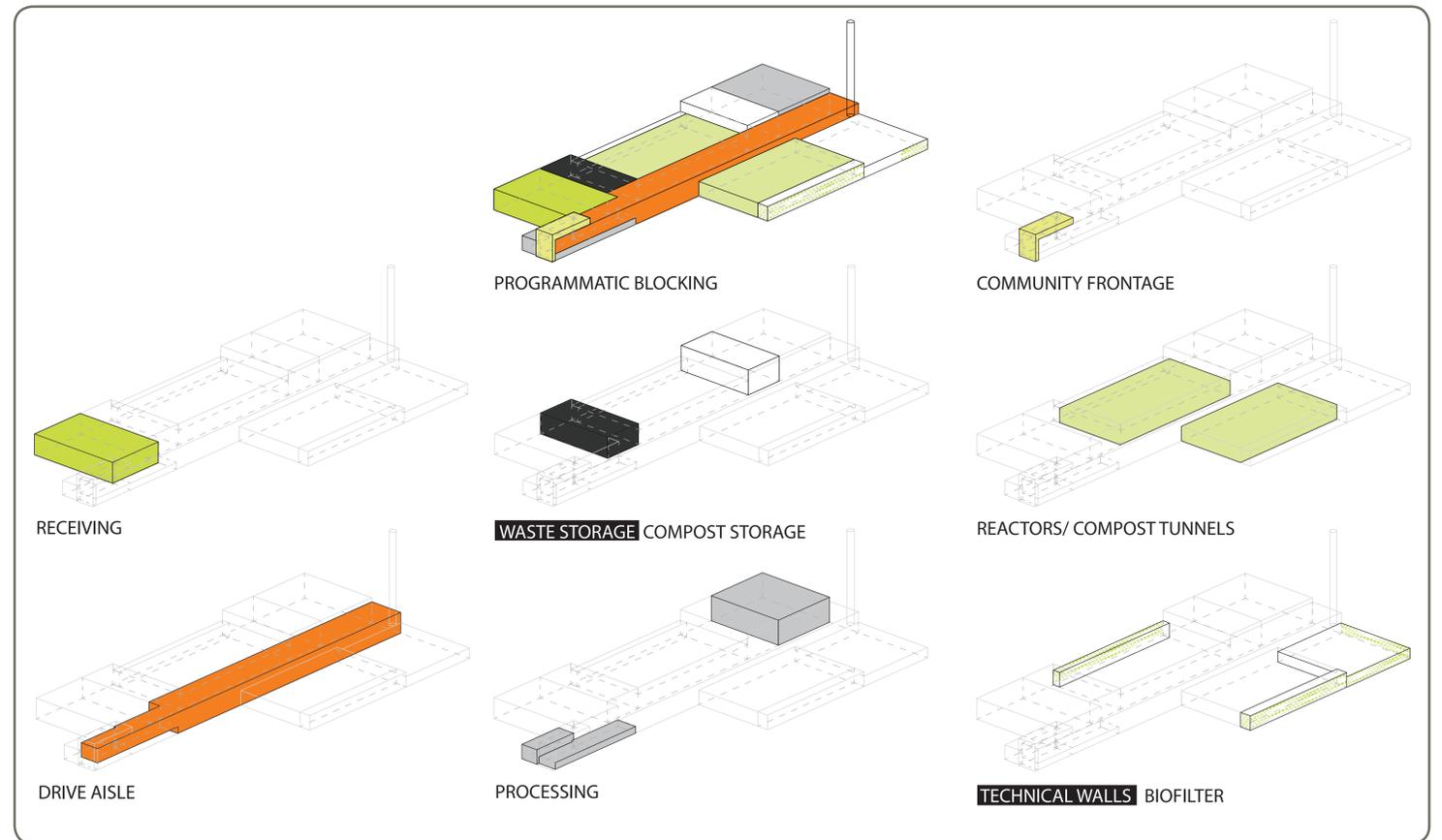
The primary biofuel process area is on the main floor with the floor to floor heights ranging from 4 to 12 metres, as required for the various Biofuel processes within the facility.

The broad outlines of spaces within the primary biofuel processing component are the following:

- Receiving Area
- Drive Aisle
- Storage Bays
- Shredder Area
- Anaerobic Digester Reactors
- Hybrid Reactors
- Composting Tunnels
- Screening Halls
- Compost Storage
- Biofilters

To state the broad functional outline of the facility, the organic waste from the City arrives at the facility on trucks from the west entry and is then stored, shredded, processed (to produce gas), composted, screened and shipped out from the north exit.

Equipment in the facility entry helps shred the waste with loaders transporting the waste within the facility, the storage bays, reactors, composting tunnels and the compost storage bays. Equipment in the screening halls sorts the compost and is then moved via the overhead conveyors into the composting storage areas. This compost is shipped out through the secondary building entry to the north. Biofilters are at the east end of the building.



Administration Area

The administrative area is a 3-floor component at the west end of the building. This area has two broad purposes:

- Serves as the administrative wing for the facility.
- Provide visitor facilities for public education on biofuel production.

The following are the spaces provided within this wing:

- Entry Vestibule
- Plant Manager
- Office Rooms (2)
- Staff Lunch Room
- Public Viewing Gallery Area
- Lobby/Reception
- Supervisor's Office
- PPE Storage
- Conference Room
- Restrooms
- Service Rooms

The lobby/reception serves as the entry point for staff and public and the main level houses most of the office rooms and the laboratory.

The second level serves as the staff amenities floor, with lockers, restrooms and a lunchroom.

The third level serves as the visitor facility with the conference room, visitor gallery and a roof garden for educational purposes.