

**ARCHITECTURAL
DESIGN
&
SUSTAINABLE
DESIGN INITIATIVES**

**26th
ARCHITECTURE
& DESIGN INC.**

**ArchEdio Inc.
Engineers &
Designers**



**INDUSTRIAL DEVELOPMENT FOR COBA STEEL
AT THE CORNER OF DODGE STREET, COBOURG, ONTARIO**

THE PROJECT AND THE LOCATION:

The proposed project is an industrial building with ancillary office space and a separate office building. The industrial building will be used for rebar fabrication.

This design report explains the architectural rationale of the project and also demonstrates how the proposal meets the Town of Cobourg municipal policies related to Sustainability.



The Town of Cobourg main areas and quadrants.

Illustration source: https://www.cobourg.ca/en/resources/Planning-Attachments/Urban_Design_Guidelines_FINAL_Sept_2010.pdf

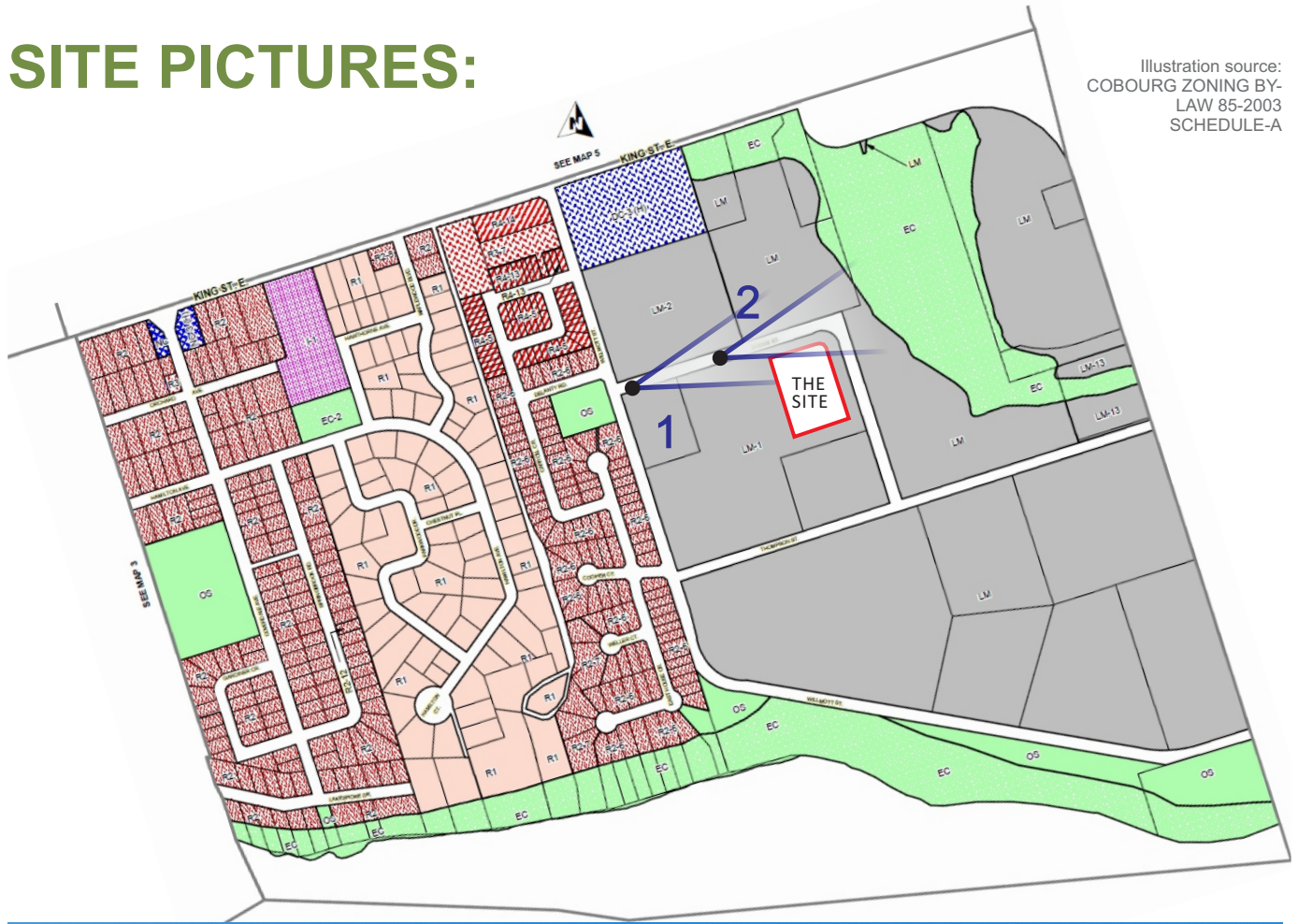


Illustration source: Google maps.

The proposed site is located at the south-east corner of Dodge Street within the Locus Point Business and Industrial park in the east End. As per municipality by laws the site is designated as Light Industrial Zone (Lm1). The Lucas Point comprises Manufacturing Buildings

SITE PICTURES:

Illustration source:
COBOURG ZONING BY-
LAW 85-2003
SCHEDULE-A



SITE PICTURES:



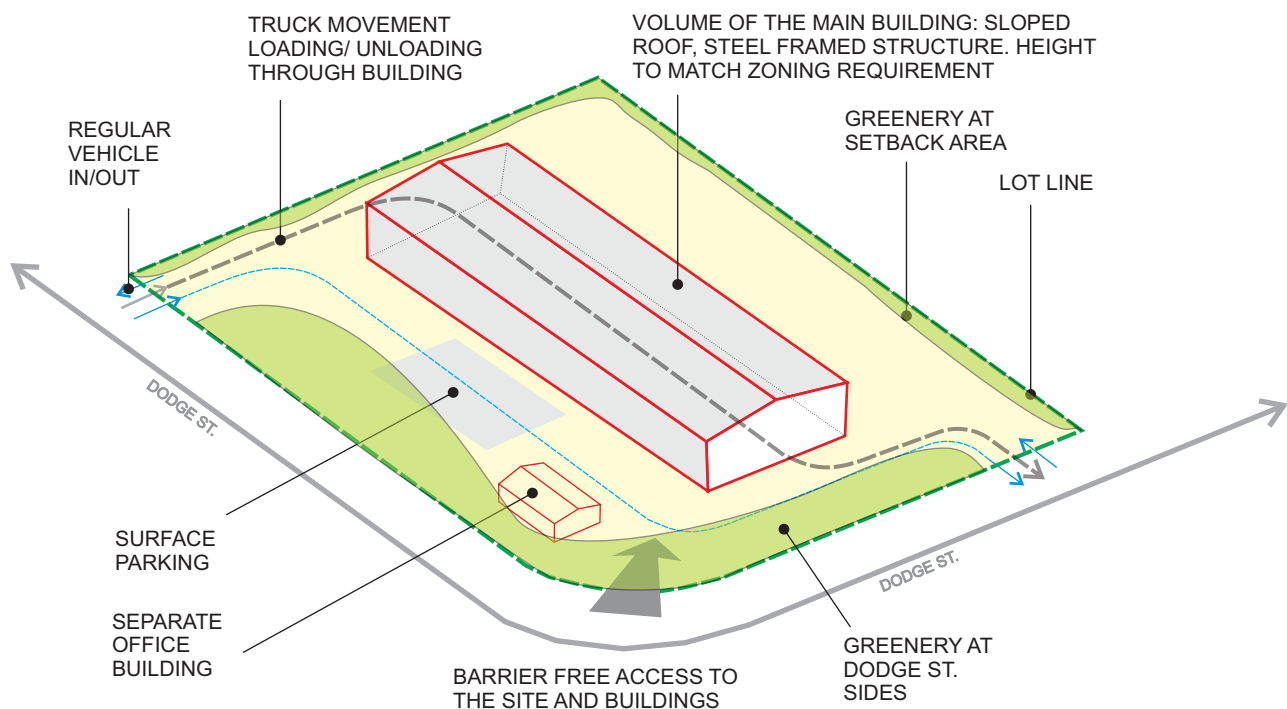
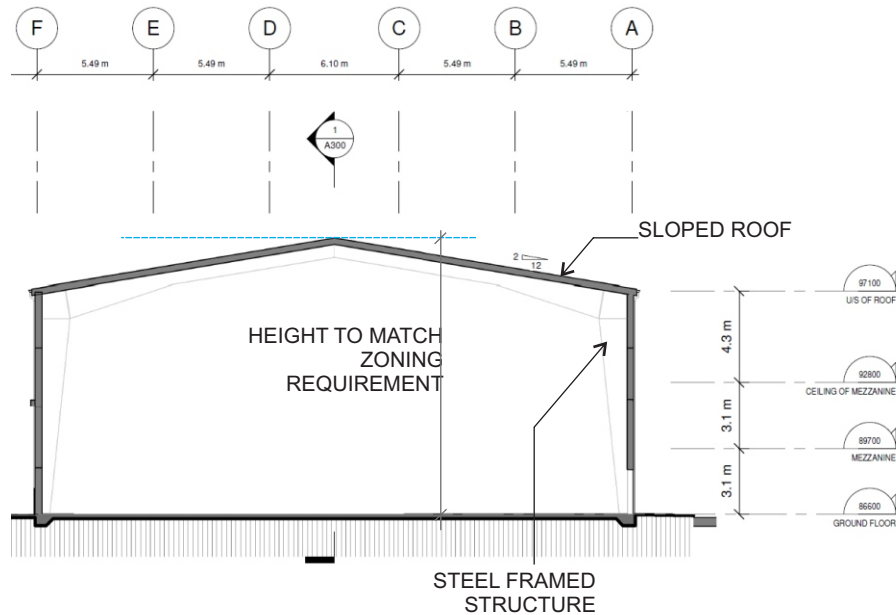
NEIGHBOUR BUILDING AT NORTH



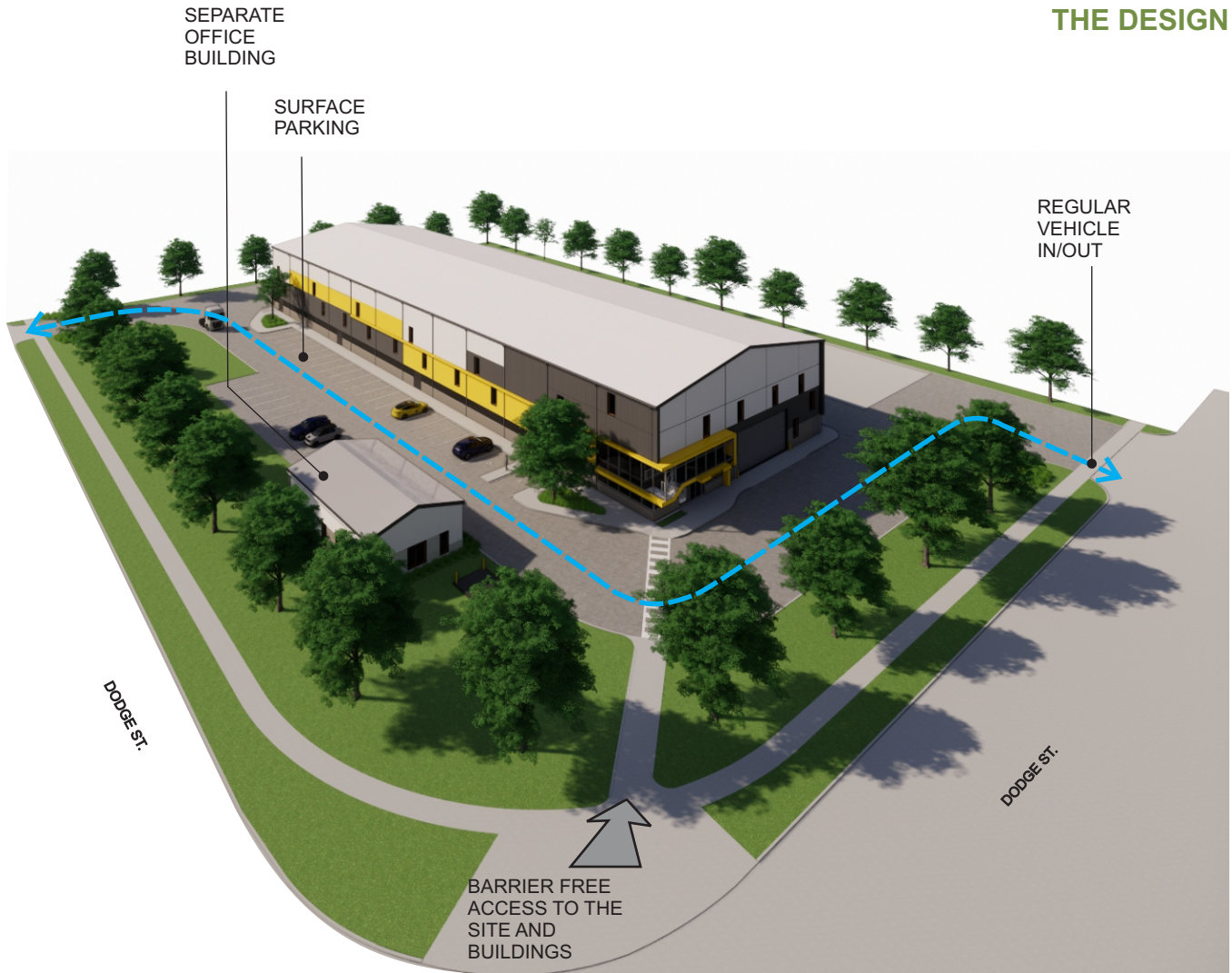
NEIGHBOUR BUILDING AT SOUTH

THE DESIGN

The volume and layout of the building have been created from the functional requirement of a rebar-factory, client specified program, preferred construction technique and also consideration of zoning and Zoning constraints. The primary structure of the building will be made of prefabricated steel framing system. In terms of materiality, masonry blocks and Insulated metal panel system to be used for the exterior envelope system.

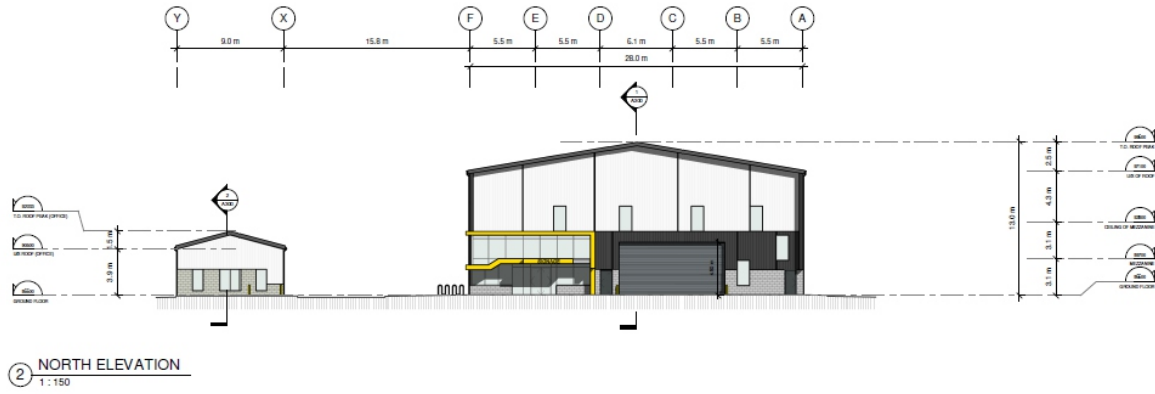


THE DESIGN



The North-East portion of the building seems to be a focal point from the corner of Dodge St.; and also the presence of the office area and the building entry makes the corner significant to deserve a distinct architectural feature. The overhanging stair towards the Mezzanine level turning into a canopy over the main entry creates a unique character. Larger glazing at the same area simultaneously defines and compliments the interior of office area and entry approach. The vibrant yellow coloured façade and the elements along with larger glazing area take away the flatness of solid building and make it exciting.





ELEVATION LEGEND	
	WHITE METAL PANEL
	DEEP YELLOW METAL PANEL
	DARK GREY METAL PANEL
	GREY MASONRY BLOCK WALL



In terms of designing the elevation of the building, masonry has been kept at first 1200mm (minimum) to 2200mm (maximum) from Ground floor level. Grey concrete block is being proposed for masonry. Rest of the elevations has been composed with the combination of 3 colours of insulated metal panel.

The facade of the proposed building is modern while respecting the functional requirement and the character of the neighbouring blocks. This project is expected to provide a higher quality of industrial building and space to flourish the intended urban zoning which will prosper and contribute to the local economy and business.

POLICY & SUSTAINABILITY:

The grey text below denotes the points from 'Town of Cobourg Official Plan' followed by the proposed initiatives.

4.8.2 Development Form:

i) reduce the consumption of energy, land and other non-renewable resources including support for energy efficient building and opportunities for co-generation;

The building will be designed as per Ontario building Code and Meet or exceed OBC SB-10 to enhance the intent of reducing the energy consumption.

ii) Minimize the waste of materials, water and other limited resources;

The buildings are pre-engineered steel buildings clad with insulated panels. One of the intent of this method would be to minimize waste of materials.

iii) Create livable, healthy and productive environments;

Providing a safe and healthy working condition is one of the planning and design intent (i.e. providing daylight to the interior spaces, landscape as outdoor breathing space, bike parking etc.).

iv) Reduce greenhouse gases; and,

v) enhance biodiversity, ecological function, and the natural heritage system, including the provision of wildlife habitat and linkages.

Within the affordable and feasible range of budget, the comparable and available local product with lower GHG emission will be given priority.

By-law recommended ground coverage and landscape/green area have been ensured with appropriate plants and trees.



4.8.3 Integrated Community Sustainability Plan:

POLICY & SUSTAINABILITY:

i) To enhance water conservation including water demand management for the efficient use of water; water recycling to maximize the reuse and recycling of water and the use of Low Impact Development Stormwater Management (LID) ;

Water efficient fixtures will be planned and installed in the entire development to have efficient use of water.

ii) To promote energy conservation including energy conservation for municipally owned facilities, identification of opportunities for alternative energy generation and distribution; and, energy demand management to reduce energy consumption;

Maximum daylight-use to be ensured by means of installing energy-efficient light bulbs and sensors regulating the brightness as required.

iii) To improve air quality protection, including reduction in emissions from vehicular and other sources and promotion of approaches such as green roofs;

By-law recommended ground coverage and landscape/green area have been ensured with appropriate plants and trees.

URBAN AND LANDSCAPE DESIGN GUIDELINES:

3.0 PUBLIC REALM GUIDELINES:

a. Design Guidelines: Where possible, public realm design should aim to reduce impervious hard surfaces.

b. Materials selected for use in the public realm should be durable to avoid premature replacement.

c. Materials selected for the public realm should be recycled to reduce the energy needed to extract and manufacture new materials.

d. Materials should be locally sourced to prevent the expenditure of fossil fuels used for freight transportation.

Canadian products are generally suited to withstand our climate.

e. The potential for alternative energy sources should be explored on public lands (e.g. District Energy, geothermal, etc.).

The intent of using locally sourced material has been set for this project within the feasible and affordable budget range; subject to review prior to construction in terms of availability/ lead time for delivery.

4.0 PRIVATE REALM GUIDELINES:

New Building Design

a. New buildings and developments should provide flexibility in the building floor plate, building envelope and building façade design to accommodate a variety of uses and users over the lifespan of the building/ structure.



Large spanned open space has been planned for the flexibility of industrial use which will easily be capable of accommodating adaptive and alternative re-use over the lifespan of the building and structure. Open concept office spaces have also been planned for major part of the office areas which can be flexible to any future user to accommodate their requirement. A part of the lot has also been kept for future development.

POLICY & SUSTAINABILITY:

b. The Town should encourage new developments to seek LEED or similar certification demonstrating a commitment to sustainability by meeting higher performance standards in environmental responsibility and energy efficiency.

The buildings are pre-engineered steel buildings with insulated panel cladding. Reducing energy consumption for heating and cooling will be a one of the design considerations. Daylight will be used to its full extent and energy-efficient light bulbs and other electrical equipment to be used.

c. Vegetated or “green” roofs should be utilized to minimize water runoff and improve building insulation. Green roofs also expand the potential usable outdoor space of the site.

d. Porous surfaces or landscaped areas should be used to capture roof drainage and minimize water runoff. Storm water management has been planned.

e. Roof drainage should flow, in part or fully, into landscaped areas on site where lot size and soil conditions are adequate to absorb such runoff. Several downspouts should be provided to better distribute storm water run-off into various areas of the adjacent landscape. Rain barrels or cisterns can be designed into new buildings to accommodate gray water irrigation.

Use an environmental management system to reduce, reuse and recycle waste, and to control stormwater and sediment run-off.

LANDSCAPING:

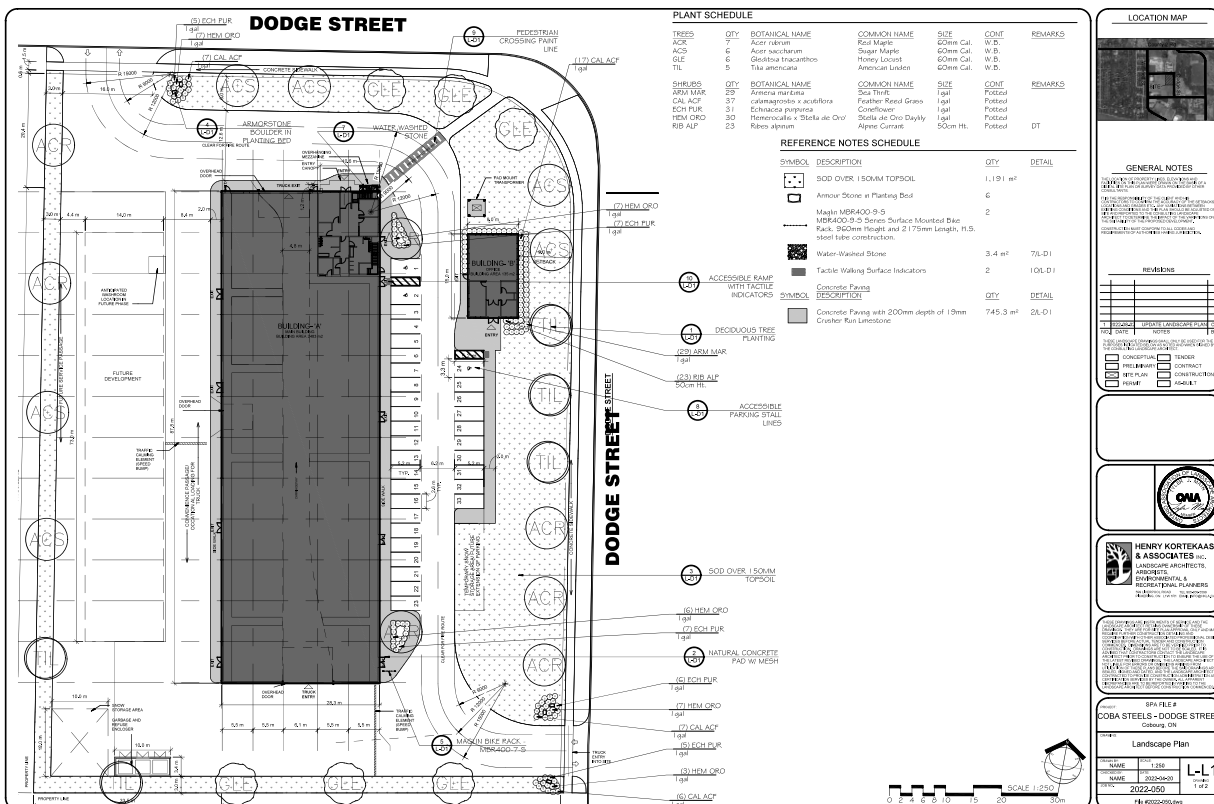
a. Existing significant trees, tree stands, and vegetation should be protected and incorporated into site design and landscaping.

b. Landscaped areas should be maximized to increase the total amount of water run-off absorbed through infiltration. Where there is minimal available area, landscaped green roofs should be employed. Landscape designs should incorporate a wide range of strategies to minimize water consumption (i.e. native species, use of mulches and compost, alternatives to grass and rainwater collection systems).

c. Plant materials native to the Town of Cobourg should be used wherever possible and mono-cultures should be avoided.

d. Waste management, water use reduction and waste water technologies should be explored where possible.

Maximum possible ground coverage and landscape/green area have been ensured with appropriate plants and trees. See Landscape plan.



POLICY & SUSTAINABILITY:

SURFACE RUN-OFF:

a. *Impervious surface areas directly connected to the storm drain system are the greatest contributor to storm water pollution. Breaks in such areas, by means of landscaping or permeable paving material should be provided to allow water absorption into the soil minimizing discharge into the storm drain system.*

Storm water management has been planned.

b. *Paved areas, such as surface parking, should be minimized wherever possible in order to maximize permeable surfaces that absorb and filter pollutants.*

c. *The surface area of streets, driveways and parking areas should be as small as possible within allowable standards.*

Minimum standard dimension for Surface parking has been provided.

d. *Parking areas should drain into vegetative or grassy swales incorporated in a project or perimeter landscaping.*

e. *Drainage basins located in parking lots should be planted with native plant materials that thrive in wet conditions.*

f. *Well-drained snow storage areas should be provided on each site in locations that enable melting snow to enter a filtration feature prior to being released into the storm water drainage system.*

Designated snow storage area has no hard-pavement.



Conclusion:

The proposed plan for the development represents good planning and architectural design principles that is compliant with the Zoning Bylaw. Also the project is expected to conserve water, air quality, energy etc. and reduce waste/greenhouse gasses which satisfy the municipality's Official Plan (OP) and Urban & Landscape Design Guidelines (UDLG).