
design
guidelines
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1.0 INTRODUCTION / CONTEXT

The Highway 2A Corridor Design Guidelines apply to all lands in the plan area of the Highway 2A Industrial Area Structure Plan (H2AIASP) as outlined on Map 3 of the ASP document. These guidelines will benefit developers by providing them with minimum requirements and a clear understanding of the expectations for development in the plan area. In addition they will set up a system that can be used by the Municipality to evaluate potential projects. The guidelines will benefit business owners who choose to locate in the 2A corridor by creating a quality industrial park that will stand the test of time through the provision of a well-planned, maintained, and controlled environment in which to operate.

The guidelines are not meant to overburden developers with significant additional building and landscaping costs. The goal is to set out a consistent standard site design and building quality to ensure compatibility of business and industrial facilities within the area and ensure the longevity of the corridor.

The Guidelines are general in nature and aim to encourage environmental compatibility, efficient and organized site layout and aesthetically pleasing, cost effective and environmentally sensitive building design and landscaping. The criteria for approval will be based upon a point system so that general compliance with these guidelines will be sufficient, while a rigorous adherence to specific styles, building materials, or planting stock, while encouraged, will not be required.

2.0 PURPOSE

The purpose of these guidelines is to:

- Establish a flexible design framework and minimum standards to guide development of the area associated with the H2AIASP
- Lay out criteria for Municipal evaluation of development projects
- Ensure that future development will be in keeping with the vision for the project
- Protect and promote the long-term economic vitality of the 2A corridor
- Minimize impacts on existing residential development and the natural environment
- Facilitate an understanding of the Municipality's expectations and assist developers in compiling complete applications for timely development within the plan area

3.0 USE OF THE GUIDELINES

3.1 ASSUMPTIONS AND LIMITATIONS

While compliance with the design guidelines is necessary for a successful development permit application, there are additional requirements at this stage which must also be met, thus compliance with these guidelines will not automatically guarantee that the Approving Authority will provide approval for the application in question.

Illustrations are provided to facilitate understanding of the concepts in the guidelines by providing one or more examples that would be appropriate or inappropriate in order to comply with the Highway 2A Corridor Design Guidelines (H2AC-DG). The illustrations are provided as examples only, understanding that there may be a number of possible design solutions that may be considered acceptable. In the event of conflict between an illustration and the text of this document, the text shall take precedence.

This document is provided as a supplementary appendix to the H2AIASP. Should there be any conflict between the H2AC-DG and the H2AIASP the ASP shall take precedence.

3.2 USERS:

Several different user groups have been identified for the Design Guidelines document:

- Property owners and their design consultants; to assist in the efficient preparation of development applications
- Municipal Planning and Development Staff; for evaluation of applications prior to a decision being made by the Approving Authority
- The Municipal District's Council and Subdivision Approving Authority; to assist in the decision making process

3.3 ORGANIZATION:

Section 4.0 contains comprehensive guidelines which will apply to all lands within the ASP area.

Section 5.0 outlines additional guidelines for those areas of the ASP lands requiring enhanced design standards. The enhanced guidelines are to be applied in conjunction with the area-wide guidelines on any lands that have been identified in the ASP as Industrial Edge, Industrial Commercial or Gateway Interface land use policy areas (see Map 3).

The enhanced guidelines should be used in conjunction with the area-wide guidelines and any regulations associated with the designated land-use district. Should there be disagreement between the Design Guidelines and the MD's Land Use Bylaw the Land Use Bylaw shall take precedence.

The Guidelines address:

- Site Planning
- Parking Requirements
- Building Design
- Landscaping
- Outbuildings, lighting, fencing and site furniture
- Signage
- Utilities, Mechanical and Telecommunications Equipment
- Crime Prevention Through Environmental Design (CPTED)

Section 6.0 outlines the implementation process for the general and enhanced design guidelines.

Section 7.0 describes the evaluation process and contains the checklist that will be used to evaluate potential developments for compliance with the design guidelines.

4.0 GENERAL DESIGN GUIDELINES

It is recognized that large scale industrial developments may have some difficulty adapting their plans to adhere to specific design guidelines without compromising their processes or means of operating. Thus, the general design guidelines provided in this document are intended to be overarching in nature, with enhanced design guidelines being provided for the more visible portions of the plan area and those areas that provide an interface with other forms of development. A certain level of flexibility may be granted to large scale industrial users at the discretion of the Approving Authority to afford them the opportunity to satisfy the spirit and intent of the guidelines while minimizing interference with their business operations.

4.1 SITE PLANNING

Building Location and Orientation

All buildings and other structures should be placed on the site with due consideration to the existing built context[1], the location of adjoining uses, and the location of major roads. The principal building should be located with the main or

1 Built context: The pattern of land use, building type size and style and site design in an area.

public entrance facing the main site entrance from the street. This entrance should be clearly delineated[2] (Fig. 1) and be connected via a surfaced pedestrian pathway or sidewalk provided from the street and/or from the main parking area.

The Maximum site coverage, including the main structure and all out-buildings or other development, is 60% of the total lot area. Parking areas and internal roadways will be included in the site coverage if impervious materials are used. However, parking areas and internal roadways that are constructed of pervious materials[3] will be exempt from this calculation. Acceptable pervious materials include: pervious

Fig 1. Delineation of entry using unique or special form.

concrete (typical void content of 15-25%), porous asphalt, single-sized aggregate, porous turf, and open-jointed blocks.

Building set-backs as outlined in the Land-Use by-law and development set-backs as specified by Alberta Transportation for development adjacent to provincial roadways must be adhered to for all site structures.

Screening

Outdoor storage should be located at the side of or behind the main building on a site and adequately removed from pedestrian pathways or outdoor spaces. These areas may also require screening[4] with landscaping, berming, walls and/or fencing as per Municipal Guidelines.

2 Delineate: To visually indicate, describe or render something.
3 Pervious Material: A material or surface which allows the penetration of water into the ground.
4 Screening: A fence, berm or hedge used to obstruct views.

Environmental

The design, construction, and operation of commercial and industrial developments in the Highway 2A corridor shall implement techniques to reduce the consumption of water, energy, and materials consistent with best practices in sustainable design as prescribed in any future Municipal District of Foothills policy directives. These guidelines address sustainable site planning, energy efficiency, water efficiency, and materials and resources management.

Fig 2. Articulation using recessing and colour.

Fig 3. Articulation using recessing and colour.

Development shall consider the natural features of the site when determining locations for buildings and other improvements in order to minimize the impact on the natural setting as well as to reduce the amount of clearing and grading required. Natural features may include mature trees, rolling terrain, rivers, streams, drainage courses, wetland areas and viewpoints, or any other features that contribute to the distinct natural character of the MD of Foothills as determined by the Municipality.

The use of impermeable pavement should be reduced where possible, utilizing porous asphalt or permeable pavers that allow stormwater to re-infiltrate the ground will be encouraged for parking areas, roadways, plazas or other hard surfaced areas. Alternatively, directing stormwater into conveyance, retention, and recharge areas[5] such as, but not limited to natural drainage systems i.e. rain gardens, bio-swales, and naturalized storm ponds will be acceptable.

The construction of energy efficient buildings that incorporate passive[6] or active[7]

5 Retention areas: Depressed areas where water is stored until it seeps into the ground, evaporates or is utilized by vegetation

6 Passive solar heating: A means of using sunlight for useful energy without use of active mechanical systems. Generally, sunlight is used to heat air, water or thermal mass.

7 Active solar heating: A solar energy collector is used to heat either liquid or air, this energy can either be used to heat an interior space or it can be transferred to a storage system and distributed from there.

solar heating geothermal heating[8] or geo-exchange[9] as well as the use of day-lighting[10] and natural ventilation[11] will be encouraged.

Water conservation measures will be encouraged; including: roof top catchment for irrigation or as a supplemental fire fighting source. Low-flow toilets and other water efficient fixtures and water efficient appliances will be required for all new development and renovations to existing development throughout the plan area. Opportunities to reuse rain water and/or grey water[12] for irrigation should be explored.

The use of materials that are low in or free of Volatile Organic Compounds (VOCs)[13] will be encouraged as will the use of recycled materials in construction. Construction Management Plans that include a recycling strategy to minimize the amount of construction waste sent to landfills should be utilized in all new development and renovations to existing development throughout the corridor. The development of a Construction Waste Reduction Plan for each development is strongly encouraged. All products, materials and systems used for construction should be evaluated for their ability to be recycled when they reach the end of their useful lifecycle. Preference should be given to products and systems that facilitate easy, non-energy intensive separation and recycling with minimal contamination by foreign debris.

Recycling of solid waste post-construction is also strongly encouraged and should be accommodated in site layout and design.

Access and Circulation

Site access and internal roadways must meet MD of Foothills Road Standards. The access circulation and parking system should provide for the safe, efficient, and functional movement of multiple modes of transportation. Clear access and orientation shall be provided for vehicles and pedestrians. Loading bays or drive-through lanes shall be located in such a manner as to not impede the efficient flow

8 Geothermal heating: The direct use of heat retained within the Earth's core for heating applications.
9 Geo-exchange: Use of a heat pump to transfer heat from the earth or a body of water into a building to heat it in the winter, and then transfer heat back into the earth or water body for cooling in summer.
10 Day-lighting: Illumination of indoor spaces by natural light through the use of skylights, windows, and reflected light. Day-lighting may also employ light sensors, and louvers or shading devices to regulate light or control glare.
11 Natural ventilation: The use of openings in a building and the naturally occurring phenomena of wind and the stack effect (the movement of air driven by buoyancy) to supply fresh air.
12 Grey water: Residential wastewater that has been used in the home for washing, grey water explicitly excludes water from toilets.
13 Volatile Organic Compounds (VOC's): carbon based chemicals that easily evaporate to a gaseous state, found to be a major contributing factor to ground level ozone, a common air pollutant which has been proven to be a public health hazard

of traffic or pedestrian movements and pedestrian/bicycle/vehicle conflicts should be minimized.

The site plan should make provision for alternate modes of transportation, including public transit (space allocated for shuttle or bus stops), bicycles (safe routes and storage) and pedestrians (safe and comfortable routes removed from vehicular traffic). Pedestrian pathway surfaces for internal circulation should be at least 1.5 m wide and are to be constructed of materials that provide even footing and are durable and easily maintained. Pathway surfaces that provide linkages to the future regional pathway alignment are to be at least 2.5 m wide. All multi-use pathways shall be constructed of durable materials, as approved by the Municipality, which are suitable for bicycle traffic and are easily maintained. Snow removal and storage requirements (including accommodating run-off from snow melt) as well as potential drifting should be considered in the design of site access, circulation, and parking.

4.2 PARKING REQUIREMENTS

Parking and loading spaces for sites in the H2AIASP will be provided as outlined in Section 10.5.0 of the Municipal District Of Foothills No. 31 Land Use Bylaw. To avoid large expanses of parking adjacent to roadways the preferred parking configuration is to have minimal parking between the front property line and the front of the building. The majority of the required parking should be located at the side or the rear of the building and where possible broken up into smaller pods and dispersed throughout the site.

Parking spaces shall be designed and provided in accordance with Section 10.5.7 of the Land Use Bylaw. The dimensions of loading spaces will be as outlined in Section 10.5.3 of the Land Use Bylaw.

While parking and loading for the 2A corridor will generally be provided as outlined in the LUB, shared parking and loading sites will be considered, and consideration for reduced parking will be given based on site-specific uses.

Provision of Parking for physically disabled persons shall be provided as per Provincial regulations. A minimum of 2% of the total number of stalls shall be provided and clearly identified for use by the physically disabled, with a minimum stall width of 3.7m (12 ft.). In addition, parking for physically disabled persons shall be located as close as possible to ramps, walkways, and building entrances and shall be arranged in such a way that users of wheelchairs are not required to pass behind parked vehicles.

The required number and design of parking spaces and loading zones for vehicles used by physically disabled persons for any use shall be included as part of and not

in addition to the applicable minimum parking requirement and shall conform to the requirements of the Alberta Safety Codes Act and any other applicable Provincial legislation.

Breaking up large parking areas with landscaped islands will be highly encouraged, especially if the islands function as bio-retention areas[14] to allow the infiltration of stormwater into the ground.

4.3 BUILDING DESIGN

Fig.4 Monolithic

Fig.5 Articulated

It is of utmost importance that all buildings proposed for the H2AIASP provide a safe and comfortable environment for employees and visitors. Indoor spaces should provide adequate heat, light and healthy air quality as per Provincial Occupational

14 Bio-retention areas: A shallow depression planted with vegetation, designed to retain stormwater before it is infiltrated into the ground or evaporated. This term may sometimes be used interchangeably with "rain garden", typically a rain garden is of smaller scale and would accommodate the run-off from one residential property, where as a bio-retention area would describe a larger project encompassing several residential properties or one or more non-residential properties.

Health and Safety and Alberta Safety Codes standards. All buildings shall comply with the Alberta Building Code (ABC) with respect to occupancy, safety and building standards and shall adhere to the ABC barrier free design guidelines to provide accessibility for the disabled.

It is recognized that many industrial uses will require buildings with a large footprint. However, in order to foster an environment that is pedestrian friendly, it is desirable to construct buildings where the various spaces that are required are given individual forms. In general, buildings that are made up of several masses arranged

Fig.6 Office Frontage with factory as backdrop.

together are preferred to those with a monolithic[15] appearance. Articulation[16] of the façades, and roof line and the incorporation of details which create a rhythm, such as changes in material or colour will be encouraged in order to create an environment that creates visual interest. (Fig. 2, 3, 4, 5)

As a minimum requirement, it is desirable to have a front elevation that is visually interesting and of a scale that is comfortable for pedestrians. Where buildings are located on corner lots, consideration should be given to the exposed exterior side walls visible from the street. These side elevations should incorporate design features that provide architectural interest.

The main or public entrance to the building should be facing the street and should be clearly identifiable as the primary point of arrival. This can be achieved through the use of large architectural elements (particularly strong vertical forms such as towers) or a change in the roof line, or it can be more simply identified through the use of an overhang and landscaping or the use of special materials such as stone or brick (See images provided in Section 4.1 on building location and orientation).

15 Monolithic: Consisting of one piece; solid or unbroken, with no differentiation of parts.
16 Articulation: The articulation of a building emphasizes each part individually revealing the distinct areas or functions of the building and how the parts fit into the whole.

Fig.7 An example of an exterior design that reduces solar heat gain.

Significant office components for buildings constructed primarily for industrial activity shall be encouraged. In buildings with an office component and a processing/manufacturing component, it is desirable that both portions of the building be unified in architectural style and treatment. Where this is not possible, the office portion should be designed as an architectural focal point with a neutral background of plant architecture. (Fig. 6)

For industrial or commercial uses, all buildings shall be constructed and finished with durable materials that have been designed to maintain their initial appearance throughout the life of the project.

Buildings shall be designed with solar orientation in mind with each elevation responding appropriately to its orientation and respecting the solar access requirements of adjacent buildings (existing and proposed). The use of day light to illuminate interior spaces will be encouraged. Use of architectural elements such as building overhangs, fins, louvers, or landscape elements such as deciduous trees or

Fig. 8 Site entrance

Fig. 9 Along building faces

Fig. 10 Street interface areas

vine covered trellises to reduce solar heat gain and glare from windows especially on the south and east sides of buildings should be incorporated into orientation and design. Minimizing paved areas adjacent to a building can also help reduce heat gain. (Fig. 7)

4.4 LANDSCAPING

Purpose of Landscaping

The quality of site landscaping is a major factor in the development of a highly functional and aesthetically inviting mixed use industrial area. Site landscape plans should be related to and coordinated with those proposed on adjacent properties or be undertaken as part of an overall landscaping scheme for a larger area.

In addition to making the area more attractive, landscaping can serve a variety of functions in an Industrial site. Thoughtfully designed landscaping can:

- Create more pedestrian friendly environments by providing shade and shelter
- Break up the mass of industrial buildings or expanse of parking areas
- Soften architectural materials
- Provide screening of service structures and loading areas.
- Differentiate between areas which serve different purposes – ex. An entry plaza could be separated from a parking area or outdoor seating area by landscaping elements.

- Provide shade and climate control for outdoor and indoor spaces.
- Control the movement of airborne particulates
- Provide buffers between different land-uses
- Filter drainage and stormwater runoff from parking areas and streets
- Allow the re-infiltration of stormwater into the ground.

Locations for Landscaping

The Design Guidelines are not intended to significantly increase development costs by mandating extensive landscaping requirements. Instead, hard[17] and soft[18] landscaping should be focused in the following areas: (Fig. 8, 9, 10, 11, 12, 13, 14, 15)

Fig. 11 Adjacent to pedestrian spaces

Fig. 12 Parking screening

Fig. 13 Utility boxes

Fig. 14 Building entrance

Fig. 15 Green spaces

- Entrances to the site
- Focal points or highly visible areas of the site
- Buffers between sites
- Along building faces
- Screening of parking, loading and storage areas

17 Hard landscaping: construction and surfacing materials used in site landscaping i.e. brick, stone, concrete, aggregate, glass, metals, woods, and so on.

18 Soft landscaping: vegetative materials used in landscape design, including aquatic and semi-aquatic plants, field-layer plants, shrubs, and trees.

Landscape Requirements

Developers must submit a landscaping plan and a landscape maintenance plan with their development permit application demonstrating their compliance with the H2AC Design Guidelines. Compliance will be evaluated based on the checklist provided in Section 7.0. Additional landscaping may be required, if in the opinion of the Approving Authority, there is likelihood that the proposed development will generate undesirable impacts on surrounding sites, such as but not limited to poor appearance, excessive noise, light, traffic, litter, or dust.

Fig. 16 Vegetated Drainage Swale

Fig. 17 Roadside Ditching (Stormwater conveyance)

Any planting undertaken should incorporate both evergreen and deciduous trees to provide foliage year round. In addition consideration should be given to the provision of fall and winter colour through foliage or bark colour. Streetscape planting should allow for sight lines to view the main façade of the building. Foundation planting which complements and focuses attention on the office portion of the building is encouraged.

Vehicle parking, outdoor storage, outdoor displays or the sale of goods shall not be allowed on any portion of a site that has been designated for landscaping unless approved by the Municipality.

"Greening" Landscaping

Water, especially treated drinking water, is a precious resource and as such must be conserved or re-used wherever possible. For all areas located in the H2A corridor, potable water shall not be used for irrigation. Where irrigation is required, it must employ harvested stormwater run-off, snow melt or post-use reclaimed water. The implementation of strategies to reduce or eliminate irrigation requirements for landscaping will be strongly encouraged. Such measures include: (Fig. 16, 17, 18, 19, 20)

- Use of drought resistant native plant species with a low water requirement
- Locating landscaping in vegetated drainage swales or bio-retention areas
- Draining parking areas into bio-retention areas through curb-cuts
- Directing downspouts into infiltration planter boxes[19] adjacent to buildings
- Use of tree box filters[20] for filtering run-off from roads
- Limiting sod to areas where it serves a functional purpose
- Using sculpture and architectural elements and hard-scaping to augment landscaping without augmenting water requirements.

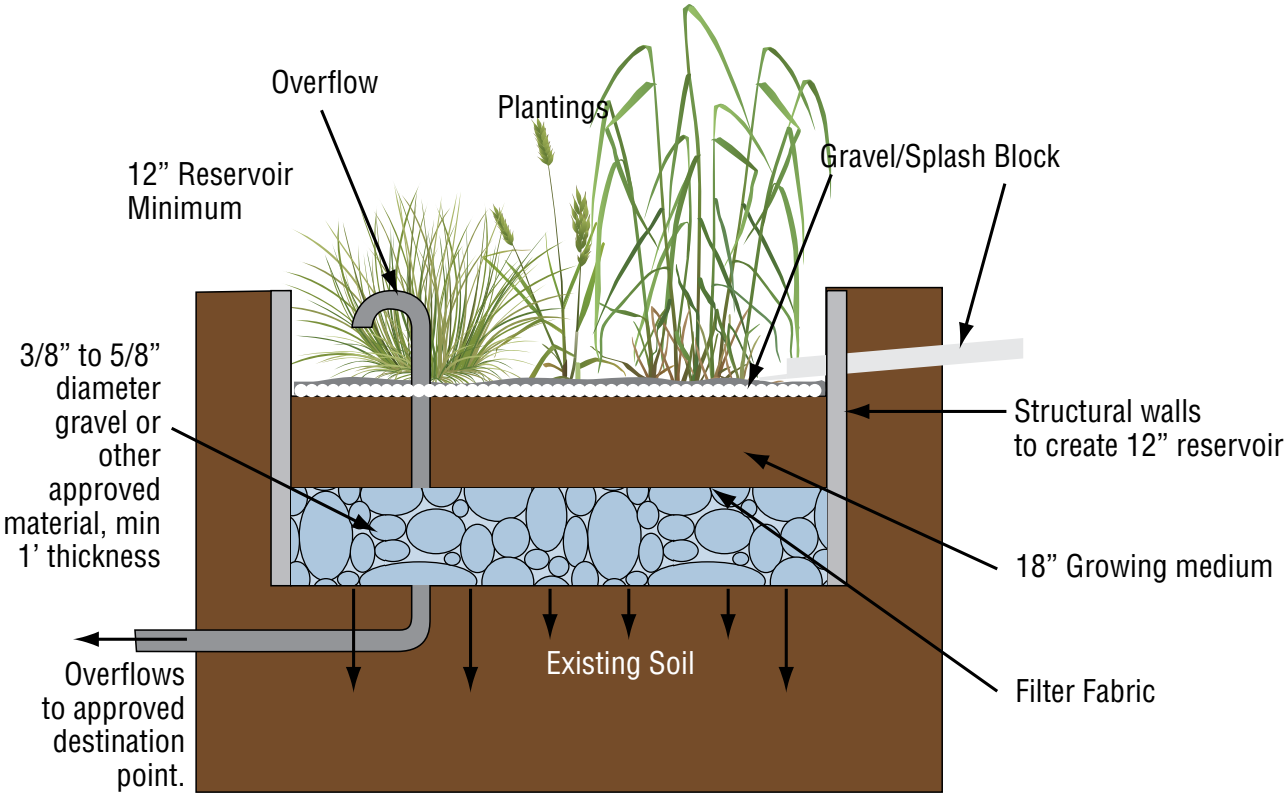

Fig. 18 An example of a planter box.

19 Planter boxes: Raised planting beds that intercept, store and filter stormwater runoff from downspouts. They allow the infiltration of storm water into the ground while at the same time irrigating vegetation planted inside of them. Pollution reduction is achieved as the stormwater filters through the soil and plant root systems. (see Fig. 18)

20 Tree Box Filters: Similar to a Planter Box. Provides for the infiltration of stormwater through soil and tree root systems (see Fig. 19).

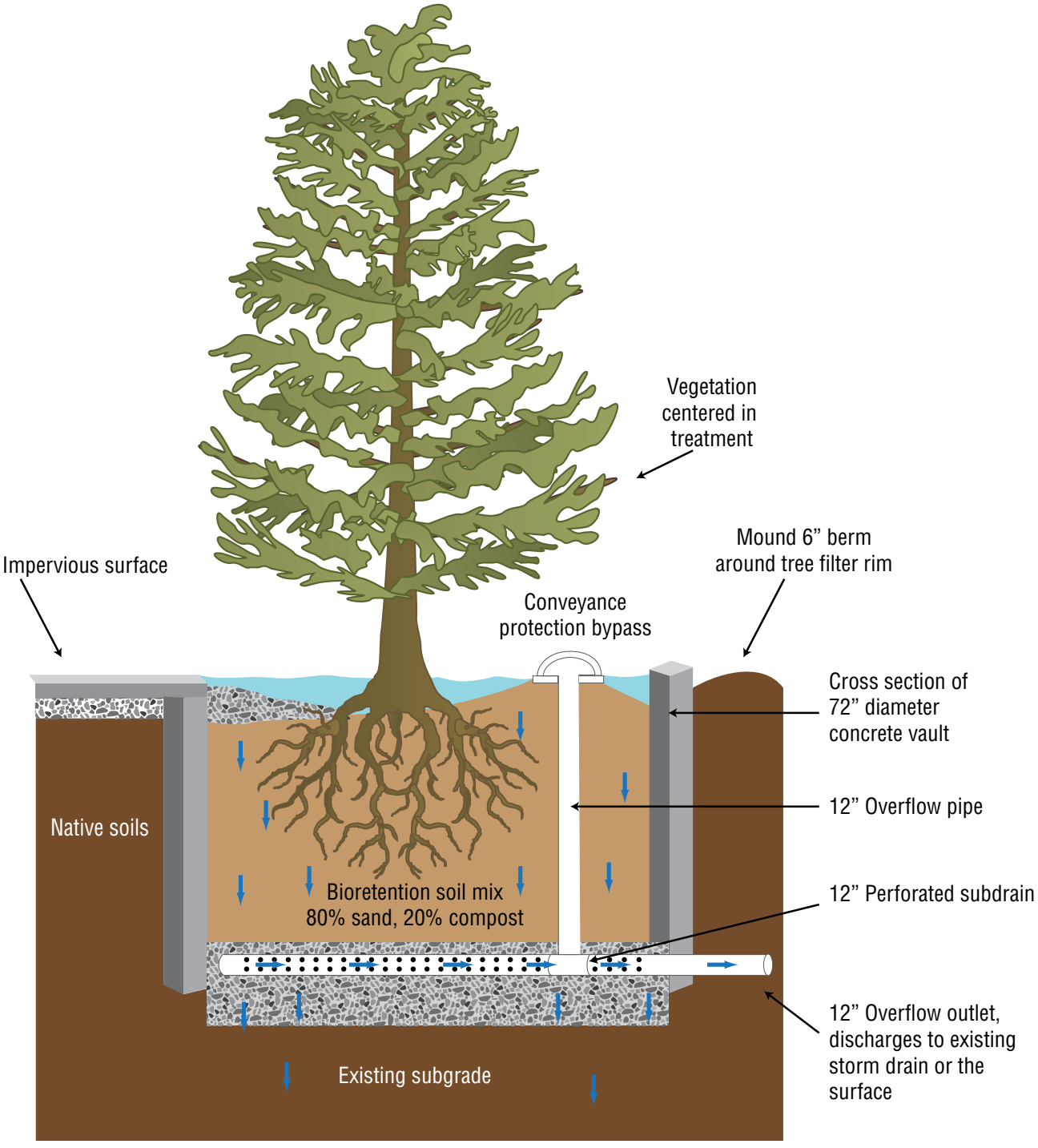

Fig. 19 An example of a tree box filter

4.5 OUTBUILDINGS, LIGHTING, FENCING, AND SITE FURNITURE

It is desirable that outbuildings on industrial sites in the 2A corridor be of similar materials and character as the principal building on the site. They must be located so as not to hamper pedestrian or vehicular circulation, emergency access or staging for fire-fighting for the site and must comply with all Municipal setbacks.

Exterior lighting shall be incorporated to provide security and safety of on-site areas such as parking, loading, shipping, receiving, pathway, and working areas. It is particularly important that building entrances be well lit.

Fig. 20 An example of a curb-cut

Any exterior lighting of the building must be compliant with the Municipality's Dark Sky Bylaw. The use of energy efficient or solar powered fixtures and those equipped with timers, motion sensors or light sensors shall be encouraged.

Fencing or screening walls can be an important component of site security, and can reduce a property's susceptibility to crime, however it is desirable that fencing – at least on the front or street-side of the principal building, be attractive and incorporate pillars or articulation for visual interest. Care should be exercised in determining what type of fencing or screening is best suited to each application on the site.

4.6 SIGNAGE

General Signage Requirements

Signage in the 2A corridor may require a development permit as outlined in the Municipal District of Foothills No. 31 Land Use Bylaw. Whether requiring a development permit or not, all signage must comply with the Land Use Bylaw and furthermore to the requirements set forth in these design guidelines. In addition, any sign, notice, or advertising device to be erected within 300m (984 ft.) from the right-of-way of a highway or 800 metres (2625 ft.) from the centre point of an intersection of a highway and any other public road requires a permit from the Minister of Transportation pursuant to the Highway Development Control Regulation, Alberta Regulation 242/96.

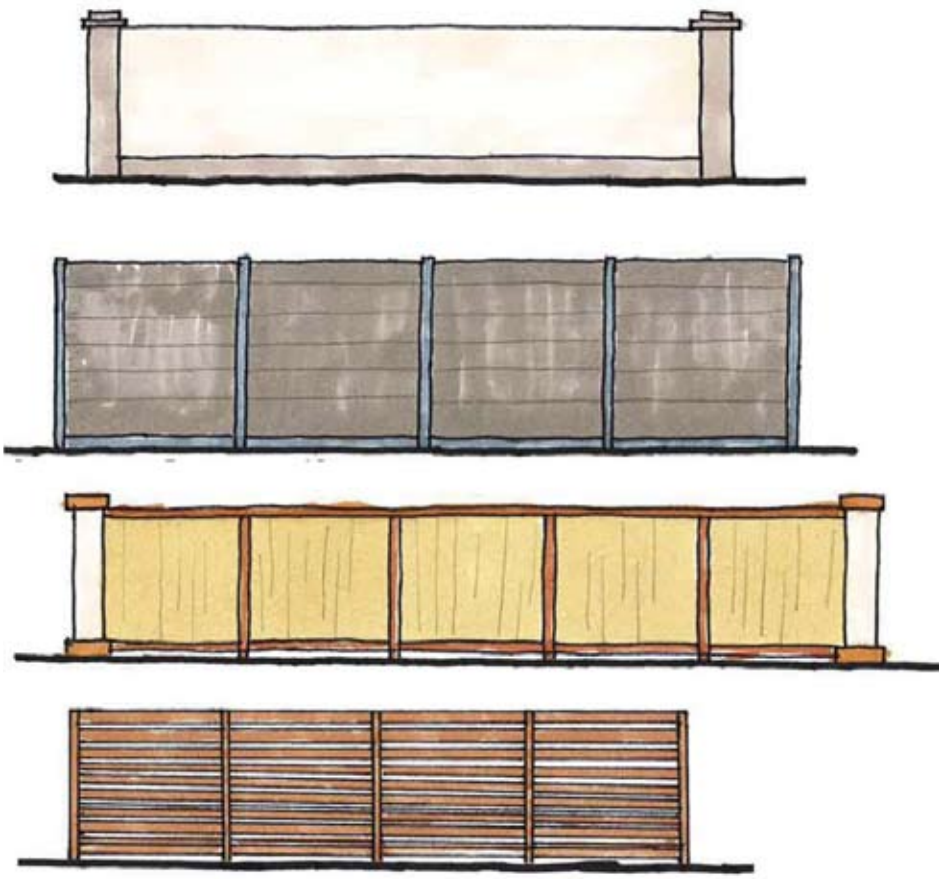

Fig. 21 Fence examples

Signage, including corporate, tenant and traffic signage, should be coordinated on each property. No sign shall be located where it will interfere with pedestrian or traffic safety.

Any form of signage not explicitly listed below shall be prohibited, unless deemed appropriate by the Approving Authority and approved through the development permit process.

The Municipal address, a minimum size of 100mm in height, shall be installed on every developed lot either on the building at the principal entrance or where appropriate, at the site's point of entry.

The 9-1-1 address, while optional, should be installed at the entrance to each property in order to allow protective services to identify properties in a timely fashion. It is recommended that the address signs follow the MD's recommendations in terms of sign location, size, and color.

Free-standing signage

A free-standing sign – a sign on a standard base or column permanently fixed to the ground and not attached to any building or other structure.

One (1) freestanding sign shall be allowed per parcel frontage for the purpose of identifying the use or building on that parcel.

Freestanding signs:

- Shall be in compliance with section 10.11 of the Municipal District of Foothills No. 31 Land Use Bylaw.
- Shall not exceed 4.5 square metres or 2 metres in height.
- Shall not be mounted at a height exceeding 6 metres.
- If illuminated shall be in compliance with the Municipality's Dark Sky Bylaw.
- Shall be permanently attached to the ground with structural support design approved by an engineer.
- Shall be located outside of the front/side/rear yard setback unless otherwise permitted by the Approving Authority.
- Shall not have blinking, flashing, strobe lights or running lights[21].
- Shall not be illuminated in such a way as to create glare upon the surrounding site, roadways or multi-parcel residential subdivision.
- Should be designed in a manner which is architecturally compatible with the general character of the building(s) on-site.
- Should be appropriate for the surrounding rural setting.
- May require landscaping at the base at the discretion of the Approving Authority.

Fascia Signs

A fascia sign – a sign placed flat and parallel to the face of a building so that no part projects more than 0.3m (1 ft.) from the building - may be erected for corporate identification purposes.

21 Running lights: Also referred to as chasing LED lights. A series of small lights that illuminate in a progression one after the other such that it appears that a light is "running" along a path.

Fascia Signs:

- Shall not exceed 20% of the building face or bay to which the sign is attached.
- If illuminated shall be in compliance with the Municipality's Dark Sky Policy.
- Shall not have blinking, flashing, strobe lights or running lights.
- Should be designed in a manner which is architecturally compatible with the general character of the building to which it is affixed.

Roof Signs

A roof sign – a sign erected upon, against, or directly above a roof or on top of or above the parapet wall of a building. Roof signs:

- Shall not be permitted.

Projecting Signs

A projecting sign – a sign other than a canopy or awning sign which projects from a structure or a building face or wall.

Projecting Signs:

- Shall have a maximum area of 9 square metres.
- Shall not rise above a parapet.
- Shall provide a minimum of 2.5 metres of clearance from the bottom of the sign and the surface below it.
- Structural supports shall be approved by a structural engineer.
- Shall not encroach within 0.6 metres of the property line.

Canopy/Awning Signs

A canopy sign – a sign that is attached to or constructed in or on a canopy, including computerized signage.

An awning sign – a sign that is painted on or anchored flat to the surface of an awning.

Canopy and awning signs:

- Shall be affixed or forming part of the principle building.
- Shall provide a minimum separation of 2.5 metres from the bottom of the sign to the surface below.
- Shall project no further than 1.2 metres out from the face of the building.
- Shall not overhang any abutting property unless granted express written consent by the other property owner supported by a fully executed encroachment and hold harmless agreement.

4.7 UTILITIES, MECHANICAL AND TELECOMMUNICATIONS EQUIPMENT

Power lines, transformers mechanical and telecommunications equipment should be located so they are removed from main pedestrian pathways and away from main vehicular carriage ways, unless they are buried and included within an approved integrated utility corridor.

4.8 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crimes such as theft, assault and vandalism can become a major expense to businesses and create fear and discomfort for their employees. It is therefore desirable to limit opportunities for crime to take place whenever possible.

According to a Home Office Police Research Group Briefing Note produced by the Home Office Department of the British Government:

> *"The level of crime on an (industrial) estate is greatly influenced by its design, layout and location. Careful attention to these aspects in the future could reduce the crime risk."*

Crime Prevention Through Environmental Design (CPTED) is an approach to planning that attempts to address crime prevention through careful and deliberate design of the environments where people live work and play. According to the International CPTED Association (ICA), CPTED is defined as:

> *"A multi-disciplinary approach to deterring criminal behavior through environmental design. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts by affecting the built, social and administrative environment."*

The use of CPTED principles may also improve a community's perception of safety. CPTED has been proven effective in reducing crime in communities worldwide. There are several key strategies that have been defined to assist in implementing CPTED, they are: Natural Surveillance, Natural Access Control, Territorial Reinforcement and Maintenance and Activity support.

Natural surveillance: The placement of physical features, and places for activity in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space. Potential offenders feel increased scrutiny and limitations on their escape routes.

Natural access control: Limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. It is accomplished by designing and constructing entrances and exits, fencing, lighting and landscape to limit access or control flow through a site or area.

Territorial reinforcement: Promotes social control through increased definition of space and improved proprietary concern. It is accomplished by using buildings, fences, pavement, signs, lighting and landscape to express ownership and define public, semi-public and private space.

Maintenance: Can be viewed as an expression of ownership of property. Deterioration indicates less control by the intended users of a site and a greater tolerance of disorder. Ensuring properties are well maintained may reduce the occurrence of vandalism.

Activity support: increases the use of a built environment for safe activities with the intent of increasing the risk of detection of criminal and undesirable activities. Natural surveillance by the intended users is casual and there is no specific plan for people to watch out for criminal activity.

These strategies have been used most effectively in residential or mixed use areas where activity occurs throughout the day and night. However, some of the principles can be readily applied to industrial or commercial development. For instance, the provision of significant areas of transparency around entry ways and stairways will enhance natural surveillance and increase security.

Developers in the H2AIASP area are encouraged to implement CPTED strategies on their sites where it does not compromise their business operations or conflict with other Municipal policies or bylaws. Special care will be required to balance the need for lighting to provide security with adherence to the Municipality's Dark Sky Bylaw. Likewise, to balance the need to provide sightlines for surveillance with adherence to the Municipality's screening policy.

5.0 ENHANCED DESIGN GUIDELINES

Lands within the plan area that are included within the Industrial General and Agricultural Transition policy areas are subject only to the H2AC General Design Guidelines. Lands that are included within Industrial Edge (adjacent to existing residential development), Industrial Commercial (mixture of industrial/commercial at sites with adequate access) or Gateway Interface policy areas will be subject to enhanced design guidelines. With respect to Future Planning Areas, while development may occur prior to comprehensive planning being completed for these areas, it will have to adhere to the Enhanced Design Guidelines.

5.1 SITE PLANNING IN ENHANCED AREAS

Aesthetic Standards

With respect to Corner lots and End View lots, consideration should be given to ensure views along sight lines are focused on key components of the building or landscaping. Sight lines, which are appropriate to a corner or end view down a street, will be encouraged. Special attention should be given to creating pedestrian scale and an inviting place for visitors and employees.

Fig. 22 Screening for delivery area

Fig. 23 Screening for service area

Service, delivery and storage areas and loading docks shall be located in areas of low visibility such as at the side or rear of the principal building. They should not be visually obtrusive and must be screened so as not to be visible from the street or adjacent residential areas. (Fig. 22, 23) Service entrances should be clearly identified using appropriate signage to discourage the use of main entrances for deliveries.

Outside storage areas including product storage, raw materials storage, trash and recycling storage should not exceed 10 % of the floor area of the principal structure however, consideration for an increase in the 10% allowance may be considered based on the proposed aesthetic treatment of screening that will be provided. Stored materials may not be stacked such that they are visible above the enclosure. Garbage or recycling containers shall be hidden from public view either by a freestanding enclosure or within the principle building. (Fig. 24) If stored in an enclosure, it shall be roofed and equipped with gates or a doorway that can be closed to reduce the chance of garbage being carried by the prevailing winds. All ancillary enclosures and out-buildings shall be constructed of materials similar in texture and colour to the principle building.

Where fencing of a property is required along a front property line or a street facing side yard property line of a corner lot, it should incorporate clusters of landscaping or decorative elements for visual interest.

Buffers

Commercial lands within the H2AIASP area that are adjacent to residential development shall have a landscaped buffer[22] of a minimum of 6.0 m (19.7 ft) wide along the property line abutting the residential lands. This landscaped area may be within a required yard setback[23]. Such buffers are encouraged to be designed to emulate natural form.

Industrial parcels that are adjacent to residential development shall have a landscaped buffer of a minimum of 10.0 m (32.8 ft) wide along the property line abutting the residential lands. This landscaped area may be within a required yard setback and is encouraged to be designed to emulate natural form.

Fig. 24 Enclosures for solid waste/recycling areas

Pedestrian Accessibility

Pedestrian spaces and routes should be designed to invite walking throughout and around each development. They should provide convenient, safe and visually attractive pedestrian access to all destinations on the site. Where possible, pathway systems should provide connectivity between sites to form a comprehensive pedestrian circulation system.

Provision of landscaped outdoor spaces which can serve as plazas, patios or pedestrian gathering places with appropriate site furniture and lighting are highly desirable. (Fig. 25, 26) These areas should be shaded and include amenities such as street furniture, drinking fountains, trash/recycling receptacles and adequate lighting for visibility and safety.

22 Buffer: an area that serves the purpose of keeping two or more areas distant from one another.
23 Set back: the distance which a building or other structure is to be removed from a street or road, a river or stream, a shore or flood plain, or any a place which needs protection.

5.2 PARKING REQUIREMENTS IN ENHANCED AREAS

Parking and loading spaces for sites in the enhanced areas of the H2A corridor shall be provided as outlined in Section 10.5.0 of the Municipal District of Foothills No. 31 Land Use Bylaw. Parking at the front of the site (between the building and the main street) should be minimized, with the majority of parking located at the side or the rear of the building. Where significant parking areas are located adjacent to perimeter roadways, they must be visually buffered with adequate screening within an area between the public right of way and the edge of the parking lot or

Fig. 25 Outdoor pedestrian area

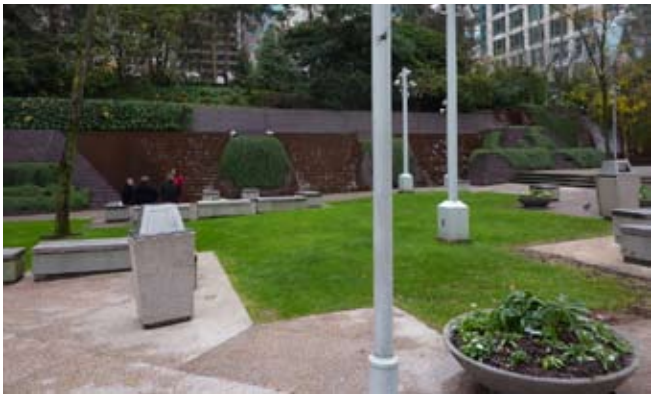

Fig. 26 Outdoor pedestrian area

constructed such that they are lower than the adjacent street. (Fig. 27, 28)

Parking lots containing more than 50 spaces must be broken up into smaller units with landscaped islands. (Fig. 29, 30) Trees should be liberally distributed throughout parking lots to maximize the aesthetic effect and to reduce “heat island” effects. Parking lot trees should be chosen to provide a generous canopy at maturity to shade parked cars and create a more attractive environment. Consideration of plant materials adjacent to parking spaces is recommended: Thorns, stickers, and sharp leaves should be avoided.

Landscaped parking islands (minimum 2.5m wide) spaced every 10 stalls are required to break up the parking lot. These islands are to be constructed using hard and soft landscaping materials. Curb cuts which enable the islands to function as bio-retention areas for stormwater from the parking areas should be included.

While parking and loading for the 2A corridor will generally be provided as outlined in the LUB, shared parking and loading sites will be considered, and consideration for reduced parking will be given based on site-specific uses.

5.3 BUILDING DESIGN IN ENHANCED AREAS

In the enhanced areas of the 2A corridor, buildings with a distinct corporate identity and quality architectural appearance are encouraged. A pedestrian oriented scheme will be preferred where appropriate, for example in areas where there are a collection of commercial uses in close proximity. A pedestrian scale can be achieved in part through the breaking-up of large masses into smaller ones through the use of articulation of surfaces to produce shade and shadow, and the expression of structure.

Fig. 27 Screening parking using depression

Fig. 28 Screening parking with landscaping

Fig. 29 Divide up large parking areas with landscaping

Each building will have a pedestrian scale base[24] that clearly delineates its entrance or entrances. Buildings should feature patterns and details which provide visual interest at the scale of the pedestrian. Building façades will avoid large stretches of blank uninterrupted walls where highly visible. Visual interest shall be added to façades using the variation of roof line or wall plane articulation, or by incorporating building elements such as porches, dormers, bay windows, turrets or towers. The

24 Pedestrian scale base: When the first floor of a multi-floor building incorporates elements that are of a comfortable scale relative to a person.

corridor's rural setting should be considered in the design of building elevations.

Roof mounted service equipment will be located away from roof edges and screened from view. (Fig. 31, 32) Screening should be an integral part of the roofscape and be in keeping with the overall design strategy with respect to form, materials and colour. Special attention should be given to those areas where the roofscape can be seen from the street or adjacent buildings.

Architectural metal, glass and steel, manufactured or natural stone, brick masonry products, and precast concrete shall be the preferred materials used on buildings in the enhanced areas. The use of concrete block or corrugated metal will be discouraged. Alternate materials will be reviewed and evaluated by the Approving Authority on the merit of their building design.

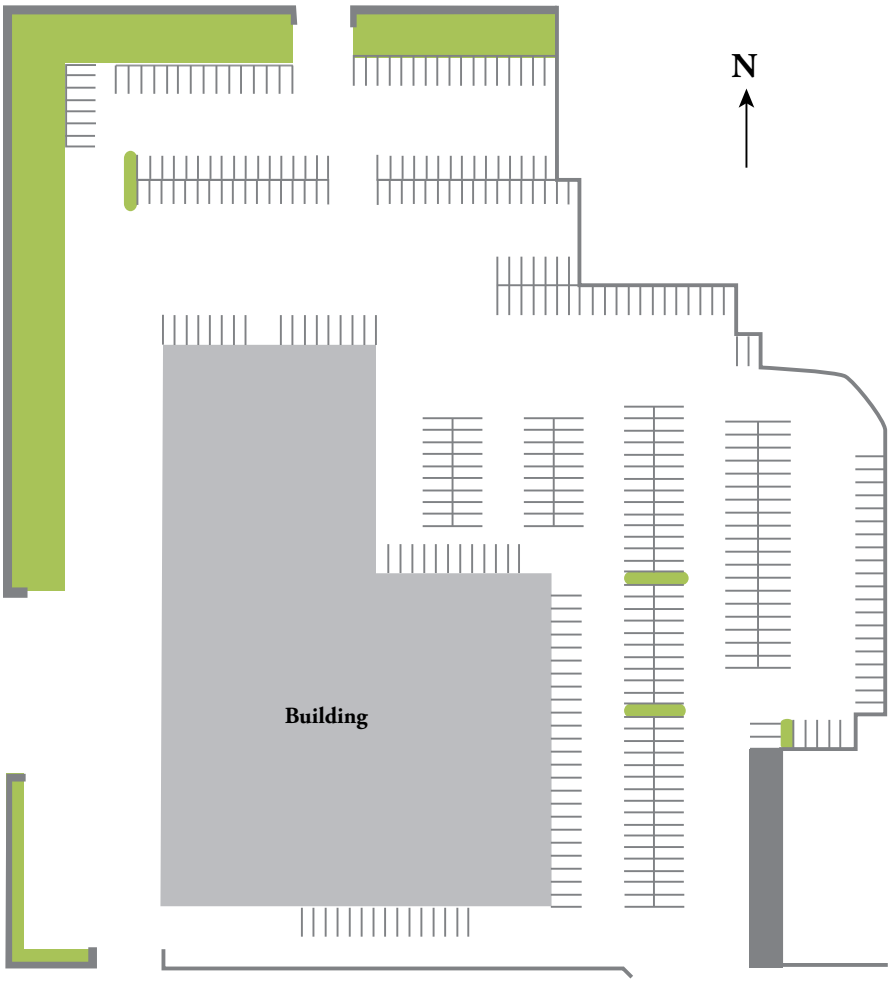

Fig. 30 An example of parking stall dispersion

Exterior materials and colors should be aesthetically pleasing and of a high quality and compatible with materials and colors of nearby structures.

5.4 LANDSCAPING IN ENHANCED AREAS

The preferred approach to landscaping in the enhanced areas of the plan is to group landscaping strategically to provide for specific functions:

- compliment the roadway landscapes;
- reinforce the site entry sequence;
- create distinctive settings for buildings by framing their front elevations;
- screen aesthetically undesirable site functions such as parking, loading or storage areas;

- reinforce the design of the open space systems;
- provide shade for parking areas and;
- provide amenities for pedestrians;
- screen parking, loading, and storage areas.

Shade and shelter from winds should be considered in all landscape design, especially along pedestrian routes or adjacent to parking areas.

Fig. 31 Screening rooftop equipment directly

Fig. 32 Screening rooftop equipment with parapet

Plant materials should be drought resistant native species. Landscape design features such as infiltration planters that reduce irrigation requirements are strongly encouraged.

5.5 OUTBUILDINGS, LIGHTING, FENCING, AND SITE FURNITURE IN ENHANCED AREAS

Lighting of the development should complement the design of the development and must be in compliance with the MD's Dark Sky Bylaw.

Fences or walls shall be designed as an integral element of the site plan and should be of appropriate material and scale to complement the architecture on the site. Long expanses of blank fence or wall without articulation should be avoided. Where significant lengths of walls or fences are required, articulation and/or ornamentation shall be required. Landscaping pockets along a fence line are also an appropriate means of providing visual interest. The maximum height of a fence or freestanding wall in the enhanced areas shall be 2.5 m. No fence shall extend or be in front of the face of the building.

5.6 SIGNAGE IN ENHANCED AREAS

Signs should reflect the character of the principal building and its intended use. They should enhance the style or unique architectural features of buildings and should be designed with the purpose of promoting retail and street activity and enhancing the pedestrian experience. *(Fig. 33, 34, 35)*

Signs are not permitted to cover or obscure architectural features of buildings. The layout and shape of the architectural features of the building should be considered

Fig. 33

Fig. 34

Fig. 35

when determining the size and location of a sign. Design elements such as window patterns will help determine the sign shape and size that will suit the building. The size of signs shall be in proportion to their location. The overall dimensions of signs will be based upon perimeter measurements and overall area.

The design and alignment of signs on multi-use buildings should compliment each other such that a unified appearance is achieved.

Projecting signs are encouraged for commercial development in the enhanced areas of the plan. These signs are affixed to the face of a building or structure and project in a perpendicular manner more than 12 inches from the wall surface. Projecting signs should be designed to reflect the character of the building and the business and should fit with adjacent signage.

5.7 UTILITIES, MECHANICAL AND TELECOMMUNICATIONS EQUIPMENT IN ENHANCED AREAS

All permanent utility lines should be installed underground. Transformers, mechanical equipment, telecommunications devices, equipment switching boxes and other utility cabinets should be located away from streets, pedestrian areas and outdoor seating areas and be screened with landscaping or architectural elements. In addition they should be located such that they are not visible from

Fig. 36 Buried utility box

Fig. 37 Lanscaping around utility box

the street, or screening must be provided in the form of fencing or landscaping in accordance with the MD's screening policy. *(Fig. 36, 37)*

6.0 IMPLEMENTATION

A design review will be carried out as part of the development permit process for the following commercial and/or industrial developments or improvements proposed for lands within the H2AIASP.

a) All new construction and site development;
b) Additions to buildings that add more than 10% to the existing building's footprint or any side elevation;
c) All exterior alterations of existing facilities; and
d) Any alterations or additions to site improvements.

Projects will be evaluated for their adherence to the Highway 2A Corridor Design Guidelines. To facilitate this process the developer will submit a detailed site plan and landscaping plan that includes a landscape maintenance plan with the application for a development permit.

Site plan drawings should include the following:

- Building siting (including future expansion areas if applicable).
- Driveways, parking and loading areas including curb details, surface materials and snow storage provisions.
- Sidewalks and any other paved areas.
- Existing trees with existing and proposed grades.
- Lot grading and drainage showing approved grades on the site.
- Service lead-ins (storm, sanitary, water, hydro, gas and telephone).
- Hydro poles, transformers, meters, fire hydrants, siamese connections.
- Fence and wall locations, design, height, materials and colours.
- Exterior lighting location, design, colour and throw.
- Exterior storage areas and their screening (including garbage).
- Landscape plan drawings should include:
- Existing trees, grades and measures proposed to preserve them.
- Site contours.
- All planting, including location, type and size in caliper, height and spread.
- All screening, including details.
- Any Low Impact Development practices or construction methods that will be incorporated into the development.

Upon receiving a complete development permit application package a design review will be carried out by Municipal staff. In some cases, external agencies (such as the ERCB) may be asked to review applications. Additionally, larger scale developments may warrant a design review panel or professional advice to ensure a comprehensive evaluation is performed. If professional advice is required it shall be at the cost of the applicant.

Evaluating Applications

H2A Corridor Design Guidelines: Project Evaluation Check-list

* Please note: the definitions pertaining to the Project Evaluation Check-lists can be found in Section 8.0 (Definitions).

PART I – GENERAL DESIGN GUIDELINES:

Mandatory Site Elements:

Proposed projects must incorporate all items in the following section to be considered compliant with the Design Guidelines

Site Planning

- ☐ Site coverage does not exceed 60%
- ☐ Siting considers the preservation/enhancement of natural features
- ☐ Building setbacks comply with land-use by-law
- ☐ Development setbacks comply with land-use by-law
- ☐ Site access and internal roadways meet MD of Foothills Road Standards
- ☐ Clear access and orientation provided for vehicles
- ☐ Clear access and orientation provided for pedestrians
- ☐ Loading bays or drive-through lanes do not impede the efficient flow of vehicular or pedestrian movements
- ☐ Pedestrian/bicycle/vehicle conflicts are minimized
- ☐ Pathway systems as required by the Municipality provide connectivity between sites or to a potential regional pathway system to form a comprehensive pedestrian circulation system
- ☐ Provision for alternate modes of transportation
- ☐ Snow removal and storage considered in design of parking and circulation
- ☐ Water conservation is considered

Parking Requirements

- ☐ Adequate parking is provided as per land-use by-law
- ☐ Design of parking meets Municipal guidelines and standards

Building Design

- ☐ Principal building entrance is oriented towards the street or site entry
- ☐ Principal building entrance is easily identifiable
- ☐ Principal building entrance is safely accessible from main parking area
- ☐ Buildings comply with the Alberta Building Code's barrier free design guidelines
- ☐ Buildings constructed and finished with durable materials designed to maintain their initial appearance throughout the life of the project
- ☐ All appliances and fixtures are energy smart and water smart
- ☐ All plumbing fixtures are low-flow or no-flow
- ☐ Water conservation measures are implemented

Landscaping

- ☐ Landscape maintenance plan does not utilize potable water for irrigation
- ☐ Landscape vegetation is drought resistant and makes use of native species

Stormwater Management

- ☐ Existing site vegetation and undisturbed soils are maintained where possible
- ☐ Parking lot and internal road design considers non-traditional methods for stormwater conveyance and infiltration

Outbuildings, lighting, fencing, site furniture and signage

- ☐ Outbuildings comply with Municipal setbacks
- ☐ Outbuildings do not hamper site access or circulation
- ☐ Outbuildings do not hamper emergency access or staging for fire-fighting
- ☐ Incorporation of appropriate fencing/screening on-site
- ☐ Exterior lighting provides security and safety of on-site areas
- ☐ Lighting complies with Municipal Dark Sky Bylaw
- ☐ Outdoor storage areas are appropriately fenced/screened
- ☐ Building address or site address clearly identified by signage with characters of 100mm minimum
- ☐ Signage complies with the land use bylaw
- ☐ Signage located where it will not interfere with pedestrian or traffic safety
- ☐ All signage is designed to be similar in material and style to buildings and other site features

- ☐ Signage, if illuminated, is in compliance with the Municipality's Dark Sky Bylaw
- ☐ Free standing signage is permanently attached to the ground, is located within the front/side/rear setback, does not incorporate any blinking, flashing, strobe lights or running lights
- ☐ Free-standing signage does not exceed 4.5 square metres or 2 metres in height
- ☐ Projecting signage does not exceed 3 square metres and provides at least 2.5 metres of clearance from the bottom of the sign to the ground
- ☐ Canopy or awning signage projects no further than 1.2 metres from the face of the building and provides a minimum 2.5 metres of clearance from the bottom of the sign to the ground

Utilities, Mechanical and Telecommunications Equipment

- ☐ Power lines, transformers mechanical and telecommunications equipment are located such that they are removed from main pedestrian pathways unless included within an approved integrated utility greenway
- ☐ Power lines, transformers mechanical and telecommunications equipment should be located so they are adequately removed from main vehicular carriage ways

Optional Features:

A project needs _____points in this section to comply.

Projects located in areas that are only subject to the general design guidelines and achieve a score of more than _____ points qualify for incentives as outlined in the table following the checklists.

Site Planning

- ☐ Pathway from parking to entry
- ☐ Service areas screened and located at side or rear of building
- ☐ Outdoor storage located in rear yards
- ☐ Low Impact Development Strategies
- ☐ Private on-site pathways meet Municipal requirements
- ☐ Space allocated for potential shuttle bus stop if deemed appropriate by the Municipality

Parking Requirements

- ☐ Majority of the required parking is located at the side and/or the rear of the building

- ☐ Parking areas surfaced with permeable paving materials

Building Design

- ☐ Energy efficient buildings incorporating green energy for heat or light
- ☐ Use of daylight to reduce lighting requirements
- ☐ Use of reduced VOC materials
- ☐ Use of recycled materials
- ☐ Construction waste reduction plan including re-cycling of surplus building materials
- ☐ Use of materials that are recyclable after their useful life
- ☐ Accommodation of recycling in site design
- ☐ Building incorporates measures to reduce solar gain

Landscaping

- ☐ Landscaping at site entrances
- ☐ Landscaping provided at focal points or highly visible areas of the site
- ☐ Landscaped buffers between sites
- ☐ Landscaping along building faces
- ☐ Landscape screening of parking, loading and storage areas
- ☐ Provision for year-round colour and interest in landscaping
- ☐ Pedestrian friendly environments created by providing shade and shelter
- ☐ Use of plant species with a low water requirement
- ☐ Locating landscaping in vegetated drainage swales or bio-retention areas
- ☐ Use of landscaping to filter stormwater run-off
- ☐ Non-native grasses limited to areas where they serve a functional purpose
- ☐ Use of sculpture, architectural elements or hard-scaping to augment landscaping
- ☐ Foundation planting which complements and focuses attention on the office portion or entrance of the building

Outbuildings, lighting, fencing, site furniture

- ☐ Outbuildings are of similar materials and character as the principal building
- ☐ Use of energy efficient or solar powered light fixtures
- ☐ Use of lighting equipped with timers, motion sensors or light sensors

- ☐ Fencing/screening is attractive and incorporates pillars or articulation for visual interest

Signage

- ☐ Signage, including corporate, tenant and traffic signage, is coordinated in material and style
- ☐ Signage is appropriate for the surrounding rural setting

Utilities, Mechanical and Telecommunications Equipment

- ☐ Incorporating alternative energy production into plan (use of solar, geothermal etc.).
- ☐ All permanent utility lines have been installed underground.
- ☐ Transformers, mechanical equipment, telecommunications devices, equipment switching boxes and other utility cabinets are located away from streets, pedestrian areas and outdoor seating areas, unless incorporated into an approved integrated utility greenway
- ☐ Transformers, mechanical equipment, telecommunications devices, equipment switching boxes and other utility cabinets are located such that they are not visible from the street, or screening is provided in the form of fencing or landscaping in accordance with the Municipality's Screening Bylaw.

Crime Prevention Through Environmental Design

- ☐ Includes design elements that support strategies for Crime Prevention Through Environmental Design.

PART II – ENHANCED DESIGN GUIDELINES

Mandatory Site Elements:

Proposed projects subject to the Enhanced Design Guidelines must incorporate all items in the general mandatory section as well as the following section in order to comply.

Site Planning

- ☐ Service, delivery and storage areas and loading docks located in areas of low visibility.
- ☐ Service, delivery and storage areas are visually unobtrusive and screened so as not to be visible from the street or adjacent residential areas.
- ☐ Outside storage areas including product storage, raw materials storage, trash and recycling storage do not exceed 10 % of the floor area of the principal structure.

- ☐ Garbage containers hidden from public view either by a freestanding enclosure or within the principle building
- ☐ Commercial lands within the 2A corridor that are adjacent to residential development have a landscaped buffer of a minimum of 6.0 m (19.7 ft) wide along the property line abutting the residential lands
- ☐ Industrial parcels that are adjacent to residential development have a landscaped buffer of a minimum of 10.0 m (32.8 ft) wide along the property line

Parking Requirements

- ☐ Parking lots containing more than 75 spaces are broken up into smaller units with landscaped islands
- ☐ Where significant parking areas are located adjacent to perimeter roadways, they are visually buffered with adequate screening within a planting strip between the public right of way and the edge of the parking lot pavement or constructed such that they are lower than the adjacent street

Building Design

- ☐ Building façades and increased day-lighting avoids large stretches of blank uninterrupted walls
- ☐ Each building has a pedestrian scale base that clearly delineates its entrance or entrances
- ☐ Roof mounted service equipment located away from roof edges and screened from view
- ☐ Screening is an integral part of the roofscape and in keeping with the overall design strategy with respect to form, materials and colour

Landscaping

- ☐ Visually unattractive site functions such as parking, loading and storage areas are screened with vegetative and materials landscaping or a combination of landscaping and screening/fencing

Outbuildings, lighting, fencing, site furniture

- ☐ Ancillary enclosures and out-buildings constructed of materials similar to the principle building and are incorporated into the overall plan in an appropriate manner
- ☐ Light standards and exterior light fixtures are in a style that suits the architectural theme of the site
- ☐ Fences or walls are designed as an integral element of the site plan and are of appropriate material and scale to complement the architecture on the site
- ☐ Where significant lengths of walls or fences are required, articulation is provided
- ☐ Landscaping pockets along a fence line are used to provide visual interest
- ☐ The height of any fences or freestanding walls does not exceed 2.5 m
- ☐ No fence in the plan extends past or is in front of the face of the principal building

Signage

- ☐ Signage is appropriate for the surrounding rural setting
- ☐ Signage, including corporate, tenant and traffic signage, is coordinated in material and style

Utilities, Mechanical and Telecommunications Equipment

- ☐ All permanent utility lines should be installed underground

Crime Prevention Through Environmental Design (CPTED)

Optional Site Features:

A project located in one of the enhanced areas of the plan area needs _____points in this section to be considered in compliance.

Projects located in areas that are subject to the enhanced guidelines and achieve a score of more than _____ points qualify for incentives as outlined in the table following the checklists

Site Planning

- ☐ Pedestrian spaces and routes designed to invite walking throughout and around the development
- ☐ Convenient, safe and visually attractive pedestrian access is provided to all destinations on the site
- ☐ Provision of landscaped outdoor spaces which can serve as plazas, patios or pedestrian gathering places with appropriate site furniture and lighting
- ☐ Outdoor gathering spaces are shaded and include amenities such as street furniture, drinking fountains, trash/recycling receptacles and adequate lighting for visibility and safety

Parking Requirements

- ☐ Majority of parking located at the side and/or the rear of the building
- ☐ Parking lot trees are chosen to provide a generous canopy at maturity to shade parked cars and create a more attractive environment
- ☐ Parking lot trees are allocated so as to provide at least one tree per four stalls

Building Design

- ☐ Buildings possess a distinct corporate identity and quality architectural appearance.
- ☐ Design of buildings incorporates the breaking-up of large masses into smaller ones, use of articulation of surfaces to produce shade and shadow, and the expression of structure
- ☐ Buildings feature patterns and detail which provide visual interest at the scale of the pedestrian
- ☐ The 2A corridor's rural setting is considered in the design of building elevations
- ☐ Exterior materials and colors are aesthetically pleasing, durable, and compatible with materials and colors of nearby structures
- ☐ Building(s) incorporate measures to address solar gain.

Landscaping

- ☐ Landscaping compliments internal/external roadways and r-o-ws
- ☐ Landscaping is used to re-enforce the site entry sequence
- ☐ Landscaping is used to create distinctive settings for buildings by framing their front elevations
- ☐ The design of the open space system is reinforced with landscaping
- ☐ Landscaping is used to provide climate moderation for pedestrian spaces
- ☐ Landscaping provides shade for parking areas
- ☐ Incorporates landscape design features such as infiltration planters that reduce irrigation requirements

Outbuildings, lighting, fencing, site furniture

- ☐ Fencing or screening required along a front property line or a street facing side yard incorporates clusters of landscaping

Signage

Utilities, Mechanical and Telecommunications Equipment

Crime Prevention Through Environmental Design

8.0 DEFINITIONS:

Alternative modes of transportation:
Can generally be described as modes of transportation other than traditional single occupancy travel. Likely forms of alternative transportation in the 2A corridor include Bus Rapid Transit (BRTs) and light or heavy rail lines.

Arrival sequence:
The series of experiences from arrival at the site to entry into the building

Articulation of buildings:
The articulation of a building emphasizes each part individually revealing the distinct areas or functions of the building and how the parts fit into the whole.

Articulation of surfaces:
The breaking up of long continuous surfaces by displacing portions of them either horizontally or vertically.

Berming:
Creating a level space, shelf or raised barrier of earth to separate two areas.

Bio-retention area (see also Rain Garden):
A shallow depression which has been planted with vegetation, designed to retain or detain stormwater before it is infiltrated into the ground or evaporated. This term may sometimes be used interchangeably with “rain garden”, typically a rain garden is of smaller scale and would accommodate the run-off from one residential property, where as

a bio-retention area would describe a larger project encompassing several residential properties or one or more non-residential properties.

Bio-swales:
Gently sloped ditches vegetated with native plants that reduce runoff volumes through infiltration and evapo-transpiration

Buffer:
An area that serves the purpose of keeping two or more areas distant from one another.

Building scale:
Building scale is a measurement of proportion in relation to the pedestrian.

Built context:
The pattern of land use, building type size, style and site design in an area.

Comprehensive pedestrian circulation system:
Can generally be described as a network of sidewalks, pathways, trails, and other pedestrian conveyance systems that effectively links one area to another.

Climate Moderation:
Can generally be described as efforts through landscaping design to maintain a comfortable outdoor environment for pedestrians.

Day-lighting (structures):
The illumination of indoor spaces by natural light through the use of skylights, windows, and reflected light. Day-lighting may also employ light sensors, and louvers or shading devices to regulate light or control glare.

Day-lighting (rainwater):
The practice of bringing former buried or culverted streams back to the surface. The terms is sometimes used to refer to the de-commissioning of storm sewer drains and creating new surface channels or bio-swales for managing stormwater (Land Stewardship Centre of Canada).

Delineate:
To visually indicate, describe or render something.

Drought resistant (tolerant):
Can generally be described as flora that is resistant to and tolerant of drought i.e. the phenomenon that exists when precipitation is significantly below normal recorded levels, causing serious hydrological imbalances that often adversely affect land resources and production systems (Government of Canada 2010).

Durable:
In the context of the 2A corridor, can generally be described as a material able to withstand normal outdoor conditions without the appearance or physical integrity of the material being reduced over the same period of time in which a less robust material would exhibit signs of deterioration.

Energy efficiency:
Can generally be described as a measure of how effectively energy is being used for a given purpose. For example, providing a similar or better level of service with less energy consumption on a per unit basis is considered an improvement in energy efficiency (Government of Canada 2010).

Energy smart:
Can generally be described as appliances and fixtures that have met the requirements set forth by the Energy star designation recognized by Natural Resources Canada.

Fence:
A protective or confining barrier of posts, wire mesh, etc. where the percentage of openings exceeds or equals 30% of the surface area (from MD of Foothills Land Use Bylaw).

Forecourt:
An open area in front of a structure's entrance.

Geo-exchange:
Using a heat pump to transfer heat from the earth or a body of water into a building to heat it in the winter, and transferring heat back into the earth or water body for cooling in summer.

Geothermal heating:
The direct use of heat retained within the Earth's core for heating applications.

Green energy:
Can generally be described as electricity generation which uses renewable resources and has minimal impact on the environment.

Grey water:
Residential wastewater that has been used in the home for washing, grey water explicitly excludes water from toilets

Landscaping:
Can generally be described as the physical modification for the purpose of changing the appearance of the parcel, but does not include lot grading.

Low flow:
Please see definition for water smart.

Lot grading:
Can generally be described as (a) the construction of berms in excess of 2m (6.5ft) (b) stockpiling of soil in excess of 2m (6.5ft) (c) trenching and/or excavation that redirects a watercourse or changes the natural drainage pattern of a lot (including but not limited to increasing the volume of run-off from a property).

Low Impact Development (LID):
Can generally be described as a form of site design and development that minimizes development impacts on air, land, and water. Specifically, site design and development forms will work to preserve pre-development site drainage

conditions and on-site hydrological functions.

Monolithic:
Consisting of one piece; solid or unbroken, with no differentiation of parts.

Natural features:
Can generally be described as those landscape features of a site or area created by geologic processes.

Natural ventilation:
The use of openings in a building and naturally occurring phenomena (wind and the stack effect) to supply fresh air.

Non-native grasses:
Can generally be described as grass species not native to the flora of the Province of Alberta and on a more general scale Canada.

Pedestrian Scale/Human Scale:
The relationship between the dimensions of a building, street, outdoor space, or streetscape element and the average dimensions of the human body, may also refer to space and the built environment as perceived by the senses of a human being.

Pedestrian scale base:
When the first floor of a multi-floor building incorporates elements that are of a comfortable scale relative to a person.

Permeable paving materials:
Can generally be described as materials used in hard surfacing which allow rainfall to percolate to subsurface catchment areas which then allow infiltration into underlying soils or the removal of the water by subsurface drainage.

Pervious material:
A material or surface which allows the penetration of water into the ground.

Planter-box:
Planter boxes are raised planting beds that intercept, store and filter stormwater runoff from downspouts. They allow the infiltration of storm water into the ground while at the same time irrigating vegetation planted inside of them.

Private on-site pathways:
Can generally be described as pathways that provide pedestrian access within a privately owned property. Private pathways nay or may not connect to public pathway systems.

Recycled materials:
Can generally be described as materials that can be treated or processed in order that they may be suitable for re-use.

Retention areas / Bio-retention areas:
Depressed areas where water is stored until it seeps into the ground, evaporates or is utilized by vegetation.

Rain garden:
A type of Bio-retention area usually a small bowl-shaped garden filled with native plants. Runoff from a disconnected

roof downspout or other source may be collected in the bowl and infiltrate into the soil with the help of long-rooted native plants.

Roadside Swales:
This category of bio-swale is located next to roads and used in lieu of curbs and gutters to infiltrate and convey runoff from the road surface. Bio-swales can absorb low flows or carry runoff from heavy rains to storm sewer inlets or directly to surface water bodies.

Running Lights:
Also referred to as chasing LED lights. A series of small lights that illuminate in a progression one after the other such that it appears that a light is "running" along the path.

Set back:
The distance which a building or other structure is to be removed from a street or road, a river or stream, a shore or flood plain, or any a place which needs protection.

Screening or Visual Screening:
The soft landscaped and hard structural materials used to minimize negative visual impacts for certain development forms. Screening can be achieved through the use of landscaped berms, planted materials, and/or vertical structural elements such as fences and walls.

Screening Walls:
Walls specifically intended to minimize negative visual impacts for certain development forms. They will have a transparency of less than 25%.

Solar gain:
Can generally be described as an increase in interior temperature as a result of solar radiation. Solar gain may be maximized in the winter months to reduce heating costs and minimized in the summer months to reduce cooling costs.

Solar heating:
Active A solar energy collector is used to heat either liquid or air, this energy can either be used to heat an interior space or it can be transferred to a storage system and distributed from there.

Passive A means of using sunlight for useful energy without use of active mechanical systems. Generally, sunlight is used to heat air, water or thermal mass.

Tree Box Filters:
Similar to a Planter Box. Provides for the infiltration of stormwater through soil and tree root systems *(Fig. 19).* The system consists of a container filled with a soil mixture, a mulch layer, under-drain system and a shrub or tree. Stormwater drains directly from impervious surfaces through a filter media. Treated water flows out of the system through an under drain connected to a storm drainpipe / inlet or into the surrounding soil. Stormwater is filtered and the tree is watered.

Useful life:
Can generally be described as the time span that a product or material has been designed and manufactured to last for.

Vegetated drainage swales:
A type of bio-infiltration where vegetation is planted in a swale that is used for the detention or conveyance of stormwater run-off.

Volatile Organic Compounds (VOCs):
Can generally be described as carbon based chemicals that easily evaporate to a gaseous state, found to be a major contributing factor to ground level ozone, a common air pollutant which has been proven to be a public health hazard.

Water conservation:
In accordance with the Province of Alberta's Water for Life Strategy, can generally be described as any beneficial reduction in water use, loss or waste and water management practices that improve the use of water resources to benefit people or the environment.

Water smart:
Can generally be described as those plumbing fixtures that meet and are recognized by the nationally recognized Environmental Choice Program's Certification Criteria.