Annex 3 – Design Framework

Annex 3, entitled 'Design Framework', contains a number of Design Considerations, which provide suggestions on how the Design Objectives and Principles in S.2.5.1 of the Official Plan could be met. It is a sampling of how the proponent of a private development or public work could apply the Design Objectives and Principles, but it makes no attempt to be exhaustive. Rather, the purpose of this Annex is to act as a trigger to stimulate discussion. It is a collaborative, educational tool, to be used to help focus more attention on thinking about design in the development of our city.

The Design Considerations do not form part of this Plan. The Design Considerations are not meant to be prescriptive and do not constitute a checklist. None of the Design Considerations is expressed as policy; the Design Objectives and Principles from the Official Plan are included within this Annex to provide an organization and context for the Design Considerations. Proponents of planning and development are free to respond in creative ways to the Design Objectives and Principles and are not limited only to those suggested by the Design Considerations contained within this Annex. The Design Framework (consisting collectively of the Design Objectives, Principles and Considerations) applies to both the public and private sector. In fact, at times it will require the partnership of both the public and private sectors to achieve the intent of the Design Framework. Annex 3 may be used in a variety of planning and development scenarios, including development applications, community design plans, and capital works projects.

Figure 3.1 – the Context of Annex 3:
The accompanying graphic, entitled 'Figure 3.1 - Context of Annex 3, shows how Annex 3 fits into the overall land use and design policy context of the City. The following paragraphs are to be read in conjunction with Figure 3.1.

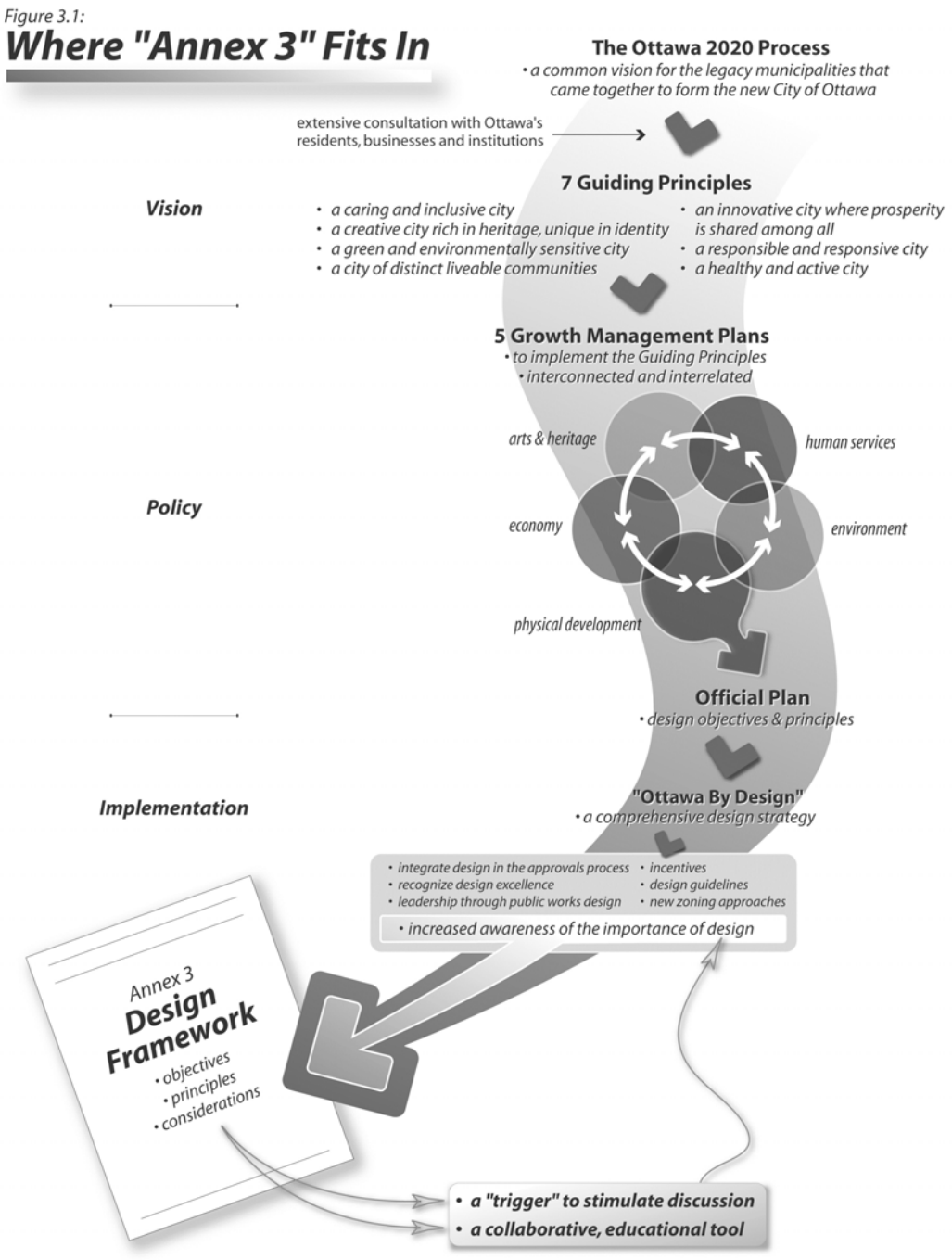
The Ottawa 20/20 process grew out of Smart Growth Summit, held from June 14 -18, 2001. The Summit examined the concept of Smart Growth and how it could be applied to Ottawa. Ottawa 20/20 was subsequently launched to articulate a shared vision for the newly amalgamated City of Ottawa and was accomplished with the active participation of the community at large. It provides the framework for managing growth in ways that reinforce the qualities most valued by its residents. These values were ultimately distilled into a set of seven principles, that in turn formed the basis upon which five growth management plans were created. These plans, one of which is the Official Plan, set out strategic priorities for policies that guide the decision-making processes followed by City Council. The Plans complement each other and work together towards the same goals.

The link to 'design' can be traced directly to the Ottawa 20/20 process, wherein people expressed a desire to protect and enhance the quality of life in our communities. One of the seven principles identified through this process is 'A City of Distinct, Liveable Communities'. The ways in which the Official Plan addresses this principle has been summarized in Section 2.1 of this Plan. The Official Plan is primarily concerned with the physical development of the city. The Official Plan supports and provides opportunities for intensification to accommodate growth in a manner that fits well and works well within our established communities. Good design is an essential element in maintaining and building liveable communities and creating quality places for people to live, work and play. Design will play a crucial role in achieving a compact urban form with a mix of land uses, a range of housing and work opportunities, efficient transit, more active street life and a greater sense of community cohesion and safety.

Section 2.5.1 of this Plan contains policy direction in the area of compatibility and community design. It includes a series of six Design Objectives and a number of associated Design Principles that are qualitative statements aimed at influencing the built environment of the city as it matures and evolves. Annex 3 encourages an increased awareness of the importance of design in the achievement of distinct liveable communities and is one tool among several that implement what S.2.5.1 of the Official Plan

refers to as *'Ottawa By Design'*, the City's comprehensive urban design strategy. It does so primarily by stimulating consideration of how the City's objectives for design could be achieved.

Figure 3.1:



Design 'happens' at different scales over a wide spectrum of areas and places:
Annex 3 arranges the Design Considerations at five different scales:

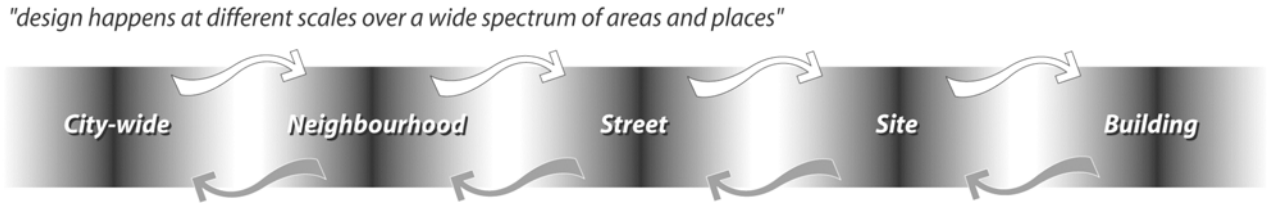
- City-wide
- Neighbourhood or Community
- The Street
- The Site
- The Building

Even though the Design Considerations have been arranged under the headings describing different scales of development, it is important to recognize that in many cases, the Considerations or aspects of each Consideration may apply at more than one scale and should be viewed in that way. The purpose of arranging the Considerations in this way is to prompt people to think about design from a variety of perspectives. In reality, development will be perceived differently at different scales. A rule of thumb in using this Annex is, as a minimum, to 'think ahead and think back one level', or 'think up and think down one level'. For example, in a community design plan exercise, reference to the Design Considerations will begin at the neighbourhood or community scale, but it must be realized that the implications for design will extend at least to the city-wide scale ('up one level') as well as that of the street ('down one level') and may also encompass the site and the building scale to some degree. Similarly, a streetscaping exercise will have implications at the scale of both the adjoining sites and the surrounding neighbourhood.

To illustrate in a general way, one of the Design Principles under Design Objective No.1 from S.2.5.1 of the Official Plan reads:

"Recognize and reflect on the history of the city or community".

The following graphic provides an example of thinking about design at various scales for this one Design Principle by showing some Design Considerations that apply at each of the various scales.



Example: city-wide scale	Example: neighbourhood / community scale	Example: street scale	Example: site scale	Example: building scale
reflecting the influence of the city's natural setting and waterways	respecting historical design elements, development patterns and cultural landscapes of the surrounding area	utilizing means such as formal street tree planting schemes or master fence or screening plans to help create an identifiable community image	providing architectural gestures- memorable pediments, facades, or steeples that will provide neighbourhood or district landmarks	using lighting to accentuate and animate buildings, natural features, public monuments and public spaces

Think ahead, think back!

The following pages, containing the Design Objectives and Principles from the Official Plan, in combination with the Design Considerations arranged under the various scales, constitute Annex 3 – Design Framework.

1.0 – Design Objective 1 (from S.2.5.1)

To enhance the sense of community by creating and maintaining places with their own distinct identity.

1.1 Design Principles associated with Design Objective 1 (from S.2.5.1)
To accomplish this objective, design should:

- Support the overall image of Ottawa as the Nation's Capital;
- Recognize and reflect on the history of the city or community;
- Promote quality consistent with a major metropolis, and a prime business and tourist destination;
- Create distinctive places and appreciate local identity in patterns of development, landscape and culture;
- Reflect a thorough and sensitive understanding of place, context and setting;
- Consider public art early in the design process and integrate it, as appropriate, as part of the project.

1.2 Some Design Considerations for Design Objective 1 & Associated Design Principles
For the city-wide scale, think about such things as:

- Respecting the integrity of the Parliament Buildings, ceremonial routes and other federal symbols;
- Reflecting the influence of the city's natural setting, major parks and waterways;
- Establishing neighbourhoods and communities of finite size, that are easily traversed on foot and include areas of distinctive character, use and identity through a lively and varied mix of uses and public spaces;

For the neighbourhood scale, think about such things as:

- Respecting and reflecting historical design elements, development patterns and cultural landscapes of the surrounding area;
- Incorporating design elements from existing distinctive building forms and details that are characteristic of the surrounding area, while achieving variety and innovation;
- Protecting, enhancing, or providing vistas of significant natural features, landmark places, major greenspaces, points of interest, and other important symbols of community identity;
- Locating important civic buildings and functions (schools, places of worship, municipal services, neighbourhood recreational facilities, theatres, meeting halls, etc.) on prominent, centrally-located sites within a neighbourhood, such as on squares or the termination of streets or vistas;
- Recognizing gateways at main entry points into communities or districts (which may include major transit stations) and making them the focus for enhancements such as: unique architectural treatment, the creation or preservation of local landmarks, suitable art forms or sculptural features, or appropriate transitions in intensity or height;
- Enhancing or creating nodes of activity within communities or districts at important junctions and points of interaction where a distinctive urban design character is created, such as through the erection of landmark buildings, and where residential densities support the provision of public transportation and a vital mix of uses and activities;
- Enhancing place-making by locating the majority of a community's population within walking distance of functionally-integrated neighbourhood services, such as community facilities, parks, schools, neighborhood retail centers, and employment centres and by enhancing connectivity among uses through means such as greenways and mid-block pedestrian connections;
- Encourage development designs that give residents direct access to neighbourhood destinations as opposed to designs that are circuitous and force residents to drive to neighbourhood destinations;

For the street scale, think about such things as:

- Utilizing means such as formal street tree planting schemes or master fence or screening plans to help create an identifiable community image so that neighbourhoods or communities are recognizable by the trees used or the form of landscape developed;
- Supporting the role of the street as a vibrant public space through means such as creating or reinforcing a pattern of building, activity, landscape, and amenity that will attract the public;

For the site scale, think about such things as:

- Providing architectural gestures - memorable pediments, facades, or steeples that will provide neighbourhood or district landmarks;
- Contributing to the identity of the place by enhancing the space between the building face and the street, where such space exists, through means such as landscaping, sculpture, lighting, railings, paving, fountains and street furniture;
- Contributing to views and vistas where buildings or structures stand out significantly on the skyline from the background of existing buildings;
- Considering adjoining buildings, topography, and the general pattern of heights in the area to determine the scale, massing and height of the development;
- Utilizing public art to contribute to the enjoyment and distinctiveness of place;

For the building scale, think about such things as:

- Integrating individual 'corporate image' architectural design elements, signage and colour in a manner that contributes to the character of the surrounding area;
- Using lighting to accentuate and animate buildings, natural features, public monuments and public spaces;
- Incorporating architectural and functional excellence to create distinctive places, enhance local identity, and assist in public interaction.

2.0 – Design Objective 2 (from S.2.5.1)

To define quality public and private spaces through development.

2.1 Design Principles associated with Design Objective 2 (from S.2.5.1)

- To accomplish this objective, design should:
- Clearly define and connect public and private spaces by:
  - Defining and enclosing spaces using buildings, structures and landscaping;
  - Recognizing every building as being part of a greater whole that contributes to the overall coherency of the urban fabric;
- Enhance and enliven the quality, character and spatial delineation of public spaces;
- Consider streets as public spaces;
- Encourage a continuity of street frontages. Where continuous building facades are not a dominant feature of the streetscape, the gradual infilling of empty spaces between buildings and between the building and the street edge is promoted to occur over time. Depending on the stage of evolution of the street, it may be appropriate to achieve this principle in a number of ways e.g., building form, landscape treatment, architectural ornamentation;
- Address the relationship between buildings and between buildings and the street;
- Meet the needs of pedestrians as a priority;
- Contribute to attractive public spaces and important vistas;
- Minimize the exposure of inhabitants to noise levels that could adversely impact their health and well-being.

2.2 Some Design Considerations for Design Objective 2 & Associated Principles

For the city-wide scale, think about such things as:

- Tying patterns of land use together through means such as providing a continuity and consistency of streetscape and landscape treatment, pedestrian and cycling routes, building setbacks, building heights, signage and lighting treatment;

For the neighbourhood scale, think about such things as:

- Providing public amenity space that is visible, usable, well-maintained and accessible;
- Addressing a range of community needs and activities through means such as the format and arrangement of public spaces, accommodating multiple functions within public spaces and providing variety, size, and number of open spaces;

For the street scale, think about such things as:

- Using buildings and trees to define streets, squares, parks and other spaces, and by generally relating their height and massing to the scale and importance of the space they enclose;
- Coordinating the development of public and private spaces in a way that contributes to the quality of the pedestrian environment, the quality of the site and the character of the street environment through means such as public art, well-designed street furniture, signage, lighting, cycle racks, fountains, pavement treatment, trees and landscaping, or other similar methods;
- Creating a continuous street-oriented building form around a street block perimeter;
- Using architectural treatments such as set backs or projections from continuous building lines, awnings, canopies, alcoves and bays to soften the interface between buildings and the public realm, create usable attractive spaces for pedestrians, add valuable visual emphasis, and foster activity on the street where people move between public and private space;
- Anchoring strategic and highly visible locations at the intersection of major roads through means such as strong architectural or design elements (e.g. bringing buildings up to the corner and placing the highest and most interesting portion of a building nearest the corner, orienting the main entrance to the corner), capitalizing on design possibilities for both street facades, coordinated streetscape and site design elements (e.g. kiosks, vendors or other pedestrian services and amenities), significant landscaping features, special paving materials, and curb extensions to shorten the distance across the street and larger sidewalk area to accommodate sidewalk activity;
- Integrating measures on the street to facilitate local shopping and economic activity such as on-street parking and stopping lay-bys;
- Incorporating interruptions of continuous building facades at strategic locations along streets frequented by pedestrians to provide pocket parks, plazas or other open spaces that provide a supportive function to the street activity or enable views and vistas to important community symbols extending beyond the street;

For the site scale, think about such things as:

- Creating connected and attractive public and private spaces by taking advantage of existing natural features such as water, slopes, and vegetation;
- Clearly expressing the difference between public and private space through a variety of means, such as the provision of walls, fences, railings, gates, arches, signage, and changes in surface texture and pattern;
- Providing building occupants with quality, usable amenity space through means such as green areas, rooftop gardens, decorative pools, gardens;
- Locating surface parking lots away from the street in rear or side yards or, if located at the street, separating and screening them from pedestrians;
- Reducing the amount of area devoted to parking by considering means such as alternatives to surface parking (structures, below-grade parking), shared parking, or reduced parking standards or requirements as and where appropriate;

- Mitigating the impact of extensive surface parking areas through such means as breaking them up into smaller segments, the placement of buildings, the use of significant landscaping, public art, fountains, seating areas, decorative walls, or other features;
- Locating service areas (loading, trash) and service elements (metres, transformers) away from the public street, pedestrian and cycle pathways and adjacent residences, or, screening them using a variety of methods, such as trees, landscaped berms, decorative walls and fences;
- Minimizing exposure to adverse or unhealthy noise levels through means, such as: utilizing acoustical barriers (berms, walls, favourable topographical features); architectural design (room and corridor arrangement, blank walls, placement of mechanical systems, windows, balconies and courtyards, building height); building construction (acoustical treatment of walls, ceilings, selection of acoustical materials; providing mechanical ventilation and climatic control systems to allow windows and doors to remain closed); mitigation at the noise source; site planning (orientation of buildings and outdoor living areas, spatial separation, intervening noise insensitive land uses, appropriate setbacks);

For the building scale, think about such things as:

- Addressing locations that abut a public space frequented by pedestrians by providing elements such as: active, at-grade community-serving uses; at-grade entrances at frequent intervals; windows giving views to passers by that both informs them of the function of the building and provides views out of the building to enhance natural surveillance; colonnades, awnings or other features that have the effect of widening the public space and/or providing weather protection to pedestrians; and seating and related amenities at known waiting areas, points of interest, vistas or changes in grade;
- Orienting the principal façade and entrances of main buildings to the street (in order of priority: arterial, collector and local, where the site has frontage on more than one street);
- Avoiding blank, windowless walls that are visible from public spaces;
- Using architectural elements, massing, and landscaping to accentuate main building entrances and connecting the entrance to the sidewalk with a well-defined pedestrian way;
- In the case of parking structures adjacent to the street, contributing to the continuity of the street edge, the streetscape and the function of the street through means such as landscaping, art or murals, decorative surface treatments, or incorporating pedestrian-oriented uses at grade.

3.0 – Design Objective 3 (from S.2.5.1)

To create places that are safe, accessible and are easy to get to and move through.

3.1 Design Principles associated with Design Objective 3 (from S.2.5.1)
To accomplish this objective, design should:

- Connect buildings and spaces through a network of roads, sidewalks, and pathways in ways that are understandable. These connections should be accessible to all users and incorporate the principles of universal access and where connections lead into a building, the building and its facilities should be designed so that it can be approached, entered, and used by persons with physical or sensory disabilities;
- Integrate public transit with existing and new development, where feasible;
- Provide appropriate (i.e., size and placement) signage identifying pathways, intersections and landmarks;
- Create places and spaces that are visible and safe and can be confidently used at all hours of the day or night.

3.2 Some Design Considerations for Design Objective 3 & Associated Principles
For the city-wide scale, think about such things as:

- Creating systems of movement that are well-integrated, continuous networks for pedestrians, cyclists, and vehicles that inter-connect a wide variety of spaces and destinations;

- Facilitating wayfinding and orienting users through a variety of means, such as the preservation or establishment of landmarks, views and vistas, public art, memorable buildings or structures or other symbols of community identity; the use of attractive, legible and easily identifiable signage that orients people and explains where they are and how to get to important locations; the creation of well defined routes and destinations through patterns of planting, lighting, surface and building materials;
- Avoiding the use of overpasses and tunnels for pedestrian and cycling routes, but where they are permitted, providing a safe alternative route at grade;
- Facilitating accessibility and connectivity through measures such as a fine grain block pattern with frequent intersections and an interconnected street layout;

For the neighbourhood scale, think about such things as:

- Coordinating access between neighbouring subdivisions at the planning stages of communities through means such as: interconnected walkway and greenway systems that link multi-use open spaces, community facilities, and neighbourhood services and multiple street linkages to more evenly distribute traffic as well as reduce travel distances for motorists and pedestrians;
- Integrating established paths, shortcuts and minor roads that reflect existing linkages and movement patterns throughout and across an area into a system of enduring linkages;
- Locating off-road pathways through well-used areas, rather than remote areas, or providing frequent connections to public roads where pathways travel through isolated areas, and providing alternatives and choice in walking routes and circulation patterns;

For the street scale, think about such things as:

- Providing the primary site and building access directly from the street in ways that are clearly identifiable, barrier free and incorporate safe, attractive pedestrian routes;
- Emphasizing pedestrian priority and safety by utilizing measures such as highly visible pedestrian crosswalks, sidewalk “bulb-outs” at intersections to narrow crosswalk distance, and placing landscape features, on-street parking, and street furniture between pedestrians and moving vehicles to serve as a buffer between the pedestrian and moving cars, providing an element of psychological comfort;
- Enhancing opportunities to provide on-street parking and road corridor landscaping through such means as refining the number, location and width of vehicle access routes and by combining access to parking and service areas from side streets or service lanes;

For the site scale, think about such things as:

- Defining clear, continuous pedestrian circulation that does not conflict with vehicular movement;
- Linking public sidewalks, buildings, parking areas, and pedestrian congregation areas with a direct on-site network of pedestrian pathways;
- Maximizing the accessibility and enjoyment of public places by taking into account differences in users’ age, gender, culture and physical ability;
- Providing well-lighted and visible parking for bicycles and motor vehicles;
- Creating transit stops and stations that are an integral part of the public realm and relate to adjacent development through measures such as providing: shelter or seating for those waiting for transit; direct pedestrian connections between buildings, stops, and station; and direct sight lines to stops and stations to create safe and secure pedestrian environments at all times of the day;
- Incorporating outdoor lighting, in spaces intended for public use after dark, sufficient to support the activities planned for that space;
- Avoiding the creation of dead-end areas or areas such as narrow recesses between buildings that could be used to entrap persons passing through the space;
- Designing development with ‘eyes on the street’ and public spaces that maximize overlooking and safety through means such as preserving unobstructed sight lines for persons passing through public spaces, situating the less private rooms of a building facing the street and avoiding high fences or walls along the street;

- Considering the impacts of climate, time and weather for year-round and day and night time use (e.g. snow, wind, rain, ice, darkness, etc.);

For the building scale, think about such things as:
- Incorporating the principles of universal access design;
- Physically integrating rapid transit stations with building and site development through such means as: incorporating the station in the building structure; coordinating the design of the station with the architecture of buildings; accommodating pedestrian movement though the building and site; integrating waiting areas, directional signage, maps, and transit schedules as part of the building; incorporating direct access from building interiors to above or below grade transit platforms; considering integrated site development including air-rights development over Park and Ride facilities;
- Incorporating a mix of uses that creates a complementary pattern of activity among users, such as late-night businesses located on transit routes.

4.0 – Design Objective 4 (from S.2.5.1)

To ensure that new development respects the character of existing areas.

4.1 Design Principles associated with Design Objective 4 (from S.2.5.1)
To accomplish this objective, design should:
- Integrate new development to complement and enliven the surroundings;
- Allow the built form to evolve through architectural style and innovation;
- Complement the massing patterns, rhythm, character, and context.

4.2 Some Design Considerations for Design Objective 4 & Associated Design Principles
For the city-wide scale, think about such things as:

- Pursuing visionary leadership in the municipal / public sector that accepts a role of stewardship of the city that will create great public squares, open space systems, street corridor enhancements and new neighbourhoods;
- Recognizing that the city is a collection of communities, each with its own history, character and sense of place within the larger fabric;

For the neighbourhood scale, think about such things as:
- Considering infill and redevelopment as opportunities to enliven and create a sense of visual interest and delight;
- Embracing opportunities to define fresh architectural approaches where there isn't a cohesive or historic building fabric, while taking a more selective approach to the introduction of contemporary design elements where the existing local urban character suggests the need to fit in with the current built form;
- Facilitating the evolution of existing neighbourhoods and communities towards the vision set out in Council-approved area or community plans;
- Incorporating lot area and yard dimensions that respect the existing pattern of development;

For the street scale, think about such things as:
- Addressing the impact of the height of medium / tall buildings by maintaining lower building profiles adjacent to streets and open spaces, while setting back the upper storeys across the front façade;

For the site scale, think about such things as:
- Providing transitions to ameliorate negative impacts of large differences in scale between new and existing development;

- Addressing the impact of the height of medium / tall buildings by means such as: incremental changes in height; providing substantial space separation or planting buffers; or using existing topographical breaks or natural features such as waterways;
- Incorporating the natural features and site contours in development patterns;

For the building scale, think about such things as:

- Addressing the impact of the height of medium / tall buildings by means such as: adding cornice lines midway up the new structure which approximate the height of adjacent buildings;
- Creating a sense of human scale and visual interest within the first three floors of a building by means such as: the use of architectural massing and detailing; the use of materials, colour, finishes and/or other similar design treatment; the use of a high percentage of clear glazing / transparency; the provision of pedestrian-oriented uses at grade;
- Incorporating the scale and rhythm of the neighbouring building fabric by complementing such aspects as the range of textures, colours, types, qualities and patterns of finish materials; the proportion, size, shape and location of windows and doors; the height and width of various facades; the form of roofline; and any other visible components or embellishments as may be appropriate, particularly for those portions of a new structure immediately adjacent to existing buildings and facing the public realm;
  Reflecting elements and details of nearby structures, by incorporating features such as projections, recesses, porches, and balconies, particularly for those portions of a new structure immediately adjacent to existing buildings and facing the public realm.

5.0 – Design Objective 5 (from S.2.5.1)

To consider adaptability and diversity by creating places that can adapt and evolve easily over time and that are characterized by variety and choice.

5.1 Design Principles associated with Design Objective 5 (from S.2.5.1)

To accomplish this objective, design should:

- Achieve a more compact urban form over time;
- Provide flexibility for buildings and spaces to adapt to a variety of possible uses in response to changing social, economic and technological conditions;
- Allow for varying stages of maturity in different areas of the city, and recognize that buildings and site development will exhibit different characteristics as they evolve over time;
- Accommodate the needs of a range of people of different incomes and lifestyles at various stages in the life cycle.

5.2 Some Design Considerations for Design Objective 5 & Associated Design Principles

For the city-wide scale, think about such things as:

- Optimizing choice and availability of options in housing, employment, services and transportation for future occupants in the design of neighbourhoods and communities;

For the neighbourhood scale, think about such things as:

- Integrating a variety of building forms throughout larger areas;
- Designing public spaces, and publicly accessible spaces to accommodate such events as: festivals, community events, and markets;
- Responding in creative ways to implement any vision for evolution and change that is set out in Council-approved plans for an area;

For the street scale, think about such things as:

- Designing development to infill empty spaces between buildings, and between buildings and the street edge, over time through such means as phased building expansion, the location of parking and on-site circulation, landscape treatment, fencing, and site features;

For the site scale, think about such things as:

- Anticipating the infilling of vacant spaces in front of and between buildings with new development;
- Incorporating a mix of uses within individual buildings and on the site;
- Designing sites and buildings with sufficient flexibility to allow for their expansion or adaptive re-use at a later date (e.g. floor to ceiling heights, building depths, positioning on the site);
- Creating site access patterns that are flexible enough to accommodate different arrangements and redevelopment over time (e.g. new internal roads, parking arrangements, aisles, pedestrian and cycle pathways, drainage and the layout of infrastructure services);
- Considering the seasonal weather changes in the design that would facilitate various uses year round, such as the use of water features for skating rinks;

For the building scale, think about such things as:

- Designing housing to be adaptable to the changing needs of its occupants (e.g. the accommodation of a second dwelling unit, universally accessible, etc.).

6.0 – Design Objective 6 (from S.2.5.1)

To understand and respect natural processes and features, and promote environmental sustainability in development.

6.1 Design Principles associated with Design Objective 6 (from S.2.5.1)

To accomplish this objective, design should:

- Protect, integrate and enhance the urban forest, vegetative cover, green spaces and corridors, environmental features and landscapes, and existing topography, where possible and appropriate;
- Reduce resource consumption.
- Reduce the release of contaminants into the environment.

6.2 Some Design Considerations for Design Objective 6 & Associated Design Principles

For the city-wide scale, think about such things as:

- Retaining as much existing natural vegetation as possible, especially along watercourses, on steep slopes and in areas linking green spaces;
- Keeping streams above ground rather than in culverts and preserving their natural meander and surrounding vegetation in a natural condition (e.g. through the setbacks and provisions established in the Official Plan);
- Allowing for controlled public access to natural areas such as urban forests and shorelines through means such as the provision of public trails where appropriate;
- Maximizing the planting of public and private areas, utilizing native species where appropriate and using a diversity of species for overall environmental quality;

For the neighbourhood scale, think about such things as:

- Using plant materials to create transitions between urban development and adjacent natural areas and open spaces and between existing and proposed development;

For the street scale, think about such things as:

- Orienting the street network and/or building patterns to maximize the opportunity to incorporate passive solar heating;
- Creating 'green streets' that serve to extend or connect environmental features and landscapes through means such as vegetation in widened boulevards and linear greenspace within the right-of-way;

For the site scale, think about such things as:

- Preserving existing trees and hedgerows as windbreaks, as a source of shade, as provision of micro-habitat for wildlife, and as heritage features;
- Providing landscaping for shade to mitigate the urban heat island effect and green infrastructure, such as green roofs and permeable pavement, along with high reflective surfaces to mitigate thermal loading of site surfaces and roofs;
- Creating buffers to protect valued natural areas;
- Setting buildings and impermeable surfaces back from streams and other natural features;
- Incorporating source control measures for stormwater management through means such as: perforated drainage pipes, rain barrels, directional flow of roof-top drainage spouts;
- Facilitating natural infiltration by reducing the volume of storm water run-off and decentralizing flows through means such as: decreasing impervious surfaces, reducing roadway surfaces, incorporating permeable pavement surfaces, incorporating green roof technology, grading to natural land contours, preserving open space through clustering of development, preserving natural stream bank vegetation, and by incorporating grass swales, bio-retention areas, and natural areas that collect flows from large impervious areas *(this Consideration has elements that apply at virtually all scales)*;
- Preserving and enhancing significant rock outcrops and vegetation, and significant changes in elevation and other topographic elements in the siting and layout of development;
- Addressing the positive and adverse effects of sun, rain, snow, wind and shade in the layout of development and landscaping to conserve energy and increase comfort (e.g. planting coniferous trees on the north side of a building to provide shelter from prevailing winds and deciduous trees in the south and west for summer shade);
- Minimizing light pollution levels through means such as the location, intensity, type and orientation of lighting sources;
- Minimizing impacts such as the loss of sunlight or privacy in existing outdoor amenity areas though means such as: the provision of sun traps; the use of light-coloured or reflective surfaces to redirect sunlight into adjacent outdoor space; designing buildings and open spaces to capture sunlight reflected by snow; anticipating the impact of shadows potentially cast by development and integrating design measures to reduce or mitigate any undesirable shadow conditions; and ensuring that views from windows, balconies, and driveways, etc. respect the private amenity areas of adjacent development through means such as orientation, design, and screening.

For the building scale, think about such things as:

- Incorporating green building technology to ensure resource efficiency, including the use of recycled, renewable, and reused resources to the maximum extent practical;
- Utilizing building rating systems such as 'Leadership in Energy and Environmental Design' (LEED) as a guide to sustainable and environmentally sound building techniques and as a way to systematically design for less energy use and environmental impact;
- Constructing buildings that will serve as environmental showpieces that will prompt others to consider green building practices locally and throughout the city.