WILLOW CREEK
AT BEARSPAW



# Architectural Controls and Design Manual

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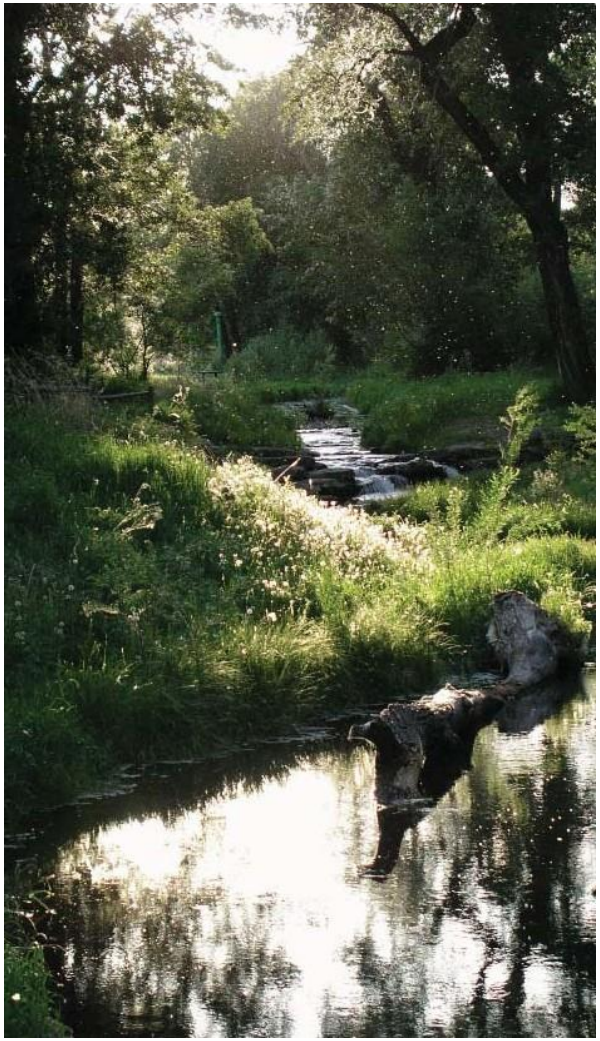


The Architectural Controls for Willow Creek at Bearspaw have been prepared for the homeowner and their architects, designers and builders. The intent of this manual is to provide a clear direction to meet the highest quality and visual standards which will protect each investment, while allowing individual expression in the design of each lot and home.

Willow Creek at Bearspaw represents a rare opportunity to create a memorable home within a distinctive country residential property with all the benefits of quick access to the nearby amenities of the city. A harmony will be created among the discriminating residences that will become part of the prairie landscape, with the backdrop of the mountain views and the on-site water features that are a rarity in the Calgary area.

The vision of Willow Creek is to create a distinctive, cohesive and environmentally sensitive community that is grounded in Alberta heritage and personal achievement. Homes will be an expression of Alberta's bold prairie landscape and set the standard for country residential living.

## Contents

This Design Manual has been divided into three sections:

**1) Site Design and Open Space**
Site design is critical to the visual appeal, both from externally to the site and internally to afford the maximum view from each property and to enhance the natural environment.

**2) Building Design**
Building design is essential to attain the cohesive, harmonious development which complements the natural environment and is destined to set the standard for exceptional homes in Calgary.

**3) Process and Approvals**
Process and Approvals provides the general conditions, the approval process for each property and home, and application forms for your architect / designer and builder.

# 1. Site Design and Open Space

## Public Open Space

As part of our design process, Willow Creek at Bearspaw has identified the existing natural attributes and potential of the site as well as the historical natural vegetation and has incorporated these characteristics into the design.

As a result, the property will maintain much of the existing rolling terrain to recreate a unique, undulating landscape with only the extremes of heights and depressions graded, as appropriate, to create the most natural landscape for aesthetic and practical purposes.

Within the site there are a number of separate low-lying areas and natural swales. These areas have provided an opportunity to create a combined natural and man-made water storage and drainage course, which also acts as a storm water system for Willow Creek and the surrounding lands. These areas will incorporate constructed water features, wetlands, a man-made creek and recirculation of water to maintain optimal water levels where possible through much of the year. These areas became the central design feature for all of Willow Creek representing an open space of nearly 30 acres.

Given this extensive open space, Willow Creek will also set the standard for country residential estates with an integrated trail system, providing connection points for future local and regional trail systems on adjacent lands.

As a significant landscaping feature, Willow Creek has an extensive plan for the introduction of natural and native vegetation which will also provide substantial habitat for wildlife. In fact, the entire open space system has been designed by Willow Creek Home Owners Association (HOA) in conjunction with Ducks Unlimited to enhance habitat for wildlife in the area. As a result of the abundance of water on the site, trees, bushes and grasses will be creatively planted to beautify the site and enhance the ponds and creek. Willow trees and shrubs are particularly hardy with vigorous growth when near water – this is where the concept of Willow Creek was created. Willow trees will be widespread, but will also be found next to pines and other trees native to the area that will visually accent the property and act as new habitat for a wide range of wildlife.

## Water Features

The constructed water features at Willow Creek have been designed to provide ecological value with a high biodiversity which is better able to withstand wet and dry climate extremes. The intent is to have water flow through the marsh and pond features for much of the year, either through natural flows or supplemented occasionally through limited pumping. Previously, areas of water were isolated with no interconnected flows. Willow Creek, through the expertise of our consultants, biologists and with the input from Ducks Unlimited has looked at a more regional solution to providing an interconnected system of ponds, streams and wetlands to create an exceptional amenity for both wildlife and the residents.

Specifically, the ponds are designed to create open water 2.5 to 3.5 meters deep for waterfowl to feed in, with a buffer of wet meadow / marsh and willow. Flows from offsite are treated in settling basins before entering the marsh areas. Overall, it is expected that the water features and enhancements added by Willow Creek Home Owners Association (HOA) will result in a substantial increase in water quality for the region.

The large pond in the southwest corner of the site is the storm water retention facility for the entire Willow Creek property. It is designed to provide storage for more than a 1 in 100 year storm event. It is also designed to "filter" the stream-water from land to the west before it enters into the open water and wetland areas.

Ponds in the northwest, north and northeast also filter water from offsite properties, but primarily act as wetlands for wildlife. These wetlands all drain through a stream system with several small waterfalls, designed to produce pleasing sounds, to the central pond which incorporates extensive areas of wetlands and wildlife habitat including an island for protected nesting.

## Vegetation

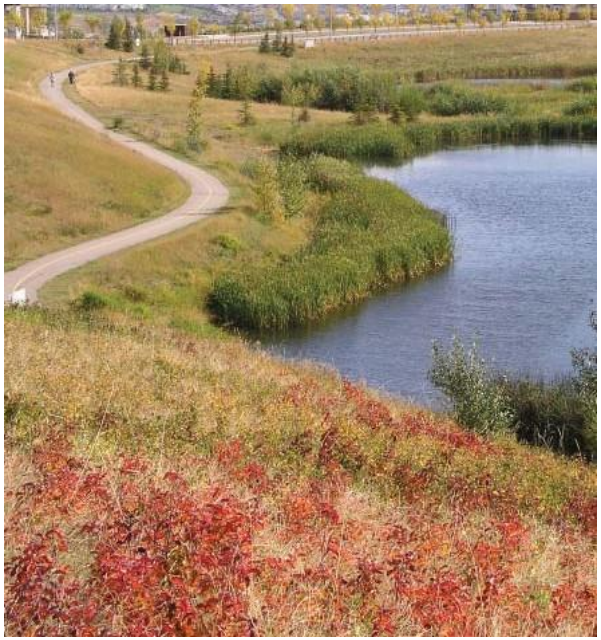
Within the open space, Willow Creek has planned for an extensive planting program consisting of native and naturalized species. Trees and shrubs will be planted in groves to provide wildlife habitat, in conjunction with plantings associated with the wetlands. In other areas groves of trees or shrubs will recreate the natural areas of the past. Appropriate grass species will also be planted within selected manicured locations for informal play areas.

The native naturalized planting concept will extend beyond the open space areas and into every lot to provide an extensive interconnected system. Along the property lines of most lots there are buffers of 7.5 to 10 meters where only native naturalized planting will be allowed. This will encourage the movement of a wide range of wildlife species throughout most of the site.

## Trails

Willow Creek is providing more than 3.5 km of trails throughout the open space system. These trails represent a first in the community where planning for future trail systems is incorporated into the design with connection points to the north and south. The trails are designed to take advantage of the mountain views and natural beauty of the Willow Creek site and are primarily located through the central open space system of the property. Gravel or stone surfaced trails have been designed to provide every lot with either direct access or a short walk to access the central trail system.

A feature of the trail system is a bridge which may act as a wildlife viewing area across the marsh and pond at the southwest corner of the site.



## Homeowners Association

As part of living in Willow Creek, all purchasers will be members of a Homeowners Association. Overall maintenance of the open space will be coordinated by this association. It will also be responsible for the ongoing Wetland Operations and Maintenance Plan which is designed to allow the wetlands to mature and be maintained at an appropriate level. Garbage and recycling collection for all homes will be contracted through the Homeowners Association. All homes must utilize an advanced wastewater sanitary system which will be monitored by Rocky View Utility Corporation. The monthly cost for all these services is included in the Homeowner Association fees.

## Lot Planning and Landscape Design

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The Willow Creek lands are to retain the sense of its original natural prairie setting with a mixture of open grasslands and clusters of trees and shrubs. The Architectural Controls are focused on providing native and naturalized species in the open space areas as well as on residential lots so that the prairie setting of the Willow Creek lands will be re-established.

Of high importance is the visual effect of landscaping and the siting of homes in relation to maintaining views within the site as well as to the mountains and surrounding areas. Consideration should also be given to determining landscaping and home locations to allow access to direct sunlight should active or passive solar energy be part of the home design.

### Setbacks

Setbacks have been established to provide homes that are in scale with each property. In addition to the setbacks provided by the Municipality, Willow Creek Home Owners Association (HOA) has, in some areas, increased the distance from the property line to the home to enhance the natural area on each lot and throughout the project. "Table 1: Building Requirements" in the Appendix (A:18) provides front, rear and side yard setbacks for all lots.

### Natural Area

Each lot has a designated natural area along the property line, around the sides and rear of the lot. This area may also extend across the front of the lot subject to architectural review. The minimum depth of the natural area is 7.5 meters, although a larger area is encouraged, subject to architectural review. The minimum distance of the natural area from the home will be 5 meters. Within this area there may be a range of plantings including native and naturalized grasses, shrubs and trees. A list of approved species may be found in the Appendix under "Naturalized Plant List" *(*A:14).

Storm water drainage from the roof, driveway and other hard surfaced areas shall be directed to the natural area. This shall be shown on the Landscape Plan for each lot.

### Manicured Area

A portion of the lot surrounding the home is to include a manicured area, where grass and gardens will be allowed in addition to trees and shrubs. The boundary between the natural and manicured areas should have a generally undulating shape. The area between the road pavement and the front property line shall also be manicured and maintained by the homeowner, to provide a high quality image for Willow Creek.

## Conservation Landscape

This landscape zone is optional. It comprises an area from the edge of the manicured landscape to the natural area. It is an intermediate zone with a mixture of native/non-native species, ranging from xeriscape beds to native and non-invasive introduced species, "smart irrigation", mulches and water management features (such as rain barrels). See "Conservation Landscapes" in the Appendix (A:7).

## Building Footprint

The home is to be located in an area designated by the developer within the Manicured Area. The setbacks for this area on each lot can be found in Table 1 in the Appendix (A:18).

## Driveway and Parking

The location of the driveway entrance will be set by Willow Creek Home Owners Association (HOA) and future changes, if any, will also be approved by Willow Creek Home Owners Association (HOA). It will be restricted to one car width wide at the entrance to the property. A circular drive to the formal front entrance of the house is acceptable. Connected to this will be a mandatory separate drive to a side or rear garage. Outdoor guest parking shall be noted on the landscaping plan and shall be restricted to an area away from the formal entrance to the home.

All roads will have ditches on both sides and culverts will be provided at the preset driveway location. Landscaping of this culvert by the homeowner will be required using an approved stone and shall be part of the landscaping plan.

## Utilities

Underground utilities (gas, water, telephone) will be provided by Willow Creek Home Owners Association (HOA) and future to the property line at the driveway entrance. A Willow Creek design feature that includes the street number will be provided at a set location at the driveway entrance to each lot. Each homeowner must connect power to this entrance feature with a sensor or timer to ensure that all lights are operating at night.

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## Lighting

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To allow a rural feel to the site and allow night-time viewing of the stars, no streetlights will be provided. Lighting for Willow Creek at Bearspaw will be designed to offer minimal light pollution to surrounding areas. Only downward directed lights will be allowed throughout the yard. No spotlights or direct viewing of any light source externally will be allowed. The light at the entrance to the driveway shall be controlled by a timer or light sensor. Any lighting of the driveway will be controlled by a motion or light sensor. Discreet upward or decorative lighting on the front of the home is allowed as a Winter/Seasonal feature.

## Wastewater System

All homes will require advanced wastewater treatment systems that meet Alberta Environment (NSF 40) standards and can be monitored remotely. Through the Homeowners Association, all systems will be maintained and monitored by Rocky View Utility Corporation.

These computer controlled and monitored systems consist of a wastewater tank, a separate textile membrane and a pumping system to a drain field. More detail on this system may be obtained from willowcreekhoa.ca or write to info@willowcreekhoa.ca. The location of the drain field has more flexibility than a standard septic system as only liquids are released, and the wastewater dispersal pipe has no direct contact with the ground. The location of this field must be shown on the Landscape Plan.

## Storm Drainage

All stormwater shall be controlled on each property prior to release to the common areas (road ditches, open space system). This will consist of directing the flow of water from all hard surfaces (roof, driveway, patios, etc.) to specific locations within the natural area. Temporary stormwater retention onsite is preferred for most storm events, with excess flows released in a controlled manner. Rainwater barrels should be the first method of storage at all downspouts. Storage of large amounts of rain water for future irrigation is also possible with tanks located under a garage. Lower areas away from the house can provide further temporary rain water storage, both within the manicured and natural areas, which can also help replenish the natural groundwater.

Solid, impervious materials are discouraged as they concentrate runoff. Flagstone, paving stones and grass pavers are encouraged as they allow water to percolate into the soil and reduce runoff.

## Fencing/Property Lines

To maintain the open natural landscape within Willow Creek, no boundary fencing will be allowed on individual lots. Privacy screening / fencing may be allowed in limited areas within the manicured area adjacent to the rear of the home, subject to Architectural Review. Control of pets with an "invisible fence" is mandatory. No pet runs will be allowed in viewable areas. Property lines will be identified with a monument provided by Willow Creek Home Owners Association (HOA).

## Architectural Features, Site Fixtures

Landscaping features with stone, wood, and the same or similar materials as on the home are encouraged, and are subject to Architectural Review. Statuary may be appropriate with the house design but will require approval. Gnomes and other such lawn ornaments are not allowed.

## Sport Courts, Pools and Hot Tubs

Sport courts will be allowed with appropriate setbacks, where minimal visual impact and noise can be achieved. Chain link fence is only allowed for sports courts and all components shall be black, however, retractable netting is preferred. Pools, spas and hot tubs shall be located adjacent to the home and shall be screened by landscaping, wall extensions from the house and appropriate approved fencing.

## Pets

Pets are allowed in the yard only if an invisible fence is used. To maintain a tranquil setting and to prevent constant barking from dogs, exterior fenced and screened dog runs will be allowed only for limited daily use (subject to the Regulations of the Home Owners Association) and with architectural approval.

## Property Maintenance

Each property shall be maintained in an appropriate manner which provides a pleasing contrast between the manicured and natural areas. Care must be taken to prevent the establishment of weeds and pests and their spread to adjacent properties.

## Landscaping Materials

A major feature of Willow Creek is the landscaping within the open space areas. This attention to the natural landscape is to continue on individual lots. All lots will require generous plantings of trees and shrubs, both within the natural and the manicured areas. The landscape design should emulate and enhance the natural plant growth within the region and have some capability to attract/protect/shelter wildlife. An example of lot landscaping can be found in the Appendix.

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### Summary of Materials

Patios / Walkways

- Paving stones
- Flagstone, rundlestone
- Concrete, in limited areas, preferably stamped/coloured or aggregate (no concrete blocks)

Driveways

- Concrete, generally for the garage apron
  If in other locations, to be limited in area, preferably stamped / coloured or aggregate (permeable where appropriate)
- Paving stones, grass pavers (permeable)
- Limestone
- Asphalt, smooth surface not to cover the entire driveway area, stamped cobble pattern where workable

Lot Grading

- general grading will be as set out in the Willow Creek Home Owners Association (HOA) Grading Plan, noting areas where further adjustment by the homeowner may be made.
- site specific grading related to home construction must be shown on the Landscape Plan

Retaining Walls

- to be kept to a minimum, preferably use natural contouring and gentle slopes instead of retaining walls
- use natural materials such as rundlestone, sandstone

Manicured / Natural Area

- Grass type- see Naturalized Plant List (Appendix)
- Vegetable gardens may be planted in the rear of the property, covering no more than 10% of the manicured area, although it may be larger if it is part of an edible decorative garden.

Shrubs and Trees – see Naturalized Plant List (Appendix)

# 2. Building Design

Willow Creek at Bearspaw will encourage individual expression in home design within the framework of an Alberta-Prairie-Mountain landscape. Three fundamental components of design should include:

1. Only natural materials are to be used for the exterior of the home.
   -stone is to be a component of every elevation
2. The formal entrance and the front door are to be the focal point of the home.
   -entrances are to be an event, an experience
3. Roof lines are to be aesthetically pleasing and interesting.
   -varying slopes, dormers and gable treatments shall be standard

Overall, homes will be designed and constructed to a higher standard with the finest materials, quality and appearance. They are to complement each other and harmonize with the natural environment. The large lots at Willow Creek will allow creative designs which can take advantage of the sun and the panoramic views. Homes should be energy efficient and meet or exceed the Alberta Built Green standards.

Homes will be individually evaluated for their quality and appropriate relationships with their neighbours. These guidelines will not prescribe the colors but will encourage a consistency with the site. Each proposed home will be reviewed based on individual merit.

The following outlines criteria that are considered fundamental to an attractive home in Willow Creek:

Laratta Homes

Locati Architects | Gordon Gregory Photography

## Theme

Homes in Willow Creek will be an expression of Alberta's bold prairie landscape and set the standard for country-residential living. The over riding objective is to respect the prairie and natural setting of the homes. Home design is to blend with the setting with color, materials and shape. The design should take into account both internal and external view sheds.

## Custom Homes

It is expected that there will be no repeat homes in the subdivision. Allowance will be given to similar plans which have different exterior elevations.

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Laratta Homes

## Style

Variety in home styles is expected and encouraged. The home should have a sense of being in western Canada and arise from traditional styles built in this region. Historical styles are welcome in Willow Creek, however they must have a true connection with the past and incorporate appropriate natural materials on the exterior of the home. This means that Spanish and adobe style homes would be out of place as would highly formal designs such as Victorian and colonial styles. The traditional Victorian white farm house would also be inappropriate. Arts and crafts style is at the core of an appropriate expression. A variation of this style is the prairie architectural style of which Frank Lloyd Wright was one of the proponents. The traditional communities which are so appealing usually consist of a series of homes ranging from quiet, unassuming homes to larger exceptional designs – all with graceful massing, elegant proportion and attention to detail.

Modern architecture will generally not be approved. Specifically, the following styles will not be approved: Roman Villas, Arizona pueblos, French chateaux, neoclassical or other similar styles.

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Locati Architects | Photo: Roger Wade Studio

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## Building Shape and Rationale

Homes should be located within the manicured area to fit as much as possible within the natural or set contours / topography. The home should step down, using multi level floor plates were dictated by grade. Lower building forms are encouraged with an emphasis on horizontal lines. Upper floors should generally be located within the roof structure and cover a smaller area than the main floor. Homes that have potential to block views should be designed with limited upper floor plates and incorporate lower slope roof designs. All elevations and roof forms will require careful design.

### Proportion

Proportion is the most important attribute to a successful design. It comprises the relationship of the sizes of different parts of the building one to another and to elements of the site.

The building should not appear too large for its site, with appropriate setbacks. It must fit comfortably without overpowering the property or adjacent homes. All parts of the building elements must carry through to all external walls. All exterior walls must also have the same standard of design and finish. The entire building should be designed with a sense of proportion. The roof should be in proportion with the walls, the front door with the entry (no two storey arches will be allowed). Wall openings should be appropriate to the wall surface in size and location, while allowing for solar access.

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## Roof

Roof lines are very important to the home. When part of the overall design, dormers, overhangs, chimneys and skylights can increase the visual interest of the roof.

It is expected that careful attention will be paid to make the roof line an attractive feature. Low slope roof lines will have to incorporate appropriate detailing and stepping to be acceptable. Steep pitches will have to incorporate habitable attic space within dormers and gable ends should include appropriate details.

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## Building Height

The maximum height of the primary building is 10 m for most homes. Certain lots may have a reduction to 9m to reduce the impact on external views (see Table 1). The builder should consult with the MD of Rocky View to confirm the calculations for the overall height of the home during the design stage.

## Walls

Walls three stories high are not acceptable. Two storey walls must be limited and incorporate at least three exterior materials.

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## Base / Foundation

An expression of the home as being firmly rooted in the ground is required. An example is a masonry base or other such treatment which provides a solid foundation and anchors the home. All homes should have masonry on most elevations. Up to 50% may be required on important elevations. Foundations with substantial and natural materials such as stone are encouraged. Parging is acceptable in limited areas provided it is in conjunction with natural materials. Any projections from the home such as decks, stairs and planters must also incorporate this same treatment.

## Other Features

### Porches

Covered porches which dominate the front or wrap around the home as a veranda are encouraged with attention given to railing, columns and fascia details. They should have sturdy masonry or timber structures, with areas underneath enclosed with wood or masonry skirts to further reinforce the foundation of the building.


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### Dormers / Gables

It is expected that most homes would incorporate dormers or gables. Gable ends and the treatments under the gable are highly visible and are to be finished with appropriate trim and detail. Low slope gables will need expression of beams and rafters.

### Decks

Decks placed off of upper floors are to be incorporated into the style of the home, taking advantage of stepping of the building and appropriate column and support details. Care should be taken with the railing expression/design, with iron preferred over aluminum. Large multi storey attached decks are discouraged.

### Turrets

Turrets and observation towers can be attractive features in the home when they are subordinate in the elevation.

### Entry

Appropriate expression on the entry is required. The entry shall be the primary front feature and in proportion to the house. It should provide shelter from the weather and be incorporated with a recessed alcove, bay, roof or veranda. All steps to the entrances are to be exposed aggregate concrete, stone tile or manufactured stone to be consistent with the exterior materials. Consideration should be given to wide and/or flared steps. Wooden steps are generally not permitted unless they are an architectural feature consistent with the design of the home. Tongue and groove pressure treated or other durable wood decking is an appropriate surface for flooring on porches.

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## Appropriate Details

### Trim

Trim is to be on all windows (front, side and rear elevations) as well as shadow boards, where appropriate. Six (6) inches would be a normal minimum width with headers 8" to 12". Smaller trim could be acceptable based on merit. This trim material should be of wood or wood like material. No aluminum, vinyl or stucco trim is allowed.

### Fascia

The fascia is the most important trim on the home and must be done in a way that enhances the roof. Double or triple fascia should be featured on all gable ends. Where eaves trough hide fascia, relaxations will be considered. On low slope roofs the fascia development is essential. Aluminum is generally not acceptable. The minimum dimension for combined fascia (painted board or equivalent) is 10" unless there are exposed rafters.

### Soffits, Eavestrough and Downspouts

Aluminum in a colour which blends with the trim is an acceptable material

### Roof Overhang

Variety in overhangs is encouraged rather than defaulting solely to 12, 18 or 24 inches. Large overhangs as a feature are encouraged on low slope roofs.


### Gables

Gable ends should employ a variety of textures and trim such as exposed trusses, brackets, vertical battens, beam ends, patterns of trim, changes in materials and projecting plains, incorporating decorative and custom shaped windows.

## Windows

Window frame color is to blend with the finishes on the exterior. No white vinyl is permitted, except where it matches the approved trim. Care must be taken in the number and placement of doors and windows to provide a balanced and integrated design. Windows should preferably include traditional true divided lites with 1/3 of the glazing area incorporating lites and 2/3 without. Decorative window grilles between the glass are acceptable provided they are 1 1/4" minimum in width. Window frames should match the quality and colour range of the exterior materials, and will require a minimum 6" trim.

## Main Entrance and Secondary Entry Doors

The main entrance and door should be a predominant feature of the front elevation. High quality decorative natural wood or wood like doors are encouraged. Painted doors must be in a neutral color. Glazed lites within the door should be compatible with the style of the home. Full height sidelites with a full width transom are encouraged. Secondary doors should have a similar style to the main entrance door. Patio doors shall be double "French" style where possible. Sliding doors may be used at less prominent locations.

## Texture

A variety of textures on wall surfaces with different materials adds richness to the home i.e.: Adding shingles to a wall dominated by horizontal siding breaks the monotony of the wall.

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## Chimney Flues

Flues and vents should be enclosed in appropriate chimney expressions. Fireplaces with masonry expressions above the roof are highly encouraged. Chimneys should be designed to be substantial in proportion with the appearance of strength and stability. When on an exterior wall it should extend down to the ground with an appropriately sturdy foundation. All chimneys shall be finished in stone, brick, stucco or wood (if compatible with exterior wall design and materials). Windows over or under chimneys are not appropriate. Galvanized metal flashings and roof vents are not allowed. All metal or aluminum vents and flashing are to be pre-finished to blend with the dominant roof color. Chimney caps with spark arrestors to compliment the design of the home are required.

Where gas fireplaces are used, top vent models are preferred with appropriate full height chimneys. If direct vent units are used, the vents must be located away from the street or common (open space) areas and be appropriately screened. Exposed metal chimneys will not be allowed.

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## Stone/Brick/Carpentry

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Details must be consistent with the materials being used. Stone walls shall appear to be the foundation coming out of the ground and not appear to be floating. Handcrafted carpentry details and stone carving are encouraged. Exterior brick or stone treatments extending above the grade should be in scale with the surrounding wall and supported by the foundation. The foundation should be either flush to the wall or extend up to 3" out from the wall surface. Natural materials are encouraged, however artificial stone may be used when in appropriate combination with two styles of stone and incorporating full smooth tooled or convex tooled joints (see recommendations of most manufacturers). Some ledge like stones and Tuscan style stone may be appropriate. No artificial riverstone, block-like stone or flat slabstone will be allowed.

## Columns/Beams

All columns are to have proportioned widths and should be perceived to hold up beams. The connection details between the two are important. Stone bases are encouraged.

## Garages

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The garage exterior must be of equal quality as the home. It may incorporate bonus rooms above. It must incorporate windows and have a maximum of 1 double door with the balance, or all of the doors to be single car widths. In general, garage doors are not to be visible from the front elevation or the main access road. The door style is to be decorative and in a single colour that blends with the home, incorporating materials compatible with those of the house. Carriage wood or wood like doors are encouraged, in one piece or sectional. The minimum garage door height is 8 ft. Windows in the door(s) are encouraged. Care must be taken to design the area above the garage door, with large blank areas not allowed.

All garages shall be subordinate to the home. Where the garage is incorporated within the house, it should be designed as a separately articulated form. An alternative location is separate from the house similar to a "Coach House", incorporating the same design and materials as the home. If more than two garage spaces are required, any additional doors must be set at a different plane. Standard metal and wood doors will not be allowed.

### Lighting

Light fixtures in the eaves and designs that obscure the source of light are encouraged. Fixtures should direct light to specific areas with direct viewing of the light source not visible. To provide a rural feel to the site and allow night-time viewing of the stars, no streetlights will be provided. A soft and comforting light will be afforded through a bollard located at and identifying the entrance of each lot. Each homeowner must connect power to this light with a sensor or timer to ensure that all lights are operating at night. Lighting for each home at Willow Creek at Bearspaw will be designed to offer minimal light pollution to surrounding areas. Only downward directed lights will be allowed throughout the yard. Light sources must not be directly observed – only the effect of the lights should be noticeable. Low wattage bulbs for seasonal decorations will be acceptable.

### Window Wells

Window wells must incorporate the same stone as used on the foundation. Corrugated metal window wells will not be allowed.

## Materials and Colours

The use of natural materials for both the home and surrounding landscape can give a strong sense of belonging between the home and its natural environment. Local rock such as ironstone and rundlestone is appropriate to the site.

Man made materials such as brick, concrete and stucco have a similar earthen quality. In most cases man-made stone does not possess a sufficiently realistic look and will only be approved on an individual basis.

To be compatible with the natural theme of Willow Creek, colours should be consistent with the site itself, including rock, trees and water, supplemented by the brighter colours of autumn. Homes should have contrasting body and trim colours. Strong colours tempered by the tones of natural materials are preferred. Consideration must also be given to enhancing the architectural details on the home.

A variety in colour is required. This will limit the use of standard prefinished products on portions of the homes and requires that custom colours be used to individualize each home. Light colours are to be limited in use and are to be for accent only, otherwise all materials should be rich deep colours and tones.

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## Roofing Materials

Asphalt shingles in darker colours may be selected from 30 year plus architectural products. Only pre-finished flashings are allowed. Slate or slate like materials are encouraged, while dark coloured metal or other roofing materials may be considered. No Mexican style clay tiles are allowed.

## Masonry

This is to be incorporated on all homes in a meaningful proportion with more than 10% to be on all building faces. Natural stone with its variations in texture and colour is encouraged including Ironstone, Rundlestone, Sandstone and Manitoba limestone. Some artificial stone may be allowed if it is sufficiently realistic (See appendix). Brick may only be used in traditional colours i.e. pressed brick in traditional reds or beige.

## Stucco

Off white and light coloured stucco may only be used as an accent, or to a maximum of 20% of the home wall area. Only the very darkest 4 to 5 colors on the standard stucco charts will generally be approved. Acrylic stucco is preferred.

## Siding

Prefinished sidings are generally not permitted. Siding that can have a custom color is allowed. Smart board and hardiplank are acceptable substitutes to real wood, which is preferred. Shingles as well as board and batten patterns are encouraged. No vinyl siding or trim is allowed.

## Accessory Buildings

The same design theme and materials must be used on any accessory building. Siting of any additional buildings must be in the manicured area. No shed, greenhouse, garage or other building packages will be allowed.

## Utility Meters

All utility meters must be located on the sides of the home and screened from the road and open space areas. This may require coordination with the utility supplier. All utility lines must be underground to the main home and all utility/accessory buildings.

## Garbage Storage

Garbage must be stored indoors. The Homeowners Association provides weekly pickup. To prevent wildlife from opening garbage, all waste must be stored in garbage bins with an attached lid. No plastic bags are permitted.

## Fencing

To maintain the open natural landscape within Willow Creek, no perimeter fencing will be allowed on individual lots. Privacy screening / fencing may be allowed in limited areas within the manicured area adjacent to the rear of the home, subject to Architectural Review. Control of pets with an “invisible fence” is mandatory. No pet runs will be allowed in viewable areas. Rear property lines will be identified with a wood or rock feature provided by Willow Creek.

## Energy Conservation, Low Consumption Fixtures and Appliances

All homes are encouraged to meet or exceed the Alberta Built Green standards.
To reduce water use, low consumption plumbing fixtures are encouraged. Use of low flow taps should also be considered as an alternative, while all toilets shall be dual flush.
Appliances shall be Energy Star rated where available.

## Fire Protection- Residential Sprinklers

Due to the rural location of Willow Creek and through discussions with the Fire Department of the M.D. of Rocky View it has been determined that all homes will be required to install residential sprinklers. In Vancouver, residential sprinklers have been required in new home construction since 1990. Based upon Vancouver's experience, sprinklers have proven reliable and effective, with more than 70,000 installations. While a smoke alarm provides a 50 percent greater chance of surviving a fire, the addition of residential sprinklers increases the chance of survival to 97 percent. Residential sprinklers are unobtrusive (covered by a cap) and provide site specific coverage so only the area that is affected by a fire has a sprinkler activated. Insurance rates can also be dramatically reduced.

## Solar Access/Geothermal

Building form and design elements should enhance and control solar gain. Design strategies could include adjusting the roof slope(s), augmenting the amount of glass and roof overhangs on south facing exposures. Geothermal heating/cooling is also encouraged using a closed loop system consisting of vertical well loops or a horizontal field application.

# 3. Process and Approvals

## General Conditions

**Architectural Control Approvals**
Each property shall receive approval from the Architectural Control Committee for design of the home and for landscaping of the property, prior to construction or before any improvements can be made.

**Building Commitment**
House construction shall commence within 15 months of lot purchase (maximum 3 months after Design/ Landscaping approval).

**Construction Time Limit**
The house shall be complete on the exterior within 18 months from the start of construction.

**Landscaping Time Limit**
Landscaping shall be completed one year after the completion of the house exterior. It is encouraged that perimeter (natural area) landscaping begin at the time of basement excavation.

**One Year Approval Period**
Approval of the designs for the building(s) and the landscape plan shall be within one year of lot purchase. Approval of the Architectural Control Committee is good for one year and is not transferable. Should a design not be approved within this time period, Willow Creek Home Owners Association (HOA) may repurchase the lot for the original selling price (excluding Block 2, Lot 19).

**Minimum Building Size**
Bungalow: 2000 sq. ft.
Two Storey: 2500 sq. ft. with 1600 sq. ft. on the main floor
Garages are in addition to the above areas.

**Security Deposit**
A Home Security Deposit payable to the Developer is required prior to review of any application by any builder other than those on the Willow Creek approved list. The security deposit will be released following the final inspection of the house to confirm adherence to the approved drawings. Interim inspections may also occur. Deductions will be made for any damages to streets, site landscaping, utilities, other properties, non conformance with approved home and landscaping plans, etc. These monies will be held in trust with the interest accruing to the purchaser. Should construction of a non approved plan occur, a stop work order will result.
Home Security Deposit: $15,000 (not required for Approved Builders)
Landscaping Security Deposit: $10,000

### Architectural Review Fees

Each home will be assessed a fee of One Thousand ($1000.00) plus GST which covers the cost of the Architectural review of all design documents and inspection of the completed construction including exterior materials as well as landscaping. Should the initial plans and documents require further review or be rejected, each subsequent review will be assessed a minimum fee of Five Hundred ($500.00) plus GST.

### Extra Charges

Administration charges will be levied when submissions involve numerous changes or extra site inspections.

### Grade Slip

The issuance of a building grade slip/form or other information by Willow Creek Home Owners Association (HOA) in no way absolves the builder from complying with all requirements, statutory or otherwise, such as Provincial, Local or Municipal laws, regulations, by-laws or other enactments and any encumbrances affecting the Title to the property, including, without limitation, utility rights of way, easements and restrictive covenants.

### Foundation Design

The homeowners builder is also responsible for the provision of all bearing certificates and footing elevation certificates which may be required, and for any other precautions in foundations where necessary. It is advisable to check soil conditions before finalizing design.

### Sewage System Design

All sewage systems in the Willow Creek development must be an advanced treatment system incorporating remote monitoring (by Rocky View Utility Corp.) and a textile membrane (per Homeowners Association), which meets the requirements of Alberta Environment (NSF 40 Standard for Residential Wastewater Treatment). Willow Creek Home Owners Association (HOA) will provide soils information specific to each lot and will, in conjunction with stormwater requirements, set the location options for the tank and the field.

### Right of Refusal

Willow Creek Home Owners Association (HOA) reserves the right to refuse approval of any plans or designs which it considers not to be of acceptable quality.

### Architectural Review Committee

The applications will be technically reviewed for compliance by the Architectural Controls Architect, with a recommendation forwarded to Willow Creek Home Owners Association (HOA) who will make the final decision.

### Changes

Willow Creek Home Owners Association (HOA) reserves the right to change these controls on a lot by lot basis as necessary and without notice.

## Approval Process

1. Predesign submission (optional but encouraged). The owner and his/her Architect review their ideas with the developer's consultant. A sketch of the site plan and several elevations would assist in determining an appropriate design.

2. A preliminary submittal may be advisable to review conceptual plans /building concept and to discuss site planning and landscape design prior to commencing working drawings.

3. Final plans to be submitted digitally in .pdf format and should include:

- Security Deposit
- Architectural Control application forms
- Plot plan showing location of utilities (to be underground and installed at side of home and not readily visible from the street).
- Drainage (to conform with the plan as set by the engineer)
- Setbacks and easements
- Building footprint and driveway (footprint to be within the "manicured area" with driveway leading to a side or rear garage)
- Proposed elevations of building corners, entrances including garage, driveway, and landscaped areas
- Construction and debris zone
- Landscape Plan – Scale 1:100 or 1/8" = 1 foot
- Planting location and species within the perimeter natural area
- Planting location and species within the manicured location
- Location of patios, walks, outdoor furniture, lights (down directional only) and trail access
- Existing and proposed contours with slopes for graded areas and driveway
- Wastewater tank and field – location to be confirmed by Willow Creek Home Owners Association (HOA)
- Drainage (to conform with the plan as set by the engineer) with slopes noted and connection to swales
- Driveway
- Building Plans
- Plans, sections, elevations
- Colour sample board

  - to be digitized, with colours, images of stone types, roof type, etc.

4. House siting and grades are reviewed.

5. Exterior design, materials and colours are reviewed and approved.

6. Approved plans are then emailed. An interim building grade slip/form will then be completed by the engineer.

7. Letter of Engagement of an engineer as required on the grade slip/form to review the foundation system with respect to the site specific soil conditions. The engineer shall determine if special geotechnical conditions exist. This letter of engagement is to be submitted for the Construction Documents review and with the building permit application to the Municipality.

8. A Construction Documents Review is required prior to submission to the MD of Rocky View. Once all conditions of the Final Design application have been met and Architectural approval has been given, the engineer will provide the final building Grade slip/form.

9. Owner receives building permit from the MD of Rocky View.

10. The Owner excavates the basement and forms all footings.

11. The owner has the advanced wastewater system designed by the Installer and then reviewed by the Engineer/ Willow Creek Home Owners Association (HOA)/Rocky View Utility Corporation and installed to the satisfaction of the MD of Rocky View.

12. Landscaping begins (weather permitting) in the natural area.

13. Home construction.

14. Ongoing inspections by Willow Creek Home Owners Association (HOA) or its representative.

15. When the house is complete, the owner notifies Willow Creek Home Owners Association (HOA) to have the final inspection.

16. A portion of the security deposit will be returned.

17. The owner notifies Willow Creek Home Owners Association (HOA) to have a final inspection of the landscaping within one year of completion of the primary building. A maintenance period of 2 years is required for all landscaping to ensure the establishment of all plants.

18. Balance of security deposit returned, subject to any deficiencies.


Appendix

# Conceptual Design Application

LOT/BLOCK: _____ DATE: _____

OWNER: _____

ADDRESS: _____

PHONE (HOME): _____ (CELL): _____

ARCHITECT / DESIGNER: _____ PHONE: _____

ADDRESS: _____

BUILDER: _____ PHONE: _____

ADDRESS: _____

---

The following materials comprise a complete application:

Preliminary Lot Landscape Plan at a scale of 1:250 utilizing the survey/engineering base map, showing the property lines, existing and proposed contours, location of grading and slopes, setbacks for the natural and manicured areas, building(s) setback(s) in relation to the building footprint, all paving and hard surfaces, existing vegetation and proposed vegetation.

Floor plans for all levels with adjacent landscaping around the perimeter of the building

Elevations for all sides of the building with perimeter landscaping

Sketch of the entry view from the driveway entrance as well as any other predominant view(s)

Materials proposed for the exterior of all buildings as well as all landscaping materials.

Any other information as requested by the Architectural Control Architect / Willow Creek Home Owners Association (HOA).

Willow Creek Homeowners

SUBMITTED BY: _____ DATE: _____

# Final Design Application

LOT/BLOCK: _____ DATE: _____

OWNER: _____ PHONE: _____ CELL: _____

SUBMITTED BY: _____ PHONE: _____ FAX: _____

---

The following comprises a complete application:

Home Security Deposit ($15,000)
Landscaping Security Deposit ($10,000)
Architectural Controls Review Fees ($1,000)
Plot Plan prepared by a certified Alberta Land Surveyor
Landscape Plan and Details
Building Plans and Details (Main and any Accessory Buildings)
Colour Sample Board
Sewage System Design by an Approved Installer
Letter of Engagement from Geotechnical Engineer

Once the Final Design Application is approved by Willow Creek Home Owners Association (HOA) and their Design Consultants, Willow Creek Home Owners Association (HOA) will issue an Interim Building Grade Form/Slip, which is to be used for drawings and documents submitted as part of the "Construction Documents Review".

# Construction Documents Review Application

LOT/BLOCK: _____ DATE: _____

OWNER: _____ PHONE: _____ CELL: _____

SUBMITTED BY: _____ PHONE: _____ FAX: _____

---

The following comprises a complete application:

Plot Plan (Revised as per Final Design approval)
Interim Building Grade Form/Slip
Landscape Plan and Details
Building Plans and Details – Finished Working Documents (Main and any Accessory Buildings)
Colour Sample Board
Sewage System Design certified by an approved installer, including an engagement letter for installation
Foundation Plans certified by a Geotechnical Engineer

Once approval has been received for the Construction Drawings/Documents by Willow Creek Home Owners Association (HOA), a Final Building Grade Form/Slip will be issued by the Engineer for submission to Development and Building Services at the
M.D. of Rocky View.

Copies of all Approvals from the M.D. of Rocky View and/or its Agents are to be provided to Willow Creek Home Owners Association (HOA) to ensure compliance with these Architectural Controls. Failure to meet these requirements may result in a stop work order.

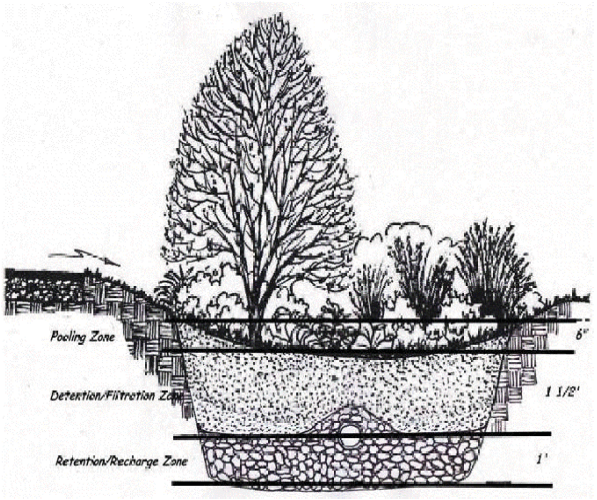
# Conservation Landscapes

Under most Alberta conditions, typical "manicured" landscapes rely on regular and perpetual inputs of maintenance effort, fertilizers, pesticides and irrigation water. Not only is this costly, but the result is landscapes with a relatively low resilience to drought cycles, diseases and periods of nutrient deficiency. There is also a well documented negative connection between surface water quality and manicured landscapes.

In recent years, there have been attempts to increase the use of native plants and to create "xeriscaped" beds that require little or no irrigation water. While these approaches are valid for some applications, there is a persistent and strongly voiced public desire for aesthetic variety and lushness in streetscapes and many parks. While the Southern Alberta area has natural ecosystems dominated by grasslands, Albertans persistently prefer landscapes that focus on trees and shrubs. This quandary will become more acute as periodic water shortages and increasing water costs create pressures to reduce the extent of irrigation in parks and open space.

Recent advancements in horticulture, urban ecology, irrigation and water management offer a variety of promising techniques to create ***Conservation Landscapes***. This term applies to an integrated combination of soil processes, native and non-invasive introduced species, "smart irrigation", mulches and water management features (such as rain gardens). The result can be lush and diverse landscapes that require minimal inputs of maintenance labour, water, fertilizers and pesticides. There are also many opportunities to incorporate waste, recycled and composted materials in conservation landscapes - diverting such materials from landfills by providing for beneficial reuse.

We are seeking to create a series of research and demonstration sites in Alberta. These vigorous and attractive landscapes will help municipalities to achieve their water and environmental management objectives, as well as to inform the public so that private landscapes will evolve toward more sustainable forms.
Candidate sites should be publicly accessible and relatively visible. There may be a mixture of public lands and private.



## Principles of Conservation Landscaping

*(Adapted from SEVEN PRINCIPLES OF WATER-WISE LANDSCAPING - Utah Botanical Centre website)*

### Planning and Design

Develop a plan that effectively integrates environmental values, water management and aesthetic functions. Important elements to consider include:

**Site Analysis** – Soils, Climate, Topography, Drainage,
Existing Vegetation, Water Balance objectives, Views, Utilities
**Landscape Goals** - Desired recreational Activities, Recycling and Re-use objectives, Maintenance,
Desired time to substantial completion of Plan, Landscape Style

### Soil Analysis

Determine soil texture class (clay, silt, loam or sand) and whether there are distinctions among the soil horizons. Is there any sign of alkalinity or of high water tables? Determine natural soil water-holding capacity and prescribe soil or subgrade enhancements. Soil analysis may substantially affect irrigation scheduling and plant selection. Consider long-term root health and the provision of extensive root zones for larger plants. Promote deep rooting in all areas except wetlands.

### Appropriate Plant Selection and Hydrozoning

Use only plant species that are well adapted to site conditions, and zone the landscape by grouping plants together according to their water requirements. Consider the long term interaction among the plants (associations) and between the plant association and the soil. Can a combination and pattern of plants, soil and water cycle be created that is nearly self-sustaining?

### Practical Turf Areas

Plant turf in areas of manageable sizes and shapes. Limit high maintenance turf to areas where it provides a functional benefit. Select appropriate turf varieties for the site. Consider varieties of grass seeding responding to differing hydrozones.

## Efficient Irrigation

Irrigate efficiently – not excessively. Use properly designed systems and apply the right amount of water at the right time. Irrigate turf areas separately from other plantings. Do not rely solely on an automatic irrigation timer. Water efficiently and only when needed.

## Mulching and Subsurface Features affecting Evapotranspiration

Use mulches in tree, shrub and perennial borders to conserve soil moisture, and manage weed growth and erosion. Consider granular beds, modified soils and other subsurface features to enhance moisture penetration and rooting depth

## Use of Recycled or Reused Materials

There are extensive opportunities to incorporate waste and recycled materials for mulching, pavement bases, soil amendments, capillary barriers and other beneficial end uses while reducing wastes sent to landfills. Some these materials are currently not commonly recycled or reused in Alberta, thus the proposed conservation landscaping applications could be particularly significant. In such cases, this would represent a multiplication of Low Impact Development values.

## Appropriate Maintenance and Monitoring

Conservation landscaping will reduce maintenance, not eliminate it. Low water-use landscapes are simply maintained differently than the typical manicured landscape. Monitor the effectiveness of water management features. Establish and maintain an IPM (Integrated Pest Management Plan).

## Outline of Candidate Techniques and Design Elements

A Calgary Rain Garden

### Water Management

Water Balance Model Case Study
Diversion and Spreader Drains or Swales
Swales for storage and infiltration
Biofilter Beds (Rain Gardens)

- with high capacity granular bed
- with moderate capacity granular bed

Large scale cistern with pump (possibly solar powered) Mini-cistern (eg. buried rain barrels with trickle discharge) Extended Detention Basin (not wet pond or wetland)
Re-contouring for Runoff Collection
Constructed Fen or Wet Meadow

### Recycled Waste of Potential use in Conservation Landscapes

Local-scale Organic Debris Recycling
AgriFood Processing Wastes
Wood waste (including on-site use of construction and demolition waste)
Composted Organics
Paper and Cardboard with minimal or no reprocessing required
Recycled Asphalt
Concrete rubble
Used Carpet
Styrofoam
Drywall (including wetted material or with some forms of contamination)
Rubber Crumb
Sewage Sludge
Organic Wetland Sediments

## Grading and Soil Modifications

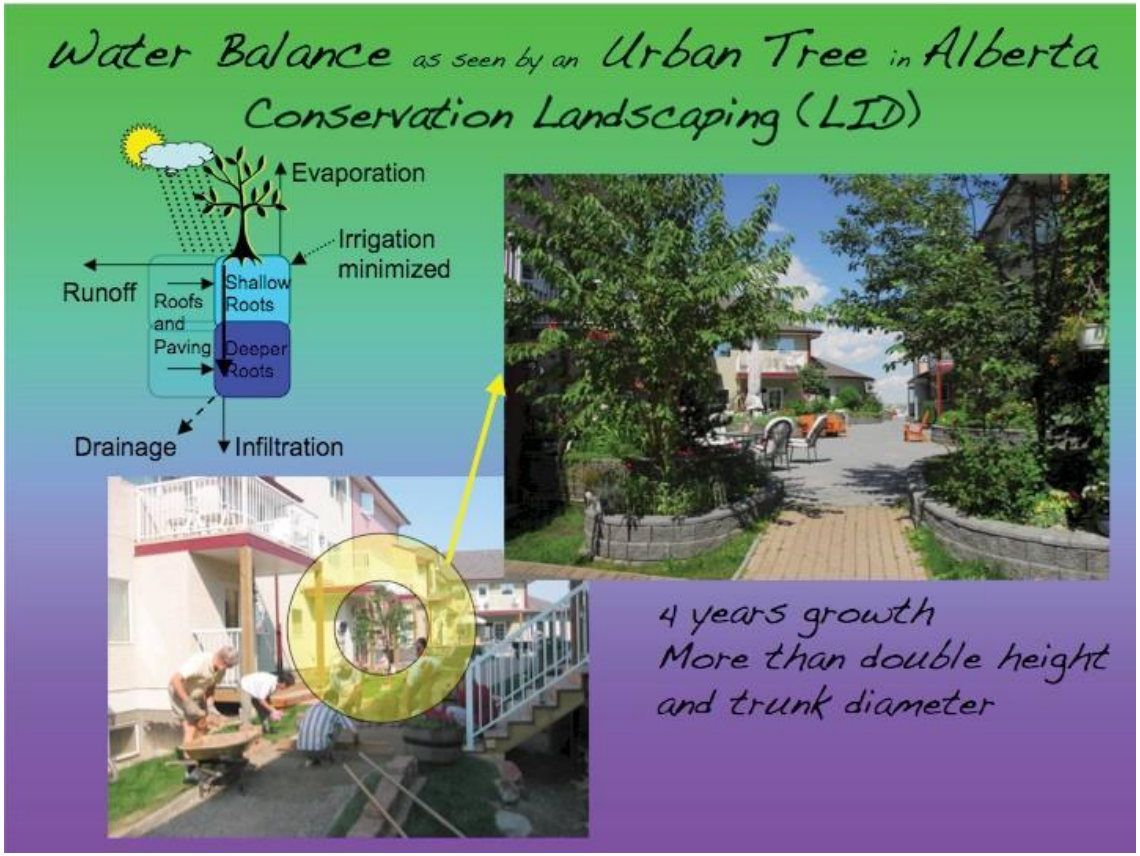
Macro and Micrograding to create niche habitats and environmental gradients
Boulder Mounds and Open Stone Retaining Walls
Boulevard planting trench
Subsurface Soil Vapour Condensation
Large Woody Debris within subgrade
Layered topsoil (separate specifications for A, B and C horizons)
Topsoil amendments to enhance permeability and influence root development
Planting Bed Insulation
Deep-scarified Beds on slope and Progressive-depth Chisel Ploughing
Dryland No-till Seeding

## Pavements

Gap-graded Pavement Sub-base
Permeable Pavement
Cellular Soil Confinement

## Mulches and Filter Layers

Sand
Fine Crushed Gravel
Recycled Asphalt
Expanded Shale
Used Carpet
Semi-composted Organics with binder
Deep Mulch (incl. multiple layers)



## Permaculture Plant and Soil Associations

"Permaculture" refers to associations of plants of varying growth habits, soil interaction, and other desired characteristics selected to create "ecosite" zones that approach self-sustaining status within the climate norms of Calgary. As distinct from native landscape reclamation, the permaculture approach accepts the use of native and non-native plants, with an intention of providing natural process benefits at the same time as meeting human use and aesthetic functionality. Each plant/soil association is developed with an eye to creating a balanced system that can be readily kept from becoming a monoculture due to over-competition of one of the introduced species, or by weed species that are currently extant in our region.

The permaculture approach is intended as an alternate to normal horticultural landscaping, and is not intended as an alternate where native landscape restoration is desired.

Many of the soil and moisture method described above are adapted from Permaculture practices. Other innovative horticulture techniques include:

- Deep Rooted Plants eg. Dogwood, Alfalfa and other legumes, Tamarisk, Cottonwood
- Nurse Woody Vegetation
- Multi-species Seed Pellets

The following permaculture plant and soil associations will be useful for our region:

It is intended that the details of specific plant and soil associations will be developed during the landscape design for chosen sites.

1. Dry to Very Dry Grass and herbs
2. Medium to Dry Grass and herbs
3. Wet Meadow Grass and herbs
4. Butterfly and Songbird Meadow
5. Dry Thicket
6. Upland Grove – south/west facing slope
7. Upland Grove – east/north facing
8. Medium to Dry Grove – south/west facing
9. Medium to Dry Grove – east/north facing
10. Moist Grove – level or south/west facing
11. Moist Grove – east/north facing
12. Evergreen Grove – medium to dry
13. Evergreen Grove - moist
14. Evergreen Thicket – medium to dry
15. Wild Berry Thicket – fruit for wildlife
16. Edible Berry Thicket – fruit for people and wildlife
17. Low Maintenance Perennial Bed – dry/sunny
18. Low Maintenance Perennial Bed – medium moisture/sunny
19. Low Maintenance Perennial Bed – medium moisture/semi shade
20. Low Maintenance Perennial Bed – moist to wet semi shade
21. Low Maintenance Perennial Bed – moist to wet shade
22. Sunny Rock Outcrop
23. Semi-shade Rock Outcrop
24. Urban Plaza or Patio (trees in extensive pavement)
25. Planting Associations for Alkali Soils

## Candidate Sites

The following is for initial discussion only; it is assumed that the municipality will extend the site selection process and choose preferred sites.

- Small MR Sites (under 4000 sq m)
- Landfill Sites – ie. Spyhill and East Calgary public entry areas
- Green Roof Project
- Subdivision Central MR Site – medium to large scale
- Densely developed site including trees surrounded by extensive pavement

The process for site selection and design is envisioned as:

- Create a preliminary list of Candidate Sites
- Create comprehensive list of Candidate Techniques / Design Elements
- Convene a workshop of potential partners to the Conservation Landscapes initiative – outcome of which is a short list of sites and the likely techniques / elements to be included at specific sites
- Conceptual Design for specific sites – during which the techniques / elements at each site are defined with more certainty
- Arrange funding for construction and consulting
- Design to suit funding

## Conservation Landscaping - An Example


Lot Concept with Conservation Area

# Naturalized Plant List

## Content



## 1. Grasses

### 1.1 Willow Creek general area grass mix

| | | |
|---|---|---|
| 34% | Blue Grama Grass | Bouteloua gracilis |
| 18% | Rocky Mountain Fescue | Festuca saximontana |
| 14% | Canada Wild Rye | Elymus canadensis |
| 12% | Sandberg's Blue Grass | Poa sandbergii |
| 8% | Fowl Blue Grass | Poa pratensis |
| 7% | Junegrass | Koeleria cristata |
| 7% | Annual Rye Grass | Lolium multiflorum |

Application: Ditches, driveways, berms. This mix can either be mowed or left unattended.
Seed rate: 31 kg/ha (= 310 grams/100 sq.m.) Apply only with no till or other dryland seed drill. Do not hydroseed.

### 1.2 Wetland Additional seed application

Seed with general area grass mix at rate of 31 kg/ha , and overseed or add the following mix to the seeder at 3.6 kg/ ha (= 36 gr/100 sq m):

| | | |
|---|---|---|
| 50% | Tufted Hairgrass | Deschampsia caespitosa |
| 25% | Slough Graas | Beckmanii syzygachne |
| 25% | Whitetop Grass | Scholochola festucacea |

Application: Areas of within 1 metre vertical of normal water level of all ponds, channels and wetlands. This mix is not intended to be mowed.

## 2. Coniferous Trees

| | |
|---|---|
| Siberian Larch | Larix siberica |
| White Spruce | Picea glauca |
| Colorado Spruce | Picea pungens |
| Scots Pine | Pinus sylvestris |
| Lodgepole Pine | Pinus contorta latifolia |

## 3. Deciduous Trees

| | |
|---|---|
| Paper Birch | Betula papyrifera |
| Balsam Poplar | Populus balsamifera |
| Plains Cottonwood | Populus deltoides |
| Trembling Aspen | Populus tremuloides |
| Chokecherry | Prunus virginiana melanocarpa – pruned to tree form |
| Narrow-leafed cottonwood | Populus angustifolia |
| Laurel Willow | Salix pentandra |

## 4. Coniferous Shrubs

| | |
|---|---|
| Common Juniper | Juniperus communis |
| Creeping Juniper | Juniperus horizontalis |
| Mugo Pine | Pinus mugo mugo |

## 5. Deciduous Shrubs

| | |
|---|---|
| Saskatoon | Amelanchier alnifolia |
| River Birch | Betula fontinalis |
| Red Osier Dogwood | Cornus stolonifera |
| Wolf Willow | Elaeagnus commutata |
| Twinberry Honeysuckle | Lonicera involucrata |
| Shrubby cinquefoil | Potentilla fruticosa |
| Chokecherry | Prunus virginiana melanocarpa |
| Alpine Currant | Ribes alpinum |
| Wild Black Currant | Ribes hudsonianum |
| Wild Gooseberry | Ribes oxyacanthoides |

## 5. Deciduous Shrubs (continued)

| | |
|---|---|
| Prickly Rose | Rosa acicularis |
| Common Wild Rose | Rosa woodsii |
| Wild Red Raspberry | Rubus idaeus |
| Beaked Willow | Salix bebbiana |
| Pussy Willow | Salix discolor |
| Sandbar Willow | Salix exigua |
| Smooth Willow | Salix glauca |
| Russet Buffaloberry | Shepherdia canadensis |
| Snowberry | Symphoricarpos albus |
| Buckbrush | Symphoricarpos occidentalis |
| High-bush cranberry | Viburnum opulus |

## 6. Habitat Zones

The Habitat Zones Plan (available from the willowcreekhoa.ca) indicates the extent of 9 types of created habitat dominated by native species, for which wildlife species habitat and feeding is a primary design objective.

These are listed below with map key code, dominant species and other relevant information.

### Open Water (OW)

Over 1.25m deep at normal water level, no organic soil, no plants

### Submerged Aquatics (SA)

0.5m to 1.25m deep at normal water level, no organic soil

Potomageton
Hippurus
Ceratophyllum
Ranunculus circinatus

### Emergent Marsh (EM)

0.0m to 0.5m deep at normal water level, 250mm deep organic soil

Eleocharis
Carex
Juncus
Scirpus
Typha

## Riparian Thicket (RT)

Moist soil to within 250mm of surface in most years
250 to 750mm A+B Horizons
Approximately 80% tree / shrub cover

Wetland Grass Mix
Salix
Populus balsamifera
Alnus
Cornus stolonifera
Betula fontinalis

## Riparian Meadow (RM)

Moist soil to within 250mm of surface in most years
250 to 750mm A+B Horizons
Scattered shrubs and herbs (less than 10% cover)
Frequently flooded

Wetland Grass Mix
Carex in wetter locations
Calamagrostis clumps scattered near shorelines
Shrubs and trees same as Riparian Thicket

## Mesic Thicket (MT)

Moist soil 500mm of surface in most years
500mm A+B Horizons
Approximately 60% tree / shrub cover
Mulch during establishment period
Infrequently flooded

## General Area Grass Mix

Populus balsamifera (moister side of bed)
Populus tremuloides (drier side)
Picea glauca
Prunus virginiana
Rosa woodsii
Eleagnus commutata (drier side)
Cornus stolonifera (moister side)

## Mesic Meadow (MM)

Moist soil to within 500 mm of surface in most years
250 to 500mm A+B Horizons
Infrequently flooded
Scattered trees and shrubs (less than 10% cover)

General Area Grass Mix
Shrubs and trees same as Mesic Thicket

## Upland Thicket (UT)

Upper 500mm dry soil by late summer in most years
500mm A+B Horizons
Approximately 40% tree / shrub cover
Never flooded
Mulch during establishment period

General area grass mix
Populus tremuloides
Picea glauca – north or east facing slopes only
Prunus virginiana
Eleagnus commutata
Roas acicularis
Ribes oxycanthoides

## Upland Meadow (UM)

Upper 500mm dry soil by late summer in most years
250mm A+B Horizons
Scattered trees and shrubs
Less than 10% tree / shrub cover
Never flooded

General area grass mix

Shrubs and trees same as Upland Thicket

# Table 1: Building Requirements

## Proposed Exterior Materials

| LOT | LEGAL PLAN BLOCK | LOT | MINIMUM MANICURED AREA SETBACKS FRONT | REAR | LEFT | RIGHT | MINIMUM BUILDING SETBACKS FRONT | REAR | LEFT | RIGHT | DRIVEWAY LOCATION | HOME MAXIMUM HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 1 | 1 | 5 | East 20 – West 16 | 7.5 | 20 | 20 | East 24 – West 20 | 15 | 30 | NE | 10 |
| 26 | | 2 | 5 | E 28 – W 24 | 7.5 | 7.5 | 20 | E 31 – W 27 | 15 | 15 | NE | 10 |
| 27 | | 3 | 5 | 15 | 7.5 | 7.5 | 20 | 20 | 15 | 15 | NW | 10 |
| 28 | | 4 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | NE | 10 |
| 29 | | 5 | 5 | 10 | 10 | 7.5 | 20 | 20 | 15 | 15 | NW | 10 |
| 30 | | 6 | 5 | 10 | 7.5 | 10 | 20 | 15 | 15 | 15 | NE | 10 |
| 31 | | 7 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | NW | 10 |
| 32 | | 8 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | NE | 10 |
| 33 | | 9 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | NW | 10 |
| 34 | 2 | 1 | 5 | 15 | 7.5 | 7.5 | 15 | 20 | 15 | 15 | NW | 9 |
| 35 | | 2 | 5 | 15 | 15 | 3 | 15 | 20 | 24 | 8 | SW | 9 |
| 36 | | 3 | 5 | 15 | 3 | 15 | 15 | 20 | 8 | 24 | SW | 9 |
| 37 | | 4 | 5 | N 10 &E 15 | 7.5 | 7.5 | 20 | N 15 & E 20 | 15 | 15 | CENTRE | 9 |
| 38 | | 5 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | CENTRE | 10 |
| 39 | | 7 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | CENTRE | 10 |
| 40 | | 8 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NE | 10 |
| 41 | | 9 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NW | 10 |
| 42 | | 10 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NW | 10 |
| 46 | | 11 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NE | 10 |
| 47 | | 12 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NE | 10 |
| 48 | | 13 | 5 | E 15 & S 10 | 7.5 | 7.5 | 20 | E 20 & S 15 | 15 | 15 | CENTRE | 9 |
| 49 | | 14 | 5 | 15 | 7.5 | 7.5 | 20 | 20 | 15 | 15 | CENTRE | 9 |
| 50 | | 15 | 5 | N 10 & E 15 | 7.5 | 7.5 | 20 | N 15 & E 20 | 15 | 15 | CENTRE | 9 |
| 51 | | 16 | 5 | NW 10 & NE 14 | 7.5 | 7.5 | 15 | NW 15 & NE 18 | 15 | 15 | SE | 10 |
| 52 | | 17 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | SE | 10 |
| 1 | | 19 | 5 | 15 | 7.5 | 10 | 20 | 20 | 15 | 15 | CENTRE | 9 |
| 2 | | 20 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | SE | 10 |
| 3 | | 21 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | SW | 10 |
| 4 | | 22 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | SW | 10 |
| 5 | | 23 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | SW | 10 |
| 6 | | 24 | 5 | 10 | 7.5 | 7.5 | 20 | 15 | 15 | 15 | NW | 10 |

All dimensions in metres. See Plans.

| LOT | LEGAL BLOCK | LOT | MANICURED AREA FRONT | REAR | LEFT | RIGHT | BUILDING SETBACK FRONT | REAR | LEFT | RIGHT | DRIVEWAY LOCATION | HOME HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 3 | 1 | 5 | 15 | 7.5 | 10 | 20 | 20 | 15 | 20 | NE | 10 |
| 8 | | 2 | 5 | 15 | 10 | 7.5 | 20 | 20 | 20 | 15 | SW | 10 |
| 11 | | 3 | 5 | 10 | 7.5 | 10 | 20 | 15 | 15 | 15 | NW | 10 |
| 12 | | 4 | 5 | 10 | 20 | 7.5 | 20 | 15 | 30 to 23 | 15 | SW | 10 |
| 9 | | 6 | 5 | 15 | 10 to 20 | 7.5 | 15 | 20 | 15 to 25 | 15 | NE | 10 |
| 10 | | 7 | 5 | 15 | 7.5 | 7.5 | 15 | 20 | 15 | 15 | NE | 10 |
| 13 | | 8 | 25 | 10 | 20 | 15 to 10 | 30 | 15 | 25 | 20 to 15 | SW | 10 |
| 14 | | 9 | 75 | 10 | 25 | 20 to 10 | 75 | 15 | 30 | 23 to 15 | SE | 10 |
| 15 | | 10 | 5 | 25 | 7.5 | 7.5 | 15 | 30 | 15 | 15 | NE | 10 |
| 16 | | 11 | 5 | 25 | 15 | 7.5 | 15 | 30 | 20 | 15 | NE | 10 |
| 17 | 4 | 1 | 10 | 10 | 7.5 | 20 | 20 | 15 | 15 | 30 | NE | 10 |
| 18 | | 2 | 5 | 10 | 20 | 7.5 | 15 | 15 | 30 | 15 | SE | 10 |
| 19 | | 4 | 5 | 10 | 7.5 | 7.5 | 20 | 20 | 15 | 15 | NE | 10 |
| 20 | | 5 | 10 | 15 | 7.5 | 7.5 | 20 | 20 | 15 | 15 | NE | 10 |
| 21 | | 6 | 10 | 10 | 7.5 | 10 | 20 | 15 | 15 | 20 | SE | 10 |
| 22 | 5 | 1 | 5 | 10 | 10 | 7.5 | 15 | 15 | 20 | 15 | SW | 10 |
| 23 | | 2 | 5 | 10 | 7.5 | 7.5 | 15 | 15 | 15 | 15 | NW | 10 |
| 24 | | 3 | 5 | 10 | 7.5 | 10 | 15 | 15 | 20 | 20 | NW | 10 |
| 43 | | 5 | 5 | 10 | 10 | 7.5 | 15 | 15 | 20 | 15 | NE | 10 |
| 44 | | 6 | 5 | 10 | 7.5 | 10 | 15 | 15 | 15 | 15 | NE | 10 |
| 45 | | 7 | 5 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | SE | 10 |

WILLOW CREEK
AT BEARSPAW

For more information, please contact info@willowcreekhoa.ca