



Bernie Amell, BLA, CSLA

Environmental Designer

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PROFESSIONAL SUMMARY

Mr. Amell has a 35 year career focusing first on “normal” landscape architecture relating to his bachelors degree from the University of Guelph, and in the last 12 years evolving into a specialty in environmental design. In the latter capacity, he has become recognized as an expert in the design of constructed wetlands for water treatment, and in the restoration of streams and riparian habitats. To date, he has designed over 80 such projects throughout Alberta and in British Columbia. He is active in various environmental and social committees in Calgary and Southern Alberta.

PROFESSIONAL QUALIFICATIONS

- Alberta Association of Landscape Architects
- Canadian Society of Landscape Architects

EDUCATION

- Bachelor of Landscape Architecture, University of Guelph, 1975

MEMBERSHIPS

- Bow River Basin Council
- Calgary Weir Enhancement Partnership
- Alberta Low Impact Development Partnership
- Parks Foundation Calgary

SUMMARY OF CORE SKILLS

Environmental Design

Mitigation and enhancement designs which incorporate human uses (e.g. stormwater management facilities) within sustainable landscape ecosystems. Particular specialties include urban ecology incorporating native species, and water quality enhancement including constructed wetlands and other natural systems. In recent years, he has been at the forefront of the adaptation of sustainable urban drainage (SUD) techniques to suit Alberta conditions. This is synonymous with low impact development (LID) stormwater techniques.

Urban Design

Conceptual design, public presentations, detailed design and project management for pedestrian open-space systems, urban parks, play areas, streetscapes, and roof gardens, with particular emphasis on incorporating urban ecology and low impact development features. Several of these projects have been given professional awards.



Recreation

Planning and detailed design for a great variety of recreation parks and major venues, including Canada Olympic Park (Calgary), Banff Recreational Grounds, and numerous smaller regional parks and playgrounds.

Research and Academics

During the past 15 years, Bernard has been engaged in environmental design research at the University of Calgary related to water treatment systems based upon ecological processes. This work has included trials of natural systems to treat urban stormwater and feedlot runoff. His current focus of research work include the following;

- Design development of the Nautilus Pond (optimization of sediment removal)
- In-situ hydraulic conductivity of soils and soil mixes (generating data to be used in the adaptation of SUD/LID techniques to Alberta conditions)
- Design of SUD test site in Edmonton

EMPLOYMENT HISTORY

- 2002 – present Principal, Env. Designer Riparia, Calgary, Alberta
- 2008 – present Environmental Designer AECOM Ltd.
- 2006 - 07 Environmental Designer AMEC Earth & Environmental, Calgary, Alberta
- 1996 – 2002 Environmental Designer Earthtech, Calgary, Alberta
- 1994 – 96 Landscape Architect Stantec, Calgary, Alberta
- 1988 – 94 Landscape Architect Matrix Landscape Architecture, Calgary, Alberta
- 1985 – 88 Landscape Architect Lombard North Group, Calgary, Alberta
- 1983 – 84 Landscape Architect IMC, Jeddah, Saudi Arabia
- 1981 – 83 Landscape Architect Corush Larocque Sunderland, Calgary, Alberta
- 1977 – 81 Jr. Landscape Architect Lombard North Group, Calgary, Alberta
- 1975 – 77 Jr. Landscape Architect Roman Fodchuk and Assoc., Calgary

SELECTED PRESENTATIONS / PUBLICATIONS / AWARDS

- Albers, C., Amell, B., (2010), *Changing the Stormwater Pond Design Game*, Submitted for publication to NOVATECH 2010 Conference, 27 June - 1 July 2010, Lyon, France.
- Presentation on City of Calgary Stormwater Quality Retrofit Program, International Committee on Urban Drainage, Edinburgh, 2008.
- Consulting Engineers of Canada, National Award of Excellence 2007, McLean Creek Wetlands for Suncor Ltd.
- “Natural Processes and Urban Form”, essay in *Coyotes Still Sing in My Valley*, R. Wein ed., 2006 Spotted Cow Press,
- IWA Watershed Conference, Calgary, 2005, paper on Alternative Design Procedures for Stormwater Ponds and Wetlands, co-authored with Dr. Angus Chu and Paul Jacobs.
- Calgary Experimental Wetland – Report on 6 Years of Data, presented to several seminars and conferences during 2005/2006.
- Urban Stormwater Management Website – Bow Basin Council: co-chair and a principal author of the website www.urbanswm.ab.ca.

- Deerfoot Trail Stormwater Innovations – article published in Stormwater Journal, March 2002.
- Constructing Wetlands for Water Treatment in Western Canada, Canadian Society of Landscape Architects Merit Award 1996.
- 17th Avenue Sculpture Park, first place in urban design competition.
- Dinosaur Provincial Park, Visual Impact Assessment Study, Canadian Society of Landscape Architects Honour Award.
- PanCanadian Plaza, City of Calgary Urban Design Award.
- TransCanada Twinning, Banff National Park, Canadian Society of Landscape Architects Merit Award (in conjunction with project team).

ENVIRONMENTAL DESIGN

Calgary Stormwater Quality Retrofit Program, 2006-present: This began with a strategic study of over 80% of the built area of Calgary, identifying and prioritizing 37 potential sites for major end-of-pipe stormwater treatment facilities, to meet objectives of the Calgary Stormwater Management Plan (which includes total loading management for TSS). This study has become the basis for subsequent program expenditures as the identified projects are being designed and built. Mr. Amell has also been the senior environmental designer for several of these projects, including:

- **Marshall Springs** (located in Fish Creek Provincial Park and treating runoff from the Evergreen Community)
- **East Fish Creek** (located in Fish Creek Provincial Park and treating runoff from the North Cranston and Aurora communities)
- **Burnsmead Wetland** (located in Fish Creek Provincial Park and treating runoff from the Parkland, Bonavista, Maple Ridge and Deer Run communities)
- **South Highfield** (treating runoff from the Manchester and Highfield industrial areas as well residential neighbourhoods extending west to Glenmore Reservoir).
- **East Bowmont** (treating runoff from Varsity and Silver Springs areas and other neighbourhoods extending north to Nose Hill Park)

Forestlawn Creek Study: 2008-2009: Assessment of the carrying capacity and long term management options for a creek serving a major portion of East Calgary including the Calgary Ring Road.

Lakeview Stormwater Improvements: 2009 to present: Environmental design for a stormwater pond and wetland to be located in North Glenmore Park, treating runoff from Lakeview, Glamorgan and Mount Royal College areas, that is currently discharged untreated to the Glenmore Reservoir.

Calgary LID Streetscape Study: 2007 to present: A study to determine the feasibility of LID (SUD) enhancements to “normal” streetscapes in the built neighbourhoods of Calgary. Demonstration sites are being sought at the present time.

54th Street SE: 2008 to present: Environmental design for a stormwater pond and wetland systems to serve a large industrial land use area in East Calgary. Water quality treatment optimization is a high priority due to the history of inter-jurisdictional conflict relating to



stormwater effects on the receiving channel, which is an major regional canal serving agricultural irrigation east of the city.

North East Stoney Trail, Calgary: 2007 to 2009: Environmental design for system of over 80 conserved wetlands and stormwater pond/wetlands to serve the northeast quadrant of the Calgary ring road. Work also included upland habitat restoration and design of large scale absorbent landscape areas to manage stormwater volume releases to small streams.

University of Lethbridge: 2008 to present: Environmental design for sustainable drainage features to serve the central campus area, main parking lot and a planned quadrangle of LEED certified buildings. The work in progress will result in a very high standard of stormwater capture and reuse for tree irrigation, while developing much needed wind shelter and resolution of existing stormwater service problems.

Calgary Landfills: 2004 – 2009: Design for wetland and pond systems to treat stormwater from two major landfills in Calgary. One of the sites also required the creation of naturalized stream habitat to replace an existing stream to be displaced by future landfill operations.

Kennedale Works Yard: 2008 – present: An Edmonton test and demonstration site for SUD/LID techniques, specifically, bioswales and absorbent landscape beds. The site includes testing of soil mixes incorporating City of Edmonton municipal compost.

Elmjay Wetland, 2005: Design for a treatment wetland to manage runoff from an industrial land use area of SE Edmonton.

Campsite Road, 2004 – 2005: Design for a large-scale wetland and pond complex in Spruce Grove, Alberta, to treat water from a highway and a residential subdivision, prior to discharging to an important fish bearing stream.

South Shore Slave Lake, Wastewater Polishing Wetland, 2004 – 2006: Design for a wastewater polishing wetland system receiving treated effluent from a new wastewater plant.

Lafarge Meadows, 2002 – 2004: Design for a 75 hectare stormwater wetland system as reclamation of a former gravel mine site, integrated with the natural landscape of Fish Creek Provincial Park and treating the runoff from over 800 hectares of south Calgary.

Sikome South Wetlands, 2002 – 2007: Design for a stormwater retrofit system integrated with the natural landscape of Fish Creek Provincial Park and treating the runoff from Highway 22X and from three existing outfalls to the Bow River. Treated water will be directed to the Lafarge Meadows wetland system.

Northwest Stoney Trail, Calgary 2003 – 2008: Design and project management for a stormwater pond and wetland facilities to treat runoff from 20 kilometres of the NW Calgary ring road. Work is in construction and includes 9 ponds and wetlands.

Suncor STP McLean Creek Diversion, 2004 – 2007: Environmental design for the diversion of a natural creek to allow creation of an oil sands tailing facility. The project included creation of new wetland and riparian habitats to replace the extent and functionality of habitats to be removed. Received Canadian Consulting Engineers National Honour Award in 2007.



Redwood Meadows Bank Stabilization, 2000: Bioengineered bank stabilization along the Elbow River

Sunridge Stormwater Pond and Wetland, Lethbridge, 2005 – 2006: Design for a stormwater wetland system integrated with the central open space system of a subdivision in Lethbridge; in construction during 2006.

Medicine Hat Stormwater Facilities, 2000 – 2007: Design of several completed, and in process, wetpond / wetland systems serving new residential development in the north central, north east and southwest sectors, integrated with the regional open space system.

Prince's Island Park, Calgary, 2001: Design of a stormwater treatment wetland and adjacent naturalized landscape at the east end of the island, treating runoff from the city core area, while providing natural habitat and aesthetic value.

Discovery Ridge: 1997 - 2003: Environmental design for a stormwater pond and wetland, as well as naturalized streambank restoration associated with a storm sewer force main and a regional stormwater outfall located in the active floodway of the Elbow River.

Deerfoot Trail Calgary, 1998 – 2002: Design of an extensive system of stormwater ponds and wetlands serving 15 km of freeway. Some of the facilities have been integrated with regional natural areas and parkland. Fisheries issues led to the need for a precedent-setting degree of water quality enhancement.

Pearce Estate Interpretive Wetland, 1999: Environmental design for 30 ha riparian wetland and park area, incorporating stream restoration, marsh wetlands, subsurface wetlands, and extensive nature interpretation opportunities.

Calgary Zoo, Northern Forest Wetland, 1996: Stormwater management and landscape design for a major component of the Canadian Wilds area including a Visitor Centre site.

URBAN DESIGN

Patterson Heights Natural Reclamation, 1994: Environmental design, contract documents and inspections for urban ecological restoration of major open-space network within a Calgary subdivision.

Crowchild Trail Urban Design, 1990: Landscape design to integrate an arterial road expansion within an inner city neighbourhood.

Grand Okanagan Resort in Kelowna, 1991: Site design, detailing and specifications. The design included fountain courtyard, lagoon, boardwalk, pool courtyard, and patio cafe areas.

Pedestrian Bridge Crossing Oldman River in Central Lethbridge, 1998: Site planning and management of public involvement.

Sheep River Rotary Park, 1993: A significant pedestrian circulation node and town centre park in Okotoks, Alberta.



Sait / Jubilee Auditorium / ACA, 1990: Design of site modifications required to integrate the North LRT line and station with the campus and contiguous institutions.

Court of Queens Bench, Calgary, 1988: A major renovation of the city centre public plaza and open space one full block in size.

Yanbu New Town, 1984: Design of complete open space system for a new town of 30,000 population in Saudi Arabia.

RECREATION

East Calgary Greenway, ongoing: Original conception of the plan to create a perimeter pathway and open space corridor around Calgary. When complete this system will be 120 km in length. Work has started on the first 10 km long segment, from 17th Avenue SE to 88 Avenue NE.

Kelowna Mission District Park, 1999: Design of a regional scale stormwater system integrated with a major urban park in Kelowna. The design incorporates stream restoration, ponds, wetlands, pathways, and interpretive features to meet both recreational, water management and environmental objectives. The latter included the provision of Kokanee salmon spawning habitat.

Kinsmen Gorge Park, Esquimalt, BC, 2001: Design of a renaturalized area to be incorporated into a long established park in Victoria. The design incorporates stream reconstruction, ponds, wetlands, riparian regeneration, paths, a boardwalk and other features to support nature appreciation.

Banff Recreational Grounds Upgrading, 1992: Design refinement and construction documents for the Banff Recreational Grounds Upgrading, a \$1.5 million sports and picnic ground park along the Bow River.

Alberta / Parks Canada / British Columbia Tourist Information Centre, Field, BC, 1991: Complete siteworks for a large tourist information centre, including the creation of a recreational park and swimming pond for the use of the Town in the floodplain of the Kicking Horse River.

Nose Creek / West Nose Creek Park System Master Plan, 1992: Recreational planning for a 20 km (12 mile) long park system, incorporating extensive naturalization, pathway development and preservation. The planning process involved a complete program of public involvement and biophysical assessment.

Canada Olympic Park, 1987: Site design for key sponsor landscape improvement areas, including Devonian Groves, Husky Bobsled / Luge Park and Esso Ski Jump Area Groves.