CrossIron Mills Shopping Centre

Balzac, AB 2007-2009

Project Overview:

CrossIron Mills Shopping Centre is the first development to be constructed within the East Balzac Retail & Racing Entertainment Centre. No potable water is permitted for outdoor watering in the rural jurisdiction due to infrastructure constraints.

ion prepared an Irrigation Strategy, mandated for Development Permit that established irrigation requirements; investigated non-potable water sources; estimated costs and benefits; discussed drought management; and established standards for irrigation design, products, construction and maintenance.

Only 11 acres of the total 32-acre landscape will be irrigated. Ten large-diameter downspouts from the shopping centre roof collect rain water in three underground cisterns strategically located in the landscape. **ion** collaborated in a multi-disciplinary team to model the site water balance, size the cisterns, design irrigation with the rain water supply and administer construction.

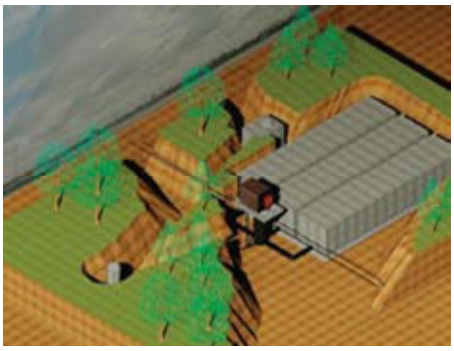
Irrigation Features & Statistics:

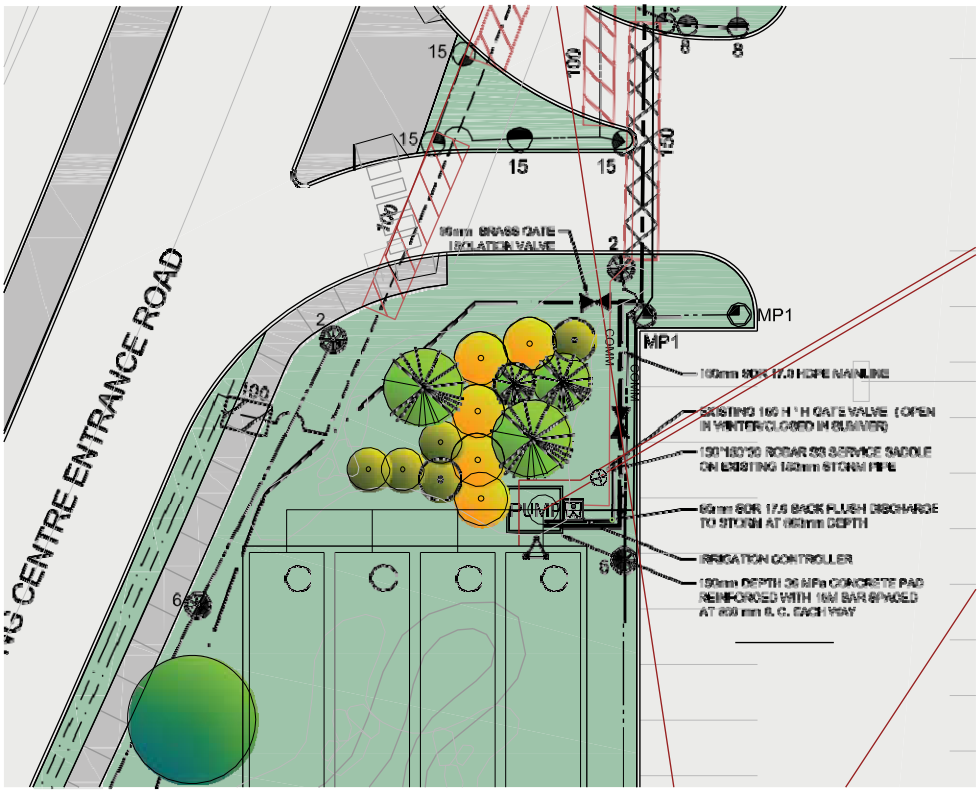
- Shopping centre roof area = 34 acres (1,500,000 ft.^{2});
- three underground cisterns total 1,100 m^3 (290,000 US gal) or 7 days peak irrigation requirement;
- three 100 gpm VFD pump stations with automatic self-flushing filters and chemigation units;
- 90 control zones;
- 5 km of mainline, 10 km of dripline, 20+ km of control wiring;
- four satellite controllers linked with telecomm cable and wireless Ethernet to central control;
- onsite weather sensor provides real-time schedule and runtime adjustments;
- seven flow sensors and master valves can shut down system upon leak or break detection.

Costs and Savings:

- Estimated seasonal irrigation requirement = 33,400 m^3;
- estimated water savings compared to a conventional system = 90,900 m^3 (73%);
- capital cost premium to install irrigation pump & filtration = $250,000;
- opportunity cost of potable water = $63,000/ year (City of Airdrie 2008 rates);
- average irrigation bid price was approximately 5% less than **ion**'s pre-construction cost estimate.

CROSSIRON MILLS





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