



## ZINIFEX STORMWATER RETENTION POND

Andrew Walter Constructions.

Zinifex's recent stormwater system upgrade is to mitigate potential offsite flows of contaminants in heavy rainfalls, in line with their continual improvement commitments. The stormwater is collected in the new pond then treated through a combination of bio-filters and sand filter, before entering the wetlands. Hudson Civil was involved in numerous aspects of this time sensitive project including providing alternative designs to address both time and constructability issues. The HDPE liner presented the first issue as the design called for a kerb to be installed to increase the safety of employees working during de-sludging. The HDPE liner made traditional boxing using pegs unacceptable resulting in AWC consulting with Hudson Civil to design a precast kerb section that would remove the necessity to peg boxing, match the required expansion joints and ease the placement of the INSITU driveway between the kerbs. A similar approach was used to construct the low nib wall acting as a weir to trap sludge before entering the main storage area.

After addressing these early issues, we still had the problem of casting a box culvert complete with dissipaters (which was overcome with some additional design changes), a 3 metre diameter pump well cast in short sections due to difficult site conditions, a large precast endwall to tie in the decant to some stock standard box culverts with lids to round the project off.



**James Hardie FRC Pipe information sessions** were recently held across Tasmania in front of over 100 people attending 3 breakfast sessions designed to dismiss myths and increase understanding of FRC pipe along with the large range of ancillary items available.

The basis of the session was to discuss the changes under the revised Australian Standard which FRC pipe is manufactured and the benefits of FRC pipe. It was deemed the best possible way to demonstrate the strength of FRC pipe was to start with a product that everyone is familiar with and its use. This was where the test rig and a section of 375mm Class 2 SRC (Steel Reinforced Pipe) was used as a starting point. This section of SRC pipe was tested to its relevant test load, first crack load and then ultimate failure load.

With these loads registered and presumed acceptable as suitable for pipes being installed in Tasmania, we tested a section of FRC pipe in the rig to display its inherent strength. The FRC outperformed the SRC in every test, **even though it was tested as a rigid pipe** and the benefits of it now being a semi rigid pipe were not being utilised (Side support from backfill).

Most people were very impressed in the ability of the FRC pipe to handle these loads (far above those that the SRC could handle) and watched the flexing pipe intently as the cyclic load was applied and removed as we kept winding up the pressure.

With the exception of a rain affected test in Devonport (*the rig was not suited to our driving in the rain!*), all went well and was well received.

James Hardie is to be commended for the professional way in which the events were organised and the large investment required for the week is certainly appreciated by all those at Hudson Civil.

Our thanks goes out to all those that attended these sessions and our congratulations to the 3 winners of \$100.00 gift vouchers to Sports Power from Hudson Civil, Louis Stevens, Ian Cute and Greg Carpenter.





Hudson Civil Products has added a dedicated Environmental division to its business, **Hudson Environmental**. We can assist you on any project requiring stormwater quality improvement devices (SQIDs), the detention or reuse of stormwater along with on site sewerage treatment systems.

Hudson Environmental Manager Roxley Saunders, who would be well known to many in the industry, is available to discuss any of your requirements.

We offer a large range of products backed with dedicated staff available to ensure the best possible outcome.

**Our growing product range now includes:**

- HCP precast stormwater detention & reuse systems
- HCP septic tanks & pump pits
- HCP pump stations and tanks
- Trade Waste units
- Triple interceptors
- Q-Guard S.Q.I.D's
- At Source Pit Traps
- WSUD options
- Raincell detention & reuse systems

**If you have a requirement and would like to talk to our Environmental Products Manager, please call our office in either Hobart or Launceston.**



3,500 Litre Septic Tank



At source *Pit Trap* fitted to a B1 complete lintel  
(Southern Councils)



Roxley (supposed desk job) fitting out our new Grease trap and Triple Interceptors.



Roxley once again with a Raincell detention unit standing in front of a 4m Dia, 25,000 litre detention tank.

**STORMWATER REUSE** has been included in the design and construction of a new gnasium at Launcestons Scotch Oakburn College. Stormwater reuse was in keeping with the environmentally sustainable design of the new building. Hudson Environmental assisted Dale Luck & Associates along with contractor T.J Adams and Sons to design and construct a 2 tank below ground system delivering a total of 60,000 litres storage for resuse in the schools toilets and their landscaping requirements. The limited area available for these tanks made installation difficult however, both tanks were delivered and installed in one morning with the excavation undertaken the previous day.

2 tanks, 4m internal diameter x 2.4m deep, were chosen to retain the amount of stormwater required and secondly, to best suit the availbale romm on site. The tanks were cross connected and short risers fitted to the tanks to minimise the visual impact of the tanks in the paved area.

The reuse of stormwater is an important issue that will become more common as we tackle the effects of drought and predicted climate change along with the general consensus that to treat water and simply flush it down the toilet (literally) or water a lawn might be something that we see relegated to the history books in the next few years.

