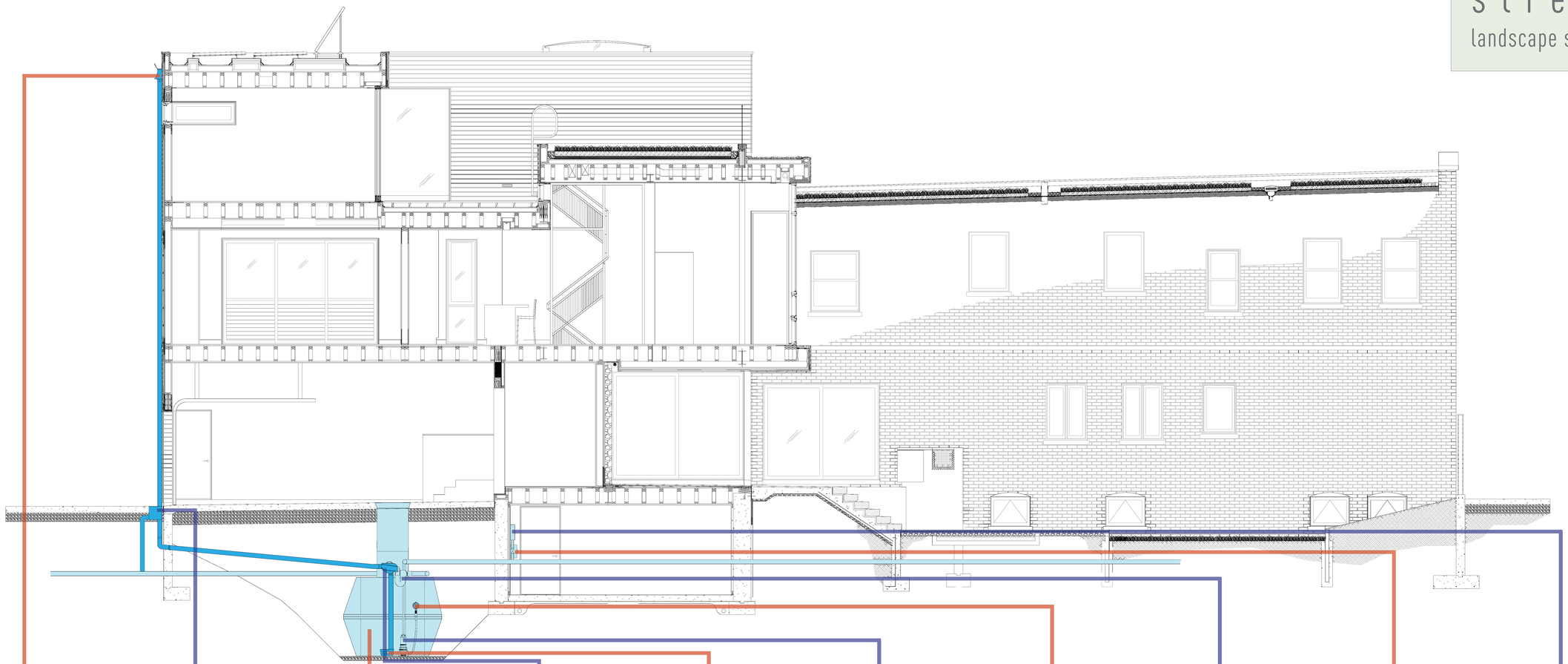
RAIN WATER HARVESTING DIAGRAM

lake
street
landscape supply



LEAF GUARD - LEAF BEATER

THE LEAF BEATER IS COMPACT MAKING IT IDEAL FOR USE WITH UNDER EAVES TANKS. IT FEATURES AN INTEGRATED FLOW DIRECTIONAL GUTTER OUTLET WHICH DIRECTS THE FLOW OF WATER FROM THE GUTTERS ONTO AN ADJUSTABLE ELLIPTICAL PRIMARY SCREEN OF 4MM APERTURE. THIS SCREEN IS VIRTUALLY VERTICAL ENABLING THE ACTION OF THE WATER TO WASH THE SCREEN AND MINIMIZE MAINTENANCE.

A SECONDARY STAINLESS STEEL SCREEN IS ALSO INCLUDED TO KEEP MOSQUITOE AND VERMIN OUT OF DOWNPIPES IN A "WET" SYSTEM. WITH THE REMOVAL OF THE SECONDARY SCREEN, THE LEAF BEATER® IS IDEAL FOR USE PURELY AS A DEBRIS REMOVING DEVICE EVEN WHEN RAINWATER IS NOT BEING COLLECTED.

AN INGENIOUS FEATURE HAS BEEN INCORPORATED INTO THE OPERATION OF THE PRIMARY SCREEN. FOUR SETTINGS CAN BE APPLIED TO VARY THE ANGLE AT WHICH THE ELLIPTICAL PRIMARY SCREEN FACES TO ADJUST FOR VARIOUS INTENSITIES OF RAINFALL AND AMOUNTS OF DEBRIS. AFTER OBSERVING THE PERFORMANCE OF THE LEAF BEATER®, THE SCREEN CAN BE ADJUSTED UNTIL THE BEST OPERATING SETTING IS ACHIEVED.

FIRST FLUSH DIVERTER -

FITTING AN APPROPRIATELY SIZED FIRST FLUSH WATER DIVERTER IS CRITICAL TO ACHIEVE GOOD QUALITY WATER. WATER DIVERTERS IMPROVE WATER QUALITY, REDUCE TANK MAINTENANCE AND PROTECT PUMPS BY PREVENTING THE FIRST FLUSH OF WATER, WHICH MAY CONTAIN CONTAMINANTS FROM THE ROOF, FROM ENTERING THE TANK.

WHEN IT RAINS, WATER SLOWLY BUILDS UP IN THE ROOF GUTTERING SYSTEM BEFORE IT EXITS THROUGH THE DOWNPIPE. THE FIRST FLUSH OF WATER FROM THE ROOF CAN CONTAIN AMOUNTS OF BACTERIA FROM DECOMPOSED INSECTS, SKINKS, BIRD AND ANIMAL DROPPINGS AND CONCENTRATED TANNIC ACID. IT MAY ALSO CONTAIN SEDIMENTS, WATER BORNE HEAVY METALS AND CHEMICAL RESIDUES, ALL OF WHICH ARE UNDESIRABLE ELEMENTS TO HAVE IN A WATER STORAGE SYSTEM.

INSTEAD OF FLOWING TO THE WATER TANK, THESE POLLUTANTS ARE DIVERTED WITH THE INITIAL FLOW OF WATER INTO THE CHAMBER OF THE WATER DIVERTER. THE WATER DIVERTERS FROM RAIN HARVESTING UTILISE A DEPENDABLE BALL AND SEAT SYSTEM - A SIMPLE AUTOMATIC SYSTEM THAT DOES NOT RELY ON MECHANICAL PARTS OR MANUAL INTERVENTION.

AS THE WATER LEVEL RISES IN THE DIVERTER CHAMBER THE BALL FLOATS, AND ONCE THE CHAMBER IS FULL, THE BALL RESTS ON A SEAT INSIDE THE DIVERTER CHAMBER PREVENTING ANY FURTHER WATER ENTERING THE DIVERTER. THE SUBSEQUENT FLOW OF WATER IS THEN AUTOMATICALLY DIRECTED ALONG THE PIPE SYSTEM TO THE TANK.

GRAF CARAT 1250 GALLON CISTERN

GRAF CARAT S 1250 GALLON UNDERGROUND CISTERN WITH PEDESTRIAN MANWAY, 14" TELESCOPIC RISER AND CHILDPROOF PP LID.

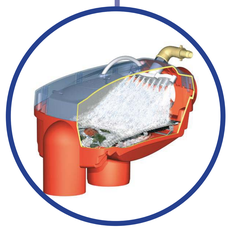
EASY AND SAFE ASSEMBLY

THE PATENTED QUICK CONNECTION, ALLOWS THE CARAT TANK TO BE ASSEMBLED WITHOUT SCREWS IN ONLY FEW MINUTES. DISASSEMBLY IS POSSIBLE AT ANY TIME.
THE FIRST-CLASS EPDM MATERIAL USED IN THE PROFILE SEALS (ILLUSTRATED IN YELLOW), HAS BEEN LABORATORY TESTED TO LAST MORE THAN 25 YEARS.
THE CENTERING BOLT ASSURES THE ACCURATE AND EASY ASSEMBLY OF THE TWO HALF SHELLS PREVENTING ANY LEAKS

VARIABLE BURIAL DEPTH: 30" TO 42" (59" MAX. WITH OPTIONAL DOME EXTENSION AND "MAXI" TELESCOPIC RISER)

VEHICLE-BEARING (WITH TELESCOPIC CAST IRON MANWAY KIT)
GROUNDWATER STABLE UP TO THE MIDDLE OF THE TANK DUE TO EXTREMELY RIGID CONSTRUCTION

MADE FROM HIGH QUALITY DURALENE; EASY TO RECYCLE
CAN BE EXPANDED AS REQUIRED
31.5" MANWAY OPENING



INTERNAL FILTER - GRAF OPTIMAX PRO

INTERNAL SELF-CLEANING CASCADE FILTER FOR UNDERGROUND CISTERNS AND ABOVE-GROUND WATER TANKS. SUITABLE FOR ROOF AREAS UP TO 3,750 SQ. FT.

FILTER SPECIALLY DEVELOPED FOR RAIN WATER HARVESTING

LOW MAINTENANCE; SELF CLEANING

SPACE SAVING FILTER TECHNOLOGY INTEGRATED IN THE TANK
CAN BE INSTALLED ON TOP OF ABOVE-GROUND TANKS
FILTER HOUSING CAN BE REMOVED WITHOUT TOOLS TO INSPECT TANK
TRANSPARENT COVER FOR EASY MAINTENANCE
4" PVC CONNECTIONS

ONLY 6.5" HEIGHT OFFSET BETWEEN INLET AND OUTLET
OPTIMUM CLEANING PERFORMANCE WITH MAXIMUM WATER YIELD

PROVIDES OVER 95 % WATER YIELD

GRAF CALMING INLET

WATER FROM THE FILTER IS FED INTO THE TANK VIA THE CALMING INLET TO PREVENT SWIRLING OF THE WATER, DISTURBANCE OF FINE SEDIMENTS AND TO INTRODUCE OXYGEN AT THE BOTTOM OF THE TANK. THIS DEVICE ALSO HELPS PREVENT MOSQUITOES.

SO THAT THE FINEST DIRT PARTICLES (+0.35MM) SETTLE ON THE BOTTOM OF THE TANK, THE FILTERED WATER IS FED INTO THE TANK VIA THE CALMING INLET TO CONTROL THE WATER INFLOW AT THE TANK BOTTOM. THIS PREVENTS SWIRLING OF THE WATER AND OXYGEN IS ALSO INTRODUCED TO THE WATER AT THE BOTTOM OF THE TANK. THIS MEANS THE WATER IS ALWAYS CLEAR AND FRESH. USED IN CONJUNCTION WITH THE OVERFLOW SIPHON, THIS DEVICE ALSO PREVENTS MOSQUITOES BY CREATING A WATER TRAP BETWEEN THE INFLOW PIPE AND THE TANK.

SUBMERSIBLE PUMP - GOULDS 3/4 HP SUBMERSIBLE

GOULDS PUMPS. 1/2 HP TO 1-1/2 HP, 115V-230V, WITH BASE. MULTI-STAGE, BOTTOM-INLET, HIGH HEAD SUBMERSIBLE PUMPS. TYPICALLY SOLD TOGETHER WITH BASE. CALL FOR INFO IF PUMP IS NEEDED SEPARATELY OR WITH A DIFFERENT BASE.

FEATURES
■ CASING: AISI 304 SS. CORROSION RESISTANT, NON-TOXIC, NON-LEACHING.
■ IMPELLER: FDA COMPLIANT, GLASS FILLED NORYL®. CORROSION AND ABRASION RESISTANT.
■ MECHANICAL SEAL: SILICON CARBIDE SEALING FACES; ALL METAL COMPONENTS OF AISI TYPE 300 STAINLESS STEEL RUNNING IN PROTECTED OIL CHAMBER.
■ ELASTOMERS: BUNA-N.
■ SUCTION STRAINER AND MOTOR SHELL: CONSTRUCTED OF AISI TYPE 304 SERIES STAINLESS STEEL.
■ SHAFT: AISI TYPE 304 STAINLESS STEEL HIGH STRENGTH KEYED PUMP SHAFT WITH IMPELLER LOCKING CAP SCREW.
■ DISCHARGE: 1 1/4" NPT VERTICAL DISCHARGE CONNECTION.
■ SUCTION STRAINER: DETACHABLE FOR EASY CLEAN OUT.

FLOATING INTAKE VALVE

1-1/4" WISY STAINLESS STEEL FLOATING FILTER WITH FINE MESH SCREEN AND 7' HOSE.

THE FLOATING EXTRACTOR CONSISTS OF AN AIR-FILLED BALL WHICH SUSPENDS THE FLOATING INLET FILTER 4" BELOW THE WATER'S SURFACE WHERE THE CLEANEST AND MOST OXYGENATED WATER RESIDES. AN IMPORTANT COMPONENT FOR ANY IRRIGATION OR TOILET FLUSHING APPLICATION.

THE INTEGRAL NON-RETURN VALVE (OPTIONAL) HELPS KEEP THE PUMP PRIMED BY PREVENTING WATER FROM FLOWING IN THE REVERSE DIRECTION.

OVERFLOW SIPHON

DIFFERS FROM THE STANDARD OVERFLOW SIPHON WITH THE INCLUSION OF A SLOTTED STEEL RODENT GUARD. DIRT PARTICLES THAT ARE LIGHTER THAN WATER (E.G. POLLEN & DUST) SETTLE ON THE WATER SURFACE AS A FLOATING LAYER. THIS FLOATING LAYER IS REMOVED WHEN THE TANK OVERFLOWS BY MEANS OF THE OVERFLOW SIPHON IN THE TANK. ALSO AIDS IN MOSQUITO PREVENTION.

THIS MODEL INCLUDES A SLOTTED STEEL PLATE WHICH PREVENTS RODENTS FROM ENTERING THE TANK IN APPLICATIONS WHERE THE INTERNAL MINIMAX® FILTER IS NOT USED.

WHEN USED IN CONJUNCTION WITH A CALMING INLET, THE OVERFLOW SIPHON PREVENTS MOSQUITOES BY ACTING AS A WATER TRAP WHERE MOSQUITOES CANNOT ENTER OR EXIT THE TANK.

FRESHWATER MAKE-UP - BRASS THREE-WAY VALVE

MOTORIZED 3-WAY BACKUP VALVE TO SELECT BETWEEN PRIMARY AND SECONDARY WATER SOURCES, ALLOWING ONLY ONE AT A TIME.

RAINWATER COLLECTION SYSTEMS CAN BE DESIGNED TO PROVIDE UNINTERRUPTED SUPPLY OF WATER BY IMPLEMENTING A BACKUP METHOD FROM A SECOND SOURCE.

THE MOST RELIABLE BACKUP METHOD IS 'DIRECT BACKUP' IN WHICH BOTH THE BACKUP SOURCE (TYPICALLY MUNICIPAL SUPPLY OR WELL WATER) AND RAINWATER SUPPLY DIRECTLY CONNECT TO THE PLUMBING SYSTEM THROUGH A MOTORIZED THREE-PORT VALVE. WHEN THERE IS SUFFICIENT WATER IN THE RAINWATER TANK, THE VALVE CONNECTS THE RAINWATER SUPPLY TO THE PLUMBING SYSTEM. WHEN THE WATER LEVEL IN THE RAINWATER TANK REACHES A PRE-SET LOW LEVEL, THE VALVE CONNECTS THE BACKUP WATER SUPPLY TO THE PLUMBING SYSTEM. A REDUCED PRESSURE BACKFLOW PREVENTER IS USED BETWEEN THE BACKUP SUPPLY AND THE VALVE TO ASSURE THERE IS NO CROSS-CONTAMINATION.

OUR UNIQUE THREE-PORT VALVE IS IDEAL FOR RAINWATER SYSTEMS. THE HYDRAULIC SECTION OF THE VALVE IS OPTIMIZED FOR LOW PRESSURE AND THE VALVE CONSISTS OF A NICKEL-PLATED BRASS VALVE BODY WITH A STAINLESS-STEEL BALL AND TEFLON SEATS. THE VALVE IS DIRECTLY COUPLED TO A 24VAC ELECTRIC ROTARY OPERATOR THAT REQUIRES ONLY 6.5 WATTS TO OPERATE AND 1.5 WATTS TO HOLD. WHEN POWER IS APPLIED, THE BALL ROTATES 90°. WHEN THE WATER LEVEL RETURNS TO THE DESIRED LEVEL, A 24VAC SIGNAL APPLIED TO THE OPPOSITE TERMINAL RETURNS THE VALVE TO ITS NORMAL STATE. FOR CISTERN BACKUP SYSTEMS, THE SOLENOID VALVE IS CONTROLLED BY A LOW-VOLTAGE FLOAT SWITCH OR BY OUR RAINWATER SYSTEM CONTROLLER (THE RETURN STATE VOLTAGE IS ONLY APLIED IN VERSIONS SHIPPED AFTER 12/09).

SMARTPRESS PUMP CONTROL

ELECTRONIC PUMP CONTROLLER WITH INTEGRAL FLOW REGULATION PROVIDES DEMAND-BASED PUMP CONTROL WITH BUILT IN DRY-RUN PROTECTION.

TANKLESS PUMP CONTROLLERS GREATLY SIMPLIFY INSTALLATION AND OPERATION OF RAINHARVESTING SYSTEMS WHILE EXTENDING PUMP LIFE.

WHEN CONNECTING A RAINHARVESTING SYSTEM TO AN IRRIGATION SYSTEM, IT IS NO LONGER NECESSARY TO WIRE THE PUMP INTO THE IRRIGATION CONTROL BOX. INSTEAD, THE PUMP CONTROLLER SENSES THE PRESSURE DROP WHEN THE IRRIGATION VALVES OPEN AND THEN SHUTS THE PUMP OFF SHORTLY AFTER THE VALVES CLOSE. A DELAY IS BUILT IN TO PREVENT "HAMMERING" - THE CLOSE-OFF CYCLING THAT HAPPENED IN THE SYST.

HOSE BIBBS, TOILETS, URINALS, POOL TOP-UPS AND POND VALVES ARE CONTROLLED JUST AS EASILY.

NO PROGRAMMING IS REQUIRED. BY DEFAULT, THE CONTROLLER MAINTAINS APPROXIMATELY 50 PSI, HOWEVER, AN INTERNAL ADJUSTING SCREW IS PROVIDED TO REGULATE OTHER PRESSURE LEVEL REQUIREMENTS.

ALSO FEATURES A BRASS PLUG THAT CAN BE REMOVED AND USED FOR THE ADDITION OF A 1/4" WATER PRESSURE GAUGE.

SEPARATE MODELS ARE AVAILABLE FOR 115V AND 230V PUMPS.