Combining the cooling and calming properties of water with architectural design, Abrio offers a restorative and peaceful gathering place that integrates into any location.

Designed to be inclusive, providing a refreshing space to all citizens—whether it’s to take a break during a busy day, interact with loved ones or seek relief from the heat.

A sustainable and soothing oasis. At dusk, CoolHub™ transforms any site into a refreshing gathering spot. Thanks to solar technology, Abrio emit a soft glow gently illuminating the area creating a magical space for all. As a solution to cool down the community during a heatwave or as a space to sit and relax with friends after dinner, CoolHub™ allows cities to extend their hours of operation and provide heat relief into the evening.

The Abrio system comes in a multiple of design configurations, combining seating (if applicable), shading, lighting and soothing aquatic elements to fit your space.

1. Vortex Abrio general clauses:

The refreshing products shall be suitable for installation in municipal and commercial facilities and public areas.

Products shall be specifically designed for the use by children and adults and follow the ASTM F2461-09 norm. The manufacturer should have the following standards and certifications: ISO 9001:2015, EN 1090-1, CWB / CSA W47.1, UL 508A, FCC, CE, ASTM F2376, GB 8408, ADA. In addition, products shall be manufactured by a company that has at least five (5) years of experience in the design and engineering of aquatic areas.

Any refreshing product belonging to a new product line or series should demonstrate meeting the effective norm or show the conformity and resistance of the prescribed materials if it is proposed equivalency. The contractor or manufacturer must demonstrate meeting specifications by providing technical documents and drawings to be included in their bid proposal.

1. Product Specifications:
	1. Product Structure:The Abrio structure shall be constructed of vertical posts 304/304L stainless-steel structural square tubing with an outside diameter of 4” (101.6mm) and a wall thickness of 0.120” (3mm).

Each vertical post will be equiped with welded angled reinforced brackets to received beams made of 304/304L stainless-steel structural square tubing with an outside diameter of 4” (101.6mm) and a wall thickness of 0.25” (6.3mm). Each post base plate shall be welded and constructed of sheet 304/304L stainless-steel thickness of 0.375” (9.5mm),

* 1. Canopy: Architectural canopies create a shaded haven during hot days. Between 2 to 4 canopies depending on the Abrio configuration. Solar-powered LEDs emit a soft glow at night to extend your site’s hours of operation. At dusk Abrio transforms into a refreshing gathering spot.

The Abrio canopies shall be constructed of sheet 304/304L stainless-steel thickness of 0.120” (3mm), bent in shape with 5 reinforcement ribs thickness of 0.375” (9.5mm) on each sides. Each canopy sides will have a 6.5’ (2m) waterproof (IP67) LED strip, 12V warm white color. The LED Strips will be holding in an aluminum profile extrusion with a frosted lens. Under each canopy a cover will be installed to hide all wires and feature components. Each canopy cover shall be made of sheet 304/304L stainless-steel thickness of 0.0625” (1.6mm), bent in a V shape and secure with hardware along each canopy lip.

Each pair of canopy will be equip with a flexible solar panel, 50W, wired all together to the controller board to recharge the integrated battery. Installer must take care of proper solar panel installation for optimal orientation and functionnality.

* South facing panels for North of Equator locations
* North h facing panels for South of Equator locations
* Avoid shadow areas for installation
	1. Soft Rain feature (if applicable): Unwind with the calming and cooling effects of soft rain.

The Soft rain feature shall be constructed of an PVC enclosure holding a Vortex tubular system of specific drip nozzles. The feature will be connected to the quick connect Abrio tubing system. Specific hydraulic requirements 0.1-0.2 gpm (0.4-0.8 lpm).

* 1. Mist feature (if applicable): Relaxing mist cools the Abrio space and refreshes passersby.

The mist feature shall be constructed of a PVC enclosure holding a Vortex tubular system of 3 brass mist nozzles. Each mist nozzle will create a visual interest as fine mist water sprays in a cone. The feature will be connected to the quick connect Abrio tubing system. Specific hydraulic requirements 0.15-0.3 gpm (0.5-1.1 lpm). Mist could need more maintenance in hard water areas.

* 1. River Maze feature (if applicable): Relax to the soothing sounds of water by directing the flow with river stones.

The River maze will be constructed of a water basin slightly angled forward and a leg of sheet 304/304L stainless-steel thickness of 0.1875” (4.7 mm), bent in shape. The river maze shall include 3 moving soft polymer molded stones, fastened with tamper proof assembly. The water nozzle soft polymer molded stones shall be pre-assemble and fit with a compensated water nozzle that will be connected to the quick connect Abrio tubing system. Specific hydraulic requirements 0.2-0.3 gpm (0.8-1.1 lpm).

User will be able to interact with the water flow and direct the water by turning and placing the river stones in different orientations.

* 1. Seating: A range of seating configurations offers relaxing options for all city dwellers. Optional Stainless Steel seating with back rest.

Abrio seating shall be constructed of 304/304L stainless-steel structural square tubing frame with an outside diameter of 3” (76.2mm) and a wall thickness of 0.12” (3 mm). Ribs supports brackets (4) shall be constructed of 304/304L stainless-steel structural square tubing frame with an outside diameter of 4” (101.6mm) and a wall thickness of 0.25” (6.3 mm). The bench leg and optional back rest shall be constructed of sheet 304/304L stainless-steel thickness of 0.1875” (4.7 mm), bent in shape. The flat seating boards shall be constructed of woodgrain polymer Lumber of thickness 1” (25.4mm)

* 1. Anchoring: All vertical posts, seatings and River mazes shall be fastened to the concrete with provided mechanical anchors and follow the provided instructions.
	2. **Mounting and Assembly Hardware:** All hardware and anchoring systems shall be 304/304L or 316 stainless steel. Exposed and accessible hardware shall be tamper resistant, requiring a special tool for removal to deter vandalism and theft.
	3. Earth grounding and bonding: Each Abrio separate components must be bonded with he provided hardware to join all painted components. They will albl connect to a single copper wire connected inside the water management system that must be wired to #8 AWG bare copper bonding solid wire, installed underground by installer.
	4. Product interactivity: The Activator shall be the direct interface between the users of the area and the products.
	5. Finish: Shall be a polyester matte-textures heat-cured powder coat that is UV and chemical resistant, suitable for public spaces.
	6. **Safety & Craftsmanship:** All accessible edges shall be machined to a rounded finish. All welds shall be buffed smooth to a non-visible finish. Accessible nozzles and spray heads shall be recessed to ensure a completely safe environment with no pinch points, head entrapments or protrusion hazards.
1. Overall hydraulic requirements

Only use on flow through systems, **potable water**. Minimum water inlet of ½”. The hydraulic requirements shall be under 2 GPM (7.6 LPM) for all Abrio models with a regulated pressure between @ 30-35 psi (2.1-2.4 bar).

Sprayzone is not identified on CAD or Abrio drawings due to low flow of the mist and soft rain. It is subject to wind intensity, direction and natural evaporation of the site.

1. Water Management System

Water conservation is key with on-demand activation and real-time flow control allow for efficient energy and water usage. Connect to Abrio via application to control water and light functions to reduce on-site maintenance.

* 1. General specifications: The manifold shall be be equipped with: a reducer coupling to ½”, a main valve ½” (The valve shall have a manual override capability (manual open/close control)), a Y-strainer ½” with mesh 400, a water meter, a pressure regulator, a brass solenoid valve ½” and a quick connect tube manifold with 6 water outlets and a drainage valve. All piping and fitting shall be constructed of SCH 40 PVC, 150 PSI pressure rated.
		1. The water distribution system shall be factory assembled and water pressure tested before delivery
		2. The electrical solenoid valves shall be wired to the MicroFlowTM controller on site. All connections into the junction box should be made to respect the enclosure Nema 4X integrity.
	2. MicroFlowTM Controller: controller will manage, power (DC Power) and control: the Activator, Valve, LEDs and Solar power. It will also be wired to the activator, valve, water meter, solar panels and LED lights to manage all operations of all the system. A modile app will give control over operation hours, monitor the water usage and give real time data.
	3. PlaystartTM activator: Conserve water with on-demand activation. Easy operation for users of all ages & abilities.Inclusive sound signal to alert activation.

The activator shall have no moving parts and run on a DC Voltage power. It is an electrical sensor that is used as an interface for processing user input activation. The activation cap shall of 304/304L stainless steel with powder coating and laser engraving. It shall be secured in place using tamper-resistant fasteners.

* 1. Water management casing: The casing shall be fix with the main vertical post constructed of a stainless steel frame with 2 sides panels of sheet 304/304L stainless-steel thickness of of 0.120” (3mm), bent in shape. The casing’s interior will hold support plates and brackets to fix the electrical enclosure and water management system parts.
1. Quality Assurance

Provide evidence of commitment of quality craftsmanship as demonstrated by the following:

Manufacturer Qualifications:

* + The products shall be designed and produced at a facility owned and directly supervised by the manufacturer.
	+ All products shall be shipped from a single source.
	+ All product designs are verified by a licensed engineer.
	+ All play product anchoring systems are designed to withstand a maximum of 125MPH (200KMH) wind load.
	+ A full-time licensed engineer must be on-staff.
	+ A full-time quality control manager must be on-staff.
	+ All products shall be designed, developed and water tested following a rigorous process.
1. Equivalencies clauses

To enable all tenders to be judged equitably, they shall be based on the specified products in this document and shown on the drawings.

1. The proposal for any substitute products must be attached to the bid or tender separately, identifying the substitute product by its trade name along with any savings it may represent for the client.
2. Following the opening of the bid or tender, only those substitutes proposed by the lowest bidder of the specified products, will be considered.
3. All substitute approval requests shall be accompanied by manufacturing drawings.

No substitution or equivalency submitted will be considered if the products proposed are not part of manufacturers standard existing product line. Written proof that the product has been manufactured previously by the substitute manufacturer and pictures of the manufactured product must be provided. Please refer to General Clauses 1.0.

1. Each proposed equivalent must be presented to the owner/consultant within seven days following the opening of tenders. Each proposed equivalent solution must have been installed and completely operational. After this time period, the bidder will be required to supply the original specified product.
2. The owner/consultant reserves the right to grant or deny approval for proposed substitutions without prejudice to his rights and his decision shall be final. The above conditions apply to this section independently of any other clauses on the subject found in this document.
3. If applicable the products must be interchangeable and of equivalent quality to the materials already installed.
4. Equipment warranties

**Minimum Warranty periods**

1. A 25-year warranty on stainless steel tubing.
2. A 5-year warranty on aluminum, brass, polymer panels, and spray nozzles.
3. A 2-year warranty on finishes, plumbing components, mechanism and hardware, polymer, and elastomer.
4. A 1-year warranty on electrical components
5. All warranties are to be managed by the equipment supplier.