The CHEO Healing Garden

By Dayna Conway and Jin Kim

Universal Planter

Accessible Hand Washing Station
In collaboration with the Healing Garden Committee of the Children’s Hospital of Eastern Ontario, we set out to design products that would be accessible and beneficial to those who are able to access the path. Through research, the two products that were pursued for the project are a universal planter, designed by Dayna Conway and a watering station, designed by Jin Kim. Our team wanted to focus on accessibility for all as not only children would be using the Healing Garden since it is on public grounds. For this reason, the following designs encourage young and old, able and less able to come together and live a healthier lifestyle by taking advantage of what nature has to offer and allowing it to benefit our lives.
The Universal Planter

Product Description

The planter is composed of a triangular shaped unit with a central planter and flat surfaces for crafting extruding out at each of the three points. It is a large unit held up by three steel legs that are connected on the bottom side of the part, between the table surfaces and the planter space. The planter is for users to grow plants, and the flat surfaces provide space for other activities such as colouring. The design intent is to encourage interaction and collaboration between all users while spending time outdoors.

Use Cycle

Children approach the planter with their parents or caregiver. The child and parent both have a “station” that they can sit at, or move one of the three seat that pivot around each planter leg to sit down and rest. From the seated position, the users can reach both the table surface and the central planting space. With open space under the rotomolded planter, wheelchair users can park their knees under the planter for comfortable gardening without straining or twisting their bodies. Highly adaptable and easy to use the product adapts easily so the user doesn’t have to.
Design Features

- Space for planting plants in 6" deep soil and watching them grow.
- Table space for activities with ridge to stop pencils from rolling off onto ground.
- Family friendly and encourages collaboration.
- Seating for children, parents and caregivers to rest while enjoying quality time with one another.
- Wheelchair accessible to a wide variety of wheelchairs and body sizes.

The Hand Washing Station

Product Description

The Hand Washing Station is designed around a cylindrical tube that extends from the ground up to the top of the unit. A basin hangs off of the tube for the water to collect the used water. The basin is at a height accessible to wheelchair users. For shorter users, there is a step that is connected to the base of the unit and can be rotated to boost the child up to the basin height. The base of the unit is a cylindrical reservoir that collects the gray water that could be later used to water the plants.

Use Cycle

Load the water container with water filled. Pull out the quick release nozzle and connect it to the container. Rotate the container so the container nozzle directing towards the ground. Lock the slide lock on the shell. Press the spray head button. Pull out the spray head if needed. Wash hands by rubbing hands on the rubbery sensor ball. After certain amount of gray water is collected, pump out the water by using a hand pump that is attached on the gray water container. Water the garden.
Design Features

• A retractable spray head for ease of use.
• A quick release water tank attachment for fast and easy connection.
• One hand scrubbing ball helps single handed users to clean their hand. Also provides tactile stimulation to kids. The ball can be removed to be cleaned and sterilized at certain intervals if necessary.
• Grey water pumped out and used to water plants.
• A detachable step that can be relocated for use by small children.

Design Development & Testing

The Universal Planter

• Testing on full scale prototype with various wheelchairs to determine optimal planter height while analyzing knee and leg clearance and arm reach.
• Full scale prototype testing with to scale cutouts of children ages 2 to 14.

• Small scale models made to explore concept versatility and encouraged collaboration between various types of users.
• Clay models exploring shape of top and bottom of planter part. The goal was to find a balance between soil depth on the top and a large amount of clearance on the bottom for users with longer legs.
Universal Hand Washing Station

• Testing the effectiveness of using the hose at different heights.

• Determining the type of hand washing aid the participants preferred to use.

• Testing one handed washing for those who cannot use both hands. The silicone porcupine ball was the product that could effectively clean the participants hand.

• Determining the optimal height that a person can lift without stress or strain. This was tested with a diverse variety of participants.

• Sketches exploring various concepts and manufacturing that allowed users to have enough clearance under the water basin, and at a height level that could be reached by small children.