inSIGHTs

INSTRUMENTING CONDUCIVE ENVIRONMENTS FOR THE VISUALLY IMPAIRED

a project by

Neeta Verma
Associate Professor of Visual Communication Design
Department of Art, Art History, & Design
University of Notre Dame

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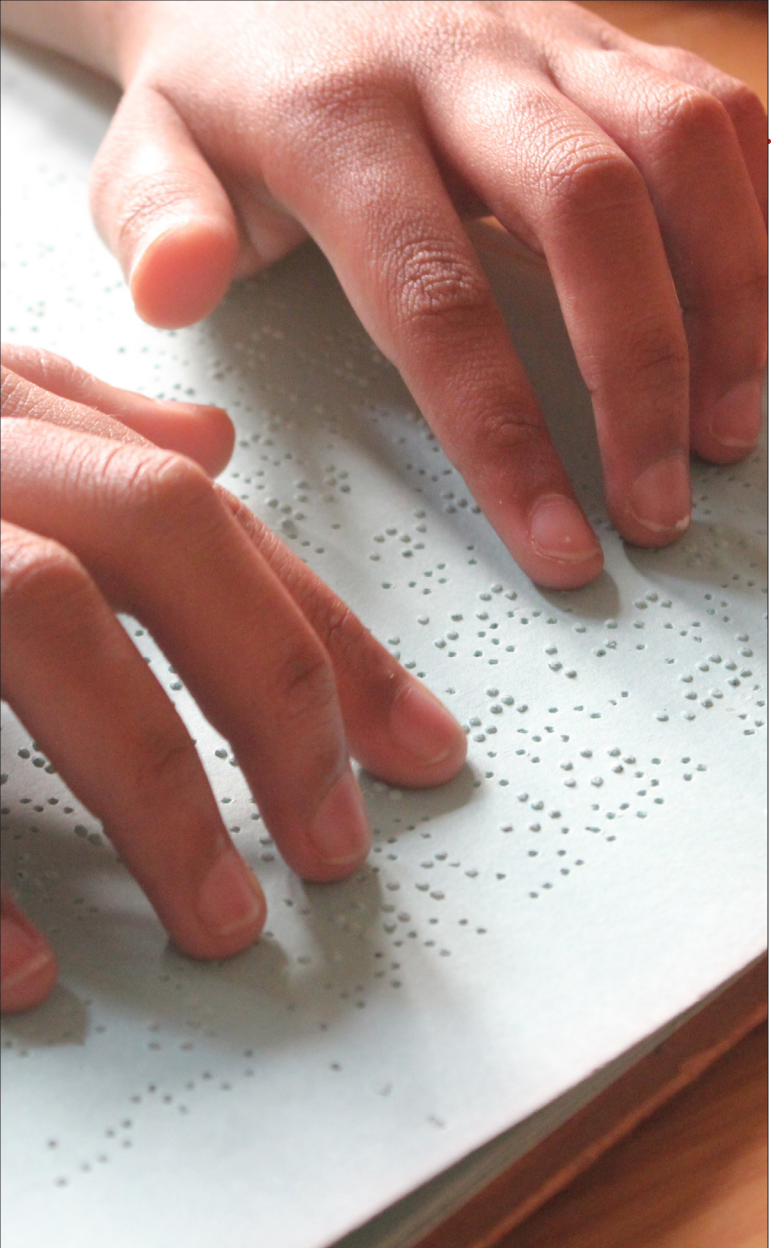
UNIVERSITY OF NOTRE DAME

SUMMARY

The aim of the project was to address the problem of accessibility and navigation within the school in an effort to make the immediate environment more conducive for those that the institution was primarily built to serve – the visually impaired girls (students and residents) of the institution. The project was a collaborative effort where, as a designer, I partnered closely with the community at the school in creating a signage system that would help the residents find their way around the facility and allow them to reach their destination safely. **The uniqueness of this approach lay in bringing together teachers, art and music instructors, the visually impaired students, and a highly supportive administration to become a part of this collaboration that culminated in a way-finding system that worked at many levels; primarily for the visually impaired but also for those that engaged with the school; the sighted teachers, staff, administration and the visitors. This collaboration and community involvement created a sense of ownership, pride and shared joy of creation.**

Through my initial research and engagement, this design challenge allowed me go deeper into the organization, in exploring and analyzing ways of shaping the environment that could assist, enable, and facilitate its primary residents. The deepest challenge came from working with limited fiscal resources and understanding ways of delivering solutions that were not only innovative but also indigenous and sustainable, and those that would work function within the constraints of the environment they were created for. Using indigenous materials, techniques and local manufacturing methods, a way-finding system was created that would help students navigate their surrounding and find their way around the institution with greater ease, agility, and confidence.

Once installed, the highly tactile (for the blind) and brightly colored (for the partially impaired) way-finding system created an empowered, enabled, and accessible environment that was kinder and more conducive for the residents of this institution.



I stood quietly in the corner, observing the girls of the Poona Blind School navigate the spaces within the school. There were those who had been at the school for a long time and knew the spaces well enough to find their way around easily–but my attention was caught and held by those who were new to the environment. These hesitant and unsure constituents of the school needed help and assistance the most and this was that moment that the surroundings needed to be most informative for these new inhabitants. All research for this project was done through many hours of observation aimed at understanding how the visually impaired students navigated spaces within the buildings and the recreation areas outside. My interest lay in discovering ways in which these students coped. In the absence of one of the foremost senses– the senses of sight, how did students relate to the environment and how did they draw information from their surroundings?

Some of the results were predictable and others came as interesting discoveries and insights. The visually impaired had a heightened sense of touch and an equally keen sense of hearing. What became clear was that not only would they touch an object to get information but also spend fairly long periods of time massaging the object to derive information, from the texture, surface details, and the feel of the material. **Materiality played a deep role in the way information was extracted from the environment**. The other was the role that sound played in their day to day survival. When confused, the visually impaired girls would tilt their heads as if to hear better and use sounds–like laughter from a room or a recognized voice to guide them.

My most interesting observation was that instead of relying on inanimate objects like the blind cane, students preferred to use other humans–amplifying the sense of touch and human contact to find their way around. Case in point–once the class was done, I would observe the students stream out. What was intriguing was that once they came out they would form a line, almost like a train. I would watch students move ahead or be asked to go to the back of this line...for the longest time I did not understand the motivation behind this order until I realized that the person who was sent to the front was the one who had the best sight, whereas those that had limited vision fell back. With hands paced on the shoulder of the student in front, the entire serpentine line [created by this unspoken system] would slowly wind its way to the desired destination.

These were the observations and recordings that became an inspiration and a basis for the design strategy for the final way-finding solution.

A visually impaired student working on a motif for her classroom
The designer with teachers at the school helping with the fabrication and making of the signs

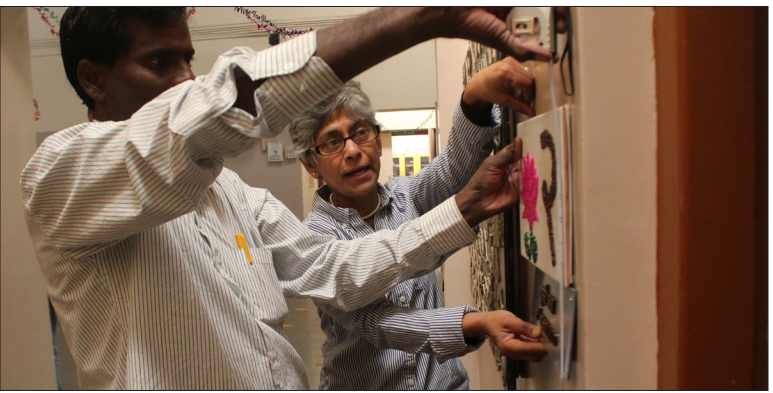
The project was a collaborative effort where, as a designer, I partnered closely with the community at the school. The uniqueness of this approach lay in bringing together teachers, art and music instructors, the visually impaired students, and a highly supportive administration, as co-creators and collaborators to become a part of this project that culminated in a way-finding system that worked at many levels; primarily for the visually impaired but also for those that engaged with the school; the sighted teachers, staff, administration and the visitors. This collaboration and community involvement created a sense of ownership, pride, and shared joy of creation.

A series of workshops with the students allowed us to adopt motifs from their work that became an integral part of the signage. The system that eventually evolved had a motif for each of their rooms. **The students followed us at every step and saw their designs transform into three-dimensional plates.** The art teachers at the school helped create the tiles that formed the base of the signage system.

The designer working with a local vendor to understand fabrication
The laser cutting facility used for the final signs

As part of the design process, I explored materials that would be used for this project. Unlike conventional signage that assists audiences visually, this was a system that needed to withstand the test of constant touch and handling by the students. Care had to be taken to choose materials that would then have heavier material qualities. It was extremely important that **the solution that was provided used techniques, fabrication methods, manufacturing, and materials that could be found locally and that could withstand the test of constant handling and extension after I had left.**

Locally manufactured beads in different shapes, sizes, and colors were used to create the bright patterns. Beads that were chosen came in different shapes, thus textures created by these beads became very varied. These beads were affixed to the tile using permanent adhesives that would be withstand the constant touching and the added stresses to the installed signage. Locally manufactured tile was used for the top of the sign. Metallic laser cut signs came to complement the tile on top.



The designer working with the carpenter and determining height for the signs
The carpenter carefully measuring the placement before drilling the holes in the wall

Once the signs were fabricated, it was time to install. Once again, a local carpenter was hired to hang the signs. Distances were carefully considered. The height for the signs was established using the shortest student as a reference. **The idea was to make sure that unlike the earlier signs that were too high, these signs were hung at a height that made them accessible to all.** One of the challenges that came up was the fact that the walls in India were all made of cement. Drilling holes and hanging the signage system created cracks. The worker that was eventually hired made sure that the drilling and installation did not leave the wall with marks around the signs and did not affect the hung pieces that were around the signage.

Tracing and positioning the number on the tile to understand where the adhesives and beads will be
The final sets if signs introduced to students to get feedback about size, texture, pattern, layout and feel of the signs

The final solution developed used tiles with relief patterns created with glass beads combined with laser cut metal signs on the bottom. The tile on the top had the motif for the class that helped identify the room by the motif. A large number was added in relief next to the motif, working as the second layer of reading by the visually impaired. Brightly colored beads in various shapes, sizes and texture were used to create the patterns and this number in relief. On the bottom was the metal sign with text in both Hindi and English also in relief. The design solution and signage emerged from the idea of serving the visually impaired, the partially impaired as well as the sighted–three constituents that comprised the users of this signage around the school. The solution provided created various points of entry and recognition of the sign. The motif, the large number in relief and the roman letters in Hindi and English all served to reinforce the same information to different audiences within the same format. **The biggest discovery and surprise I encountered came when I was about to add braille to the bottom of the signs, the students stopped and resisted the idea strongly and when questioned, they told me that the use of braille made them feel less than the others.** They felt that the roman letters in relief below the tiles were equally recognizable and did not want the braille to be added to the signs. The installed signs were highly tactile (for the blind) and the brightly colored (for the partially impaired). And the way-finding system created an empowered, enabled, and accessible environment. It was kinder, gentler, and more conducive for the visually impaired students and residents of this institution.

After the installation, during the evaluation phase of the project, I would often find students lingering outside their classroom for long periods of time running their fingers over the relief patterns and numbers, gliding their fingers over the gentle bumps of the glass beads as if each touch was a little discovery unto its own!

Besides merely creating a signage system that would help and promote accessibility, **the idea was to also create a solution that had a sense of pride and joy inbuilt within the process.** It was a way finding system that brought joy and ownership to all constituents within the school.

Amongst the students, I would often see one student lead other students to show them how their design had been translated into the permanent sign. For the heavily impaired, these signs became a place for small groups to gather around and the entire break would be spent with each of them taking turns in touching the signs. Due to the quality of relief created by the use of beads, textures were varied and the fingers would encounter chance lifts and dips as they traced the surface of the patterns–keeping the girls engaged for long periods of time.

For the teachers, it became a system that was easily scalable. Contacts, materials, and fabricators were all documented so that if the system needed to be expanded, the resources were close at hand and accessible.

For the administration, having a system that worked for all audiences–the visually impaired, the partially blind and the sighted, changed the way people navigated the inside of the building. A far more significant change that the system brought was the way the signage system added a bright visual appeal to the interior spaces that worked simultaneously to brighten the space and make it look and feel warm, pleasing, and welcoming for ALL its constituents.

The complete documentation of the project can be viewed on the following link: https://drive.google.com/file/d/0B-cgLnixY219ZWlfT2FGYTBSTWs/view?usp=sharing