

How Canon Elevated Printing Technology Works



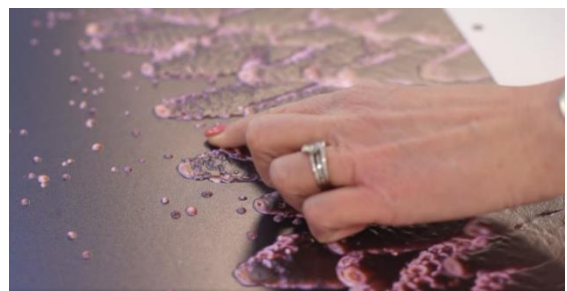
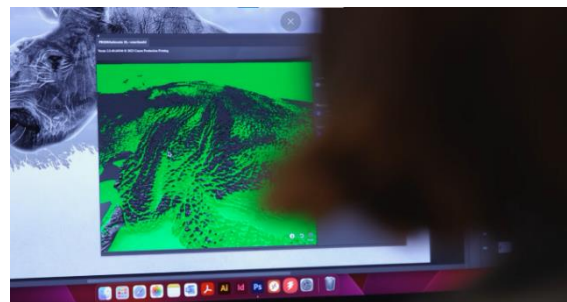
The tactile prints made for World Unseen were created with proprietary Canon technology - PRISMAelevate XL software and the Arizona flatbed printer series.

Developing a height map

For World Unseen, a height map was developed for each image chosen for the exhibition. Canon customer CBB (Netherlands) used the PRISMAelevate XL software to create the images.

The software can create highly accurate 3D designs for tactile and elevated print applications of up to 2mm.

The software helps identify which elements of the image should have a tactile nature (e.g. the skin of a rhinoceros) and which should have elevation to create the desired definition, pixel by pixel. The height can be manipulated as well to achieve the best results.



Printing process

For World Unseen, we used the Canon Arizona printer series with Nottingham based customer ProSign.

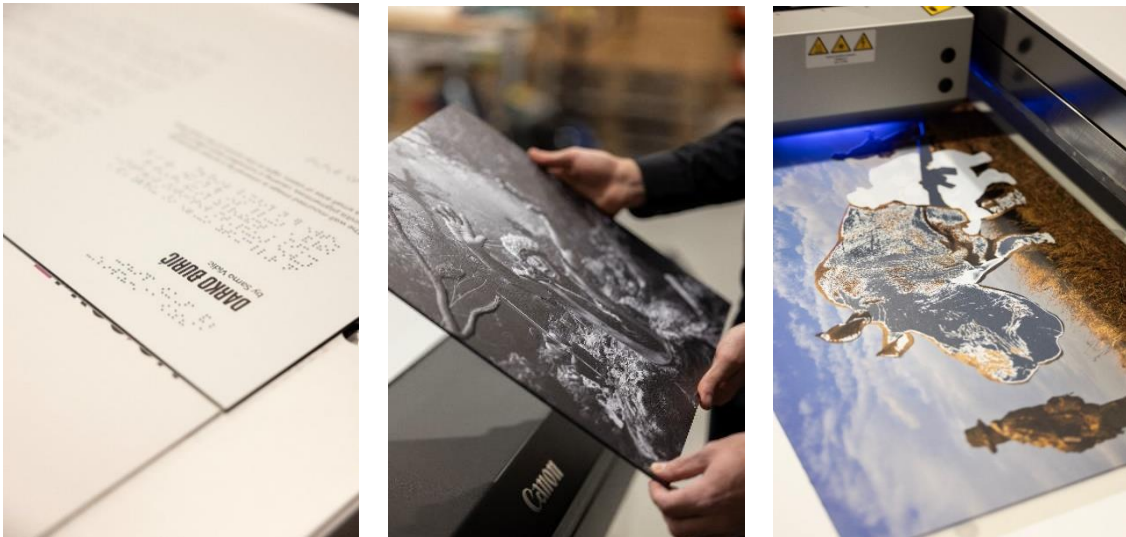
Arizona printers use UV curable inks. To generate the desired effect, multiple layers of very thin ink are printed on top of each other to get the elevation. After every layer, the ink is cured with UV light which hardens the surface. This process is continued until the desired elevation and textures are achieved.

One layer is approximately 50 μm thick (for reference, a human hair is 60 μm = micrometre / one millionth of a metre)

A white cover layer and a full color layer are then printed on top to create a full color print.

Elevated printing can be used for many applications, such as textured wallpaper, embossing, 3D maps, fine art reproductions, and packaging.

The technology is also very suitable to create materials specifically for visual impaired people, such as braille, textured signage and incorporating braille onto packaging.



Examples outside of World Unseen

Since the pilot of our elevated printing technology in 2013, Canon has been leading the way in this innovative and creative field.

One area that lends itself particularly well to elevated print is replicas of fine art, where Canon's technology can mimic individual brush strokes and cracks in the paint to make near-perfect copies of the original prints.

Working with world-famous galleries and museums across the world, we have already helped thousands of blind and visually impaired people experience world-famous paintings by creating incredible tactile replicas of old masters, such as Rembrandt's Portrait of an Elderly Man, The Goldfinch by Carel Fabritius and Vermeer's Girl with a Pearl Earring.

A 4x3 metre version of Girl With A Pearl Earring is on display in the foyer of the Mauritshuis museum in the Netherlands, along with 1x1 metre close ups of the intricate detail, allowing visitors to touch the art and see the artist's level of detail up close. It's proved so popular with visitors that's the exhibition has been extended for a further 7 months in 2024.



In Vienna in March 2024, we displayed elevated prints of an all-abilities choir performing Beethoven's 9th symphony in sign language, showing the movements of the music through light photography and printed elevation for an immersive experience.

