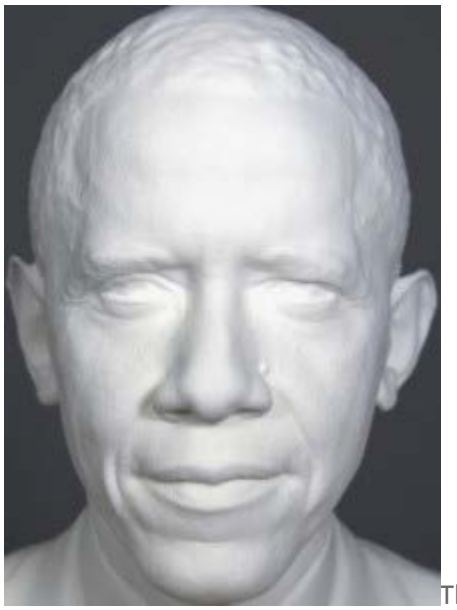
HTTP://3DPRINT.COM/99001/MCOR-3D-PRINTED-OBAMA-COLOR

3D PRINTERS / 3D PRINTING

3D Printing the President for Posterity: Mcor Shows the Smithsonian How it's Really Done

BY BRIDGET BUTLER MILLSAPS · OCTOBER 5, 2015

As President Obama himself has lauded 3D printing as a positive technology that will indeed be a catalyst for change in manufacturing, certainly portraying him in that medium for posterity–amongst so many others–is a perfect fit. But all 3D printed models are not created equally–something we see on a daily basis–and a point that Mcor Technologies not only opined upon but took action to make clear. After all, this is the leader of the free world we are depicting. With all the hoopla surrounding the 3D printing project that the Smithsonian undertook in making a 3D printed bust of President Obama, the Mcor team took note, as well as making immediate notes on how they would improve the model.



The original project was inspired by the historical tradition of commemorating presidents as authentically as possible. The Smithsonian team pointed out how they used the Lincoln Life Mask as the idea for what they wanted, but quickly decided to take on the challenging of 3D scanning and 3D printing the likeness of Obama. With the idea being to connect the people to their president, the Smithsonian team had the president sit for a quick 3D scan and then they proceeded to put his facial and torso details into 3D print through the Smithsonian 3D Digitization program.

As the world watched, duly impressed with this first 3D printed model of the president, the Mcor team watched too, knowing they could do much, much better.

"It was lauded as the 21st Century means to produce a bust for the official National Portrait Gallery collection faster and easier than the traditional plaster casting techniques used to capture the likenesses of previous US presidents," stated the Mcor team in a recent blog. "While the comparison between plaster casting and the 3D printing technology used is true, the team didn't realize that they were using the wrong type of 3D printing technology for producing human likenesses, sort of like using a flat head screw driver to screw in a Phillps head screw."

With that being said, Mcor went to work at showing off exactly what they meant with an extremely realistic, full color 3D print of President Obama that as they were quick to point out shows far more detail, shading, and effect than the stark white print. Not only does the 3D print from Mcor look far more impressive, it's more affordable to produce, and even more eco-friendly.

While the company, founded in 2004 by brothers Conor and Fintan MacCormack, is originally based out of Ireland, they put some time and effort into showing the US how to depict one of the most powerful men–and recognized faces–in the world, in 3D. And all with paper.

We've followed this company as their Mcor 3D printing equipment and technology has been used to make everything from a 3D printed bust of a Cambodian king to 3D printed volcanoes to creating new processes and finishes as well as new resources with color–all as they use standard copy paper to produce amazing 3D models. Used by professionals like architects and engineers, designers, schools, and entrepreneurs and small businesses, their printers lay down layer after layer of paper until a model is complete, resulting also in a piece that is completely recyclable and eco-friendly.

While certainly everyone has an enormous amount of respect for what the Smithsonian does in terms of researching, collecting, and curating, they can definitely take a few tips on 3D printing from Mcor–as we all

can. Undeniably, their 3D printed version of President Obama shows off exactly why 3D printing is worth being talked about by world leaders in speeches–and exactly how it may be responsible for a third revolution indeed.

What do you think of this President Obama Bust? Let us know in the Mcor Obama forum thread on 3DPB.com.

http://3dprint.com/79231/bust-of-cambodian-king/

3D DESIGN / 3D PRINTED ART / 3D PRINTERS / 3D PRINTING

Paper-Based 3D Printing Used to Reconstruct Bust of 11th Century Cambodian King

BY TE HALTERMAN · JULY 9, 2015

The original, damaged, bust of the king

There are, for varying reasons, always those willing to attempt to wipe history from memory by destroying artifacts and documents to serve their purposes. Some artifacts are lost to natural disasters and the ravages of time.

To combat the loss of such artifacts, Eric Lemaresquier uses 3D scanning and printing technology expertise to restore such objects and make certain they're not entirely lost to future generations.

Lemaresquier, of leFabShop and leFabClub in Paris, France, is the Workshop Manager. His leFabClub offers training and support for entrepreneurs, assists job seekers, and provides technical training and private working space to develop business ideas and help makers grow their projects.

Using photogrammetric scanning, 3D modeling software and 3D printing, Lemaresquier took on the task of accurately repairing and replicating a damaged, ancient bust of Suryavarman, King of Cambodia.

During the 11th century, Suryavarman I was the ultimate leader of the Khmer Empire, and his claim over the Khmer throne derived from his mother's position as a member of the royal family. His reign stretched for some 40 years and his days were consumed defending his kingdom. He was called the "King of the Just Laws." Suryavarman I died in 1050 and posthumously achieved the title "the king who has gone to nirvana."

Intent on preserving the bust of the king, Lemaresquier and his team used a rotating table to capture more than 200 photos to digitally save the sculpture using Autodesk Memento software.

That data was then exported to Pixologic Zbrush, and Lemaresquier and his team used the software to fill in holes and re-sculpt all of the missing details of the ancient bust. The photographic capture tool within the software mimicked the existing textures, and a hyper-realistic digital model of the original bust was built.

To build the restored physical model in 3D, Lemaresquier used an Mcor IRIS SDL paper-based 3D printer to create an authentic feel in photorealistic color.

"If I had to choose between a plastic replica of Milo's Venus, and a paper one, the choice would be obvious – paper," Lemaresquier says of the choice. "Because of the IRIS' high-resolution color capability, it's a no brainer. The cost of materials is lower than any other printers out there and the authentic feel and durability for artistic pieces that you get with the Mcor IRIS, you simply can't get with plastics-based printers."

The bust of Suryavarman repaired and 3D printed

The large piece was divided into three parts which were painstakingly assembled after 3D printing, and the finished 3D printed model was coated with a white glue varnish.

The results pleased Lemaresquier, and he believes the project will create new opportunities for the Mcor IRIS process to be employed in historic and artistic restorations, preservation for museums, governments and other organizations.

Mcor technology also came into play recently in preserving a piece of more recent history, as a 3D scanned and printed replica of a brick from the Rana Plaza was created in memory of the 2013 building collapse disaster.

Do you know of any other projects where 3D printing is being used to preserve and repair objects of antiquity? Let us know in the 3D Printed Bust of Cambodian King forum thread on 3DPB.com.

Digital model of the original

http://3dprint.com/78953/mcor-3d-print-rana-plaza-brick/

Mcor 3D Prints Incredibly Realistic Rana Plaza Brick Replica From Tragic Building Collapse

BY DEBRA THIMMESCH · JULY 7, 2015

Besides the countless ways that 3D printing technology has changed and will continue to alter the landscape of manufacturing, it also has the capacity to improve and even save lives. In the process, the technology is proving a boon rather than a detriment to the environment.

That's definitely the case where Mcor Technologies is concerned. This highly innovative, Ireland-based 3D printing powerhouse is at the forefront in manufacturing affordable, full-color, safe, and eco-friendly 3D printers. Founded by brothers Dr. Conor MacCormack and Fintan MacCormack, the company, which is headquartered in Dunleer, County Louth, Ireland, about 70 kilometers north of Dublin, produces the only 3D printers to use, says their website, "ordinary-A4/letter paper as the build material."

Mcor produces its Matrix and IRIS 3D printers, both of which are capable of printing using paper as the build material. Furthermore, it is paper that you can purchase at an ordinary office supply store, so we assume you can opt for the recycled paper.

Now Mcor has an opportunity to demonstrate how its technology truly can change–and save–lives. On April 24, 2013 unspeakable tragedy struck when an eight-story commercial building, Rana Plaza, in the Savar Upazila of Dhaka, Bangladesh collapsed, killing 1,129 people and injuring twice as many. Searches through the rubble continued until May 13 when the final death toll was calculated.

The collapse of Rana Plaza was the result of a known structural failure in the building. The building housed apartments, a bank, several shops, and garment factories. Immediately after major cracks, which compromised the structure, were discovered, the shops and banks on the lower floors closed. However, the low-paid garment workers were ordered to return to their jobs the following day and the building collapsed during the morning rush hour.

Mcor Technologies was asked by Irish Design 2015, a national design and crafts job initiative to encourage enterprise and innovation, to replicate one of the original bricks from the Rana Plaza building. The brick was provided to Mcor by Arup, a global firm of consulting engineers, and they were charged with creating a replica using their unique, paper-based 3D printing technology. The Mcor Technologies brick is designated to be included in a capsule traveling to Irish embassies across the globe to showcase the work of Irish companies involved in craft and design.

The brick from the collapsed Rana Plaza was first 3D scanned using a handheld 3D scanner, which captured the every contour, every minute detail of the object. Next a file with printable polygons was created and directed to an Mcor IRIS 3D printer. Layer by layer, the replica brick was printed, using a process known as SDL (selective deposition lamination).

In the photograph at left, the original brick and the replica are shown. The fidelity of the replica (top) to the original (bottom) is truly remarkable.

This project emphasizes, aside from its humanitarian focus, the strength and durability of the Mcor 3D printed paper material and also the full-color capability of the technology. Indeed, while the Rana Plaza brick is crumbling, a terrible reminder of the senseless deaths that occurred due to the lack of structural

integrity of the building, the Mcor Technologies brick is proven an excellent material for construction, among its many uses.

What do you think of this project? Is it similar to any other restoration endeavors you've heard of? Discuss in the 3D Printed Rana Plaza Brick forum thread over at 3DPB.com.