Keller Gallery

**Objects by Architects**

Massachusetts Institute of Technology

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PARTICIPANT QUESTIONS: *RAEL SAN FRATELLO*

1. What is this? What is your object?

The object is 3D printed out of a wood material we developed. Part of the material is wood fiber, with some synthetic reinforcement fibers. The entire object was then sealed with a water-based sealant to give it a bit more strength. The shape of the object, a bowl, was inspired by the drawings of the 19th century biologist and artist Ernst Haeckel.

1. What is the backstory for this object? Why did you make it in the first place?

We have been experimenting with new materials for 3D printing for some time. First with ceramics, then cements and some experimental materials like salt and bone. The wood came about because we found an inexpensive source for wood powder, or wood flour as it is called, and it seemed like an exciting material to experiment with because of the texture of the material, the economy, it’s translucency, the grain (defined by the additive manufacturing process). In part, the bowl was designed to test the structural integrity of the 3D printable wood.

1. How is the object fabricated? What is your involvement in that process? Did this change?

The object was fabricated using a 3D printer. Rather than using the proprietary materials one would normally use, we developed the wood material at The University of California Berkeley where Ronald Rael is an Assistant Professor, and in our office Rael San Fratello, with Virginia San Fratello, where we explore design applications for the research.

1. Is this object considered continuous with your practice or an anomaly?

We consider the object consistent with our practice in terms of our explorations of reuse, materials and resistance (in this case, resistance to accept the closed nature of 3D printing processes). Formally, 3D printing has opened up new avenues to our work that we are just beginning to put into practice.

1. Do you make any other objects?

Increasingly, our research in 3D printing is pushing us into many avenues of object making. Because we are a young practice, we consider many of our built projects as “full scale models” and in that sense, they are objects as well, just bigger ones. Almost always we have a hand in the physical production of our work.

1. How do you test the object? Were there prototypes and earlier iterations?

There are iterations of the form of the object in other materials. Rather than testing the object, the object was actually made to test our materials for strength, detail, and other factors we evaluate in the development of materials.

1. How do you market your object? How do you price your object?

We have begun promoting our work on a website, [www.emergingobjects.com](http://www.emergingobjects.com). As with all works of art, the price of our work is based on value, not time and materials.

1. How are your materials chosen?

In this case, we are always searching for interesting powder-based materials that we can reconstitute via additive manufacturing. We have searched for many kinds of wood flours, this one being pecan shell, but we are now working with engineered maple and pine.

1. Who are you designing and making for?

Right now this work is in the research and development stages. We hope to develop the material so that we are designing for clients and selling products made of the material. Because the material can be quite strong, we are also seeking to design large-scale objects for the built environment.

1. Are you an architect?

We were educated as architects and our practice is a licensed practice in New York and Colorado.

1. Did you build before you starting making objects?

Ronald Rael, the co-principal of Rael San Fratello, was on construction sites since a toddler and worked as a builder for 10 years before attending architecture school and continues to have a direct hand in the making of objects in the office.

1. Did making the object change your other creative practices?

Yes, because of the process, we are now experimenting with new assembly methods for the materials we are developing based on this object. We now consider object making a large arm of our creative practice, and have named that part Emerging Objects.

1. How does your education inform your practice?

Both of our degrees are in Environmental Design (undergraduate from the Universities of North Carolina (Virginia) and Colorado (Ronald)). This liberal arts degree, with a focus on the broad spectrum of design (from products to buildings) as well as the environmental consequences of design (or lack thereof) are enormously influential to our practice. Our graduate education at Columbia University at the moment when digital design was being born into architectural culture is formative in our processes, use of technology and thinking about contemporary design practice.

1. How do you describe your design style/philosophy? How has it evolved?

Much of the work of Rael San Fratello attempts to expose the latent potential found in some of societies most pressing issues, particularly those not necessarily defined by geographical location. Working through digital processes and additive manufacturing is opening new avenues for us to think about societal issues relative to design.

1. Why not a chair?

We design chairs too.