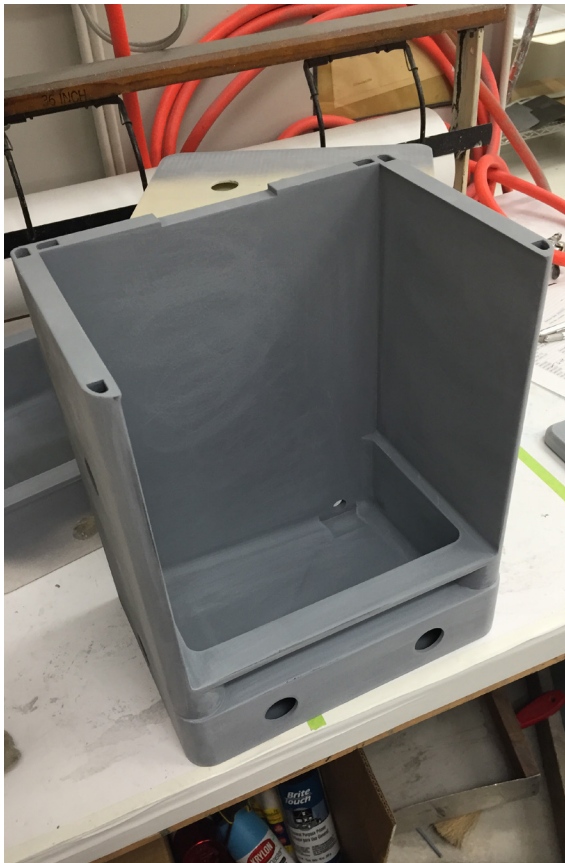




# GE FirstBuild: Opal Nugget Ice Maker



## About GE FirstBuild

A subsidiary of GE Appliances, FirstBuild is an online and physical community dedicated to designing, engineering, building, and selling the next generation of major home appliances. FirstBuild's microfactory in Louisville, KY, is open to the public.

# MakerBot + Stratasys Success Stories

## Challenges

For companies like GE Appliances, bringing new products to market has long been a slow and expensive process. Years of effort and tens of millions of dollars will be poured into research, development, tooling, and marketing before an appliance is available. Yet the needs of customers can be hard to understand and can shift quickly, now more than ever. So FirstBuild is embracing lean startup principles and experimenting with ways to get products to market faster, from rapid prototyping to low-volume manufacturing.



MakerBot and Stratasys 3D printers played a crucial role in the development phase of Opal”

## Solution

At its Louisville microfactory, FirstBuild has a wide array of tools for all phases of product development. FirstBuild engineers and designers keep a MakerBot® Replicator® 2X Experimental 3D Printer or a MakerBot® Replicator® Desktop 3D Printer on their desk. The microfactory also has a Stratasys uPrint, an Objet500 Connex3, and a Fortus 400mc, and the team has access to the nearby GE Appliances Rapid Prototyping Center, including several Fortus 900mc 3D printers.

## Benefits

A desktop 3D printer allows FirstBuild engineers and designers to explore multiple concepts quickly in the early phases of developing a new appliance. Having a MakerBot Replicator right next to your computer “allows us to quickly make changes to our parts, so in a matter of a couple of hours I get to see multiple iterations of this part,” says FirstBuild engineer Tomas Garces. With a 3D printer on your desk, engineers can explore bolder ideas without worrying about cost of materials; MakerBot PLA Filament costs a few cents a

gram. So they can fail quickly on the way to a workable solution. And when a concept is ready for feedback, nearby colleagues can look at and hold models and share their thoughts.

FirstBuild uses their full range of 3D printers to design the Opal Nugget Ice Maker, an affordable countertop appliance that makes a porous, chewable kind of ice usually available at restaurants. Garces and his team went through 15 iterations on a chute that guides the nuggets of ice into the ice bucket. After brainstorming concepts on the MakerBot Replicator 2X with MakerBot ABS and Dissolvable Filaments, they shifted to the uPrint and Fortus 400mc for sharper accuracy and surface finish. They also printed six versions of the body of the Opal as a single piece on the Fortus 400mc, using ABS and then nylon. “MakerBot and Stratasys 3D printers played a crucial role in the development phase of Opal,” says Garces.

Then FirstBuild launched a crowdfunding campaign which attracted more than 6,000 nugget ice lovers. Crowdfunding gives FirstBuild “the opportunity to validate that a cutting edge group of early adopters wants Opal before we make hundreds of thousands of them.” The campaign raised more than \$2.6 million and is on track to deliver the first Opal Nugget Ice Makers in July 2016, a mere 14 months after a FirstBuild community member first proposed the idea.

### About MakerBot

MakerBot, a subsidiary of Stratasys Ltd. (Nasdaq: SSYS), is a global leader in the desktop 3D printing industry. Founded in 2009 to make 3D printing accessible and affordable, MakerBot now has one of the largest install bases and market shares of the desktop 3D printing industry, with more than 80,000 MakerBot 3D printers in the world and a robust MakerBot 3D Ecosystem that combines hardware, software, apps like MakerBot PrintShop and MakerBot Mobile, materials, training, support, and Thingiverse, the world’s largest 3D printing community.



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