



The Starbucks Ark Hills location was remodeled in May 2016 to serve as a place for people to come together. The u-shape experience bar provides a central location to select and serve beverages.
[Provided by: Starbucks Coffee Japan]

Company Name
Starbucks Coffee Japan

Location
Shinagawa-ku, Tokyo

Software
Autodesk® Revit®
Autodesk® Stingray
Autodesk® Revit® Live

Starbucks Coffee Japan: The Secret to Attractive Coffeehouse Design

- Building Information Modeling and
VR leads to new design

Starbucks, a coffee shop established in Seattle, is a well-known global brand with more than 20,000 branches worldwide. There are over 1,240 branches in Japan, providing places for people to visit between home, work, or school.



Starbucks Coffee Japan

Established in 1995, the company operates coffeehouses and handles coffee and other product sales with the help of its 3,440 employees. Starbucks Coffee Japan opened its first coffeehouse in Ginza, Tokyo. Currently, there are more than 1,200 coffeehouses in Japan. With a mission to inspire and nurture the human spirit – one person, one cup and one neighborhood at a time, the company values each and every small connection made through a cup of coffee in each community-rooted coffeehouse.

Although we see chain stores every day, one of the defining characteristics of Starbucks' stores is that most of its coffeehouses are created by in-house designers. They take the region's history, culture, and lifestyle into consideration when developing their designs, rather than just using a standardized approach for all of their coffeehouses.

The first spacious coffeehouse in Matsuya Street, Ginza, appeared in the news as "the first international Starbucks coffeehouse." At the time, the coffeehouse was designed to comply with Japanese laws and spatial characteristics based on the stylized design provided by Starbucks headquarters. As Starbucks developed more coffeehouses internationally, instructions from headquarters became more conceptual, and they began to design with creativity and a cultural perspective in mind.

The coffeehouse design department of Starbucks Coffee Japan, known as the Japan Design Studio, is one of the leading 18 Starbucks design studios in the world. Among its 30 staff members, almost 80% are interior designers or architects. They design more than 100 coffeehouses for new store openings and remodel 150 existing coffee houses each year.

Interior designers are required to maintain the consistency of Starbucks' design as a global brand, but they also need to understand the Japanese culture and be able to provide coffeehouse designs that appeal to customers in different regions.



After several remodels, the Starbucks in Matsuya Street, Ginza is still loved by many people. [Provided by: Starbucks Coffee Japan]



Starbucks in Matsuya Street, Ginza, at the time of opening in August 1996. [Provided by: Starbucks Coffee Japan]

Designs by an in-house team

In 2009, the coffeehouse design department replaced their conventional 2D CAD software with Autodesk Revit, a BIM tool that the company used in its Seattle headquarters. Mayu Takashima, the Starbucks Coffee Japan manager looks back on their move to BIM. "There was no training preparation and the person responsible for maintenance was absent, but we went ahead and tried things out on our own. As a result, each designer started out with a different way of drawing."

"Whatever way you use it, Revit can make it work," laughs Takashima. "As an extreme example, the information of each designer was tied to each family (parts for 3D modeling). But, we were unable to pull it out as information as we had to manually input this information into another data set in order to digitally use it. We were in a chaotic situation as we were unable to effectively use the BIM attribute information."

In order to streamline the workflow, they conducted a fundamental review of the work

process. "We met with each designer and thoroughly narrowed down as far as possible the functions that we would need in order to create coffeehouse designs. By collecting everyone's information, we first made sure that everybody was able to work at the same level", says Eri Takao from the design planning team. "This fundamental review was successful, and work is now done smoothly using Revit for all coffeehouse designs."

In addition, they were able to create a training program as part of ongoing maintenance. This is still being used effectively today as a program for external partners or CAD operators who have no experience using Revit and need to efficiently learn how to use the tool.

"Now everyone knows 'how to draw this drawing' without any hesitation, which is a huge time-saver. We are able to spend more time thinking about and creating designs," says Takahashi.

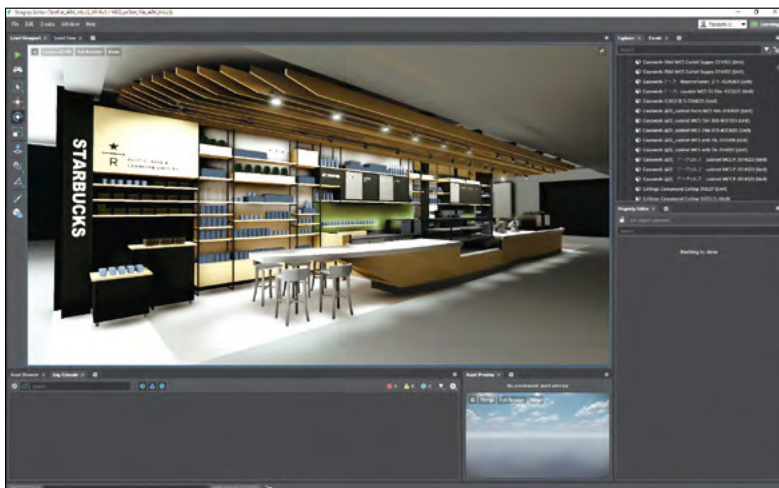
The coffeehouse design department remodels numerous existing coffeehouses every year

based on original 2D drawings in CAD software. To begin the remodeling process, the team must create a 3D Revit model from the 2D drawing, and then add new designs. With this data, sales managers and district managers on the operational side can easily explain the changes to stakeholders.

"Designers are constantly thinking in 3D, but others are not. Showing parts that are hard to grasp in a 2D drawing in a 3D Revit model makes communication extremely easy," says Takashima.

"Even as a designer, seeing things like beams in a Revit model and understanding that they are going to stick out in the building is real. In that sense, this is a tool that is helpful for designers as well," adds Takao.

When presenting to building owners, there is no need to outsource the presentation, as it can all be rendered in Revit. This has significantly improved the speed of work as the team is able to better explain the design to the owners and immediately get their feedback.



Actual image of Ark Hills store (right) and an Autodesk Stingray rendering created at the time of design. [Provided by: Starbucks Coffee Japan]

Moving to VR

Beginning in the summer of 2016, the team started creating VR experiences from BIM data by using the Autodesk Revit Live service, a cloud solution based on the 3D game engine, Autodesk Stingray. Revit Live can convert Revit files to VR experiences in just one click, without any complicated conversion work. The visualizations can be used for presentations and information sharing.

Before adding Revit Live to their workflow, various departments in the company were asked to experience the Ark Hills store that had just been remodeled through VR with the HTC VIVE head-mounted display.

"The barista who works at the Ark Hills Store happened to come into the Starbucks Japan head office the day before the VR experience, so we had him secretly test it out first," says Takao.

"We were using the actual BIM data that was used for construction so we obviously knew what to expect, but when that barista said, 'I work with the siphon here everyday. The width, the height is exactly the same, and this is the angle when the customer sits,' we were

confident about the other departments testing it out the next day."

Nothing was unnatural about the VR experience, even for staff members who worked at the coffeehouse. Sixty staff members from various departments experienced the model in VR and were all amazed.

"It was fun to watch the different reactions from everyone. The facilities team observed detailed parts to see how things were designed from underneath," explains Takao. "If you can virtually reproduce the action of holding a cup and serving it to a customer, it can also be used for operational designs as well."

"We typically create a mock-up to check fixtures used in stores, but I think we might be able to omit this process. We also have numerous meetings with the staff to decide the placement of actual equipment, but we may be able to use VR for that as well," says Takashima.

"I feel that experiencing the 3D model quickly may be useful in the future."

By using Revit Live, the Revit model can be edited for real-time display in a short time. Viewpoints and lighting can also be adjusted by using the Live Editor tool. Anyone involved in the project can view and experience the visualization interactively by using the free Live Viewer app.

"We used to have to imagine the outcome and persuade departments that needed to understand the design, such as the construction department and operations in charge" says Takashima. "I am hoping that we will be able to build consensus by sharing realistic images using VR in the future."

The VR experience in Revit Live provides sufficient quality for in-house verification processes, but Stingray helps the team to create even more detailed visuals and makes an even more realistic VR experience possible.



By using a head-mounted display, the 3D space can be experienced in VR and allows users to move around freely to check the design. [Provided by: Starbucks Coffee Japan]



Stingray helps the team to create a more detailed and beautiful visual. [Provided by: Starbucks Coffee Japan]



Ark Hills store counter designed with Autodesk Revit. [Provided by : Starbucks Coffee Japan]

Building a better world

Starbucks conducts various social contribution activities, from earthquake reconstruction support to working with regional communities. In 2016, the coffeehouse design department participated in a subsidy project in Asahikawa, Hokkaido to train teleworkers to use Revit as a part of the employment promotion that municipalities conduct as depopulation measures. The aim of the project is to teach people who have the motivation to work but cannot leave home due to personal reasons, such as family care or a disability, a valuable skill so they can become part of the workforce.

“As its corporate philosophy, Starbucks always wants to contribute to creating a better society,” says Takashima. “I thought this effort matched this philosophy, so we tried collaborating with teleworkers for the first time.”

Revit users are in high demand in the market and Takashima thinks that mastering this skill will help them to achieve economic independence.

“Everyone is experiencing Revit for the first time, but they are all extremely active and say that it is fun to operate.

For example, you will need to draw furniture in Revit, but watching the assembly process is fun, and they will simply understand what it means to design by working together. Unlike 2D CAD, you can actually feel the process of shaping the design and experience the excitement of creating with designers,” says Takashima.

Starbucks continues to explore new ways of working and new production processes. As technology advances, the company will continue to make further strides in the community and in design.

The Starbucks Sanjyo Torimaru Building store in Kyoto was remodeled in September 2016. The inspiration for the design was the idea of “Kirei sabi,” a concept of beauty created by Masakazu Kobori, the tea master. [Provided by: Starbucks Coffee Japan]



(From the left) Coffeehouse Design Department design planning team Eri Takao, Coffeehouse Design Department manager Mayu Takashima, Autodesk technical consultant Atsunori Yokota. There is a desk for the Autodesk consultant in the coffeehouse design department to flexibly and promptly correspond to technical demands such as constructing BIM data or using the latest technology. [Photographer: Naoya Inoue]

Autodesk Inc. www.autodesk.co.jp

〒104-6024 Tokyo-To Chuuou-Ku Harumi 1-8-10 Harumi Island Triton Square Office Tower X24F
 〒532-0003 Osaka-Fu Osaka-shi Yodogawa-Ku Miyahara 3-5-36 Shin Osaka Trust Tower 3F

Autodesk and Revit are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document. © 2017 Autodesk, Inc. All rights reserved.