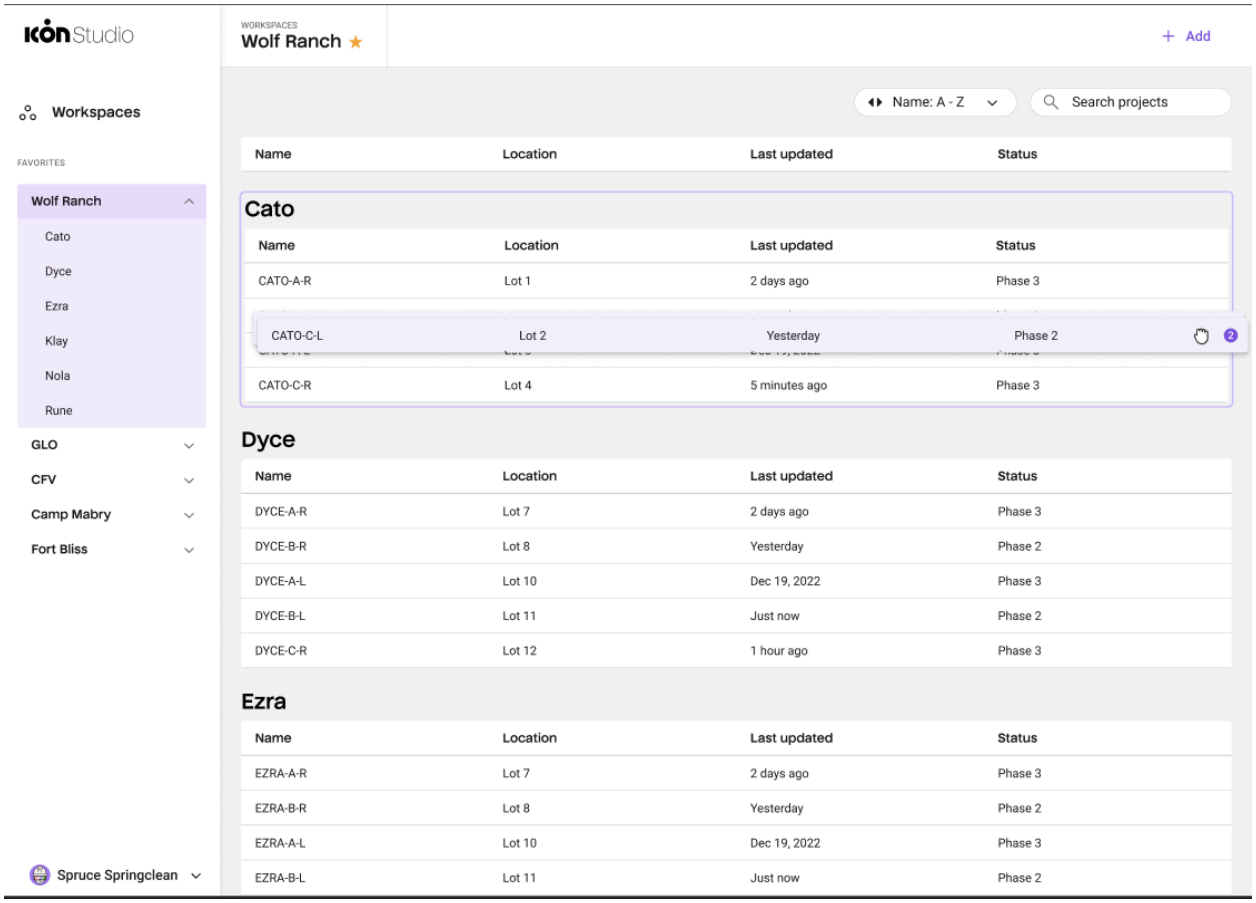
Rafael Josh Portfolio

Here is a sample of my contributions to ICON's BuildOS Construction Suite. This is a set of applications that my team designed and built for internal employees to streamline their processes and let them focus on more important roles. It comprises of two apps, Studio and Blueprint, which formed the construction wing of BuildOS.

Studio is a CAD-like design application in which one can draw, place, and arrange printable projects. These connect to the in-field application Titan (non-BuildOS) for print operators to use. Studio is made for architects and print engineers to make changing a design faster and easier in a way that's clear to the user exactly what is being changed. I regularly had direct contact with those end-users to understand bugs or features that would accommodate their needs and built them with UX approval. However, this was most often after the designs were built and tested. While it was being designed and built, user studies were owned by our UX team. We succeeded in creating a product which architects and engineers regularly used and relied on for their daily operations. We were able to measure user engagement through service tickets, conversations with users, and field testing.

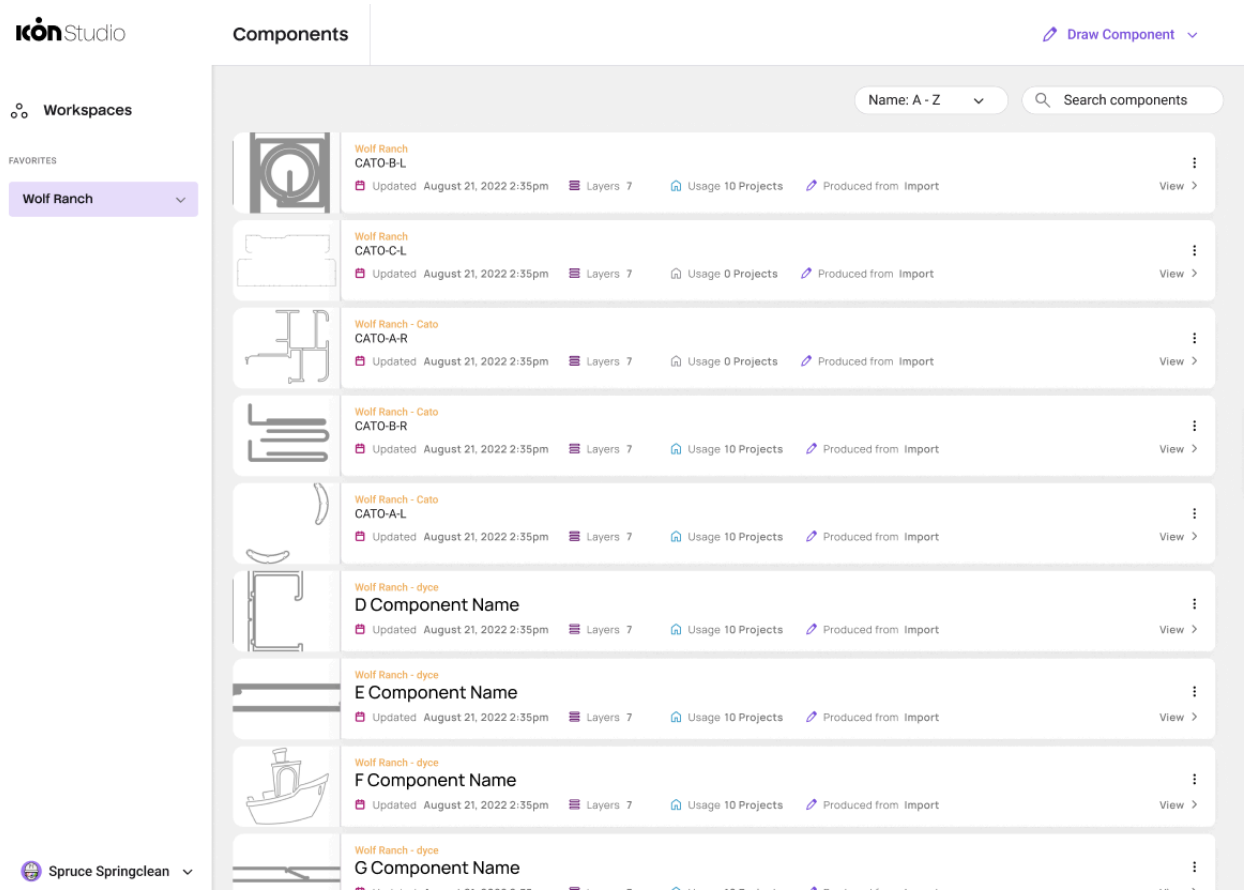
Blueprint is a pre-construction and project management application for viewing all pieces needed on a print, and data on materials and cost. There was also a big scheduling feature for arranging contractors on a print for finish out like doors, windows, cabinets, appliances. etc. We did not get to finish that before our wing was laid off. My role and our process on this was exactly the same as in Studio. End users were our finance team, project management team, and pre-construction team who were in charge of ordering all parts necessary on a print. This was a success as well as tested by all of those roles listed.

Our apps were heavily influenced by their current processes and mimicking the software they already used in a more opinionated way that worked with a concrete 3D printer. Ourselves, our users, and our managers were all happy with the apps we produced and they will continue to benefit ICON for years to come. Below are more detailed screenshots of our designs, their purposes, and my contributions to them. I unfortunately did not save any of the media I produced of these working products, but the designs are exact to the finished application.

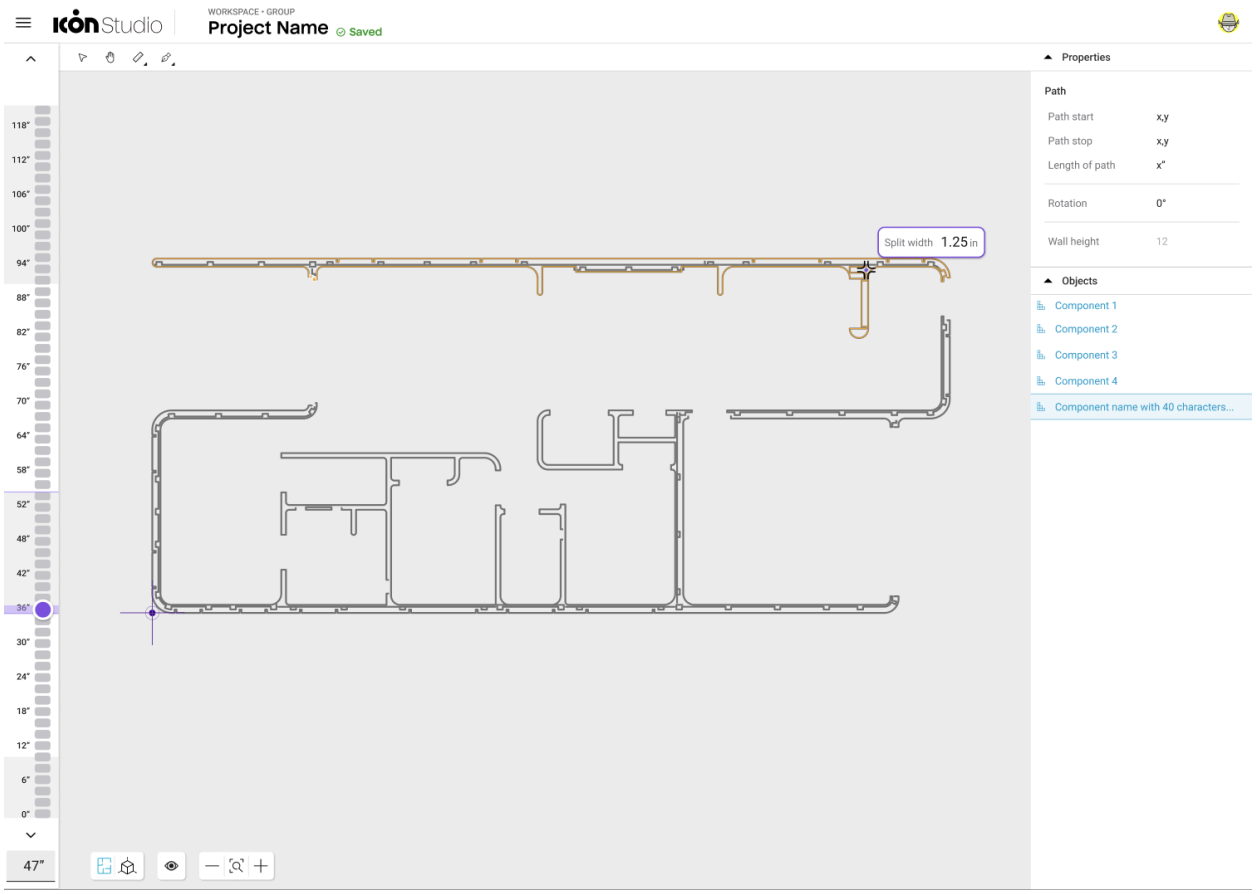


This is the entry point and menu to Studio. I was responsible for and built every feature and style on this page. The most complex features here are:

- Drag and drop projects from one group to another.
- Drag and drop projects and groups into other workspaces on the left.
- Adding new workspaces, groups, and projects. Top right.
- Searching and sorting projects.
- Account options and info in the bottom left.

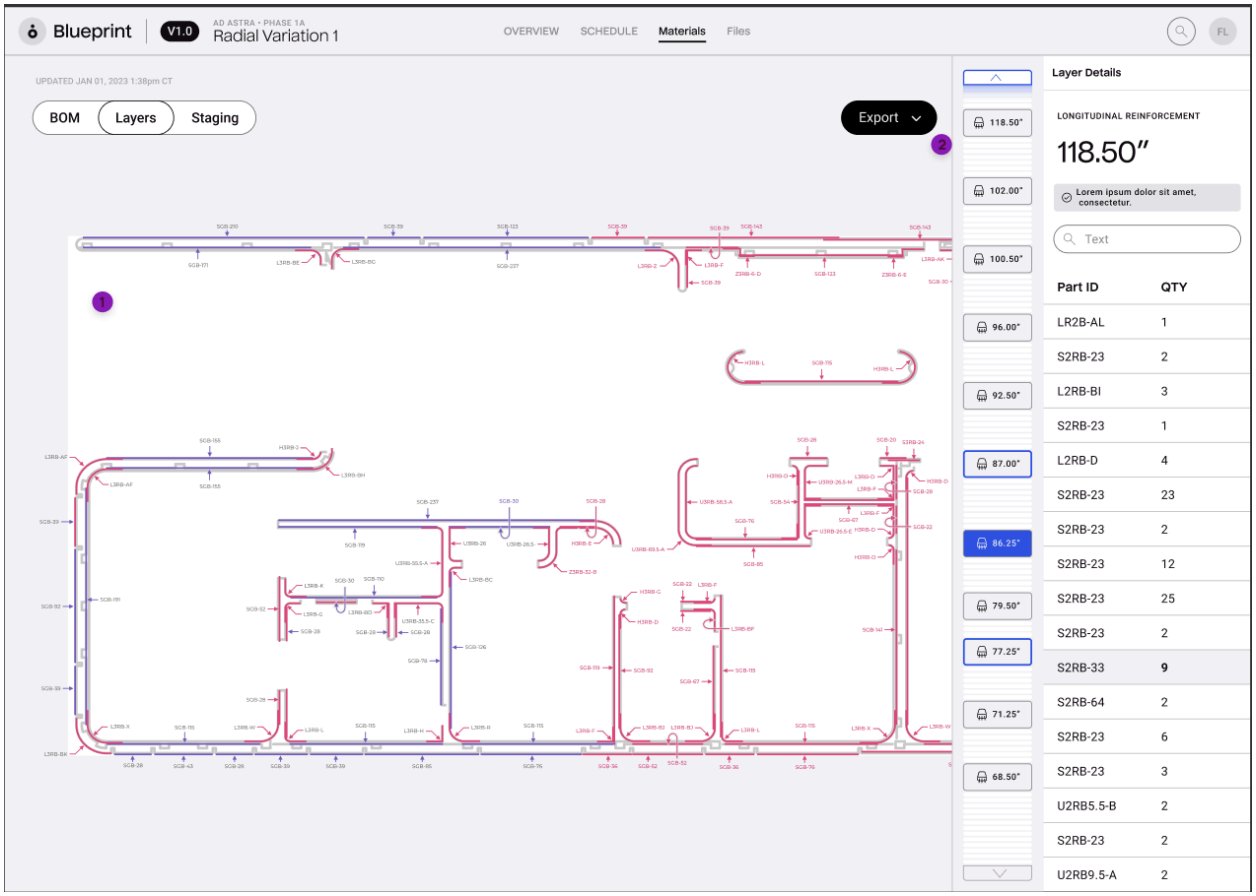


This is a subpage of the last one and shows all components, which go into projects. I wrote this list view and components. This has an enlarge view feature on each print SVG.



This is the main project view for Studio. I wrote the code or worked on most features and styles on this page. My most complex features here are:

- The layer navigation on the left side as it was responsible for layer and level changes, needed custom scrolling and scroll-to, and a dynamic text input with multiple ways to write the same values. All of which needed to be synced together.
- Dimensioning tool (ruler) that can take linear, angular, and arc length measurements between any two points or lines. Definitely the most mathematically complex one that I worked with another engineer to finalize and push. I don't have screenshots of that in action.
- Drag and drop on the right side list of components on the page to decide print order.
- Bottom view toggles that can change to the 3D view of the print, set overlays on the paths, or zoom on the canvas.



This switches gears to our other app, Blueprint. I had fewer contributions to this UI, though the parts I did do were important. Here I built:

- The header navigation features and styles.
- The level scroll on the right side. This switched to unique levels showing Rebar placements (current level view), electrical installations, and plumbing installations
- The pointer component there in the canvas, which had to be draggable, selectable, and rotatable. Also had different ways to point, such as the u-turn pointer and angle pointer.