HOW WE WORK.

DATA-DRIVEN DESIGN

Our approach to Building Information Modeling (BIM) and Virtual Design and Construction (VDC) is design optimization. This pushes us for improvements in all areas involving tools, processes, workflows, layouts, and deliverables. Our goal is to give our designers simple, intuitive, and capable automation tools for encoding client goals and design constraints to assist design and analysis. We believe that we are well positioned to push building systems engineering with the next generation of designing.

- **Automate Existing BIM Deliverables** — Continued improvement for automation and quality for our existing engineering deliverables.
- **New BIM Deliverables** — Research and development for the next generation of deliverables for engineering and data.
- **Modular Design** — Design for Manufacturing & Assembly (DfMA) starts with design. We are modularizing our design components and workflows with the end result in mind.
- **5D BIM Platforms** — BIM-based cost estimating for accuracy and efficiency.
- **Digital Twin Starter Kit** — Monitor and visualize. Research digital twin platforms, integrations, and workflows to bring buildings to life in the digital world.
- **2D BIM** — Working in 3D BIM when others are working in 2D is what we affectionately call 2D BIM because efficiency and quality are better with an extra dimension.
- **Generative Design Platforms** — Advanced computing starts with the basics. Encoding the rules of design into algorithms to provide useful results. Develop a generative design mindset and skillset for designers to match the evolving toolset.

EXPLORING NEW OPPORTUNITIES

Our designs start with the future in mind. With systems rapidly evolving, our engineers and designers stay on top of the forecasted trends. This allows us to design our systems to be easily modified or expanded based on long-term needs. We're your partner for the life of the building and so our goal is to be able to establish solid groundwork for any future changes and renovations. On the next page are a few of the opportunities we are exploring.

- **Digital Twin Integration (predict & control)** — BIM commissioning and data deliverables leads us to leverage operational usage data to support manual decision making while connecting disparate databases.
- **VDC with Design Intent BIM —** Eliminate wasted efforts and optimize projects as a whole by integrating with the construction workflow while still communicating design intent. Preparing for a dynamic shift from documentation-based deliverables to design completion.
- **Advanced Simulations** — Generative design and cloud platforms enable a whole host of possibilities for calculations that were previously out of reach.
- **Automated Digital Twin (simulate & automate)** — Design for best case scenarios and simulate impractical worst case scenarios to determine system boundaries before it fails. This automation of decision making through integrated controls with real time data leads to increased efficiency.
- **Dissolve Non-BIM Workflows** — Challenge the status quo by moving siloed calculations and resources into integrated engineering workflows.

ADAM ROTH

BIM/VDC Director

A problem solver through and through, Adam uses his strengths to balance the present and the future of data and automation. Through his role as director of BIM/VDC, Adam leads his team to solve some of the biggest problems in the field, excited by the day-today opportunities and challenges. Passionate about innovation, new ideas, processes, and improvements, he is always looking ahead at the possibilities and believes "if you limit your goals, you limit your potential." Level-headed, fair, and exceptionally analytical, Adam is able to examine all factors, figure out what is wrong, and develop solutions that impact our firm and industry. It's these opportunities to make a difference that drive him. And with more than a decade of experience creating new standards and procedures, Adam is helping keep Henderson on the cutting edge of technology.