CLARKITECTURE
BUILDINGS THAT MEAN BUSINESS.

WHAT ARE BIM AND VDC?

Building information modeling (BIM) and *virtual design and construction* (VDC) are two examples of technology systems that we have embraced to provide a better design and construction experience for you (the client). Although there is no replacement for top-notch talent, expertise and high quality customer service, these systems are game changers in our industry.

> Note: industry jargon that you are likely to hear often is included in italics. Throw around these terms to impress your friends!

Building information modeling (BIM). Once upon a time, construction projects were documented by hand-drafted drawings and written notes. With the advent of personal computers, architects transitioned to *computer aided design/drafting* (CAD) and word processing software. CAD is still prevalent in our industry today. But at the end of the day, those architects who cling to CAD systems are doing little more than trading in drafting tables and T-squares for a mouse and keyboard. The drawings they produce are still little more than a combination of lines and patterns that we interpret through separate drawings as various parts of the building. While we live in a world of **smart**, CAD is **not smart**.

Along came BIM. It takes many forms, but by definition, **BIM is a digital model-based system that is linked to a database of project information**. Rather than describing a bunch of parallel lines as a wall, a wall is modeled as a component that contains brick, insulation, studs and drywall. Instead of creating dozens (if not hundreds) of independent drawings, we create one *building model* and capture various views of it. In lieu of estimating the floor area of a room, we generate a *schedule* that contains the precise floor area, surface area of the walls, volume of the room, and so on. BIM **is smart**.

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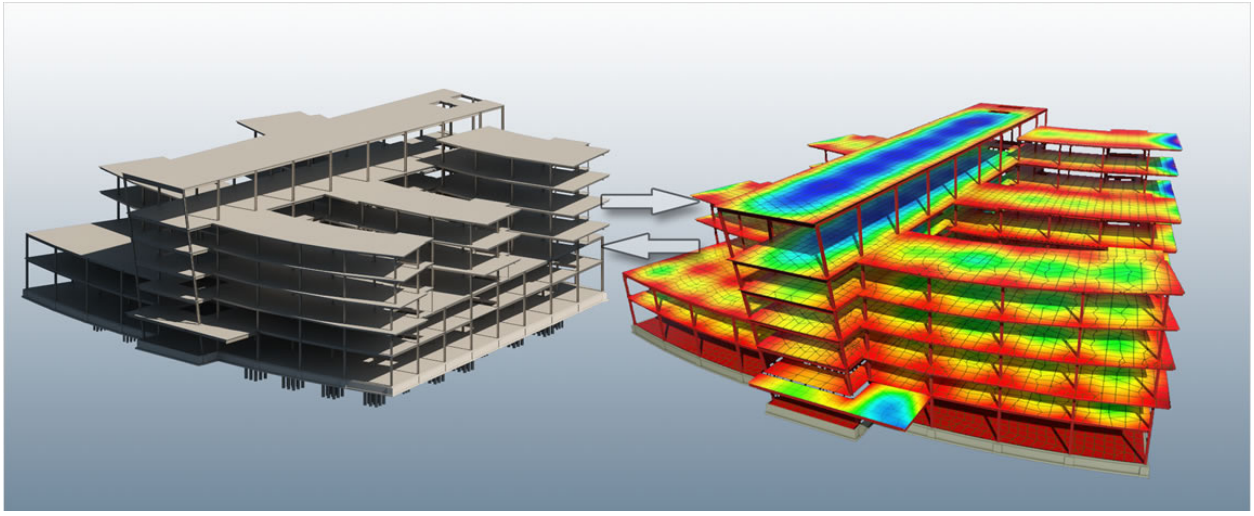
That all sounds great for us (the architect), but **how does BIM help you?** To utilize BIM is to design smart and build better. When executed properly, the technology can:

- Decrease the number of costly errors encountered during construction.
- Reduce construction waste with precise material take-offs.
- Save time (and money) on design, fabrication and construction.
- Generate more accurate cost estimates, design comparisons and other simulations.
- Realistically render the building in three dimensions so you can better understand various parts and systems of the design before it's built.



Clarkitecture designs exclusively in a BIM platform, at no added cost to you. It's important to know that there are some misconceptions about BIM:

- It does not increase the cost or lengthen the schedule of a construction project. On the contrary, BIM was developed to reduce cost, eliminate errors and facilitate a seamless construction process.
- Despite what many architects claim, BIM is not synonymous with 3D digital modeling. This misconception leads those architects to falsely advertise that they employ a BIM process, whereas they are simply drawing the building in 3D. *SketchUp* (a Trimble product) is a popular modeling app, but it does not contain the information component of BIM. *Revit* (an Autodesk product) is the leading BIM app, but it is often misused as a glorified modeling program, thereby leaving its intended construction benefits untouched.

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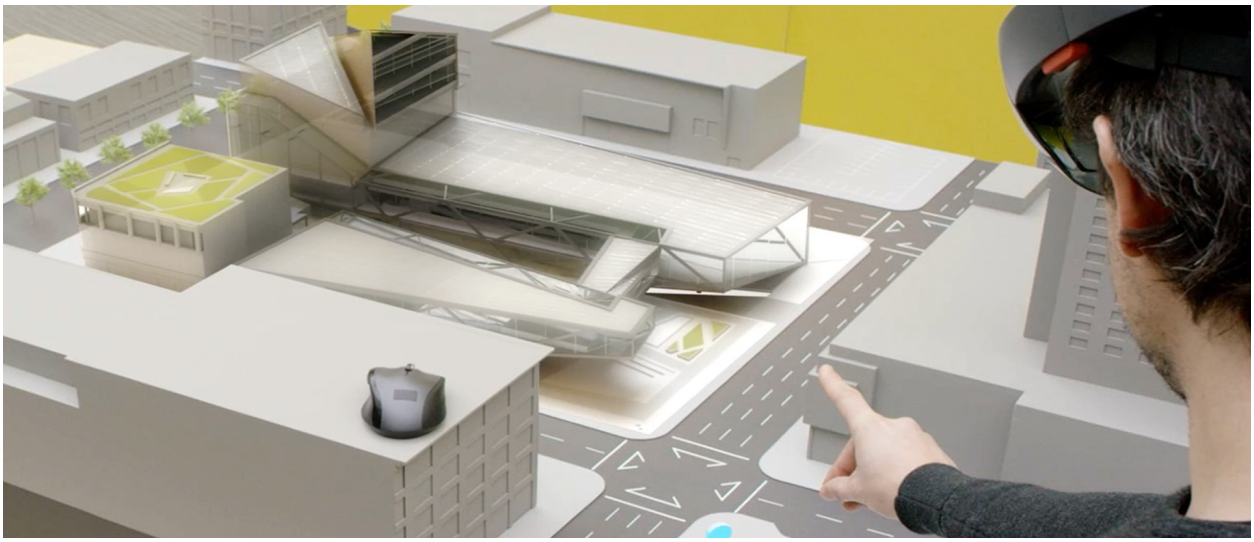

Virtual design and construction (VDC). If BIM made design and construction smart, VDC makes it smarter (think of it as BIM 2.0). This rapidly developing technology is the next step in the evolution of design and construction. Still new enough to be considered cutting edge, VDC is not (yet) widely used in the industry. **Clarkitecture is actively accelerating the emergence of VDC by investing resources in its practical application**.

Like BIM, VDC also takes many forms. The most common of these are *virtual reality* (VR) and *augmented reality*. A digital BIM model can be exported to a compatible rendering engine; which, when combined with a VR headset, you can walk through and even manipulate the virtual building. Walls, doors, windows and furniture can be moved in real-time, thereby connecting you deeper with the building design. Augmented reality enables construction tradespeople to "project" the intended design on to a partially constructed building to see where future parts and systems will be installed.

Its **benefits to you** are similar to BIM. To a greater degree, VDC can:

- Further decrease the number of costly errors during construction.
- Provide a virtual model of the building design that you can walk through and manipulate before it's built.

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