



Subject buildings.

# INTENT DEFINES PROCESS

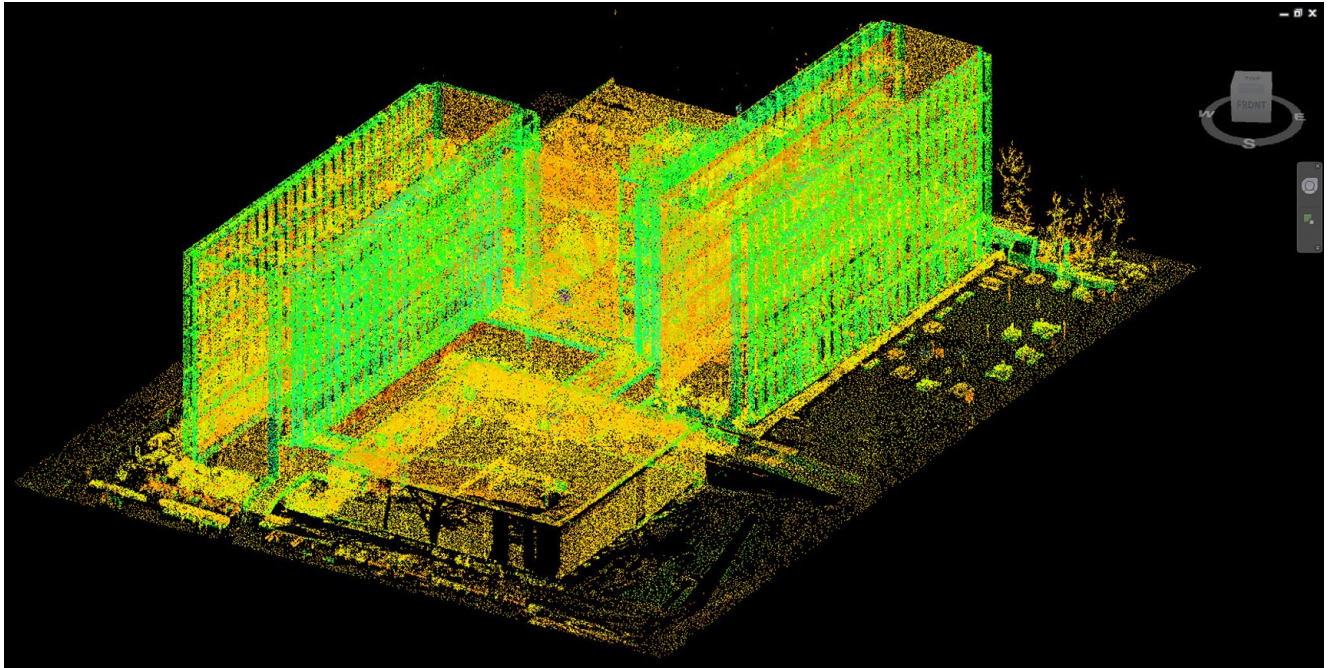
**Y**ou may have heard it said that, “There is no truth. There is only perception.” It is certainly silly to suggest that truth does not exist. However, we should never lose sight of the importance that perception plays in our everyday lives. In fact, how people view things is of the utmost importance as we seek to capture and represent the world in which we live.

I recall a project opportunity that perfectly illustrates how important perception is. The project was presented to me by an architect who needed a series of buildings on a college campus modeled from laser scan data. The project encompassed four buildings - two multi-story towers and two single story buildings connected by a covered walkway system. The facades of all four buildings, as well as

the roof of the single story buildings, had already been laser scanned.

The architect was looking for an existing conditions building shell model to be developed from the laser scan data using Autodesk’s Revit platform. When we looked more closely at the scan data it became apparent that we were not going to be able to create a model with the specified level of development (LOD). This was due primarily to the coverage of the scans. There were numerous shadows and areas with no

BY JOHN M. RUSSO, AIA



Scan imagery of subject buildings.

scan coverage, the point density was insufficient to see the required detail and we had some concerns about the alignment of the scans. We informed the architect of this and asked him where he got the scans. He said he obtained them from the building owner and that the building owner had the building scanned.

Needless to say, the architect was not happy to learn we were unable to work with the data. We were also a bit surprised as to who would provide data that was clearly unsuitable for the task at hand. We informed the architect that additional scanning would need to be performed in order to capture the necessary data. However, at this point, we were suspect of the original scanning provider's qualifications and thought it would be a good idea to find out who performed the scans and try to determine what their original scope

of work (SOW) was. After all, maybe the owner wouldn't have to pay to have it rescanned if the scanning was done improperly. With a little more research we discovered that the scanning service provider was a very well qualified and highly experienced professional colleague of ours, so I contacted him to see what I could learn.

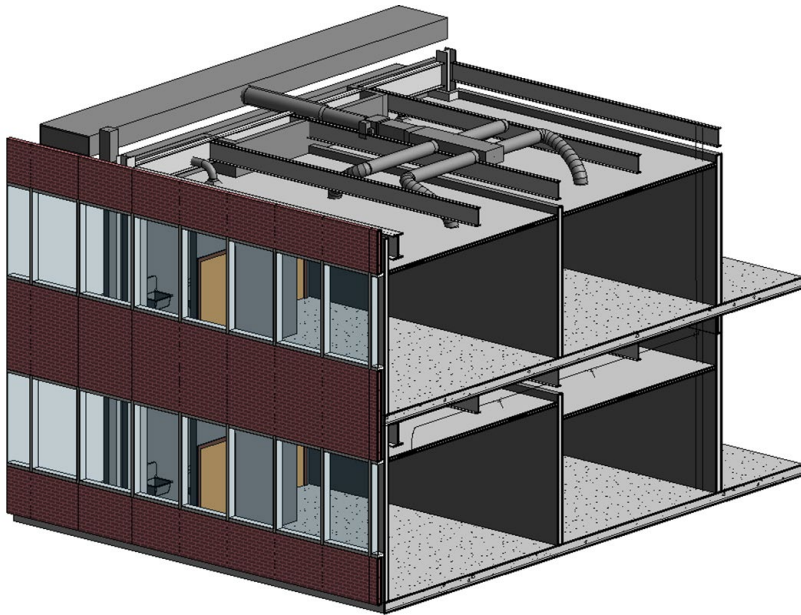
### **The Intent**

When I told my colleague about the situation and asked him about the data he let out a big sigh of frustration as I envisioned his accompanying eye roll. Turns out his firm was actually hired by a contractor who was competing to win the project. The contractor had him "run out" and take a few quick scans of the façade. No survey control or targeting was used and the scans were registered with a cloud-to-cloud process. "Keeping the cost low was of the utmost

importance to the contractor," he said. The level of accuracy and the level of detail were of little concern. The contractor's primary intent was to use the scans to illustrate the contractor's capabilities to the owner and to help differentiate his company from his competitors in an effort to win the job. In other words, these were "marketing scans."

### **The Perception**

Well, it worked. The contractor was awarded the project (not necessarily because of the scans, but I assume they may have influenced the owner's perception of the contractor). In his bid to win the work, the contractor told the owner he had scanned the facades and the owner could have the scan data. The owner's perception at this point was that the scans would be suitable for design purposes. The truth of the matter was, these scans were not



Required Level of Development (LOD).

suitable for design—at least not for the purpose the owner’s architect had in mind to use them for.

### The Process

As soon as the contractor told the scanning service provider what was needed, the provider was able to determine what process would be appropriate to capture the data. The intent was clear. The data’s primary purpose was to help the contractor win the job. The accuracy and density of the scans were indeed unimportant. The process the service provider choose to capture the data was perfect for the data’s intended purpose—marketing.

The problem arose when the data was transferred to the owner and the owner perceived that the data may be suitable for other purposes. Had the service provider been told the data would need to be captured in a way that was suitable for design purposes, the service provider would have

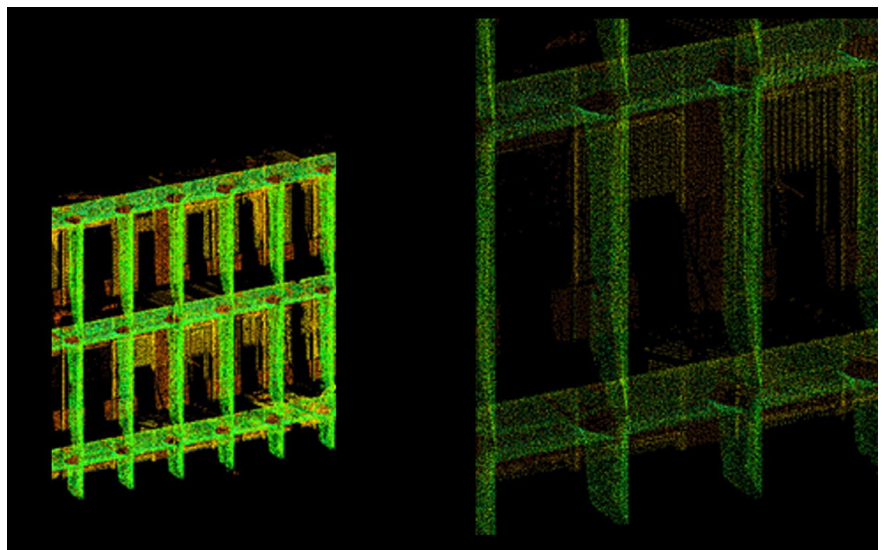
taken another approach and used a completely different process to acquire the data—at a higher cost, of course. Had the owner been told that the data was only really suitable for visualization purposes he never would have passed

the data on to his architect for his use during design. It all boils down to the fact that “*Intent Defines Process.*”

### The Importance of Defining Intent

The above story illustrates the importance of defining intent. In fact, defining the intent should be one of the first things done when identifying a SOW for any project. However, it also illustrates the importance of ensuring that the intent definition travels with the acquired data. It is very common for data to be transferred from one stakeholder to the next. As the data is transferred from one party to another, the receiver of the data is not always made aware of the data’s original intended purpose.

Because the process of laser scanning can utilize various techniques to capture and represent the data, it is even more important that people who come into possession of the data be aware of its original intended purpose. Having a data exchange or file format



Close-up images of façade scan data reveals lack of detail needed to achieve required LOD model.

capable of storing this info as metadata is key. The metadata can be checked to identify the original intent of the data capture which will give the user of the data sufficient information to determine whether or not the data will be suitable for their own intended use.

### The E57 Standard

The ASTM E57 file format for 3D imaging data exchange, more commonly known as the E57 format, has been designed as a general-purpose, open standard for exchanging 3D imaging data. It can store point cloud

data from laser scanners and other devices that produce 3D measurements. It can also store associated 2D imagery, such as that produced by digital cameras, as well as core metadata associated with the 2D images and 3D points. For this reason it is important that our industry support this standard. To learn more about the ASTM E57 standard visit their [website](#) and their related open source software project [site](#). Get involved, get behind it and support the E57 standard.

### Conclusion

We live in a complicated world where we make observations that result in perceptions. When the intent of the observations is not clear, we must rely on those perceptions. Our perceptions don't always provide us with the truth. However, it is clear that the way we perceive things influences how we make decisions. This is why it is important for us as professionals seeking to capture and represent reality to take care to define our intent, up front. In that way those who obtain our data will have a clear understanding of the data's intended purpose. Tools such as the E57 file format can help us document our intent as metadata so it lives with the project data we capture and is always available to its users. The importance of intent cannot be understated, after all *Intent Defines Process.* ■

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