



Growing inside a historic building



Peter Judge
Global Editor

If you want to build new space in a 90-year old landmark, you have to plan carefully, says DataGryd

60 Hudson Street is an Art Deco marvel of downtown Manhattan. Built in 1928 as the headquarters of telegraph company Western Union, it has remained a communications center, and become one of the world's most important Internet hubs, as a convergence point for multiple providers' lines.

For nearly ten years, DataGryd has hosted multiple tenants in colocation space within 60 Hudson. DataGryd's four floor empire includes a large suite which was originally leased to Telx, a retail colocation provider that was bought by Digital Realty in 2015. Digital has remained an anchor tenant, with 60,000 sq ft on the fifth floor.

DataGryd's CEO Thomas Brown told us how his company managed to set up in a pre-existing landmark, and to upgrade and modernize within its confines, while operating within the limitations of regulations and labor rules that go with a big city location. It's quite a story.

The building's history brings many positives. As well as the historic network connections, the structure has floors designed to hold heavy equipment, and elevators capable of moving it to the right level. "It's been a utility building as opposed to a multi-tenant building," said Brown. "The building has been designated for that type of environment."

Despite this, in 2011, DataGryd moved into space which had previously been offices, occupied by New York's city engineers and the Department of Correction, rather than telco equipment. Brown counts DataGryd fortunate in this: "It's easier to build new rather than modernize."

The space did come with convenient pipes, however. Previously used for pneumatic communications tubes, they could become fiber conduits.

60 Hudson's telco history gave it good connections and "it became an aggregation point, a carrier hotel," said Brown. The building can lay claim to having one of the first "meet-me rooms," where multiple providers' fiber networks connected.

But what do you do when you need to upgrade and modernize in this space? DataGryd found out when it shifted strategy. "The entire fifth floor was a wholesale agreement with Telx. When I joined the firm, we pivoted and we said, we recognize that people aren't taking down large parcels of space."

That meant things had to be different on the sixth floor, said Brown. Customers were asking for small amounts of space, with big

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providers wanting to build Edge PoPs as small as 50kW, in a New York building close to customers.

In 2019, Brown led the process to turn the sixth floor of 60 Hudson into Megasuite 6, a 60,000 sq ft space, built out in five 1MW halls, within which customers can take space in units from a 50kW cage up to a whole suite.

"I will tell you we have very different proposals that are out with folks," Brown told us. "We have a plan if someone wants to have a whole 1MW suite. If they want an entire floor, to customize in the way they would like to, we can even do that. We are not rigid in our offering."

He went on: "Power and density of power is becoming more and more critical to the decision making process. Today the equipment takes up less physical space, but uses more physical power. The typical

footprint used to be 3kw to 5kW per rack, but we're now seeing a minimum requirement of 7kW."

It's hard to get guaranteed power in a city, said Brown: "We went ahead and got diverse power and a separate feed from the power utility in New York City." DataGryd has floors three to six: the power comes in on the third floor.

Backup power is provided by three 4MW generators which are on the 24th floor, to keep safe from flooding such as happened when Hurricane Sandy hit in 2012. To meet New York's laws, the fuel tanks have to be underground in the basement. They have powerful pumps, and those pumps are rigorously protected from any floods.

"When Hurricane Sandy devastated lower Manhattan, we were 1,000 ft from the floodplain," said Brown. "We were going to have generators down in the basement, but we did not want to be subject to any kind of flood. You can't get any higher in 60 Hudson without being on the roof."

Before the upgrade process, all of the power coming into the building was contracted out - although not all was being utilized. It wasn't possible to get even sub-1MW suites, said Brown, particularly if the customer wanted N+1 redundancy.

DataGryd now has access to four 12MW feeds, he explained. "My colleague [VP of design and construction] Sander Gjakaj designed that so there are four separate feeds. That allows a layer of diversity." If DataGryd needs to do maintenance, or if a feed goes down, there is no interruption to service.

"Is that overkill? As we evolve with 5G, AI and IoT, the density levels continue to increase." If needed, DataGryd can switch to two feeds, and go from 12MW to 24MW of available power.

The first 1MW was completed in July 2019, and opened for business later that year.

● Modernization Supplement

Planning and forethought is vital for any modernization, said Brown. DataGryd has its eye on the seventh and eighth floors of 60 Hudson. When Megasuite 6 was installed, DataGryd put in conduits that could carry power and networks to those floors: "They are not occupied, and not part of our lease today. But we have designed those conduits. Should we expand down the road, we have the resources."

Despite the size of the facility, 60 Hudson is an Edge location, said Brown: "There's different types of Edge - and I've got four million eyeballs right outside my building."

To prepare for a wave of Edge applications, DataGryd is improving links to the mobile operators, to accommodate 5G. It would be "a problem" for operators to put IT equipment at every cell tower in New York, Brown told us. Instead, head end equipment is being placed in aggregation points, one of which will be at 60 Hudson. Others will be in places including sports and entertainment venues, like Madison Square Garden, Radio City Music Hall, and the Yankee Stadium.

Upgrading within New York City was a challenge. "There's significant stuff that needs to be approved, and coordination with a number of agencies. That can take a year."

Among the red tape, DataGryd had to get approval from the Historical Society to change the insides of a landmark.

Alongside this, the normal jobs of testing can be harder. "It takes patience and persistence to get it done in a timely manner," he told us.

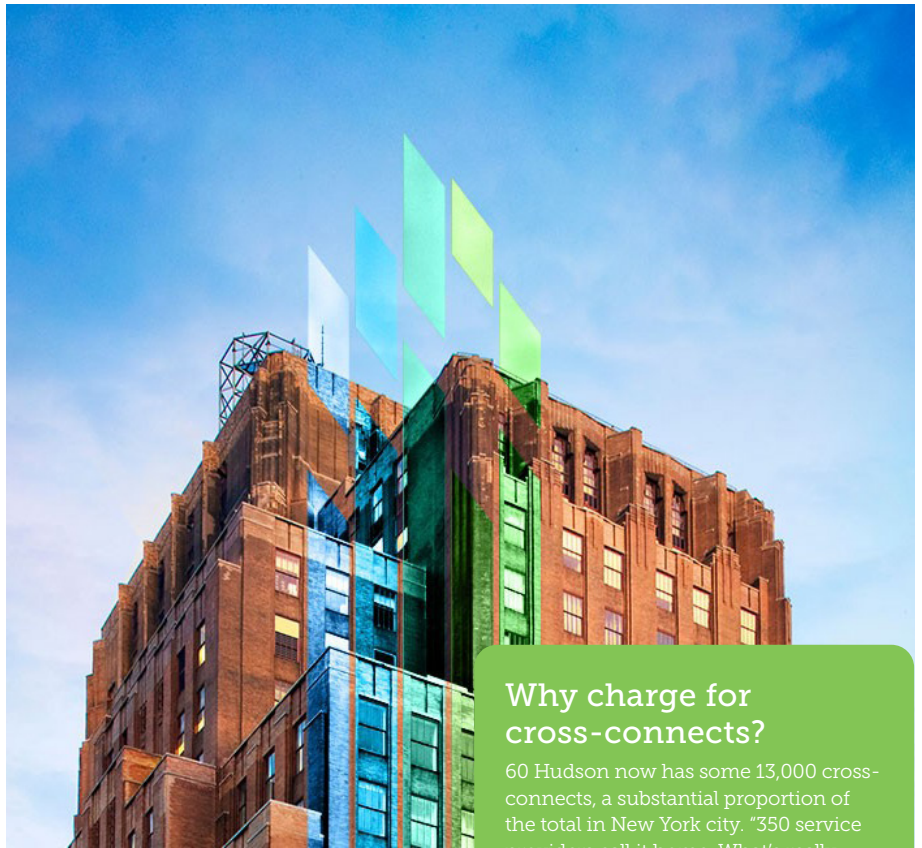
For instance, DataGryd's space has centralized cooling. Once again, planning paid off. The original cooling system was built to expand in 1MW increments. But testing the new Megasuite's cooling powers meant working with heavy equipment inside the space.

"We installed load banks [heat generators] to simulate the draw of this tower. They're the size of a tractor trailer, and sound like a jet engine."

The UPS (uninterruptible power supply) was likewise built with expansion in mind, and both UPS and cooling have been left ready to expand into the other available floors. "We capped off the cooling and power underneath the raised flooring. When we expand, all we have to do is tap into that. We just order the PDUs and the CRAC units and we're good to go."

Future upgrades, and expansion into the empty floors, may come sooner because of Covid-19. "During this pandemic, there have been opportunities coming into our funnel that did not exist before," said Brown. The next part of the Megasuite was scheduled for 2021, but that's been brought forward.

Thanks to planning, future halls can be built in half the time as the first one -



Why charge for cross-connects?

60 Hudson now has some 13,000 cross-connects, a substantial proportion of the total in New York city. "350 service providers call it home. What's really appealing is a low latency connection," said Brown.

But unlike large operators such as Equinix, DataGryd does not charge for cross connects: "We want to eliminate that."

The likes of Equinix and Digital Realty don't operate meet-me rooms in 60 Hudson, said Brown. "One of the things we've been able to do is provide a direct connect, where we build a conduit from our customer's space directly to their partner. If the client wants to interconnect with a provider, they go directly to their suite. This circumvents the meet-me so we are not subject to a cross-connect."

Why operate this way? Because it saves money for customers, says Brown: "We did an analysis for a large content provider, just shy of a year ago. They were spending \$200k a month on cross-connects, and 75 percent of those cross connects were going to four providers with multiple nodes within the building. If we can directly connect with their main node in the building, the only charge we would have would be \$1 per linear foot of conduit."

Cross connects typically cost \$100 to \$350 per month, he told us, but a cable pulled would provide material cost savings.

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and even that time was remarkably quick because that forethought meant there very few snags, said Brown.

"I am very proud to say we had comparatively few setbacks, and that is amazing in the city of New York," said Brown, praising the construction partners, which included Clune Construction and Hurricane Electric. "These are all guys who understand and have built this kind of critical infrastructure before."

Attention to detail headed off some problems. For instance CRAC units briefly landed six inches from their proper position.

If they'd been bolted down, that could have caused a month of extra work, but vigilance spotted the problem: "Being proactive, walking the job on a daily basis every morning and afternoon, will avert issues that could set you back."

Overall, Brown sounds justifiably proud: "We're incredibly pleased to have it done in budget and within time frame. That's unheard of within New York City!"