Defendants' Appendix to Amended Pre-Trial Brief

Handbook of the 40 Representative Assets

Motors Liquidation Company Avoidance Action Trust v. JPMorgan Chase Bank, N.A., et al., Case No. 09-ap-504 (S.D.N.Y. Bankr.)

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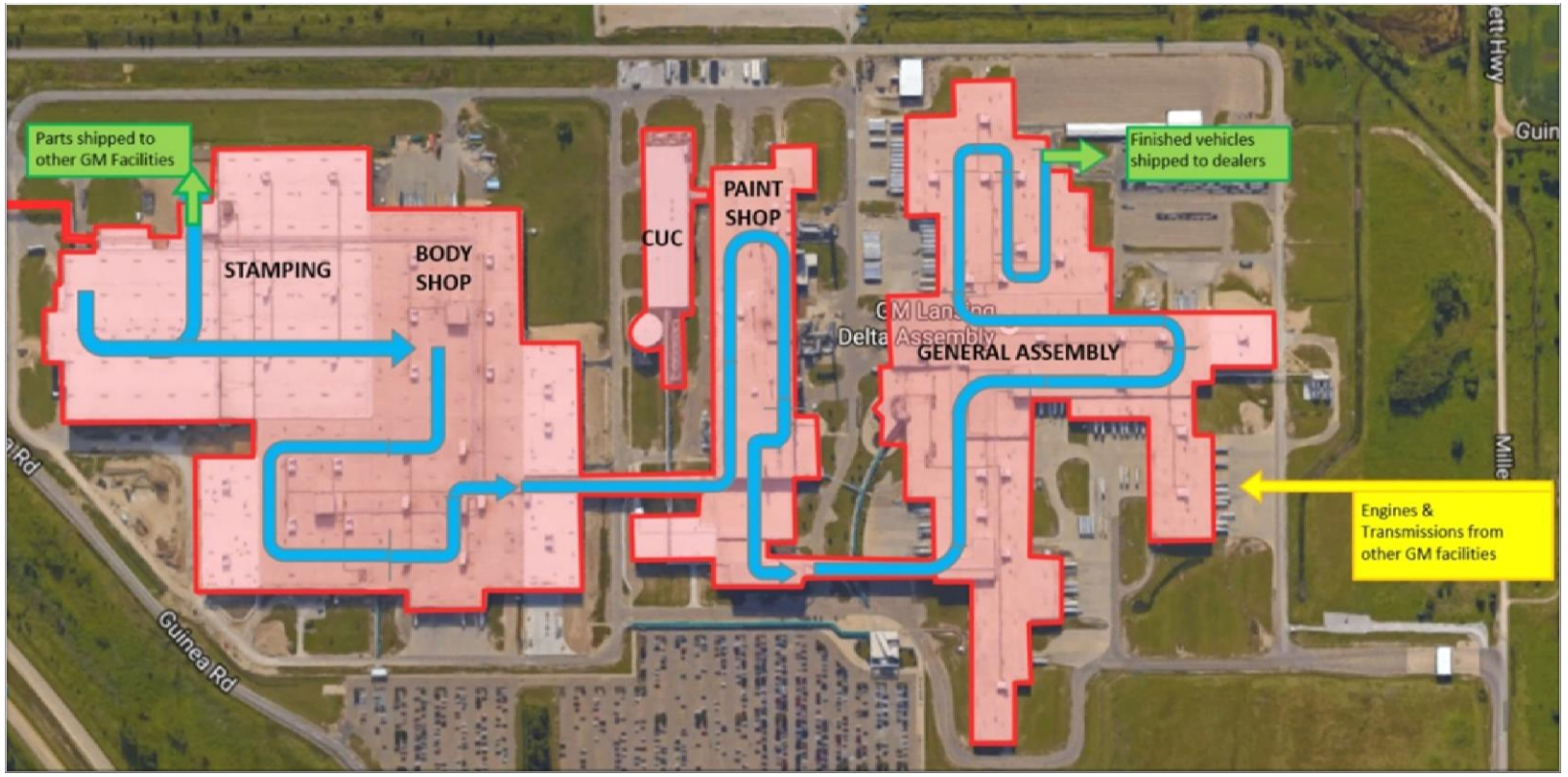


GM's Lansing Delta Township facility currently manufactures three different mid-sized SUVs on the same production lines: the Chevy Traverse, GMC Acadia, and Buick Enclave. Lansing Delta Township is a "greenfield" development (built on an empty parcel of land). Planning for construction began in the 1990s, ground breaking for the stamping area began in June 2000, construction of the assembly areas began in 2003, and the first production car rolled off the assembly line in September 2006. LDT consists of two facilities in Old GM's accounting systems, one referred to as GM Lansing Regional Stamping and a second known as GM Lansing Delta Township Assembly. Both facilities are contained in a single interconnected complex and collectively are commonly referred to at GM by the shorthand "Lansing Delta Township" or "LDT," and contain almost 3.4 million square feet of manufacturing and production support facilities.

The “stamping” area at LDT (Lansing Regional Stamping), depicted in the image on page 1, is primarily devoted to stamping major exterior body components like underbodies, hoods and door panels. The body components are then assembled into vehicle bodies in the section of LDT known as the “body shop,” which is in the same building as the stamping area, with no walls separating the two areas. From the body shop, the assembled car bodies (“Bodies in White”) are transported by conveyor to the connected multi-story “paint shop,” where the bodies are transported by conveyor across all three operating floors through tanks, booths and ovens during the pre-treatment, rust proofing, primer and final paint process. The painted bodies are then transported to the “general assembly” area by conveyor, where they are fitted with the vehicle interior components and married to the powertrain, wheels and tires. After testing, the finished vehicles are then driven off the line at the end of the production line.

LDT also houses a Central Utility Complex or “CUC” that provides electricity, compressed air, natural gas, chilled water, domestic water, hot water and steam, treated water, waste water treatment and fire suppression to the entire 3.4 million square foot plant. Representative Assets were chosen from each of the four manufacturing areas (stamping, body shop, paint shop, general assembly), plus the CUC.

A. Stamping Assets.

The Term Lenders' expert on the 4 Representative Assets located in the LDT stamping area — as well as the 2 other stamping presses that remained with Motors Liquidation — is Max Miller, a 32-year GM veteran who finished his career as the Plant Manager of the GM Grand Rapids Stamping plant.

Asset 32: AA Transfer Press[1]

[1] Throughout this handbook, the light red shading on the pictures identifies the portions of the picture that represent the Representative Asset. While the pictures are intended to be illustrative of the Representative Assets, for many of them, given their enormous size and scale, only a small portion of the asset can be depicted.

The AA Transfer Press stamps sheet metal blanks into auto body components that are then assembled on the integrated weld lines in LDT's body shop and other GM regional assembly plants into subassemblies. The subassemblies are then assembled into "Bodies in White" — complete car bodies ready for painting. The AA Transfer Press was custom manufactured to GM's specifications, delivered in large pieces to LDT, and assembled in place while the stamping building itself was being constructed. The AA Transfer Press is bolted to specialized concrete pillars driven into the bedrock beneath the building, weighs approximately 5.6 million pounds, and is 200 feet long, 125 feet wide, and 40 feet tall.

The press is 200 feet long to allow progressive manufacturing operations to be applied to sheet metal blanks by a series of stamping dies placed inside the press envelope. The piece of sheet metal is "transferred" within the housing of the machine (hence the name "Transfer Press"). Larger and larger transfer presses have become popular at automotive Original Equipment Manufacturers ("OEMs") like GM (and Ford, Chrysler, Nissan, Toyota) over the past 30 years. While more expensive to purchase, install and operate than press systems made up of multiple, standalone presses, transfer presses have the ability to produce larger panels at faster rates — with multiple panels pressed with every stroke and up to 15-18 strokes per minute.

GM spent over $33 million to purchase and install the AA Transfer Press, which is essential to the manufacturing process at LDT and has been operated in place since stamping operations at LDT began in 2003. GM spent millions more to install the integrated systems

that work with the AA Transfer Press, including overhead cranes that permit GM to swap in and out large dies, scrap conveyors beneath the factory floor that remove metal waste created by the AA Transfer Press, and a tryout press and measurement systems that allow dies to be periodically tested and repaired.

Mr. Goesling relies on a provision of a "sale/leaseback" entered into after the press was fully installed and operational in which the parties agree that the press would remain personal property and not become part of the realty even if affixed, to characterize the press as personal property. The lease provision is irrelevant in determining Old GM's intent at the time the press was installed and is inconsistent with the facts on the ground. Moreover, the lease permits GM to purchase the press at the end its term, which it undoubtedly would do.

The Term Lenders have conceded that under the Term Loan Collateral Agreement, the Term Lenders do not have a lien on the AA or B3-5 Transfer presses because the post-installation lease contains a prohibition on a grant of liens. However, per the Court's December 2, 2016 Scheduling Order, the parties have agreed that the Court should decide whether the AA Transfer Press and the B3-5 Transfer Press are "fixtures" for purposes of making the Representative Assets Trial as productive as possible.

Asset 33: B3-5 Transfer Press

The B3-5 Transfer Press, like the AA Press, is a massive metal stamping press located at LDT that fulfills a similar function as the AA Press. The B3-5 Press was custom manufactured in Japan to GM's specifications, delivered in large pieces to LDT, and assembled in place while the building was being constructed. The press is bolted to concrete foundations driven into bedrock to support the press's 3.6 million pound weight. It is enormous: 260 feet long, 75 feet wide, 30 feet tall.

In addition to the press itself, this asset includes a "destacker" or "front-of-line" component that receives stacks of large metal blanks and "destacks" them one at a time by feeding them into the press itself. This asset also includes an "end-of-line" component that receives the stamped finished panels from the press, provides an opportunity for manual quality inspection, and then prepares the stamped parts for delivery to the next operation. These components are highly integrated with the press component of the B3-5 Transfer Press itself, work in tandem with the press in an automated fashion, and are integral to its operations. (Similar components are used with the AA Transfer Press, but are recorded as separate assets from the AA Transfer Press on GM's fixed asset ledger.) Again, like the AA Transfer Press, the B3-5 Press is part of a system that includes overhead cranes that permit GM to swap dies, scrap conveyors to remove metal waste, a tryout press, and a measurement system.

GM spent over $27 million to purchase and install this asset, which is essential to the functioning of LDT. This asset has been operated in place since stamping operations at LDT began in 2003. Like the AA Press, the B3-5 Press became subject to a "sale/leaseback," but only after the press was installed and operational.

Asset 31: Danly Press

The Danly Press is likewise massive — it weighs 1.5 million pounds and is 30 feet long, 20 feet wide, and 30 feet tall. Like the AA and B3-5 Transfer Presses, installation of the Danly Press required excavation of a custom pit, pouring a large steel-reinforced concrete foundation, and installing a custom removable floor to facilitate maintenance.

Unlike the AA and B3-5 Transfer Presses, the Danly Press is a "tryout" press used to test or "tryout" new and repaired stamping dies without having to take one of LDT's production presses temporarily out of operation. Given the enormous pressure put on the dies by production operations, which causes wear over time, all auto manufacturers regularly remove dies from production presses and recondition them — after which the reworked die must be "tried out," which involves stamping a limited run of parts to verify the reworked die. To allow the Danly Press to fulfill this function, it is linked to the other presses at LDT through a network of mobile die carriers and overhead cranes that GM installed in specific locations to allow the large stamping dies to be removed from the production presses, moved to a rework area, and installed on the Danly Press for testing.

Prior to being installed at LDT, the Danly Press was installed and operated as part of a system of production presses at a different, standalone GM stamping facility in Indianapolis. It served that function for over 20 years to manufacture large truck components. By 2000, however, the Danly Press was no longer useful for the purpose for which it had been installed; Old GM was required by market demand to change the design of its truck bodies, and the press systems at Indianapolis Stamping (which

included the Danly Press) could not produce the new components. This resulted in a shift of production elsewhere — an extraordinary development that had not been anticipated 20 years earlier, in 1980, when GM installed the Danly Press at Indianapolis Stamping. After the press sat idle for several years, the new construction of LDT created a need for a permanent tryout press. To meet that need, GM — at a cost of over $1 million and several months of effort — moved the Danly Press to LDT and repurposed it from a production press to a tryout press. In this new role, it has been installed and operated in place at LDT for 14 years.

Asset 10: Opticell Robotic System

The Opticell Robotic System cost GM over $600,000 to purchase and install. The Opticell Robotic System is a "cell" that consists of several interconnected components, including a robot, a slide that allows the robot to move to multiple measurement and testing locations within the cell, as well as extensive safety fencing around the cell to permit safe operation — all of which are bolted to the floor of LDT in numerous places.

The Opticell Robotic System serves a critical quality control function in the stamping area of LDT by randomly testing body components stamped by the AA, B3-5 and other production presses to ensure that the finished product meets the engineering design requirements to move on to the body shop at LDT and other GM regional assembly plants. This asset also assists in evaluating whether the dies have degraded and tool reworking will be required before further production with those dies occurs.

While Mr. Goesling makes much of the fact that the Opticell previously moved within LDT, this movement took place in connection with an extraordinary expansion of capacity in the subassembly area of the LDT body shop — not an event that Old GM anticipated at the time of installation of the Opticell Robotic System. Apart from that one move, the Opticell Robotic System has operated in place for over 10 years at this point — underscoring that any moves are exceedingly rare.

Asset 29: GG-1 Transfer Press (Grand Rapids)

The GG-1 Transfer Press was located in the Grand Rapids, Michigan stamping facility until shortly before the demolition of that facility after the Old GM bankruptcy. Like the AA and B3-5 Transfer Presses at LDT, the GG-1 Transfer Press was anchored to a specialized foundation attached to pylons driven into the bedrock under the building, and it was massive — weighing over 2.2 million pounds, spanning 150 feet in length, 75 feet in width, and 30 feet in height. The asset required a custom pit and extended roof clearance.

During its life at Old GM's Grand Rapids, Michigan stamping facility, the GG-1 Transfer Press was a critical part of plant operations, performing a role similar to the AA and B3-5 Transfer Presses at LDT and the TP-14 at Mansfield. The GG-1 Transfer Press cost Old GM over $11 million to purchase and install in 1989.

The GG-1 Transfer Press was operated in place by Old GM for 19 years until the Grand Rapids plant was left behind in the sale to New GM in the bankruptcy. The GG-1 Transfer Press was ultimately sold to a third-party buyer prior to the demolition of the Grand Rapids plant. Mr. Miller estimates that the removal of the press would have taken a buyer more than 3 months to perform and would have left behind a 40' x 50' hole in the plant floor extending into the basement (damage that ultimately contributed to the decision to demolish the facility). These extraordinary events arising out of Old GM's bankruptcy were not anticipated when Old GM installed the GG-1 Transfer Press in 1989.

Asset 30: TP-14 Transfer Press (Mansfield)

The TP-14 Transfer Press was located at Old GM's Mansfield, Ohio stamping plant, a plant that New GM did not purchase. The plant was instead idled and ultimately demolished. Given the extensive costs that would have been required to remediate the pits and foundations required for stamping operations, repurposing the plant for some other use was not economically feasible and the plant was torn down. Before it was removed, the press was mounted on four large (approximately 3-4 feet wide, 4-5 feet long, and 12-20 feet high) concrete piers attached to pylons driven into the bedrock. Like the other presses, the TP-14 press was massive, weighing an estimated 1.4 million pounds, with a 70 foot length, 55 foot width, and 30 foot height.

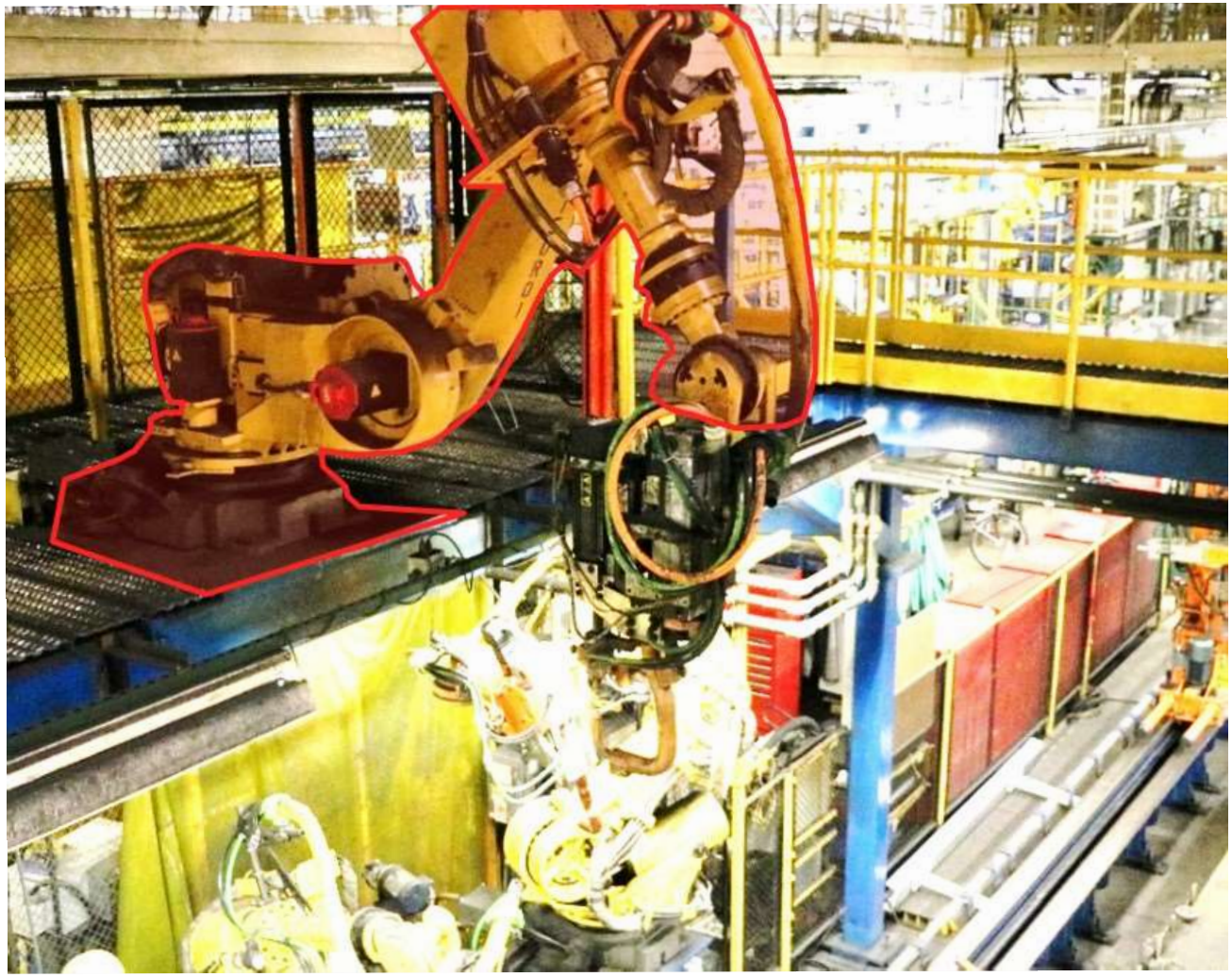
The TP-14 Transfer Press was operated in place by Old GM for 22 years until the GM bankruptcy. During its life at the Mansfield, Ohio stamping facility, the TP-14 was a critical part of plant operations, performing a role similar to the AA and B3-5 Transfer Presses at LDT. The TP-14 Transfer Press cost Old GM over $4.5 million to purchase and install in 1987.

After the bankruptcy, but prior to the demolition of the plant, the TP-14 Transfer Press was sold to a third party. Mr. Miller estimates that it likely required at least 3 months to remove the press, leaving behind a 70 foot by 55 foot by 15 foot hole in the plant floor. Needless to say, these extraordinary events were not anticipated when Old GM installed the TP-14 Transfer Press in 1987.

B. Body Shop Assets.

The Term Lenders' expert, Eric Stevens, will testify as to the six assets in the LDT body shop. Mr. Stevens has 35 years of experience at GM, and retired in 2013 as Vice President – Global Manufacturing Engineering, where he oversaw the design, installation, and major upgrades of all of New GM's manufacturing assets worldwide.

Asset 12: Overhead Body Shop Welding Robot



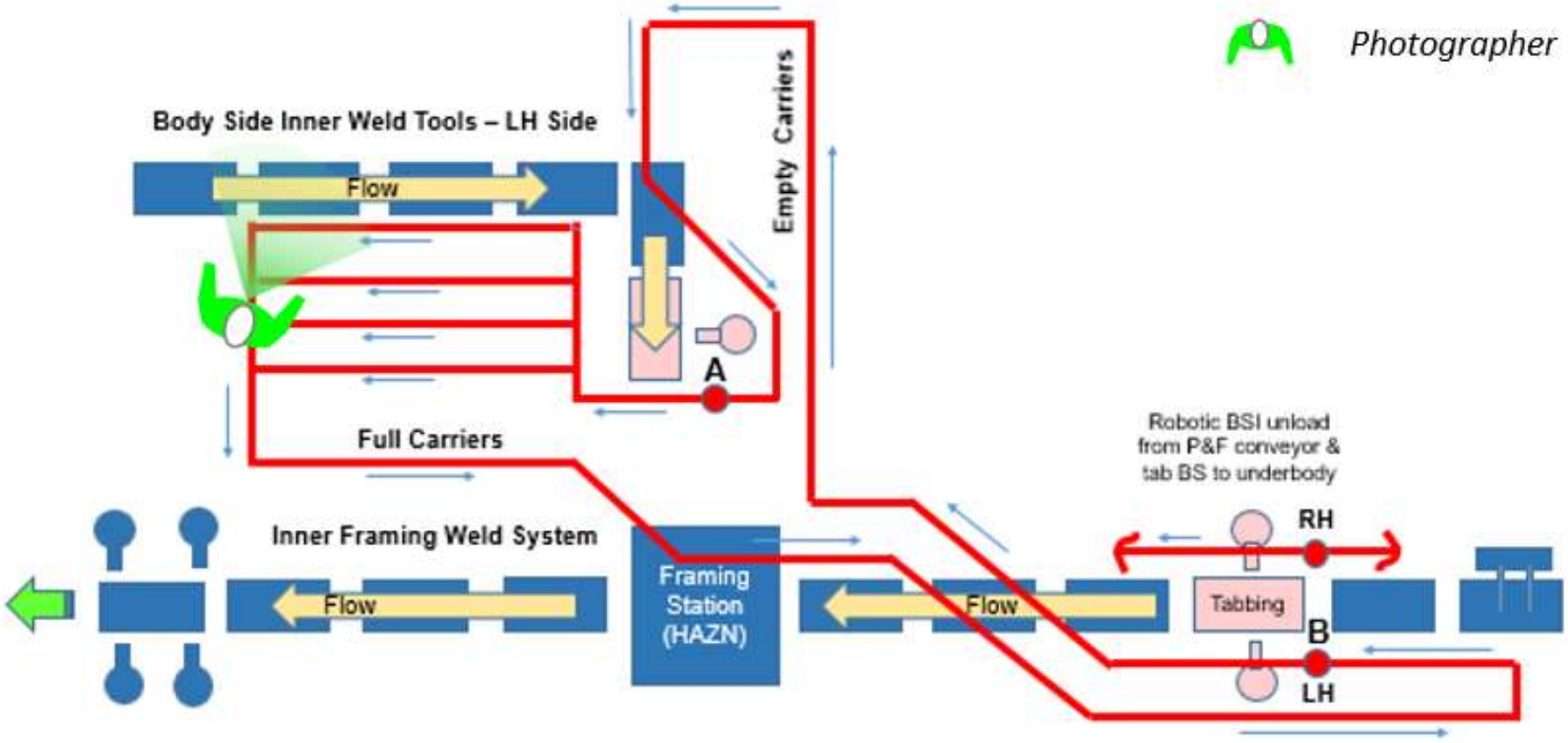
This Overhead Body Shop Welding Robot is a critical part of a "framing" station at LDT. The outer framing station integrates 10 robots and other welding equipment into a single system. The framing station welds body components into a complete vehicle body or "frame" that is ready for hang-on parts assembly, quality control and painting. Given the need for structural welds on the upper section of the vehicle body, this 2,000 pound robot was lifted and bolted to the top of a mezzanine structure designed to support the overhead robots, which in turn was bolted to the reinforced concrete floor of the building. An integrated conveyor carries the body through the mezzanine structure and under the Overhead Body Shop Welding Robot to allow it to make approximately 10 welds on the upper section of each vehicle body.

Removing this 2,000 pound robot (and immediately installing a replacement, as would be necessary for the plant to function at required capacity) from its awkward location atop the mezzanine structure in the middle of an operating integrated system would be extremely challenging, would expose the robot and nearby assets to the risk of damage, and could not be done while the plant was operational.

The Overhead Body Shop Welding Robot has been operated in place for the past 10+ years. While Mr. Goesling argues that robots frequently move, the fact is that they do not. As Mr. Stevens will testify, excluding plants that were shut down or that went through unanticipated changes, at most 1.1% of *all* robots at GM ever moved absent extraordinary circumstances between 2009 and 2015.

Asset 17: Power and Free Conveyor

As with many of the pictures, the picture above shows just a small portion of the Body Shop Power and Free Conveyor. The diagram below shows the perspective of the photographer who took the photograph (represented by the green figure of a human being on the middle of the left side of the diagram below). The full scope of the Body Shop Power and Free Conveyor is shown by the red line in the diagram, the vast majority of which does not appear in the picture above.



This 2,000 foot long, 400,000 pound conveyor and mezzanine structure was installed in LDT in 2006 to carry one car body component — the left side of the vehicle body — from the subassembly area of the body shop where it is fabricated as a sub-assembly to the framing station where it is welded to other body components, including the right side of the car body, the roof and the underbody. The Body Shop Power and Free Conveyor is an overhead conveyor that is attached to the steel I-beam structure of the LDT plant at approximately 200 locations, through approximately 1,200 bolted attachment points. GM specifically ran utilities to drive motors across the 2,000 foot length of the conveyor.

A conveyor of this length could only be installed piece-by-piece. As a result, the conveyor portion of this asset is primarily made up of "modular" conveyor sections, which allowed the conveyor to be installed in a custom configured path to fit GM's process needs and the layout of LDT. The modular nature of the conveyor therefore says nothing about its intended permanence. Mr. Goesling concedes that the mezzanine and white steel components of this asset — weighing nearly 300,000 pounds standing alone — would need to be scrapped if this asset were ever removed, and that the asset would likely have no value to a third party.

The Body Shop Power and Free Conveyor has operated in place since it was installed in 2006. Mr. Stevens will testify that assets like this conveyor simply do not move given their customized nature and layout. He will also testify that in extraordinary situations like plant closures, conveyors like this one are often simply scrapped.

Asset 13: Weld Bus Ducts

Again, this picture shows only a small portion (approximately 100 feet) of the over 10,000 feet of Weld Bus Ducts installed in the body shop at LDT.

The Body Shop Weld Bus Ducts carry electrical power from the Central Utilities Complex (see Asset 11, at page 63 below) to the welding robots, conveyors and other machinery that are located in the LDT body shop. The ducts run over 10,000 feet in length and are attached to the LDT plant's roof trusses in over a thousand places, using hangers, nuts, bolts, and clips.

The layout of the Body Shop Weld Bus Ducts was determined at the time LDT was built; indeed, the layout was custom engineered to (a) align with the layout of the facility, (b) supply power to nearly all of the welding equipment in the body shop, and (c) provide flexibility to allow for the addition of new subassembly cell equipment without modifying the Weld Bus Ducts. Removing the Weld Bus Ducts network would take weeks and would cause the body shop — and therefore all of LDT — to be idled, until they were replaced with an identical asset.

Mr. Stevens will testify that he is unaware of any instance when an entire bus duct system like this one was moved — absent the extraordinary circumstance of a plant closure. These particular Weld Bus Ducts have been operated in place at LDT for over 10 years.

Asset 19: Full Body Coordinate Measurement Machine ("CMM")

The photo above shows a portion of the Full-Body CMM at the time of its installation. The first photo below depicts a full-body CMM similar to the Full Body CMM at LDT. Again, as with many of the photos herein, this photo does not depict the extensive portions of this asset that are installed below ground, in the custom pit that was dug for this asset. An illustrative cross section of a similarly customized pit and foundation is further below:

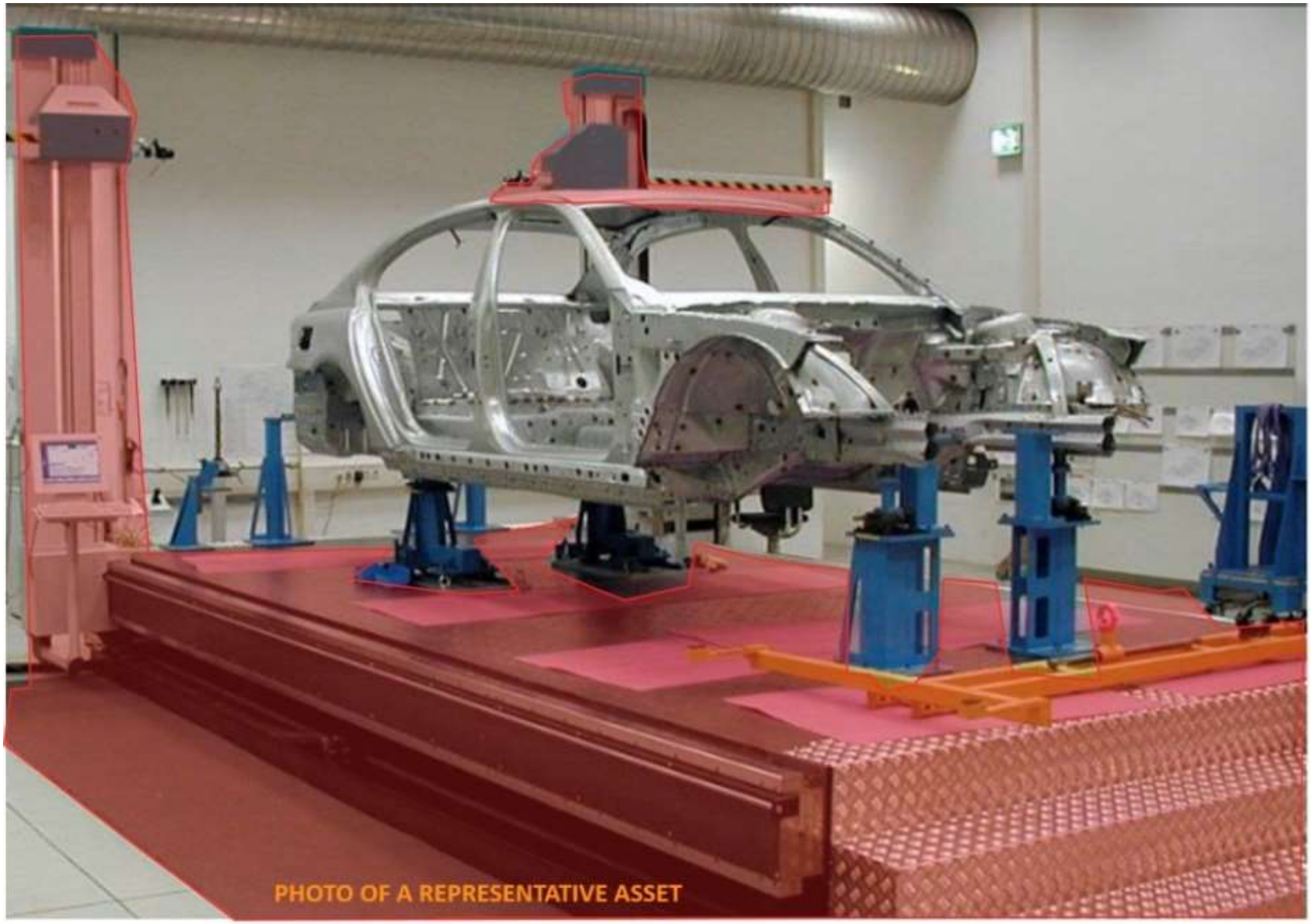
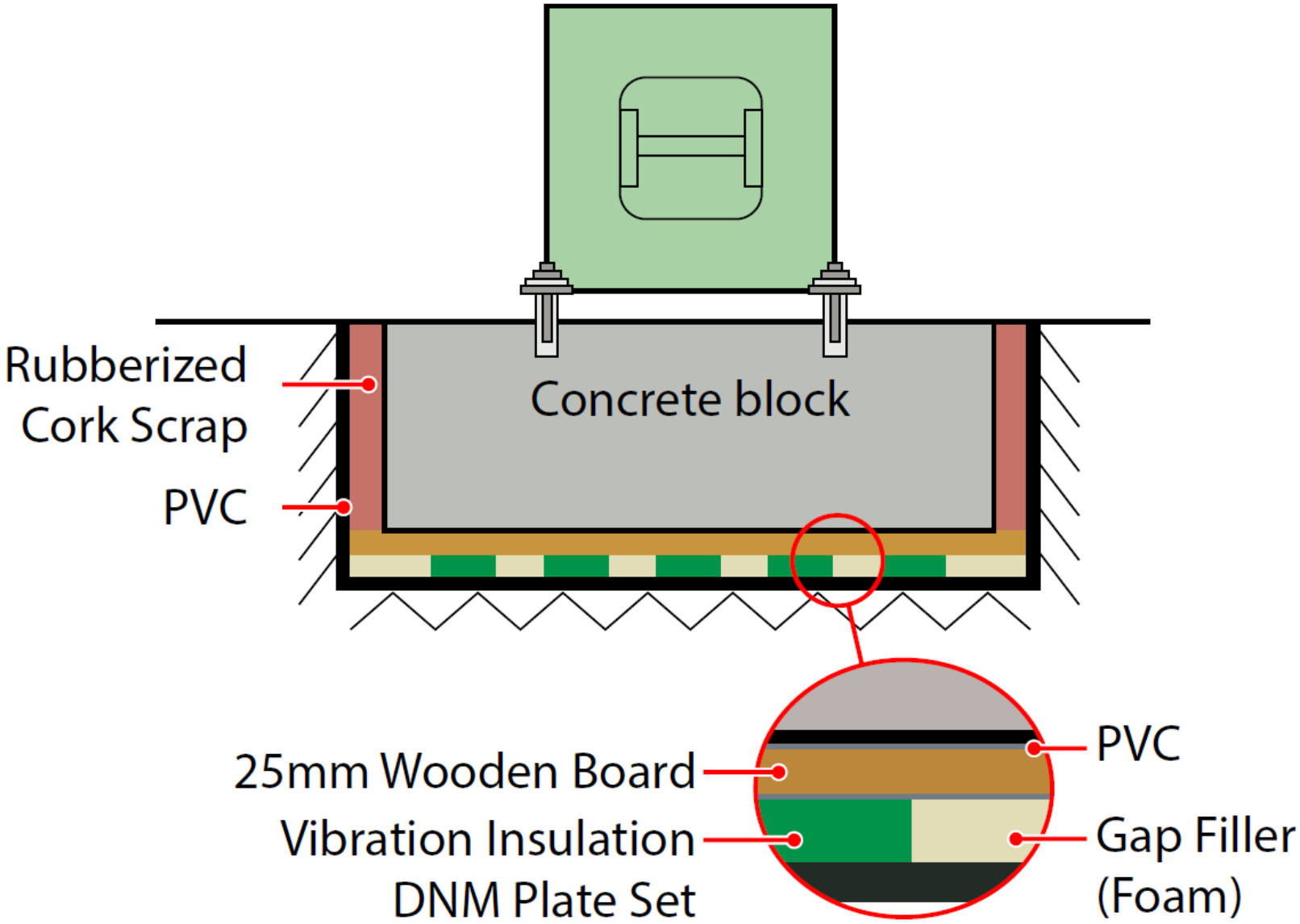


PHOTO OF A REPRESENTATIVE ASSET

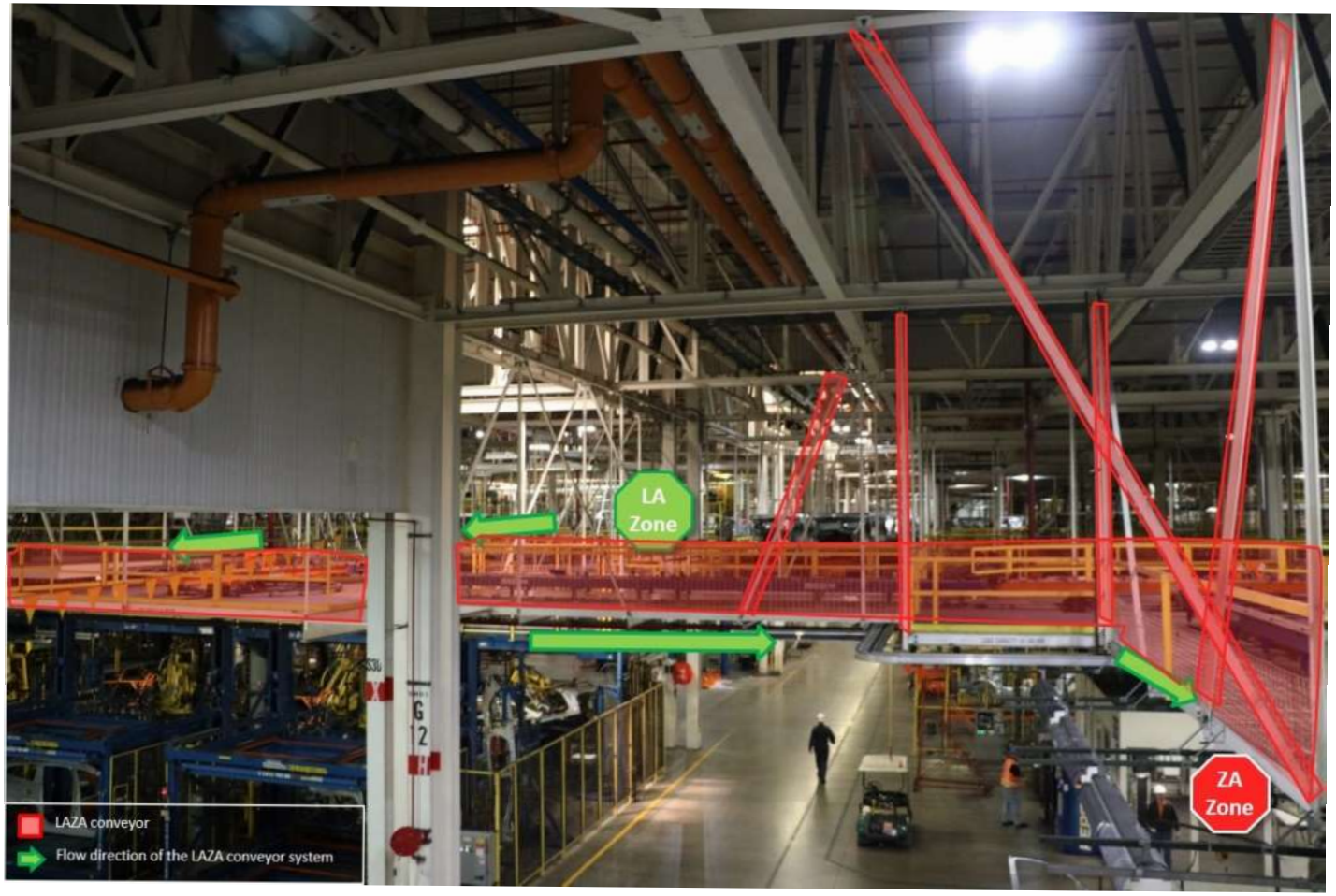

Rubberized
Cork Scrap
PVC
Concrete block
25mm Wooden Board
Vibration Insulation
DNM Plate Set
PVC
Gap Filler
(Foam)

The Full Body CMM is a 30 foot long, 20 foot wide, and 10 foot tall asset weighing 100,000 pounds. It was used by Old and New GM to measure a sample of its welded car bodies and determine whether they met the precise tolerances required by GM's manufacturing processes. The Full Body CMM was installed at LDT in 2006, in a special climate-controlled room and in a specially constructed pit, in which the CMM's custom foundation was installed. The machine was operated in place for 9 years as a critical component of LDT's production operations.

In 2015, New GM removed the Full Body CMM after technological advancements in the auto manufacturing industry allowed New GM to perform more body quality control testing on the production line itself in real time — reducing the need to move selected bodies off the integrated assembly line and into the CMM room for audit.

The removal of the Full Body CMM likely required up to 11 labor-weeks of effort to extract and break up the foundation, fill and reinforce the pit that remained, pour a concrete cap on the pit, and let that cap cure for 20 to 30 days thereafter. The evidence of that healed damage can still be seen in the concrete floor. The Full Body CMM was never reused by GM.

Asset 16: Skid Conveyor



This photograph shows a small fraction of the Body Shop Skid Conveyor's 1,000 foot length.

The Body Shop Skid Conveyor is a 1,000 foot long conveyor and mezzanine structure, weighing 400,000 to 500,000 pounds. The Body Shop Skid Conveyor carries fully welded bodies weighing approximately 1,000 pounds each overhead from the outer framing zone to the "Body-in-White" final line, where the doors, hood and other body components are attached to the body frame creating the full body-in-white that is then conveyed to the LDT Paint Shop for painting. The Body Shop Skid Conveyor consists of both a conveyor and the mezzanine which was custom built to hold it — the conveyor portion of the asset is attached to the mezzanine by hundreds of bolts and screws, and the mezzanine is connected to the white steel and building trusses with hundreds of bolts in turn.

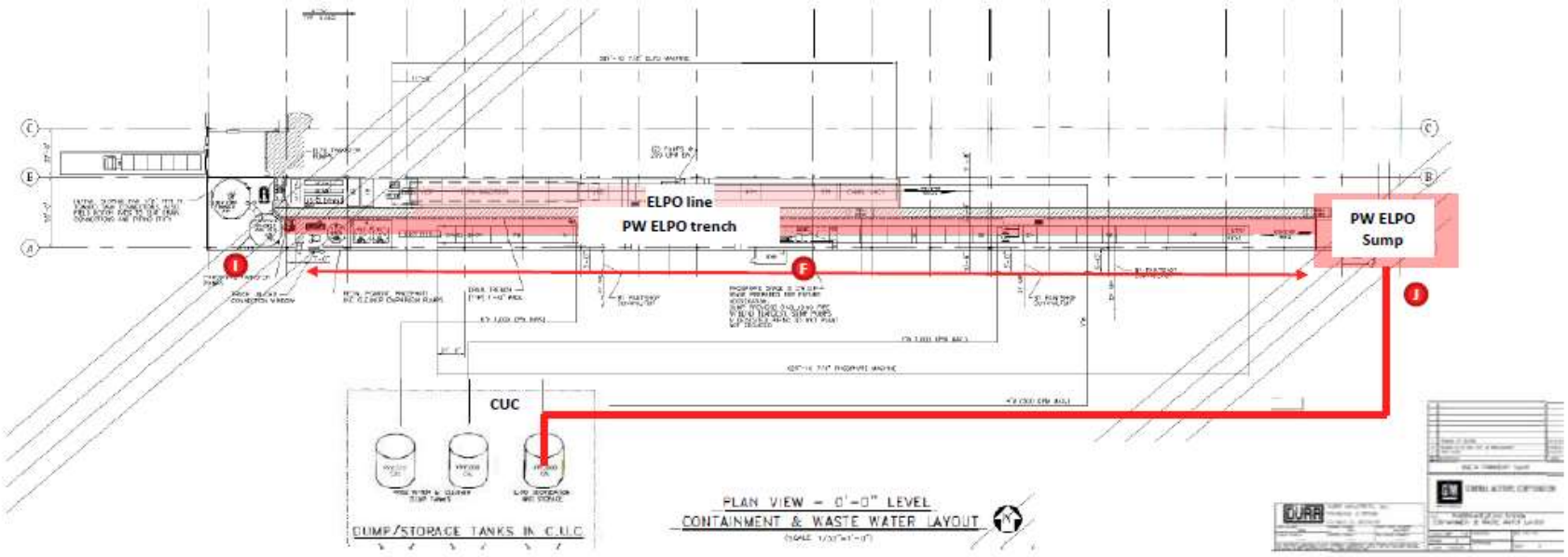
As with the Body Shop Power and Free Conveyor discussed above, while the conveyor portion of this asset is primarily made up of "modular" conveyor sections, this was done to facilitate installation and customization of the 1,000 foot long asset, not its removal. Mr. Goesling concedes that the mezzanine and white steel components of this asset — weighing nearly 300,000 pounds standing alone — would need to be scrapped if this asset were ever removed, and that the asset would have no value to a third party.

The Skid Conveyor has operated in place since it was installed by GM in LDT in 2006. Removing the Body Shop Skid Conveyor would be a major undertaking, involving months of work, requiring GM to idle LDT for the entire time the conveyor was removed — all just to be replaced with an identical asset.

C. Paint Shop Assets.

The Term Lenders' expert on the six Representative Assets at LDT's paint shop is Steven Topping, a former GM engineer with over 30 years of experience in paint-engineering and manufacturing capacities. Mr. Topping finished his career at GM as the Global Liaison Engineer for Paint and as GM's Global Subject Matter Expert for Polymers Paint, in which roles he helped design and construct GM's paint facilities in North America and the Asia-Pacific region, and trained employees at new GM paint facilities worldwide.

Asset 4: Electro-Coat Paint Operations ("ELPO") Waste System

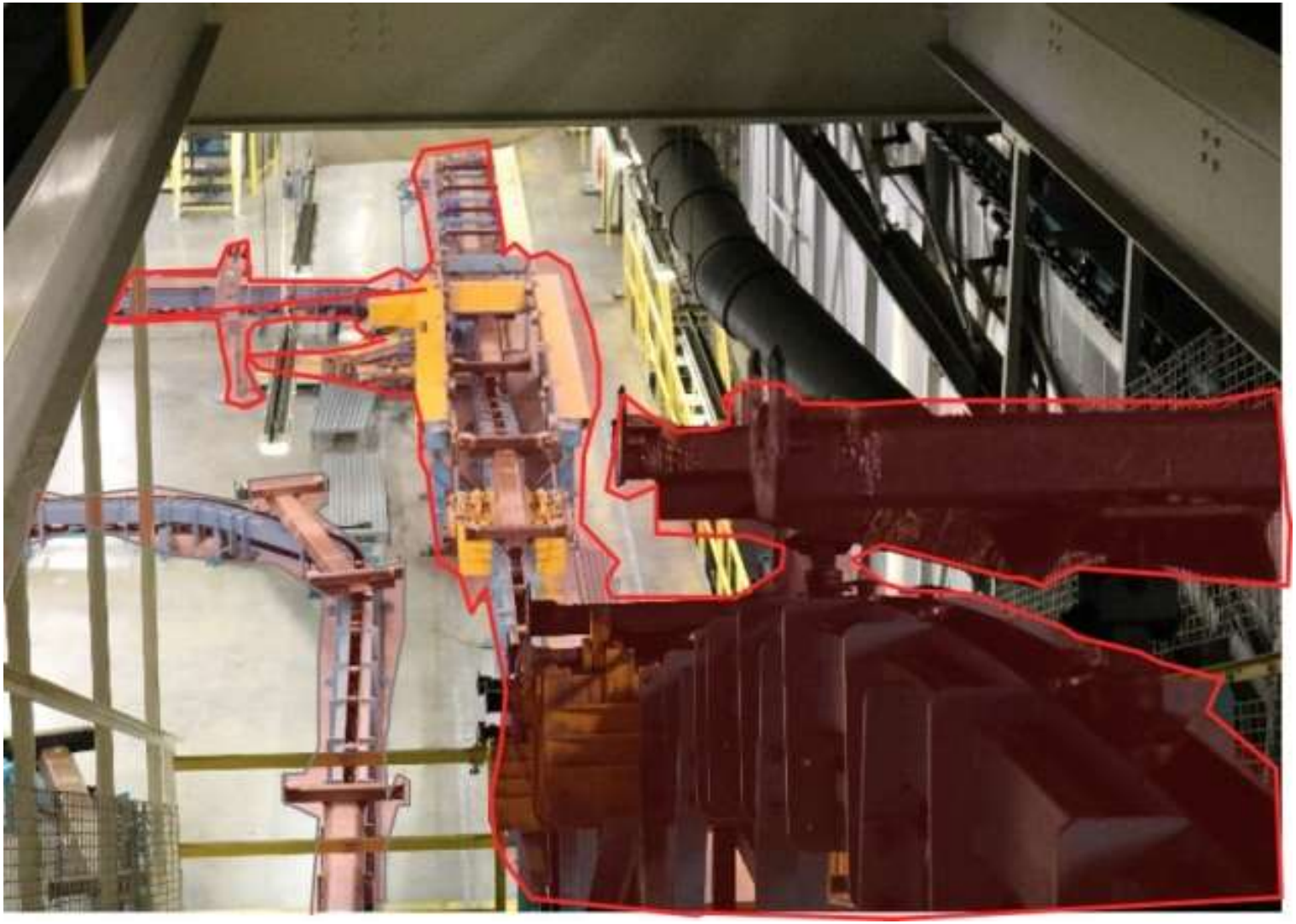


The Avoidance Trust concedes that the ELPO Waste System is a fixture. The asset includes a trench, plus more than one thousand feet of piping. As the name suggests, the ELPO Waste System captures waste material that drains from tanks used for the "Electro Coat Paint Operation" ("ELPO") process in LDT's Paint Shop. The ELPO process uses chemicals and an electric charge to apply a special coating of primer to a vehicle body. The goal of the ELPO process is to make a vehicle body more receptive to subsequent colored base coats.

The ELPO Waste System is, however, just one small component of the larger ELPO system, which along with other pre-treatment systems represents roughly 25 percent of the paint shop. A comparable paint shop would cost $450 million. Without the ELPO Waste System, the entire ELPO process could not function; and without the rest of the ELPO process, the ELPO Waste System — which the Avoidance Trust concedes is a fixture — would likewise have no value.

Asset 6: ELPO Oven Conveyor

These two pictures capture only a small fraction of the ELPO Oven Conveyor's 2,000 foot, multi-story length.



The ELPO Oven Conveyor is a 2,000-foot long, 40,000-pound conveyor that traverses three separate operating levels of LDT's paint shop and is bolted at thousands of points to the floors and structural steel. The ELPO Oven Conveyor carries vehicle bodies through the curing process for the Electro Coat Paint Operation ("ELPO," discussed above). Along the way, the ELPO Oven Conveyor serves as a timing mechanism, ensuring each car body spends a proper time at the proper temperatures, and is an integrated component in the ELPO process — signaling to other connected assets when to perform their functions.

The ELPO Oven Conveyor was engineered for the particular paint ovens it services, and it was designed to be able to carry any vehicle style or platform type that would be produced at LDT. The Paint Shop building was specifically designed to accommodate the ELPO Oven Conveyor. For example, GM created vehicle-sized holes in the building's floors at specific locations along the conveyor's path to allow the conveyor to pass through from level to level. GM spent approximately $1.1 million to purchase and install the ELPO Oven Conveyor. Mr. Goesling conceded at deposition that the asset would be of no use to a third party.

The ELPO Oven Conveyor is part of the overall ELPO system in the paint shop, which was purchased as a single, integrated system. Without this Conveyor, that investment would be worthless until GM — after months of effort — replaced this Conveyor with an exact duplicate.

Asset 5: Paint Circulation Electrical System

The Paint Circulation Electrical System is a 2,000 pound set of electrical distribution cabinets that was specifically configured to distribute power to all of the paint mixing and circulation assets in LDT's paint shop. The asset is bolted to a custom 4-inch raised concrete foundation, which allows the Paint Circulation Electrical System to sit above the floor (protected from any spill or flood).

The asset is served by electrical power lines that were embedded in up to 20 inches of concrete under the floor in order to satisfy safety requirements. Similarly, for safety reasons, the area housing the Paint Circulation Electrical System was specially designed around the asset to direct any explosions toward an explosion relief wall that, if necessary, would explode outward into an empty field.

GM spent $1.9 million to install the Paint Circulation Electrical System at LDT. The asset provides power to all aspects of the paint mixing and circulation system at LDT, allowing mixed paint to be delivered to the spray booths throughout the paint shop at LDT. Removal of the Paint Circulation Electrical System would, as a functional matter, stop all paint application operations at the facility; and as Mr. Goesling concedes, portions of the asset—the control cabinets, wiring and miscellaneous other parts—would likely have no use to anyone else.

Asset 9: Top-Coat Bells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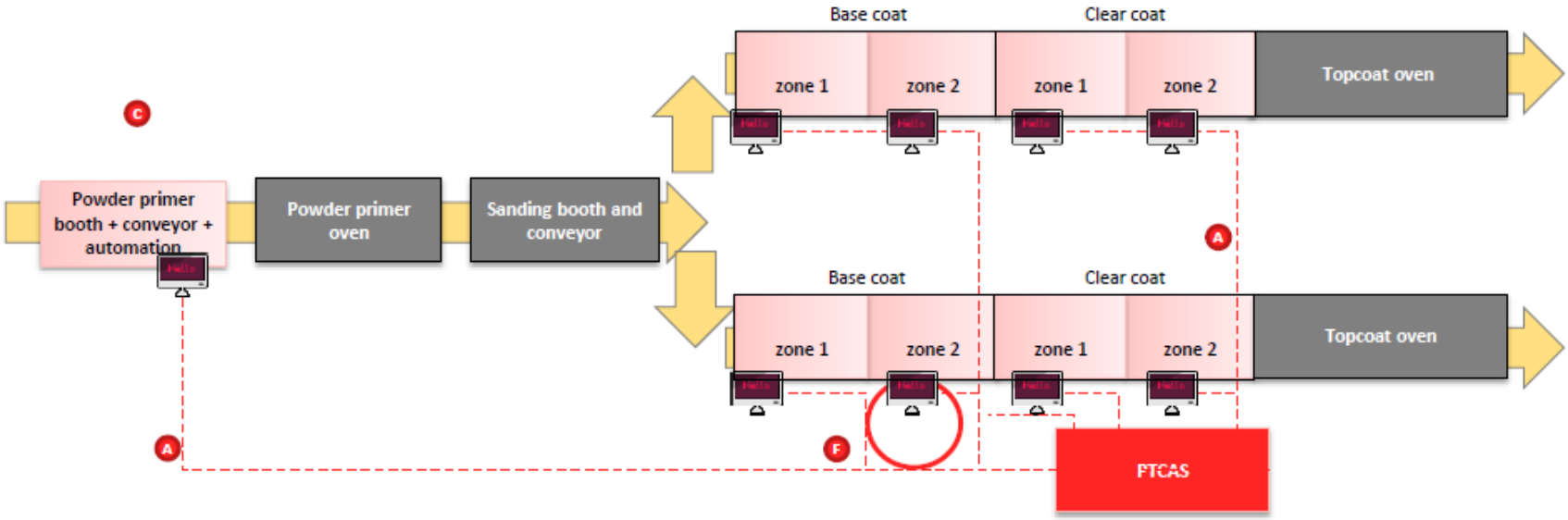
The Top-Coat Bells are a set of 12 robotic paint applicators (or "Bells") that apply a clear coat of paint to vehicle bodies in a sealed room known as the Top-Coat Spray Booth, as shown in the first picture. (The parties agree the Top-Coat Spray Booth itself is a fixture.)

The Top-Coat Bells extend through the walls of the Top-Coat Spray Booth into the adjoining room as shown in the second picture (which shows the back side of the Bells shown in the first picture). The Top-Coat Bells and the Top-Coat Spray Booth were designed to fit together seamlessly to create a hermetically sealed clean room environment.

The Top-Coat Bells cost GM $2.8 million to install, and both the bell applicators and integrated controllers that make up this Representative Asset are bolted to the concrete floor and attached within the spray booth wall.

The Top-Coat Bells are also extensively integrated with the rest of the LDT paint shop. A conveyor delivers vehicle bodies to the Top-Coat Spray Booth, where those bodies are painted by the Top-Coat Bells. After this process is complete, the vehicle bodies travel on a conveyor from the Top-Coat Spray Booth to a paint oven, where the paint applied by the Top-Coat Bells is dried and cured. All of these operations are coordinated by the Top-Coat Software (discussed below), which integrates the entire top-coat process in LDT's Paint Shop.

Asset 7: Top-Coat Software



The Top-Coat Software is the brain that coordinates the operation of a large number of fixed assets in the top-coat process at LDT. The software enables direct control of fixed assets including (a) the Top-Coat Bells and paint application equipment in seven other painting zones in the process; and (b) the conveyors that carry the car bodies through the process. It also monitors (c) the spray booth air supply systems in real time. The Top-Coat Software is required for coordinated top-coat painting operations at LDT.

The software was installed at the same time as the equipment it controls and monitors and is expected to operate in place for the useful life of that equipment. It is specialized software that would have no value apart from the equipment it was customized to monitor and run, and the isolated pieces of equipment in turn would be unable to carry out the synchronized and environment-sensitive process necessary to paint cars without Top-Coat Software. It is likely that the Top-Coat Software is listed as its own separate asset on GM's fixed asset ledger instead of being folded into the physical equipment because it coordinates the activity of a number of machines.

Mr. Goesling identifies no instance when software like this was ever moved or resold. That is because the software is an integral part of the fixed assets that make up the top-coat process.

Given that the Top-Coat Software is "a computer program embedded in goods," the UCC expressly acknowledges that the Software can be "goods" subject to a security interest. M.C.L.A. § 440.9102(1)(qq). And because that "good[] . . . ha[s] become so related to particular real property that an interest in [it] arises under real property law," it is a fixture subject to the Term Lenders' security interest. *Id.* § 440.9102(1)(oo).

Asset 8: General Assembly Paint Mix Room

The General Assembly Paint Mix Room is a 2,000 pound, self-contained, OSHA-required enclosure for mixing small amounts of paint for touch ups and repairs in LDT's general assembly area. Under OSHA regulations, paint is required to be mixed in an enclosure like this one because isolating the paint-mixing process minimizes the risk of igniting flammable paint fumes. The GA Paint Mix Room is approximately 9 feet long, 8 feet wide, and 12 feet tall, and is bolted to the floor. It is connected by hard conduit to electrical power, fire suppression systems, and a specialized exhaust and ventilation system.

When LDT was being built, GM appropriated roughly 100 square feet of the plant's general assembly area to house the GA Paint Mix Room — in fact, GM left certain walls empty and installed a special ceiling structure just for the GA Paint Mix Room. The GA Paint Mix Room was designed so that if an explosion were to occur, it would expand up and out without causing significant damage to the rest of LDT's general assembly area.

GM spent over $800,000 to purchase and install the GA Paint Mix Room (and likely some related equipment), which has operated in the same place since it was put in service in 2006.

D. General Assembly Assets.

The Term Lenders' expert, Eric Stevens, will also testify as to the 5 Representative Assets that are located in LDT's general assembly area. As noted above, Mr. Stevens has 35 years of experience at GM, and retired in 2013 as Vice President – Global Manufacturing Engineering, where he oversaw the design, installation, and major upgrades of all of New GM's manufacturing assets worldwide.

Asset 18: Vertical Adjusting Carriers

The 87 VAC Carriers (outlined in red in the picture above) are major components of a Vertical Adjusting Carrier system ("VAC System") that moves vehicles through the chassis assembly line in the General Assembly area at LDT. The chassis assembly line is where suspension and vehicle powertrains (including the engine and transmission) are married with vehicle bodies and chassis. The VAC System allows LDT to produce 1,100 vehicles per day.

As shown in the image above, the VAC Carriers can only move along the conveyor rails that stretch 2,000 feet in length. The rails, in turn, are affixed to LDT's superstructure with thousands of bolts. Each VAC Carrier weighs approximately 8,000 pounds and is approximately 25 feet by 8 feet by 20 feet; collectively, the 87 Carriers that make up this Representative Asset weigh almost 700,000 pounds. Each VAC Carrier also has its own drive motors and draws power from the electrified control rail that it must remain in contact with at all times. The VAC Carriers have no operational value without the rails they run on, and vice versa. Moreover, to remove a Carrier, GM would need to cut the rails. If GM *did* remove a Carrier, it would either have to replace that Carrier or suffer a loss in capacity (and removing *all* of the VAC Carriers would bring LDT to a halt). And as Mr. Goesling concedes, portions of this asset would have little value to a third party, valuing the entire asset at scrap.

GM spent over $4 million to purchase and install the 87 VAC Carriers. The VAC System as a whole cost $14 million to purchase and install. The VAC Carriers and the rest of the VAC System have been operated in place at LDT for approximately 10 years.

Asset 15: Soap, Mount and Inflate System

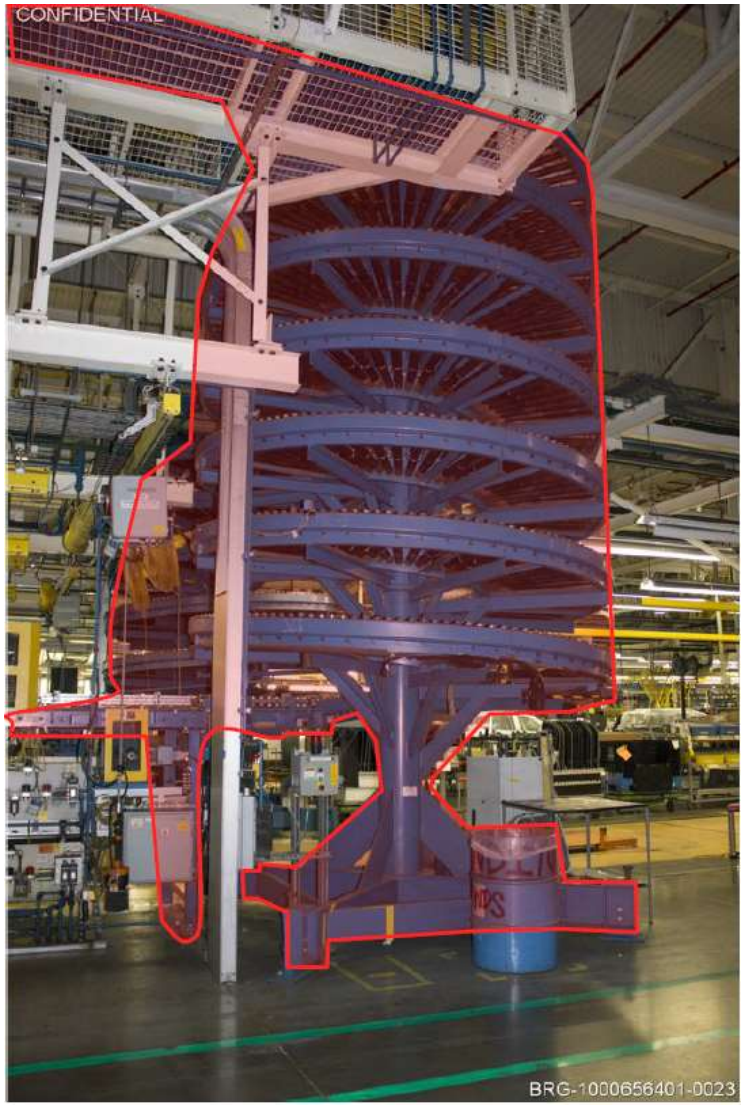
The Soap, Mount and Inflate System mounts tires to wheels, and inflates the resulting wheel and tire assembly. It is the only machine at LDT that combines wheels and tires into assemblies, which can then be installed on automobiles. Accordingly, without it, all production at LDT would stop — without wheels, no vehicles could roll off the line. The Soap, Mount and Inflate System weighs approximately 40,000 pounds, is 90 feet long, and takes up over 1,000 square feet of floor space.

GM spent $1.9 million to purchase and install the Soap, Mount and Inflate System, which is integrated into a series of conveyors that install valve stems, bring wheels and tires to the System and then conveys them for balancing before delivering completed assemblies to the final assembly line for installation on the vehicle at a point approximately 400 feet away.

The entire wheel and tire assembly and delivery system represented a $12 million investment by GM. That investment would be rendered useless if the Soap, Mount and Inflate System were removed, and production at LDT would be halted until an alternative source for completed wheels and tires could be installed or found. The system was installed at LDT when the plant was opened in 2006 and has remained in place since it was installed. Mr. Goesling values the entire system as scrap, concluding that it would have no use to a third party.

Asset 20: Wheel & Tire Conveyor

These pictures show a portion of the beginning (first picture below) and end (second picture below) of the Wheel and Tire Conveyor — the majority of the Conveyor is overhead and could not be captured in a single picture.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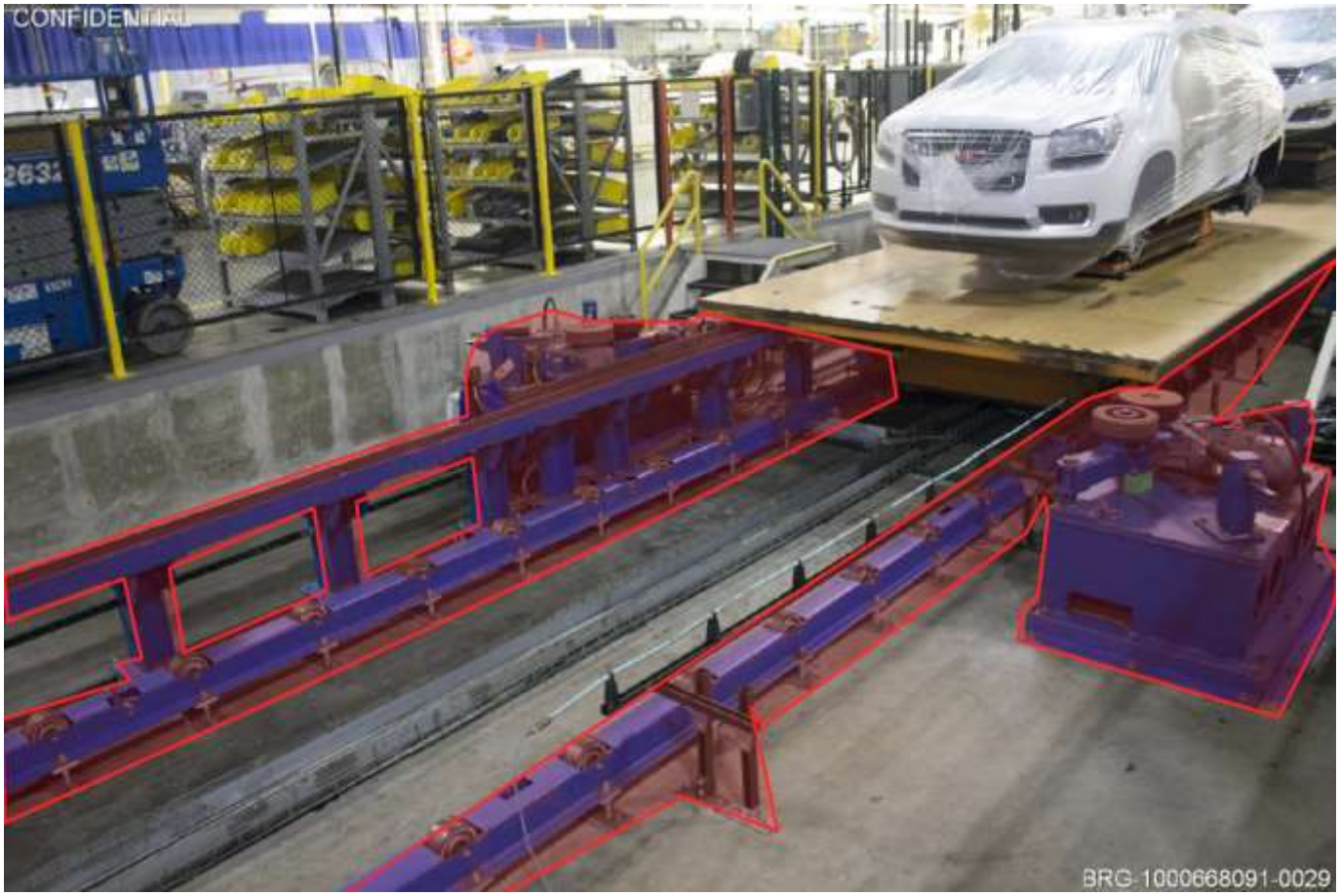
The Wheel and Tire Conveyor weighs over 400,000 pounds and is over 380 feet in length. It is bolted to the concrete floor of the building in hundreds of locations and to LDT's overhead superstructure in thousands of locations. The Wheel and Tire Conveyor delivers assembled wheels and tires from the wheel and tire assembly system (including Representative Asset 15 discussed at page 52 above) to the final skillet conveyor (Representative Asset 21 discussed at page 57 below) for installation on vehicles.

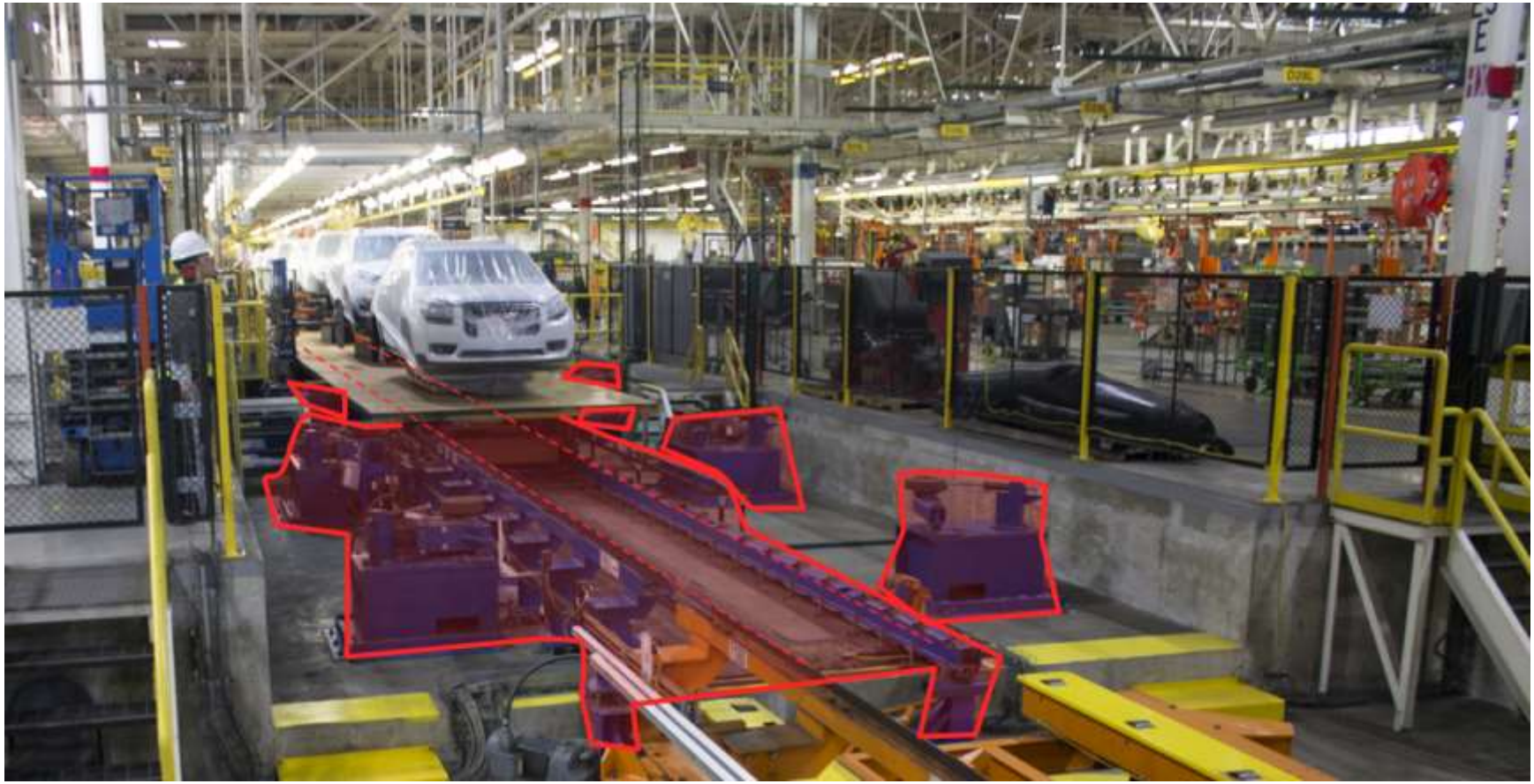
GM spent over $1 million to purchase and install the Wheel and Tire Conveyor. The conveyor system was installed at LDT when the plant was opened in 2006 and has remained in place that entire time.

Removal of the conveyor system would be both extremely time consuming and destructive — significant portions of the Wheel and Tire Conveyor (including all of the white steel used to attach the Conveyor to the LDT plant's superstructure) would have to be scrapped, and the removal process would necessarily result in damage to the floors requiring remediation. And without the Wheel and Tire Conveyor, production at the facility would be affected within an hour. A short-term workaround would be difficult to implement and would reduce plant productivity by 25%, causing a loss of thousands of vehicles of production each month.

Asset 21: Final Line Skillet Conveyor

The photos below capture short segments of the 500 foot long conveyor.





The Final Line Skillet Conveyor is a 500 foot long, 12 foot wide, 80,000 pound asset secured by over 2,500 bolts to a steel-reinforced concrete pit designed and dug specifically to hold it. The approximately 3,000 pound skillets and the near-finished vehicles they carry move along the Final Line Skillet Conveyor through various "final" assembly stations, where seats, wheels and tires, and doors are added — resulting in a vehicle that can literally be driven off the line.

LDT's assembly building was designed around the final assembly process and line, including the custom concrete pit (which Mr. Goesling concedes is a fixture) that was excavated and poured specifically for this Final Skillet Conveyor. Because the Final Skillet Conveyor was installed in a pit, allowing the skillets to be presented at floor level, LDT's workers address the vehicle in an ergonomic fashion, improving productivity and minimizing injury. The Final Line Skillet Conveyor has now been operated in place for over 10 years and was purchased and installed at a cost of almost $1.5 million.

Removing the Skillet Conveyor would be expensive, time-consuming, and extremely disruptive. In addition to the inherent difficulty of removing a massive asset from the middle of an operating facility crowded with other assets, removing the Skillet Conveyor would halt production at LDT, resulting in a $2.4 billion loss of revenue over the several months it would take to purchase, manufacture, and install a replacement. Mr. Goesling concedes that because it was uniquely configured for GM, the removed Skillet Conveyor would be of so little value to anyone else that it would be sold for scrap. Removing this massive and heavily integrated asset would take fifteen people two to three months of full time work.

Asset 2: Pits & Trenches

The plaintiff agrees this Representative Asset is a fixture. The Final Line Skillet Conveyor is installed *within* a portion of this asset (one of the "pits" can be seen in the picture immediately above), and if the Final Line Skillet Conveyor were removed, this pit — which was specifically sized and dug for the Final Line Skillet Conveyor — would simply be a very significant safety hazard that would need to be remediated.

E. Central Utility Complex ("CUC").

The Term Lenders' expert, Eric Stevens, will also testify about LDT's CUC. The asset also includes the walls and roof of the CUC building itself. The Term Lenders do not claim that part of the asset as collateral.

Asset 11: Central Utilities Complex

These pictures show only a small fraction of the utility systems that make up the CUC.

The Central Utilities Complex ("CUC") is a 65,000 square foot facility with an installed cost of nearly $74 million. The asset provides utility services to LDT, including electrical power; hot, chilled and domestic water; treated water; steam, compressed air; and wastewater treatment. Mr. Stevens will testify that the great majority of the CUC asset consists of the equipment *within* the CUC building — equipment the building was purpose-built to contain, and which was specified precisely to meet LDT's process utility needs. The Term Lenders' expert appraiser, Carl Chrappa, will similarly testify that only about 10% of the CUC's $74 million installation cost was for the construction of the CUC *building*. The remaining 90% was for the purchase and installation of equipment inside the CUC.

All of the major equipment inside and outside the CUC is attached to the CUC building. It is also critical to the operation of the stamping, body, paint, and general assembly areas at LDT. As Mr. Stevens will testify, GM designed and specified the CUC from the ground up — including the building itself and the assets within it. The entire CUC was designed to work as a unit to service the operating needs of LDT, and was correspondingly recorded as a single asset on GM's fixed asset ledger.

The systems within the CUC are massive. For example, 40-foot tanks and concrete platforms comprise elements of the wastewater treatment system. If any components of the major systems were removed (all of which are large and would take an extensive effort to remove), all operations at LDT would stop until the component was replaced with an identical asset.

While the CUC is subject to a 16 year capital lease, a review of the lease terms shows that it is actually a financing agreement that requires the CUC to return to GM at the end of the lease term after GM has paid off the financing, for a nominal fee of $10. The "lease" does not permit the lessor to remove the CUC or any of the equipment in the CUC (all of which stays with GM) without GM's express written consent.

Mr. Goesling concedes that certain components of the CUC — including process-specific components — are fixtures, and that the great majority of the CUC would have no use to a third party.

II. Warren Transmission.

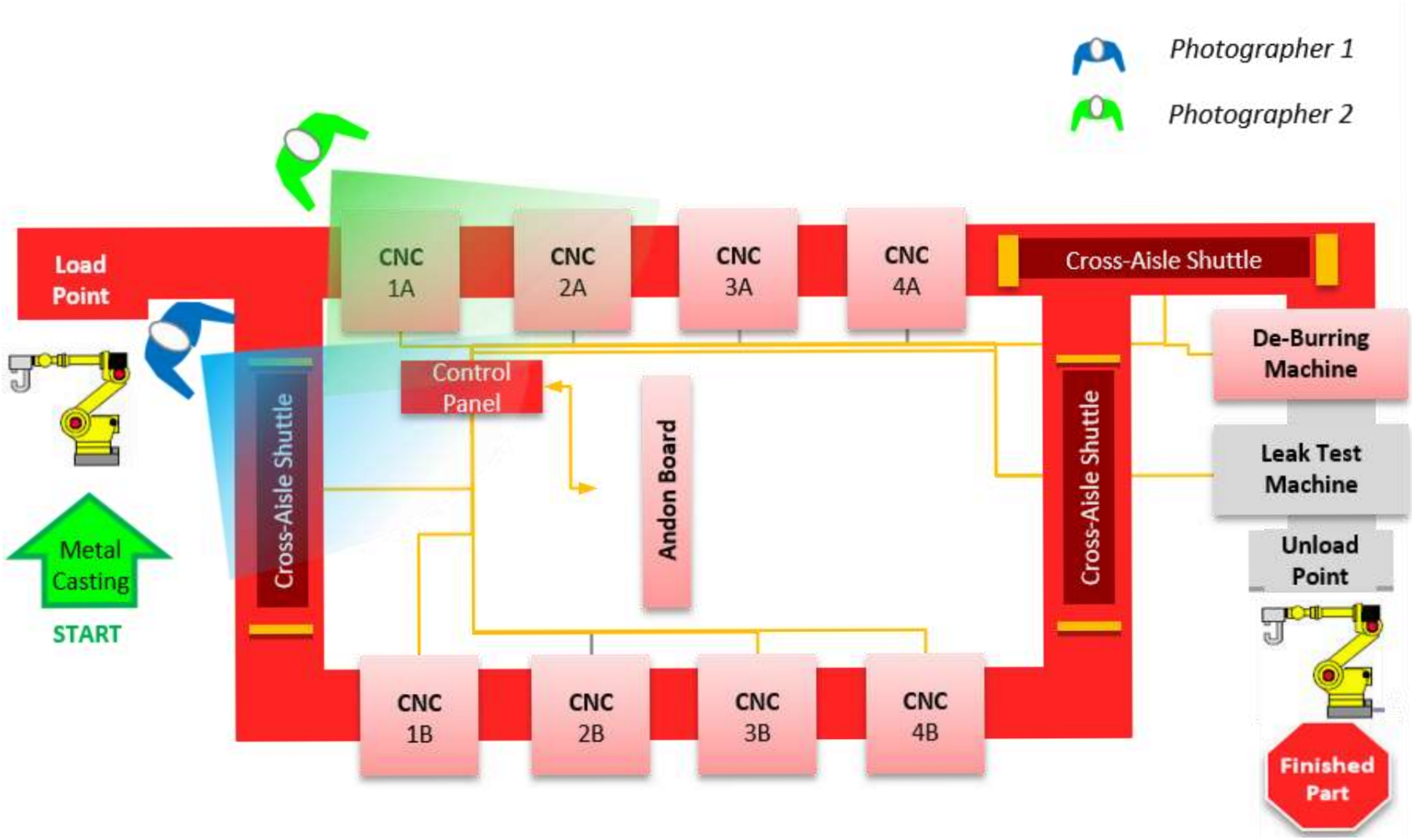
The Term Lenders' expert on the 11 Representative Assets located at GM Warren Transmission is Daniel Deeds. Mr. Deeds, who has 39 years of General Motors experience, finished his career as Manufacturing Engineering Director at Warren Transmission after serving as plant manager and engineering director at a number of powertrain facilities in North America.

Warren Transmission is an integrated facility that transforms metal castings poured at a foundry into complete transmissions. Between 2004 and 2007, GM invested over $400 million to renovate the Warren facility, upgrading HVAC and lighting systems, pouring new, thicker concrete floors (that could handle the weight, forces and tolerances required by the new equipment), and install an integrated bundle of equipment that could produce the 6-speed transmissions that are still produced at Warren today. Given the pace of change in powertrain, GM selected expensive, but versatile, equipment that could be used to produce not just 6-speed transmissions, but also future 7, 8 and even 10-speed transmissions if regulatory change or consumer demand so required. In that event, GM would be able to recoup the full value of its $400 million investment without moving its expensive, integrated systems.

Nine of the Representative Assets at Warren are part of the newer "6-speed" line; the other two Representative Assets are related to the older "4-speed" line that operated for nearly 30 years at Warren from 1982 to 2010, when the equipment reached the end of its useful life and was later removed and scrapped to make room for a major renovation project that would allow portions of Warren to produce the Electric Drive Unit for GM's new electric cars.

Asset 3: Power Zone Conveyor

These two photographs show only a small fraction of the Power Zone Conveyor. The diagram further below shows the limited viewpoint of the photographer taking the two photos.


Photographer 1
Photographer 2
Load Point
CNC 1A
CNC 2A
CNC 3A
CNC 4A
Cross-Aisle Shuttle
De-Burring Machine
Leak Test Machine
Unload Point
Finished Part
Control Panel
Andon Board
Cross-Aisle Shuttle
Cross-Aisle Shuttle
Metal Casting
START
CNC 1B
CNC 2B
CNC 3B
CNC 4B

The Power Zone Conveyor moves transmission housings along a custom path through eight 30,000-pound Computer-Numerically Controlled ("CNC") milling machines; the housings are machined to fine tolerances by each successive machine in the line. At the end of this conveyor and CNC milling line, a 6-speed transmission housing is ready for inspection by automated GM testing equipment. The Power Zone Conveyor extends over 200 linear feet, occupies floor space 80 feet long by 50 feet wide, and weighs approximately 10,000 pounds. It is attached by over a hundred bolts to the floor and to the CNC machines, and has extensive connections to the plant's utility systems.

The Power Zone Conveyor, like all of the conveyors among the Representative Assets, is made up of smaller sections that have been combined into a custom layout. The motors on the individual sections of the Power Zone Conveyor are integrated with one another electronically to allow the conveyor to operate as a seamless unit and to be controlled from one central point on the conveyor. The over 200-foot long conveyor is modular to facilitate its installation, not removal. As acknowledged in an article that Mr. Goesling cites, auto manufacturers do not typically reconfigure their conveyors. And as Mr. Goesling concedes, portions of the conveyor were custom configured, and he believes that the entire thing would be sold for scrap if removed.

The Power Zone Conveyor was purchased and installed at a cost of over $1 million. It has remained in place since it was installed in 2007.

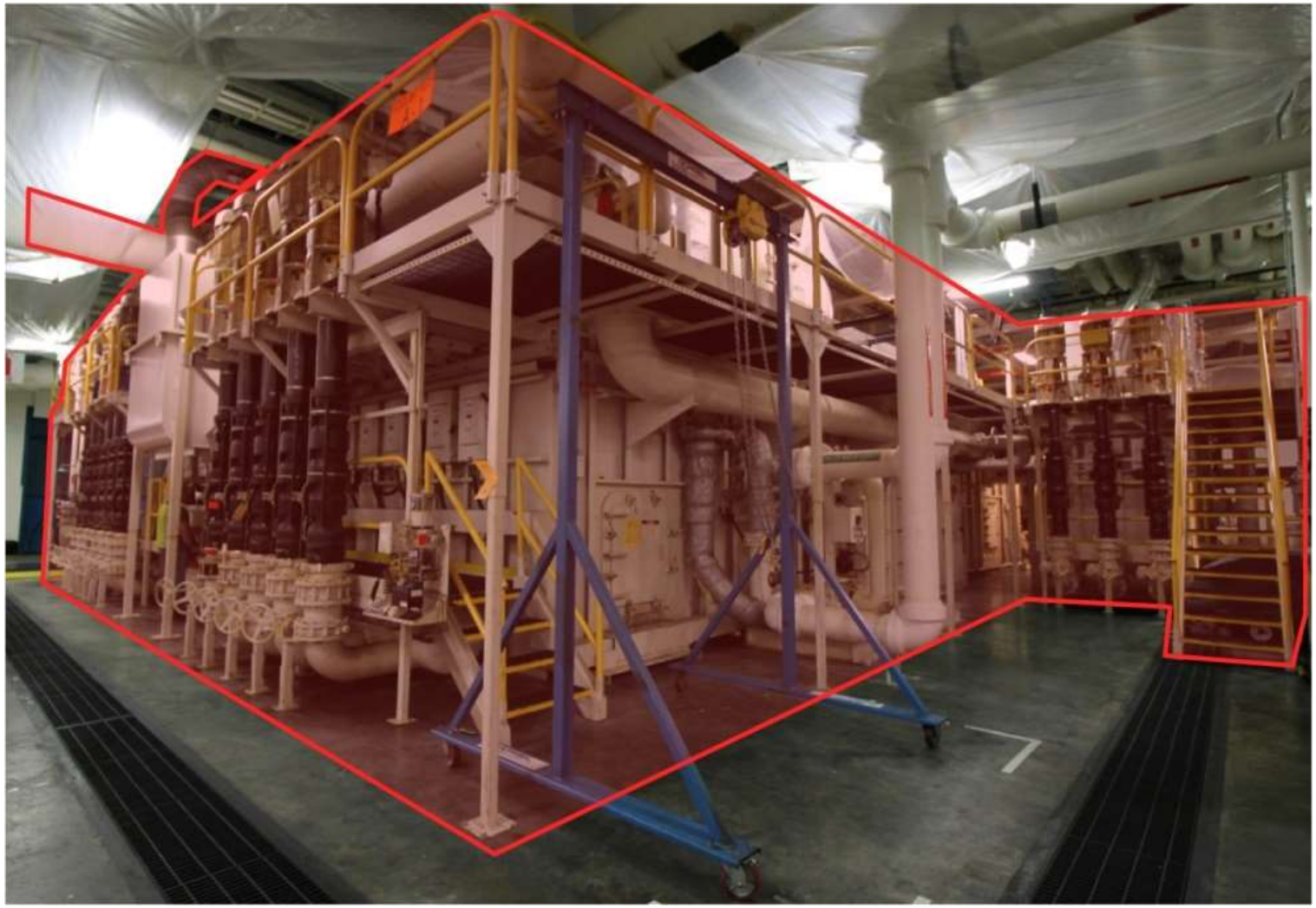
Asset 14: Leak Test Machine

The Leak Test Machine performs quality control checks on aluminum 6-speed transmission housings. Given the fine tolerances required by modern engines and transmissions, every transmission housing is tested by GM on one of three Leak Test Machines to ensure that it is free from defects.

The Leak Test Machine, on its own, weighs approximately 30,000 pounds and is 30 feet long, 25 feet wide and 12 feet tall. GM spent over $1.25 million to purchase, install and customize it for the 6-speed transmission housing line. Indeed, Mr. Goesling values the asset as scrap, believing that it would have little value to a third party if removed. The Leak Test Machine is bolted to the concrete floor of the plant, connected to a number of plant utilities, and bolted to other assets in the transmission housing milling line.

Moreover, the Leak Test Machine does not operate alone. It is directly integrated into the rest of the 6-speed transmission housing line at Warren, and works together with the assets in its module as a cohesive unit to produce transmission housings that meet GM's fine tolerances. Unsurprisingly, GM has not moved the Leak Test Machine over the nearly 10 years it has been in operation.

Asset 23: Aluminum Machining System



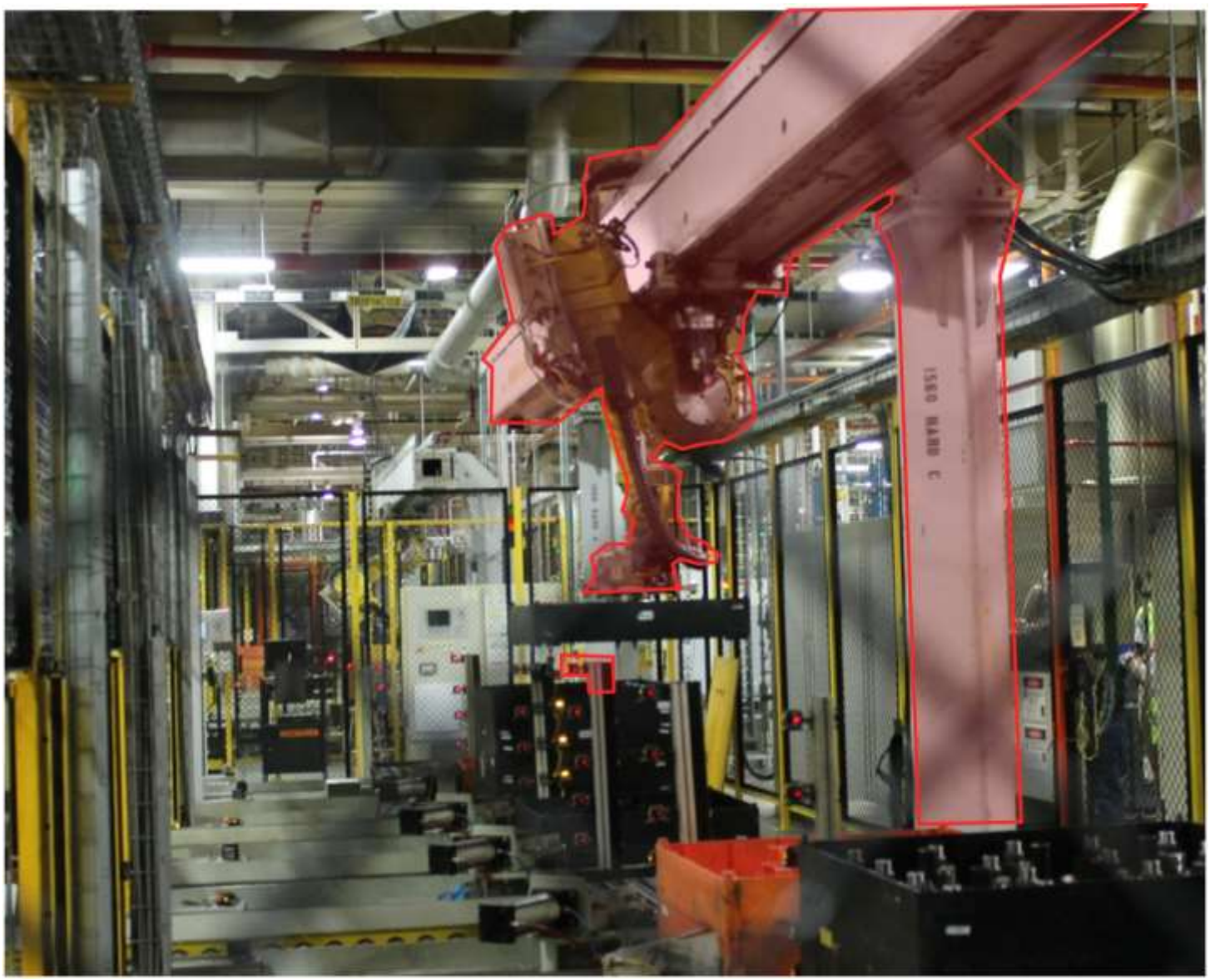
The Aluminum Machining System is integrated with 36 CNC machining centers in the 6-speed line at Warren transmission. It supplies clean, temperature-controlled coolant to each of those machines and removes the aluminum chips created by the milling process from the coolant. Without the Aluminum Machining System, the heat from the cutting friction of the CNC machines would deform the castings and the machines would quickly jam with chips — rendering the 36 CNC machines, the conveyors connecting them, and numerous other assets useless.

The $1.9 million Aluminum Machining System is a huge asset — 75 feet long, 60 feet wide, and 25 feet tall, and weighs over 800,000 pounds — and is bolted to the plant floor in numerous places.

Given the size and weight of the Aluminum Machining System, GM had to construct a special reinforced concrete floor to support it. The asset also required large-grade 24-inch supply and return steel piping to connect it to each of the 36 CNC machines.

The Aluminum Machining System is surrounded by custom trenches built into the floor of the Warren plant; the trenches are 16 inches wide and 12 inches deep and sloped to catch basins at each corner with sump pumps in place to pump any spills to the Warren waste treatment plant. Mr. Goesling concedes that the specialized trenches and piping that are part of this asset are “fixtures,” but nonetheless concludes that the rest of this huge machine is personal property because in his view it could theoretically be moved or sold — despite his valuing the machine at scrap value because he could not identify a single comparable sale.

Asset 22: Fanuc Gantry Robot

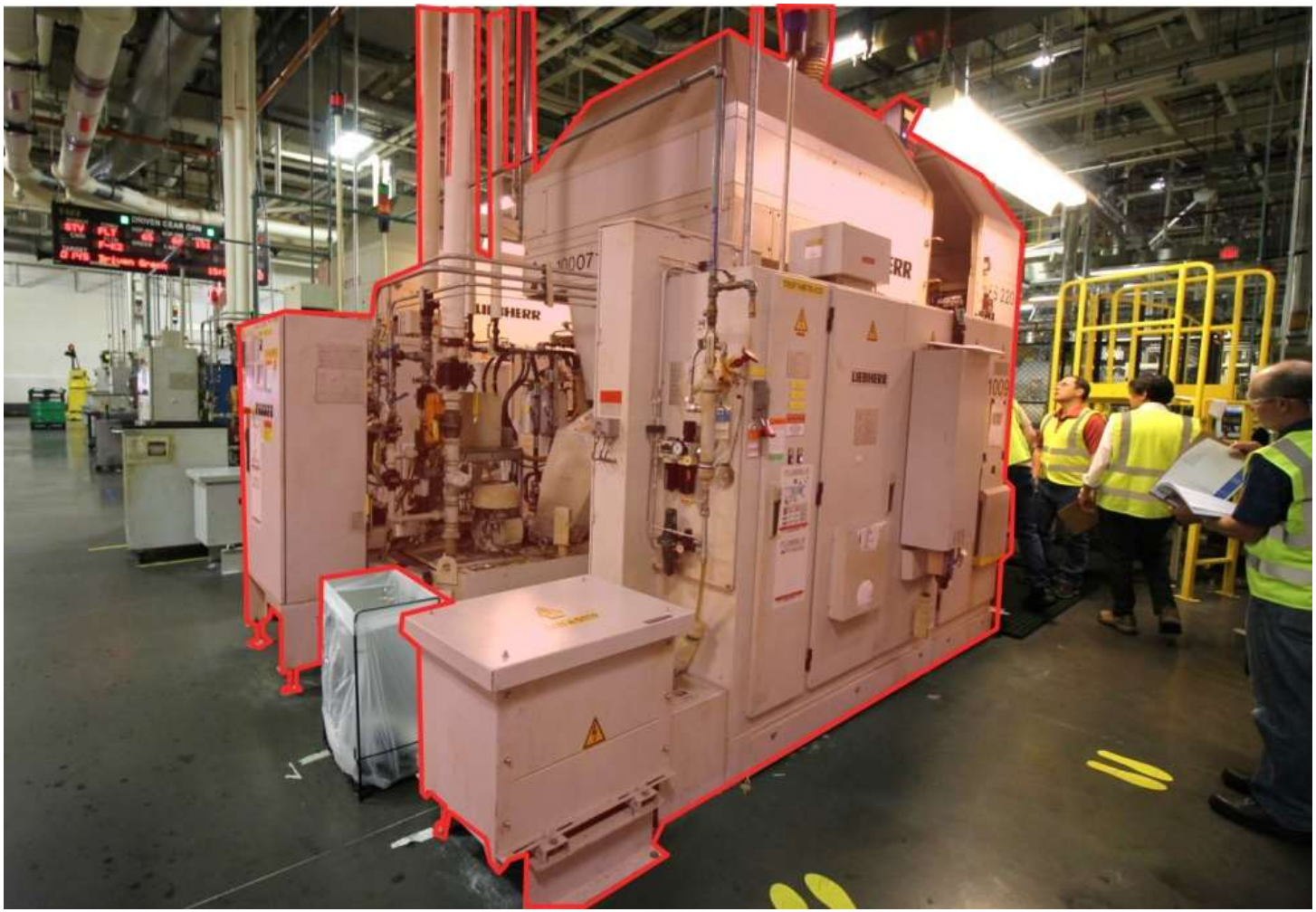


The Fanuc Gantry Robot consists of a Fanuc robot installed on a 30 foot long, 20 foot wide and 10 foot tall gantry system custom-specified by GM to allow the robot to (a) pick up transmission gears from a specifically located unfinished heat-treated gear delivery area, (b) transport each gear to GM's automated finish gear grinding process, and (c) transport each finished gear back into a separate pallet storage area, where it will be stored before being delivered to the final transmission assembly line. The Fanuc Gantry Robot helps maintain the quality of the gears by avoiding any damage during transit, as the smallest nick or burr in the gears — which have been milled to tolerances much smaller than a human hair — will result in noise in the transmission. Loading the gears in the finish gear grinding process by hand would inevitably result in quality control problems, and would cost GM significantly more in labor costs.

The parties agree that the robot and the gantry system are part of the asset. (There is a minor dispute as to whether the safety fencing surrounding the asset is included in the asset.) The parties also agree that the Fanuc Gantry Robot's gantry support columns are bolted to the floor and bolted to the overhead gantry rail, and that the robot is then bolted in turn to a carrier that slides on the gantry rail in a set path.

The entire Fanuc Gantry Robot system weighs over 8,000 pounds, and has been operated in place by GM for almost 10 years.

Asset 24: Base Shaping Machine



The Base Shaping Machine is part of the production line at Warren Transmission that turns steel blanks into gears for the 6-speed transmission — cutting teeth into the gears that will mate with other gears to send power to a vehicle's wheels. The Base Shaping Machine weighs 30,000 pounds, is 15 feet long, 12 feet wide and 10 feet tall. A custom 12-inch concrete floor was poured to accommodate the machine, which is attached to the concrete floor through its weight, and 12 isolation dampers that allow the Base Shaping Machine to operate with limited vibration and produce high-precision 6-speed transmission gears.

The Base Shaping Machine is bolted to the inlet and outlet conveyors that feed it, as well as to an electrical supply transformer and electrical control cabinets, all of which are bolted to the floor in turn. The Base Shaping Machine is also attached to the plant utilities through hard piping that delivers coolant to the precise location of the Base Shaping Machine.

GM spent over $1 million purchasing and installing the Base Shaping Machine at Warren Transmission. The Base Shaping Machine is also an integral part of the gear manufacturing line at Warren, and is integrated through a powered loop conveyor with gear hobbing machines, a gear washing machine, and a gantry robot that loads and unloads unfinished and finished gears. The Base Shaping Machine has been operated in place 24 hours a day, 6 days a week for over 10 years.

Asset 25: Liebherr Hobb Machine

The Liebherr Hobb Machine, like the Base Shaping Machine, is used to manufacture transmission gears as part of the 6-speed line at Warren Transmission. The Liebherr Hobb Machine is bolted to the floor to keep the machine from moving when the horizontal forces of the cutting tools inside the Liebherr Hobb Machine are applied to cut the gear blanks. The Liebherr Hobb is also held in place by its great weight and size — it weighs 33,000 pounds, is 12 feet long, 15 feet wide, and 10 feet tall.

The facility has been specifically adapted for its use — a 12-inch concrete floor was poured to hold the significant weight of the asset and allow the Liebherr Hobb to produce gears to the required tolerances. In addition, safety fences and access ladders were installed around the Liebherr Hobb, and input and output conveyors in the gear manufacturing line were customized to work with the asset.

The Liebherr Hobb Machine apparently was moved to its current location when GM unexpectedly idled a machining line at its St. Catharines, Ontario, Canada plant as part of an expansion of capacity on the Warren 6-speed line. Since installed, the Liebherr Hobb machine has operated in place for over 8 years. The machine was purchased and installed at a cost of over $1.1 million.

Asset 36: Helical Broach

The Helical Broach is an even larger CNC milling machine than the Base Shaping Machine and the Liebherr Hobb. Like those assets, it is part of the gear-making processes in the 6-speed line at Warren Transmission. The Helical Broach is held in place by its weight and size — the asset weighs approximately 90,000 pounds, is 18 feet long, 15 feet wide, and 20 feet tall. It is installed on a thick 12 inch concrete foundation to support its large weight, and is located in the Warren Transmission facility in the one area that provides sufficient roof clearance for its 20 foot height. The Helical Broach is bolted to the conveyor that feeds it, as well as to an electrical power transformer and electrical panels, all of which are in turn bolted to the floor. The Helical Broach is also integrated with a coolant filtration system via hard piping that delivers coolant to the precise location of the machine.

GM spent approximately $1.5 million to purchase and install the Helical Broach and has operated it in place as part of the Warren 6-speed line since 2006.

Mr. Goesling asserts that similar assets used to be installed by GM in pits, and that since the Helical Broach was installed at floor level it was not intended to be permanent. The change in method of installation, however, was done to reduce cost and time to install, as well as for safety reasons, not to facilitate the movement or removal of the machine.

Asset 1: OP-150 Shims Station

After the 6-speed transmission housings and gears have been milled, heat-treated and initially checked, all components are delivered to the assembly line at Warren Transmission which performs additional checks and assembles the components into a completed transmission that is ready to be paired with an engine and installed in a completed vehicle. The OP-150 Shims Station is one of the integrated components of the automated 6-speed transmission assembly line.

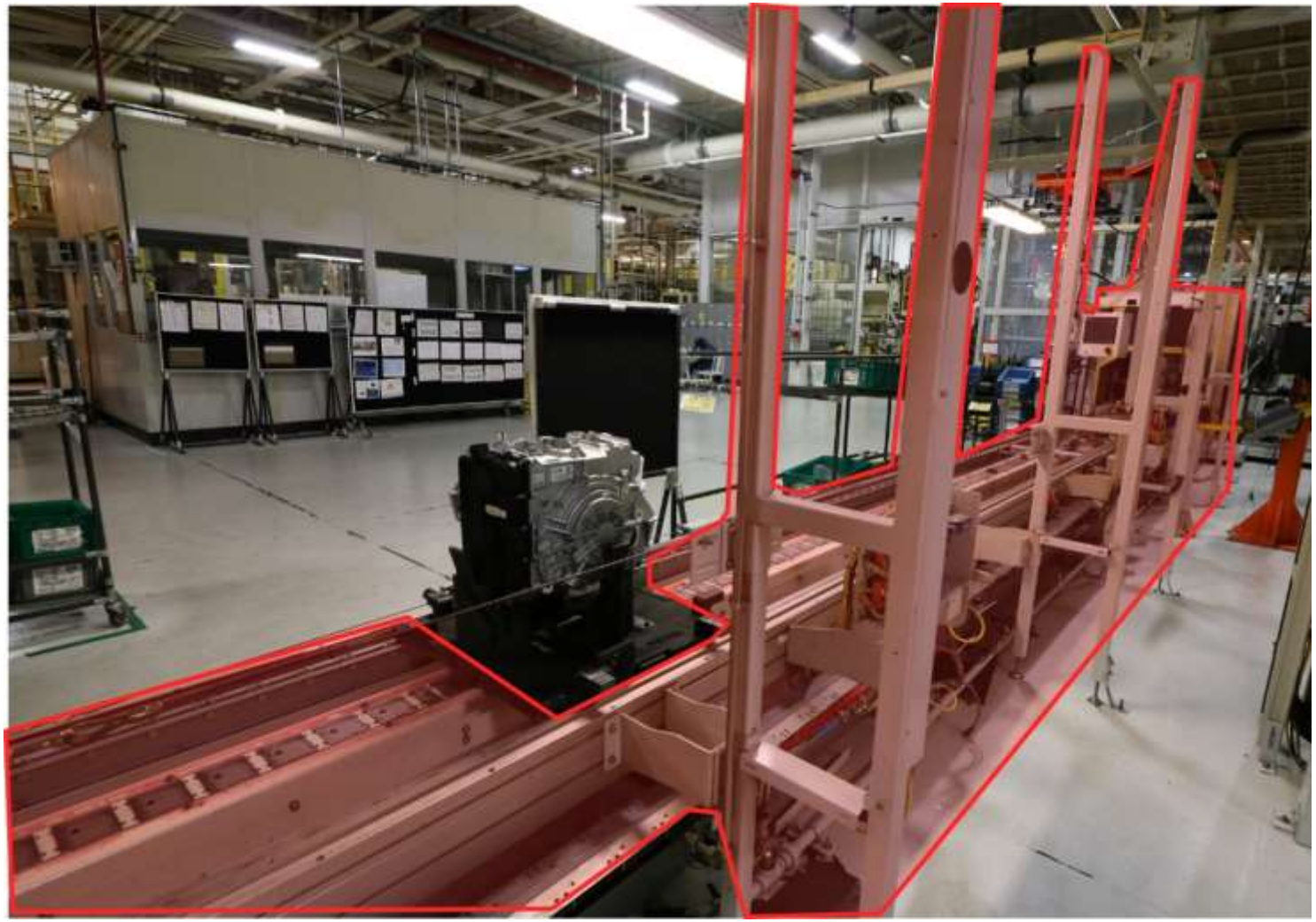
The OP-150 Shims Station checks each transmission housing, detects any variance in design tolerance, and if it finds a variance, selects the appropriate shim (small piece of metal) and installs it in the correct place in the transmission housing to correct the variance. The OP-150 is customized to the 6-speed assembly line at Warren, and would have no use if separated from the rest of the line given the unique design of the 6-speed that required the insertion of shims.

The OP-150 Shims Station weighs 9,000 pounds, occupies 200 square feet of floor space and is 10 feet tall. It is bolted to both the concrete floor as well as the conveyors that feed it.

The OP-150 Shims Station, along with the other integrated assembly and testing stations on the 6-speed assembly line (all of which are connected by powered conveyors), is critical to Warren's production of 6-speed transmissions. While Mr. Goesling disputes that this asset was adapted to the realty, he concedes that it is "so specialized that it would likely not be sold on the open market." In the absence of the OP-150 (which is part of a line that assembles half the transmissions manufactured by Warren), half the transmissions produced by Warren would not be reliable and could not be used in GM vehicles — cutting Warren's 6-speed output by half.

Asset 35: Button Up Conveyor System

As with all conveyor pictures, this picture captures only a small segment of this over 350 linear foot long asset, which is installed in the form a loop that covers 3,000 square feet of Warren Transmission.



The Button Up Conveyor is responsible for the final leg of the 6-speed transmission assembly and testing process at Warren — its custom layout feeds six final assembly and testing operations and results in a completed transmission ready for shipping and combination with an engine from one of GM's engine plants. Over 400 bolts attach this 350 linear foot long, 3,000 pound conveyor to the concrete floor of the facility.

As with a number of the other conveyors discussed above, this conveyor is made up of smaller conveyor portions. Again, the "modular" design of the system was to enable its installation and customization, not its removal. Even then, the installation process took over 50 labor weeks and 10-12 truckloads of parts to complete. While Mr. Goesling disputes that the conveyor is adapted to the realty, he concedes that it is uniquely configured for GM's needs and would have only scrap value to a third party purchaser.

The Button Up conveyor was purchased and installed at a cost of over $2.7 million. It has remained in place since it was installed in 2006.

Asset 34: Build Line w/ Foundation

This photograph shows the concrete cap covering the foundation of the former Build Line.

Unlike the preceding Warren assets, the Build Line — a 300 foot in-ground conveyor with an embedded structural steel foundation to support its significant weight — was part of the former 4-speed transmission line at Warren Transmission. The 4-speed transmission line was originally installed at Warren in 1982 and 1983 and operated in place through 2010. The Build Line's 28-year operation was over twice the depreciable life assigned to it by GM.

After remaining idle for several years, the components of the 4-speed line, including the Build Line, were torn out and scrapped — a multi-year process, requiring assets like the Build Line to be torched into pieces and carried out with powered equipment. (This is perhaps why Mr. Goesling concedes that the asset would have little value to a third party once removed.) The floor space formerly occupied by the 4-speed line was remediated; the 325 foot-long pit and foundation that supported the Build Line was filled with sand and capped with a 4 inch thick concrete cap. Some of the space formerly devoted to the 4-speed transmission was repurposed (after extensive renovations) to make electric drive units for GM's electric cars. Other 4-speed floor space, including the space where the Build Line had been installed, is currently used for storage. The effects of this remediation are still visible in the floor where the Build Line was formerly located.

Asset 37: Courtyard Enclosure

This photograph shows the Courtyard Enclosure as it was being used in 2016.

The Courtyard Enclosure is an enclosure of previously open space between then existing buildings at Warren Transmission. It was put in place in 1982 to house certain manufacturing operations that were part of the 4-speed transmission line. The parties agree that much of this $8 million asset is ordinary building materials — roof, walls, building costs — that are not fixtures under Michigan law.

However, as of June 2009 — 27 years into the operation of the 4-speed line — the Courtyard Enclosure also contained a number of components that had an identity independent from the building itself, including dock doors and levelers, hot water tanks, lighting transformers, and a fire safety system. Each of these components was extensively attached to the building structure by bolts, cement or the components' sheer size and configuration. As estimated by the Term Lenders' appraiser, these "fixture" components of the Courtyard Enclosure represented approximately 10 percent of the installed cost of the total asset. Mr. Goesling does not analyze any of these components to determine if they meet the fixture test.

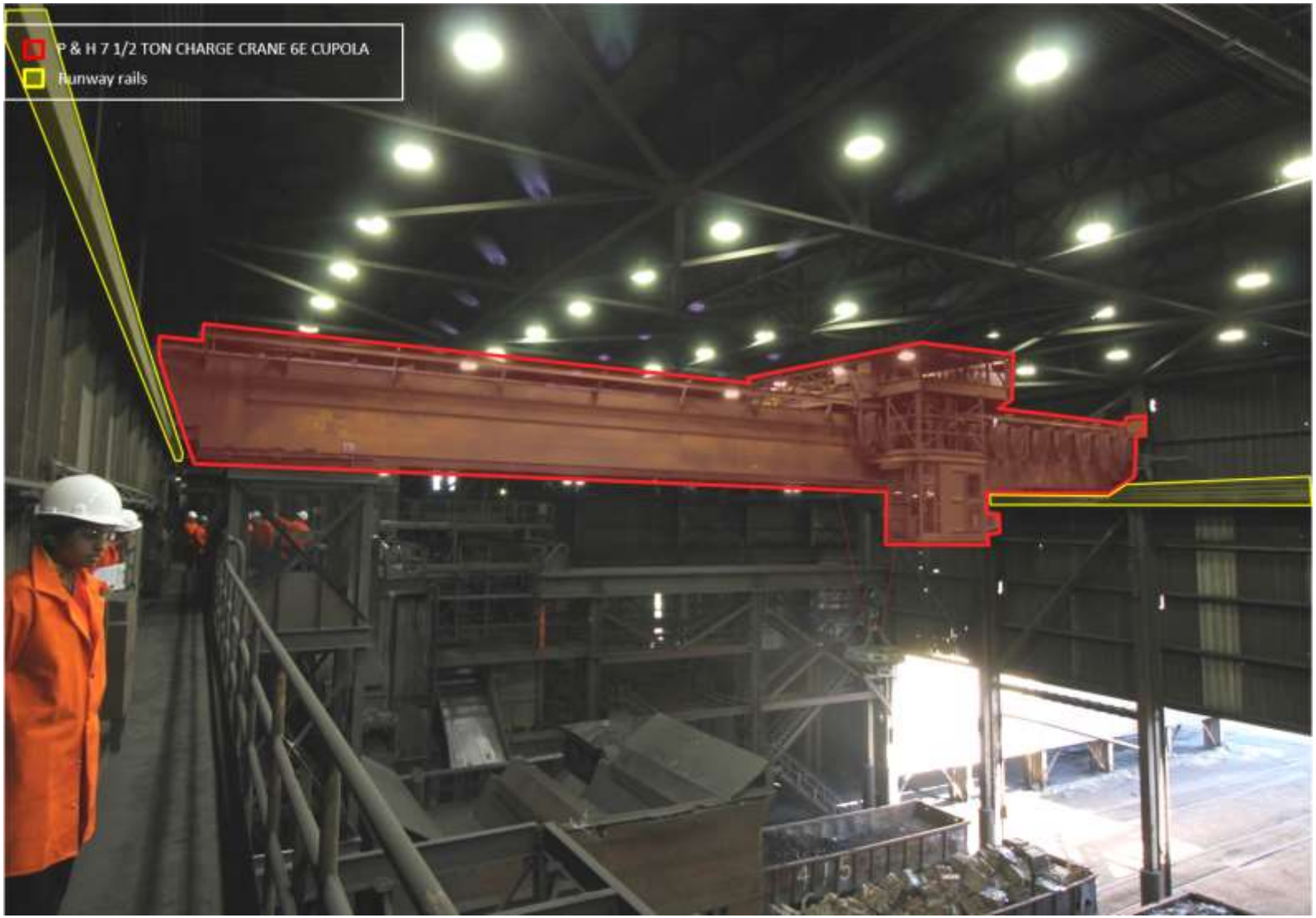
As part of the scrapping of the 4-speed line and the installation of the Electric Drive Unit line at Warren Transmission (as discussed above), GM renovated the Courtyard Enclosure in 2012-2013 and removed a number of the components that the Term Lenders contend were fixtures in June 2009; these renovations occurred after the components had operated in place for nearly 30 years and reached the end of their useful life.

III. Defiance Foundry

The Term Lenders' expert on the 6 Representative Assets at the Defiance Foundry is John Thomas, a 28-year GM veteran who spent 18 years of his career directly involved in foundry operations and finished his career as the Plant Manager of the Defiance Foundry. The Defiance Foundry consists of a number of highly integrated melting and molding lines housed in a two-building complex. Defiance Foundry turns scrap metal and ingots into cast metal parts that are then machined into finished components at one of GM's engine or transmission plants.

GM built the Defiance Foundry as a foundry in the 1940s, and has operated it continuously as a foundry for almost seventy years. In order to accommodate the foundry operations, the surrounding land has been substantially modified to include a landfill for core and foundry sand, a waste pile for solidified discharge from the emissions cleaning systems, wastewater pools plus berms to protect the river from wastewater contamination, and extensive railway systems to bring raw materials into the foundry. In light of these modifications, as well as the design of the foundry buildings themselves, the Defiance Foundry, and the land on which it sits, realistically would not be repurposed for any use other than foundry operations.

Asset 40: Charger Crane



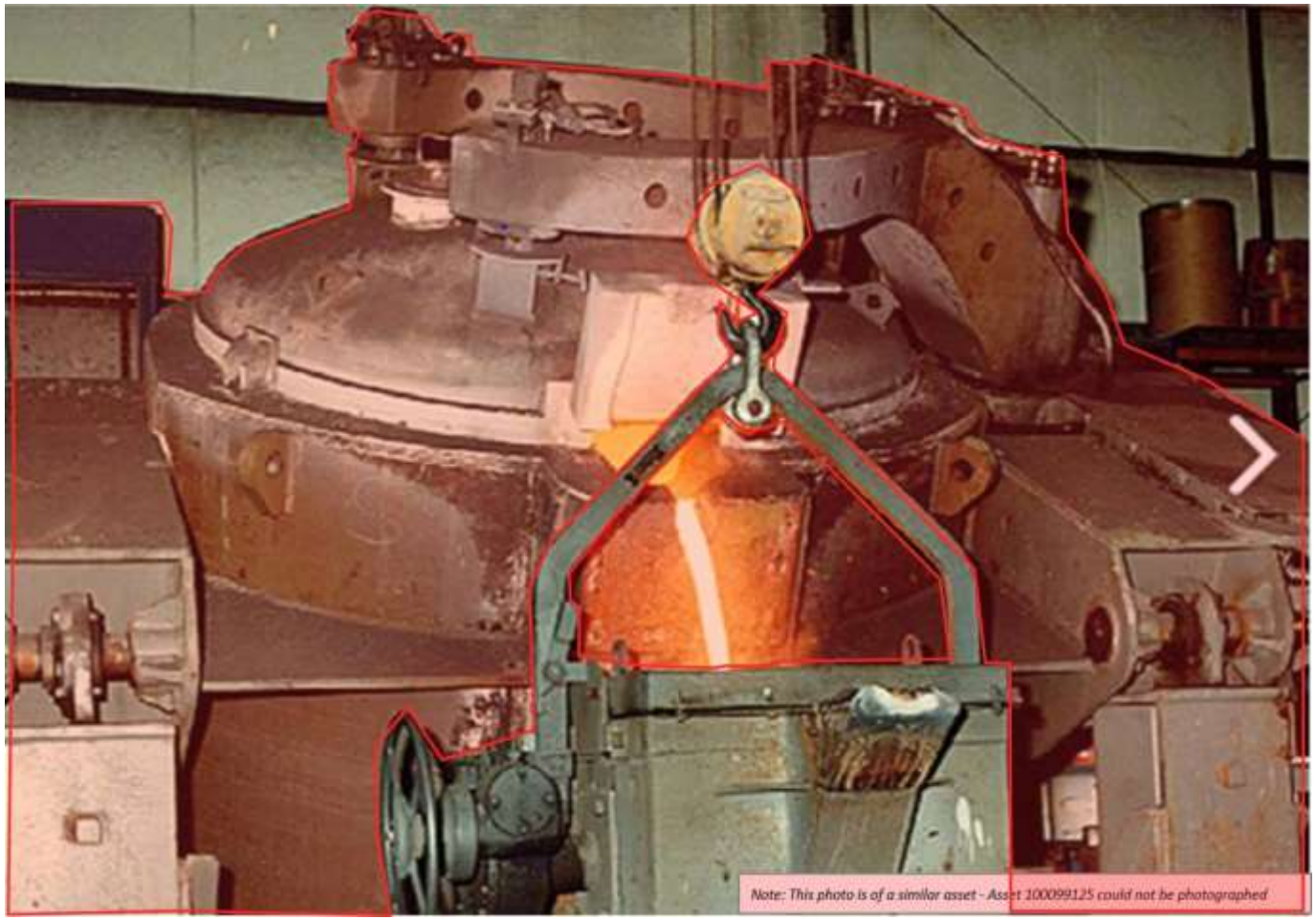
The Charger Crane is suspended over incoming railcars in a "charge yard" and uses a 4-foot-diameter magnet to pick up scrap metal (the foundry's "raw materials") from those railcars. The scrap metal is then delivered by the crane to a feeder / conveyor system that transports the metal to one of Defiance's large, melting furnaces (here, known as a "cupola"). The cupola process produces the extremely high temperatures necessary to melt the scrap metal into molten metal suitable for casting.

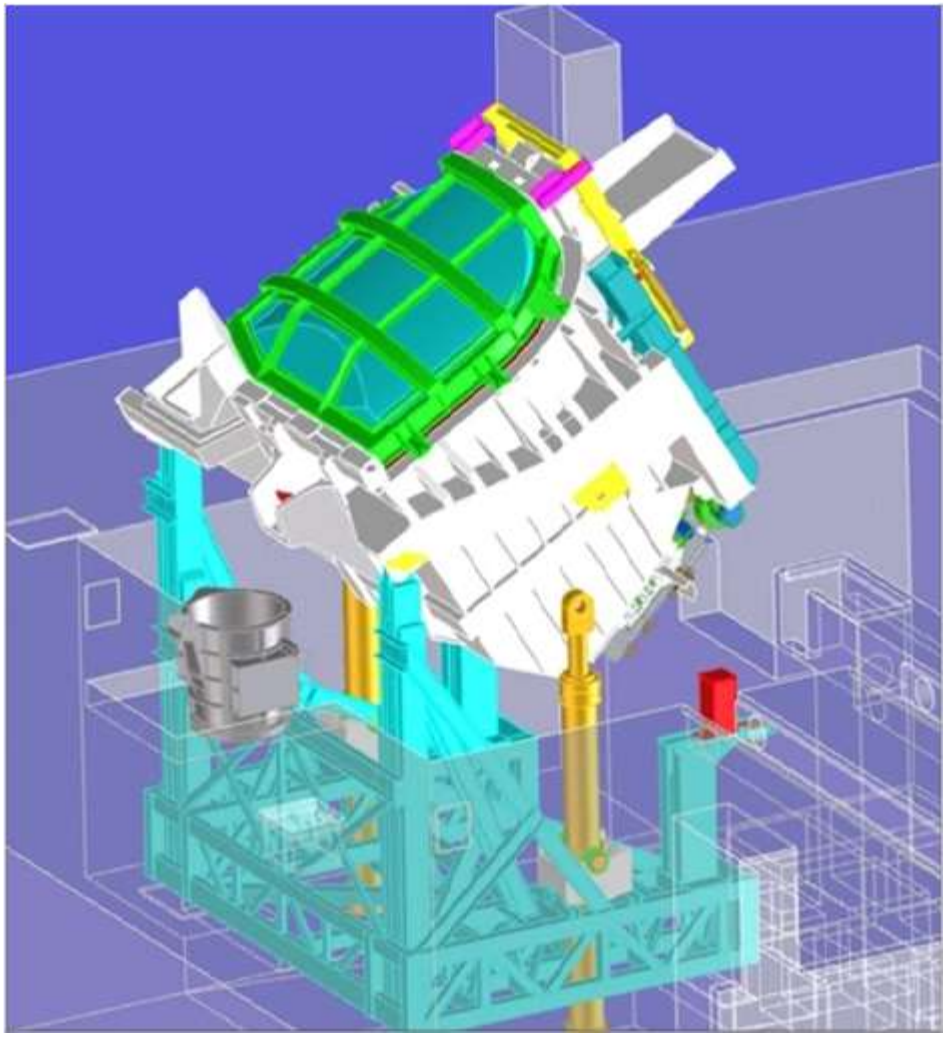
The Charger Crane was custom-built to meet GM's performance specifications (*e.g.*, speed, lift capabilities, drop height, and travel span), and to conform to the facility's existing infrastructure (*e.g.*, runway, electrified rails, span, and load tolerances). It weighs over 140,000 pounds and is suspended 55 feet above the floor. It travels along runway rails attached to the building; the Charger Crane would have no value without the rails, and the rails would have no value without the Crane. The Charger Crane is approximately 100 feet long, 20 feet wide, and 10 feet high.

GM spent approximately $640,000 to purchase and install the Charger Crane, which was shipped in pieces from the manufacturer. GM was required to obtain special trailers and permits just to transport each of the Charger Crane's two 100-foot trolley beams, which weigh approximately 50,000 pounds each. The Charger Crane replaced a substantially identical crane that had been operated in place for over 30 years.

Asset 28: Holding Furnace

This photo and schematic are of a holding furnace similar to the one at Defiance Foundry.





As its name suggests, the Holding Furnace at Defiance held molten iron at a stable, molten temperature until the subsequent assets in the mold line were ready to use it. It was removed from the Defiance Foundry in 2011.

When it was in operation, the Holding Furnace transferred the iron to ladles that delivered it to a pouring furnace, which then poured the molten metal into individual molds for malleable iron transmission components.

The Holding Furnace was approximately 12 feet long, 16 feet wide, and 24 feet high, and could hold 100 tons of molten metal at a constant 2,500 degrees. To install the asset in 2007, GM excavated a deep pit (approximately 20 feet long by 20 feet wide by 15 feet deep), poured a substantial concrete foundation into that pit, embedded hundreds of feet of structural steel, and installed specialized refractory brick to protect the floor of the plant.

All told, GM spent approximately $4.2 million to install the Holding Furnace — just one component of a malleable iron line that cost GM approximately $35 million in installation and repurposing costs in 2007. The “new” malleable iron line, in fact, was part of repurposing an existing mold line at Defiance that had been sitting idle, and much of the equipment associated with that existing line was reused in place as part of the malleable iron line after some modification, resulting in a much lower total installation cost than an entirely new line.

While GM knew that the malleable iron product would only be needed for approximately 3-4 years at the time the Holding Furnace was installed, GM was actively seeking alternative uses for the system that they had installed. One

possibility that GM considered was a compacted graphite casting process. The compacted graphite project was ultimately cancelled as part of the pre-bankruptcy planning.

After the malleable iron line ceased production in 2010, the Holding Furnace sat idle for approximately a year while GM sought alternative uses for it and the rest of the mold line. In 2011, however, GM determined it needed the floor space to expand Defiance's aluminum casting operations and, as noted, the Holding Furnace was removed in 2011, a significant task that required approximately 450 labor days, and left a hole in the building floor that measured approximately 20 feet long by 20 feet wide by 15 feet deep. The hole needed to be remediated before that area of the foundry could be reused for aluminum casting operations.

Asset 39: Core Box Robot

A "core machine" with an installed "core box" is a machine that uses chemicals and/or heat to harden sand into the shape (the "core") that defines the interior dimensions of an engine or transmission. Metal is eventually poured over this core package to create the engine or transmission part, and the core is removed, leaving the intended cavity in the finished product. The Core Box Robot is a robot in the center of a cell of integrated assets that, working together, processes, assembles, and transfers cores from the core machine to a conveyor. The conveyor then takes the cores to a dip tank for hardening in advance of casting.

To install the Core Box Robot, GM bored large holes in the plant floor, filled those holes with specialized epoxy, and used anchor bolts to attach the Robot's base plate to the floor through the epoxied holes. The resulting foundation is stronger than concrete. The Core Box Robot, which includes a customized gripping tool, weighs approximately 5,000 pounds and measures 7 feet high by 3 feet wide with a 13 foot reach. The Core Box Robot, and its epoxied bolted installation, are designed for heavy-duty foundry operations.

The Core Box Robot is also heavily integrated with other components of its "cell," including a "definning stand" (which uses brushes and plates to remove residual sand from the resulting core), a specialized turntable (where operators assemble pieces of the core), control systems, safety devices, and custom safety fences. All of these components are bolted in precise places to allow the Core Box Robot to integrate all of their operations.

GM spent $62,500 on the Core Box Robot, its controller and gripping tool; $84,000 on the

definning stand and turnable; plus a nearly equal amount of $135,000 to install and integrate the Core Box Robot and the other components of the Core Box Robot cell. The Core Box Robot is critical to the efficient operation of the approximately $2 million core machine. Put simply, a core machine cannot produce more cores than can be regularly unloaded, processed, assembled, and moved downstream — which is the task of the Core Box Robot and its cell.

The Core Box Robot was installed in 2005 and has remained in place since that time.

Asset 26: Core Delivery Conveyor System

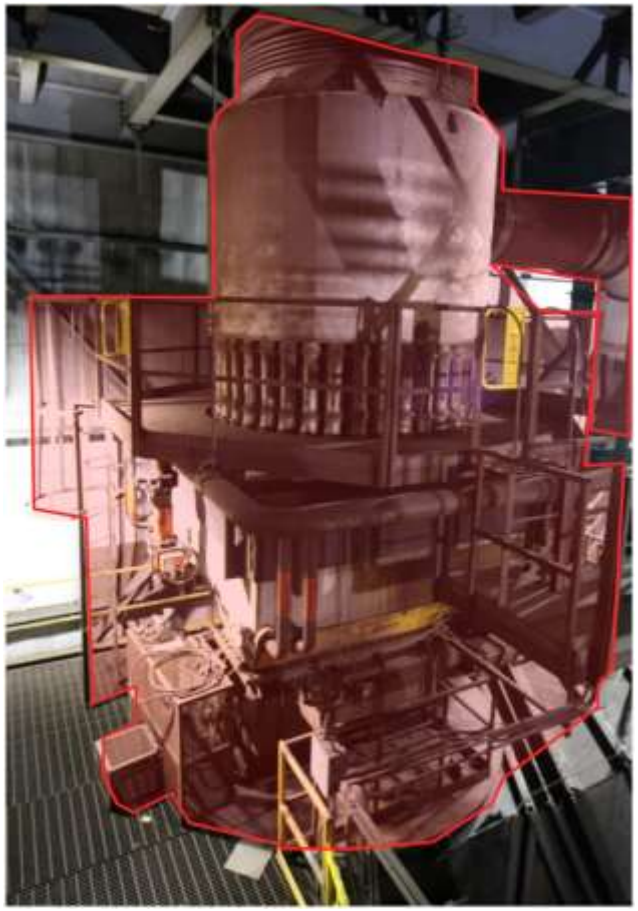
The Core Delivery Conveyor System is an integrated conveyor that transfers cores from a core box robot cell (virtually identical to Asset 39 described above) to the "dipping process" (where a liquid refractory coating is applied to the cores). The Core Delivery Conveyor System weighs more than 8,000 pounds and measures approximately 140 feet long by 7 feet wide with a 7 foot wide support platform. It is bolted to a custom-designed platform suspended approximately 13 feet above the ground, which is itself bolted to the building's vertical support columns, bolted to the existing mezzanine (which was put in place to accommodate equipment for the core machine), and also connected to the building's overhead trusses with structural-angle iron hangers. GM spent approximately $280,000 to purchase and install the Core Delivery Conveyor System.

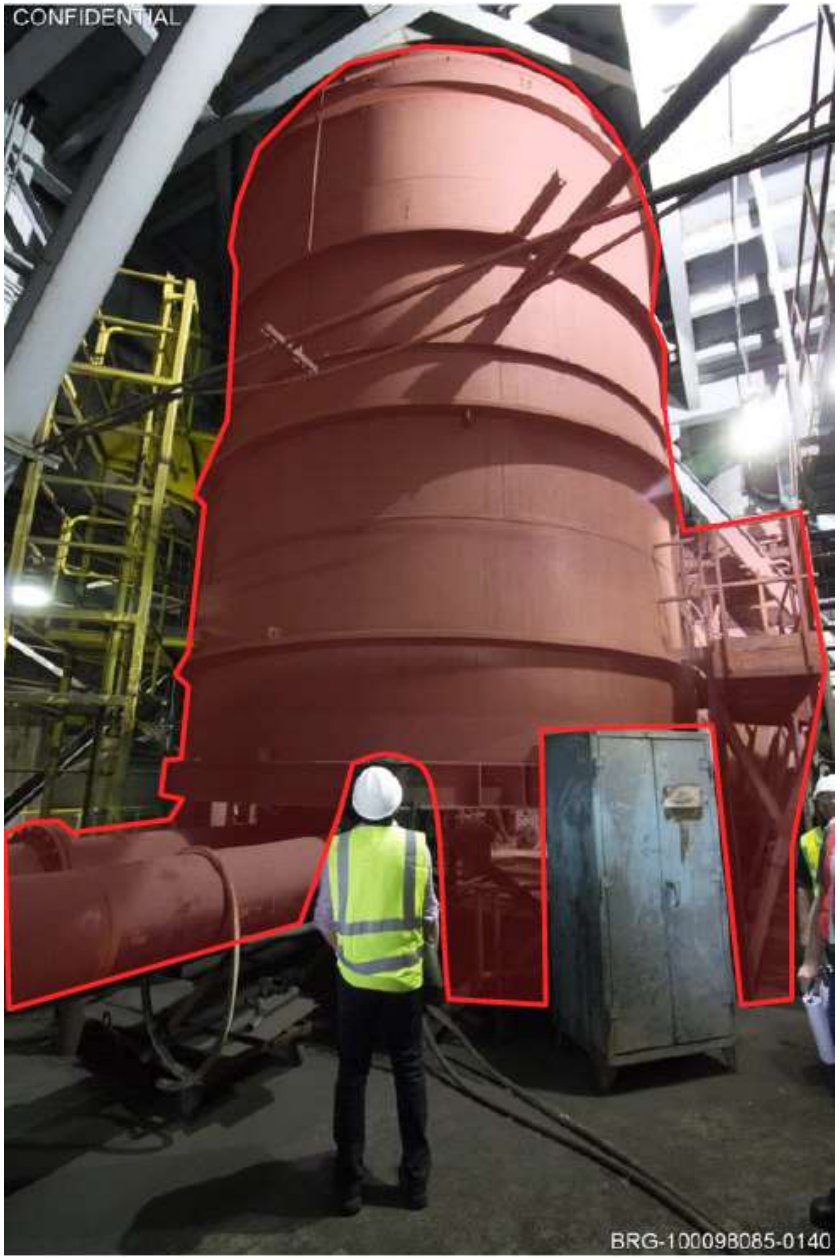
The Core Delivery Conveyor was designed and constructed specifically to address a unique problem of connecting the Core Box 116 cell to the Core Box 122 core dip process in a tight corner in the Defiance Foundry. Rather than the traditional floor mounted support columns, which would have interfered with the aisle way below the conveyor's path, GM designed the Core Delivery Conveyor System and its mezzanine support to be suspended from the overhead structural steel and existing mezzanine. The conveyor was customized specifically to this one corner of this particular plant, and Mr. Goesling concedes that the asset would have no value to anyone else and would be sold for scrap if removed.

The Core Delivery System was installed in 2007 and has remained in place since that time.

Asset 27: Emissions System

These two pictures (showing the bottom level of a heat exchanger and the upper portion of a scrubber) show only a portion of two of the major components of the Emissions System. The entire Emissions System is far too extensive to capture in any photograph.

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The Emissions System is a complex, integrated, multi-story system that captures, cleans, and recycles emissions from a cupola at Defiance. The components of the asset are secured to two multi-story enclosures totaling 6,000 square feet that were designed and constructed specifically to support the Emission System. Many critical pieces of the system could not be removed without significant damage to the enclosures and potentially to the asset components. In total, the Emission System weighs approximately 400,000 pounds.

The Emissions System removes and controls particulates and toxic gases generated by foundry melting operations and is required for any foundry operations to meet environmental and safety regulations.

GM spent nearly $10 million to purchase and install the Emissions System in 2007. It is essential to the functioning of the Defiance Foundry and has been operated in place since its installation. As Mr. Goesling concedes, due to the asset's unique configuration, the only part that would have anything other than scrap value is an electric turbine motor.

The Emissions System replaced a functionally similar earlier system, the Gas Cleaning System #4 Cupola (Representative Asset 38 discussed below). That system was installed in 1976 and operated in place for over 30 years before reaching the end of its useful life, and becoming technologically obsolete. As discussed below, given the sheer size of the former Gas Cleaning System, GM has simply left the majority of it abandoned in place instead of incurring the significant expense that would be required to remove it.

Asset 38: Gas Cleaning System

This photograph only shows the cupola takeoff ducts, a small portion of the overall asset.

The Gas Cleaning System is the predecessor to the Emissions System (Representative Asset 27 described above). Like the Emissions System, the Gas Cleaning System, which is 40 feet tall by 25 feet wide by 10 feet deep, was designed and installed to clean high-temperature exhaust gases from a cupola at Defiance. Portions of the Gas Cleaning System are bolted to the floor of the enclosure, while other parts are welded to the structural steel of the building. GM spent $1.1 million (in 1976) to install the Gas Cleaning System.

Although it was originally installed in 1976 to comply with then-current EPA regulations, it is so large, heavy (100,000 pounds) and intricately installed that the majority of it is still in place today — despite having been decommissioned over nine years ago. Mr. Goesling concedes that the Gas Cleaning System would have almost no value to a third party.