

# SSP Close-out...A New Opportunity for Small Aerospace Contractor Businesses

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## Abstract

*The Shuttle Strategic Management office benchmarked government programs that have been involved in program close-outs. An issue NASA is concerned about is that contractors are fleeing the Shuttle Program to move forward to the Exploration Program: Interestingly, doing so leaves SSP Close-Out as an opportunity for Shuttle Program small businesses contractors.*

*This paper contains recommendations and insights that are based on benchmark meetings between the Titan Program and the Shuttle Program Strategic planning office. This paper identifies opportunities for the Shuttle Program small business contractors that are interested in helping bring the Shuttle program to a close.*



## 1.0 Titan Benchmark Close-Out Managers

The Airforce Titan Close-Out Manager, the Lockheed Close-Out Manager and the Airforce Financial Manager for Launch Programs

## 2.0 The Titan Fly-out / Close-Out Concept

Following the Titan program, NASA is managing the SSP program in two parts; Fly-Out and Close-Out. Fly-Out is a constructive process that focuses on integrating the flight elements from production to flight. Close-Out is a de-construction process where management focuses on decommissioning, environmental remediation and destruction of facilities, tools and equipments. Fly-Out tracks the progress of flight elements, element by element, as they are integrated into a flight article. Close-Out has no need for integrated decommissioning, destruction and environmental remediation. Close-Out tracks the progress of closing-out a program location by location with no need to integrate the Close-Out activities at one location with another. Close-Out costs a lot of money...the Titan mantra was “**Do it Safe & FAST**” so as to eliminate cost to the Government as quickly as possible.

### 3.0 SSP Close-Out

NASA has appointed Mr. Lightfoot the closeout manager to lead a small team of Level II Strategic Planners. The team determines Close-Out requirements and ground rules. The team defines and divides the program into two tasks: The CONTRACT Close-Out task and the FACILITIES shutdown task. Futron and USA are developing the strategic plan for Close-Out.

The Close-Out Manager is planning the Shuttle Close-Out by identifying **Close-Out requirements by location**, including the manpower and skills needed to implement the Close-Out plan. The plan takes into account that Close-Out is already an ongoing activity in the Shuttle program because government centers are disposing of real properties and personal properties as a regular part of doing business. The Close-Out of NASA's Orbiter Production done years ago is an example. Close-Out begins by organizing these ongoing activities so as to take prompt action and realize savings for the Fly-Out program. It is expected that doing so will also result in learning Close-Out on the small scale so as to learn how to Close-Out on the large scale, when Fly-Out concludes.

Small Business Contractors involved with SSP logistics organizations must be proactive and responsible for having spares serviceable and ready for launch up to the end of Fly-Out. The rationale is that the transition from Fly-out to Close-Out occurs on a fuzzy timeline.

The contractors that support the NASA logistics organization should change their focus from "spares" to "ALL materials".

Interestingly, Close-Out Requires that spares be at their highest levels of availability in program history as you approach the last flight. NO "zero balances" as Fly-Out comes to an end.

Contractors need to be careful when handling critical components that are out of the "production replacement window". There is a need to protect such components that are "rejected" for some reason the same as new. Don't label critical hardware with reject stickers, as is sometimes the case. Rejected property can get mishandled as junk. Care for a "rejected" motor thrust vector actuator as a vital component of the SSP else it get handled as junk. This mishandling nearly happened on the Titan program due to labeled an actuator that failed a certification test as "rejected". The actuator was out of the production replacement window. It was about to be shipped without packaging protection. Thankfully someone realized the value of the actuator and prepared it for shipping the same as a flight article. During shipping an accident occurred and the actuator was saved by its shipping container. It's a small cost to do the shipping correctly and avoid the handling damage to critical components that are out of the "production replacement window".

Contractors should help NASA make an early determination of the list of facilities, tools and equipments necessary to complete Fly-Out. TOOLS are not FACILITIES. Tools are structures that cannot have offices and labs in them. This list is to avoid closing out something that is critical for Fly-Out. The list of Fly-Out spare parts can be an overlooked, so the list should include them to avoid going out of the parts business too soon and add risk to mission success. Avoiding this problem requires close coordination with the Fly-Out program. This was a “Tough Lesson Learned” on the Titan program.

Golden Eggs: There will come a time when there will be only a few spares left for Fly-Out that cannot be replaced by production. These spares become "golden eggs" that have to be protected from inadvertent Close-Out action. They require special management attention. On the Titan program, the operations teams got the message by Management telling the operations team members that “You may be the last one that has the chance to protect/save the program.” Everyone understood this message.

Contractors should help the NASA logistics organizations take special “end of program considerations” such as batteries and ordnance. Batteries are bought all at once for production efficiency and for exchangeability. Ordnance is not bought all at once. For reliability, single lot dependency is to be avoided. The timing of last minute procurements require careful consideration. There are many of these types of "end considerations" in a large scale Close-Out program.

The contractors should survey and list the facilities, tools and equipments to be decommissioned at the end of SSP Fly-Out, location-by-location. The list should be arranged in Fly-Out priority order by the program element managers. The lists should include the junk in the program. Early effort should be to get rid of junk in the program. Everybody knows what it is and will be happy to see it go: Besides, Titan suggests, it saves money for the Fly-Out program.

The Titan management said that it takes about a year to get the top level Close-Out requirements identified and documented and recommended that NASA start EARLY. The Close-Out plan should be based on the requirements to take one of three actions, as appropriate to the facility or tool location: (1) transferring the assets to another program, (2) transferring the assets to an organization for useful service (museum) or (3) decommission, destruction and land remediation. Decommission can be either “Tear down” or “Safe or abandon”. Depending on who owns the item, these can be a NASA job or a contractor job. All Close-Out planning should be in place two years before final flight. Contractors are required to do this planning.

The list of Close-Out items should include an assessment of how the items will be dispositioned and decommissioned in logical order. Typically the list would start Close-Out by working from the bottom of the list upward. Examples of “bottom of the list” items are disposition of documents and disposition of broken equipments and already abandon facilities. At the top of the list are items like orbiters, launch pads etc. The intent is to learn on the low priority items first then as the higher priority items come up for decommissioning you will be ready to take on the large scale work they require.

The Defense Reutilization and Marketing Office (DRMO) can be very helpful in disposing of items. NASA will need contractors to identify items that can be sold. NASA will let the DRMO sell items to be disposed. DRMO rules, regulations, laws etc should be known by the Close-Out contractors as there are many ways to use the DRMO to decommission facilities, tools etc. Creative disposal is suggested for all Close-Out items.

Use the prime contractor to Close-Out the SSP. Rationale: The SSP is a high-tech system employing high-tech solids, liquids and gasses. This requires in-depth understanding of the Close-Out problems associated with such items. Also, they are equipped to do Close-Out work as they have been doing it for other programs already. The subcontractors will be required to help. The Close-Out Manager should review the Close-Out language in every contract affected and identify legal, law, regulation, EPA requirement and precedent issues early. Do this for both the Government and the contractors rules and regulations. **Have the primes prepare the Close-Out plans with their subcontractors.** Begin early because contract extensions may be required. Some of the contracts were written to build and deploy the SSP, not to close it out.

The Close-Out plan should include key dates for the contractors and their subs such as production shut down dates as planned by the contractors: Also, dates when business acquisitions are going to occur. The list should include shelf-life of critical items and the dates when EPA laws are due to change in the state where the items are to be decommissioned. The plan should include the identification of ways to dispose of facilities and equipments being used for operations. This will include old facilities that require special considerations of asbestos and lead paint. Understanding the requirements for handling the decommissioning, disposal and destruction of these materials should be undertaken no less than three years or more before Fly-Out ends. Contractors can be very helpful in the preparation of these plans.

The Titan team said that records retention was a big problem for the Titan program. Early decisions about the records to retain and what to let go, and what medium to use, should be initiated early. Laws guide record retention: but they are subject to interpretation. Know the laws and begin early to get the interpretation needed to Close-Out records retention requirements at reasonable cost. The medium that is used for records retention is important. If it's on paper there are one set of problems and if on disk that is another set of problems. All methods have their problems and costs and legacy systems. Thirty years of records is a sleeper and needs to be addressed early.

Contractors should start early to establish a Close-Out Checklist: (1) Systems (2) Facilities (3) Contracts (4) Funds (5) Safety FARs (6) Civil Law (7) Rumor control (8) Contract structure to accommodate stretch. NASA and the contractors wherever possible, consolidate facilities during Fly-Out to reduce cost, and then Close-Out the facility.

#### **4.0 The Close-Out Business Environment**

Establish legal support early. Good Legal support is needed from the start. The contractor will be motivated to get USG things off contractor land and the government will be motivated to get the contractors things off government land. These are legal matters related to (1) contract, the laws where the property is located, (2) EPA regulations and laws and (3) laws related to the disposition of documentation and materials. Frequently it's the LAND that motivates Close-Out action by the contractors. Titan management cautioned that these legal implications will catch NASA by surprise unless started early. Of the \$300M for Titan Close-Out, 40% is for reserve for environmental cleanup uncertainty. Uncertainty will be used to build big reserves. To avoid such large reserves, start early to understand the details associate with decommissioning and associated risks.

**Recommendation #13** Historical preservation associations take time and funds to support. They will expect to find the funds to preserve artifacts for preservation initiatives. In today's environment, the funds will be hard to come by. Keep disposing, decommissioning and destroying like Satan.

**Recommendation #14** Many facilities mean many people... who love the STS. Closing out requires management that is respectful of the people and is low key. In many cases Close-Out destroys equipments and tools that they believe to be invaluable and will be seeking ways to slow the Close-Out process. Be patient. Show them how the Close-Out is work to be proud of doing. Anything less and you will lose their critical skills and their tribal knowledge when the quit from being disrespected.

**Recommendation #15** The Close-Out team should be small and flexible and "run below the radar", never taking a hard stance on a Close-Out item until Fly-Out is complete. On the last flight, if there are anomalies, the engineering team will want to keep everything to study what happened. Facts are that the anomaly resolution will not have any material significance after the last flight because there are no flights coming behind to benefit. Anomaly resolution is expensive and should be avoided after the last flight.

**Recommendation #16** Unofficially funded projects must be identified early and informed that contract Close-Out is upon them. These are the little pork programs that exist in any large program. This requires diplomacy because pork programs have politicians at the end of their leash. Facilities on bases where the government has program facilities are another "hanger on". When you close the facility, the base will have funds in your program for leases and center support etc. that will go away.

**Recommendation #17** The cost of Close-Out is on the order of a \$300 million spread over ten years. The cost will be far higher for the SSP because it's about three times as big as the Titan program. The drivers are the EPA Regulations, Local Laws, and FARs. When the SSP contracts were first put in place, there were laws and regulations then that will not be the laws and regulations at Close-Out. These factors deserve consideration early in SSP Close-Out by both the Program and the NASA field centers working together to reduce the cost of SSP Close-out.

**Recommendation #18** HR Incentive costs, disposal costs, the cost for disposal of hardware, tools, transportation systems, and documentation are major costs. The costs will be different by State: State laws ARE ALL DIFFERENT. Environmental remediation costs will be among the biggest cost for Close-Out and require the most soft glove management skills by field centers. Be aware that these costs will be incurred by both the program offices and the field center offices so early coordination is essential to keep the cost down.

**Recommendation #19** It will be necessary to have a good internal cost estimating team that is experienced at not the program or the field centers or contractors build a fat reserves. Also have a good team that knows how far they can stretch the FARS (creative interpretation).

**Recommendation #20** Develop a good relationship with DCMA. They need to understand that certain materials must be kept around in order to reach the end of the program. Sometimes during the Titan program, audit agencies such as DCMA have the tendency to want to dispose of excess material that might be needed to complete a mission or a program. The more they know about the program Close-Out the better they can help. Start early developing a good relationship with DCMA.

## **6.0 Close-Out Contract Considerations**

**Recommendation #21** The administrative details of contract closure are HARD and require experience and innovation. The easy part is dealing with the disposition of people and property. Its counter intuitive.

**Recommendation #22** When there is light at the end of the tunnel, consider hiring quick closeout contractor to help at the very end of Close-Out. They are called “Quickclose” contractors.

**Recommendation #23** Don’t forget the primes and subs have contract personalities. Closing contracts requires experience negotiators and skillful interpreters of the government and the contractor regulations, laws etc. “Scrap” contractors move FAST. Use them as much as possible.

**Recommendation #24** Get a Close-Out plan from the contractors. They will argue that Close-Out is not in their contract so extension will be required. Remember, when the contract was written it was to get the system built and deployed, not closed out. Extensions will be required.

**Recommendation #25** DCAA will not let a contract be closed out until they say so. They too have had their budgets cut. Use creative means to get the DCAA to support contract Close-Out. Invite them to site visits, Foster their support. Doing so can significantly shorten contract termination times.

**Recommendation #26** Remind the Close-Out team that contractors have no incentive to close and will delay doing so for many reasons. Contractors will want to add work and continue their contract. To reduce the cost to the Government, avoid creative work additions by contractors.

**Recommendation #27** Plans will be needed to closing out specific systems not anticipated in the original contract of decades past. Consider making the requirement for the contractor to develop these plans a deliverable.

## **7.0 Special Titan Contracts Issues**

**Recommendation #28** Be prepared for contract negotiations to be interesting. Close-Out is the contractors' last chance to earn large profit on the large SSP program.

**Recommendation #29** Don't price Close-Out activities too early, things always change. Better might be a pre-priced effort with a factor to increase the value of the contract if Close-Out is delayed a year out or so. This would prevent re-opening negotiations unnecessarily.

**Recommendation #30** Negotiations should include indemnification issues related to unusually hazardous activities related to Close-Out. In the Titan program contracts were changed to ensure that disposal was done properly vs. being turned over to DRMO. The program didn't want toxic piping ending up in a farmer's field for irrigation. Some contracts have unique features which make the contractor responsible even if environmental laws change.

**Recommendation #31** Work closely with auditors such as DCAA. A defective pricing audit worth a couple thousand dollars can take years to resolve. Make sure that insignificant issues don't keep the contract from closing. Be prepared to facilitate these issues in order to resolve them early. The sooner you know of these issues, the better you are able to work their resolution and not become an impediment or distraction to the Fly-Out program.

## **8.0 Close-Out HR/Workforce Considerations**

**Recommendation #32** Find out early, who are the critical people you need for Fly-Out and the critical people you need for Close-Out: Many are on both lists. The key questions here are "WHO CAN I NOT REPLACE?" And "WHO WOULD BE HARD TO REPLACE IN 6 MONTHS?"

**Recommendation #33** Put skills retentions programs in place as early as possible. Avoid the loss of critically skilled and experienced people EARLY. You will need them and their knowledge of the facilities and equipment and history associated with the use of the facilities, tools and equipments. Exit interviews need to be examined to determine the motivations for leaving and counter incentives found to retain the skills needed. This will include working with follow-on programs. The exploration programs should know the

exploration needs to get funding so the people in the Close-Out program have places to go.

**Recommendation #34** Corporate memory is also important for closing contracts. Contracts have personalities that reflect the contract managers' personality. Like it or not, it's true. Seek to retain the contract managers as long as you can as they know the subtleties of the contracts they helped negotiate.

**Recommendation #35** Use letters of appreciation, Words are cheap. Like children, the government people and contractors respond to words and letters of appreciation more than any other form of incentive and inducement.

## **9.0 Other Relevant Titan Close-Out information**

Superstructure and concrete are disposal problems. They lead to healthy reserves because of the uncertainty of the demolition and reversion of the land back to its original state. Example... \$30M uncertainty on a single test stand: Items affected include Storage facilities. CX tanks, Ox piping Waste Sumps Waste trenches. The maps show the extent of the environmental considerations. Recommendation: Start early to identify a demolition contractor.

Disposition of Tools for environmental remediation is a matter of decontamination. The development of decontamination equipments and teams to run them to meet standards is required. It will be necessary to build decontamination systems. They are expensive. Decontamination is required before demolition.

The Defense Reutilization and Marketing Office (DRMO) can be very helpful in disposing of items. Sometimes you have to ask the right questions in order for them to be creative and find a way to dispose of something. The disposition of "Bad Actors" equipment requires creativity. Trucks turned in with Oil, Fuel and Batteries can be disposed of as Trucks. If they come back as not saleable, they must be decommissioned by removal of fuel, oil, batteries etc and given back to the DRMO for disposal as scrap metal. This can be two years of delay thus the term "Bad Actors"... they go away slowly. Excessing property involves environmental local issues as they are different state by state. Sometimes, approval from DRMO is required to disposition facilities and tools.

The tracking system for Close-Out is important. The details of the regulations are sometimes system dependent. Start early to develop a deactivation plan. Some items may be ready for deactivation, like unused communications sites and redundant checkout stands. At some point, the second launch pad will become available for deactivation before the last flight.

Have a communications plan to inform all affected parties of the disposition of major assets years of deactivation. Invite comment and involvement where others have "hidden" plans for major asset uses.



Do strategic planning to understand contractor's incentives. This requires knowing the contractor's business. Example: Track the price of steel as it will influence how the contractors will behave when they are Closing-Out their tooling.

Help the contractors do Close-Out. They are usually new to Close-Out. Some firms will want to move on to new programs. Those that do not have new programs will want to hang onto the Close-Out contract. They will say, if you don't give use the money now, it will cost you more later. Don't believe it.

For Titan, the last mission is not the last launch. The Titan must be capable of launching again 6 months later after the last mission. The same may be true for the SSP Close-Out. What is planned now may be different when Close-Out actually gets underway. Be conservative about program Close-Out assumptions. Don't destroy assets without reexamining the Fly-Out assumptions.

Program reviews for Fly-Out show "element by element" the pictures of the flight hardware. Closeout uses Maps of Close-Out sites, with the facilities and tools clearly shown in pictures.

The cost of Historical Societies can be significant time consuming issue: Do this work up-front.

Management during Close-Out involved crafting well-worded emails. Develop disposition metrics. Small items inventories are an issue. Get on them early. Dispose of Government assets first and do the contractors second. Contracts and Agreements and Law reviews are required to breakdown and demolish facilities and equipments.

Walk the floor of the facility that is about to be closed out. Find out what problems you are going to encounter from the people in the facility: KNOW the politics that apply to each location. Technology, Security and Protections are factors in Close-Out.

"Right to Title" is an issue for disposal. Be sure you have the Titles for the tools to be decommissioned and destroyed.

## **10. Titan Management & Contract Details & Advice**

Avoid level of effort contracting. Be prepared to extend Fly-out contracts to accommodate Close-Out: Happened twice with the Titan program.

Use a sound Earned Value system to guide you in the Close-Out process. Consider using a good cost and performance contractor. Use Earned Value as the deviations are critical to finding where there may be problems.

During Fly-out, the WBS is for buildup to launch. During Close-Out, the WBS is the opposite, it's for tear-down, demolish or transfer to another program. During fly-out the WBS is to integrate flight hardware. During Close-Out the WBS is to disintegrate the

program elements. During Fly-Out, the program is managed by flight element, such as the engines, the launch vehicles, the payload processing etc. During Close-Out, disintegration is managed location by location and the regulations and laws are different at each location.

Purchase Orders Close-Outs... there are lots of them and they are expensive to Close-Out

DCMA is conservative. It's funding has been reduced too: They have fewer people. They can delay the Close-Out. Be helpful as they work with your contracts.

The Titan Close-Out manager established a Close-Out assessment team. They focused on the locations of the Close-Outs and determined the detailed tasks for each site from 4 primary points of view...Human relations, Disposition, Disposal and Demolition. There are 4 organizations that regulate Close-Out: Federal Governments FARs (international), State Governments, the Titan Program itself and the Titan program Contractors. They all have different rules and policies and laws associated with Close-Out. It's at least a 16 element matrix of management considerations. It took 7 people 3 months to get the Assessment program pulled together.

The Logistics Organization was chosen to lead Close-Out. They were charged to make a list of all items to be Closed-Out early. Expect pushback from the management of all items on the early Close-Out list. Targets for the early Close-Out list are those that, in consolidation with others on the list, will lead to a cost savings during Fly-Out.

Logistics had to change their focus from traditional logistics spare parts to ALL Material. Titan started 4+ years ago with management's question? Do we have the material we need to Fly-Out the Titan program? This became a study to determine what spare and materials were needed to do the Fly-Out the Titan program: Innovative initiatives followed the study.

Five logical initiatives guided the Fly-Out program planning. (1) Assessment of the Material Requirements. (2) Verifying the remaining inventory, (3) Identifying and filling shortages, (4) Where necessary ensuring post production capability and finally (5) protecting the remaining assets.

Assessment of materials started in 1999 and has continues today. Verifying the remaining inventory started in 2000 when inspection of the spares found that some spare were running out of shelf life, some were broken or in need of repair or were corroded. Shelf life is critical in the later part of Fly-Out. An important part of the assessment effort is the visual inspection of boxed spares. Take nobody's word for those items that are critical for Fly-Out.

Verifying the remaining inventory continued to 2004 with emphasis changing from flight hardware to ground spares, ordnance, batteries etc. Identifying and filling shortages allowed the consolidating all material into one data base and streamlining of reporting shortages.

The effort to protect the “assets remaining” becomes more important near the end of Fly-Out. As Fly-Out comes to an end, the supply of hardware diminishes. Protecting assets is a subtle challenge. For example, air-conditioning controls during storage can be a factor in maintaining clean parts devoid of corrosion. Another is conducting failure analysis to identify the parts to be preserved. Another is the “Golden Eggs” philosophy being established by an awards ceremony. Another is to challenge engineers to find ways to use Close-Out materials. It was amazing how much "stuff" (parts, materials) can be used another way by working with engineers.

The “Golden Egg” concept came into being in 2002 and remains an important part of Close-Out management today. There are some materials and parts that are so important that they must be protected. They are the “Golden Eggs” of the Close-Out program. As the time remaining in the program draws short, some parts become critical because there is not enough time to find a replacement or produce the part from scratch should the part become needed. These items need to be identified and anyone who works with these parts or material should be informed that they are the “Golden Eggs” of the program and all efforts to protect them should be employed.

The Titan program is in the “Golden Egg” part of its lifetime. Golden eggs are items that can no longer be replaced by production because the production contracts have been closed-out. Diminishing pipelines, reduced supplier base and product lines are causing parts and material to become “Golden Eggs”. Damaged items could become irreplaceable and cause loss of missions. Management should identify these items early. Then management must come up with ways to increase protection vigilance and awareness with everyone involved in HARDWARE MOVEMENTS. “Be Protective” “You may be the last one that has the chance to protect and save the part” is the mantra of the “Golden Egg” program.

Threats to the Fly-Out program: Poor protection of rejected units. They should be protected the same as new. Out of sequence type work increases risk. Shipping instructions for return to supplier were unclear. No policy on retention and reutilization of original packaging. “I have always done it this way”... Checking requirements is essential. Tribal knowledge is long at the end of a program and that is not reliable. Checking the requirements is the only safe way to assure protection of program hardware.

“Management by Questions”: The Titan government and prime contract managers gave us an excellent summary of how to approach this large matrix of considerations by sharing their management questions.

Titan uses a Mission Success Incentive compensation plan. As a program draws to a close it is important to get employees focus on doing an excellent job right up to the end of flight and through the end of Close-Out. The Incentive plan was modest but it recognized floor leadership for its work with modest rewards. The contractors developed the plan and the Titan program paid for its implementation.

There will be the temptation to “Save” on the part of managers in the program. Avoid the temptation because it stretches Close-Out.

There is an Act that governed water and soil contamination. CERCLA is the Comprehensive Environmental Response Compensation and Liability Act that governed Close-Out at the Aerojet Site. The Titan program infrastructure dated back to the 1950’s. Lots of equipments, materials, tooling that was to be scrapped and not retained by other programs. There was so much uncertainty in meeting CERCLA that the financial reserve for Close-Out was often as big the Close-Out costs themselves. This was particularly true at Aerojet, a propulsion contractor. It was suggested that the Shuttle Program focus on any Close-Out activities early and start to deal with CERCLA ASAP.

The regulations on decontamination levels are becoming more stringent. PCBs, Lead Paint, Asbestos, and Heavy metals changes with time and always becomes stricter. What was in place at the start of the prime’s contract will be different now. Be aware of the difference and begin adjusting the contract early. There are specialists for disposing of these materials and contaminates. Bring them in early to be sure the detailed Close-Out plans are complete. Nearly 100% of the Tooling and Equipment were found to be contaminated with PCBs. Cleaning large facilities and tools contaminated with propellant generated huge quantities of contaminated water and it was necessary to develop a decontamination system to clean the water. That system may still be available at Aerojet.

Constantly changing environmental requirements, the dates of new regulations, the end dates of old regulations were a management challenge alone. The same was true for the changing financial environment where the demolition of Superstructure was influenced by the price of steel. Due to the decline in the Steel market, Schnitzer (contractors) would net trade work in exchange for the scrap metal.

Lessons learned: Develop or use a good decontamination system. Use heavy shears to teardown Superstructure. Let the specialist contractor’s deal with the paints, PCBs etc. on the contaminated structure once it’s demolished