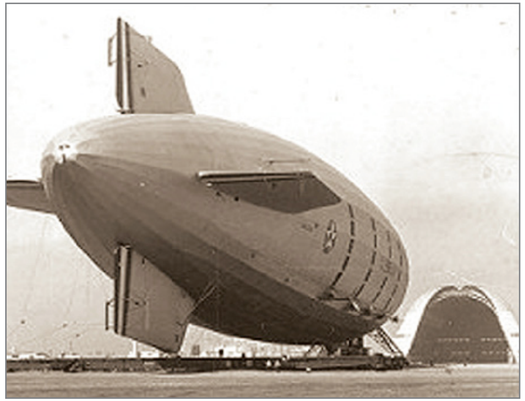
What's Happening at Hangar 1

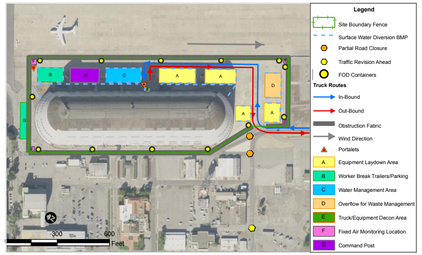
The Department of the Navy (Navy) is implementing a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) removal action to control migration of polychlorinated biphenols (PCBs) from Hangar 1 to the environment. Hangar 1 is located at the former Naval Air Station Moffett Field (Moffett Field).

Removal action includes:

- Demolition or deconstruction and off-site disposal and/or recycling of all interior structures
- Removal of the hangar siding and roofing
- Removal of all debris to appropriate off-site disposal or recycling facilities
- Application of a weather-resistant epoxy coating to the hangar's structural steel frame
- Implementation of historic mitigation measures

The Navy understands the unique challenges and constraints associated with this project, and is taking a careful and methodical approach to implementing the removal action. These measures will preserve the hangar as a historic resource while protecting human health and the environment. The remaining structure will provide the opportunity for potential future adaptive reuse by the current owner, the National Aeronautics and Space Administration (NASA).





Site Plan

Inside the Hangar

An extensive scaffolding system will be erected inside the hangar so as much work as possible can be performed while the siding remains intact. This approach is one way to promote safety and containment of emissions during demolition, and allow safe access to the siding and roof for washing and coating.

Because the interior of Hangar 1 is made up of several levels of offices, shops and other facilities, different methods will be used to demolish each level to ensure the main structural system of the hangar will not be damaged. For example, demolition of the lower level structures will be completed using specialty equipment, while the second and third levels will be completed primarily by hand-demolition methods.

Following demolition/deconstruction of the internal structures, the hangar will be divided into six, 216-foot-wide work zones for siding removal and steel frame coating. Each zone will undergo the following four phases of remediation:

1. Pressure wash the interior hangar surfaces, including siding and structural steel,
2. Apply coating to structural steel and concrete structures,
3. Remove roofing and siding, and
4. Apply coating to newly-exposed outer steel surfaces with rollers or brushes.

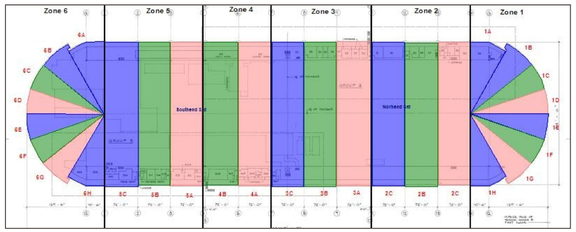
Work will progress from one zone to the next, starting on the south end of the hangar, so that the north end will provide protection against the prevailing winds as demolition proceeds.

Long-term Protection

Once the interior demolition is complete, all accessible steel in the hangar will be pressure washed. Pressure washing will be conducted and the coating will be applied while the exterior siding is still in place. Leaving the exterior siding in place both contains any dust inside the structure and eliminates any coating spray from leaving the site.

After the surfaces are pressure washed, they will be inspected for cleanliness to ensure the new coating will properly bond to the structure. A weather-resistant epoxy coating system called Carbomastic 15 (CM15) will be applied using airless spray equipment. This work will be completed within the covered hangar in sections before the siding is removed.

Quality control for the coating application will include adhesion tests and measurement of the wet and dry thickness of the coating after application to the structural steel. Inspections will be made by inspectors who are certified by the National Association of Corrosion Engineers (NACE) and/or Society of Protective Coatings (SSPC).



Work Zones

About CM15

This coating is particularly well suited for over-coating existing paint because it can penetrate through rust better than other coating products and contains a low solvent content that will not soften the existing paint. The coating has a proven performance record in providing long-term effectiveness and is expected to effectively encapsulate the contaminants on the steel structure for a minimum of 10 years with minimal maintenance. Additionally, CM15 coatings have performed well for over 20 years in similar environments at other sites.

Roof and Siding Removal

Roof and siding removal will be done manually from top to bottom, and from the east and west sides concurrently. The existing upper roofing materials will be removed using hand tools, bundled, and lowered through openings to the hangar floor below. The individual side panels will be unbolted from inside the hangar and will then be carefully lowered and packaged inside the hangar. The Federal Aviation Administration navigation beacons and holiday star on the hangar roof will be maintained, accessible and functional during remediation activities.

Coating the Hangar's Exterior

After the roof and siding are removed, the exterior steel frame of the hangar will also receive a CM15 epoxy coating. The exterior steel surfaces will be scraped, wiped clean and inspected prior to application of the CM15 coating, which will be applied by hand using rollers and brushes.

Ensuring Environmental Integrity

The Navy is committed to sustainability and reuse wherever possible. In addition to minimizing environmental impacts during the demolition and coating processes, the Navy will implement recycling efforts, safe disposal methods and rigorous quality control at every step. Inside the hangar, some NASA furnishings and equipment will be decontaminated and re-used, and non-hazardous materials will be recycled to the maximum extent practical. All demolition wastes will be transported off site by registered haulers in covered trucks for recycling or disposal at permitted landfills. Where possible, waste haul trucks will be powered with biodiesel fuel to promote environmental sustainability.

Protecting Your Health

Protecting human health and the environment throughout the remediation activities is a top priority for the Navy. To provide a secure work area during field activities, the entire site will be surrounded by chain-link construction fencing. The secured area will include a buffer zone to ensure that the public is protected from the construction activities. The following additional safety measures will be taken to ensure that workers, NASA employees and tenants and the public are protected against dust emissions and other hazards that could be generated during demolition.

Baseline and Confirmation Sampling

Baseline sampling will be conducted to evaluate and document the pre-construction condition of soil, sediment and air quality at the site. After the removal action is complete, confirmation samples will be collected to verify that the remediation process has not generated any additional contamination and that the remediation goals have been met.

Air Monitoring Program

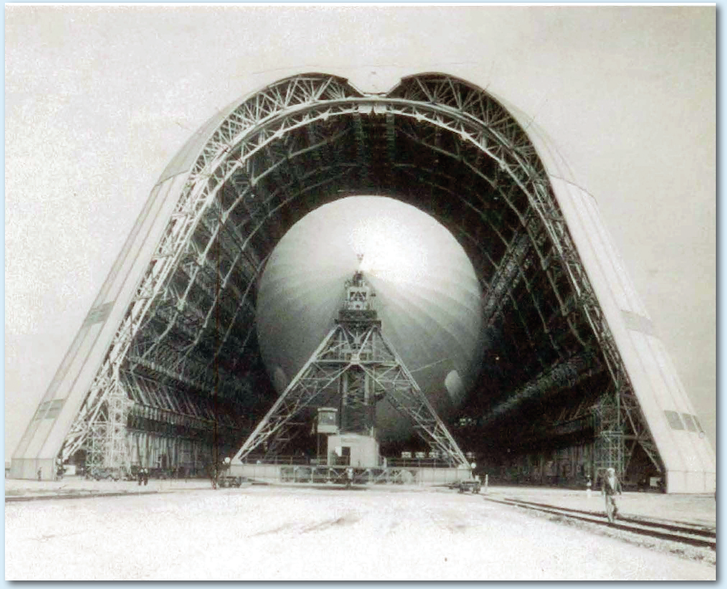
A rigorous air monitoring program will be developed to make sure that workers and the public are not exposed to unsafe air emissions. From the early stages of the project, an air monitoring program will be in place to provide continuous, real-time perimeter dust monitoring in the work zone. Three dust monitoring stations will be installed: one upwind and two downwind of construction activities. Site personnel working above ground level will wear personal dust monitors for their own safety. These personal monitors will serve as a first indicator of any potential airborne emissions, before contaminants would be transported off site. If dust monitor alarms sound or personal monitor action levels are exceeded, work will be halted and dust-mitigation actions will be taken. Additional chemical-specific air monitoring will be conducted to verify the effectiveness of the air monitoring program.

Dust Control

The contractor's demolition methods have been designed to minimize the potential for generating airborne particulates in the work area. Bundling and lowering roofing and siding materials will be done inside the hangar to provide better dust control. Operations will be adjusted during periods of high wind to maintain optimal dust control. Water spray and misters will be used to control dust at the source to minimize fugitive emissions. If needed, the fence delineating the work area will also be covered as an additional dust control measure.

Storm Water Management

Stormwater run on and runoff from the site will be controlled and the storm drain trench surrounding the hangar will be isolated to prevent unintended discharge of storm water or wash water from the site.



Hangar 1 has a rich history in the region and to the aeronautical world as a whole.

The Navy will make every attempt to salvage and preserve artifacts identified for historical purposes. Items identified for decontamination will be returned to NASA for storage or future use. Some of the items that have already been identified for preservation are the man cranes, the "clam shell" doors/motors and the holiday star. In addition, the color of the new coating will match the existing color of the structure. Lastly, the contractor will create a video documenting the progress of the remedial action and donate the final product to the Moffett Field Museum. These efforts are in addition to completing the Historic Architectural Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation and preparing an interpretive CD containing archival photographs and oral histories.

Work Plan approval Start interior abatement/demolition	Start siding removal	Complete siding removal and coating Complete confirmation sampling	Submit final report
Summer 2010	Winter 2010	Summer 2011	Winter 2012

Waste Management

All waste materials will be segregated by individual waste stream, characterized, and properly packaged for transport and disposal off site. All waste water generated during the removal action will be captured, stored, and treated in an on-site waste water management system. The treated water will be analyzed to ensure that it is free of contaminants and then re-used to the extent possible for on-site construction activities, like pressure washing and dust control.

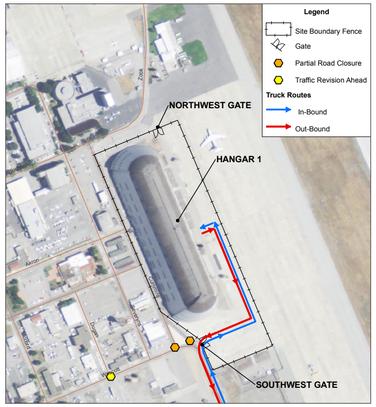
Airfield Protection

A Bird Air Strike Hazard (BASH) Mitigation Plan will be developed and implemented to prevent birds from using the hangar for roosting or nesting and posing a hazard to aircraft at Moffett Field.

Working with NASA Ames Research Center Personnel

The Navy recognizes that Hangar 1 and this project are of particular interest to many stakeholders – particularly those who work at NASA Ames Research Center (ARC). Because of the proximity of NASA ARC buildings to Hangar 1, the Navy has identified ways to minimize the construction impacts to personnel who work in the vicinity of the project.

- The average truck traffic will be around five trucks per day and will not exceed 20 trucks per day at the peak of construction
- Trucks will be entering and exiting the project site area through the Ellis Gate
- There will be no road closures and partial lane closures will be limited to the immediate vicinity of the hangar allowing access to all surrounding facilities
- Most work will be contained within the hangar until winter 2010



Traffic Control Plan

Keeping You Updated

The Navy will continue to provide information about the demolition and removal of contaminated siding and coating of the structural steel frame. This will include future NASA ARC personnel briefings and Navy-sponsored Restoration Advisory Board (RAB) progress updates at project milestones such as work plan completion, mid-point of construction and construction completion. In addition, the Base Realignment and Closure (BRAC) Program Management Office (PMO) West Moffett Field Web site will be updated to provide project information.

For more information, please contact:
Kathryn Stewart, P.E.
BRAC Environmental Coordinator
(415) 743-4715
Kathryn.Stewart@navy.mil

Visit the Moffett Field Web page at www.bracpmo.navy.mil/basepage.aspx?baseid=52&state=California&name=moffett

Moffett Field - Hangar 1

Information Update

Moffett Field, California January 2010

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