JN5

TO: NASA Headquarters
Attn: BX/Director of Facilities

FROM: JA/Director of Center Operations

SUBJECT: Environmental Impact Assessment for Upgrade of Lunar Samples Curatorial Facility

Reference our letter dated August 15, 1974, which transmitted the Johnson Space Center's Construction of Facilities (CoF) requirements for fiscal year 1976.

Attached is a copy of the Environmental Impact (EI) assessment for the subject project which was included in the fiscal year 1976 requirements. The EI assessments for the remaining fiscal year 1976 projects, which have been submitted to Office of Management and Budget, were previously forwarded for your review.

The assessment concludes that there will be no significant impact on the environment, nor irreversible or irretrievable commitment of resources from the subject project. It is also concluded that the project comes under the umbrella of the Center's institutional EI statement which was published in 1971. Therefore, it appears that the formal publication of this assessment is not required under the provisions of the National Environmental Policy Act of 1969.

This assessment is furnished pursuant to instructions contained in NMI 8800.7C dated April 10, 1974, entitled "Guidelines for Conducting Assessments and Preparing Environmental Statements Required by the National Environmental Policy Act of 1969." Your review and concurrence in the assessment are requested.

Original Signed By
for Joseph V. Piland

Enclosure

JN5/GHSpencer:jp:12/27/74:2731

cc:
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ASSESSMENT OF ENVIRONMENTAL IMPACT

for the

UPGRADE OF LUNAR SAMPLES CURATORIAL FACILITY, BUILDING 31

FY 1976 CoF Project, Control No. P-76-70167-CO-1

Lyndon B. Johnson Space Center (JSC)

of the

National Aeronautics and Space Administration (NASA)

Houston, Texas

December 1974

FOREWORD:

The success of the NASA Apollo lunar missions was partially measured by the material collected and returned to Earth. These materials are of immense value in advancing the scientific knowledge of the universe. There is need to preserve these samples for study over a time period that extends to future generations. The lunar samples curatorial staff of NASA is responsible for the care, safeguarding, and dissemination of these materials for scientific study. It has been recognized that unwarranted risks arise from the continued use of the existing JSC building 31 in the storage and processing of the samples. Upgrading of curatorial facilities as provided by this project will afford protection to the lunar materials from natural and manmade hazards including tornadoes, hurricanes, flooding, and theft.

The following environmental impact assessment for the titled project has been prepared subsequent to the publication of the institutional Environmental Impact (EI) statement for the Manned Spacecraft Center (now the Lyndon B. Johnson Space Center (JSC)), dated February 18, 1971. Subject project will be constructed within the confines of JSC, and will, therefore, retain the environmental setting described in the Center's EI statement. This assessment concludes that there will be no significant impact on the environment, nor irreversible or irretrievable commitment of resources from the subject project. It is therefore concluded that this project comes under the umbrella of the Center's instituitional EI statement, and that the formal publication of this assessment is not required under the provisions of the National Environmental Policy Act of 1969.

I. Description of Proposed Action

This project will provide an annex to existing building 31 to facilitate adequate storage and handling of the lunar samples at JSC. The building annex will contain approximately 15,000 square feet (7,500 square feet on two floors), and will be a windowless structure. This structure will contain secure vaults to house the lunar sample collection and to accommodate additional supporting functions for processing of the lunar materials. The lunar storage area will provide an inert atmosphere and nonreactive containers and tools to protect the samples against chemical and physical degradation. The building will be constructed to withstand anticipated natural or manmade hazards for a period of at least 50 years. Pristine lunar materials will be maintained in an atmosphere of pure nitrogen. The storage vaults will be elevated to protect against hurricanes and attendant flooding. Access to the laboratories and vaults will be at the second floor level and will be monitored through very high security measures. Cleanliness features shall preclude contamination of the lunar samples from vapors or particulate matter. Nitrogen glove box cabinets will be provided for storing samples within the pristine vault.

The existing JSC utility tunnel system will be extended to the mechanical equipment area serving the new building annex. Alarm systems will be provided to activate when the uninterrupted power system reaches an unusual or unacceptable quality of power. Alarm systems will also be provided to activate when the facility environmental systems reach unacceptable levels, or when the security system is violated.

II. Relationship of the Proposed Action to Land Use Plans, Policies, and Controls

This project will conform with the land use plans of JSC as described in the institutional EI statement for the Center, previously published. These plans prescribe the location, architectural concepts, and construction features for the variety of facilities located within the Center. The location of the building annex near the existing curatorial facilities will maintain the functional planning established for JSC.

The proposed action will not violate land use controls of other Governmental agencies for the area in which JSC is located.

III. Probable Impact of the Proposed Action on the Environment

The primary or direct impact on the area's environment from this project is expected to be negligible. There is no significant amount of pollutants expected to be generated, discharged, or emitted from the curatorial facilities. There is no probable addition to noise pollution from the facilities. Utility services to be provided to this building include chilled water supply and return, steam and condensate return, compressed air, gaseous nitrogen, potable water (domestic and fire protection), and sanitary sewerage. These utilities are common to those supplied other buildings at JSC and are described in more detail in the aforementioned institutional EI statement for the Center. Controls will be provided during construction of the building annex to avoid the transport of soils via storm water runoff from excavations.

The secondary or indirect environmental consequences from this project will be more beneficial than adverse. Construction of the curatorial facilities will have minimal short-term effects on the local economy. The proposed facilities will contribute to the normal functions of JSC. These functions are described in more detail in the previously published EI statement for the Center. Of more consequence, the completion of the facilities in this project will provide for the safeguarding and efficient investigation of the lunar samples. This investigation is expected to enhance man's knowledge of the universe and to contribute to the protection and improvement of the environment.

IV. Alternatives of the Proposed Action

Improved facilities for the storage and processing of the lunar samples are essential to assure adequate protection and care of these valuable materials. Alternatives to the proposed action include (1) no action or (2) construction of similar facilities at another location. The possible consequence of the first alternative is loss of the samples or damage to their usefulness from theft, accident, or natural hazards. To relocate the curatorial facility elsewhere would require an entirely new building without the cost-saving use of the existing ancillary facilities in building 31. It is estimated that a facility with an additional 20,000 square foot area would be required at another remote location. In summary, neither of the apparent alternatives to this project seem to be practical or justified.

V. Probable Adverse Environmental Effects from the Proposed Action

This project appears to provide no significant adverse primary environmental effects. There will be no apparent increase in air, water, or noise pollution from the use of the proposed facilities. The utility services to be provided for the curatorial facility are available at JSC and are common to the services provided for other buildings at the Center. Waste water generated by the proposed action will receive the same type of monitoring, treatment, and discharge as afforded other JSC facilities.

The secondary or indirect environmental effects from this project appear to be minimal. Construction of the new facility will represent a normal action in the ongoing functions of the Center. The economic and other effects of the Center on the area's environment are detailed in the institutional EI statement which was published in 1971. This project, therefore, also comes under the umbrella of the previous EI statement for the Center and retains the overall advantages which outweigh disadvantages in the evaluation of environmental effects.

VI. Relationship between Local Short-Term and Long-Term Effects from the Proposed Action

The advantages from this project of a long-term increase in knowledge of the universe and in the enhancement of man's environment appears to outweigh any potential disadvantages. The minimal local short-term effects on the environment include construction activities and the commitment of a relatively small value of resources in the installation of the facilities. The long-term effects include the potential for increased knowledge of lunar materials and its application to the understanding and use of the Earth's resources.

VII. Irreversible and Irretrievable Commitments of Resources Involved in the Proposed Action

The commitment of natural resources in this project is relatively insignificant. Construction of the facility will include materials in common use. There will be no substantial curtailment of the area's environmental potential, degradation of natural or cultural resources, or loss or destruction of environmental resources from the proposed action. Neither the project facilities nor functions appear to irreversibly affect the use or commitment of land or other resources. The termination of the need for the proposed facility will permit the reuse of the building or land area for other purposes.

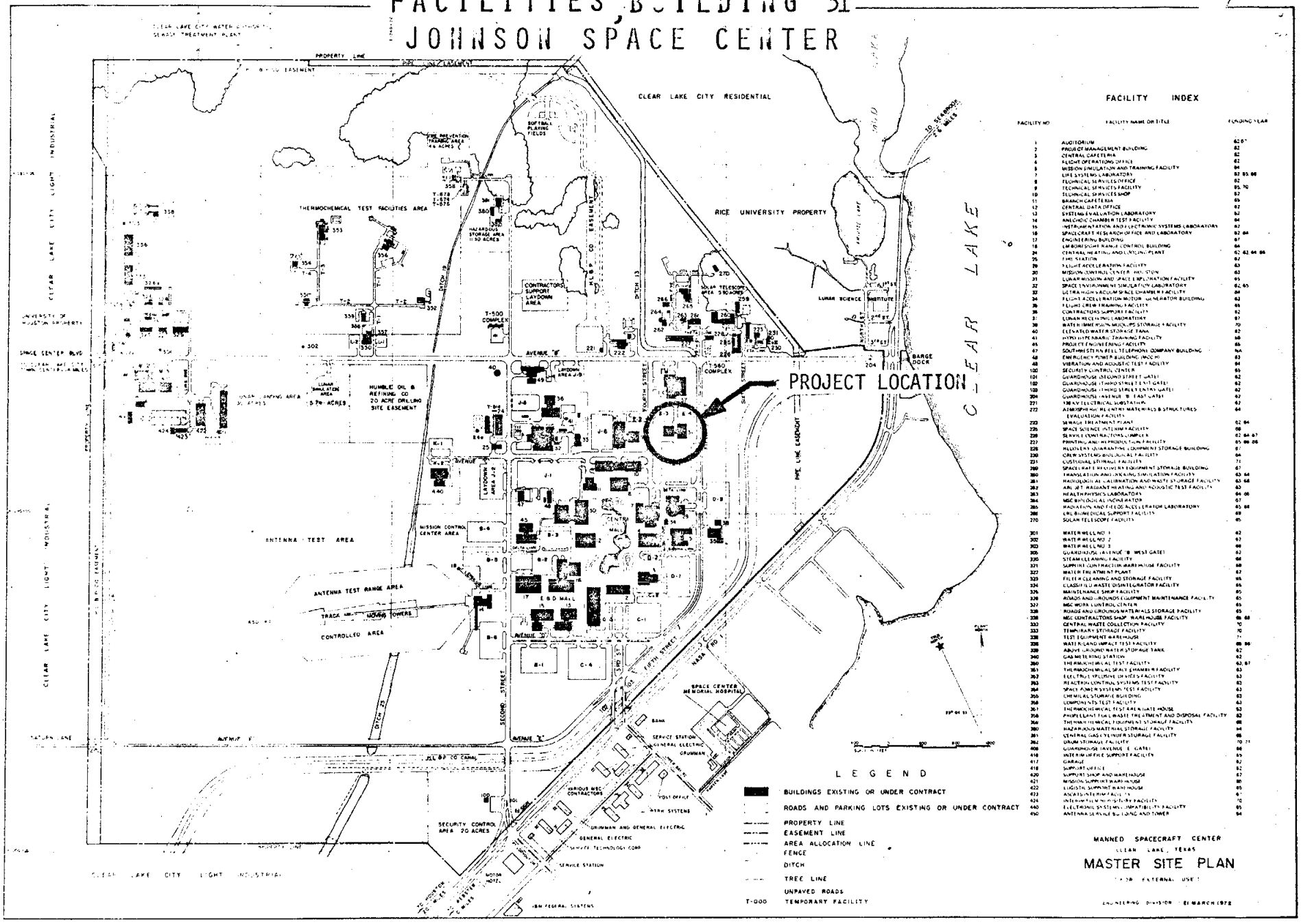
VIII. Other Interests and Considerations of Federal Policy Which Offset Adverse Environmental Effects of the Proposed Action

This project will provide facilities for the adequate protection and use of the samples of lunar materials returned to Earth as part of the national effort in the exploration of space. Consequently, this lunar material represents a substantial national investment; and its adequate care, protection, and investigation are in conformance with our Nation's policy to use the exploration of space for the benefit of all mankind. The consideration of these interests of Federal policy support the early completion of the proposed action.

In summary, it is concluded that there will be no significant impact on the environment from this project; that it is desirable to construct the lunar sample curatorial facility at the proposed location; and that it is in the best interests of our national policy for the exploration of space to complete the proposed action.

UPGRADE OF LUNAR SAMPLE CURATORIAL FACILITIES, BUILDING 31

JOHNSON SPACE CENTER



FACILITY INDEX

FACILITY NO	FACILITY NAME OR TITLE	FUNDING YEAR
1	AUDITORIUM	62 67
2	PROJECT MANAGEMENT BUILDING	62
3	CENTRAL CAFETERIA	62
4	FLIGHT OPERATIONS OFFICE	62
5	MISSION SIMULATION AND TRAINING FACILITY	64
7	LIFE SYSTEMS LABORATORY	62 65 66
8	TECHNICAL SERVICES OFFICE	62
9	TECHNICAL SERVICES FACILITY	65 70
10	TECHNICAL SERVICES SHOP	62
11	BRANCH CAFETERIA	69
12	CENTRAL DATA OFFICE	67
13	SYSTEMS EVALUATION LABORATORY	62
14	ANECHOIC CHAMBER TEST FACILITY	64
15	INSTRUMENTATION AND ELECTRONIC SYSTEMS LABORATORY	67
16	SPACECRAFT RESEARCH OFFICE AND LABORATORY	62 64
17	ENGINEERING BUILDING	67
18	EMBORESIGHT RANGE CONTROL BUILDING	64
24	CENTRAL HEATING AND CHILLING PLANT	62 63 64 66
25	FIRE STATION	67
29	FLIGHT ACCELERATION FACILITY	63
30	MISSION CONTROL CENTER (MCC)	63
31	LUNAR MISSION AND SPACE EXPLORATION FACILITY	65
32	SPACE ENVIRONMENT SIMULATION LABORATORY	62 65
33	ULTRA HIGH VACUUM SPACE CHAMBER FACILITY	64
34	FLIGHT ACCELERATION MOTOR GENERATOR BUILDING	62
35	FLIGHT CREW TRAINING FACILITY	65
36	CONTRACTORS SUPPORT FACILITY	62
37	LUNAR RECEIVING LABORATORY	67
38	WATER IMMERSION MOCK-UPS STORAGE FACILITY	70
40	ELEVATED WATER STORAGE TANK	62
41	HYPERBARIC TRAINING FACILITY	66
45	PROJECT ENGINEERING FACILITY	65
47	SOUTHWESTERN BELL TELEPHONE COMPANY BUILDING	NA
48	EMERGENCY POWER BUILDING (MCC H)	63
49	VIBRATION AND ACOUSTIC TEST FACILITY	64
150	SECURITY CONTROL CENTER	65
151	GUARDHOUSE (SECOND STREET GATE)	62
152	GUARDHOUSE (THIRD STREET GATE)	62
153	GUARDHOUSE (TIMING STREET ENTRY GATE)	62
204	GUARDHOUSE (AVENUE 'B' EAST GATE)	62
221	138 kV ELECTRICAL SUBSTATION	62
222	ATMOSPHERIC REENTRY MATERIALS & STRUCTURES EVALUATION FACILITY	64
223	SEWAGE TREATMENT PLANT	62 64
226	SPACE SCIENCE INTERIM FACILITY	68
229	SERVICE CONTRACTORS COMPLEX	62 64 67
232	PRINTING AND REPRODUCTION FACILITY	65 66 68
235	RECOVERY QUARANTINE EQUIPMENT STORAGE BUILDING	67
239	CREW SYSTEMS BIOLOGICAL FACILITY	64
271	CUSTODIAL STORAGE FACILITY	71
288	SPACECRAFT RECOVERY EQUIPMENT STORAGE BUILDING	67
290	TRANSLATION AND DOCKING SIMULATION FACILITY	63 64
261	RADIOLOGICAL CALIBRATION AND WASTE STORAGE FACILITY	67 68
262	AIR JET RADIANT HEATING AND ACOUSTIC TEST FACILITY	65
263	HEALTH PHYSICS LABORATORY	64 66
264	MSC BIOLOGICAL INCINERATOR	67
265	RADIATION AND FIELDS ACCELERATOR LABORATORY	65 68
266	CRL BIOMEDICAL SUPPORT FACILITY	69
270	SOLAR TELESCOPE FACILITY	65
301	WATER WELL NO 1	62
302	WATER WELL NO 2	62
303	WATER WELL NO 3	68
305	GUARDHOUSE (AVENUE 'B' WEST GATE)	62
320	STEAM CLEANING FACILITY	68
321	SUPPORT CONTRACTOR WAREHOUSE FACILITY	68
322	WATER TREATMENT PLANT	62
323	FILTER CLEANING AND STORAGE FACILITY	65
324	CLASSIFIED WASTE DISINTEGRATOR FACILITY	66
326	MAINTENANCE SHOP FACILITY	65
329	ROADS AND GROUNDS EQUIPMENT MAINTENANCE FACILITY	65
327	MSC WORK CONTROL CENTER	65
328	ROADS AND GROUNDS MATERIALS STORAGE FACILITY	65
330	MSC CONTRACTORS SHOP WAREHOUSE FACILITY	68 69
332	CENTRAL WASTE COLLECTION FACILITY	70
333	TEMPORARY STORAGE FACILITY	70
338	TEST EQUIPMENT WAREHOUSE	71
339	WATER LAND IMPACT TEST FACILITY	68 69
340	ABOVE GROUND WATER STORAGE TANK	62
360	GAS METERING STATION	62
360	THERMOCHEMICAL TEST FACILITY	63 67
361	THERMOCHEMICAL SPACE CHAMBER FACILITY	63
362	ELECTRO EXPLOSIVE DEVICES FACILITY	63
363	REACTION CONTROL SYSTEMS TEST FACILITY	63
364	SPACE POWER SYSTEMS TEST FACILITY	63
366	CHEMICAL STORAGE BUILDING	63
368	COMPONENTS TEST FACILITY	63
367	THERMOCHEMICAL TEST AREA & WATER HOUSE	63
368	PROPELLANT FUEL WASTE TREATMENT AND DISPOSAL FACILITY	63
369	THERMOCHEMICAL EQUIPMENT STORAGE FACILITY	68
370	HAZARDOUS MATERIAL STORAGE FACILITY	68
371	GENERAL GASEYLINDER STORAGE FACILITY	68
382	DRUM STORAGE FACILITY	70 71
408	GUARDHOUSE (AVENUE E GATE)	65
410	INTERIM OFFICE SUPPORT FACILITY	65
417	GARAGE	62
418	SUPPORT OFFICE	62
420	SUPPORT SHOP AND WAREHOUSE	62
421	MISSION SUPPORT WAREHOUSE	68
422	LOGISTICS SUPPORT WAREHOUSE	65
423	ASCAT'S INTERIM FACILITY	67
424	INTERIM FLIGHT SIMULATOR FACILITY	70
440	ELECTRONIC SYSTEMS COMPATIBILITY FACILITY	65
490	ANTENNA PULSE BUILDING AND TOWER	64

MANNED SPACECRAFT CENTER

CLEAR LAKE, TEXAS

MASTER SITE PLAN

FOR EXTERNAL USE

ENGINEERING DIVISION - 21 MARCH 1972

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