

May 17, 1976

REF: HA-3/30/76-781

Mr. Fred Zobrist
Science Research Council
c/o Neighbor Island Consultants
Suite 1912, 130 Merchant Street
Honolulu, Hawaii 96809

Dear Mr. Zobrist:

Conservation District Use Application for
Governmental Use (Temporary Dormitory Facilities)
at Mauna Kea, Hamakua, Hawaii TMK 4-4-15:1

At its meeting of May 14, 1976, The Board of Land and Natural Resources approved your application subject to the following conditions:

1. That the applicant comply with Section 2C and 2F of Departmental Regulation No. 4.
2. That no development occur within the Special Management Area unless approval is first received by the authority in accordance with the procedures adopted pursuant to Section 205A, Act 176, SLE 1975.
3. That the applicant receive concurrence of the proposed use from the University of Hawaii which holds revocable permit S44440 on the land.
4. That the applicant adhere to the non-removal of mamani trees and shrubs, and that disturbance to other vegetation be kept to a minimum.
5. That any removal of vegetation be under direct supervision of Department Personnel.
6. That the applicant be required to haul water from areas other than Pohakuloa to meet the needs of the applicant.

7. That the applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit, and not occasioned through the fault of the State.
8. The applicant designate a parking area for normal day-to-day parking.
9. The temporary 8' x 20' portable restroom not shown on the existing and proposed facilities plan be removed.
10. All wooden base camp structures be painted uniformly to blend with the environment.
11. The applicant initiate spot landscaping plantings to screen structures and buildings.
12. That the applicant locate the building such that it is in line with the existing CFHT Corporation Building, thus making the camp more compact.
13. That the camp access road dead-end near the proposed 10,000 gallon capacity water tank.
14. That all solid waste be hauled away to disposal in Hilo.
15. That the temporary dormitory facilities be given to the Department of Land and Natural Resources for use as public recreational support facilities at the completion of the UKIRT construction activities, provided however, that should the Department of Land and Natural Resources not accept the facilities the applicant shall restore the site to its original condition.
16. That the construction plans be approved by the Chairman, allowing for disapproval should the concerns of the Division of State Parks not be met.
17. Other terms and conditions as prescribed by the Chairman including but not limited to a performance bond in an amount prescribed by the Chairman to insure:

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- a. All construction is conducted in accordance with conditions of approval within two years from the date of this approval, and
 - b. To insure restoration of the site to its original condition, including the cesspool should the Department of Land and Natural Resources not exercise its option to accept the facilities at the completion of UKIRT construction.
18. That the applicant make arrangements with Land Management Division to make payment for use of sleeping facilities.

Should you have questions on any of these conditions, please contact our Planning Office at 548-7837.

Very truly yours,

CHRISTOPHER COBB
Chairman of the Board

cc: OEQC
County Planning
Dr. John Jeffries

bcc: Fish & Game
State Parks

WLB:cm

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"soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or or wildlife habitat (SCS, 1956)."

Rain and melting snow water runoff in the up slope and the temporary Hale Pohaku Base Camp area currently follow existing ground contours and established natural drainage courses. In conjunction with the design of the roadway now under construction from Hale Pohaku to the Summit, the estimated 10-year one hour rainfall was calculated at 1.9 inches. On November 20, 1973, Hale Pohaku received approximately 7 inches of rainfall over an eight-hour period. This intensity of rainfall caused some erosion to the existing dirt roads in Hale Pohaku primarily because no provisions were made for drainage in the initial roadway construction.

The on-going realignment and/or resurfacing of the new Summit Road includes realignment of approximately 3.3 miles of road from the temporary base camp, north, toward the Summit. This new alignment would interrupt the existing natural drainage patterns. However, the road design includes some 21 culverts in this section of realigned road which, as proposed, would re-establish the natural, storm drainage pattern and reduce the possibility of flooding or erosion in the temporary Base Camp area.

Access to the project site from Hilo or Kona is via the Saddle Road, State Route 200, to Puu Huluhulu. From this location, the Summit Road continues past Humuula Sheep Station, through Hale Pohaku, and on to the Summit.

Two structures are administered by the State Division of Forestry. However, they are being leased until May, 1976 to the CFHT Corporation for dormitory use by subcontractors to the Corporation. Five structures are owned and utilized by University of Hawaii for dormitory, administrative space, and ancillary uses i.e. generator shed. Adjacent to the proposed Science Research Council facilities are two buildings which also serve as a dormitory and mess hall area for subcontractors to CFHT Corporation.

The existing base camp facilities at Hale Pohaku are supplemented by two electrical generators, two water catchment and storage systems, two cesspools and a solid waste dump site.

Electrical power is supplied to the base camp by the use of two diesel generators. The 60 and 90 KW generators are never operated simultaneously as one generator always serves as a "back-up" to the other, for example, during maintenance. Maintenance on each generator is performed at least once a month.

Currently there are three wood stave water storage tanks with a total capacity of 9,500+ gallons which are utilized by the University of Hawaii. These tanks are located in the immediate vicinity of the kitchen-mess hall-dormitory area.

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Two tanks having a total capacity of 4,300 gallons are located approximately 80 feet north and up slope from the existing kitchen-mess hall-dormitory area. One tank with a capacity of 5,200 gallons is located between the existing UH kitchen-mess hall-dormitory and at approximately the same elevation. This tank is gravity fed from the two upper tanks but is not equipped with a pump to back feed into the upper tanks. Some catchment devices have been installed on the kitchen-mess hall and dormitory roofs to catch rain water and deposit it into this lower tank. Thus, when this tank is full or nearly full at the time precipitation occurs, the tank overflows and the water is lost.

The amount of water presently caught by surface catchment is not adequate to meet the present demands of approximately 240 gallons/day. As a result, UH hires a trailer and driver to haul a UH-owned 5,000 gallon tanker from Hilo to Hale Pohaku and the Summit. Such water deliveries are approximately once every 20 days at a cost of approximately \$160 to UH.

A 12,000 gallon capacity swimming pool catchment system is utilized by CFHT Corporation for its dormitory and mess hall facilities. Because the number of construction workers utilizing the CFHT facilities has on occasion been greater than the initial estimates of 36 workers, the water supply has sometimes been inadequate. As a result, the corporation has also been forced to import some loads of water to its catchment system.

Vegetation in the vicinity of Hale Pohaku consists chiefly of alpine shrub varieties of such plants as pua keawe, geranium, ohelo and small ferns identified as kalamoho laulii or cliffbrake. Small clumps of mamani are scattered about with aweoweo, pilo and wild geranium growing within. Understory consists of a number of native and exotic grasses and forbs, (herbs other than grass) some of which are annuals and biennials.

DESCRIPTION OF USE:

The proposed base camp expansion at Hale Pohaku would consist of the construction of 20 x 130-foot building which would provide a combination dormitory-kitchenette/pantry-lounge facility for 20 construction workers. In conjunction with these facilities, water storage, water and electrical distribution systems and a cesspool would also be installed. Supplementing these facilities would be a 100 x 100-foot open storage area where contractors could store construction materials and equipment.

The 20 x 130-foot building would provide similar accommodation to those existing within the recently constructed CFHT dormitory and mess hall facility. The major difference would be that the proposed SRC facility would include the same uses within one larger building. More specifically, the living area (including toilet and showers) would consist of approximately 1,500 square feet while the kitchen/pantry and lounge area would include some 1,100 square feet.

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It is proposed to install a portable swimming pool having a 10,000 gallon capacity, for water storage. The pool walls would be heavy gauge enameled steel with top and bottom rails and vertical supports being galvanized steel. Both the pool liner and pool cover would be made from a tough vinyl material. The pool also would have a bottom drain which would be connected to the water service line to the proposed dormitory-kitchenette/pantry-lounge building. No special foundation would be constructed for the pool as only a level sand cushion is required.

The proposed temporary buildings and support facilities would be site adapted to the existing ground contours; however, some clearing, grubbing, excavation and grading would be required.

Water distribution lines from the proposed water tank to the proposed building would be placed underground.

Electric power would be provided to the proposed facilities by the University of Hawaii through the existing system of a 90 KW and a 60 KW generator plus a planned backup generator of approximate similar capacity. Connections to the generators would be made through the use of approximately 380 linear feet (116+m) of underground electrical conduit.

A new cesspool would be installed just south of the proposed building. Connections to the cesspool would also be placed underground.

SUMMARY OF COMMENTS RECEIVED:

The following are comments submitted by the various agencies in response to an earlier identical application denied by the Board on March 12, 1976.

The State Department of Health has no objections on the basis that the applicant comply with all public health requirements.

The Hawaii County Planning Department has responded stating that with the original application, they recommended approval with two conditions. This application, however, was denied by the Board of Land and Natural Resources on the basis that alternate sites, more compatible with the proposed use and desires of the community, were sought.

Since then, a draft Mauna Kea Master Plan has been completed and is pending Board of Land and Natural Resources action. Indications are that the proposed temporary use will not be in conflict with the Mauna Kea Master Plan or the Advisory Committee's recommendations. Both the draft plan and Advisory Committee Report find the Hale Pohaku area as most suitable for mid-level facilities.

As indicated through the environmental assessment, the impacts to the environment are likely to be less than significant. There is, however, one area which may be of increasing concern.

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The environmental assessment mentioned that solid wastes are to be disposed of at a site adjacent to Hale Pohaku. While such practices may have been adequate in the past, the Hawaii Planning Department foresees the need for other methods of disposal with the continued and expanded use of the area.

As the subject application has not been substantively changed from the original, and based on the above considerations, they again recommend approval of the petition with the following conditions.

1. That the temporary structures be demolished at the end of the contract period and/or end of the construction phase.
2. All solid waste generated by the construction phase be hauled to transfer or dump sites in Hilo.

They further request that the Department of Land and Natural Resources require other present and future users of facilities at Hale Pohaku haul their solid waste to transfer sites in Hilo.

The Division of Land Management states that the area in question is covered by revocable permit No. S-4440 to the University of Hawaii, and as such, the University should be notified of the proposed use.

To Land Management, it appears that the applicant is combining the use application within the Conservation District as also the application for land tenure. They ask that the use application and matter of land tenure be separated and that the applicant be so advised. There are no objections to the environmental assessment.

Fish and Game Division recommends that the condition of use approval should include the non-removal of mamani trees and shrubs and that disturbance to other vegetation be kept to a minimum. Any removal of vegetation should be under direct supervision of DLNR personnel. Disturbance or removal of vegetation upon which native birdlife depends would be undesirable.

Forestry comments that the Hale Pohaku facility is under the jurisdiction of the State Parks Division, and is outside the program areas of forestry.

DOWALD notes that there are no adequate water sources in the vicinity to provide water to the project site; and that surface catchment is not adequate to meet present demands as water is transported from Hilo. Since it is anticipated that expansion of the base camp facilities may cause water supply problems in the future due to the increase in water demand, the applicant should be apprised of the situation and the temporary facilities be removed after construction of the telescope facility is completed.

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The Division of State Parks understands the permanent site of UH midlevel facilities is to be determined by April 1976 as part of the Mauna Kea Master Plan. This facility is to be located in a basin adjacent to the Hale Pohaku site.

As such State Parks prefers to have the proposed facilities located at the midlevel site rather than continue the expansion of temporary facilities at Hale Pohaku. The establishment of these new, temporary facilities will commit Hale Pohaku to this use for several years and thus may conflict with the need to re-establish Hale Pohaku as a park.

A site inspection by State Parks indicated that the continued use of Hale Pohaku as a base camp for future development of the summit should be discontinued if recreational use of the area is anticipated with the return of the State Parks cabins probably in May 1976. Mixture of recreation and this type of services are not compatible. The noise from recreational groups will be unacceptable to night workers who sleep during the day.

A designated parking area should be constructed for normal day-to-day parking. This will encourage regrowth of vegetation which the vehicle parking is hampering.

They go on to say that there is a temporary 8' x 20' portable restroom located next to existing structures not shown on the existing and proposed facilities plan. This building is inappropriately located and should be removed.

All wooden base camp structures should be painted uniformly to blend with the environment. The CFHT Corporation structures blend well with the area.

Additionally they suggest the applicant initiate spot landscape plantings to screen structures and buildings. The proposed temporary open storage is ideally located; however, the combination dormitory-kitchenette/pantry-lounge facility, if located as planned, will be openly visible from the Summit Road. This structure should be located in line with the existing CFHT Corporation building, making the camp more compact.

Lastly, State Parks suggests to control further vehicle damage to the area, the camp access road should come to a dead end somewhere near the proposed 10,000 gallon capacity water tank.

STAFF ANALYSIS:

The proposed use is permitted under Section 2B(1)b and e of Departmental Regulation No. 4.

The proposed action is exempt under Section 1:33(A)3.

The major food supply for a number of endemic and exotic birds is the mamani. When in season, the tree flowers profusely, providing large amounts of nectar that attracts birds

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and insects. Birds observed feeding on the mamani are the apapane, i'ikii, amakihi and the white-eye. In the forests of nearby Kaohe Game Management area are the elepaio, the rare akiapolaau and very rare palila.

Hunters and Fish and Game officials report two types of game birds which inhabit the general Hale Pohaku area are the chukar partridge and California quail.

According to local hunters and State game officials, the project site is inhabited by feral sheep and mouflon, wild pigs, wild goats, and feral cats. Several wild pigs and cats have been domesticated and are cared for by residing observatory personnel.

There are no historical/archaeological sites within the project site; however, up slope from the temporary base camp lies the Keanakakoi Adz Quarry (at 12,400 foot elevation) which is approximately 2,000 feet west of the existing Summit Road. The Quarry site is listed on the National Register of Historic Places.

Solid wastes from the entire Base Camp are presently being discarded and covered in a 300 square foot area just east of the existing UH dormitory.

One cesspool, located just south of the existing UH dormitory and mess hall, is presently the receiving facility for liquid wastes being generated by the UH facilities while sewage from the CFHT facilities is disposed into a cesspool located south of its facilities.

The dominant noise at the existing base camp and project site is caused by the diesel engine-electric generating unit. It is believed that the noise levels recorded in the base camp in 1973 have not increased over 10 dba during the past two years. During this time the base camp has been expanded to include CFHT Corporation's dormitory-kitchen-mess hall facilities on the west side of Hale Pohaku.

Even though no surface wind data are available for Hale Pohaku, hunters and observatory officials indicate that the prevailing winds blow from the northeast.

The request to erect additional dormitory and mess hall facilities is based upon the Science Research Council's (SRC) desire to develop a 158-inch infrared flux collector on the summit of Mauna Kea. Since the Governor of the State of Hawaii has endorsed this project and an Environmental Assessment has already been approved for the proposed United Kingdom Infrared Telescope (UKIRT), SRC is proceeding with the submittal of a Conservation District Use Application to DLNR and an EIS to the Governor's Office for the proposed Base Camp expansion.

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As is known, construction on Mauna Kea is very seasonal, thus in order to maintain the United Kingdom schedule, work should start in April of this year in order that minimal work can be completed and winterized before freezing weather this fall.

The Board's basis for denying the earlier application was directed toward the lack of information regarding alternative locations for the proposed temporary dormitories.

A letter response to the above dated March 24, 1976 was submitted by Neighbor Island Consultants, Inc. The letter states that the site at Hale Pohaku is only suggested. An alternate site about 1300' makai of Hale Pohaku at the 9100' contour elevation adjacent to the existing Mauna Kea Summit Road was considered. A site at the new Mid-Level Facility Area proposed by the current Master Plan is also acceptable, however, the operation of an additional generator is required at a cost of about \$2000 per month.

Other areas studied include the Humuula Sheep Station, Pohakuloa and military lands. However, all such sites were below the 6500' level. In order that workers are adequately acclimatized, it is felt that they should be located at the 9000' level. Hale Pohaku is about 9300' above sea level.

The United Kingdom desires to use the construction camp for the period of construction (less than 2 years) and, if needed, for a subsequent period to house operational and observing personnel until a permanent mid-level facility is completed. Vacation of the area would coincide with the transfer of the University of Hawaii and Canada, France, Hawaii Telescope operations to the proposed mid-level facility.

Once vacated the United Kingdom will have no further use for the facility and will remove or transfer the structure to the State Parks or other agencies as the State and Land Use Board may desire. The building would be ideal for housing skiers or hunters as it includes private rooms, dormitory area, recreation room and kitchen. Further, even though considered a temporary structure because of its limited period of usage by the United Kingdom, the building would be constructed to permanent structure standards in accordance with the current building codes. For example, the buildings include double wall construction with insulation, carpeted floors, bathrooms and a color scheme to blend with the environment. Further the building would be easy to relocate because of its post and block foundation. A complete set of the proposed construction plans has been filed with Joe Souza, Director of the State Parks Division.

Staff is of the opinion that through the applicant obtaining concurrence of the University of Hawaii, the concern regarding land tenure raised by Land Management may be alleviated inasmuch as the University holds a revocable permit issued by the Board.

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In this manner separation of land use and land tenure may occur.

RECOMMENDATION:

That the CDUA for temporary facilities for the construction of UKIRT Observatory at Hale Pohaku, Mauna Kea, Hamakua, Hawaii, TMK 4-4-15:1 be approved subject to the following conditions:

1. That the applicant comply with Section 2C and 2F of Departmental Regulation No. 4.
2. That no development occur within the Special Management Area unless approval is first received by the authority in accordance with the procedures adopted pursuant to Section 205A, Act 176, SLH 1975.
3. That the applicant receive concurrence of the proposed use from the University of Hawaii which holds revocable permit S4440 on the land.
4. That the applicant adhere to the non-removal of mamani trees and shrubs, and that disturbance to other vegetation be kept to a minimum.
5. That any removal of vegetation be under direct supervision of Department Personnel.
6. That the applicant be apprised and understand that expansion of the base camp may cause water supply problems in the future due to an increase in water demand.
7. That the temporary facilities be removed when construction of the telescope facility is completed.
8. That the applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit, and not occasioned through the fault of the State.
9. The applicant designate a parking area for normal day-to-day parking.
10. The temporary 8' x 20' portable restroom not shown on the existing and proposed facilities plan be removed.
11. All wooden base camp structures be painted uniformly to blend with the environment.

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12. The applicant initiate spot landscaping plantings to screen structures and buildings.
13. That the applicant locate the building such that it is in line with the existing CFHT Corporation Building, thus making the camp more compact.
14. That the camp access road dead-end near the proposed 10,000 gallon capacity water tank.
15. That all solid waste be hauled away to disposal in Hilo.
16. That the temporary dormitory facilities be consigned to the Department of Land and Natural Resources for use as recreational support facilities at the completion of UKIRT Construction activities.
17. That the applicant shall file with DLNR a performance bond to the amount of \$5000 to insure that all construction is conducted in accordance with conditions of approval within two years from the date of this approval.

Respectfully submitted,


LEONARD BAUTISTA
Staff Planner

APPROVED FOR SUBMITTAL:


CHRISTOPHER COBB, Chairman
of the Board

Condition 18. That the applicant make arrangements with Land Management Division to make payment for use of sleeping facilities.

SEE NEXT PAGE FOR AMMENDED CONDITIONS

AMMENDED CONDITIONS:

6. That the applicant be required to haul water from areas other than Pohakuloa to meet the needs of the applicant.

7, OMITTED

Conditions numbered 8 through 15 changed to 7 through 14.

15. That the temporary dormitory facilities be given to the Department of Land and Natural Resources for use as public recreational support facilities at the completion of the UKIRT construction activities, provided however, that should the Department of Land and Natural Resources not accept the facilities the applicant shall restore the site to its original condition.
16. That the construction plans be approved by the Chairman, allowing for disapproval should the concerns of the Division of State Parks not be met.
17. Other terms and conditions as prescribed by the Chairman including but not limited to a performance bond in an amount prescribed by the Chairman to insure:
- a. All construction is conducted in accordance with conditions of approval within two years from the date of this approval, and
 - b. To insure restoration of the site to its original condition, including the cesspool should the Department of Land and Natural Resources not exercise its option to accept the facilities at the completion of UKIRT construction.