Archaeological Monitoring Plan for Waikiki Beach Walk Project, Waikīkī Ahupuaʻa, Kona District, Island of Oʻahu (TMK:2–6–002, 003, 004)

Windy K. McElroy, M.A.

April 15, 2005

Contents
1 Introduction 2
  1.1 Nature and Location of the Undertaking 2
  1.2 The Project 8
2 Background 8
  2.1 Physical Environment 8
  2.2 Pre-Contact and Early Historic Land Use 8
    2.2.1 Land Commission Awards 10
    2.2.2 Historic Period Development 11
  2.3 Previous Archaeology 13
3 Project Design 16
  3.1 Anticipated Archaeological Remains 17
  3.2 Field Problems 18
  3.3 Research Problems 18
  3.4 Project Personnel 19
4 Fieldwork 19
  4.1 Field Recording and Sampling 19
  4.2 Discovery of Human Remains 21
Abstract

Archaeological monitoring will be conducted by T. S. Dye & Colleagues, Archaeologists, Inc. at TMK:2–6–002, 003, 004, Waikiki, O‘ahu for the redevelopment of the Waikiki Beach Walk area. Archaeological monitoring will focus on the identification and documentation of historic properties within the area of potential effect of the redevelopment project. This document also specifies a work plan that will be carried out should historic properties or burials be identified during the archaeological monitoring phase of inventory survey. The archaeological monitoring will be conducted as one phase of inventory survey; the other phase of inventory survey is covered by a separate plan.

1 Introduction

At the request of Paul H. Rosendahl, Ph.D., Inc. on behalf Outrigger Enterprises, Inc., T. S. Dye & Colleagues, Archaeologists, Inc. has prepared an archaeological monitoring plan (AMP) for one phase of inventory survey during a proposed undertaking1 in Waikiki, O‘ahu, Hawai‘i. The project proposed by the AMP is designed to identify historic properties that might be exposed during the undertaking and to treat them appropriately.

1.1 Nature and Location of the Undertaking

The approximately 7.9 acre redevelopment project area consists of 22 parcels within TMK:2–6–002, 003, and 004, and includes properties owned by Outrigger Enterprises,
1.1 Nature and Location of the Undertaking

Inc. makai of Kalākaua Avenue and along Lewers Street, Kālia Road, Beach Walk, and Saratoga Road (fig. 1). Structures currently in the project area include hotel, retail, restaurant, and parking facilities, most of which have basements. All of these structures sit on piles or footings, and the basement slabs sit slightly above the water table. The project area is 1–2 m above mean sea level, and extends from the shoreline to about 455 m (1500 ft.) inland.

Figure 1. Project area, showing locations of nearby archaeological sites.

Several existing buildings will be demolished during the undertaking. Demolition will consist of removing each structure in sections and either hauling away demolished building material or using it as fill in the basements. None of the below grade structures, walls, or slabs will be removed. Once the demolished material is removed down to the basement slab, holes will be cut into the basement slabs, the basements will be filled,

\footnote{Words that appear in the glossary are added to the margin where they first appear.}
and piles will be driven through the openings in the basement slabs. The slab remnants from cutting the holes will be cleared by hand, and no excavation beneath the basement slabs is expected. Piles will be driven to depths of 120–200 ft. Once the piles are in place, utility connections will be excavated into the new fill, and the ground level slab will be poured at grade level. No new utilities will be placed beneath the basement slabs.

New buildings will be constructed in place of the demolished buildings. Primary ground level for these buildings will be set at approximately 2 m above grade. Construction activities for the new buildings will take place above the current ground surface.

Civil work required to support the undertaking includes: cutting, removing, and capping some existing utility connections that will be abandoned; installation of new utility connections to the site; the re-routing/replacement of an existing sewer line; and installation of a new surface treatment on limited areas of Lewers Street.

Cutting, Removal and Capping of Existing Utility Connections A part of the design of the undertaking is to simplify the number of utility connections by treating the entire project area as a single building and combining the incoming and outgoing utility lines into fewer lines. The abandoned lines will be removed, if above a structural slab or in the yard area between the building and the curb, or abandoned if below any existing slab. The excavation for removal of these lines will be limited, so far as possible, to the areas originally excavated for the installation.

Installation of New Utility Connections Because not all of the utility connections can make use of existing points of entry, it will be necessary to excavate some limited areas to bring new water, sewer, gas, electrical and storm drainage lines into the site from utilities already available in the streets (fig. 2). The depth of these excavations will depend on the depth of the existing main line and whether or not it is under pressure or gravity fed. For example, water, electrical and gas lines can enter the site at the same height as their respective mains in the street which can be as high as roadway construction standards would permit. Sanitary sewer and storm drainage (storm sewer) lines flow through gravity and therefore the lines in the existing street are typically lower than the other utilities so that the connection from the site flows downhill to the main.

The width of the excavation will depend on the depth of the new line and the type of soil in which the excavation is made. The goal is to minimize the width of the excavation so as to minimize the extent of work while making sure that the excavation is safe for workers, i.e., “benched” to prevent collapse of the walls. If a line is installed at 3 ft. below grade, a 45-degree slope on the excavation would create a total trench width in excess of 6 ft. If the soils are stable a narrower trench may be possible.

Re-Routing/Replacement of the Helumoa Road Sewer Line Currently, a 12 in. sanitary sewer line runs under Helumoa Road. This sewer line serves several existing Outrigger properties, as well as the Ft. DeRussy Army Museum. Since Outrigger has
1.1 Nature and Location of the Undertaking

Figure 2. New utility connections.
purchased Helumoa Road between Beachwalk and Lewers so that the new retail component of the project can be built over this area, this sewer must be re-routed. The existing Beachwalk to Lewers segment, on Helumoa Road, will be abandoned in place and therefore will require no excavation.

The segment running from Helumoa to Kalia along Beachwalk will be removed and replaced with a new line of a larger diameter (fig. 3, Work Area 1a). An existing sewer line in Kalia Road between Beachwalk and Lewers (fig. 3, Work Area 2) and Lewers Street between Kalia and Helumoa (fig. 3, Work Area 3a) will also be replaced with a larger line. The Kalia and Lewers segments will be large enough to require additional support beneath the line. These supports will be in the form of 24-inch diameter jet-grouted columns spaced about 10 feet apart. These columns are anticipated to be under the existing water table and continuously grouted beneath the new sewer pipe. In order to minimize the amount of new excavation, the existing sewer line will be temporarily diverted above grade and the new lines will be installed, offset from the centerline of the existing sewer lines by 6–7 in. In addition, in order to minimize the disruption to vehicular traffic caused by this work, the width of the trench will be minimized, even if it requires shoring the sides of the trench.

Because of the extent of patching that would be required at the areas of sewer line removal and replacement, the City and County will require repaving, at a minimum, half the entire street, even though the trenches may not extend to the full width (fig. 3). The repaving may require removal and replacement of the existing paving and base course, or re-compaction of the existing base course, but is not expected to require additional excavation of soils below the base course.

**Installation of New Surface Treatment on Lewers Street** A portion of Lewers Street, between Helumoa Road and Don Ho Lane (fig. 3, Work Area 3b) is proposed to be paved with a non-asphalt material, such as a stamped colored concrete. This will require the complete removal of the existing asphalt paving and possible removal and replacement, or re-compaction, of the base course. The owner is also exploring the installation of additional handicap ramps or rolled curbs in areas abutting this area, but additional excavation above and beyond what is contemplated related to the re-paving is not expected.

**Widening of a Portion of Helumoa Road** An area approximately 100 ft. long (fig. 3, Work Area 4) adjacent to the existing Mauka edge of Helumoa Road, Diamond Head of Lewers, will be widened by about 6 ft. to accommodate the turning radius of large vehicles exiting Helumoa onto Lewers. This widening will require the removal of the existing curb, sidewalk, asphalt, and base course. Upon re-compaction of the subgrade, new curbs, base course and asphalt will be placed in the widened areas. No utility relocation is anticipated and no below grade excavation of the existing road will be required for the widening.
Figure 3. General areas of civil work.
1.2 The Project

*T. S. Dye & Colleagues, Archaeologists, Inc.* will conduct archaeological monitoring of all ground disturbing activities of the undertaking. A separate plan for inventory survey through subsurface testing has been developed for areas affected by the installation of new utility connections (see pg. 4) and the re-excavation of these areas during construction will be monitored to the extent necessary to ensure that no new sediment is exposed. The ground disturbing activities, described above, constitute the area of potential effect for the undertaking. The primary focus of the monitoring is the identification and appropriate treatment of historic properties that are exposed during excavations. The goal is to complete an inventory of historic properties within the undertaking’s area of potential effect. Given the project’s location in a densely developed section of Waikīkī, traditional inventory survey techniques are not applicable and monitoring is the most reasonable way to accomplish inventory survey goals within the area of potential effect. If significant historic properties or human remains are found, these will be treated according to a work plan, including a data recovery plan or burial treatment plan, as appropriate.

2 Background

This section is intended to provide basic information about the natural, cultural, and archaeological history of Waikīkī, focusing on the vicinity of the project area. The first section describes the natural environment, and the second section reviews pre-contact and early historic land-use. Following this, māhele land tenure and later development of the project area are discussed. Taken together, these sections present an overview of the evolution of the land from its Hawaiian roots to its modern state. Finally, the history of archaeological investigation in the project area is reviewed.

2.1 Physical Environment

The project area has been essentially fully developed for many years, and the ground surface, for all intents and purposes, has been entirely modified. The terrain in the project area is flat, and portions lacking structural improvements are mostly asphalt or concrete pavement and fill. Vegetation consists primarily of maintained ornamentals. The average minimum temperature in the project area is 63°F, and the annual maximum temperature is 88°F (Armstrong 1973). Rainfall in the project area averages 20 in. per year (Armstrong 1973). According to geotechnical studies and tests conducted by Tom Nance, URS (Dames & Moore), and Geolabs, the water table occurs slightly below mean sea level.

2.2 Pre-Contact and Early Historic Land Use

The *ahu'pua'a* of Waikīkī has a long and colorful past, and was once the favored locale for the ruling chiefs of O'ahu. This may have begun as early as the fourteenth century, when the *ali'i nui* Ma'ilikūkahi transferred the seat of government to Waikīkī (Handy
2.2 Pre-Contact and Early Historic Land Use

and Handy 1972). It remained the seat of government until Kamehameha I briefly transferred the government, after unifying the islands, to Kailua-Kona on the Island of Hawai‘i. Much of early Waikīkī, through the time of Ma‘ilikūkahi in the fourteenth century, was a plantation of irrigated agricultural fields covered in taro and fishponds. This area extended as far inland as Makiki, Mānoa, and Pālolo valleys. At the time of European contact, Waikīkī was one of the richest and most densely populated areas on O‘ahu (Davis 1989:8).

One of the first written accounts of Waikīkī comes from Captain George Vancouver who arrived in Hawai‘i in 1792. He wrote:

> The situation occupied by us in this bay, which the natives call Whyteete [sic] seemed nearly as eligible as most of the anchoring places these islands are generally found to afford . . . On the shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly deep . . . with the plains near the sea-side, presented a high degree of cultivation and fertility . . . Several portions of land were planted with eddo or taro root, in different stages of inundation; none being perfectly dry, and some under three to six or seven inches under water . . . In this excursion we found the land in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind (Vancouver 1798:Vol. I).

Another westerner who described the fishponds of Waikīkī was Andrew Bloxam, who arrived in Hawai‘i in 1825 aboard the HMS Blonde. Bloxam wrote:

> The whole distance to the village of Whyteete [sic] is taken up with artificial fishponds extending a mile inland from the shore, in these fish taken by nets in the sea are put, and though most of the ponds are fresh water, yet the fish seem to thrive and fatten. Most of these fish belong to the chiefs, and are caught as wanted (Bloxam 1925:35).

The increased arrival of Europeans and Americans to Hawai‘i brought much change to Waikīkī. A growing population meant an increase in development, and new construction began in the area. The numerous ponds that once dotted the landscape soon fell out of cultivation and into disrepair as described by Levi Chamberlain in 1828:

> Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population (Chamberlain 1957:26).

The once beautiful and impressive system of irrigation had become an eyesore and a possible health hazard.
In the 1870s the influence of westerners on Waikīkī was apparent. With the growing trade and tourism, a number of westerners saw the need and potential for the development of hotels and permanent residences (Davis 1984). It was around this time that the first modern development likely occurred in the project area.

Soon, something had to be done about the poor condition of the old ponds. In 1896, Act 61 of the session Laws was passed; it required landowners of wetlands to create dry landscapes in the interest of public health (Simmons et al. 1995). Not long after, the idea of in-filling the ponds and fields of Waikīkī began to take shape.

The 1900s saw a new face put on Waikīkī. In 1921, the Waikiki Reclamation Project began. The Dillingham Construction Company worked on this project between 1921 and 1929. It consisted of dredging the entire length of the Ala Wai Canal. The dredged material was then used as fill over a large portion of Waikīkī but was mainly used to fill in the many ponds and terraces thus making the previous "swamp land" usable to the United States Military for Fort DeRussy and others for commercial use (Nakamura 1979).

2.2.1 Land Commission Awards

A review of the currently available information indicated that four Land Commission Awards (LCA) were awarded within the project area (fig. 4). Descriptions of the LCA were obtained from the Native Register, Native Testimony, and Foreign Testimony on file at the Hawai‘i State Archives. The four award parcels were LCA 104 FL (Fort Lands), to Mataio Kekuanaoa; LCA 1408, to Kaua; LCA 1436, to Kalaipaopao; and LCA 1513, to Wailehua. With the exception of LCA 104, which was situated in the northern portion of the project area and incorporated the two ponds, Loko Kaohai and Loko Halemauauola, the remaining three LCA were located makai of the present Kālia Road. The LCAs are detailed below.

LCA 104 FL (Fort Lands) was awarded to Mataio Kekuanaoa. Kekuanaoa became the governor of O‘ahu in 1839 (Day 1984) and was the caretaker at the fort, located at the base of Fort Street in Honolulu. Claiming land at the fort as well as land in Waikīkī and numerous other properties around O‘ahu, Kekuanaoa obtained a large amount of property. His claims for Waikīkī include: two lo‘i, five fishponds and a muliwai. Much of this land would eventually become Fort DeRussy.

LCA 1408 was awarded to Kaua. He claimed two lo‘i and a houselot in Waikīkī. Nalaweha, who was supervising konohiki, states that he had given this land to Kaua in the time of Ka‘ahumanu I because of his service to the konohiki.

LCA 1436 was awarded to Kalaipaopao. She inherited the land from her father, Ahia, who obtained the land from his parents, who were given the land from Ka‘ahumanu I. Her claim was for two lo‘i in the ‘ili of Kanuku, two sections of an unnamed stream, and a houselot at Kawehewehe, which is near the stream.

LCA 1513 was awarded to Wailehua. His claim was for eight lo‘i, a houselot and a kula. Nalauhea testified on behalf of Wailehua and states that the land had been given to him by Ka‘ahumanu and that Wailehua was konohiki under Victoria Kamāmalu.
2.2 Pre-Contact and Early Historic Land Use

Figure 4. A portion of S.E. Bishop’s 1881 Map showing LCA awards and fishponds in relation to the project area.

2.2.2 Historic Period Development

The project area has seen much change over a relatively short period of time. At European contact, Waikīkī was under intense agricultural and aquacultural use, with the northern portion of the project area containing irrigated pondfields, or lo‘i, and fishponds, or loko i‘a. The native Hawaiians that worked the ponds likely had houses in the same area closer to the shoreline to the south. They took advantage of the dunes of Waikīkī to bury their dead, and the ocean fronting Waikīkī supported many people with its productive reefs and readily available deepwater fishing.

With Western influence, the lo‘i and loko i‘a were eventually abandoned, and the once highly productive Waikīkī became an eyesore and a health hazard. The māhele land division of 1848 brought about a change in land ownership and different ap-
approaches to land use. With the dredging and subsequent filling of the many ponds, including those on the north side of the project area, a large expanse of land became available for commercial and residential use. Bishop’s 1881 map shows four structures located between the tract that would become Kālia Road and the ocean, and two other structures mauka of the same tract (fig. 4).

The increase in development within the project area between 1914 and 1927 coincided with the changing landscape throughout Wāikīkī. Prior to 1914, very little development had occurred within and immediately adjacent to the project area. Fewer than 20 structures were present between Kālia Road and Kalākaua Avenue, and most of them were single-story wooden dwellings. The area south of Kālia Road and west of the existing Hālekūlani Hotel was not recorded on the Sanborn Fire Insurance maps for the period, suggesting that for at least that portion of the project area no structures were present prior to 1914 (fig. 5).

Figure 5. Sanborn Fire Insurance map of the project area in 1914.
2.3 Previous Archaeology

By 1927, it is apparent that the project area had become nearly completely developed and few of the original structures on the 1914 Sanborn map were still present (fig. 6). The area between Kālia Road and Kalākaua Avenue was nearly completely covered with structures, most of which were single-story wooden buildings with several two and three-story structures scattered throughout the area. The most evident change was between Kālia Road and the ocean, where two apartment developments had been constructed. In a relatively short time period, Waikīkī had been transformed from a productive agricultural complex to a developed urban area.

Figure 6. Sanborn Fire Insurance map of the project area in 1927.

2.3 Previous Archaeology

Most archaeological investigations undertaken in the Waikīkī area have occurred during the last 20 years. However, archaeological reports associated with the Waikīkī
ahupua’a extend back to more than a century ago, when human remains were discovered in the vicinity of the current Elks Club, near Kapi’olani Park during excavations on the James B. Castle property (Emerson 1902). This discovery took place in 1901. The skeletal remains of four adults were uncovered along with whale teeth and glass beads. Given the extensive archaeological literature associated with such a large ahupua’a as Waikīkī, the following will provide only a summary of the archaeology of Waikūkī and focus on the immediate area surrounding the project area.

In 1930, J. Gilbert McAllister conducted an island-wide survey of O’ahu (McAllister 1933). He reported a total of four heiau sites within the vicinity of Waikīkī, the largest of which was Papaenaena, site 58, located at the base of Diamond Head in the area of the present Hawaii School for Girls at La Pietra. This luakini heiau was reportedly associated with Kamehameha I. Kenneth P. Emory of the Bishop Museum attempted to identify the heiau foundation in 1968 when the La Pietra property was being developed, but results were inconclusive (Davis 1989:20).

In 1976, while excavating for the Hale Koia Hotel at Fort DeRussy, west of the project area, Bishop Museum archaeologists recovered five human burials (Kimble 1976). The remains were reported to be prehistoric or early historic bundle burials and were designated site 50–80–14–9500. A sixth human burial was also recovered from immediately beneath the road and was believed to be of later interment.

In 1980, emergency excavations were conducted at the Hilton Hawaiian Village Tapa Tower site (Neller 1980). The remains of three individuals were recovered along with nearby trash pits. This was designated site 50–80–14–2870. Due to ongoing construction activity, controlled excavations were not conducted at the site. Using historic documents, the historic shoreline was reconstructed and it was determined that the burials were likely interred after 1850.

In 1981, an archaeological reconnaissance and emergency recovery were carried out at the site of the then new Halekulani Hotel, located immediately east of the project area, along the coastline (Neller 1981). Four distinct burials were found, three located northwest of the project site and one along the shoreline on the east side. The area was designated site 50–80–14–9957. There were also a number of bottles and historic trash pits discovered during construction. All cultural remains were disturbed prior to notification, yet several determinations regarding the burials and their context were made (Neller 1981). The burials were thought to be native Hawaiian, dating to the 1800s. The historic artifacts recovered from the site dated to the late 1800s and early 1900s. Although there were no intact archaeological deposits, the available evidence indicated that a historic site was located along this portion of Waikīkī, and archaeological investigations, including monitoring, were recommended.

In 1984, archaeological and historical investigations were conducted at the Halekulani Hotel (Davis 1984). Test pits and trenches were excavated in an attempt to isolate intact cultural deposits at site 50–80–14–9957. While most of the property was disturbed by recent construction, an area along the beach and an isolated area in the center of the property remained relatively intact. Excavations uncovered 32 features, including human skeletal remains, a dog burial, postholes, trash pits, privies, and several pits. Most of the trash pits contained bottles, ceramics, and metal. Although the area had been heavily disturbed by the recent construction, significant cultural materials dating to the late 1800s remained intact.
Between 1985 and 1987, archaeological monitoring of construction excavations associated with the Mechanical Loop Project at the Hilton Hawaiian Village was carried out (Hurlbett et al. 1992). Fifteen features were identified at site 50–80–14–2870, mostly on the northeast end of the project area near Kālia Road. Nearly 4,000 artifacts consisting of household (glassware and tableware) and architectural (nails, glass, etc.) items were recovered. The majority of the artifacts dated between 1870 and 1930.

In 1987 a human burial was inadvertently discovered during utilities excavations on Kalākaua Avenue, in front of the Moana Hotel at site 50–80–14–3745 (Griffin 1987). The burial was determined to be a male between 25 and 30 years of age (Lee and Pietrusewsky 1988). The following year, eight more burials were encountered in the same area during the Waikīkī Moana Historical Rehabilitation Project at site 50–80–14–9901 (Simons 1988).

Extensive archaeological work has been conducted in the vicinity of Kālia Road and the Fort DeRussy property. Beginning in 1989, a series of test excavations, data recovery and monitoring projects were undertaken in the area. In July of 1989, a limited subsurface inventory survey was carried out for a proposed lī'au facility located at the Hale Koa Hotel. Test excavations identified a buried cultural layer and associated historic artifacts. Based on the disturbance of the cultural layer and the lack of midden remains, the area was thought to have been disturbed and the historic artifacts were in a secondary context. Nevertheless, archaeological monitoring of construction activities was recommended.

In 1989, subsurface reconnaissance survey and historical documentary research were conducted at Fort DeRussy (Davis 1989). Archaeological testing attempted to confirm archival data indicating the former presence of buried fishponds, ‘āuawai, and associated habitation remains. The testing documented intact subsurface cultural deposits with individual features, including ‘āuawai, fishpond walls, and historic deposits. The historic land filling episodes that occurred at Fort DeRussy had filled in the ponds and ‘āuawai, but had not destroyed them. The area along the beach front at site 50–80–14–4570 contained glass and ceramics that dated to the nineteenth century and an earlier pre-contact component with fire pits and a post hole.

In 1992, archaeological data recovery excavations were carried out in connection with the construction of new recreational facilities at Fort DeRussy (Simmons et al. 1995). Further excavations at site 50–80–14–4570 uncovered information regarding the construction and structure of the fishponds and the ‘āuawai system that fed the ponds. A permanent habitation deposit was also identified.

In 1993, archaeological monitoring was conducted during Phase I activities for the Kālia Road Realignment, which was associated with the construction of a new tower for the Hale Koa Hotel (Carlson et al. 1995). The monitoring uncovered the remains of the Loko Paweo fishpond, site 50–80–14–4574, and two other sites, 50–80–14–4570 and 50–80–14–4966. These contained historic trash pits, features, an occupation layer, and human remains, including several sets located directly in front of the U.S. Army Museum (Carlson et al. 1994).

In 1996, an archaeological inventory survey and subsurface testing were conducted at the site of the proposed Kalākaua Plaza, situated on the mauka side of Kalākaua Avenue, directly across from Fort DeRussy. Archival research indicated the probability of encountering fishpond deposits or other cultural resources associated with the intensive
cultivation in Waikīkī (Cleghorn 1996). No cultural deposits were identified, and the area was determined to be extremely wet or marshy and “not conducive for traditional economic practices” (Cleghorn 1996:15).

In 1997, archaeological data recovery excavations were conducted at Fort DeRussy, between Dudley Street and Kālia Road (Denham and Pantaleo 1997). A fire pit, coral concentration, and post hole were recorded at site 50–80–14–4570. At site 50–80–14–4579, firepits, a pit, a human burial, dark stains, historic middens, and possible pre-contact midden features were documented. Site 50–80–14–4579 was thought to be used for permanent historic occupation and possibly pre-contact burial and intermittent use.

In 1999, the remains of two human burials, site 50–80–14–5744–1 and 2, were found along Kalākaua Avenue, near ‘Ena Road (Hammatt and McDermott 1999). The remains were uncovered between 1.2 and 1.5 m below surface during the placement of anti-crime lighting in Waikīkī.

In 2000, an archaeological subsurface inventory survey was carried out on a proposed development parcel directly across Kalākaua Avenue from the Fort DeRussy tennis courts (LeSuer et al. 2000). This was across Kālaimoku Street from the negative findings at Kalākaua Plaza (Cleghorn 1996). The subsurface testing identified the major ‘auwai, site 50–80–14–4970, that fed the fishponds of Waikīkī. Also identified were site 50–80–14–5796, a historic period wetland that may have been used for agricultural purposes, and abundant micro-strata interpreted as fill episodes from the dredging of the Ala Wai Canal.

In 2001, a subsurface inventory survey was conducted at the Hilton Waikikian property, which lies just northwest of the existing Hilton Hawaiian Village Complex (Corbin 2001). A series of backhoe trenches revealed that the area had been extensively disturbed by historic period land modification. While recent historic materials were recovered, no evidence of earlier archaeological remains was encountered.

In 2002, archaeological monitoring of excavations for sewer lines was conducted on Kalåkaua Avenue and Ala Moana Boulevard in front of the Hilton Hawaiian Village (Putzi and Cleghorn 2002). Five pits were found within site 50–80–14–6399; one was a fire pit, three were refuse pits, and the function of the final pit was undetermined. Four fishponds, two ‘auwai, and a prominent waterway were also identified.

One historic building stands in the vicinity of the project area, although no archaeological work has been conducted there. The structure is the Gump Building, site 50–80–14–9919, which was constructed in 1929 (SIHP files). It is a two-story rectangular structure with a hip and valley roof and decorative oriental wall perforations. The building is located on the mauka side of Kalåkaua Avenue, just northeast of the project area.

3 Project Design

Archaeological monitoring will be conducted for all ground disturbing activities. Identified archaeological remains will be recorded and appropriate archaeological samples collected. If cultural materials indicating the presence of undisturbed deposits are discovered, then further sub-surface test excavations may be conducted. Archaeological
testing will focus on the identification and documentation of subsurface features, deposits, and cultural material, with the goal of recording historic properties at a level consistent with SHPD standards for inventory survey (§13–276). A report of the monitoring results will be prepared consistent with the standards set out in Hawaii Administrative Rules (HAR) §13–275–5 for archaeological assessments, HAR §13–276–5 for inventory survey reports, and HAR §13–279–5 for monitoring reports, as appropriate. This approach was proposed in an archaeological assessment study (PHRI 2001) and approved by SHPD.

In the event significant historic properties or human remains are discovered, then one or more treatment plans will be formulated, reviewed in the usual way, and implemented.

3.1 Anticipated Archaeological Remains

Based on the findings of the historical documentary research, several inferences can be made regarding the nature and distribution of potentially significant archaeological and historical resources that might possibly be present in the project area. These inferences are tentative, and subject to the qualification that any such resources that might have once been present may have been subsequently disturbed, substantially destroyed, and/or removed by construction activities undertaken in the course of the extensive commercial and residential development that occurred within and adjacent to the project area during the last 50 years.

Historic maps of the area indicate that several fishponds were once present within and immediately adjacent to the project area. Loko Kaohai, site 50–80–14–4578, and Loko Halemauuola, site 50–80–14–5479, were situated on the northern edge of the project area. Previous investigations at nearby Fort DeRussy revealed subsurface evidence of fishponds, and it is possible that demolition or construction excavation in this general area may encounter buried fishpond deposits along with associated cultural remains. Furthermore, the multiwai that once existed along the western edge of the project area may still contain subsurface vestiges of lo‘i that were present in the early historic era. However, the limited nature of the excavations and the shallow depth of the water table in the project area lessens the likelihood of disturbing subsurface cultural deposits.

Human burial and cultural deposits related to both precontact and historic period occupations have been recovered east and west of the project area. Excavations at the Halekulani Hotel encountered both intact and disturbed human burials, as well as historic deposits, on the property (Neller 1981; Davis 1984). Excavations immediately west of Fort DeRussy and the Hale Koa Hotel also encountered intact human remains (Kimble 1976; Carlson et al. 1994). Thus it is possible that the coastal portion of the project area contains human burials, as well as other potentially significant cultural remains, such as habitation deposits with portable artifacts and midden materials, and features including firepits, hearths, ovens, postholes, pavements, and trash pits. However, the construction of buildings that contain basements or underground facilities such as parking garages more than likely displaced or destroyed cultural remains that may have once been present.
3.2 Field Problems

The field problem is defined as a phase of sub-surface inventory survey for traditional Hawaiian archaeological sites, early historic sites, and human burial remains that may be affected by the undertaking. Given the extensive modern disturbance to Waikiki, traditional Hawaiian deposits are likely to exist as discontinuous remnants. The primary field problem of the monitoring is the identification of cultural remains appropriate or suitable for data collection through a program of limited test excavations and sampling. The field problem is explicitly constrained to the undertaking’s area of potential effect. Pondfield walls and deposits, human burials, and historic refuse deposits are the primary features that might be found during undertaking activities. It is also possible that traditional Hawaiian or historic habitation sites may be encountered.

3.3 Research Problems

The problems of archaeological monitoring can be separated into two general categories: cultural deposit identification and cultural deposit characterization. Cultural deposit identification refers to the location of intact cultural deposits and the estimation of their extent and depth. Cultural deposit characterization problems refer to the determination of the nature and significance of the deposits, and their potential to address questions of Hawaiian cultural history and settlement. This set of research problems concerns elements of stratigraphic interpretation, the historical sequence, and the larger problems of Hawaiian archaeology. In general, archaeological remains in Waikiki are important for their potential contribution to the knowledge of traditional Hawaiian settlement, fishpond development, and historic-era land use. Archaeological monitoring will be carried out to determine the potential of the cultural remains to address these problems.

1. The nature of stratification and the depositional history.
   (a) Modern development of Waikiki has disturbed much of the project area. However, discontinuous remnants of the traditional Hawaiian land surface and associated archaeological sites may be found intact, near the surface or deeply buried beneath fill material. The first problem of the field investigation is recognition and preliminary identification of these deposits.
   (b) It is possible that cultural activities, particularly short-term occupations, could have taken place several times in one locale with little evident stratigraphic development. Identification of possible re-occupation sequences is a critical concern in the stratigraphic interpretation of deposits. A comparable problem is occupations of widely separated time periods occurring on the same general occupational surface.

2. Episodes of occupational history.
   Archaeological and archival evidence indicates that the region has a long sequence of occupation. Investigation of the deposits seeks to establish the occupational history in the project area. This involves a clear recognition of the possible presence of nineteenth century habitation, as well as pre-contact Hawaiian habitation.
3. Larger problems of Hawaiian archaeology.

(a) Problems related to agricultural expansion and intensification might be examined through the evaluation of possible agricultural/aquacultural use of the area and dating of associated deposits and structures.

(b) The question of early occupation in coastal environments is one of the most important issues in the larger picture of Hawaiian archaeology. Early $^{14}$C dates have been obtained from charcoal recovered from coastal deposits on O‘ahu (Pearson et al. 1971), but most of these dates have an associated set of problems regarding stratigraphic position, context, and interpretation. Consequently, particular attention needs to be placed on this issue during the recording, sampling, and analysis phases of the project. Materials submitted for dating will meet the definitional criteria for “suitable dating material” (Dye 1998:22).

3.4 Project Personnel

A senior archaeologist will serve as principal investigator for the project. The principal investigator will be responsible for overall project organization and management, will establish and ensure high standards for field sampling and laboratory analyses, may conduct field visits and direct supervision of field personnel as appropriate, and will review content of draft and final monitoring reports. The principal investigator will also be responsible for directing archaeological sub-surface test excavations.

An archaeological monitor will be present at all undertaking activities with a potential for adverse effect on historic sites. The archaeological monitor will be a B.A. level archaeologist or higher with experience in Hawai‘i. The archaeological monitor shall have the authority to halt any undertaking activities in any area where cultural materials have been tentatively identified and are threatened by continuation of the activities.

4 Fieldwork

Each day prior to fieldwork, the archaeological monitor will attend a safety and work plan meeting with the construction team involved with the undertaking. At the first of these meetings and subsequent meetings as necessary, the archaeological monitor shall explain the purpose of the archaeological monitoring, the authority of the archaeological monitor to halt activities of the undertaking, and the conditions under which such a decision would be made. The field procedures and organization will be discussed at these meetings so agreement can be reached on coordination, communication, and scheduling.

4.1 Field Recording and Sampling

Field recording and sampling will be directed toward the research problems outlined above (see pg. 18). They are intended to mitigate any potentially adverse effects to historic properties. Standards of documentation, recording, and analysis of features,
soil and sediment profiles, and artifacts shall accord with the standards set out in HAR §13–276–4 for archaeological field survey. Accurate map locations of test units, stratigraphic profiles, and archaeological features, deposits, and artifacts shall be maintained.

The first three items in the following list are intended to provide basic stratigraphic data relevant to the reconstruction of land surfaces in the project area in sufficient detail to make possible correlation of land surfaces with information from early topographic maps and with information from past or future archaeological projects. Items four through ten are intended to address the problem of long-term use of a stable surface and the associated difficulties of inferring use and occupational history.

1. The archaeological monitor or the staff archaeologist will be responsible for recording all stratigraphic profiles with cultural remains or features; stratigraphic profiles where samples have been taken; and profiles where there is a sedimentary change or unconformity that, in the professional judgment of the archaeological monitor or staff archaeologist, contains information important for the research problems itemized above (see pg. 18).

2. The archaeological monitor or staff archaeologist will make notes on exposures whose stratigraphic profiles are not drawn.

3. Locations of all stratigraphic profile drawings and photographs will be recorded, and an elevation above sea level will be established by an appropriate means.

4. All cultural deposits will be examined in the field for
   (a) evidence of micro-stratification and other data relevant to evaluation of depositional history, and
   (b) evidence of disturbance, irregularity, or boundary conditions that might indicate cultural activities; such evidence will be recorded in the profile description.

5. All deposits will be examined for cultural items and the stratigraphic positions of these items will be noted. Notation shall include reference to the age of the artifact and how this age might indicate either disturbance to a deposit of different age, or the age of the deposit. In particular, evidence for pondfield aquaculture and traditional Hawaiian occupation will be noted, as well as evidence for early historic uses of the land.

6. Features will be recorded with attention to stratigraphic positioning, particularly their position of origin.

7. Profile descriptions will include appropriate technical information, in conformance with standards established by the U.S. Soil Conservation Service, as well as field-based interpretation of depositional history.

8. The stratigraphic positions of samples collected from profiles, including artifacts, feature contents, soil samples, and dating materials will be recorded.
4.2 Discovery of Human Remains

The project area was inhabited and used by native Hawaiians and more recently by diverse ethnic groups. Human remains in the project area might belong to one of several ethnic groups. If human remains are discovered, the archaeological monitor will notify the appropriate on-site official, all excavation work in the vicinity will stop, and SHPD and the Medical Examiner will be notified. It is understood that undertaking activities can be performed in other areas, away from the remains. The archaeological monitor will protect any exposed remains in an appropriate fashion, such as covering them with a shallow layer of sediment, and will secure the area.

The archaeological monitor will provide the senior archaeologist with any observed data relevant to the age and cultural affiliation of the human remains. The observations will be made only on the exposed and/or disturbed deposits and will not involve additional excavation.

The AMP does not propose any additional treatment of human remains, other than documentation of archaeological context. A burial treatment plan will be prepared, as appropriate.

The activities of the undertaking in the vicinity of the discovery of human remains may resume if an accepted burial treatment plan has been approved or in the event SHPD and the Oahu Island Burial Council, in consultation with the recognized lineal and cultural descendants, have agreed to permit the undertaking to proceed with culturally appropriate interim protective measures for human remains, which may include preservation in place or relocation.

5 Post-Field Actions

The nature and scope of post-field actions will vary depending upon the results of field investigations. At a minimum, if no cultural remains are discovered, an archaeological assessment will be produced to document the negative findings of the field investigations. If cultural remains are discovered, analyses appropriate to the research questions (see pg. 18) will be carried out and reported, according to the standards set out in §13–276–5 for inventory survey reports.

5.1 Laboratory Procedures

Laboratory procedures will minimally follow the standard procedures set out in §13–279–5(6). Artifacts will be photographed, sketched, and identified as appropriate; relevant metric attributes will be measured and recorded. Faunal remains will be minimally identified to phylum, with detailed identification to genus or species as appropriate.
Mathematical manipulations of laboratory data will be carried out for summary descriptions and comparisons with other collections, as appropriate.

Laboratory processing will be carried out on all collected samples. Samples that have been collected as total units will be processed in the laboratory under controlled conditions. As appropriate, a concentration index will be calculated for each relevant archaeological context related to occupational history and will not be calculated in an interpretive vacuum.

Carbonized plant material submitted for $^{14}$C analyses will be identified to the lowest possible taxonomic category and selected to minimize in-built age. Wood charcoal identification also provides useful information on the occupational history of a region and on changes to the environment (Dye 1998; Desilets and Dye 1998).

Human burial remains will be treated according to an approved burial treatment plan.

5.2 Curation

Curation of research documents and archaeological samples shall be undertaken on a temporary basis at facilities provided by Paul H. Rosendahl, Ph.D., Inc. until the State of Hawai‘i establishes permanent facilities.

5.3 Report Preparation and Scheduling

Preparation of a final technical report shall conform to the standards set out in §13–275–5 for archaeological assessments, §13–276–5 for inventory survey reports, and §13–279–5 for monitoring reports, as appropriate. A draft technical report shall be prepared and submitted in a timely manner, within four months following the end of fieldwork. The revised and corrected final report will be submitted within one month following receipt of review comments on the draft report.

6 Consultation Process

In recognizing the very sensitive nature of any undertaking in the Waikiki area, Outrigger Enterprises, Inc. has engaged in early consultation with various individuals, groups, and government agencies to inform them of the project. There has been ongoing consultation with the State Historic Preservation Division, including staff from the Burial Sites Program, History and Culture Branch, and the Archaeology Branch. A presentation was made to the Oahu Island Burial Council on January 11, 2005 to initiate formal consultations with the council on the project. While not required by law, a legal notice for persons with an interest in the project area was published in Ka Wai Ola O OHA, the Honolulu Advertiser and the Honolulu Star Bulletin in the first of January 2005. To date no comments have been received in response to the legal notice. Early consultation meetings have been held with members of Hui Malama I Na Kupuna, Office of Hawaiian Affairs, Mamakakaua, Daughters and Sons of Hawaiian Warriors, Waikiki Community Center, the Queen Emma Foundation, and the Board of Water Supply. Informal consultation has begun with members of families who have
been recognized as cultural and lineal descendants for native Hawaiian human burial remains that have been discovered in the Waikiki area. These consultation efforts will continue as the project proceeds in an effort to ensure that any cultural concerns are timely and appropriately addressed.

Glossary


‘auwai Ditch.

‘ili A land section, next in importance to ahupua’a and usually a subdivision of an ahupua’a.

ahupua’a Traditional Hawaiian land division usually extending from the uplands to the sea.

ali‘i nui High chief.

concentration index A measure, such as weight or count, of cultural material per unit excavated sediment.

heiau Traditional Hawaiian place of worship.

in-built age The age of a material when it was incorporated into the archaeological record. In-built age has the potential to skew 14C dating results.

konohiki Head man of an ahupua’a land division under the chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights. See also ahupua’a.

kula Plain, field, open country, pasture. Land with no water rights.

lo‘i A single irrigated taro patch. Irrigated terrace, especially for taro.

loko i‘a Fishpond.

lū‘au Hawaiian feast, named for the taro tops always served at one; this is not an ancient name, but goes back to at least 1856.

luakini Heiau of the ruling chiefs where human sacrifices were offered.

māhele Land division of 1848.

makai Seaward.

mauka Inland, upland, toward the mountain.
River, river mouth, estuary, or pool near the mouth of a stream, as behind a sand bar, enlarged by ocean water left there by high tide.

Prior to A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.

The archaeological monitoring and related actions, including laboratory analyses and report preparation. See also undertaking.

The proposed redevelopment activities. See also project.

Bibliography


BIBLIOGRAPHY


Kimble, R. (1976). Memo for the record regarding the burials found during construction of the Hale Koa Hotel. Memorandum on file at the State Historic Preservation Division, Kapolei, Hawai‘i.


