

REQUEST FOR LEGAL SERVICES

Date: October 19, 2020
From: Tamara Paltin, Chair
Planning and Sustainable Land Use Committee


TRANSMITTAL

Memo to: DEPARTMENT OF THE CORPORATION COUNSEL
Attention: Michael Hopper, Esq.

Subject: COUNTRY TOWN BUSINESS DISTRICT IN LĀNA'I CITY (PSLU-52)

Background Data: Please revise the draft resolution to indicate the Lāna'i City Country Town Business District Design Guidelines and Standards as Exhibit 1.

Work Requested: ☒ [X] FOR APPROVAL AS TO FORM AND LEGALITY
☐ [] OTHER:

Requestor's signature  _____ Tamara Paltin	Contact Person Richard E. Mitchell or Ana Lillis _____ (Telephone: 270-7662 or 270-7660, respectively)
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☐ [] ROUTINE (WITHIN 15 WORKING DAYS) ☐ [] RUSH (WITHIN 5 WORKING DAYS)
☐ [] PRIORITY (WITHIN 10 WORKING DAYS) ☐ [] URGENT (WITHIN 3 WORKING DAYS)

☒ [X] SPECIFY DUE DATE (IF IMPOSED BY SPECIFIC CIRCUMSTANCES): October 30, 2020
REASON: For posting on November 2, 2020 for the November 10, 2020 Council meeting agenda

FOR CORPORATION COUNSEL'S RESPONSE

ASSIGNED TO:	ASSIGNMENT NO.	BY:
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TO REQUESTOR: ☐ [] APPROVED ☐ [] DISAPPROVED ☐ [] OTHER (SEE COMMENTS BELOW)
☐ [] RETURNING--PLEASE EXPAND AND PROVIDE DETAILS REGARDING ITEMS AS NOTED

COMMENTS (NOTE - THIS SECTION NOT TO BE USED FOR LEGAL ADVICE): _____

DEPARTMENT OF THE CORPORATION COUNSEL

Date _____

By _____
(Rev. 7/03)

Resolution

No. _____

ADOPTING THE LĀNA'I CITY COUNTRY TOWN BUSINESS DISTRICT DESIGN GUIDELINES AND STANDARDS

WHEREAS, Subsection 19.510.110.A, Maui County Code (MCC), requires design guidelines and standards be established for each Country Town Business District (B-CT) established pursuant to Chapter 19.15, MCC;

WHEREAS, Section 19.510.100, MCC states that the purpose of the design guidelines and standards is to “insure that all buildings and structures shall be erected, constructed, reconstructed, renovated, remodeled, enlarged, or converted in a similar and compatible architectural design character with that of surrounding buildings. It is intended that an identifiable and unified design theme be retained within each B-CT country town business district;” and

WHEREAS, the “Lāna‘i City Country Town Business District Design Guidelines and Standards” attached hereto as Exhibit “A” updates the existing design guidelines to address desires expressed in the 2016 Lāna‘i Community Plan to have more detailed guidance on new construction and the treatment of historic buildings, and reduced parking requirements; and

WHEREAS, the attached document addresses the design considerations required in Subsections 19.510.110.C and D, MCC; and

WHEREAS, the attached document was reviewed by the Urban Design Review Board on December 5, 2017 and the Lāna‘i Planning Commission on February 21, 2018, March 21, 2018, May 16, 2018 and November 20, 2019, as required in Subsection 19.510.110.B, MCC, as well as the Cultural Resources Commission on November 2, 2017; and


WHEREAS, design guidelines shall be adopted by the Council by resolution pursuant to Subsection 19.510.110.E, MCC, now, therefore,

Resolution No. _____

BE IT RESOLVED by the Council of the County of Maui:

1. That the attached Lānaʻi City Country Town Business District Design Guidelines and Standards are hereby adopted; and
2. That copies of this resolution be transmitted to the Mayor and the Planning Director.

APPROVED AS TO FORM AND LEGALITY



MICHAEL J. HOPPER
Department of the Corporation Counsel
County of Maui
2020-0037
2020-01-15 Resolution

EXHIBIT 1:

Proposed new Design
Guidelines and Standards for
the Country Town Business
District in Lāna‘i City (2019)

[With Corrected B-CT Map]

[Version Allowing Ground
Signs]

LĀNAʻI CITY

COUNTRY TOWN BUSINESS DISTRICT



Photos: Stanley Solamillo.

DESIGN GUIDELINES AND STANDARDS



COUNTY OF MAUI
DEPARTMENT OF PLANNING
2019

CONTENTS

PART I – OVERVIEW

SECTION 1 – INTRODUCTION	1:1 - 1:4
SECTION 2 – HISTORIC OVERVIEW OF LĀNA‘I CITY	2:1 - 2:6
SECTION 3 – GENERAL DESIGN CHARACTER OF LĀNA‘I CITY	3:1 - 3:6
SECTION 4 – ARCHITECTURAL CHARACTER OF LĀNA‘I CITY	4:1 - 4:2
SECTION 5 – ARCHITECTURAL FEATURES OF LĀNA‘I CITY	5:1 - 5:7
SECTION 6 – INVENTORY OF KEY BUILDINGS IN THE COUNTRY TOWN BUSINESS DISTRICT	6:1 - 6:7

PART II – DESIGN GUIDELINES AND STANDARDS

SECTION 1 – GENERAL DESIGN GUIDELINES AND STANDARDS	1:1 - 1:6
SECTION 2 – ARCHITECTURAL DESIGN GUIDELINES	2:1 - 2:26
SECTION 3 – STREETScape DESIGN GUIDELINES	3:1 - 3:2

PART III – APPENDICES

APPENDIX A: COUNTRY TOWN ORDINANCES	A:1 - A:9
Part 1: Chapter 19.15, Maui County Code – Country Town Business Districts	
Part 2: Sections 100 - 130 of Chapter 19.510.100, Maui County Code – Application and Procedures	
APPENDIX B: CHAPTER 10 – 2016 LĀNA‘I COMMUNITY PLAN	B:1 - B:8
APPENDIX C: CHAPTER 9 – 2016 MAUI COUNTY PLANTING PLAN	C:1 - C:10
APPENDIX D: GLOSSARY	D:1 - D:3
APPENDIX E: GEOLOGY AND CLIMATE	E:1 - E:2
APPENDIX F: GUIDELINES FOR REHABBING KAUAI’S OLD HOUSES	F:1 - F:8

PART I

OVERVIEW

1 INTRODUCTION

APPLICABILITY

The Design Guidelines and Standards apply to exterior improvements or changes to properties in the Lānaʻi City Country Town Business District. Although not required, property owners outside of the Country Town Business District are encouraged to follow these Design Guidelines and Standards to ensure changes are compatible with the historic character of Lānaʻi City.

PURPOSE AND INTENT

The Country Town Business District in Lānaʻi City has several special design elements that set it apart from other commercial developments in Maui County. These elements, known as “character-defining features,” include:

- A grid street layout with alphabetically and numerically ordered streets;
- Narrow roads that lack curbs;
- Thick plantings of Cook pine trees;
- Single-story buildings that are separated by open space and set back from the road ; and
- Historic plantation vernacular buildings that, for the most part, have all of their original architectural elements.



1929 aerial photo of Lānaʻi City showing its grid street layout. Photo: Bishop Museum.



Lānaʻi City's narrow roads, Cook pine trees, and small-scale historic buildings set it apart from other places in Maui County. Photo: Stanley Solamillo.



Many of Lānaʻi City's historic buildings have their original architectural elements.

The main purpose of the Design Guidelines and Standards is to preserve the town's character. This is accomplished by encouraging property and business owners to:

- Maintain and preserve Lānaʻi City's character-defining features; and
- Construct new buildings that are compatible with the character of the Country Town Business District.

To read the full legal intent of the Design Guidelines and Standards, please refer to Section 19.510.100, Maui County Code (Appendix A, Part 2).



This document reflects national historic preservation philosophy. The principles below summarize this philosophy and should be applied to all properties in the Country Town Business District.

Principles for rehabilitation:

1. Regular maintenance is essential.

Regular or preventative maintenance is done before any noticeable deterioration becomes visible. No alteration or reconstruction is involved. This work reduces the need to deal with repairs in the future. Maintenance can include simple treatments like repainting, trimming vegetation so that it does not touch the building, and making sure that flashing is working properly. Property and business owners are strongly encouraged to keep their buildings in good condition so that more aggressive, and consequently more destructive and expensive measures of rehabilitation or reconstruction are not needed.

2. Preserve original features and materials.

Avoid removing or changing original materials and features. Preserve original doors, windows, porches, and other architectural features.

3. Repair first.

If materials or features are deteriorated, repair them using recognized preservation methods, whenever possible. If features are too deteriorated to repair (more than 50%), they should be replaced with new components that are similar to the originals in form, finish, and materials.

Principles for additions:

1. The historic building should remain the main focus of the district.

Additions should not damage or hide important details and materials of the main historic building or other resources on the lot.

2. Respect the character of the historic building.

Additions should respect the architectural character of the existing building. Additions should not use architectural details that are more ornate than those found on the existing building or that are not typical of the existing building's architectural character.

Principles for new construction:

1. Historic buildings should remain the main focus of the district.

Consider the historic character of the surrounding district when designing a new building. New construction should be differentiated from historic buildings in the district without detracting from them.

2. Respect the character of the district.

Creating exact replicas of historic buildings should be avoided because it makes it hard to tell the difference between old and new buildings and makes the architectural evolution of the district difficult to interpret. While new construction should not attempt to copy historic buildings, it should not be so dissimilar that it damages the character of the district.

LEGAL FRAMEWORK

The legal framework for Country Town Business Districts is Chapters 19.15 and 19.510, Maui County Code (see Appendix A) and these guidelines. "Historic properties" are also regulated under Chapter 6E, Hawaii Revised Statutes.

The Director of Planning administers the design guidelines and standards, and the Director of Public Works administers the drainage and road guidelines and standards. The Director of Planning approves plans for construction based on the criteria established in the Design Guidelines and Standards.

As stated in Section 19.15.040, Maui County Code – "Design Review," except as necessary to protect public health, safety and welfare, where a conflict exists between adopted country town business district design guidelines and standards and the Maui County Code, the design guidelines and standards shall prevail.

CONSISTENCY WITH THE 2016 LĀNA'I COMMUNITY PLAN

The Design Guidelines and Standards are consistent with the strategies, goals, policies, and actions identified in Urban Design chapter of the 2016 Lāna'i Community Plan, which include:

Strategies:

2A. Review, revise, and enhance as necessary the B-CT design guidelines for Lāna'i City to provide more detailed guidance for new construction as well as renovation and reconstruction of existing structures. Review and amend the B-CT zoning ordinance to allow flexible adaptive reuse.

3. Create a comprehensive parking strategy for Lāna'i City and develop and adopt less restrictive parking requirements as part of the revised Lāna'i City B-CT design guidelines which would allow businesses to utilize public parking surrounding Dole Park instead of developing new parking spaces on site. Review and amend the B-CT zoning ordinance to be consistent with proposed design guidelines.

8. Ensure street lighting is minimized and street lights use shielding to prevent unnecessary light pollution.

Goal:

Lāna'i will retain and enhance its urban design character, which is unique in the State.

Policies:

1. Maintain and enhance the traditional small-town streetscape design and rural road character in Lāna'i City and outside of town.

2. Enhance the landscape of Lāna'i City and other settlement areas through the use of native or other appropriate landscaping, such as using non-invasive and drought-tolerate plants.

3. Ensure the character of new development within and around Lāna'i City respects and enhances the urban design character of the plantation town by utilizing appropriate design guidelines, including expansion of the grid street network.

8. Protect and maintain the dark sky of the island's rural environment by ensuring street lighting, building lighting, and park lighting do not create excessive light pollution and glare.

11. Continue assisting property owners to preserve and rehabilitate historic buildings in the B-CT District.

Actions:

10.02. Revise and enhance the B-CT design guidelines for Lāna'i City to provide more detailed guidance for new construction, as well as renovation and reconstruction of existing structures for adaptive reuse.

10.04. Create a comprehensive parking strategy for Lāna'i City. Revise the B-CT design guidelines to lessen parking requirements and allow businesses to fulfill onsite parking requirements through use of existing public parking surrounding Dole Park.

To read the entire urban design chapter, please see Appendix B.

STUDY AREA

The island of Lāna'i is 18 miles long and 13 miles wide, with an area of 141 square miles. The maximum elevation is 3,370 feet. Of the more than 90,000 acres, 3,054 acres are classified as urban by the State land use district system. Lāna'i City is located near the geographical center of the island, at an altitude of approximately 1,600 feet with average temperatures ranging between 65 and 72 degrees. According to the US Census Bureau in 1990, Lāna'i had a population of approximately 2,426 persons living in 847 households. In 2010, the population grew to 3,102 living in 1,140 households.

2 HISTORIC OVERVIEW OF LĀNAʻI CITY



Undated aerial photo of Lānaʻi City. Photo: Bishop Museum.

Before pineapple, Lānaʻi's main industry was ranching. In 1922, James Drummond Dole, the owner of Hawaiian Pineapple Company (HAPCo), bought the island from Harry A. and Frank F. Baldwin for \$1,100,000.¹

Dole's purchase of Lānaʻi increased the company's production acreage to 30,000. The need for more land was driven by HAPCo's expanding markets and aggressive marketing program. Dole secured supply contracts with the U.S. military during World War I. After the war, HAPCo began shipping canned pineapple to Great Britain, France, Belgium, Norway, Sweden, and Denmark.²

At the time of purchase, the island's population was estimated to be as few as 125 people, most of whom were Native Hawaiian.³

HAPCo's annual report from 1923 described the company's progress:

We have entered into a contract with Hawaiian Dredging Company for the improvements at the harbor at Kaunalapau, on the island of Lanai. This covers the building of a 300-foot breakwater and 400-foot wharf together with a small amount of dredging, and is estimated to cost in the neighborhood of \$500,000. We are also building a good road from the harbor to the pineapple lands and establishing a small town...with suitable water supply, electric lights, sewerage, etc.⁴

1 Hawaiian Pineapple Company, Ltd., "Annual Report for the Hawaiian Pineapple Company, Ltd., Honolulu, Hawaii For the Year Ended December 31..." (Honolulu: Advertising Publishing Company, Ltd., 1923), 6.

2 HAPCo, "Annual Report," 1923.

3 Stanley Solamillo, National Register of Historic Places nomination: Lānaʻi City (Wailuku, HI: County of Maui, Department of Planning, 2009), 8: 8.

4 HAPCo, "Annual Report," 1924, 5.

Dole originally planned to name Lāna'i's main town "Pine City," which was short for "Pineapple City." The name was rejected by the U.S. Postal Service, however, and the new settlement was named "Lanai City" instead.⁵ The town was laid out by Anglo-American engineer, David E. Root. In 1926, the Honolulu Star-Bulletin described him as the "resident engineer of the pineapple company."⁶

When Root began his field work in the spring of 1923, the barren plain selected as the new town site looked more like a desert. The land was cleared of cactus by tractors that dragged metal chain across the ground, cutting the bases of the cacti. Root and HAPCo surveyors laid out a grid. The grid covered 232 acres and consisted of thirty-six blocks.

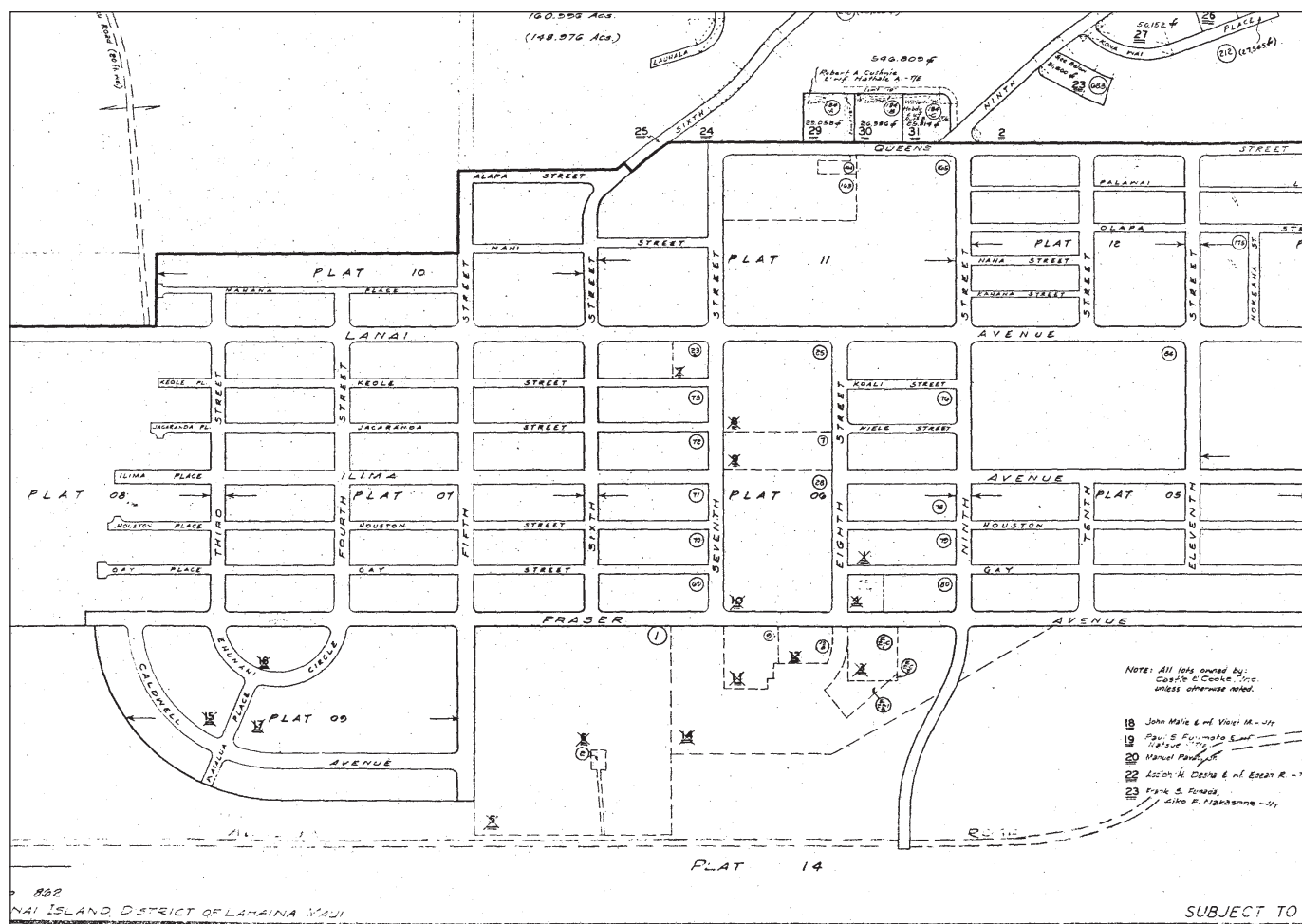
In his design for Lāna'i City, the Honolulu Star-Bulletin reported that Root "surveyed and laid everything out on paper before a single post was driven into the ground."⁷ He placed a rectangular shaped park in the center of the town, bounded by fifty-foot-wide streets. Root located commercial uses on the sides of the park and plantation management and institutional uses on the opposite ends of the park, which corresponded in elevation to the site's high and low points.

The grid was oriented by the town's topography (northeast-southwest), instead of north-south. The residential blocks extended out from the sides of the park, northeast-southwest, and were later divided into sixteen lots per block. 30-foot wide streets bisected the blocks. The main roads were later identified as "avenues." The roads that ran northwest-southeast as well as those fronting the sides of the park were initially identified as "streets," then as "lanes" after 1951, then as "streets" once more from 1970 onward.

5 Stanley Solamillo, National Register nomination, 8: 8.

6 "New Project on Lanai is Latest in Long Series of Achievements – Hawaiian Pineapple Company Has Grown From \$20,000 Business in 1901 to \$10,000,000 Today," Honolulu Star-Bulletin, February 6, 1926, 4.

7 "Lanai, Land of Hawaii's Pineapple Industry of Future," Honolulu Star-Bulletin, August 30, 1924, 3.



Undated property tax map of Lāna'i City, showing its grid street layout.

In addition to designing the town's layout, Root may have also been involved in selecting and developing house designs in Lānaʻi City. HAPCo hired Kikuchi Honda, a Japanese master builder from Maui, and his crew to build some of the town's earliest homes as well as the HAPCo machine shops and store between August 1923 and mid-1924.⁸ Masaru Takaki built more houses in Lānaʻi City between 1925 and 1929.⁹ Takaki was followed by Thomas Tanaka, who built a teacher's cottage on the island in 1938.¹⁰ All three contractors reportedly built a total of 615 homes in Lānaʻi City.



1924 photo of Lānaʻi City, looking northeast. Photo: Lānaʻi Culture & Heritage Center.



Undated photo of houses along Lānaʻi Avenue. T. Okamoto Store (Richard's Market) is at the far right corner and Nishi Hongwanji Mission (Lānaʻi Union Church) is off in the distance. Photo: Bishop Museum.

8 Stanley Solamillo, National Register nomination, 8: 16.

9 Stanley Solamillo, National Register nomination, 8: 17.

10 L.C. Newton and John A. Lee, Who's Who in the Counties of Maui and Kauai, Territory of Hawaii, 1939 (Wailuku: Maui Publishing Company, Ltd., 1940).

Between 1923 and 1924, Honda and members of his crew also built commercial buildings in the town. Between 1925 and 1929, Takaki built additional commercial buildings, and an unidentified contractor built several more commercial buildings from 1930 to 1959. Honda's buildings included at least five stores that were described by a reporter as: "[A] commercial center [which] boasts a commodious general store, a meat market and ice plant...a bake shop and restaurant..."¹¹ Two years later, HAPCo's annual report listed the town's buildings as "[an] office, hospital, clubhouse, bank, stores, church, theater and various other buildings, together with housing accommodations for about 750 people."¹²



1926 photo of T. Okamoto Store (Richard's Market), Lanai Fish Market (Hula Hut), HAPCo. Dormitory and Plantation Bakery (Pine Isle Market), and Lanai Hotel (Pele's Other Garden). Photo: Lāna'i Culture & Heritage Center.



1926 photo of Bishop National Bank (First Hawaiian Bank). Photo: Lāna'i Culture & Heritage Center.



1926 photo of workers welcoming Territorial Governor Farrington to Lāna'i City. Photo: Lāna'i Culture & Heritage Center.



Partial view of Lāna'i City in 1926, looking southeast from Nishi Hongwaji Mission (Lanai Union Church). Photo: Lāna'i Culture & Heritage Center.

¹¹ "Lanai, Land of Hawaii's Pineapple Industry of Future," Honolulu Star-Bulletin, August 30, 1924, 3.

¹² HAPCo, "Annual Report," 1926, 5.



1929 aerial photo of Lāna'i City. Photo: Lāna'i Culture & Heritage Center.



1926 photo of Lāna'i City Post Office and HAPCo. Administrative Office. Photo: Lāna'i Culture & Heritage Center.

During the 1920s and 1930s the following commercial buildings were constructed near Dole Park:

- Lanai Theater (known today as Hale Keaka, the Lāna'i Theater);
- Bishop National Bank (known today as First Hawaiian Bank);
- Arita's Barbershop & Pool Hall (known today as Rainbow Pharmacy);
- Tamiyama Tailor (known today as Blue Ginger Café);
- T. Endo's Fountain (known today as the former Canoe's Restaurant);
- Yet Lung Meat and Fish Market, storage building, shop keeper's residence (known today as UH Maui College Lāna'i Education Center);
- Yet Lung Store (known today as Lana'i Art Center);
- Lanai Hotel (known today as Pele's Other Garden);
- HAPCo Dormitory and Plantation Bakery (known today as Pine Isle Market);
- Fuji Drug Store and Kinoshita Photo Studio (known today as Café 565);
- Miguel's Photo Studio and Sweet Shop (known today as Lanai Gymnasium);
- Lanai Fish Market (known today as Hula Hut); and
- T. Okamoto Store (known today as Richard's Market).¹³

¹³ Stanley Solamillo, National Register nomination, 8: 19.



1926 photo of Dole Club House (Hotel Lāna'i). Photo: Lāna'i Culture & Heritage Center.



Ca. 1935 photo of the newly remodeled Lanai Theater. Photo: Lāna'i Culture & Heritage Center.

In the following two decades the commercial buildings below were constructed on vacant lots fronting Dole Park:

- Oyama's Lanai Family Store (known today as Mike Carroll Art Gallery);
- Dole Plantation Housing Office (known today as Bank of Hawaii);
- International Food and Clothing Center (known today by the same name);
- Hawaiian Airways (known today as Okamoto Realty); and
- Clark Nakamoto's Photo Shop (known today as Launderette Lanai).



1952 photo of the Dole Administration Building. Photo: Lānaʻi Culture & Heritage Center.

Nishi Hongwanji Mission (known today as Lanai Union Church) was the first religious building constructed in Lānaʻi City. Like the town's first commercial buildings, Honda and his crew built the mission in 1923-1924. It was dedicated in 1925. The mission was followed by Sacred Hearts Catholic Church which was built in 1931.¹⁴



1924 photo of Nishi Hongwanji Mission (Lanai Union Church). Photo: Lānaʻi Culture & Heritage Center.



1938 photo of Nishi Hongwanji Mission (Lanai Union Church). Photo: Lānaʻi Culture & Heritage Center.

¹⁴ Stanley Solamillo, National Register nomination, 8: 19.

3 GENERAL DESIGN CHARACTER OF LĀNA'I CITY

Lāna'i City is centered around the rectangular shaped Dole Park, with most of the town's commercial and civic buildings facing the park. Dole Park is surrounded by a grid pattern of streets lined with modest plantation houses on small lots. One of the most significant character-defining features of Lāna'i City is the abundant plantings of Cook pine trees. Now that the mature trees are 60 to 100 feet tall, the town has a unique ambiance of being nestled in a forest. The landscaping, rectilinear street pattern, the centralized commercial uses around a large green park, and the small scale of the buildings embody many of the best qualities of late nineteenth and early twentieth century American town planning.

STREETSCAPE

The streetscape is the visible space fronting both sides of a road, and the elements contained within that space. Lāna'i City's streetscape is rural in character. Many of the town's historic streetscape elements are still present, including its street pattern, lot sizes, setbacks, building types, narrow roads, and mature Cook pine trees.

The following is a summary of the Country Town Business District's rural streetscape elements:

- Narrow roads, many of which lack gutters, curbs, and sidewalks
- Grid street pattern
- Varied front yard setbacks, from 15 to 20 feet in the area surrounding Dole Park
- Right-of-way improvements limited to paved roads with grass, dirt, or gravel shoulders
- Limited street lighting
- Primarily one-story commercial buildings
- Mature Cook pine trees and open, grassy areas
- Wood utility poles





Cook pine trees in Lāna'i City.



Front lawn and landscaping at the former Dole Administration Building.

LANDSCAPE

The main landscape feature of Lāna'i City is the mature Cook pines. The pines are planted throughout the town but are more prevalent in the center of town, in and around Dole Park. A small stand of ironwood is located near the community gymnasium. The front yards of businesses surrounding Dole Park are grassed and landscaped with ti, plumeria, and other ornamental plants.



Front lawn and landscaping at Launderette Lanai.



Undated photo of Lāna'i City, looking toward Lāna'ihale. Photo: Bishop Museum.

VIEWS/LANDMARKS

The crest and upper slopes of Lāna'ihale frame the entire town. The general slope of the town creates numerous viewsheds, which include neighboring roofs and glimpses of Miki Basin or the hills above the town. Plains and fields open the view to the south and west of town.



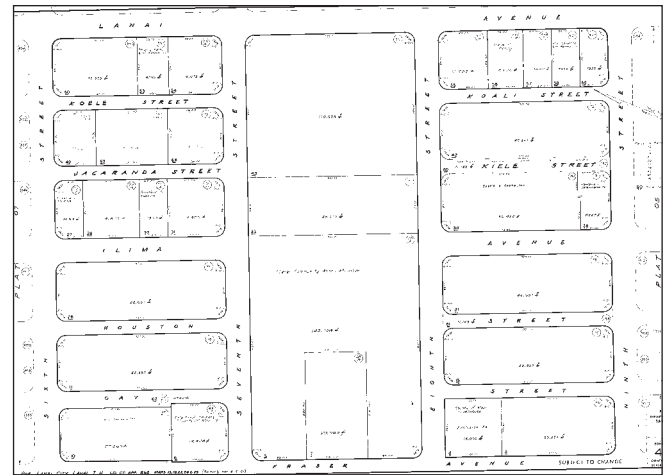
Ca. 1946 photo of the former police station and jail, looking southeast with Lāna'ihale in the background. Photo: Lāna'i Culture & Heritage Center.

TOWN LAYOUT

Several plantation towns in Hawaiʻi, including Hanapēpē, Waimea, and Pāʻia developed along one main road with smaller streets randomly intersecting the main road. Lānaʻi City is different from several of its small town counterparts because it developed around a central park (Dole Park) and was laid out with a regular grid street design. The grid plan, which was prevalent in American town planning throughout the 19th and 20th centuries, is a feature of Lānaʻi City that is not common in other plantation towns in Hawaiʻi.

Dole Park is about six acres in size with dozens of mature Cook pine trees towering along its perimeter and clustering at its *mauka* end. The park is at the center of the town's grid plan. It provides a variety of spaces for community events. A small County community center and a few children's play areas are located within Dole Park. Footpaths cross the park, connecting the businesses on each side and leading to play areas across from the gymnasium.

Many of Lānaʻi City's businesses and services surround Dole Park. Residential scale commercial and community buildings line Seventh and Eighth Streets. Larger scale community and religious buildings are clustered at the Fraser Avenue and Lānaʻi Avenue ends of the park. Lānaʻi City's businesses include specialty shops, grocery stores, restaurants, galleries, offices, banks, and a theater. Community and religious uses include churches, the County gymnasium, the Lānaʻi Senior Center, University of Hawaii Maui College's Lānaʻi Education Center, and Lanaʻi Art Center.



Undated property tax map of the area surrounding Dole Park.



Ca. 1950 aerial photo of Lānaʻi City, looking toward the former Dole Administration Building. Photo: Lānaʻi Culture & Heritage Center.



1926 photo of Lānaʻi City, looking south. Photo: Lānaʻi Culture & Heritage Center.



Houston Street is typical of Lāna'i City. It is narrow with grass shoulders and lacks curbs, gutters, and sidewalks.



The roads surrounding Dole Park are more elaborate than those leading to the historic residential areas. They are wider and they have basalt stone curbs and concrete sidewalks.



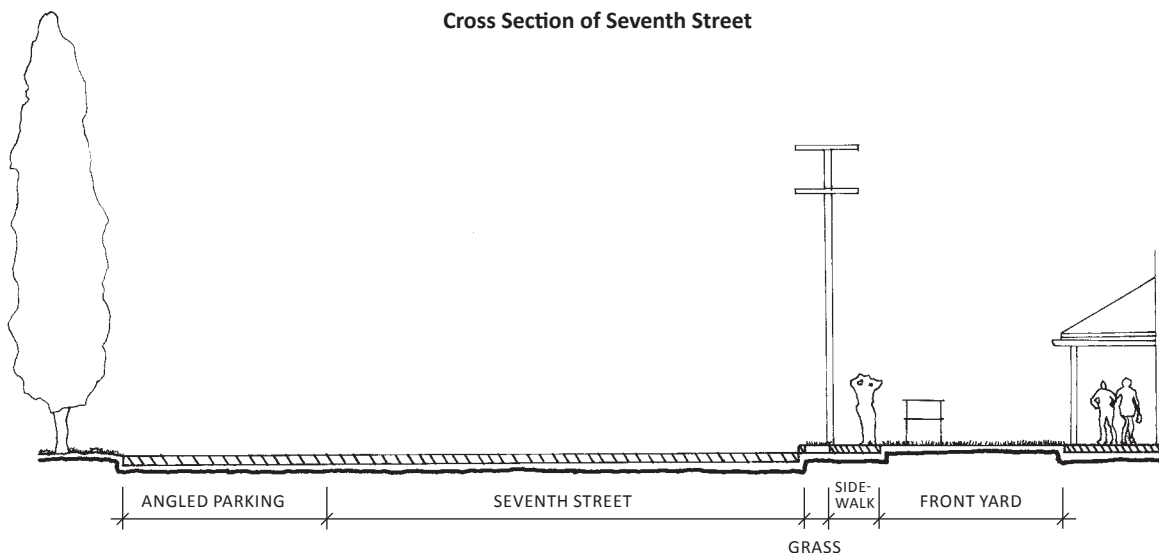
Eighth Street with a basalt stone curb and concrete sidewalk on one side and Dole Park on the other.

STREETS

The grid street plan and rural roads are important character-defining features of Lāna'i City. The main roads, which connect the town to outlying areas, are Fraser Avenue and Lāna'i Avenue. Many of Lāna'i City's roads are narrow and lack curbs, gutters, and sidewalks. However, a few roads surrounding Dole Park have sidewalks. In the Country Town Business District, concrete sidewalks run along Fraser and Lāna'i Avenues, Seventh and Eighth Streets, and part of Ilima Avenue. Additionally, the sidewalks along Seventh and Eighth Streets have basalt stone curbs. The cross section illustrated below shows the typical condition found on Seventh Street.

In the Country Town Business District, most roads accommodate two-way traffic, however Koele Street is one-way. The roads that run northeast to southwest are identified by number, while the roads that run northwest to southeast are identified by place or person name and were originally alphabetically organized.

Cross Section of Seventh Street



UTILITIES

Utility poles are made of wood. Street light fixture arms are typically attached to the wood poles. Existing water and sewer lines along the roads provide utility service for the area. Fire protection is provided through fire hydrant connections.



Utility poles are visible in many historic photos of Lānaʻi City, including this one of Eighth Street from 1926. Photo: Lānaʻi Culture & Heritage Center.



Utility poles at the corner of Lānaʻi Avenue and Ninth Street.

DRAINAGE

In general, Lānaʻi City is positioned on a high plateau with a relatively good drainage pattern that has reduced flooding conditions during heavy rainfall events. The roads drain by the natural slope of the land in most areas. There are drain lines installed along Lānaʻi Avenue and in a few locations along Fraser Avenue. Lānaʻi City experiences localized flooding that appears to be caused by blocked stormwater drains and channels. Blockages may be due to overgrown grass or sediment buildup in the drains and channels, however further investigation is needed to determine the exact cause of these overflows.



Many roads drain due to the town's naturally sloping topography.



Off-street parking fronting Lanai Hardware & Lumber.

PARKING

Parking for businesses surrounding Dole Park includes parallel parking next to commercial buildings, as well as angled parking next to Dole Park. The Dole Administration Building, Dole Fleet, Lanai Hardware & Lumber, Lanaʻi City Service, and Napa Auto Parts have off-street parking.



Angled parking next to Dole Park. Photo: Stanley Solamillo.

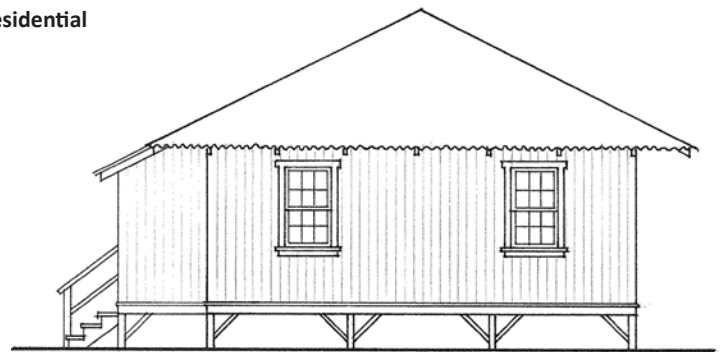
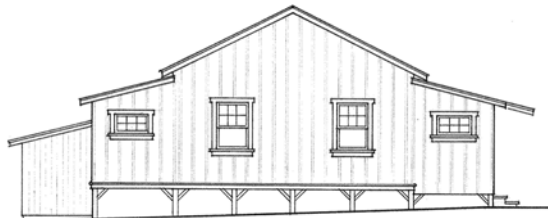


On-street parking in front of Richard's Market.

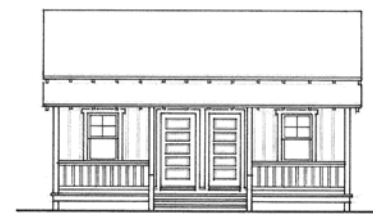
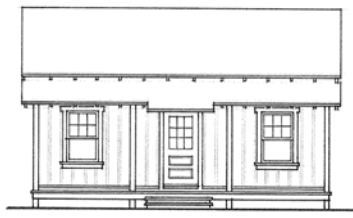
4 ARCHITECTURAL CHARACTER OF LĀNA'I CITY

Residential

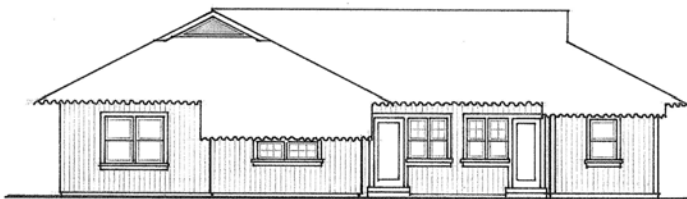
Drawings: George Rixey, AIA.

**Residential**

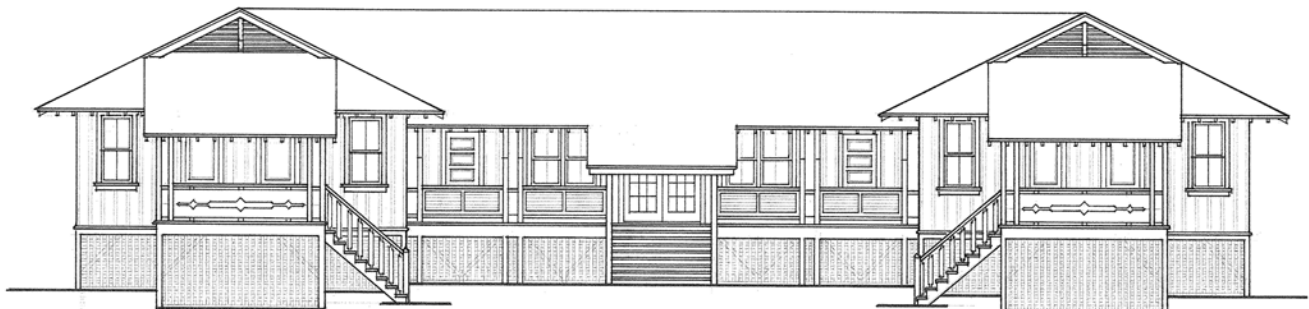
Drawings: George Rixey, AIA.



The main architectural style found in Lāna'i City – and used for both commercial and residential buildings – is plantation vernacular. Most of the buildings are of wood construction, feature board and batten or vertical tongue and groove siding, and have gable, hip, or gable-on-hip roofs covered with corrugated metal. Front porches are used on commercial as well as residential buildings, providing either a simple entry feature or extending across the entire front facade of the building. The functional, unpretentious style is elaborated in some larger residences and commercial buildings by a more complex plan and increased decorative detailing.

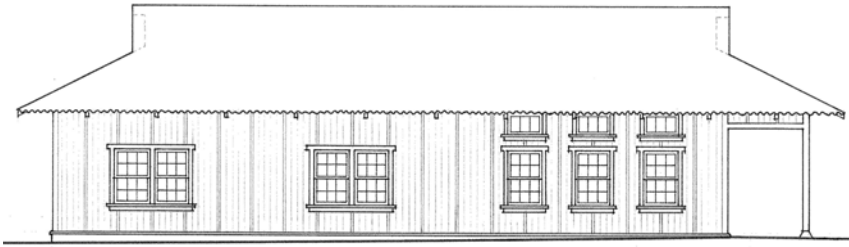
Commercial

Drawings: George Rixey, AIA.

**Hotel**

Drawing: George Rixey, AIA.

Commercial



Drawings: George Rixey, AIA.

The commercial buildings in Lānaʻi City are mostly one story in height. They differ from the commercial buildings of other plantation towns on Maui, including Pāʻia and Makawao, because their front facades appear residential in nature and they lack parapets. Many of the commercial buildings in the town have front porches, are fronted by lawns, and are setback from the front lot line, conveying features typical of the surrounding residential area. Buildings such as Lanai Union Church and the theater seem large by comparison, although they are only two stories in height. Most buildings are set back from the front lot line by roughly 15 to 20 feet. Side yard setbacks vary more than front yard setbacks.



Many commercial buildings are fronted by lawns or landscaped areas.



Many commercial buildings have front porches and lack parapets.

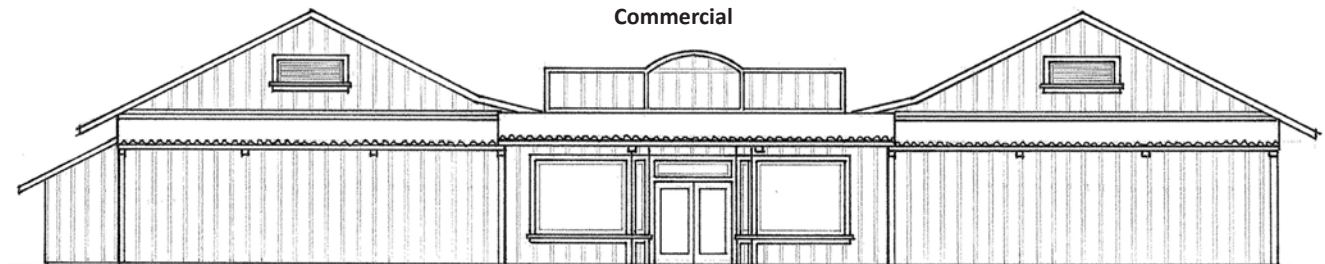


Most commercial buildings are one story in height.



The theater is a bit larger than other commercial buildings surrounding Dole Park.

Commercial



Drawing: George Rixey, AIA.

5 ARCHITECTURAL FEATURES OF LĀNAʻI CITY



Lanai Gymnasium and Lānaʻi Theater have dormers, which are unusual for Lānaʻi City.



Deep eaves and exposed rafter tails are common roof features in Lānaʻi City.

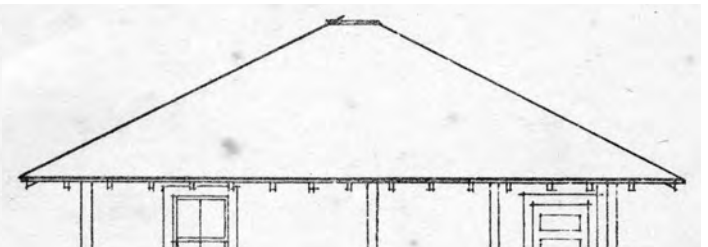
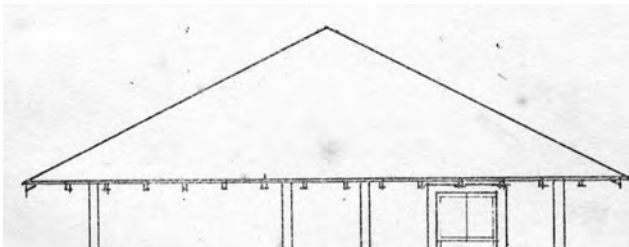
ROOFS

Roof forms typical of Lānaʻi City include: gable roofs, hip roofs, shed additions to roofs, and combinations of two or more types. Many roofs in the commercial area have deep eaves and exposed rafter tails. The most common roofing material in Lānaʻi City is corrugated metal. Roofs are usually painted.



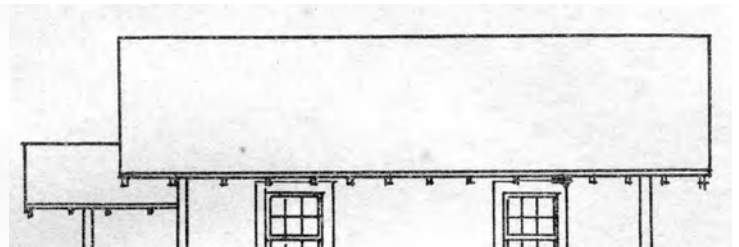
Corrugated metal is the most common roofing material in Lānaʻi City. Photo: Stanley Solamillo.

Hip Roof



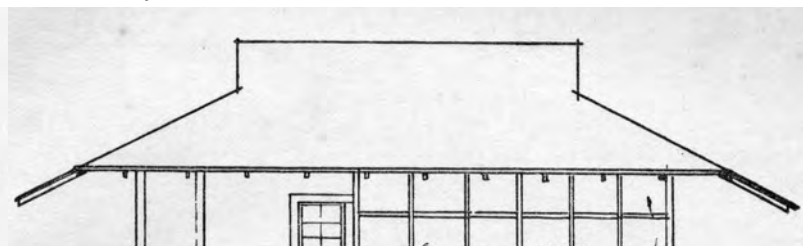
Front and side view of hip roof. Drawings: Hawaiian Sugar Planters Association, courtesy of Grove Farm Museum, Kauaʻi.

Gable Roof



Front and side view of gable roof. Drawings: Hawaiian Sugar Planters Association, courtesy of Grove Farm Museum, Kauaʻi.

Gable-on-Hip Roof



Front and side view of gable-on-hip roof. Drawings: Hawaiian Sugar Planters Association, courtesy of Grove Farm Museum, Kauaʻi.



FACADES

The front facades of buildings in the Country Town Business District often have wood gable vents and covered front porches. Several storefronts in this area have symmetrical arrangements with large display windows flanking each side of an entrance.



Former Lanai Library (demolished). Photo: Lānaʻi Culture & Heritage Center.



Pele's Other Garden. Photo: Lānaʻi Culture & Heritage Center.

PORCHES

Many of Lānaʻi's commercial buildings have prominent front porches. Some porches are located under the main roof, while others are under a separate but attached roof.



Lānaʻi Theater. Photo: Lānaʻi Culture & Heritage Center.



First Hawaiian Bank. Photo: Lānaʻi Culture & Heritage Center.

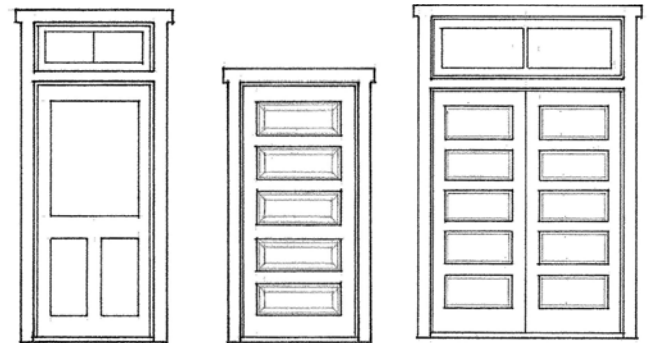


Photos: Chris Hart & Partners.



DOORS

Most buildings have entrances with wood doors. Several commercial buildings have five-panel doors or doors with a single light (panel of glass). A few doors in the commercial area are topped by transom windows. Doors are consistently detailed with simple wood trim. In addition to the typical entrance doors, several buildings have screen doors.



Drawings: George Rixey, AIA.



Photo: Chris Hart & Partners.



Photo: Stanley Solamillo.



Photos: Stanley Solamillo.



Photo: Stanley Solamillo.

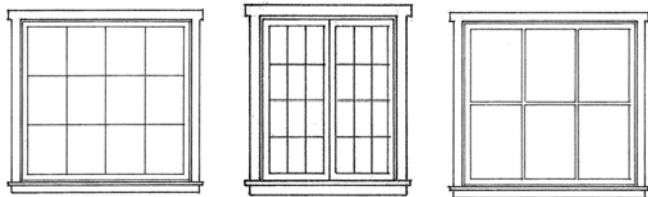
Transom Windows



Dormer Windows



Storefront Display Windows



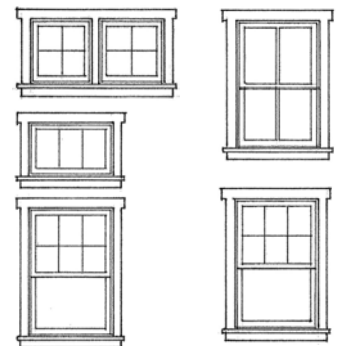
Drawings: George Rixey, AIA.



WINDOWS

The front facades of several commercial buildings surrounding Dole Park have large, multi-light display windows constructed of wood. Some commercial buildings have transom windows as well. In addition to large display windows, double-hung windows constructed of wood are very common in the Country Town Business District. These windows are especially common at the side and rear facades of commercial buildings. Like doors, windows are consistently detailed with simple wood trim.

Double-Hung and Horizontal Sliding Sash Windows



Drawings: George Rixey, AIA.

These windows are traditionally found on homes, churches, and at the side and rear facades of commercial buildings. Photos: Stanley Solamillo.

Corrugated Metal Siding



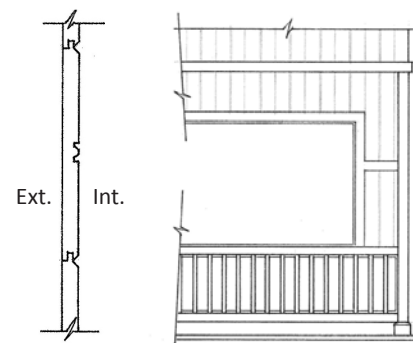
Photo: Stanley Solamillo.

Tongue and Groove Siding



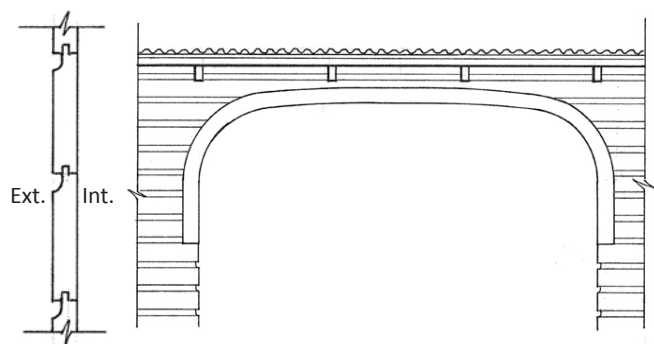
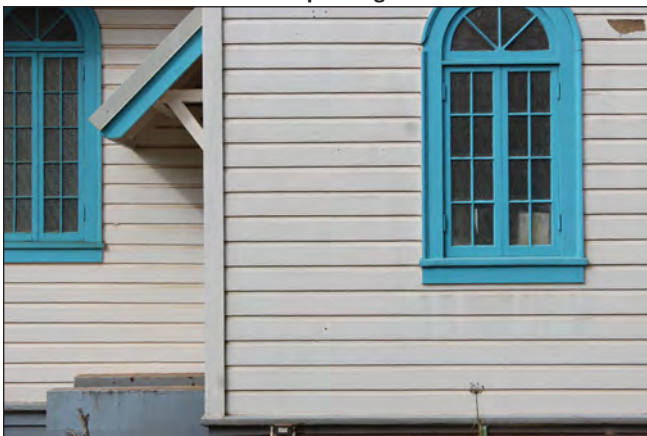
SIDING MATERIALS

The most common siding material found in Lāna'i City, for both commercial and residential buildings, is board and batten. Vertical tongue and groove and horizontal drop siding were also traditionally used. Later additions were sometimes built using combinations of siding materials. Several buildings, including the Lāna'i Theater and Dole Fleet, have corrugated metal siding.



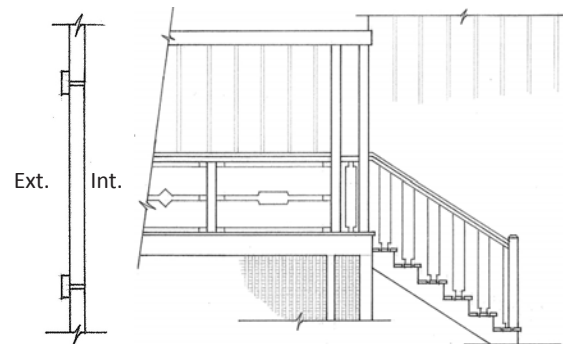
Drawings: George Rixey, AIA.

Drop Siding



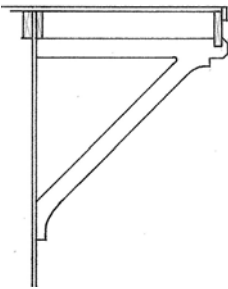
Drawings: George Rixey, AIA.

Board and Batten Siding

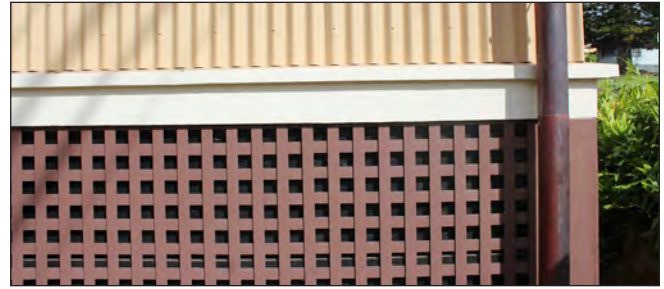


Drawings: George Rixey, AIA.

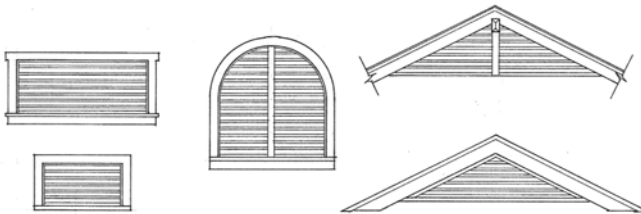
Brackets



Trim and Skirting



Gable Vents



Drawings: George Rixey, AIA.



ORNAMENTATION

Ornamentation on both commercial and residential buildings is not sophisticated, and is made of wood. Common wood details for commercial buildings include: gable vents, exposed rafter tails, brackets, porch columns, and window and door trim.

Window Trim



Photo: Stanley Solamillo.

Exposed Rafter Tails



Exposed Rafter Tails, Porch Columns, and Ceiling



Porch Columns, Balustrades and Railings, and Skirting



COLOR

Paint color in Lāna'i City varies a fair amount. Commercial buildings around Dole Park are generally painted red, green, tan, or yellow. The trim, doors, and windows of these buildings are typically painted a contrasting color. Corrugated metal roofs in this area are either unpainted or painted red, green, or blue.



Photo: Stanley Solamillo.



Photo: Stanley Solamillo.

SIGNS

Signs in the commercial area are simple. Many buildings have wood signs that identify the name of the business. Signs are often freestanding and located in the front yard. Other signs are placed directly on the building, either on the roof or the wall. All signs are permanent in nature and securely attached to the ground or the building.



6 INVENTORY OF KEY BUILDINGS IN THE COUNTRY TOWN BUSINESS DISTRICT

Several buildings in the Country Town Business District are potentially historically significant. Together, they define the existing character of the district. Most show a high degree of integrity because they still have their original floor plans, windows and doors, and exterior finish materials. They include:

BANK OF HAWAII: c. 1940

400 Eighth Street (TMK: 4-9-006:055). This single-story commercial building has a hip roof covered with corrugated metal. The building has vertical tongue and groove siding and windows that provide views of Lāna'i Avenue and Eighth Street.

RICHARD'S MARKET: 1924

434 Eighth Street (TMK: 4-9-006:042). Richard's was originally built as two separate buildings in 1924. Sometime after World War II, an addition was made joining the two buildings. The building has board and batten siding, and experienced several renovations over the years, including changes to its original door and window openings, improved signage, and side and rear additions.

HULA HUT: 1924

418 Eighth Street (TMK: 4-9-006:034). This single-story building has board and batten siding, jalousie windows, and a corrugated metal canopy running the length of its front facade. The gable roof has a rectangular, wood gable vent.

CAFÉ 565: 1926

408 Eighth Street (TMK: 4-9-006:034). This single-story commercial building has a gable-on-hip roof covered with corrugated metal. It has vertical tongue and groove siding, large nine-light display windows, and two entries facing Eighth Street.



**PINE ISLE MARKET: 1924**

356 Eighth Street (TMK: 4-9-006:021). This single-story commercial building has a side-gable roof covered with corrugated metal. It has board and batten siding. Its original wood windows have been replaced with fixed and horizontal sliding sash windows made of vinyl.

**INTERNATIONAL FOOD & CLOTHING CENTER: 1953**

833 Ilima Avenue (TMK: 4-9-006:021). This single-story commercial building is topped by a parapet, or “false front,” and has a column-supported canopy along its front facade. Behind the parapet is a gable roof with exposed rafter tails. It has one large, single-light display window and a single entrance facing Ilima Avenue.

**PELE'S OTHER GARDEN: 1925**

811 Houston Street (TMK 4-9-006:015). This building originally operated as the “Lanai Hotel.” It is a single-story building with board and batten siding, double-hung windows, and a porch running the length of its front facade. It has a gable-on-hip roof with wood gable vents, deep eaves, and exposed rafter tails. The roof is covered with corrugated metal.

**OKAMOTO REALTY: c. 1940**

338 Eighth Street (TMK: 4-9-006:015). This single-story building has vertical tongue and groove siding and a hip roof with exposed rafter tails. The roof is covered with corrugated metal. Several of its original wood windows and doors have been replaced with vinyl ones.

LĀNA'I DISTRICT COURT: 1929

312 Eighth Street (TMK: 4-9-006:004). This building originally housed the police station. It has a hip roof covered with corrugated metal, a covered front porch, and deep eaves with exposed rafter tails. It features vertical tongue and groove siding and double-hung windows. The narrow structure next to the district court originally served as a jail with three tiny cells.

SACRED HEARTS CHURCH: 1931

815 Fraser Avenue (TMK: 4-9-014:008). Although outside the boundary of the Country Town Business District, the church contributes to the history and character of the town. This building has drop siding and arched doors, windows, and vents. The nave has a steeply pitched gable roof and the tower has a steeply pitched hip roof. Both are covered with standing seam metal.

LANAI GYMNASIUM: 1937-38

717 Fraser Avenue (TMK: 4-9-014:006). Although outside the boundary of the Country Town Business District, the gymnasium contributes to the history and character of the town. This large building has a side-gable roof and gabled dormers covered with standing seam metal. The building has several interesting features, including an arched entry porch, wood brackets in the gable ends, and a continuous band of windows under the upper eave. The entry porch projects from the main structure with a gabled roof. The dormers have narrow, multi-light windows. The gym is similar to those built on Maui during the same period; however, its architectural details are more elaborate.

**UH MAUI COLLEGE LĀNA'I EDUCATION CENTER:
1925**

323 Seventh Street (TMK: 4-9-006:065). This single-story commercial building has a gable-on-hip roof and exposed rafter tails covered with corrugated metal. Its original wood siding has been covered with T 1-11 and its original wood doors and display windows have been replaced with modern ones.



**LANA'I ART CENTER: 1925**

833 Ilima Avenue (TMK: 4-9-006:011). This single-story commercial building has both board and batten and vertical tongue and groove siding. It has a gable-on-hip roof covered with corrugated metal. The roof features deep eaves and exposed rafter tails as well as wood gable vents. The front gable vent is hidden behind a sign. The front facade has a symmetrical arrangement with a single door entrance topped by a transom. The entrance is flanked by two large, twelve-light display windows.

**LAUNDERETTE LANAI: c. 1950**

353 Seventh Street (TMK: 4-9-006:026). This single story, single wall building has a hip roof and is built on grade. The street facade has an asymmetrical design. The roof is covered with corrugated metal and has a narrow, continuous fascia.

**THE LOCAL GENTRY: 1928**

363 Seventh Street (TMK: 4-9-006:026). This single-story commercial building has both board and batten and vertical tongue and groove siding. It has a gable-on-hip roof covered with corrugated metal. The roof features deep eaves and exposed rafter tails as well as wood gable vents. The front facade has a symmetrical arrangement with a double door entrance topped by a two-light transom. The entrance is flanked by two large, six-light display windows.

**BLUE GINGER CAFÉ: 1925**

409 Seventh Street (TMK: 4-9-006:031). This single-story commercial building has a combination of board and batten and vertical tongue and groove siding. It has a gable-on-hip roof covered with corrugated metal. The roof features deep eaves and exposed rafter tails as well as wood gable vents. The deep roof overhang at the front facade accommodates tables for restaurant patrons. The front facade has a symmetrical arrangement with a double door entrance. The original large, twelve-light display windows have been replaced with vinyl double-hung windows.

FORMER CANOES RESTAURANT: 1925

419 Seventh Street (TMK: 4-9-006:031). This single-story commercial building has a hip roof covered with corrugated metal. It has board and batten siding at the front facade and vertical tongue and groove siding at the side facades. The front facade has an asymmetrical design with a double door entrance, two large, nine-light display windows, and a pair of wood double-hung windows.

**RAINBOW PHARMACY: 1925**

431 Seventh Street (TMK: 4-9-006:064). This single-story commercial building has a gable roof with rectangular gable vents. A full-length canopy supported by wood columns runs along the front facade. The roof and canopy are covered with PBU metal panel roofing. The front facade has an asymmetrical design with a double door entrance. To the left of the entrance is a bay of three fixed-sash windows and to the right is a bay of two fixed-sash windows.

**MIKE CARROLL ART GALLERY: 1952**

443 Seventh Street (TMK: 4-9-006:064). This single-story commercial building's hip roof has exposed rafter tails and is covered with corrugated metal. A full-length porch runs along the front facade, under the main roof. The building has vertical tongue and groove siding and a symmetrically designed front facade. The front facade has a double door entrance topped by a single-light transom. The entrance is flanked by two large, single-light display windows.

**HALE KEAKA, THE LĀNA'I THEATER: 1926**

456 Seventh Street (TMK: 4-9-006:054). This building was originally built as a theater when the plantation opened. This large, two-story building has a clipped gable roof and clipped gabled dormers covered with corrugated metal. The building has several interesting features, including an arched entry porch, wood brackets in the gable ends, and a large, arched gable vent. The entry porch projects from the main building. The dormers have narrow, multi-light windows. The roof has deep eaves with exposed rafter tails. The building was rehabilitated and renamed in 2014. It includes two 93-seat theaters and a green room.



**FIRST HAWAIIAN BANK: 1924**

644 Lāna'i Avenue (TMK: 4-9-011:018). Built in 1924, this building originally housed Bishop National Bank. It sits on a raised, post and beam foundation with board and batten siding. It features a gable roof with exposed rafter tails and brackets in the gable ends. The roof is covered with corrugated metal. The entry porch projects from the main building with a gable roof.

**FORMER DOLE ADMINISTRATION BUILDING: 1951**

730 Lāna'i Avenue (TMK: 4-9-011:001). This single-story building is located at the *mauka* end of Dole Park. It has a gable-on-hip roof with a distinctive cupola. The entry porch at the front facade projects from the main building and is topped with a hip roof. It has board and batten siding and its roof is covered with corrugated metal.

**DOLE FLEET: c. 1924**

Corner Ninth Street and Lāna'i Avenue (TMK: 4-9-005:090). This complex of industrial buildings has corrugated metal siding and wood structural framing. The buildings have a combination of gable and gable-on-hip roofs covered with corrugated metal. The distinguishing feature of this large complex is the unusual arrangement of wood, double-hung windows. The buildings were used for decades to maintain equipment for Dole Plantation. Photo: Stanley Solamillo.

**LĀNA'I CITY SERVICE AND NAPA AUTO: c. 1930**

1036 Lāna'i Avenue (TMK: 4-9-012:001). This building's roofline is hidden behind parapet walls and a partial mansard roof. It has board and batten siding and fixed-sash display windows.

LANAI HARDWARE AND LUMBER: c. 1936

1110 Lāna'i Avenue (TMK: 4-9-013:034). This wood-framed industrial building has corrugated metal siding and roofing. It features an L-shaped plan, gable roof, and wood, double-hung windows.



PART II

**DESIGN GUIDELINES
AND STANDARDS**

1 GENERAL DESIGN GUIDELINES AND STANDARDS

The County developed the guidelines and standards in Part II of this document to help interpret the regulations in the Country Town Ordinances. This section provides guidance for design elements in the Country Town Business District, including streetscapes, roads, and signs.

LANDSCAPING AND OUTDOOR USE AREAS

Existing trees, plants, and landscaping should be retained, to the extent possible. Vegetation growing too close to buildings traps moisture in foundations and siding. Keeping a buffer between landscaping and the building helps reduce moisture damage.

1. Trees, bushes, and other plants should not touch any part of the building. At minimum, a two-foot buffer should be maintained between the building and surrounding landscaping.
2. Use landscaping where possible to shield commercial buildings from neighboring residential areas.
3. Use landscaping to screen off-street parking areas.
4. For properties surrounding Dole Park, front and side yards should be grassed and landscaped. Patios may also be installed within a portion of the side or front yards of food establishments to accommodate outdoor dining. These outdoor dining areas should incorporate grassed and landscaped elements. Covering an entire front or side yard with concrete, concrete pavers, or any other non-landscaped surface is not allowed.
5. Preserve existing Cook pine trees to the extent possible. As these trees reach the end of their lives, they should be replaced with new Cook pines.
6. Planting of Native Hawaiian and Polynesian-introduced species is strongly encouraged. For more information on Native Hawaiian and Polynesian-introduced plants, consult Chapter 9 of the 2016 Maui County Planting Plan in Appendix C.
7. Avoid planting invasive species. This includes plants identified as “high risk” in the Hawaii-Pacific Weed Risk Assessment list. For more information on “high risk” plants to avoid, consult the Hawaii-Pacific Weed Risk Assessment list [online](#).



Maintain a buffer between the building and landscaping to prevent moisture damage.



Use landscaping to screen outdoor dining areas.



The landscaping at the theater incorporates a grassy lawn and different Native Hawaiian and Polynesian-introduced plants.



Incorporate Native Hawaiian and Polynesian-introduced plants into landscaping, when possible.



The County should follow the State's lead in using the correct spelling of "Lāna'i" for its signs.

SIGNS INSTALLED BY THE COUNTY

Pursuant to Chapter 4E, Hawai'i Revised Statutes, and the Guidelines for Hawaiian Geographic Names, the County should use the correct spelling of "Lāna'i" when installing new signs for County-owned properties, such as parks and streets. Businesses are also encouraged to use such spelling.



Rainbow Pharmacy and The Local Gentry have ground signs that are set back from the edge of the sidewalk and are appropriately sized.

OUTDOOR SIGNS FOR BUSINESS IDENTIFICATION

Signs must comply with the requirements of Chapter 16.13, Maui County Code, as applicable, or the sign guidelines below, whichever is most restrictive.

1. Ground signs must be set back from the edge of the sidewalk or street and shall not exceed twenty-four square feet.
2. Signs on the building shall be located on the wall, window, or roof and shall not exceed sixteen square feet.
3. Signs should be painted, carved, or incised.
4. Signs should be made of traditional materials such as wood.
5. Signs should be illuminated by shielded external lighting sources.
6. Signs should be installed so they do not obscure architectural elements.
7. Signs should incorporate colors traditionally found in the district.
8. Plastic or inflatable signs are not allowed.



Café 565 and Launderette Lanai have roof signs that are appropriately sized and located.

PARKING

Off-street parking and loading requirements are established in Chapter 19.36B, Maui County Code. As stated in Subsection 19.36B.040.B, Maui County Code: “country town business district design guidelines adopted pursuant to chapter 19.15 of this code, if any, shall prevail over this chapter if there is a conflict.”

1. All permitted uses established in Chapter 19.15, Maui County Code, including additional outside dining areas, are exempt from parking requirements established in Chapter 19.36B, Maui County Code.
2. Existing parking stalls fronting Dole Park are exempt from standards established in Chapter 19.36B, Maui County Code.
3. Grass and gravel parking areas as well as on-street parking are allowed.
4. If new off-street parking is provided, it must comply with the following standards:
 - A. Minimize the parking area’s visibility from the street.
 - B. Place parking areas to the rear of the lot, behind the main building, whenever possible.
 - i. Parking areas may be placed to the side of the main building when locating them behind the building is not possible.
 - ii. Do not place parking areas in the front yard of the main building.
 - C. Avoid large expanses of parking.
 - i. Use landscaping to break up larger parking areas.
 - D. Provide access to parking areas from secondary streets instead of main streets, whenever possible.
 - E. Use landscaping to screen parking areas from views from the street.
 - F. Use pervious parking surfaces, such as grass, gravel, or grasscrete pavers, whenever possible.



Rainbow Pharmacy's off-street parking area is located in the side yard, but is barely visible from the main road. It is well hidden by landscaping and has a gravel surface.



Bank of Hawaii's off-street parking area is accessed from a secondary road. This leaves the front yard, which faces the main road, landscaped and green.



The off-street parking requirements in the Maui County Code are unnecessary because there is enough on-street parking in the Country Town Business District. Photo: Stanley Solamillo.



Maintain Lāna'i City's grid street network.



Maintain existing right-of-way and pavement widths.



Road widening is not required. Work on existing buildings and new construction are exempt from the road widening requirements in the Maui County Code. Photos: Stanley Solamillo.

STREETS

The grid street plan and rural roads are character-defining features of Lāna'i City. The traditional small town streetscape design and rural road character in the Country Town Business District should be maintained.

1. The grid street network shall be maintained.
2. Existing street right-of-way and pavement widths shall be maintained.
3. Road widening is not required. Work on existing buildings and new construction are exempt from the road widening requirements in the Maui County Code.
4. The system of one-way streets, which facilitates traffic flow while preserving the network of narrow streets, shall be maintained.
5. Kiele Street is a privately-owned road in the Country Town Business District. Should Kiele Street be closed to traffic, Koali Street shall remain a two-way street.

Note: Title 18, Maui County Code establishes standards and requirements for road widths, sidewalks, curbs, and gutters.

As stated in Section 18.32.020, Maui County Code: "Exceptions from specific compliance with this title may be approved by the director [of Public Works] where a plan and program has been approved pursuant to section 2.40.050 or title 19 to include but not be limited to planned developments, R-O zero lot line overlay district, a cluster housing development, large agricultural area development, country town business districts, historic districts, redevelopment areas and project districts."

Section 18.16.050, Maui County Code establishes minimum road widths. This section also gives deference to any standards adopted in this document.

SIDEWALKS

Chapter 7 of the 2016 Lāna'i Community Plan encourages more pedestrian facilities within the older town center. Chapter 10 of the same plan also recognizes that the rural character of Lāna'i City's streetscape will be damaged if the County imposes modern street design standards. These standards, which require curbs, gutters, wide concrete sidewalks, and wide road widths, create a very different urban design pattern from the Country Town Business District.

Instead of adding large concrete sidewalks where they do not currently exist, pedestrians should be accommodated using alternative methods. These methods might include: using existing grass, gravel, or dirt shoulders, or dedicating a portion of the traffic lane for bicycle and pedestrian use.

1. Preserve and maintain existing concrete sidewalks and basalt stone curbs. Existing sidewalks and curbs are exempt from the standards in the Maui County Code.
2. New sidewalks, curbs, and gutters are not required. Work on existing buildings and new construction are exempt from the sidewalk, curb, and gutter requirements in the Maui County Code.



New sidewalks, curbs, and gutters are not required. Work on existing buildings and new construction are exempt from the sidewalk, curb, and gutter requirements in the Maui County Code. Photos: Stanley Solamillo.

UTILITIES

Wood utility poles and overhead wires are typical in the Country Town Business District and in the portions of Lāna'i City that were built for plantation housing.

1. Overhead utility lines are allowed.
2. New transformers should be located underground or placed at grade and screened.
3. Avoid placing new transformers on poles.



Overhead utility lines are allowed in the Country Town Business District.

Drainage Features Traditionally Found in Lānaʻi City*Sloping topography**Drain inlet**Drain inlet**Swale**Maintain existing drainage features.***DRAINAGE**

Drainage should be consistent and compatible with the existing character of the town. It should protect structures and convey runoff out of the area, with the continued use of existing drainage conveyance methods. Additionally, Chapter 7 of the 2016 Lānaʻi Community Plan encourages the Department of Public Works to maintain the existing drainage system in Lānaʻi City by clearing blockages. It also encourages adding natural drainage storage and filtration to supplement the existing system.

1. Maintain existing drainage features.
2. Inspect, and if necessary, repair existing stormwater drainage swales and culverts and remove blockages from drains and channels.
3. Manage surface water using natural system drainage, retention, and filtration to reduce flooding and siltation of ocean waters.
4. Provide capacity along major drainage ways and within improvements to collect and convey runoff as required by state law or the Maui County Code.
5. Limit work to the existing system to minimize cost and disruption.
6. Direct runoff to Iwiole and Kapano Gulches to the extent possible, where there is adequate capacity.
7. Allow flexibility for stormwater capture off-site (below Lānaʻi City, along Iwiole Gulch or within reservoirs along Kapano Gulch).
8. Drainage improvements may include:
 - Additional drain inlets and culverts along select roadways;
 - Improved roadside ditches;
 - New swales; or
 - Natural drainage storage and filtration systems.
9. Ensure drainage improvements are compatible with the character of the town.

2 ARCHITECTURAL DESIGN GUIDELINES

Chapter 10 of the 2016 Lāna'i Community Plan encourages property and business owners to maintain and preserve Lāna'i City's historic buildings. The Community Plan also promotes new construction that compliments and reflects the town's historic character.

Action No. 10.02 of the Community Plan directs the Department of Planning to update the Design Guidelines and Standards so they provide more detailed guidance on rehabilitation, additions, and new construction. The guidance in this section is meant to carry out Action No. 10.02.

In addition to general guidance for **rehabilitation**, **additions**, and **new construction**, this section provides guidelines for individual building components, including:

- Roofs;
- Entrances and doors;
- Porches;
- Siding; and
- Windows;
- Paint color.



Photo: Stanley Solamillo.

The Department of Planning uses the general guidance on pages 2:3 - 2:9 and the guidance for individual building components on pages 2:11 - 2:26 to determine whether plans for new construction or changes to existing buildings can be approved.

GENERAL GUIDANCE

REHABILITATION

“Rehabilitation” includes maintenance, improvements, or changes to existing buildings. A successful rehabilitation is one that preserves as much of the exterior historic building materials as possible. To retain historic fabric, architectural elements (such as windows, doors, porches, and storefronts) and historic building materials (such as wood and masonry) should be repaired rather than replaced. Repair should be done with the least amount of intervention as possible. When the material is damaged beyond repair, limited replacement should be done with matching or compatible materials.

1. Rehabilitation of a historic building should minimize changes to original materials, architectural elements, and ornamentation.
2. Deteriorated original architectural elements and materials should be repaired rather than replaced.
3. Where repair is not possible, replacement features should match the original component in design, material, color, and texture.
4. Do not cover original building materials with new materials.
5. Do not use harsh cleaning treatments, like sandblasting and pressure washing, because they can permanently damage historic materials. Clean buildings using the gentlest means possible.
6. Previous additions or changes should be evaluated for historic significance. Changes that have gained historic significance should be retained and preserved.
7. Missing or deteriorated features should be reconstructed based on physical evidence and archival documentation, such as historic photographs, plans, or written descriptions. Do not reconstruct details found on similar historic buildings without other supporting documentation.
8. While purposely allowing buildings to fall into disrepair so they can be “demolished by neglect” is unacceptable, there can be circumstances involving threats to public health, safety, and welfare, which may result in demolition.

Before Rehabilitation

Photo: Stanley Solamillo.

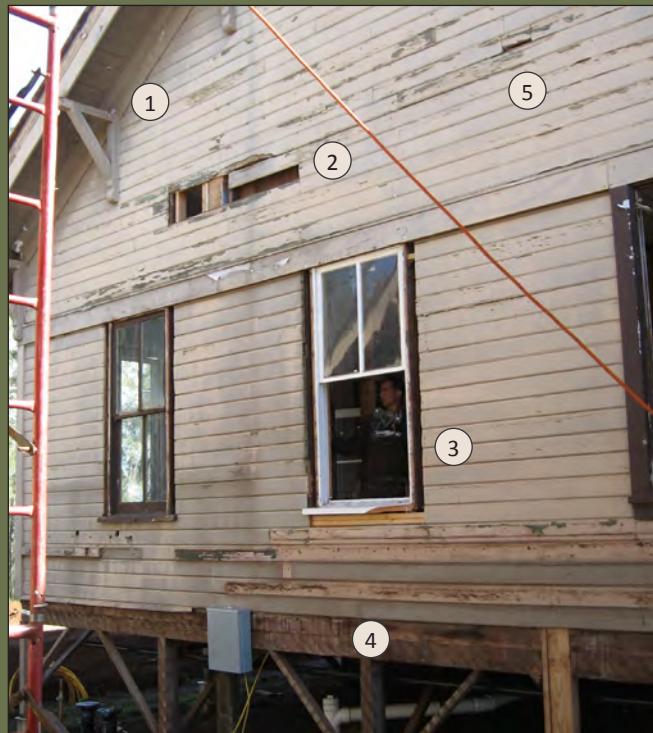
After Rehabilitation

The former owner of Mā'alaea General Store received a federal income tax credit for this rehabilitation project. Photo: Dom Marino. This rehabilitation complies with the guidelines.



During the rehabilitation of Mā'alaea General Store, the missing parapet wall was reconstructed using historic photos.

Use historic photos, plans, sketches, or other documentation to substantiate the design of missing or damaged architectural features.



Photos: Stanley Solamillo.



- 1 Retain architectural ornamentation.
- 2 Replace missing or damaged siding with matching materials.
- 3 Repair windows.
- 4 Inspect foundation for damage and repair or replace decorative skirting (if applicable).
- 5 Inspect and repair siding and other wood elements. Prepare surfaces by scraping and sanding flaking paint before repainting.
- 6 Repair or replace damaged porch elements.
- 7 Preserve roof shape, overhang, and decorative features, like exposed rafter tails.

9. As stated in Section 19.15.040, Maui County Code, buildings on existing substandard lots may be reconstructed on the established building footprint where the Director of Planning determines, in accordance with established design guidelines, that such reconstruction does not detrimentally affect the character of the district.
10. Consult the additional resources below for tips on planning successful rehabilitations.

Additional Resources

Sharon Park, FAIA, *Preservation Brief 47: Maintaining the Exteriors of Small and Medium Size Historic Buildings* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2007).

<https://www.nps.gov/tps/how-to-preserve/briefs/47-maintaining-exterior.htm>

Guidelines for Rehabbing Kauai's Old Houses (Līhu'e, Kaua'i: Community Housing Resource Board of Kauai).

See Appendix F.



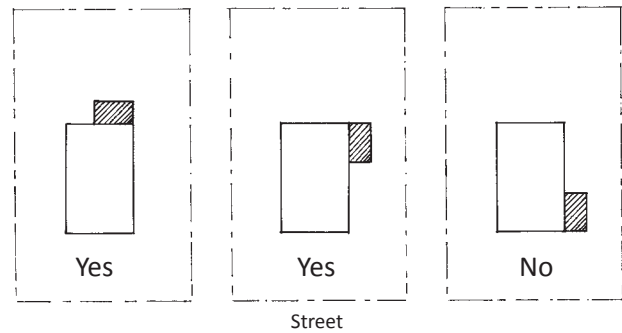
This rehabilitation does not comply with the guidelines. It removed original materials and elements that could have been repaired, including original siding and windows. It also used inappropriate replacement elements.

Do not replace original architectural elements when repair is possible. If an element is too damaged to repair, then make sure its replacement matches the design and appearance of the original. Photo: Stanley Solamillo.

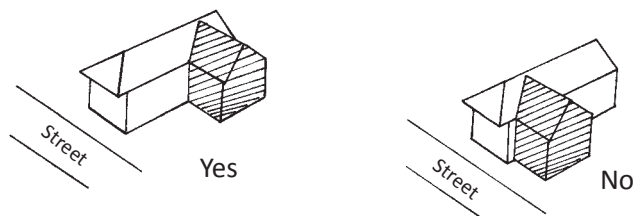
ADDITIONS

Additions should be carefully designed and located so they do not overwhelm or damage the existing building and site. Additions should be compatible with and respectful of the historic building and site through similarities in scale, form, massing, materials, and detailing. To expand a historic building successfully, the new addition should follow the basic design vocabulary of the historic building but be clearly distinguishable.

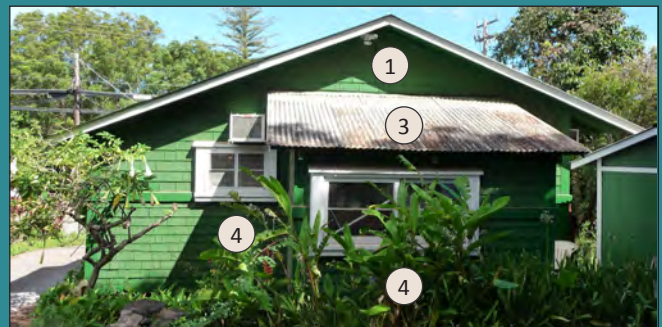
1. Additions should be designed and located so they are subordinate to the main historic building in terms of scale and mass.
2. Additions or changes to the front of the building are inappropriate. Additions should be set back from the front of the building and located at the side or back of the building.
3. Additions that damage or overwhelm the historic building (because they are too tall or their footprints are too large) are inappropriate.
4. The addition's roof pitch, shape, and overhangs should be similar to the historic building.
5. Additions should be similar in height to the historic building.
6. An addition that is taller than the main historic building may be considered if it is substantially set back from the front facade and connected with a smaller linking element.
7. Rooftop additions should be limited to the back of the building to preserve the historic scale and form of the building and minimize visibility from the public right of way.
8. The addition's windows should be similar in shape, size, design, and placement to the openings of the historic building.
9. The addition's shape, size, and openings should create a directional emphasis (horizontal or vertical) that is similar to the historic building.
10. The addition's exterior materials should match or be compatible with the materials of the historic building in terms of type, color, and texture.



Place additions at the back of the building when possible. If site conditions do not allow this, then place the addition at the side and set it back from the front facade. Do not place additions at or near the front facade.



Set additions to the side of the building back from the front facade.



- 1 Place additions at the back and ensure they are subordinate to the main historic building.
- 2 Use a roof pitch, shape, and overhang that is similar to the main historic building.
- 3 Use roofing and siding materials that are similar to the main historic building.
- 4 Use windows that are similar in shape, size, design, and placement to the main building.

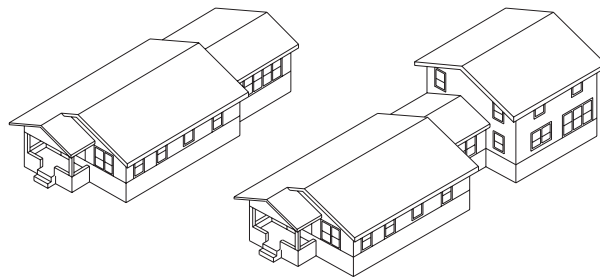


This addition complies with the guidelines because:

- It is subordinate to the main historic building in terms of scale and mass.
- It is located at the side of the main historic building and is set back from the front facade.
- Its roof pitch is similar to the roof pitch of the main historic building.
- Its windows are similar in size, shape, and design to the windows of the main historic building.
- Its siding and roofing materials are similar to the siding and roofing materials of the main historic building.

Photo: Stanley Solamillo.

- The addition's architectural details should not be more ornate than those found on the historic building. Do not use architectural details that are not in keeping with the historic building's architectural style.
- Consult the additional resources below for tips on designing compatible additions.



Additions should be similar in height to the historic building. An addition that is taller than the main historic building may be considered if it is substantially set back from the front facade and connected with a smaller linking element. Drawings: Winter & Company.



Do not place additions at the front facade.

Additional Resources

Anne E. Grimmer and Kay D. Weeks, ***Preservation Brief 14: New Exterior Additions to Historic Buildings: Preservation Concerns*** (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2010).

<https://www.nps.gov/tps/how-to-preserve/briefs/14-exterior-additions.htm>

John Sandor, ***Interpreting the Standards 18: New Additions to Mid-size Historic Buildings*** (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2001).

<https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS18-Additions-MidSizeBuildings.pdf>

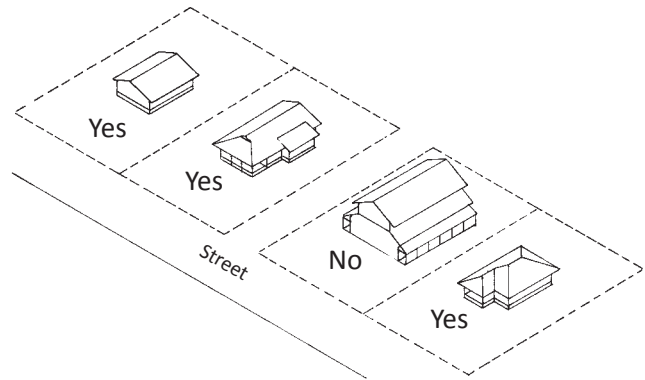
Chad Randl, ***Interpreting the Standards 37: Rear Additions to Historic Houses*** (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2006).

<https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS37-Houses-RearAdditions.pdf>

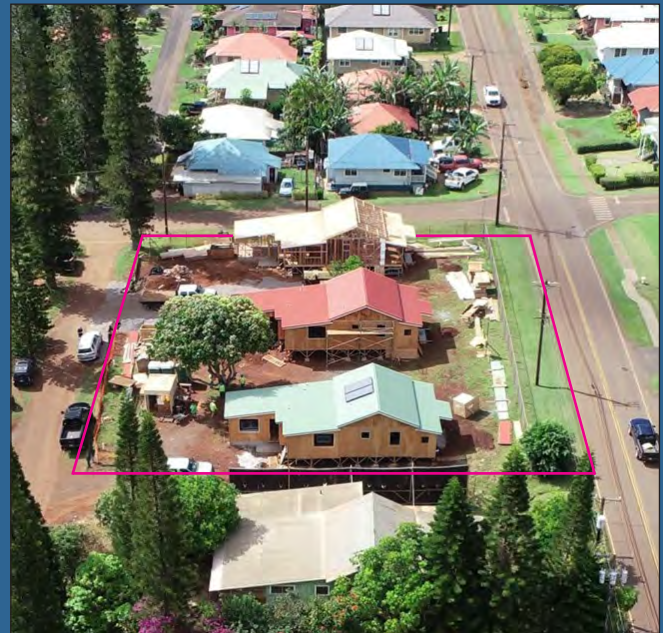
NEW CONSTRUCTION

Like additions to existing buildings, new construction should be similar to, compatible with, and respectful of its historic setting. Creating exact replicas of historic buildings should be avoided because it makes it hard to tell the difference between old and new buildings and makes the architectural evolution of the district difficult to interpret. While new construction should not attempt to copy historic buildings, it should not be so dissimilar that it damages the character of the district.

1. New construction should be similar in height, mass, form, and scale to the surrounding historic buildings.
 - A. When the width of a new building exceeds that of neighboring historic buildings, the front facade should be divided into smaller sections. This can be accomplished by stepping back sections of the wall plane or by using vertically oriented dividing elements such as pilasters.
 - B. New buildings directly across the street from Dole Park shall be limited to 15 feet in height.
 - C. New buildings in all other areas of the Country Town Business District shall be limited to 30 feet in height.
 - D. New building massing should be compatible with the existing variety of form and massing elements.
 - E. New building scale should respect the size and proportions of surrounding historic buildings.
 - F. If an existing lot is subdivided, the minimum lot area shall be 6,000 square feet.
2. Roof forms should resemble those found on neighboring historic buildings.
3. Doors, windows, and other openings should be similar in shape and placement to the openings of neighboring historic buildings. Additionally, door and window openings should have a similar proportion of wall to window space as neighboring historic buildings.
4. Exterior materials should match or be



Ensure that new construction is similar in height, mass, form, and scale to the surrounding historic buildings.



These new homes on Lāna'i Avenue comply with the guidelines because:

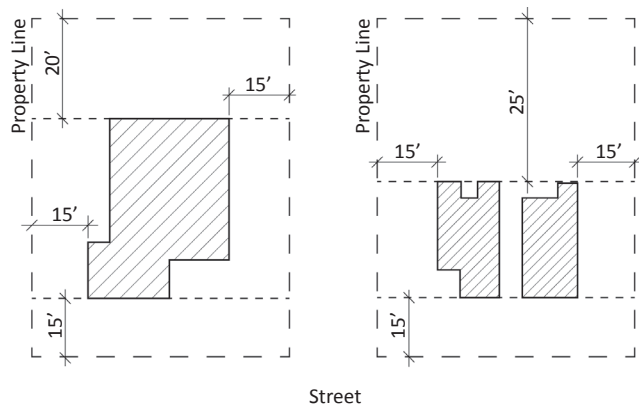
- *They are similar to neighboring historic buildings in terms of height, mass, form, and scale.*
- *They correspond with the setbacks and orientation of neighboring historic buildings.*

Photos: Charlie Palumbo, Pūlama Lāna'i.



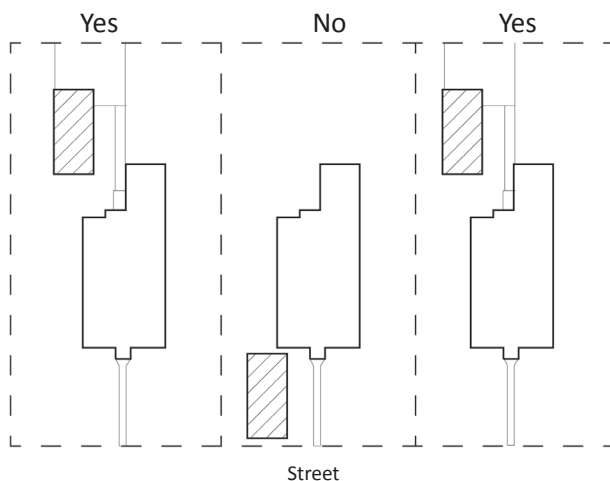
- 1 Use roof forms that resemble those found on neighboring buildings.
- 2 Use doors and windows that are similar in shape and placement to the openings of neighboring historic buildings.
- 3 Use doors and windows that have similar proportions of wall to window space as neighboring historic buildings.
- 4 Use exterior materials that match the materials of surrounding historic buildings.
- 5 Use architectural ornamentation that is simple in design.

Photo: Glenn Mason, Mason.



Street

Provide front, side, and rear yard setbacks of at least 15 feet for new buildings.



Street

Ensure that new accessory buildings, such as garages, are subordinate to the main building and located at the back of the lot.

compatible with the materials of surrounding historic buildings in terms of scale, texture, and proportion.

- A. Hardie Board or other fiberboard siding may be appropriate for new construction so long as the new materials are visually similar to the traditional material in dimension, finish, and texture.
 - B. Imitation or synthetic materials, such as vinyl siding and T 1-11 veneer are not appropriate because they are not visually similar to the traditional siding materials found in the Country Town Business District.
5. Architectural details should be simple in design. They should not be more ornate than those found in neighboring buildings.
 6. New buildings should correspond with the setbacks and orientation of neighboring historic buildings.
 - A. Front yard setbacks for new buildings shall be a minimum of 15 feet.
 - B. Side and rear yard setbacks for new buildings shall be a minimum of 15 feet, except where the side or rear of a lot abuts a lot in any zoning district that requires a setback, the setback shall be the same as required in the abutting district.
 - C. The following accessory structures are allowed within the setback area: mail boxes, trash enclosures, boundary walls/fences, ground signs, and outdoor uses such as seating and tables as described in "Landscaping and Outdoor Use Areas."
 - D. Main entrances and porches of new buildings should face the same direction as those found along the street frontage. In the Country Town Business District, most historic building entrances are oriented towards the main street.
 7. New secondary buildings, such as garages and outbuildings, should be subordinate to the size and appearance of the primary historic building and located at the back of the lot.

8. Mechanical, electrical, solar, or other exterior equipment should be located in the least visible place possible.
 - A. If equipment is mounted on the roof, it should be on the rear slope, behind the roof's midpoint, or set back from the front of the building so it is less visible from public spaces.
 - B. Window air conditioning units should not be located at the front facade.
9. Access ramps and other accommodations for wheelchairs should be located to provide access without being visually intrusive.
10. New construction should be located and designed to accommodate special natural or man-made site features.
11. Consult the additional resources below for tips on designing compatible new construction.

Additional Resources

Pratt Cassidy, *FRESH – Determining Compatibility for New Structures in a Historic District*.

https://georgiashpo.org/sites/default/files/hpd/pdf/CLG/FRESH_CLG.pdf

“New Construction within the Boundaries of Historic Properties,” Planning Successful Rehabilitations, Technical Preservation Services, National Park Service.

<https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>



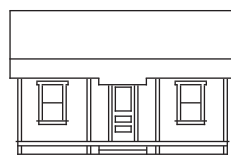
This new house on Lāna'i Avenue complies with the guidelines because:

- Its roof form resembles those found on neighboring buildings.
- Its doors and windows are similar in shape and placement to the openings of neighboring historic buildings.
- Its doors and windows have similar proportions of wall to window space as neighboring historic buildings.
- Its exterior materials match the materials of surrounding historic buildings.
- Its architectural ornamentation is simple in design.

Photos: Glenn Mason, Mason.



Yes



Yes



No



Yes

Ensure that new construction is similar to, compatible with, and respectful of its historic setting.

GUIDANCE FOR INDIVIDUAL BUILDING COMPONENTS

ROOFS

Original roofs are important elements of historic buildings. Changes to the original roof configuration can alter the way a building looks and harm its historic character.

Corrugated metal is the most commonly used roofing material in the Country Town Business District. This is particularly true for the commercial buildings surrounding Dole Park. The main roof types are hip, gable-on-hip, and gable. Many buildings have deep overhangs with exposed rafter tails, and were originally built without facias or gutters.

The original elements of a roof, including its shape, design, and materials, should be preserved and maintained.

The guidelines below apply to **rehabilitation** projects:

1. Original roof shape and features should be retained.
 - A. Preserve original shape, overhang depth, and materials.
 - B. Preserve original roof features (such as open eaves with exposed rafter tails and brackets).
2. Deteriorated roofing materials should be repaired as needed.
 - A. Do not remove original roofing material that can be repaired.
 - B. Repair original roofing instead of replacing it, to the extent possible.
 - C. Consult the additional resource for tips on repairing and rehabilitating original roofs.

Additional Resource for Roofs

Sarah M. Sweetser, *Preservation Brief 4: Roofing for Historic Buildings* (Washington DC: Preservation Assistance Division, National Park Service, U.S. Department of the Interior, 1978)

<https://www.nps.gov/tps/how-to-preserve/briefs/4-roofing.htm>

Traditional Roof Components

- | | | |
|--------------------|----------------|--------------|
| 1 Hip | 3 Rafter Tails | 5 Gable Vent |
| 2 Corrugated Metal | 4 Gable | |

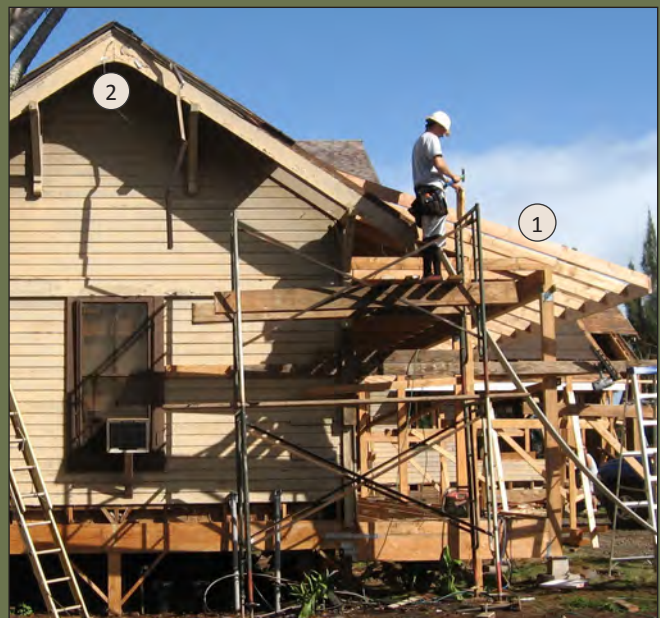
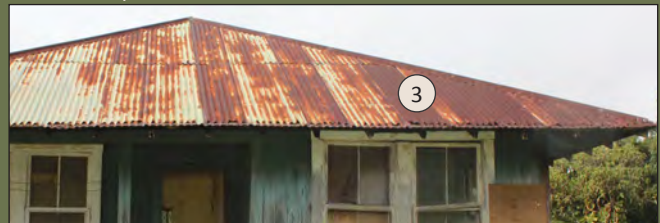
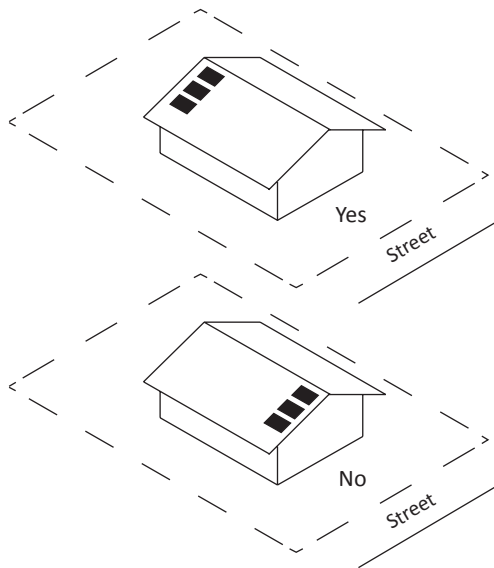


Photo: Stanley Solamillo.



- 1 Preserve original roof shape and overhang depth when replacement is necessary.
- 2 Preserve unique roof features.
- 3 Regularly inspect and maintain roofing before it deteriorates to the point that it no longer can be repaired.



Place roof-mounted equipment, like solar panels, towards the rear of the roof when possible.



Do not use standing seam roofing.



Do not use PBU panel roofing.

3. Replacement roofing should match the materials and appearance of the original roof.
 - A. Replace original roofing only when it is too deteriorated to repair.
 - B. Match the original roofing in material and appearance. In other words, replace corrugated metal roofing with corrugated metal roofing.
 - C. Do not use other metal roofing, such as PBU panel and standing seam, because it does not look the same as corrugated metal.
 - D. If original metal roofing is missing, consider replacing with corrugated metal.
4. New roof elements should be placed where they will be least visible.
 - A. Place solar panels and other roof-mounted equipment on the back slope of the roof, or set the equipment back from the front of the building when possible.
5. Metal gutters may be installed if drainage is an issue.



Use corrugated metal roofing.



- 1 Use roof shapes, pitches, and overhangs that are similar to surrounding historic buildings.
- 2 Use corrugated metal roofing.
- 3 Incorporate exposed rafter tails or other roofing details found on surrounding historic buildings.

Photo: Glenn Mason, Mason.

The guidelines below apply to **addition** and **new construction** projects:

1. Roof forms, pitch, and overhangs should be similar to those found in surrounding historic buildings.
2. Roof material should be corrugated metal.
3. Exposed rafter tails are common, however, if desired, fascia boards made of wood or wood like material may be used.
4. If drainage is a concern, metal gutters may be installed.
5. Solar panels or other roof-mounted equipment should be located in the least visible place possible, on the back slope of the roof or set back from the front of the building.

PORCHES

Porches serve several important functions:

- They protect an entrance from rain and provide shade from the sun;
- They provide a sense of scale; and
- They connect a building to its surroundings by orienting its entrance to the street.

Porch elements found on commercial buildings in the Country Town Business District can include:

- Roof;
- Columns;
- Balustrades and railings; and
- Slab on grade foundation or post and beam foundation with decking.

In Lāna'i City, front porches are prominent features of both residential and commercial buildings. Because of their historical importance and prominence as character-defining features, original porches should be preserved and maintained.

The guidelines below apply to **rehabilitation projects**:

1. Original porches should be preserved and maintained.
 - A. Preserve original porch elements, including roofing, columns, and balustrades.
 - B. Do not remove original porch elements (like balustrades).
 - C. Do not conceal or cover original porch materials (like ceilings, eaves, floors, foundations, and columns).
 - D. Do not add new front porches where they did not historically exist.
2. Deteriorated porches should be repaired as needed.
 - A. Do not remove original porch elements that are in good condition or that can be repaired.
 - B. When repairing original porches, use methods that retain their historic fabric and appearance, whenever possible.
 - C. Consolidates or epoxies may be used to strengthen deteriorated wood.
 - D. Consult the additional resources for tips on repairing original porches.



Preserve unique porch elements like these balustrades and columns.



Before Rehabilitation



After Rehabilitation

This original porch was repaired in a way that preserved its historic character. Photos: Stanley Solamillo.



Traditional Porch Components

1 Roof

2 Column or support post

3 Balustrade and railing

4 Foundation

Additional Resources for Porches

Aleca Sullivan and John Leeke, *Preservation Briefs 45: Preserving Historic Wooden Porches* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2006).

<https://www.nps.gov/tps/how-to-preserve/briefs/45-wooden-porches.htm>

Aleca Sullivan, *Interpreting the Standards 9: Inappropriate Porch Alterations* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 1999).

<https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS09-Porch-Alterations.pdf>



Do not enclose or remove original front porches. Photo: Lorraine Minatoishi, AIA.



This access ramp is simple in design and its foundation and railings match the historic building. Photo: Generations Magazine.

3. Replacement porches should match the materials and appearance of the original porch.
 - A. Replace original porch elements and materials only when they are too deteriorated to repair.
 - B. Replace missing or rotten porch elements (like columns, railings, and roofing) when necessary with elements that match the originals in proportions, dimensions, materials, and appearance.
 - C. Match the original dimensions, proportions, height, and spacing of balusters when replacing missing ones.
 - D. If replacing an entire original porch is necessary, keep and reuse as many of the original elements and materials as possible.
 - E. Match the original porch in scale, massing, and details.
 - F. Match the original materials in texture, dimensions, and finish.
 - G. Consult the additional resources for tips on designing appropriate replacement porches.
4. The open character of original front porches should be retained.
 - A. Do not enclose or remove original front porches.
 - B. Restore a previously enclosed porch to its original, open appearance, whenever possible.
5. Design and locate access ramps so they do not compromise the historic character of a building.
 - A. Locate ramps so they minimize damage to important architectural features and materials.
 - B. Use simple ramp designs that are compatible with the architectural style of the building.

The guidelines below apply to **new construction** projects:

1. Front porches or corrugated metal canopies should be used for new construction if neighboring historic buildings have them.
2. Porches or corrugated metal canopies should mimic the appearance of surrounding historic porches (use the same elements, and be constructed of same materials).
3. Porches or corrugated metal canopies should mimic the massing and proportions of surrounding historic porches.



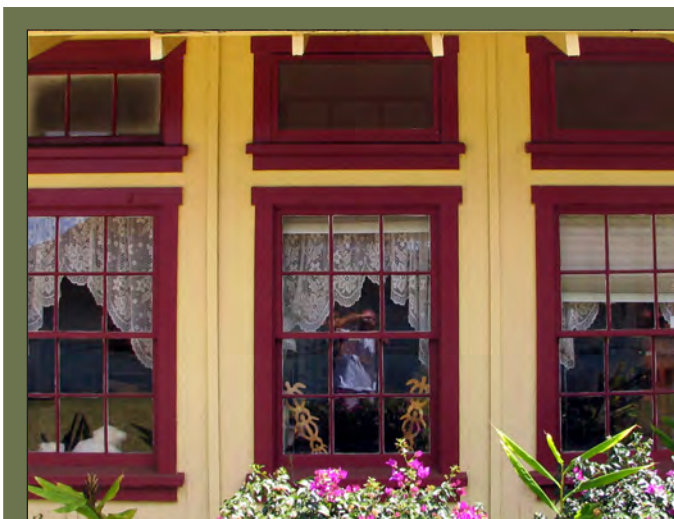
This new home's front porch is similar to the porches of neighboring historic buildings in terms of massing, proportions, materials, and details. Photos: Glenn Mason, Mason.



Instead of being replaced, these original storefront display windows were repaired in a way that preserved their historic character. Repair original windows when possible instead of replacing them. Photo: Stanley Solamillo.



This original storefront display window is unique and contributes to the character of this building.



These original double-hung windows with transoms are unique and contribute to the character of this building. Photo: Chris Hart & Partners.

WINDOWS

The design, placement, and arrangement of original windows help define the architectural style of a building.

The components of an original window can include: sash, muntins, lights (the glass part), sill, apron, and trim. These components are important to the character of an original window.

Because original windows are so important to the character of a building, their retention and treatment are critical design considerations. Historic buildings lose integrity when their original windows and window components are removed or replaced.

In Lāna'i City, historic commercial buildings have several different kinds of windows. The most common include: display, double-hung, and transom. These original windows are key architectural features.

Original windows and transoms should be preserved and maintained. Concealing, enclosing, or covering original windows should be avoided. If replacement windows are needed because of deterioration, they should match the original windows in size, design, and materials.

The guidelines below apply to **rehabilitation** projects:

1. Original windows and their components should be preserved and maintained.
 - A. Preserve the size, shape, and proportions of original window openings.
 - B. Do not change the position, pattern and arrangement of original windows at key facades.
 - C. Do not enclose original window openings.
 - D. Greater flexibility in the placement of new windows may be considered for facades that are not highly visible from the street.
2. Deteriorated windows should be repaired as needed.
 - A. Do not remove original windows that are in good condition or that can be repaired.
 - B. Repair frames and sashes rather than replacing them, whenever possible.
 - C. Consolidates or epoxies may be used to strengthen deteriorated wood.

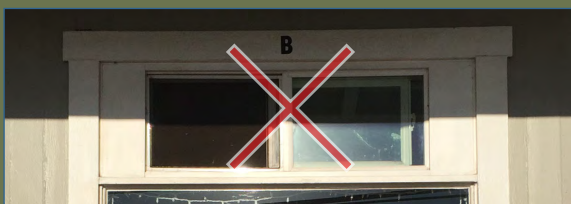
- D. Replace only those elements of an original window that are beyond repair.
3. Replacement windows should match the materials and appearance of the original windows.
- A. Replace original windows only when they are too deteriorated to repair.
 - B. When replacing an original window, retain as many of the original window components as possible, including the frame and trim.
 - C. Match the original windows in size, number, and arrangement of lights (pieces of glass).
 - D. Match the original window's exterior muntin pattern, profile, and size.
 - E. Do not use replacement windows with internal muntins sandwiched between layers of glass on facades that are visible from the main road.
 - F. Consult the additional resources on page 2:18 for tips on repairing original windows and selecting appropriate replacement windows.



A missing piece of glass does not mean the whole window needs to be replaced -- just replace that one missing piece.



Repair original windows when possible instead of replacing them. Photo: Stanley Solamillo.



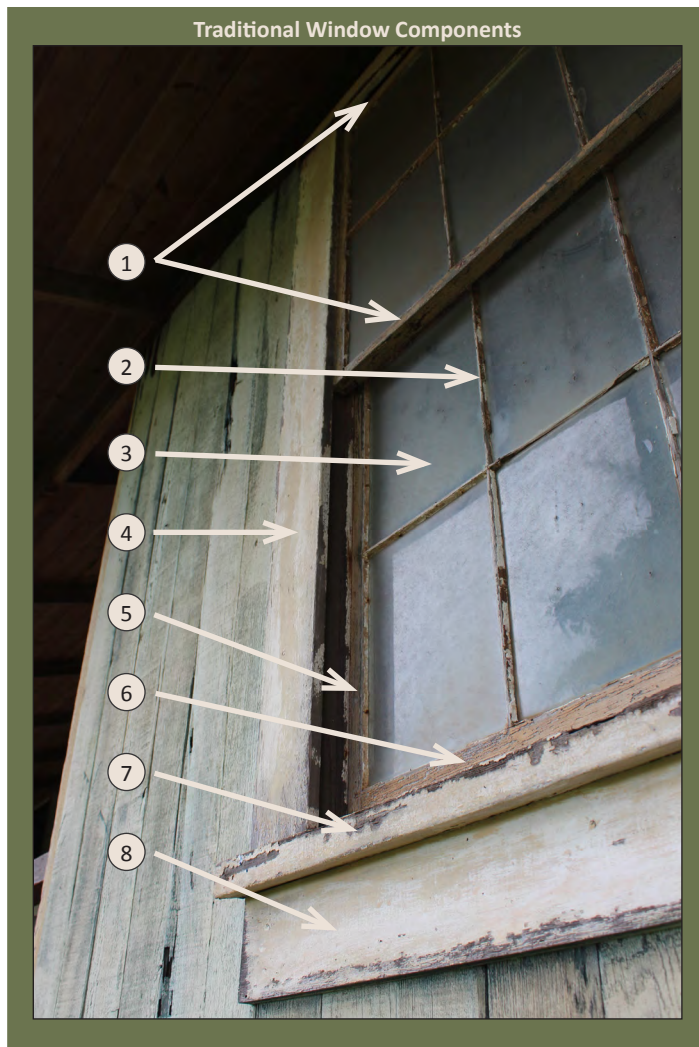
Do not board up or change the size and shape of an original transom window.



This facade's original windows and window components, including the trim, have been removed. The replacement windows are also a poor match for the originals.

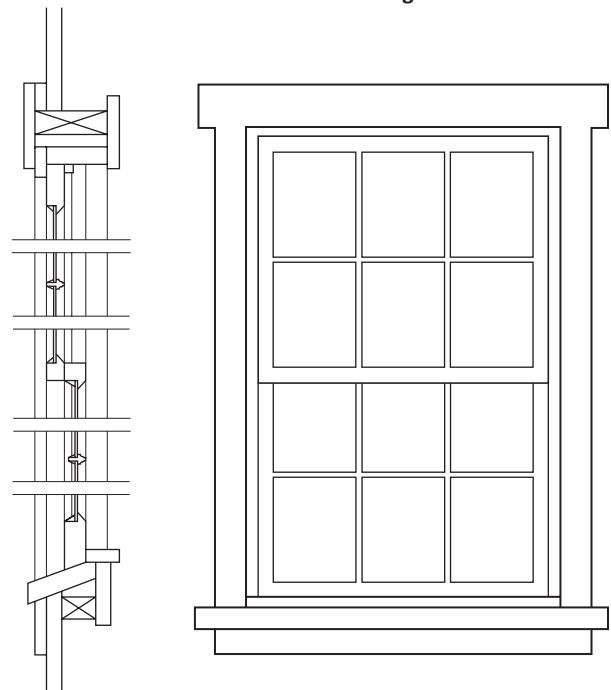


Do not change the shape or size of original window openings or use fake divided lights when replacement is necessary. Photo: sarehabberclub.com.



- | | |
|-------------------------------|---------|
| 1 Sash | 5 Stile |
| 2 Muntin | 6 Rail |
| 3 Light | 7 Sill |
| 4 Trim (also known as casing) | 8 Apron |

Traditional Window Diagram



Additional Resources for Windows

“Historic Design Guidelines, Windows: Repair, Replacement, and New Construction” (San Antonio: Office of Historic Preservation, City of San Antonio, 2015).

<https://www.sanantonio.gov/Portals/0/Files/HistoricPreservation/Windows%20Updated%20June%202017.pdf?ver=2017-06-14-163708-323>

John H. Meyers, Preservation Brief 9: *The Repair of Historic Wooden Windows* (Washington DC: Preservation Assistance Division, National Park Service, U.S. Department of the Interior, 1981).

<https://www.nps.gov/tps/how-to-preserve/briefs/9-wooden-windows.htm>

“How to Restore Sash Windows,” Old House Online (February 2010).

<https://www.oldhouseonline.com/articles/how-to-restore-sash-windows>

“Window Repair Tips from John Leeke,” Old House Online (May 2011).

<https://www.oldhouseonline.com/articles/window-repair-tips-from-john-leeke>

Janice Lew, *Rehab It Right! Historic Windows & Doors* (Salt Lake City: Utah Heritage Foundation, 2011).

https://preservationutah.org/images/Historic_Windows_and_Doors_Property_Owners_Guide.pdf

Regina Cole, “Don’t Buy Replacement Windows for Your Old House,” *Forbes* (July 17, 2018).

<https://www.forbes.com/sites/reginacole/2018/07/17/dont-buy-replacement-windows-for-your-old-house/#4da79b9662c0>

Claire Kelly, *Interpreting the Standards 23: Selecting New Windows to Replace Non-Historic Windows* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2001).

<http://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS23-ReplaceWindows.pdf>

“Replacement Windows That Meet the Standards,” Planning Successful Rehabilitation Projects, Technical Preservation Services, National Park Service, U.S. Department of the Interior, accessed September 2, 2018,

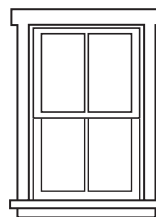
<https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/windows-replacement.htm>

The guidelines below apply to **addition** and **new construction** projects:

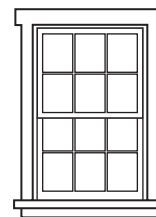
1. Windows should mimic the style and pattern of openings used in surrounding historic buildings.
2. Window openings should have a similar proportion of wall to window space as neighboring historic buildings.
3. Traditional window dimensions and profiles should be used.
4. Windows with internal muntins sandwiched between layers of glass should not be used on facades that are visible from the public-right-of-way.
5. Windows may be wood or wood like, provided the wood like material is similar in character and appearance to traditional wood windows.
6. Traditional window trim and sill details should be used.
7. Consult the additional resource below for tips on selecting appropriate windows for new construction.



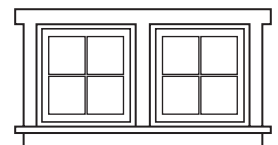
Examples of Windows Traditionally Found in Lāna'i City



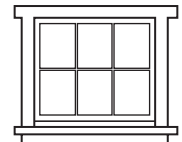
Two-over-two-light double-hung window



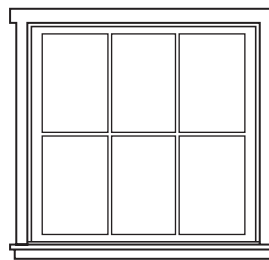
Six-over-six-light double-hung window



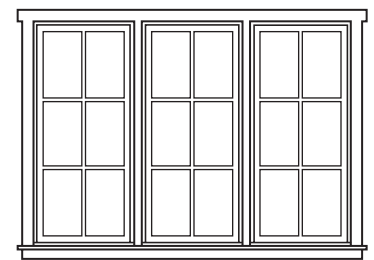
Eight-light horizontal sliding sash window



Six-light hopper window



Six-light display window



Eighteen-light display window

Additional Resource for Windows

"Historic Design Guidelines, Windows: Repair, Replacement, and New Construction" (San Antonio: Office of Historic Preservation, City of San Antonio, 2015).

<https://www.sanantonio.gov/Portals/0/Files/HistoricPreservation/Windows%20Updated%20June%202017.pdf?ver=2017-06-14-163708-323>



Yes



No

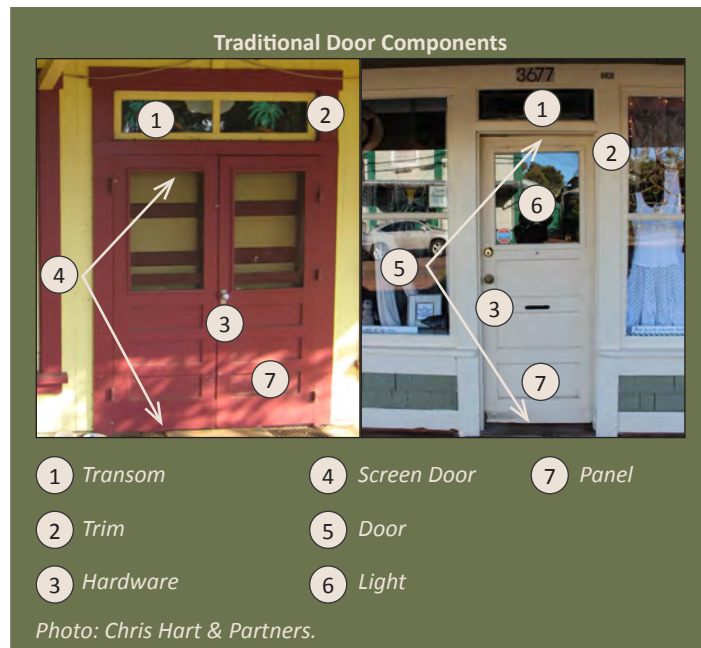


Yes



Yes

Use windows that reflect the style, pattern of openings, proportions of wall to window space, and trim details of surrounding historic buildings.



ENTRANCES AND DOORS

Original doors and entrances are key focal points of historic commercial buildings. For this reason, major changes to entrances or inappropriate replacement doors can damage the character of a historic building.

Original doors and entrances should be preserved and maintained. Enclosing an entrance or creating a new one at the front facade should be avoided. If damaged, original front doors should be repaired rather than replaced. If replacement doors are needed because of excessive deterioration, they should match the original in size, placement, design, details, and materials.

The guidelines below apply to **rehabilitation** projects:

1. Original doors and entrances should be preserved and maintained.
 - A. Preserve original doors and door components, especially on the main facade.
 - B. Do not change original doors and door components, including trim, lights, transoms, and hardware.
 - C. Do not fill or partially block original door openings on the main facade.
 - D. Do not cut new entrances at the front facade.
2. Deteriorated doors should be repaired as needed.
 - A. Do not remove original doors that are in good condition or that can be repaired.
 - B. When repairing original doors, use methods that retain their historic fabric and appearance, whenever possible.
 - C. Consolidates or epoxies may be used to strengthen deteriorated wood.
 - D. Consult the additional resources for tips on repairing original doors.
3. Replacement doors should match the materials and appearance of the original doors.
 - A. Replace original doors only when they are too deteriorated to repair.
 - B. When replacing an original door, retain as many of the original door components as possible, including the trim and frame.



- C. Match the original doors in materials and size.
- D. Match the original doors in design. If this is not possible, ensure replacement doors are consistent with the architectural style of the building.
- E. Do not replace original doors with stock Masonite doors that are widely available at big box hardware stores.
- F. Consult the additional resources for tips on selecting appropriate replacement doors.



Additional Resources for Entrances and Doors

Mike Zook, "How To: Restore an Antique Door," The Craftsman Blog with Scott Sidler, last modified January 18, 2013, <https://thecraftsmanblog.com/how-to-restore-an-antique-door/>

Janice Lew, *Rehab It Right! Historic Windows & Doors* (Salt Lake City: Utah Heritage Foundation, 2011). https://preservationutah.org/images/Historic_Windows_and_Doors_-_Property_Owners_Guide.pdf

Anne Grimmer, *Interpreting the Standards 4: Inappropriate Replacement Doors* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 1999). <https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS04-Doors-Replacement.pdf>

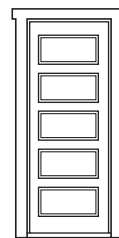
Anne Grimmer, *Interpreting the Standards 22: Adding New Entrances to Historic Buildings* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2001). <https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS22-NewEntrances.pdf>

Anne Grimmer, *Interpreting the Standards 21: New Openings on Secondary Elevations* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2001). <https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS21-NewOpenings-SecondaryElevations.pdf>

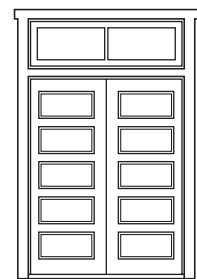
The guidelines below apply to **addition** and **new construction** projects:

1. Door openings should have a similar proportion of wall to door space as neighboring historic buildings.
2. Doors and door components, such as trim, lights, transoms, and hardware, should be similar in design and appearance to neighboring historic doors.
3. Doors may be wood or wood like, provided the wood like material is similar in character and appearance to traditional wood doors.

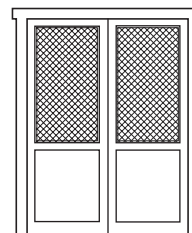
Examples of Doors Traditionally Found in Lāna'i City



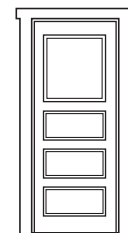
Five panel door



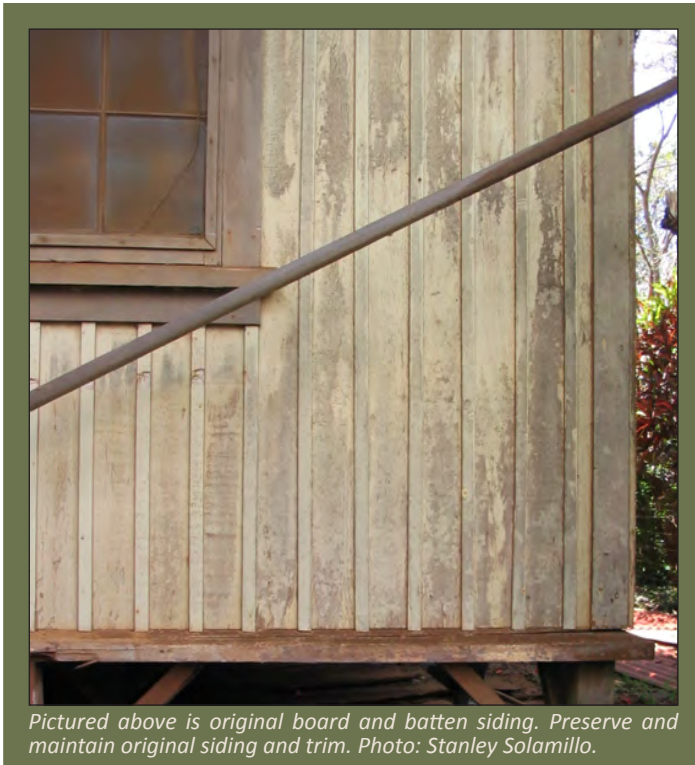
Five panel doors with transom



Screen doors with single panels



Single light door with three panels



Pictured above is original board and batten siding. Preserve and maintain original siding and trim. Photo: Stanley Solamillo.



Pictured above is original tongue and groove siding. Repair original siding when possible instead of replacing or covering it.

Though this siding is damaged, it can be repaired by selectively removing the rotten boards and replacing them with new boards that match the originals in texture, material, and dimensions.

SIDING

Original wood siding and trim can last for a long time if regularly maintained and repaired as needed. The scale, texture, and finish of original wood siding and trim contribute to the historic character of a building. Similarly, original metal siding, like the corrugated metal on Dole Fleet, can withstand years of use if properly maintained. Original metal siding also contributes to the character of historic buildings in Lānaʻi City.

Original siding and trim should be preserved and maintained. Damage and deterioration should be prevented through routine maintenance and repair. If damaged, original siding should be repaired or replaced with material that matches the original.

The guidelines below apply to **rehabilitation** projects:

1. Original siding and trim should be preserved and maintained.
 - A. Maintain a good coat of paint on historically-painted siding to minimize damage from the elements.
 - B. Properly prepare the surface before applying new paint.
 - C. Regularly inspect wood-framed buildings for termites and other wood-eating pests.
 - D. Professionally fumigate the building if termites are an issue.
 - E. Do not let landscaping (including trees, vines, shrubs, and flowers) grow on or too close to the building.
 - F. Make sure there is a buffer between landscaping and the building.
 - G. Make sure water is properly draining away from the building to minimize decay.
 - H. Clean original siding and trim using the gentlest means possible.
 - I. Do not use abrasive cleaning techniques like power washing or sandblasting.
 - J. Consult the additional resources for tips on maintaining original siding.

2. Deteriorated siding and trim should be repaired as needed.
 - A. Do not remove original siding and trim that can be repaired.
 - B. Repair wood siding and trim using consolidates, epoxies, wood patches, or other methods that retain their historic appearance.
 - C. Consult the additional resources for tips on repairing wood siding.
3. Replacement siding and trim should match the material and appearance of the original siding.
 - A. Selectively replace original siding and trim only when they are too deteriorated to repair.
 - B. Match the original siding and trim in material, texture, and dimensions.
 - C. Do not replace or cover original siding with vinyl, aluminum, or T 1-11 siding.

Additional Resources for Siding

Sharon C. Park, FAIA, *Preservation Brief 47: Maintaining the Exterior of Small and Medium Size Historic Buildings* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 2007).

<https://www.nps.gov/tps/how-to-preserve/briefs/47-maintaining-exterior.htm>

Jason Carpenter, "Patching Wood Siding," This Old House.

<https://www.thisoldhouse.com/how-to/patching-wood-siding>

John H. Myers, *Preservation Brief 8: Aluminum and Vinyl Siding on Historic Buildings – The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings* (Washington DC: Technical Preservation Services, National Park Service, U.S. Department of the Interior, 1987).

<https://www.nps.gov/tps/how-to-preserve/briefs/8-aluminum-vinyl-siding.htm>



Do not cover original siding with T 1-11.



Do not cover original siding with vinyl.

The guidelines below apply to **addition** and **new construction** projects:

1. Siding should resemble the appearance of vertical tongue and groove boards, board and batten, or corrugated metal.
2. Tongue and groove and board and batten siding may be wood or wood like, provided the wood like material is similar in character and appearance to traditional wood siding.
 - A. Do not use T 1-11, vinyl, or aluminum siding.
 - B. Hardie Board may be used if it resembles the proportions and textures of traditional wood siding.
3. Trim should resemble the appearance and proportions of traditional trim.



The this new home's board and batten siding resembles the appearance of siding traditionally found in Lāna'i City. Photo: Glenn Mason, Mason.

Traditional Architectural Ornamentation



Photo: Stanley Solamillo.



1 Exposed Rafter Tails

4 Trim

2 Brackets

5 Column

3 Gable Vents

6 Balustrades and Railings

ARCHITECTURAL ORNAMENTATION

Historic architectural ornamentation, including gable vents, brackets, and window trim help define the character of a historic building. These elements exhibit special craftsmanship and add visual interest.

Original architectural ornamentation should be preserved and maintained. Removing or concealing historic architectural ornamentation should be avoided. If replacement is necessary, the replacement should match the material, design, color, and texture of the original ornamentation as closely as possible.

The guidelines below apply to **rehabilitation** projects:

1. Original architectural ornamentation should be preserved and maintained.
 - A. Maintain original ornamentation so that repair or replacement is not needed.
 - B. Maintenance can include limited paint removal and repainting as well as making sure that water is properly draining from the roof and away from the foundation.
2. Deteriorated architectural ornamentation should be repaired as needed.
 - A. Do not remove architectural ornamentation that can be repaired.
 - B. Repair wood ornamentation using consolidates, epoxies, wood patches, or other methods that retain its historic appearance.



3. Replacement ornamentation should match the material and appearance of the original ornamentation.
 - A. Replace original ornamentation only when it is too deteriorated to repair.
 - B. Use photographic or physical evidence to substantiate the design of replacement ornamentation.
 - C. Match the original ornamentation's scale, proportion, finish, dimensions, and appearance.
 - D. Do not add ornamentation where it did not historically exist.
 - E. Do not introduce ornamentation that is not in keeping with the architectural style of the building.



The guidelines below apply to **addition** and **new construction** projects:

1. Architectural ornamentation should be in keeping with architectural style of the neighboring historic buildings.
2. Ornamentation should be simple in design and should complement, not compete with the architectural character of neighboring historic buildings.
3. Ornamentation should not be more ornate or elaborate than ornamentation found in the district.
4. Ornamentation should reflect the size and shape of ornamentation found in the district.
5. Ornamentation may be wood or wood like, provided the wood like material is similar in character and appearance to traditional wood ornamentation.



Lead Paint Safety Precautions

Keep in mind that older buildings often contain lead-based paints. Before beginning work, consult different recommendations for lead safe working practices. Lead-based paint is not considered a reason to remove and replace historic, character-defining materials or features, including windows, doors, and trim. There are remedial techniques that can be used to safely remove or encapsulate lead-based paint.

For more information on working with lead-based paints, consult the following sources:

Environmental Protection Agency:

www.epa.gov/lead

National Park Service:

<https://www.nps.gov/tps/how-to-preserve/briefs/37-lead-paint-hazards.htm>

PAINT COLOR

Paint protects building materials like wood from the elements and pests. Although it is an important protective layer that prolongs the life of building materials, it is subject to deterioration and requires periodic reapplication to maintain its protective qualities. In addition to paint's protective qualities, its color can affect how a building is perceived and its contribution to its setting. For this reason, paint is an important design consideration.

The guidelines below apply to **all projects**:

1. Roof, siding, and trim may be painted contrasting colors.
2. Paint colors should be compatible and consistent with those present in the commercial area surrounding Dole Park.
3. Consult the additional resource and lead paint safety precautions for tips on selecting paint colors and working with lead-based paint.

Additional Resource for Paint Color

Scott Sidler, "Choosing Exterior Paint Colors for Your Historic House," The Craftsman Blog with Scott Sidler, last modified February 6, 2012,

<https://thecraftsmanblog.com/choosing-exterior-paint-colors-for-your-historic-house/>



3 STREETSCAPE DESIGN GUIDELINES

STREET FURNITURE

Street furniture refers to elements such as trash cans, benches, and tables that are located on public sidewalks. Street furniture does not include patio furniture placed in front of businesses. In urban areas, sidewalks are often wide enough to accommodate both pedestrians and street furniture. One of Lānaʻi City's special qualities is its rural streetscape, which includes narrow sidewalks at select locations surrounding Dole Park.

1. Street furniture should only be installed where the sidewalk is wide enough to accommodate these elements while allowing enough space for pedestrians to walk.
2. Street furniture should have a simple, contemporary design that is compatible with the scale, style, and texture of the surrounding historic buildings. Historic designs from other locations should not be introduced.
3. Street furniture may be constructed of wood or metal and should be painted neutral colors to avoid detracting attention from the surrounding historic buildings and streetscape.
4. Street furniture should be consistent throughout the district.

FENCES

Although fences are not common today in the Country Town Business District, they were historically used in this area, and they may be appropriate in certain locations.

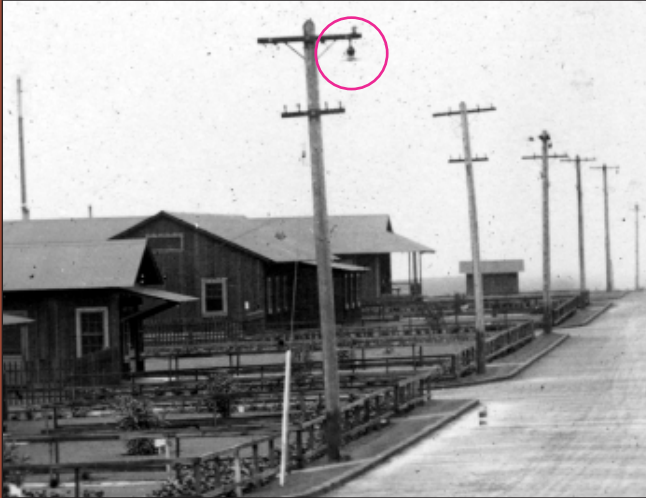
1. Fences may be allowed for public health and safety.
2. Fences should be made of wood, preferably with either wood slats or pickets, so as to not present the appearance of a solid wall.
3. Fences should be stained or painted a neutral color.
4. Fences should be limited to 3 feet in height.
5. Chain link fences are discouraged and may only be used in combination with hedges or other landscape screening.
6. Low (3 feet in height or less) rock walls may be appropriate in areas that do not front Dole Park.



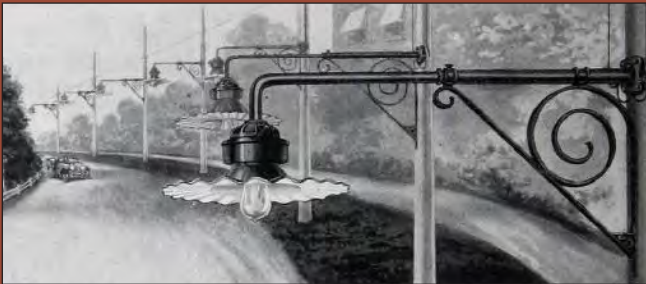
The sidewalks in the Country Town Business District are not wide enough to accommodate street furniture, so some businesses put patio furniture in their front yards.



1920s photos showing fences and hedges in Lānaʻi City. Photos: Bishop Museum and Lānaʻi Culture & Heritage Center.



1926 photo showing a street light attached to a utility pole. This is still done in Lānaʻi City today. Photo: Lānaʻi Culture & Heritage Center.



These fixtures are similar in design to the street lights historically used in Lānaʻi City. Image: George Cutter Co., 1919, uploaded to the APT Heritage Library on July 19, 2011.

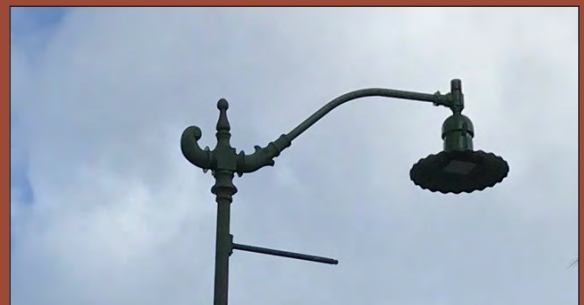
STREET LIGHTS

Street lights in Lānaʻi City should be selected and located to provide visibility and to increase public safety, but also to control glare and light trespass. Intense lighting and maximum frequency is not typical of the rural quality of Lānaʻi City. Many street light fixtures are attached to utility poles. Chapter 20.35, Maui County Code, regulates outdoor lighting. In addition:

1. Lower level lighting or pathway lighting should use standards with luminaries placed at 8 to 15 feet above grade or bollards of approximately 30 inches in height.
2. The light source should be directed at less than 90-degree cutoff downwards, illuminating the path and any ground cover plants.
3. Light sources should be shielded so that no light is emitted above a horizontal line parallel to the ground.
4. Street light improvements should be compatible with the character of the town.
 - A. Consider installing new fixtures based on designs historically used in the town. These designs should be substantiated by historic photos and other archival documentation.



All of the historic street lights in Lānaʻi City have been replaced with these modern "cobra head" fixtures. As these fixtures reach the end of their lives, consideration should be given to installing new fixtures that are more historically accurate and compatible with the character of the town. Photo: Stanley Solamillo.



This modern fixture is similar in design to the fixtures historically used in Lānaʻi City.

PART III
APPENDICES

APPENDIX A: COUNTRY TOWN ORDINANCES

PART 1: CHAPTER 19.15, MAUI COUNTY CODE – COUNTRY TOWN BUSINESS DISTRICTS

Sections:

Footnotes:

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Editor's note— Ord. No. 4153, § 1, adopted in 2014, amended former Ch. 19.15, §§ 19.15.010—19.15.060, in its entirety which pertained to similar subject matter and derived from Ord. No. 1629, § 2, 1987; Ord. No. 2609, § 4, 1997; Ord. No. 3417, § 1, 2006; Ord. No. 3622, § 4, 2009; Ord. No. 3941, § 1, 2006.

19.15.010 - Purpose and intent.

- A. The B-CT country town business district is intended to establish development standards for businesses in smaller and/or more remote communities.
- B. It is intended that the unique design character of these business districts be preserved and maintained to promote the "country town" atmosphere of these communities in Maui County.
- C. This B-CT country town business district zoning ordinance establishes the means of implementing various provisions of Maui County community plans. Provisions in such community plans promote retention of certain aspects of the lifestyle that have developed over the years in the commercial areas of small and remote communities throughout Maui County. These communities traditionally feature single-unit retail establishments in separate buildings or units with a shared common wall. Structures, generally, are small in scale, oriented in heights to a pedestrian scale, and rustic in design. These areas differ from larger, modern urban centers that feature shopping centers and business establishments that utilize on-site parking.

Examples of the country town concept are commercial areas of such communities as Makawao-Pukalani-Kula, Paia-Haiku, Hana, Lanai City, and Molokai. Other areas on the fringes of larger urban concentrations, however, may qualify for B-CT country town business district zoning if consistent with the applicable community plan. The decision as to which areas, in detail, are appropriate for this zoning category is dependent on numerous variables and involves both subjective and objective considerations.

(Ord. No. 4153, § 1, 2014)

19.15.020 - Permitted uses.

Within the B-CT country town business district, the following uses shall be permitted:

Permitted uses	Criteria or limitations
Amusement and recreational activities	Conducted wholly within a completely enclosed building
Animal hospitals, including boarding	
Art and music studios	

Auditoriums, theaters, gymnasiums including fitness centers, private clubs and dance halls	
Automobile services	
Bed and breakfast homes, in lawfully existing single-family dwellings	Subject to the restrictions and standards of section 19.64.030 of this code
Buildings and premises used, owned, or operated by government agencies, including community centers	
Combinations of dwelling units with other permitted uses in the same building	Except on Molokai
Communication equipment and antennae	Provided that it is part of or supported by a building
Day care facilities	Except on Molokai
Eating and drinking establishments	
Educational institutions	
Education, specialized	
Farmer's markets	
General merchandising	
General office	
Hardware, feed, and garden stores	Provided, that feed and fertilizer are kept within an enclosed building
Home occupations	Within lawfully existing single-family dwellings
Libraries	

Multifamily dwellings, duplexes, and bungalow courts	Except on Lanai and Molokai
Museums	
Parking lots	
Personal and business service	Except for dry cleaning on Lanai. Printing establishments shall be conducted within an enclosed building
Pet shops	
Recycling collection center	Conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected
Redemption center	
Religious, benevolent, or philanthropic societies, civic organizations, and quasi-public uses	
Short-term rental homes, in lawfully existing single-family dwellings	Subject to the restrictions and standards of chapter 19.65 of this code
Swap meet or open air market	
Taxicab, car rental, and U-drive stations and offices	
Warehouse facilities associated with a permitted use within the district	
Other similar businesses or commercial enterprises or activities that are not detrimental to the welfare of the surrounding area	Provided that such uses shall be approved by the appropriate planning commission as conforming to the intent of this article

19.15.025 - Accessory uses.

- A. The following uses, located on the same lot, are deemed accessory, customary, incidental, usual, and necessary to the permitted uses in the B-CT country town business district:

Accessory uses	Criteria or limitations
Energy systems, small-scale	Provided there will be no detrimental or nuisance effect upon neighbors
Food and agricultural product manufacturing and processing	Provided, that the manufacturing and processing is primarily associated with a permitted use under section 19.15.020 and wholly contained within a completely enclosed building and the goods are sold exclusively on site; and provided there will be no detrimental or nuisance effect upon the surrounding area
Garages, porte-cochere, mail boxes and trash enclosures	
Light manufacturing such as leather crafting, sewing or candle making	Provided, that the light manufacturing is primarily associated with a permitted use under section 19.15.020 and wholly contained within a completely enclosed building and the goods are sold exclusively on site; and provided there will be no detrimental or nuisance effect upon the surrounding area
Other uses that are determined by the director of planning to be clearly incidental and customary to a permitted use	

- B. The following uses, located on a nearby lot, are also deemed accessory, customary, incidental, usual, and necessary to the permitted uses in the B-CT country town business district:

Accessory uses	Criteria or limitations
Energy systems, small-scale	Provided the system is within a distance of four hundred feet of the nearest point of the lot it serves and there will be no detrimental or nuisance effect upon neighbors

(Ord. No. 4153, § 1, 2014)

19.15.030 - Special uses.

The following are special uses in the B-CT country town business district, and approval of the appropriate planning commission shall be obtained, upon conformance with the intent of this article and subject to such terms and conditions as may be warranted and required:

Special uses	Criteria or limitations
Public utility substations	Provided there will be no detrimental or nuisance effect upon neighbors
Storage facilities not associated with a permitted use within the district	
Telecommunication offices and facilities	Provided, that all exterior telecommunication equipment shall be set back at least twenty-five feet from any property line and that such telecommunication equipment shall be screened from public view by appropriate means, including, but not limited to, landscape planting
Transient vacation rentals	One to twelve bedrooms
Upholstery, canvas, sign painting, and surfboard making shops	Conducted wholly within a completely enclosed building
Vehicle bodywork, frame or body parts straightening, steam cleaning, painting, welding, storage of non-operating vehicles, and tire recapping or re-grooving	Conducted wholly within a completely enclosed building
Other uses that are similar in character to permitted and special uses and consistent with the unique character, identity, and needs of the country town, and that are not detrimental to the welfare of the surrounding area	

(Ord. No. 4153, § 1, 2014)

19.15.040 - Development standards.

The development standards for the B-CT country town business district shall be as follows, unless otherwise specified in adopted design guidelines pursuant to section 19.510.100:

DEVELOPMENT STANDARDS		
	B-CT	Notes and exceptions
Minimum lot area (square feet)	6,000	
Minimum lot width (in feet)	60	
Maximum building height (in feet)	35	Except that vent pipes, fans, chimneys, antennae, and equipment used for small-scale energy systems on roofs shall not exceed forty-five feet
Minimum front yard building setback or build to line	None for buildings	Unless specified by adopted design guidelines
Minimum side and rear yard building setback or build to line	Where the side or rear of a lot abuts a lot in any zoning district that requires a setback, the abutting side or rear yard shall have the same yard setback as required in the abutting district	
Maximum height and minimum setback for freestanding antennae or wind turbine structures	Minimum setback of one foot for each foot in height, from all property lines	
Design review	All buildings and structures shall be erected, constructed, reconstructed, renovated, remodeled, enlarged or converted in a similar and compatible	

	architectural design character with that of surrounding commercial buildings. It is intended that an identifiable and unified urban design theme be retained within each B-CT country town business district. The urban design theme shall be in conformance with established design guidelines and standards for each community as reviewed by the commission, and adopted by resolution. Except as necessary to protect public health, safety and welfare, where a conflict exists between adopted country town business district design guidelines and standards, and the Maui County Code, the design guidelines and standards shall prevail	
Substandard buildings	Buildings on existing substandard lots may be reconstructed on the established building footprint where the director of planning determines, in accordance with established design guidelines, that such reconstruction does not detrimentally affect the character of the district	

(Ord. No. 4153, § 1, 2014)

19.15.050 - Rule making authority.

The director of planning may adopt rules to implement this chapter.

(Ord. No. 4153, § 1, 2014)

PART 2: SECTIONS 100 - 130 OF CHAPTER 19.510.100, MAUI COUNTY CODE – APPLICATION AND PROCEDURES**19.510.100 - Country town business district design guidelines.**

Purpose. The purpose of country town business district design guidelines is to insure that all buildings and structures shall be erected, constructed, reconstructed, renovated, remodeled, enlarged, or converted in a similar and compatible architectural design character with that of surrounding buildings. It is intended that an identifiable and unified design theme be retained within each B-CT country town business district. Except as necessary to protect public health, safety and welfare, where a conflict exists between adopted country town business district design guidelines and standards, and this code, the design guidelines and standards shall prevail.

(Ord. No. 4153, § 2, 2014)

19.510.110 - Establishment of country town business district design guidelines and standards.

- A. Each small town within Maui County that incorporates country town business districts shall establish design guidelines and standards.
- B. Review of country town business district design guidelines and standards by the appropriate planning commission shall include:
 - 1. Review and comment by the urban design review board;
 - 2. An advertised public meeting in the respective country town; and
 - 3. A public hearing held by the appropriate planning commission. The director of planning shall publish the notice of the date, time, place, and subject matter of the public hearing once in a newspaper printed and issued at least twice weekly in the County and which is generally circulated throughout the County at least thirty calendar days prior to the date of the public hearing.
- C. In developing site design guidelines and standards, consideration shall be given to functional and spatial relationships with surrounding uses, and landscape planting in the aesthetic continuity of surrounding sites.
- D. In developing architectural design guidelines and standards, consideration shall be given to: the existing variety of form and massing of elements; the size and proportions of surrounding structures; the predominant directional expression of nearby buildings; the articulation of main building entrances; the roof forms and composition of structures found in the area; the recurrent alteration of wall areas with door and window elements in facades; and the building materials, texture, and color schemes of surrounding buildings.
- E. The design guidelines and standards shall be adopted by resolution by the council.

(Ord. No. 4153, § 2, 2014)

19.510.120 - Administration and review of proposals.

- A. Adopted country town business district design guidelines and standards shall be administered by the director of planning; however, approved drainage and roadway guidelines and standards shall be administered by the director of public works. Design plans for improvements within the B-CT country town business districts shall be approved by the director of planning in accordance with established guidelines or the architectural character of existing town design until such time as guidelines are approved for an area.
- B. Pending adoption by the council of the country town business district design guidelines and standards required under section 19.510.110, the director of planning shall review all proposals so as to enhance design features of country towns and shall consider the following factors in the review:

1. Siting should reflect the functional and spatial relationships with surrounding uses, including preservation of scenic and historic view corridors;
2. Landscape planting should enhance the aesthetic continuity of surrounding sites;
3. Building massing should be compatible with the existing variety of form and massing elements;
4. Building scale should respect the size and proportions of surrounding structures;
5. Directional orientation should foster the relationship of the predominant directional expression of nearby buildings;
6. Entry features should reflect the manner of articulation of main building entrances;
7. Roof form and composition should be compatible with that of structures found in the area;
8. Patterns of facade openings should be compatible with the recurrent alteration of wall areas with door and window elements; and
9. The use of building material type, texture, and color schemes should be compatible with those of surrounding buildings.

(Ord. No. 4153, § 2, 2014)

19.510.130 - Appeal.

- A. An applicant may appeal a final determination on a design plan made by the director of planning pursuant to section 19.510.120 by filing a notice of appeal with the appropriate planning commission within ten days after such final determination. Upon review, the planning commission may affirm the decision of the director of planning or reverse or modify the director of planning's decision if:
 1. The decision was based on a clearly erroneous finding of a material fact or error of law; or
 2. The decision was arbitrary, or capricious, or characterized by abuse of discretion; or
 3. The proposed design plan maintains the design integrity of the B-CT country town business district.
- B. The appeal of the director's determination shall be placed on the next available commission agenda as a non-public hearing item.

(Ord. No. 4153, § 2, 2014)

APPENDIX B: CHAPTER 10 – 2016 LĀNAʻI COMMUNITY PLAN

10 | URBAN DESIGN

A. INTRODUCTION

Lānaʻi City was originally conceived by James Dole as a new town in 1923. Today, it is the last intact plantation town in the State. Built to be a self-sufficient company town, Lānaʻi City is centered around the rectangular shaped Dole Park, with most of the town's commercial and civic properties facing the park, surrounded by a grid pattern of residential streets with modest plantation houses on small lots. Most of the plantation-style structures were built between 1927 and 1938. One of the most significant character-defining elements of Lānaʻi City is the abundant plantings of Cook Island Pines throughout the town. Now that the mature trees are 60 to 100 feet tall, the town has the unique ambiance of being nestled in a forest. The landscaping, the rectilinear street pattern, the centralized commercial land uses around a large green park, and the small scale of the buildings embodies many of the best qualities of late nineteenth, early twentieth century American town planning.

Existing Conditions

In 2009, the National Trust for Historic Preservation included Lānaʻi City on its list of the Top Ten "Most Endangered" historic sites in the United States. Most of Lānaʻi City's original structures are still standing; however, in recent years some buildings, both commercial and residential, have been demolished and replaced with new construction. There are also a number of structures that are empty and falling into substantial disrepair, becoming so termite infested that they may not be renovated and restored, resulting in what has become known as "demolition by neglect." Residents of Lānaʻi greatly value the unique character of their town and would like to see the town's design character maintained and enhanced, while also allowing for improvements for safety, efficiency, expansion, and viability. The Cook Island Pines that were planted throughout Lānaʻi City are now mature and some are reaching the end of their lifespans. Some trees will have to be cut down and replaced as they age, become diseased, or create risks to property.

There are design guidelines for the B-CT District of Lānaʻi City. The other settlements on the island, the Kōʻele and Mānele PDs, also have their own design standards and guidelines under their PD ordinances.

10 | URBAN DESIGN

Growth and Expansion of Lānaʻi City

The next 20 to 30 years will likely see considerable growth and expansion of Lānaʻi City as well as the creation of new areas of development (Mānele Mauka Village and Kaumālapaʻu Harbor Village). Even before Pūlama Lānaʻi announced conceptual plans to expand Lānaʻi City, there were three major development projects proposed (or ongoing) on the northwest edge of Lānaʻi City: the DHHL subdivision, the Lānaʻi High and Elementary School campus expansion, and the County's affordable housing project. With a combined total of over 150 acres, these three projects represent a sizeable extension of the existing town. In 2013, Pūlama Lānaʻi initiated conceptual plans to expand Lānaʻi City to the west and north. The expansion is intended to accommodate the existing need for non-resort housing, including affordable and non-market rate housing at a variety of price points, and additional commercial space, as well as future needs associated with the anticipated growth in economic activity and population. The projects will be constructed in phases over the next 25 years and will require infrastructure upgrades and expansions and coordinated urban design.

Streetscape and Landscaping Principles

Section 2.80B.070(E)(15), MCC, requires the community plan to contain a "list of streetscape and landscaping principles and desired streetscape and landscaping improvements." The Lānaʻi City Country Town Business District Design Guidelines and Standards 2011 provide guidelines and standards for streetscape, landscaping, and planting within the Lānaʻi City B-CT district that can also be applied to areas outside the B-CT district. The streetscape and landscaping principles of this community plan shall be the streetscape, landscaping, and planting guidelines and standards of the Lānaʻi City Country Town Business District Design Guidelines and Standards 2011, and any of its subsequent updates.

Streetscape and landscaping improvements typically occur with new development or redevelopment. Therefore, the policies and actions within the chapter are intended to provide general guidance on the streetscape and landscaping improvements desired by the community.

Urban and Rural Design Principles

Section 2.80B.070(E)(6), MCC, requires the community plan to contain a "statement of urban and/or rural design principles and objectives for the community plan area." Figure 10.1, Urban and Rural Design Principles, fulfills this requirement by identifying the key concepts that affect the character of Lānaʻi. These principles apply to the entire island and address design features such as streets, public spaces, building orientation, and parking. The goals, policies, and actions in this chapter provide direction for implementing the Urban and Rural Design Principles.

10 | URBAN DESIGN

Urban and Rural Design Principles

1. **Preserve and maintain the features of the built and natural landscape that give the island its distinctive character.** Some of the character-defining features include the wide open spaces in the center of the island, the iconic rows of Cook Island Pines, the historic quality of Lānaʻi City, and development concentrated in specific areas.
2. **The design of newly developed areas should be visually compatible with the landscape the character of the island and existing development.** New development should reflect the island's architectural history, character, climate, and landscape.
3. **Maintain and enhance the town's historic character.** The historic character of the town is one of its most distinguishing features. As a result, the renovation and preservation of historic structures is encouraged. Also, new buildings and other improvements should be designed to complement and enhance the town's historic character.
4. **Mixed-Use.** Strive for a balance of housing, jobs, shopping, recreation, and civic uses in Lānaʻi City. Establish the town as a lively place to be during the week, on the weekends, at night, and for special events.
5. **Walkability.** Create a comprehensive network of travel options, with an emphasis on the pedestrian experience. Sidewalks, walkways, and greenways should link land uses and offer a safe, inviting, and comfortable walking experience.
6. **Street Connectivity.** Street networks should continue the existing grid network and contain multiple paths for efficient circulation. New streets should connect to the existing street network in all adjoining areas where practical. Dead-end streets and cul-de-sacs should only be allowed when required by topographic constraints or when connectivity is prevented by conditions on adjoining properties.
7. **Public Realm.** The town's streets, sidewalks, parks, and other open spaces collectively comprise the public realm. These features provide public gathering places and the physical framework around which buildings and other improvements are made. The design of the public realm should create a sense of community, safety, and pedestrian activity.

10 | URBAN DESIGN

Urban and Rural Design Principles (continued)

8. **Building Orientation.** In commercial areas, buildings should be oriented toward the street, creating a connection between the private elements of the town and the public realm. Principal entries to buildings should face public spaces such as streets, parks, or plazas instead of facing parking lots.
9. **Parking.** Parking in commercial areas should be either on-street or behind buildings to prevent a field of parking in front of buildings. Parking lots should be designed for pedestrians and cars, and should include pathways and trees.
10. **Apply appropriate development and design standards.** Until such time as the Lāna'i City Country Town Business District Design Standards are adopted by the Council, the following planning standard applies to development and design. Building height is limited to two stories or 30 feet above grade except as follows: (1) buildings within heavy industrial areas may be as high as 40 feet and may exceed this height subject to design review by the County; and (2) buildings within business/commercial areas surrounding Dole Park shall not exceed one story in height.

Figure 10.1 Urban and Rural Design Principles

B. ISSUES AND STRATEGIES

Issue 1: The array, quality, and integrity of the historic structures that make up the core of Lāna'i City are threatened by inadequate maintenance, demolition, and renovation without care for historic character.

Strategy 1: Protect Lāna'i City's unique small-town character and plantation heritage by supporting collaborative efforts to develop a vision and master plan for Lāna'i City that includes preservation of historic structures in the B-CT District.

Issue 2: Lāna'i City's intact and unique plantation era historic character could be compromised by inappropriate new development and insensitive renovation of existing structures.

Strategy 2A: Review, revise, and enhance as necessary the B-CT design guidelines for Lāna'i City to provide more detailed guidance for new construction as well as renovation

10 | URBAN DESIGN

and reconstruction of existing structures. Review and amend the B-CT zoning ordinance to allow flexible adaptive reuse.

Strategy 2B: Develop design guidelines for new structures not only in the Lānaʻi City B-CT District but also outside of the B-CT District to provide guidance on appropriate form, scale, architectural character, details, and materials.

Strategy 2C: Many Lānaʻi residents would like to ensure the urban design of the town expansion provides a similar “sense of place” and quality of life to the existing town. Encourage Pūlama Lānaʻi to collaborate with the community and the County on the development of site plans, building types, planning and design standards, and design guidelines for any expansion of Lānaʻi City, as well as for any new development areas, through interactive public design workshops.

Issue 3: County standard parking requirements for commercial operations make it expensive and difficult to obtain building permits and yet, there is ample parking surrounding Dole Park for the adjacent businesses and institutions, making the requirement for onsite parking for each business unnecessary.

Strategy 3: Create a comprehensive parking strategy for Lānaʻi City and develop and adopt less restrictive parking requirements as part of the revised Lānaʻi City B-CT design guidelines which would allow businesses to utilize public parking surrounding Dole Park instead of developing new parking spaces on site. Review and amend the B-CT zoning ordinance to be consistent with proposed guidelines.

Issue 4: The rural character of Lānaʻi City’s streetscapes will be compromised by the imposition of modern street design standards. Lānaʻi’s rural design character is dependent upon, in large part, its rural streetscapes, street design, and road network configuration. Previous expansions of Lānaʻi City have utilized curvilinear street network forms, breaking the rectilinear grid and intimate scale of Lānaʻi City’s small-town streets. Modern/contemporary street design standards, which include requirements for curb and gutter, wide concrete sidewalks, and wider lane and street widths, have been used in newer areas of town and create a very different urban design pattern and ‘sense of place’ from older areas of town.

Strategy 4: Develop and adopt by ordinance specific rural and small-town street design standards, as well as streetscape guidelines, for Lānaʻi to govern both existing areas and new development areas. These standards and guidelines would permit context sensitive street design, such as streets without wide concrete sidewalks and formal curbs and gutters, and maintenance of the small-town streetscapes found in Lānaʻi City. They would also maintain, where possible, the overall street grid pattern for Lānaʻi City.

10 | URBAN DESIGN

Issue 5: Loss of the array of Cook Island Pines in Lānaʻi City from age or disease would significantly alter the character of the town.

Strategy 5: Work with appropriate agencies, NGOs, and the community to prepare a management and replanting plan for the Cook Island Pines throughout Lānaʻi City. Explore options for appropriate alternative tree species, depending on location and site. Cook Pines could be replanted if appropriate for that location, or native and noninvasive species could be used.

Issue 6: Non-native landscaping in settled areas can consume precious water resources and may introduce invasive species.

Strategy 6: Support the development of a street tree planting plan for existing areas and new development. Distribute a guidance document for homeowners and landowners to address both new and existing landscapes that would promote the use of non-invasive, drought-tolerant, and climatic-zoned native plants wherever possible.

Issue 7: Parks in Lānaʻi City are concentrated in the central area; outlying neighborhoods are lacking park facilities.

Strategy 7: Ensure the expansion of Lānaʻi City or development of new residential areas provides for adequate parks and open spaces, as required by Title 18, MCC.

Issue 8: Unshielded street lights and playfield lighting cause glare and light pollution that not only detract from the rural character of Lānaʻi, but also cause problems for migrating and nesting seabirds.

Strategy 8: Ensure street lighting is minimized and street lights use shielding to prevent unnecessary light pollution.

C. GOAL, POLICIES, ACTIONS

GOAL Lānaʻi will retain and enhance its urban design character, which is unique in the State.

Policies

1. Maintain and enhance the traditional small-town streetscape design and rural road character in Lānaʻi City and outside of town.

10 | URBAN DESIGN

2. Enhance the landscape of Lānaʻi City and other settlement areas through the use of native or other appropriate landscaping, such as using non-invasive and drought-tolerant plants.
3. Ensure the character of new development within and around Lānaʻi City respects and enhances the urban design character of the plantation town by utilizing appropriate design guidelines, including expansion of the grid street network.
4. Ensure the urban and architectural design of new development areas outside of Lānaʻi City is consistent with the rural, small-town character of the island.
5. Ensure there is community engagement and input into any new development.
6. Support the coordination of major development projects in Lānaʻi City to maximize efficiency, provide infrastructure and public amenities, and enhance the overall character of the town.
7. Encourage the planting of suitable street tree species in new and existing areas; encourage the replacement of Cook Island Pines, if appropriate.
8. Protect and maintain the dark sky of the island's rural environment by ensuring street lighting, building lighting, and park lighting do not create excessive light pollution and glare.
9. Promote the development of a variety of park and recreational facilities distributed throughout Lānaʻi City and the island.
10. Encourage the provision of public restrooms in major parks and public spaces.
11. Continue assisting property owners to preserve and rehabilitate historic buildings in the B-CT District.

Actions

Table 10.1 Urban Design Actions				
No.	Action	Policy No.	Lead County Agency	Partners
10.01	Prepare a vision and master plan for Lānaʻi City through collaborative efforts that include historic preservation of structures in the B-CT District.	1, 3, 6, 11	Department of Planning	Pūlama Lānaʻi

10 | URBAN DESIGN

Table 10.1 Urban Design Actions				
No.	Action	Policy No.	Lead County Agency	Partners
10.02	Revise and enhance the B-CT design guidelines for Lāna'i City to provide more detailed guidance for new construction, as well as renovation and reconstruction of existing structures for adaptive reuse.	1, 3, 11	Department of Planning	Pūlama Lāna'i
10.03	Develop design guidelines for structures in Lāna'i City, but outside of the B-CT District, to provide guidance on appropriate form, scale, architectural character, details, and materials.	3, 6	Department of Planning	Pūlama Lāna'i
10.04	Create a comprehensive parking strategy for Lāna'i City. Revise the B-CT design guidelines to lessen parking requirements and allow businesses to fulfill onsite parking requirements through use of existing public parking surrounding Dole Park.	1, 3, 6	Department of Planning	Pūlama Lāna'i
10.05	Develop an urban forestry management plan for County and public property throughout Lāna'i City. Include options for the planting of native and non-invasive species, where appropriate, and consider replanting Cook Island Pines only where there is adequate space for the mature trees. Encourage Pūlama Lāna'i to adopt a similar plan.	2, 7	Department of Parks and Recreation	Department of Planning Pūlama Lāna'i
10.06	Select options for implementing LED lighting to save energy and provide a more point-like light source.	8	DPW	Department of Planning Pūlama Lāna'i

APPENDIX C: CHAPTER 9 – 2016 MAUI COUNTY PLANTING PLAN

CHAPTER 9. NATIVE HAWAIIAN AND POLYNESIAN- INTRODUCED PLANTS

9.1 PURPOSE

- 9.101 To encourage the use of Native Hawaiian and Polynesian-introduced plants in landscaping for the purposes of their perpetuation and increasing the public's awareness and appreciation of local flora.

9.2 ENDANGERED SPECIES

- 9.201 By federal law no one should possess or propagate endangered species without a permit. A few species are included in the Maui County Planting Plan (MCP) and are so labeled in case their propagation and use are permitted in the future. The plant's scientific name, as found Table 9-1: Native & Polynesian Introduced Plants, is followed by a triple asterisk (***) and a note at the top of the page with an explanation. Some plants in this document may be placed on the endangered list at a later date. At that time, their propagation and use in landscapes may be restricted by law.

9.3 DEFINITIONS

- 9.301 Indigenous refers to being native of the Hawaiian Islands, but also occurring naturally elsewhere (without the aid of humans).
- 9.302 Endemic to the Hawaiian Islands means occurring naturally (without the aid of humans) nowhere else in the world. These plants are labeled NATIVE (ENDEMIC).
- 9.303 Native plants were in Hawaii before the Polynesians arrived and include plants both indigenous and endemic to our islands. The plants that are indigenous but not endemic are labeled NATIVE.
- 9.304 Polynesian introductions include those plants brought by Polynesian immigrants prior to the year 1778. These plants are identified by POLYN. INTRO.
- 9.305 Exotic plants were introduced into Hawaii after European contact in 1778.

9.4 STATE LAW

- 9.401 The 1992 Hawaii State Legislature passed legislation that was signed by the Governor (Act 73) encouraging the use of Hawaii's native plant species in new or renovated landscaping of State funded buildings.

- 9.402 The 1993 Legislature amended Act 73 to include Polynesian introduced plants along with those that are native to Hawaii. It was H.B. No. 882, H.D. 2, S. D. 1. HB 882 (Act 156).

9.5 GENERAL

- 9.501 In keeping with the State laws, Maui County encourages all landscapers and developers to include Native Hawaiian plants, as well as those introduced by the Polynesians, wherever and whenever feasible.
- 9.502 It is important that native plants not be gathered from the wild because they have enough difficulty in maintaining their populations against the invading exotic plants. Nurseries are propagating and stocking Native Hawaiian plants and can help with providing instructions for their planting and care.
- 9.503 Using native plants should not jeopardize these and other species growing in the wild to lose their natural habitats.
- 9.504 Whenever feasible, Native Hawaiian plants in the landscape should be properly labeled for identification and for the public's awareness and education.
- 9.505 Wherever and whenever feasible, the native plants used should belong to the island on which the species originated to maintain purity of the gene pool. Closely related plants, such as species of loulou or of nehe, should not be used within the same landscape design as cross pollination will occur and produce gene contaminated seed.
- 9.506 The extreme isolation of the Hawaiian Islands accounts for a high percentage of endemic species. Ninety percent of approximately 1,200 native ferns, flowering plants, and trees are found nowhere else in the world.
- 9.507 Approximately half of the 950 remaining species of native plants found only in Hawaii are threatened with imminent extinction. Extinction has happened because towns, agriculture, pastures, and resorts have virtually eliminated native plants from lowland areas. Thousands of foreign species imported for landscapes and crops have escaped into State forests and out-competed native plants in the wild.
- 9.508 A benefit of using native plants in landscaping is that they usually require less care once they are established.
- 9.509 The following table (Table 9-1) is a list of Native Hawaiian and Polynesian Introduced Plants. Use the chapters indicated, or the Index at the end of

this document, to discover the plant's characteristics and requirements.
Use this information to locate plants in their preferred habitats.

- 9.510 The Hawaiian language diacritical marks appear only in Table 9-1: Native & Polynesian Introduced Plants – By Usage. Use this information to assist with proper pronunciation and written expression of plant common names.
- 9.511 Recent archeological evidence indicates that kou, *Cordia subcordata*, and hala, *Pandanus tectorius*, are a pre-Polynesian occurrence in Hawaii. Therefore, they are not Polynesian introduced but native throughout the Pacific.

TABLE 9-1: NATIVE & POLYNESIAN INTRODUCED PLANTS – BY USAGE*Listed By Common Name***Table 9-1: Native & Polynesian Introduced Plants – By Usage**

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***OVERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
STREET TREES – SMALL	Rauvolfia sandwicensis	hao	dry-med	NATIVE (ENDEMIC)
	Diospyros sandwicensis	lama	dry-med	NATIVE (ENDEMIC)
	Metrosideros polymorpha	‘ōhi‘a lehua	(dry) med-wet	NATIVE (ENDEMIC)
	Cheirodendron trigynum	‘ōlapa	med-wet	NATIVE (ENDEMIC)
STREET TREES – MEDIUM	Thespesia populnea**	milo	(dry) med-wet	NATIVE
	Reynoldsia sandwicensis	‘ohe makai	dry	NATIVE (ENDEMIC)
PALMS FOR STREETS AND 10-15 FT WIDE MEDIANS	Pritchardia hillebrandii	loulou, loulou-lelo (Molokai)	(dry) med-wet	NATIVE (ENDEMIC)
PALMS FOR MEDIANS WIDER THAN 15 FT	Pritchardia arecina	Golden loulou, (E. Maui)	(dry) med-wet	NATIVE (ENDEMIC)
PARK, GREENWAY, AND OPEN SPACE TREES – SMALL	Dodonaea viscosa	‘a‘ali‘i	dry-med	NATIVE
	Psydrax odorata	alahe‘e	dry-med	NATIVE
	Piper methysticum	‘awa	wet	POLYN. INTRO.
	Pleomele auwahiensis	hala pepe	dry-med	NATIVE (ENDEMIC)
	Rauvolfia sandwicensis	hao	dry-med	NATIVE (ENDEMIC)
	Hibiscadelphus giffardianus***	hau kuahiwi (Big Island)	med	NATIVE (ENDEMIC)
	Pittosporum hosmeri	hō‘awa	med	NATIVE (ENDEMIC)
	Nesoluma polynesicum	keahi	dry	NATIVE
	Acacia koaia	koai‘a, koai‘e	dry-med	NATIVE (ENDEMIC)
	Hibiscus waimeae***	koki‘o ke‘oke‘o (Kauai)	(dry) med	NATIVE (ENDEMIC)
	Hibiscus immaculatus	koki‘o ke‘oke‘o (Maui & Molokai)	(dry) med-wet	NATIVE (ENDEMIC)
	Kokia drynarioides***	koki‘o, kokia	dry-med	NATIVE (ENDEMIC)

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***_OVERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
PARK, GREENWAY, AND OPEN SPACE TREES – SMALL	Hibiscus kokio	koki'o 'ula'ula	(dry) med-wet	NATIVE (ENDEMIC)
	Myrsine lessertiana	kōlea	med-wet	NATIVE (ENDEMIC)
	Diospyros sandwicensis	lama	dry-med	NATIVE (ENDEMIC)
	Musa acuminata	mai'a, banana	(dry) med-wet	POLYN. INTRO.
	Sophora chrysophylla	māmane	med	NATIVE (ENDEMIC)
	Hibiscus brackenridgei***	ma'o hau hele (Hawaii State flower)	dry-med	NATIVE (ENDEMIC)
	Gardenia brighamii***	nānū, na'ū	dry-med	NATIVE (ENDEMIC)
	Morinda citrifolia**	noni, Indian mulberry	dry-med-wet	POLYN. INTRO.
	Metrosideros polymorpha	'ōhi'a lehua	(dry) med-wet	NATIVE (ENDEMIC)
	Cheirodendron trigynum	'ōlapa	med-wet	NATIVE (ENDEMIC)
	Nestegis sandwicensis	olopua	dry-med	(NATIVE ENDEMIC)
	Pisonia brunoniana	pāpala kēpau	med	NATIVE
	Pisonia sandwicensis	pāpala kēpau, āulu	med	NATIVE (ENDEMIC)
PARK, GREENWAY, AND OPEN SPACE TREES – MEDIUM	Pandanus tectorius	hala, pandanus	(dry)med-wet	NATIVE
	Cordia subcordata	kou	(dry) med-wet	NATIVE
	Aleurites moluccana**	kukui	(dry) med-wet	POLYN. INTRO.
	Sapindus saponaria	mānele, soapberry	med	NATIVE
	Thespesia populnea**	milo	(dry) med-wet	NATIVE
	Syzygium malaccense	'ōhi'a'ai ,mountain apple	med-wet	POLYN. INTRO.
	Reynoldsia sandwicensis	'ohe makai	dry	NATIVE (ENDEMIC)
	Pisonia umbellifera	pāpala kēpau, āulu	wet	NATIVE
	Erythrina sandwicensis	wiliwili	dry-med	NATIVE (ENDEMIC)

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***OVERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
PARK, GREENWAY, AND OPEN SPACE TREES - LARGE	Calophyllum inophyllum	kamani	(dry) med-wet	POLYN. INTRO.
	Acacia koa	koa	med-wet	NATIVE (ENDEMIC)
	Artocarpus altilis	‘ulu, breadfruit	(dry) med-wet	POLYN. INTRO.
PARK, GREENWAY, & OPEN SPACE PALM TREES – SMALL	Pritchardia glabrata	dwarf-loulu (W. Maui)	(dry) med-wet	NATIVE (ENDEMIC)
	Pritchardia hillebrandii	loulu, loulu lelo (Molokai)	(dry) med-wet	NATIVE (ENDEMIC)
PARK, GREENWAY, & OPEN SPACE PALM TREES – MEDIUM	Pritchardia arecina	golden loulu (E. Maui)	(dry) med-wet	NATIVE (ENDEMIC)
PARK, GREENWAY, AND OPEN SPACE PALM TREES – LARGE	Cocos nucifera	niu, coconut	dry- med-wet	POLYN. INTRO.
PARKING LOT TREES – 20’ SPREAD	Rauvolfia sandwicensis	hao	Dry-med	NATIVE (ENDEMIC)
	Reynoldsia sandwicensis	‘ohe makai	dry	NATIVE (ENDEMIC)
	Cheirodendron trigynum	‘ōlapa	med-wet	NATIVE (ENDEMIC)
PARKING LOT TREES – 25’ SPREAD	Thespesia populnea**	milo	(dry) med-wet	NATIVE
SOUND/WIND/ VISUAL BARRIERS	Dodonaea viscosa	‘a‘ali‘i	dry-med	NATIVE
	Wikstroemia uva-ursi	‘ākia	dry-med	NATIVE (ENDEMIC)
	Psydrax odorata	alahe‘e	dry-med	NATIVE
	Talipariti tiliaceum	hau	(dry) med-wet	NATIVE
	Abutilon eremitopetalum***	hidden petal abutilon	dry-med	NATIVE (ENDEMIC)
	Cordyline fruticosa	kī, ti	(dry) med-wet	POLYN. INTRO.
	Saccharum officinarum	kō, sugar cane	(dry) med	POLYN. INTRO.
	Hibiscus waimeae***	koki‘o ke‘oke‘o (Kauai)	(dry) med	NATIVE (ENDEMIC)
	Hibiscus immaculatus	koki‘o ke‘oke‘o (Maui & Molokai)	(dry) med-wet	NATIVE (ENDEMIC)
	Hibiscus kokio	koki‘o ‘ula ‘ula	(dry) med-wet	NATIVE (ENDEMIC)
	Senna gaudichaudii	kolomona	dry-med	NATIVE

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***OVERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
SOUND/WIND/ VISUAL BARRIERS	Abutilon menziesii***	ko'oloa 'ula	dry-med	NATIVE (ENDEMIC)
	Nototrichium sandwicense	kulu'i	dry-med	NATIVE (ENDEMIC)
	Gossypium tomentosum	ma'o, Hawaiian cotton	dry-med	NATIVE (ENDEMIC)
	Scaevola chamissoniana	naupaka kuahiwi	med-wet	NATIVE (ENDEMIC)
	Scaevola sericea	naupaka kahakai, beach naupaka	(dry) med	NATIVE
	Schizostachyum glaucifolium	'ohe, Hawaiian bamboo	(dry) med-wet	POLYN. INTRO.
	Vitex rotundifolia	pōhinahina, beach vitex	(dry) med	NATIVE
	Hibiscus kokio subsp. saintjohnianus	pua'aloalo, koki'o 'ula'ula	(dry) med-wet	NATIVE (ENDEMIC)
	Osteomeles anthyllidifolia	'ūlei	dry-med	NATIVE
	Broussonetia papyrifera	wauke	(dry) med	POLYN. INTRO.
GROUND COVERS	Artemisia australis	'āhinahina	(dry) med-wet	NATIVE (ENDEMIC)
	Artemisia mauiensis	'āhinahina	dry-med	NATIVE (ENDEMIC)
	Wikstroemia uva-ursi	'ākia	dry-med	NATIVE (ENDEMIC)
	Sporobolus virginicus	'aki'aki	(dry) med	NATIVE
	Chamaesyce celastroides	'akoko	dry-med	NATIVE (ENDEMIC)
	Chamaesyce skottsbergii var. skottsbergii***	'akoko	dry-med	NATIVE (ENDEMIC)
	Sesuvium portulacastrum	'ākulikuli, sea purslane	(dry) med-wet	NATIVE
	Peperomia leptostachya	'ala'ala wai nui, Hawaiian peperomia	dry-med	NATIVE
	Boerhavia repens	alena	dry-med	NATIVE
	Colubrina asiatica	'ānapanapa	(dry) med-wet	NATIVE
	Alocasia macrorrhiza	'ape	med-wet	POLYN. INTRO.
	Hedyotis centranthoides	au, pilo	med	NATIVE (ENDEMIC)

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***OVERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
GROUND COVERS	Hedyotis littoralis	au, pilo	(dry) med-wet	NATIVE (ENDEMIC)
	Zingiber zerumbet	‘awapuhi, shampoo ginger	(dry) med-wet	POLYN. INTRO.
	Canavalia molokaiensis***	‘āwikiwiki	(dry) med	NATIVE (ENDEMIC)
	Canavalia pubescens	‘āwikiwiki	dry-med	NATIVE (ENDEMIC)
	Bacopa monnieri	bacopa, ‘ae‘ae	(dry) med-wet	NATIVE
	Bonamia menziesii***	bonamia menziesii	dry-med	NATIVE (ENDEMIC)
	Scaevola coriacea***	creeping naupaka	dry-med	NATIVE (ENDEMIC)
	Cressa truxillensis	cressa	dry-med	NATIVE
	Asplenium nidus	‘ēkaha, bird’s nest fern	med-wet	NATIVE
	Ipomoea tuboides	Hawaiian moon flower	dry-med	NATIVE (ENDEMIC)
	Abutilon eremitopetalum***	hidden petal abutilon	dry-med	NATIVE (ENDEMIC)
	Heliotropium anomalum var. argenteum	hinahina kū kahakai	dry-med	NATIVE
	Discorea bulbifera	hoi, yam	(dry) med-wet	POLYN. INTRO.
	Portulaca lutea	‘ihi	(dry) med-wet	NATIVE
	Portulaca molokiniensis	‘ihi	dry-med	NATIVE (ENDEMIC)
	Santalum ellipticum	‘iliahi	dry-med	NATIVE (ENDEMIC)
	Plumbago zeylanica	‘ilie‘e	dry-med	NATIVE
	Sida fallax	‘ilima papa	dry-med	NATIVE
	Lagenaria siceraria	ipu, gourd	(dry) med	POLY. INTRO.
	Eragrostis monticola	kalamālō	dry-med	NATIVE (ENDEMIC)
	Calocasia esculenta	kalo, taro	wet	POLY. INTRO.
	Cordyline fruticosa	ki, ti	(dry) med-wet	POLY. INTRO.
	Senna gaudichaudii	kolomona	dry-med	NATIVE

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***VERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
GROUND COVERS	<i>Bidens hillebrandiana</i> ssp. <i>hillebrandiana</i>	ko'oko'olau,	(dry) med-wet	NATIVE (ENDEMIC)
	<i>Bidens mauensis</i>	ko'oko'olau,	dry-med	NATIVE (ENDEMIC)
	<i>Abutilon menziesii</i> ***	ko'oloa'ula	dry-med	NATIVE (ENDEMIC)
	<i>Coprosma ernodeoides</i>	kūkaenēnē	dry-med	NATIVE (ENDEMIC)
	<i>Nototrichium sandwicense</i>	kuluī	dry-med	NATIVE (ENDEMIC)
	<i>Nephrolepis exaltata</i>	kupukupu, native sword fern	(dry) med-wet	NATIVE
	<i>Schiedea globosa</i>	mā'oli'oli	med-wet	NATIVE (ENDEMIC)
	<i>Capparis sandwichiana</i>	maiapilo, native caper	dry-med	NATIVE (ENDEMIC)
	<i>Cyperus laevigatus</i>	Makaloa	wet	NATIVE
	<i>Peucedanum sandwicense</i> ***	Makou	(dry) med-wet	NATIVE (ENDEMIC)
	<i>Pipturus albidus</i>	māmaki, Hawaiian tea	med-wet	NATIVE (ENDEMIC)
	<i>Gossypium tomentosum</i>	ma'o, Hawaiian cotton	dry-med	NATIVE (ENDEMIC)
	<i>Fimbristylis cymosa</i> ssp. <i>spathacea</i>	mau'u 'aki 'aki, fimbristylis	dry-med	NATIVE
	<i>Psilotum nudum</i>	Moa	(dry) med-wet	NATIVE
	<i>Dubautia scabra</i>	na'ena'e	dry-med	NATIVE (ENDEMIC)
	<i>Myoporum sandwicense</i>	Naio	dry-med	NATIVE
	<i>Vigna marina</i>	nanea	med-wet	NATIVE
	<i>Scaevola chamissoniana</i>	naupaka kuahiwi	med-wet	NATIVE (ENDEMIC)
	<i>Scaevola sericea</i>	naupaka kahakai, beach naupaka	(dry) med	NATIVE
	<i>Lipochaeta connata</i> var. <i>connata</i>	nehe	(dry) med-wet	NATIVE (ENDEMIC)
	<i>Lipochaeta rockii</i>	nehe	dry med	NATIVE (ENDEMIC)
	<i>Lipochaeta succulenta</i>	nehe	(dry) med-wet	NATIVE (ENDEMIC)
	<i>Melanthera integrifolia</i>	nehe	(dry) med	NATIVE (ENDEMIC)

Table 9-1: Native & Polynesian Introduced Plants – By Usage

Water requirements: Categories in parentheses are too dry for plant natural survival in planting zones. Additional water is required to satisfy plant needs. **HPWRA designations:** ***VERRIDE* (only kukui, noni, and milo. See Chapter 11: Alien Invasive Plant Species). **Endangered** species are denoted with ***.

USAGE	SCIENTIFIC NAME	COMMON NAME	WATER REQUIREMENT	DISTRIBUTION
GROUND COVERS	Melanthera lavarum	nehe	dry-med	NATIVE (ENDEMIC)
	Sesbania tomentosa***	‘ohai	dry-med	NATIVE (ENDEMIC)
	Vaccinium reticulatum	‘ōhelo	dry-med	NATIVE (ENDEMIC)
	Lycium sandwicense	‘ōhelo kai	(dry) med	NATIVE
	Fragaria chiloensis	‘ōhelo papa	(dry) med	NATIVE
	Curcuma longa	‘ōlena, turmeric	(dry) med-wet	POLYN. INTRO.
	Microlepia strigosa	palapalai	(dry) med-wet	NATIVE
	Phyllanthus distichus	pāmakani mähū	med	NATIVE (ENDEMIC)
	Jacquemontia ovalifolia ssp. sandwicensis	pā‘ūohi‘iaka	dry-med	NATIVE
	Tacca leontopetaloides	pi‘a, arrowroot	(dry) med	POLYN. INTRO.
	Dioscorea pentaphylla	pi‘a, yam	(dry) med-wet	POLYN. INTRO.
	Vitex rotundifolia	pōhinahina, beach vitex	(dry) med	NATIVE
	Ipomoea pes-caprae	pōhuehue, beach morning glory	(dry)-med	NATIVE
	Solanum nelsonii	popolo, beach solanum	dry-med	NATIVE (ENDEMIC)
	Argemone glauca var. glauca	pua kala, Hawaiian poppy	dry-med	NATIVE (ENDEMIC)
	Styphelia tameiameia	pūkiawe	dry-med	NATIVE
	Ipomoea batatas	‘uala, sweet potato	med-wet	POLYN. INTRO.
	Dioscorea alata	uhi, yam	(dry) med-wet	POLYN. INTRO.
	Dianella sandwicensis	‘uki‘uki	(dry) med	NATIVE
	Osteomeles anthyllidifolia	‘ūlei	dry-med	NATIVE
	Scaevola gaudicaudii	yellow naupaka	(dry) med	NATIVE (ENDEMIC)

APPENDIX D: GLOSSARY

Adaptive reuse – the reuse of a building, usually for purposes different from the original use, such as a home converted into offices.

Addition – new construction added to an existing building.

Alteration – work that affects the exterior appearance of a property.

B-CT – acronym used in the 2016 Lāna'i Community Plan for Country Town Business District.

Baluster – one of a series of short, vertical members, used to support a stair or porch handrail, forming a balustrade.

Balustrade – an entire rail system with top rail and balusters.

Board and batten – siding that consists of boards set vertically and covered where their edges join by narrow strips called battens.

Canopy – a roofed structure that extends outward from a building providing a protective shield for doors, windows, and other openings.

Character – the qualities and attributes of a building, site, street, or district.

Character-defining features or elements – include the overall shape of the building, its materials, craftsmanship, decorative details, as well as aspects of its site and environment.

Clipped gable – a gable roof with its ends clipped back.

Column – a cylindrical or square vertical structural or ornamental member.

Consolidant – resin used on rotted wood to strengthen it and prevent it from further decay. Consolidants are used to restore the integrity of wood, and epoxy fillers are used to replace missing wood fibers.

Compatible – in harmony with surroundings.

Configuration – the arrangement of elements and details on a building or site which help define its character.

Demolition – any act that destroys a building, either partially or entirely.

Demolition by neglect – destruction of a building through abandonment or lack of maintenance.

Display window – a window that faces the street and is used to display merchandise for sale in a store.

Dormer – a roofed structure that projects vertically from a sloped roof. A dormer usually has a window or a louvered vent.

Double-hung window – a window with two sashes, one sliding vertically over the other.

Drop siding – siding that consists of horizontally oriented boards that have a depression in the upper part of each board.

Element – a part or detail of a site, building, street, landscape, or district.

False front – also known as a parapet. A low horizontal wall at the edge of a roof that hides the shape of the roof behind it.

Facade – an exterior wall of a building. The front or main facade is usually distinguished from other facades by more elaborate architectural details.

Fascia – a horizontal board that covers the rafter tails along the edge of the roof.

Gable – the triangular section of wall at the end of a building's roof.

Gable-on-hip roof – a roof that incorporates both gable and hip forms. The upper portion is gabled (sloped on two sides) and the lower portion is hipped (sloped on all four sides).

Gable roof – a pitched roof with a gable at one or both ends and a downward slope on either side of a central, horizontal ridge.

Gable vent – a vent, usually made of wood, placed in the gable end of the roof to ventilate the attic.

Hip roof – a roof with slopes on all four sides.

Jalousie window – a window with angled, overlapping slats of glass, arranged horizontally like a shutter, which tilt open for ventilation. Also known as a "louvered window."

Lights – pieces of glass in windows and doors.

Maintain – to keep in an existing state of preservation or repair.

Massing – refers to the three-dimensional qualities of the building that create its size and shape as seen from the outside. Another way to think about massing is to picture a building that has been shrink-wrapped. If everything but the shrink-wrap has been removed, the building massing is what remains.

Multi-light window – a window sash composed of more than one piece of glass.

Muntin – a secondary framing member that divides and holds the pieces of glass in a multi-light window or door.

New construction – construction that is characterized by the introduction of new buildings in historic areas and districts.

Paneled door – a door composed of solid panels held within a framework of rails and stiles.

Pavement width – refers to the width of the paved portion of the road, including any on street parking. The pavement width does not include sidewalks.

Porch – a covered entrance that projects from the facade of a building.

Post and beam foundation – a foundation that is raised above the ground and sits on horizontal beams resting on posts.

Preservation – saving from destruction or deterioration old and historic buildings, sites, structures, and objects and providing for their continued use by restoring, rehabilitating, or adaptively reusing them.

Proportion – harmonious relation of parts to one another or to the whole.

Orientation – the placement of a building on a site as it relates to the physical conditions of the site, such as its geography and man made features.

Rafter tails – the non-technical term used to describe eaves. An eave is the edge of the roof that projects beyond the face of the wall.

Reconstruction – the act of reproducing by new construction the exact form and detail of a building or a part of a building that no longer exists, as it appeared at a specific period of time.

Rehabilitation – the act of returning a building to usable condition through repair or alteration while preserving those portions or features that convey its historical, architectural, or cultural values.

Retain – to keep secure and intact. In the guidelines, “retain” and “maintain” describe the act of keeping an element, detail, or building and continuing the same level of repair to help preserve elements, sites, and buildings.

Right-of-way width – refers to the width of the road, between property lines, including any sidewalks or bike lanes contained in those boundary lines.

Sash – the moveable or fixed framework containing the glass in a window.

Scale – refers to the proportional relationship of size and shape of buildings and elements to each other and their site. In other words, scale is the footprint (width and length) size and height of the building in relation to its lot.

Shed roof – a pitched roof with only one slope.

Siding – the exterior wall covering of a building.

Sill – the bottom crosspiece of a window frame.

Slab on grade foundation – a concrete foundation that sits directly on the ground.

Stile – a vertical piece in a panel or frame of a window or door.

Streetscape – the visible space fronting both sides of a road, and the elements contained within that space.

Subordinate – of less or secondary importance.

Transom – a smaller, horizontal window over a window or door.

Trim – the decorative framing of openings and other features on a facade.

Tongue and groove – siding that consists of vertically arranged boards that each have a slot or “groove” along one edge and a ridge or “tongue” on the other. The boards are joined together by inserting the tongue side of one board into the groove side of the other. The interlocking edges of these boards eliminate the need for battens. Tongue and groove boards are also common decking and flooring in historic homes.

Vernacular – a regional form or adaptation of an architectural style.

Window components – the moving components of a window are known as sashes. Sashes move within the fixed frame. The sash may consist of one large piece of glass or may be divided into smaller pieces of glass by thin members called muntins.

Window profile – the outline of window sash components is known as the window profile. Historic windows have complex profiles. Their sashes step back to the glass in several small increments. These increments are important details. The profiles of historic double-hung windows add depth to the facades of buildings.

Yard setback – the distance between the building’s facade and the related front, side, or rear lot line.

APPENDIX E: GEOLOGY AND CLIMATE

NOTE: This appendix was carried over from the 1997 Lāna'i City Community Design Guidelines document. Please be aware that this information is dated and portions may no longer be accurate.

by Francis Oda
Group 70 International, Inc.

TOPOGRAPHY

Located in the wind and rain shadow of West Maui and East Molokai, the island of Lana'i has not experienced as much erosion as west Maui or Molokai. Except for a few gulches the island has retained its basic shield volcanic form. Situated on the upland slopes of the shield which formed the island, the topography of Lana'i City slopes gently in range of 0% to 7%, from approximately 1,500 to 1,700 feet above sea level. In the center of town around Dole Park, the slopes average 2% to 3%.

TEMPERATURE

The climate of Lana'i, like that of other islands of Hawaii, is subtropical rather than tropical. The mean annual temperature of Lana'i City is 68.1 degrees Fahrenheit. This station is leeward of the crest of Lana'i Hale and owes its temperatures not only to the altitude, 1,620 feet ASL, but to frequent cloudiness. The mean temperature along the coast is somewhat higher, especially on the leeward (southwest) side, where the elevations are lower and nearly every day is cloudless. However, the cool sea breezes blowing over such a small island have insufficient time to be thoroughly heated; hence even these areas are not unbearably hot. The lowest temperature recorded at Lana'i City was 48 degrees F. (December 23, 1935).

WIND

Lana'i lies in the belt of the northeasterly trade winds, which are very constant. The whole island is not exposed to the full effect of the trade winds, being partly sheltered by Maui. However, the funneling effect of the East Molokai and West Maui mountains increases wind velocity in the channel. Although, there are no anemometer records of the region facing the channel between Molokai and Maui, the numerous wind scars, the universal leeward bend in the tree trunks, and the wind-pruned tops of the trees in this region are evidence of constant high wind. Lana'i City is located on the leeward side of the crest of Lana'i and is partly sheltered from the direct effect of trade winds. Southerly or "Kona" winds interrupt the trade winds at times, especially during the winter months.

VEGETATION

Vegetation reflects the rainfall, temperature, elevation, and soil characteristics at each location. Therefore, vegetation is an important indicator of soil and climatic conditions. Lana'i lacks the range in elevation necessary for wide variation in climatic conditions; however, the variation is sufficient to establish four distinct vegetation zones. Zone A includes the arid and sunny leeward coastal lands below the 1,000 foot elevation. Zone B includes a large area of the central plateau with elevations from 1,000 to 1,800 feet. The wetter and cooler zones "C" and "D" with elevations 1,800 feet and above includes part of agricultural land and upland slopes. The highest and wettest lands of Lanai Hale are in

Zone D.

RAINFALL

Lanaʻi falls partially inside the rain shadow of Maui. This is partially responsible for the low rainfall on the island as a whole. The state wide average for most of the other Hawaiian islands is 45 inches per year. The average for the surrounding ocean is 25 inches per year. The average annual rainfall for Lanaʻi ranges from less than 10 inches along the coast to 38 inches on the summit of Lanaihale. Rainfall is influenced by topographic location in relation to the mountain peaks and altitude on mountains less than 6,000 feet high in the Hawaiian islands. Because Lanaʻi is small and relatively smooth, the geographic distribution of rainfall is not as spotty as on the larger, more rugged islands. The rainfall varies widely from year to year. There is a well marked dry season during the summer, but is shown by the comparative mean monthly distribution of rainfall a less marked rainy season occurs in the summit area. December is the wettest month and July is generally the driest. Heavy downpours characteristic of the sub-tropical latitudes commonly account for a considerable part of the annual rainfall, and in some of the arid sections a single rain may contribute as much as 80% of the annual total. Because Lanaʻi is not sheltered by other islands on its southerly side, "kona" storms are unobstructed. Sudden local heavy showers called *nauhu* fall during times when neither trade winds nor the kona winds blow. A *nauhu* shower is caused by a cloud that forms off the south or west coast and then moves inland, dropping its moisture apparently as a result of local convection currents. *Nauhu* showers are reported to occur chiefly in the afternoon during hot weather.

SOILS

The soils in the Lanaʻi City area are part of the Molokai-Lahaina association. These soils are generally deep well drained soils with topography ranging from nearly level to moderately steep slopes. Soil texture is fine to moderately fine at the subsoil level. Elevations for the Molokai series range from nearly sea level to 1,600 feet. The Lahaina soil series occur in slightly wetter conditions and cooler soil temperature. Specific soils around the town center area are Waihuna clay (WoA, 0 to 3% slopes), Lahaina silty clay (LaB, 3-7% slopes) and Kalae silty clay (KcB, 2-7% slopes).

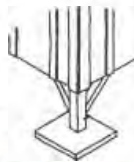
APPENDIX F: GUIDELINES FOR REHABBING KAUAI'S OLD HOUSES

GUIDELINES FOR REHABBING KAUAI'S OLD HOUSES



These practical suggestions have been prepared by the Community Housing Resource Board of Kauai to help owners of modest homes protect the long-term value of their buildings.

The recommendations are not complicated or costly. Rather, these are maintenance-oriented guidelines and financially feasible considerations to help owners solve normal wear and tear problems. These guidelines are based on the Secretary of the Interior's Standards for



Rehabilitation (1983) which are the foundation for many private rehabilitation and home improvement projects in Hawaii and on the Mainland. Local housing renovation work at Grove Farm Homestead in Lihue provided examples of common upkeep problems and typical repairs necessitated by island environmental conditions — rain, humidity, strong sun, salt-air, mildew, algae and many pests — that contribute to special house upkeep problems.

We hope you will find these home fix-up guidelines useful because, as



time goes by, Kauai's traditional homes, well-built by local carpenters, are growing in value as affordable places to live and income producing property. If maintained properly, these buildings can last for over 100 years.

COMMUNITY HOUSING RESOURCE BOARD OF KAUAI 
4193 Hardy Street, Lihue, Kauai, Hawaii 96766. Phone (808) 245-7344

The process of keeping your property in a state of utility through maintenance and repairs is important. Rehabilitation makes possible efficient, continuing use while saving those features of your property that are significant to its original look.

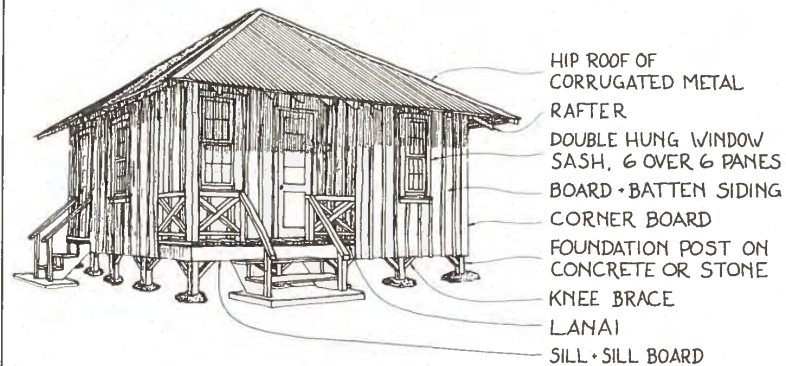
Remember these useful general guidelines:

1. Good building maintenance is good housekeeping.
2. Keep as much as possible of original materials.
3. Don't hide the original style.
4. If you have to replace old materials, replace them with similar new materials.



HISTORICAL NOTES: TWO RESIDENTIAL KAUAI BUILDING TYPES

SINGLE-FAMILY PLANTATION-STYLE HOUSE c. 1920



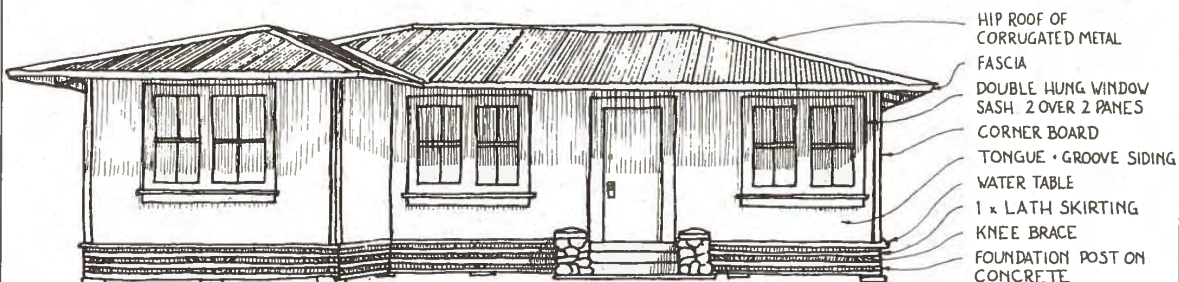
Plantation-Style Single-Family Cottage, c.1920

As the sugar and pineapple plantations began to build single family dwellings, this type of hipped roof, board and batten, single wall cottage became the most popular house form on Kauai.

Modern Single-Family Dwelling, c.1940

In the pre-World War II years, vertical tongue and groove board, single-wall homes were built on Kauai by both plantation and non-plantation owners. These new houses had hipped roofs, but they also had larger windows and a more streamlined exterior appearance than the older plantation-style cottage.

SINGLE-FAMILY HOUSE c. 1940



GETTING STARTED

BEGIN WITH A HOUSE CHECK-UP

If you already own an old house, use this checklist for an annual maintenance inspection. If you are going to fix-up an old house, here is an easy

way to evaluate the condition of your building and to record telltale signs of problems that must be treated. Take care of small things right

away because little problems can become big and expensive.

CHECK LIST

	YES	NO		YES	NO
1. Structural system:					
Are there any signs of sagging floors?	<input type="checkbox"/>	<input type="checkbox"/>	Is putty around window glass broken and unpainted?	<input type="checkbox"/>	<input type="checkbox"/>
Are any of the foundation posts and footings missing?	<input type="checkbox"/>	<input type="checkbox"/>	Have original window frames and doors been replaced?	<input type="checkbox"/>	<input type="checkbox"/>
Are wooden posts, sills, joists and steps soft when probed with screw driver to test for rot and termite damage?	<input type="checkbox"/>	<input type="checkbox"/>	4. Flooring and lanais:		
Is there material stored underneath the house which prevents good air circulation under the flooring?	<input type="checkbox"/>	<input type="checkbox"/>	Are any floors uneven?	<input type="checkbox"/>	<input type="checkbox"/>
Are there any loose, rotted or missing exterior wall boards or battens?	<input type="checkbox"/>	<input type="checkbox"/>	Does flooring need any repair?	<input type="checkbox"/>	<input type="checkbox"/>
Is vegetation overgrowing the foundation and siding?	<input type="checkbox"/>	<input type="checkbox"/>	Has the original floor been covered?	<input type="checkbox"/>	<input type="checkbox"/>
Does run-off water remain near the foundation?	<input type="checkbox"/>	<input type="checkbox"/>	Are there signs of dampness on floors or around pipes?	<input type="checkbox"/>	<input type="checkbox"/>
Has the building been treated for termites within the past five years?	<input type="checkbox"/>	<input type="checkbox"/>	Are lanai railings in need of repair?	<input type="checkbox"/>	<input type="checkbox"/>
2. Roofing:			5. Painting and staining:		
Does the roof leak?	<input type="checkbox"/>	<input type="checkbox"/>	Has it been more than ten years since your house has been repainted or stained?	<input type="checkbox"/>	<input type="checkbox"/>
Has a new roof been applied directly over old shingles?	<input type="checkbox"/>	<input type="checkbox"/>	Is paint peeling, curling or blistering?	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, check for rotted shingles.</i>			What was the original color of the siding and windows and doors?	<input type="checkbox"/>	<input type="checkbox"/>
Is any flashing around the roof loose or missing?	<input type="checkbox"/>	<input type="checkbox"/>	6. Plantings and hedges:		
Does the ridge of the roof sag?	<input type="checkbox"/>	<input type="checkbox"/>	Are trees, bushes or other plants touching the walls or foundations?	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, check for rotted rafters.</i>			7. Electrical system:		
Are rain gutters blocked or leaking?	<input type="checkbox"/>	<input type="checkbox"/>	Is there at least one electrical outlet in every room?	<input type="checkbox"/>	<input type="checkbox"/>
3. Doors and windows:			Is there any surface mounted lamp cord extension wiring?	<input type="checkbox"/>	<input type="checkbox"/>
Are any doors difficult to open?	<input type="checkbox"/>	<input type="checkbox"/>	Are multiple cords plugged into a single outlet?	<input type="checkbox"/>	<input type="checkbox"/>
Are there open, separated joints around door frames, window frames or trim?	<input type="checkbox"/>	<input type="checkbox"/>	8. Plumbing:		
			Is water pressure inadequate?	<input type="checkbox"/>	<input type="checkbox"/>
			Are there any leaking pipes, faucets or toilets?	<input type="checkbox"/>	<input type="checkbox"/>

If your answer is yes to any of these questions, please read the following sections on suggested repairs and maintenance.

ROOFING

Repairs or alterations should not alter the roof pitch or reduce the extent of overhang of the roof eaves. From both a functional and visual point of view, sound, weather tight roofing is an important element of your house. Maintaining the roof as "cover" is a top priority for every fix-up project because a good roof is the first line of defense against the biggest enemy of every old house: water.

Painted corrugated metal panels, sawn wooden shingles or asphalt shingles are the typical roofing materials found on these residential dwellings, and roofing materials help define the overall look of the house.

The original roofing should be maintained or replaced in kind. Repairs generally will include replacement of extensively deteriorated metal panels or shingles and repairs to flashing and rain gutters. Painted, new corrugated metal, sawn wooden shingles and asphalt shingles all have a maintenance life-cycle of at least 20 years.

It is possible to make temporary repairs to "tin roofs", especially to rusted-out lapping areas, by getting



another piece of the same corrugated stock. Pull the nails, stick the piece of stock in above the deck and then drive nails back in. Asphalt wet patch works pretty well on rusted metal and nail holes, but if your roof regularly leaks, you will need to replace it. Wooden sawn shingles can be renewed to retard the growth

of mould and algae by painting the shingles with diesel truck fuel or commercial shingle oil.

Caulk all loose roof flashing and clean out flashing of roof gutters annually or more often. Remember that gutters protect the siding, doors and windows.

If you have to re-roof your house, use the look of the original house.

DOORS & WINDOWS

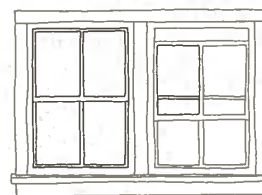
Doors and windows are part of the weatherproofing and ventilation of your house, and the design and location of doors and windows are also elements that help give your house its special distinctiveness. Nothing alters the appearance of a house more than changing its doors and windows.

Doors and windows in most older houses become especially vulnerable to deterioration from sun and rain. Wind-driven rain penetrates the door frame and deterioration begins in the frame and in window sills and cracks in the window putty.

Try to retain and repair the original doors and hardware because of the authenticity of the materials. Replacement porcelain knobs are relatively easy to find by asking around. Locks also can be repaired.

If a replacement door is required, choose one that most closely matches the design of the original door. Avoid reducing or enlarging the original door opening size to install "stock" size doors, and do not change the location of the door or cut new entrances in the wall. Doors should swing freely. If your doors and hinges become too tight, there may be a variety of problems, and you should consult a carpenter. A good way of fixing a tight door is to check underneath the house and possibly jack up the joist or sill to add a new foundation post. Avoid cutting the door.

Retain all original windows, and wherever possible, repair the window frame, window sill, double-hung sash and glass. Do not install "stock" windows of another size, and avoid using jalousie windows to replace



DOUBLE HUNG SASH



5 PANEL DOOR



HALF SCREEN DOOR

sash. All too often window sash are replaced when little painting repairs are needed. For example, if you find sash corner joints, all is not lost. New pieces can be cut. Bottom rails of the sash will be less expensive than buying new sash.

PAINTING & STAINING

Keeping the exterior coated for protection is the most important home owner repair.

Your house should be painted at least once every ten years. Siding, lanai, doors, window trim and "tin roofs" should be repainted or stained in a color as close to the original color as possible. When a change of color is necessary, the color should be in character with other colors found on similar old buildings.

When using stains, use oil-based

penetrating stain and not solid body stain.

Corrugated metal roofing should always be kept painted. Flaking paint can be removed with a wire brush.

An inexpensive treatment of damaged but functional wall boards is to treat them with a mixture of boiled linseed oil and turpentine two or three times, a few days apart, so the oil will penetrate the wood. Repaint a month later.



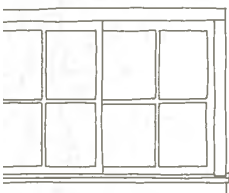
ave to completely
ur house, take a look
ighbors' roofs and try
: same material to keep
of your street.

FLOORING & LANAIS

Lanais and porches should neither be enclosed as additional interior space, nor removed. Railings, posts, steps and other lanai and porch details should be retained and kept in good repair as an essential feature of the house. A fresh coat of paint on lanai floors and wooden steps is normally needed every three to five years.

Tongue and groove flooring usually deteriorates just on the end

of a board. It is economically and structurally sound to cut the board off usually at the second joist, keeping the rest of the board in place. To take out a tongue and groove board, split it up the middle with a circular saw, and lift the pieces up. To install new tongue and groove, push the new board in from the end, leaving some extra stock on the end to be cut flush with the other board.



SLIDING SASH



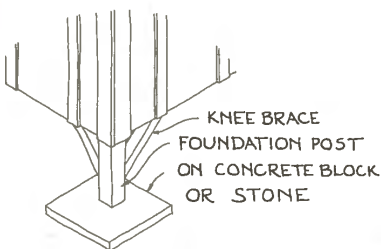
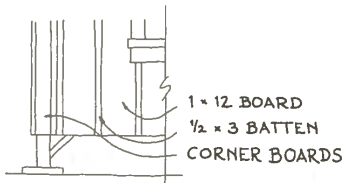
SOLID PANEL DOOR

ttle more than scraping and
some rot and deterioration at
made, and replacing a few
aying all new windows for the

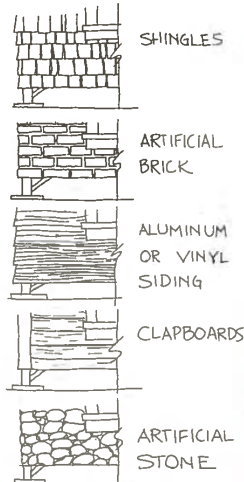


STRUCTURAL REPAIRS

SIDING MATERIALS



NOT RECOMMENDED SIDING MATERIALS



A sound foundation is essential to the maintenance of your house. Moisture and untreated foundation problems can cause irreversible structural damage. Wet wood leads to dry rot and termites.

When repairs are needed to foundations, floor joists and the plate and frame, it's always a good idea to consult an experienced carpenter first. For example, if wooden floor joists have deteriorated because of moisture or termites, you need to determine how much load the support walls should bear before reinforcing old joists with new wood or foundation posts.

In case of foundation posts, allow a minimum of at least 18 inches between the ground and the bottom of floor joists for ventilation and access. Keep the area underneath the house dry.

The wood siding on your house is its "skin". Most houses were of

single-wall construction, and the most common types of siding were 1" x 12" vertical board and batten or 1" x 6" vertical tongue and groove boards.

Damaged siding and sills should be repaired rather than replaced, and home owners can repair surface damaged wallboards themselves with water putty as filler.

Be sure to have the house fumigated every five years. If the exterior siding has deteriorated beyond repair in parts of the house, selective replacement of exterior siding is required. Duplicate the original as closely as possible. With board and batten siding, maintain the original spacing of boards and battens to avoid covering any of the original trim such as corner boards and window and door frames. Use of synthetic materials such as aluminum, vinyl or plastic, over wooden siding, may lead to moisture problems and should be avoided.

ELECTRICAL & PLUMBING

In setting priorities for repairs to your house, keep in mind that electrical and plumbing work, if needed, should be first choices. Electrical repairs involve life safety, and plumbing repairs will reduce moisture problems in the structure. When making necessary electrical and plumbing repairs, install the

PLANTING

Existing plant materials and varieties should be retained, and new trees, shrubs and flowers should go together with older plantings.

Vegetation growing too close to the structure traps moisture in foundations and siding. Keeping a two-



GUIDELINES FOR REHABBI

AL SYSTEM JMBING

systems in areas that will require the least possible alteration to the house. Continue to use the traditional exposed bulb lighting system on lanai and in carports and garages. Avoid placing electric meters and other equipment, like television antennas, where they can be seen from the street.

& HEDGES

foot buffer space between plantings and the building is a good idea.

Existing hedges should be maintained. Growing hedges of hibiscus, crotons, panex, spider lilies, or ironwood are preferable to wire and wooden fences.



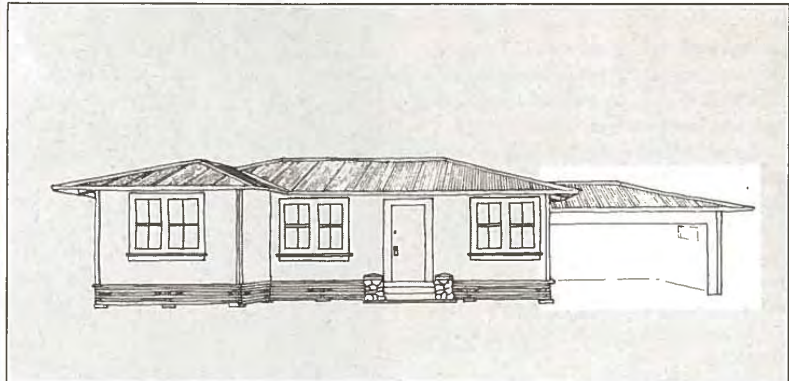
NEW ADDITIONS & SECONDARY STRUCTURES

The scale, proportions, materials and color of the existing house should guide the design, construction and finish of any expansion of your house.

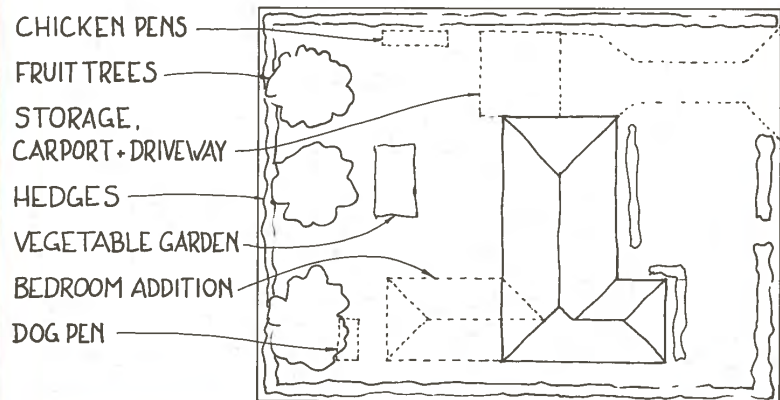
New construction of add-ons for living space, and the addition of secondary buildings — carports, garages and garden equipment buildings —

should be located as inconspicuously as possible.

An addition built to the side or rear of the dwelling will usually have the least impact. Avoid additions that are larger than the existing structure and don't build additions that will damage original building features and details.



TYPICAL PLOT PLAN



ING KAUAI'S OLD HOUSES

MAKING IT HAPPEN

Little problems can become big and expensive ones if you put them off. You can do quite a bit of work yourself by taking care of things right away. To avoid being overwhelmed, keep the projects small.

Before you do any repairs, even minor ones, ask local people who are involved in old building maintenance for their recommendations.

Make up a list of materials you will need, and check out places listed in the Yellow Pages to get two or three bids. You can save money if you order materials in advance. Remember that repairs are labor intensive and take time, but repairs usually do not require much material.

Residential repairs usually do not require building permits. Permits are not needed for exterior painting, re-roofing (provided you are replacing the same type of roofing material), and cabinet work. Also, spending \$3,000 for additional repairs over a 12 month period is allowed without a permit.

If you plan to do major house renovation repairs in a short period of time, check with the County of Kauai Public Works Department Building Division for building permit and building code requirements.



MAHALOS



These guidelines were developed by the Community Housing Resource Board of Kauai with a grant from the U.S. Department of Housing and Urban Development to whom acknowledgement is gratefully made. This fair housing project was initiated and directed by Fred Holthaus of the Kauai County Housing Agency.

The brochure was written and

edited by Barnes Riznik, Director, Grove Farm Homestead and Waioli Mission House, who also serves as a member of the Kauai County Historic Preservation Review Commission. Steve Johnson, Robert Schleck and Richard Candee reviewed the technical content of the text, and Pat Palama prepared it for the printers. Griffin Noyes Associates were responsible for the illustrations, design and layout.

COMMUNITY HOUSING RESOURCE BOARD OF KAUAI 

LĀNAʻI CITY
COUNTRY TOWN BUSINESS DISTRICT
DESIGN GUIDELINES AND STANDARDS
2019