

SUNSET EVALUATION REPORT

**PROFESSIONAL ENGINEERS, ARCHITECTS,
SURVEYORS AND LANDSCAPE ARCHITECTS**

Chapter 464, Hawaii Revised Statutes

A Report to the Governor and the Legislature of the State of Hawaii

**Submitted by the
Legislative Auditor of the State of Hawaii**

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FOREWORD

Under the "sunset law," licensing boards and commissions and regulated programs are terminated at specified times unless they are reestablished by the Legislature. Nationally, the first sunset law was passed in 1976. Within three years, 30 more states had enacted similar legislation. The rapid spread of sunset legislation reflects increasing public concern with what it sees as unwarranted government interference in everyday activities.

Hawaii's Sunset Law, or the Hawaii Regulatory Licensing Reform Act of 1977, scheduled for termination 38 occupational licensing programs over a six-year period. These programs are repealed unless they are specifically reestablished by the Legislature. In 1979, the Legislature assigned the Office of the Legislative Auditor responsibility for evaluating each program prior to its repeal.

This report evaluates the regulation of professional engineers, architects, surveyors, and landscape architects under Chapter 464, Hawaii Revised Statutes. It presents our findings as to whether the program complies with the Sunset Law and whether there is a reasonable need to regulate professional engineers, architects, surveyors, and landscape architects to protect public health, safety, or welfare. It includes our recommendation on whether the program should be continued, modified, or repealed.

Our approach to the evaluation of the regulation of professional engineers, architects, surveyors, and landscape architects is described in Chapter 1 of this report under "Framework for Evaluation." That framework is also used for all our other sunset evaluation reports. It is based on the policies enunciated by the Legislature in the Sunset Law. The first and basic test we applied was whether an identifiable danger to public health, safety, or welfare could result from the conduct of the occupation or profession being regulated. Then the other criteria for the evaluation were applied.

We acknowledge the cooperation and assistance extended to our staff by the Board of Registration of Professional Engineers, Architects, and Surveyors, the Department of Commerce and Consumer Affairs, and other officials contacted during the course of our examination.

Clinton T. Tanimura
Legislative Auditor
State of Hawaii

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Chapter 1

INTRODUCTION

The Hawaii Regulatory Licensing Reform Act of 1977, or Sunset Law, repeals statutes concerning 38 state licensing boards and commissions over a six-year period. Each year, six to eight licensing statutes are scheduled to be repealed unless specifically reenacted by the Legislature.

In 1979, the Legislature amended the law to make the Legislative Auditor responsible for evaluating each licensing program prior to its repeal and to recommend to the Legislature whether the statute should be reenacted, modified, or permitted to expire as scheduled. In 1980, the Legislature further amended the law to require the Legislative Auditor to evaluate the effectiveness and efficiency of the licensing program, even if he determines that the program should not be reenacted.

Objective of the Evaluation

The objective of the evaluation is: To determine whether, in light of the policies set forth in the Sunset Law, the public interest is best served by reenactment, modification, or repeal of Chapter 464, Hawaii Revised Statutes.

Scope of the Evaluation

This report examines the history of the statute on licensing of engineers, architects, surveyors, and landscape architects and the public health, safety, or welfare that the statute was designed to protect. It then assesses the effectiveness of the statute in preventing public injury and the continuing need for the statute.

Organization of the Report

This report consists of three chapters: Chapter 1, this introduction and the framework developed for evaluating the licensing program; Chapter 2, background information on the regulated industry and the enabling legislation; and Chapter 3, our evaluation and recommendation.

*NOTE: Originals for pages 2-5 are filed with Report No. 83-7,
Sunset Evaluation Report, Real Estate Brokers and Salesmen,
Chapter 467, Hawaii Revised Statutes.*

Chapter 2

BACKGROUND

Chapter 464, Hawaii Revised Statutes, regulates the professional practice of engineering, architecture, land surveying, and landscape architecture in the State. The law prohibits any person, corporation, or partnership from practicing unless that person or those in charge of the corporation or partnership possess a valid state certificate of registration.¹ The State began regulating the first three professions in 1923 with the enactment of Act 227. Landscape architecture became regulated in 1970 with the passage of Act 85.

Occupational Characteristics

According to data provided by the Department of Commerce and Consumer Affairs (DCCA), there are 2,875 engineers, 859 architects, 178 land surveyors, and 95 landscape architects who hold valid certificates of registration from the State.² The following sections describe briefly each of these professions.

Engineering. Engineers apply the theories and principles of science and mathematics to solve practical technical problems.

Examples of engineering skills date far back in history. The pyramids of Egypt are examples of early engineering feats as are many of the still-used bridges, roads, and aqueducts built by the Romans.

From these beginnings, engineering has grown and is today second only to teaching in total employment in a professional occupation. Approximately 1.2 million persons in this country were employed as engineers in 1980.³

1. Although the term "certificate of registration" is used, the certificate is for all practical purposes a "license" since it is illegal to practice without such a certificate.

2. State of Hawaii, Department of Commerce and Consumer Affairs, *Geographic Report*, September 29, 1982.

3. U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook, 1982-83*, April 1982, p. 57.

Most engineers specialize in one of the more than 25 branches of engineering. These branches include such specialties as aerospace, agricultural, chemical, civil, electrical, industrial, mechanical, petroleum, and structural engineering.

Engineers develop scientific hardware to explore outer space and the oceans; design defense and weapons systems for the military; and design, develop, and supervise the construction of buildings, skyscrapers, highways, and transportation and rapid transit systems. Engineers also design and develop consumer products such as automobiles, television sets, and refrigerators.

About half of all engineers work in manufacturing industries. In 1980, about 400,000 were employed in nonmanufacturing industries including construction, public utilities, and business and management consulting services. Local, state, and federal governments employ approximately 160,000 engineers.⁴

All 50 states plus the District of Columbia require licensing for engineers who serve the public and whose work may affect safety, health, or property.⁵ Licensing requirements generally include a degree from an accredited engineering school, four years of relevant work experience, and passing a state examination.

There are numerous professional engineering societies and associations that support the career interests of their membership. The first American professional engineering society, the American Society of Civil Engineers (ASCE), was founded in 1852.⁶ It now has over 78,000 members. Membership in its Hawaii branch numbers over 775.⁷

The umbrella organization for all engineering societies is the American Association of Engineering Societies (AAES) which was formed in January 1980. The AAES, which replaced the Engineers Joint Council, currently represents about 750,000 engineers.⁸

4. *Ibid.*

5. *Ibid.*, p. 58.

6. Mark D. Zimmerman, "Professional Organizations, New Focus for Loyalty," *Machine Design*, v. 51, no. 21, September 1979.

7. Interview with Richard Fewell, President, American Society of Civil Engineers—Hawaii Section, September 13, 1982.

8. "Engineer Leader Urges Energy Goals," *Honolulu Star-Bulletin*, August 28, 1979.

Architecture. Architects provide a variety of professional services to clients planning building projects. They are involved in all phases of development from the initial discussion of general plans with the client to construction. Their duties require a variety of skills—design, engineering, management, and supervisory.

An architect's services are divided into four phases: (1) schematic design; (2) design development; (3) construction documents; and (4) construction contract administration.

During the first phase, architects analyze their clients' needs and requirements; inspect the construction site; study zoning laws, codes, and other building design regulations; and prepare estimates of construction costs.

After approval of the schematic design by their clients, architects prepare the plans and elevations of buildings and discuss with their clients the exact dimensions of all portions of the buildings and the location of electrical outlets and fixtures, plumbing, heating, and air conditioning facilities.

In phase three, they prepare the construction documents which include the working drawings and specifications that describe in detail all the work to be done by the building contractors. Cost statements are reviewed and approvals are obtained from their clients.

In the last phase, architects assist their clients in obtaining bids from construction companies and advise them on the selection of contractors. During the construction period, architects review and approve shop drawings, and make periodic visits to the site to make sure that the construction is done in accordance with all specifications.

In 1980, about 80,000 architects were employed in the United States. Most architects work for architectural or engineering firms or for builders, real estate firms, or other firms that have large construction programs. Architects also work for government agencies responsible for housing, planning, or community development.⁹

9. U. S. Bureau of Labor Statistics, p. 52.

The major professional architectural organization is the American Institute of Architects (AIA), founded in 1857 in New York. In 1979, the AIA consisted of 216 local chapters with a membership of some 26,000.¹⁰

All 50 states and the District of Columbia require persons to be licensed before they may call themselves architects or provide architectural services. To qualify for the licensing examination, a person must normally have at least a Bachelor of Architecture degree followed by three years of practical experience in an architect's office. As a substitute for formal education, most states accept additional experience (usually 13 years) and successful completion of a qualifying test for admission to the licensing examination.¹¹

Surveying. Surveyors establish official land boundaries, research deeds, write descriptions of land to satisfy legal requirements, assist in establishing land valuations, measure construction and mineral sites, and collect information for maps and charts.

As with engineering, the origins of surveying date far back in history. For example, the Great Pyramid of Khufu at Giza, built around 2700 B.C., is so accurately square and so perfectly oriented to the cardinal points of the compass that it immortalized the surveying skills of the Egyptians.

The need for surveying skills grew as nations found it necessary to establish boundaries, and citizens found it necessary to mark property lines and boundaries. As this country developed, settlers found it necessary to chart their routes and establish new land ownership through surveys and the filing of claims.

Today, surveying is performed in a similar manner throughout the world except for minor details of technique and the use of different instruments. The methods used are a reflection of the instruments which are manufactured primarily in Austria, East and West Germany, Great Britain, Japan, and the United States.

10. State of Oregon, Legislative Research, *Staff Sunset Review, State Board of Architect Examiners*, December 1979, pp. 8-9.

11. U. S. Bureau of Labor Statistics, p. 52.

Surveys are normally conducted by a survey party headed by a land surveyor who is directly responsible for the party's activities and the accuracy of its work. The land surveyor plans the fieldwork, selects survey reference points, and determines the precise location of natural and constructed features of the survey project area. The surveyor is also responsible for recording the data obtained, verifying the accuracy of the survey data, and preparing necessary sketches, maps, and reports.

Surveying is divided into different types according to its purpose. Surveys to establish property boundaries represent a large, highly specialized branch known as land surveying. A land surveyor must be knowledgeable not only in surveying techniques but also must have an understanding of real property law and be capable of making technical decisions that can be justified in a court of law. Other types of surveyors include topographical surveyors, geodetic surveyors, highway surveyors, geophysical prospecting surveyors, and pipeline surveyors. This report focuses exclusively on land surveyors, the only type of surveyor currently regulated by the State.

In 1980, approximately 60,000 surveyors were employed in the United States. Approximately one-fourth of these surveyors worked for local, state, and federal government agencies. Most surveyors employed by local and state governments work for highway departments and other public works agencies. About 40 percent of all surveyors work for construction companies and for engineering and architectural consulting firms. Many surveyors either work for or own firms that conduct surveys for a fee. Surveyors are also employed by the utilities, natural gas and petroleum companies, and the transportation industry.¹²

All 50 states require land surveyors who make property and boundary surveys to be licensed. The requirements for licensure vary from state to state but, in general, include one of the following: (1) a college graduate, two to eight years of experience, and passing a state licensing examination; or (2) eight to 20 years of surveying experience and passing a licensing examination.¹³ Some states now require a bachelor's degree in surveying or in such related fields as civil engineering or forestry with courses in surveying.

12. *Ibid.*, p. 55.

13. National Council of Engineering Examiners, *Land Surveying Registration Requirements*, February 19, 1982.

Landscape architecture. The practice of landscape architecture centers on physical land planning and design for a variety of projects, such as parks, schools, commercial, industrial, and residential sites.

The term “landscape architect” was coined in 1858 by Frederick Law Olmstead, the designer of New York City’s Central Park. The practice of landscape architecture has existed as a recognized profession since the establishment of the American Society of Landscape Architects (ASLA) in 1899, and the first complete academic program in landscape architecture was established by Harvard University in 1901.¹⁴

Today, the profession of landscape architecture has moved from an earlier emphasis on large-scale park, estate planning, and physical city planning to contemporary work in regional and urban landscape analysis and commercial, industrial, and residential projects.

In 1980, about 15,000 persons worked as landscape architects in the United States. Most had their own businesses or worked for architectural, landscape architectural, or engineering firms. Others were employed by government agencies involved with forest management, water storage, public housing, city planning, urban renewal, highways, parks, and recreation.¹⁵

The ASLA is the major professional association for landscape architects and serves as the accrediting body for schools of landscape architecture. The ASLA–Hawaii Chapter has approximately 65 members.

Hawaii is one of 16 states which regulate both the title of landscape architect and the practice of landscape architecture. Thirteen states regulate only the title, and seven states regulate only the practice.¹⁶

The requirements for licensure normally include graduating from an accredited school of landscape architecture, having one to four years of practical experience under the supervision of a licensed landscape architect, and passing a state examination. Most states will accept from four to 13 years of practical experience in lieu of formal college training.

14. Michael Laurie, *An Introduction to Landscape Architecture*, American Elsevier, 1975, pp. 6–10.

15. U. S. Bureau of Labor Statistics, pp. 53–54.

16. Council of Landscape Architectural Registration Boards, *State Comparison Chart*, CLARB, 1982.

Statutory History

Professional engineers, architects, and surveyors have been regulated by the State for nearly 60 years while regulation of landscape architects is comparatively recent. Act 227, SLH 1923, created a Territorial Board of Registration for Professional Engineers, Architects and Surveyors and empowered the board to issue certificates of registration and, subject to the approval of the Governor, to suspend or revoke such certificates.

The legislative intent of Act 227 was “to safeguard life, health and property”¹⁷ The House Judiciary Committee reported that “the designing of public buildings, or of large structures, or the practice of a profession having to do with public interest, should only be done by qualified persons.”¹⁸ The Senate Ways and Means Committee noted in its report that the committee “believes this measure is for the interest and the protection of the public”¹⁹

Since 1923, Act 227 has been amended almost two dozen times, mostly minor changes. Among the more significant amendments, Act 165 in 1931 changed the title of “surveyors” to “land surveyors” to distinguish those professionals from other classes of surveyors who are not subject to regulation. The act also required that certificates of registration for professional engineers indicate the major branch of engineering a registrant has qualified for. In addition, Act 165 repealed the requirement that the board obtain the Governor’s approval to revoke or suspend a certificate of registration.

In 1949, Act 306 revised and clarified the statutory definition of the practice of land surveying. Membership on the board was increased with required board representation from each of the counties. Act 306 also clarified and expanded the powers of the board to include enforcement of the chapter. Finally, the act significantly stiffened the qualification requirements for registration.

Act 85, SLH 1970, added the regulation of landscape architects to the board’s responsibilities. Support for licensing came from various design professional societies in Hawaii including ASLA–Hawaii Chapter, which noted that the other design professionals

17. Section 1, Act 227, SLH 1923.

18. House Standing Committee Report No. 348 on House Bill 262, Regular Session of 1923.

19. Senate Standing Committee Report No. 472 on House Bill 262, Regular Session of 1923.

(engineers, architects, etc.) were required to be licensed in Hawaii and that only landscape architects were not required to be regulated.

It was noted in legislative testimony that landscape architects “design, prepare working drawings for, and supervise the installation of millions of dollars worth of public and private construction involving land development, consequently the public should be protected from incompetent landscape architect practitioners.”²⁰

Nature of Regulation

Under Chapter 464, the licensing of professional engineers, architects, land surveyors, and landscape architects is regulated by a 14-member board placed for administrative purposes in the Department of Commerce and Consumer Affairs. The department provides staff support to the board.

As required by law, board membership consists of three professional engineers, three architects, three surveyors, two landscape architects, and three public members. Each of the counties is represented by at least one of the board members.

Board members must be residents of the State for at least three years, and all professional members of the board are required to have been engaged in professional practice for at least nine years immediately preceding appointment to the board. State law specifies a term of four years for board members. They may, however, be appointed to an additional four year term.

The members of the board serve without pay but are reimbursed for expenses incurred during the performance of their duties. The board must hold at least two regular meetings each year and have a chairman, vice-chairman, and a secretary.

The powers and duties granted by statute to the board include the authority to conduct examinations; grant, suspend, revoke, or refuse to renew certificates of registration; subpoena witnesses, administer oaths, and take testimony; make bylaws and

20. Testimony on House Bill 1924–70 before the House Committee on Judiciary by the American Society of Landscape Architects, Hawaii Chapter, March 19, 1970.

adopt, amend, and repeal rules and regulations; keep records of its proceedings and all applicants for registration; and “do all other things necessary and proper to carry out this chapter in all matters within its jurisdiction.”²¹

The law exempts certain persons from the provisions of the chapter. Among those exempt are: (1) persons practicing professional engineering, architecture, land surveying, or landscape architecture solely as officers or employees of the local, state, and federal governments; (2) persons engaging in these professions on privately owned or controlled property unless the safety or health of the public is involved; and (3) persons engaged in land surveying upon privately owned or controlled property unless a common boundary is involved.

Additionally, the law exempts certain structures from the provisions of Chapter 464. These include: (1) any privately owned or controlled one-story building, the estimated cost of which does not exceed \$40,000; (2) any privately owned or controlled two-story building, the estimated cost of which does not exceed \$35,000; (3) any privately owned or controlled one-story structure used primarily as a residence, the estimated cost of which does not exceed \$50,000; and (4) any privately owned two-story structure used primarily as a residence, the cost of which does not exceed \$45,000.

Registration requirements and procedures. There are certain requirements for licensing that are common to all four of the professions regulated by the board, and there are also other qualifying conditions that are unique to each profession.

Among the common requirements are the payment of application and registration fees, the requirement that applicants be of good character and reputation, and the requirement that all applicants pass a one-half hour examination covering the state registration law and the rules and regulations of the board.

Chapter 464 specifies that all experience must be “lawful” in all cases where experience is required. This means that the experience must be satisfactory to the board as defined in Chapter 82, Title 16, of the board’s rules and regulations.

21. Section 464–7, HRS.

In addition to the requirements that are specific to each profession, the board may, at its discretion, require additional proof that the applicant is competent to practice professionally. Whenever the board is not fully satisfied with the results of an examination, it may give the applicant a further examination or examinations.

The requirements specific to each profession are described below.

Engineers. The law defines a person who practices professional engineering as one “who holds himself out as able to perform, or who does perform, any professional service such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects, wherein the safeguarding of life, health, or property is concerned or involved when such professional service requires the application of engineering principles and data.”

To qualify for a certificate of registration as a professional engineer, a person must meet one of two sets of qualification standards: (1) graduate from a school or college approved by the board; complete an engineering curriculum of four or more years; have three years of full-time experience in engineering work or equivalent part-time experience; and pass a written and/or oral examination; or (2) have 12 years of full-time experience in engineering work or equivalent part-time experience; and pass a written and/or oral examination.

Architects. An architect is defined by statute as one “who holds himself out as able to perform, or who does perform, any professional service such as consultation, investigation, evaluation, planning, design, including aesthetic and structural design, or responsible supervision of construction, in connection with any private or public buildings, structures, or projects or the equipment or utilities thereof, or the accessories thereto wherein the safeguarding of life, health, or property is concerned or involved, when such professional service requires the application of the art and science of construction based upon the principles of mathematics, aesthetics, and the physical sciences.”

To be eligible for registration as a professional architect, a person must meet one of the five following sets of criteria:

(1) Hold a masters degree in architecture from an approved institution of higher education; have one year of full-time experience in architectural work; and pass a professional written or oral examination, or both; or

(2) Hold a bachelor's degree in architecture from an approved school or college; complete an architectural curriculum of five years; have two years of full-time experience in architectural work; and pass a written or oral examination, or both; or

(3) Be a graduate of an approved school or college; complete a pre-architecture or arts and sciences curriculum of four years or more; have five years of full-time experience in architectural work; and pass a written or oral examination, or both; or

(4) Be a graduate of a community college or other technical training school approved by the board; complete an architectural technology curriculum of two years or more; have eight years of full-time experience; and pass a qualifying written examination and a professional written or oral examination, or both; or

(5) Have 11 years of full-time experience in architectural work; and pass a qualifying written examination and a professional written or oral examination, or both.

Landscape architects. The statute defines a person practicing landscape architecture as one “who holds himself out as able to perform professional services such as consultation, investigation, reconnaissance, research, design, preparation of drawings and specifications, and responsible supervision where the dominant purpose of such services is: (A) the preservation and enhancement of land uses and natural land features; (B) the location and construction of aesthetically pleasing and functional approaches for structures, roadways, and walkways; and (C) design for equestrian trails, plantings, landscape irrigation, landscape lighting, and landscape grading. This practice shall include the location, arrangements, and design of such tangible objects and features as are incidental and necessary to the purposes outlined herein.”

The statute prohibits the practice of landscape architecture or use of the title landscape architect unless licensed under Chapter 464.

Exempted from the provisions of the chapter are: any business conducted by an agriculturist, horticulturist, tree expert, arborist, forester, gardeshop operator, nurseryman or landscape nurseryman, gardener, landscape gardener, landscape contractor, landscape designer, landscape consultant, garden or lawn caretaker, or cultivator of land.

To register as a professional landscape architect, an applicant must meet one of two sets of qualification standards: (1) graduate from a school or college approved by the board; complete a landscape architectural curriculum of four or more years; have three years of full-time experience in landscape architecture work or equivalent part-time experience; and pass a written and/or oral examination; or (2) have 12 years of full-time experience in landscape architecture work or equivalent part-time experience; and pass a written and/or oral examination.

Land surveyors. The law defines a person who practices land surveying as one “who holds himself out as able to make, or who does make cadastral surveys²² of areas for their correct determination and description, either for conveyancing or for the establishment or reestablishment of land boundaries or the plotting of lands and subdivisions thereof.”

To register as a professional land surveyor, an applicant must meet one of three sets of qualification standards: (1) graduate from a school or college approved by the board; complete a geo-science, civil engineering, or general engineering curriculum of four or more years; have three years of full-time experience in land surveying in Hawaii; and pass a professional written and/or oral examination; (2) graduate from a community college approved by the board; complete a civil engineering technology (survey option) curriculum of two or more years; have seven years of full-time experience in land surveying (three years of which have been in Hawaii); and pass a qualifying written examination and a professional written and/or oral examination; or (3) have 11 years of full-time experience in land surveying (three years of which have been in Hawaii); and pass a qualifying written examination and a professional written and/or oral examination.

Endorsement, temporary permits. Under the law, the board may issue a certificate of registration by endorsement to engineers, architects, and landscape architects who hold an unexpired certificate issued by any foreign or domestic jurisdiction whose registration requirements are of a standard satisfactory to the board. If uncertain of the applicant’s qualifications, the board may require a written and/or oral examination.

22. Cadastral surveys are those surveys which create, mark, define, and reestablish land boundaries.

Temporary permits may be issued by the board to nonresident persons for a limited period of time. These permits may be issued only to persons who present evidence to the board that they possess the same qualifications required of applicants for permanent registration. At its discretion, the board may cancel the temporary permits at any time.

Certificate, use of seal. Every person who is registered is required to display conspicuously the original certificate in the person's principal office or place of business. The certificate bears the date of the original registration, specifies the field of registration, and, in the case of professional engineers, indicates the major engineering branch the registrant has specifically qualified for. Every certificate of registration expires on April 30 of each even-numbered year following its issuance and becomes invalid after that date unless renewed.

Registered professionals may use a seal or rubber stamp bearing the person's name and title. The law requires all plans, maps, specifications, and reports prepared by or under a registered professional to be stamped with such a seal or stamp when filed with public officials.

Officials of the State and its political subdivisions enforcing laws or ordinances relating to the construction or alteration of buildings or structures are prohibited from accepting or approving plans or specifications that are not stamped by a registered architect or registered structural engineer unless the structure is exempt under Chapter 464. Maps and surveys filed in the land court must bear the seal of a registered land surveyor.

Suspension or revocation of certificates. The board has the authority to revoke or suspend the certificate of registration of any person found guilty of any fraud or deceit in obtaining a certificate, gross negligence, incompetency, misconduct in the practice of the profession, or violating Chapter 464 or the rules and regulations of the board. Any person may initiate charges in writing with the board secretary against any person holding a certificate.

In cases where a professional's certificate may be revoked or suspended, the board is required to give the person proper notice and a hearing in conformity with the Administrative Procedure Act. In all proceedings, the board has the same powers regarding the administering of oaths, compelling the attendance of witnesses and the production of documentary evidence, and examination of witnesses as are possessed by circuit courts.

Violations, penalties. Persons who violate Chapter 464 are subject to the following penalties. A person may be fined not more than \$500 and/or imprisoned not more than one year if that person: (1) falsely practices or holds himself out as authorized and qualified to practice professional engineering, architecture, land surveying, or landscape architecture; (2) uses any title, card, sign, or device indicating authorized professional registration without first registering or without having a valid and unexpired certificate; or (3) uses the seal or certificate of another person, falsely impersonates a registered practitioner, or uses an expired, suspended, or revoked certificate. A firm or corporation may be penalized if it furnishes or offers to furnish these professional services without first complying with the provisions of Chapter 464.

Chapter 3

EVALUATION OF THE REGULATION OF PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS, AND LANDSCAPE ARCHITECTS

This chapter contains our evaluation of the regulation of professional engineers, architects, land surveyors, and landscape architects under Chapter 464, Hawaii Revised Statutes, including our evaluation of the need for regulation and existing regulatory operations. We conclude this report with our recommendations.

Summary of Findings

Our findings are as follows:

1. Even with regulation, a significant potential for public harm exists with the practices of engineering, architecture, and land surveying. The absence of regulation would expose the public to even greater threat of harm.
2. While the practice of landscape architecture may pose some threat of harm to the public, the risks and likelihood of harm are not significant enough to warrant state regulation. The licensing of landscape architects does not protect the public from harm in any meaningful or necessary manner.
3. The regulatory operations of the board could be improved by implementing several changes in the board's standards for licensing, applications administration, and development and grading of examinations.

The Need for Regulation

Potential harm from engineers, architects, and land surveyors. We find that the practices of engineering, architecture, and land surveying pose a clear and significant threat to the public and that this potential for harm exists even when these professions are regulated. Although engineers, architects, and land surveyors are regulated in all 50 states, inappropriate, negligent, and incompetent practices continue to occur and result in significant harm to the public through serious injury, loss of property and life, and severe financial loss.

Collapsed buildings and structures represent the most dramatic example of the danger to the public posed by engineers and architects. Although there is currently no national compilation of figures on structural failures due to design errors, the chairman of the committee on damaged and failed structures of the American Society of Civil Engineers has estimated that in the last ten years there have been at least 500 sizable structural failures annually. He estimated repair and replacement costs at “hundreds of millions, perhaps billions of dollars. . . .”¹

Nationally, there are several notable examples of design errors resulting in tragic building and structural failures. On July 17, 1981, two 145-foot-long skywalks spanning the lobby of the year-old Hyatt Regency Hotel in Kansas City collapsed on 1,500 dancers killing 114 persons and injuring 216. Records show that the skywalks fell after a design change was made in a telephone call between the structural engineering company and the steel fabricator. Stress calculations would have shown that the redesigned skywalks were barely able to support their own weight. Unfortunately, no such calculations were done. It was reported that each of the two engineers who made the redesign change apparently assumed that it was the other’s responsibility to make the new calculations.²

Design errors and construction deficiencies also resulted in the 1978 cooling tower collapse in West Virginia which killed 51 workers. As a result of the construction accident, considered one of the country’s worst, the federal Occupational Safety and Health Administration issued ten citations for “willful violations” against the company that had designed and was building the tower.³

Two other notable failures include the Hartford (Connecticut) Civic Center Colliseum and the Kemper Memorial Arena in Kansas City. In January 1978, the huge steel roof of the Hartford Civic Center collapsed under a heavy snow and ice load.⁴ In June of 1979, the ceiling of the 17,500-seat Kemper Arena collapsed without warning.⁵

1. Walter McQuade, “Why All Those Buildings Are Collapsing,” *Fortune*, November 19, 1979, p. 58.
2. “Haunted Hotel,” *The Wall Street Journal*, October 8, 1982, p. 1.
3. McQuade, p. 61.
4. *Ibid.*, p. 58.
5. *Ibid.*

Fortunately, neither the civic center nor the indoor arena were in use at the times of the accidents. Engineers estimated that had the structures been in use, the number of deaths would have run into the thousands.⁶

In the civic center collapse, the accident was blamed on design errors. Based on the original drawings, the roof was designed with inadequate bracing and an insufficient margin for safety. In the Kemper Arena accident, an investigation indicated that the engineers and architects were negligent and developed faulty specifications to construct the framing of the arena.⁷

Locally, Hawaii has been fortunate. There have been no instances in which collapsed buildings or structures have resulted in any deaths. In a 1970 incident, however, a portion of the ceiling of a market in Kalihi collapsed injuring six persons including one young woman who had to be hospitalized.⁸ The owner of the market subsequently filed a successful lawsuit against the architect, structural engineer, and contractor for the poor design and faulty construction of the ceiling.

There are other local examples of structural problems. The most notable of these are the problems associated with the business administration complex of the University of Hawaii at Manoa. The building was completed in 1971 at a cost of approximately \$4.5 million. Problems with the building became evident in 1973 when large cracks began appearing in the walls, ceilings, and support pillars.⁹

The F-Tower of the business administration complex had the most problems. A report done by engineering consultants in March 1980, concluded that the tower was in danger of possible structural failure and beyond repair. After \$1 million in repairs, the F-Tower was demolished in 1980 at a cost of about \$700,000.¹⁰ In December 1980, the State filed a \$10 million lawsuit against the architectural-engineering firm and the general contracting firm for, according to the State, negligence in the performance of their work.

6. Jane U. Rippeteau, "The Failures Exposed by the Hyatt Disaster," *Business Week*, August 3, 1981, p. 24.

7. McQuade, p. 63.

8. "Supermart's Ceiling Falls, Injuring 6," *Honolulu Star-Bulletin*, February 14, 1970.

9. "5-Year-Old Building at UH is Crumbling," *Honolulu Star-Bulletin*, October 19, 1976, p. A-1.

10. "\$10 Million Suit Names Builders of U.H. Tower," *Honolulu Advertiser*, December 13, 1980.

In another incident, it was discovered in 1981 that the metal decking under Aloha Stadium's concourse flooring was badly corroded. The State suspected that the architects and others involved in the construction might have been responsible for the problems and spent approximately \$1.3 million to replace the flooring. In June 1982, the State filed a \$3.3 million lawsuit against the designers, builders, and suppliers of steel for the stadium construction.¹¹

In July 1982, the residents of one tower of the Aloha Towers Condominium in Waikiki were asked as a precautionary measure to evacuate their units because cracks were discovered in several concrete and steel support beams in the fifth floor recreation deck. It has been estimated that the repair bill could exceed \$100,000. The owners' association is currently negotiating with the building's engineer and developer over who will pay the repair bill.¹²

In September 1982, a \$1.8 million out-of-court settlement was obtained by apartment owners of the Mt. Terrace Condominium in Hawaii Kai who claimed that their building was improperly designed and constructed. The condominium owners reached the settlement with the developer. The primary problems with the condominium, built in 1974, were window leaks and cracks in the pool foundation, allegedly resulting from design errors and faulty construction. The developer is currently seeking damages from the design professionals, the general contractor, and subcontractors.¹³

Although examples of public harm involving land surveyors are not as dramatic or visible as those of engineers and architects, it is apparent, nonetheless, that a significant potential for harm exists. Unlike engineers and architects, land surveyors pose little risk of harm to the public's health or safety. The primary danger here is extended and costly litigation and severe financial loss resulting from improperly measured land and property boundaries.

11. "State Files \$3.3 Million Suit, Citing Rust at Aloha Stadium," *Honolulu Advertiser*, June 19, 1982, p. A-7.

12. "Aloha Towers Condo Repairs Under Way," *Honolulu Advertiser*, July 29, 1982, p. A-9.

13. "\$1.8 Million Condo Settlement," *Honolulu Advertiser*, September 27, 1982, p. A-2.

One of the most glaring local examples of the potential harm posed by land surveyors are the results of survey work, reported to be grossly incompetent even by standards of that period, sponsored by the land commission between 1850 and 1870. Up to 40,000 parcels of land underwent these “kuleana surveys.” Although these surveys were conducted numerous years ago, they remain significant because the improper survey work remains the source of many of Hawaii’s land and survey problems even today.

According to the Surveyor General’s Report of 1882, in these kuleana surveys “. . . No uniform rules or instructions were given to the surveyors employed, who were practically irresponsible. Few of them could be regarded as thoroughly competent surveyors, while some were not only incompetent but careless and unscrupulous. The result was that almost every possible method of measurement was adopted.”¹⁴ As might be expected, overlaps and gaps were common and it is difficult even today to put these old surveys together correctly. The continuing difficulty in retracing old surveys and completing original surveys and numerous property and land disputes and lawsuits have their origins in the poor quality of these earlier kuleana surveys.

There are more recent examples of improperly conducted land surveys which illustrate the severity of the potential harm. The State, the City and County of Honolulu, and several private surveyors and engineers are currently involved in a class-action lawsuit filed by property owners in the Aliamanu subdivision. The property owners allege that the legal description and the boundaries of each parcel of land in the subdivision are defective as a result of erroneous land surveys. The results include homes and other constructed improvements encroaching upon neighboring properties and upon public highways. In another case, the State is presently involved in a multi-million dollar lawsuit involving a highway project on Maui. The plaintiffs allege that the State was responsible for various surveying and design problems.

Our examination of complaint cases filed with the registration board further illustrates the need to protect the public from the possible harm involved in the practice of engineering, architecture, and land surveying.

14. Hawaii, Surveyor General, *Surveyor General’s Report*, Appendix 1, “A Brief History of Land Titles in the Hawaiian Kingdom,” Honolulu: P.C. Advertiser Co., 1882, p. 28.

Between 1977 and September 1982, 29 complaint cases were filed with the board. Of these 29 complaints, 11 were filed against registered engineers, nine against architects, five against land surveyors, three involved unlicensed practitioners, and in one case we were unable to determine which specific profession was involved. The complaints generally consisted of allegations of unprofessional conduct, poor workmanship, failure to complete work, unlicensed practice, and unethical business practices.

Finally, two recent developments serve to further illustrate the significant potential for harm posed by engineers, architects, and land surveyors. The first is the dramatic increase in claims paid by insurance companies for design problems caused by these professions; the second is the establishment in Hawaii of a design professional conciliation panel.

Professional liability, malpractice or errors and omissions insurance is a relatively new expense for design professionals. Prior to the 1950s, only a building owner could be sued by a third party, not the owner's design agent. Court decisions have since opened up these professionals to suit.

Since 1969, building-casualty claims paid by insurance companies have increased from an estimated \$32 million to \$235 million with hundreds of millions more still under litigation. In the past ten years, the amount of premiums paid by design professionals for liability insurance has leaped from approximately \$25 million a year to about \$175 million. Liability insurance now represents the second or third largest business expense for these professionals.¹⁵

In 1981, the State established a design professional conciliation panel to deal with the numerous lawsuits filed against engineers, architects, and land surveyors. The law requires that any person claiming that a tort has been committed by any of the three aforementioned professionals must file a claim with the conciliation panel before a suit based on the claim may be commenced in court. It is noteworthy that there is only one other profession in the State subject to a similar panel—the medical profession which, like the design professions, has been the target of numerous lawsuits.

15. McQuade, p. 58.

Conclusion. Our evaluation indicates that even with regulation, a significant potential for harm exists from the practices of engineering, architecture, and land surveying. Incompetent practitioners can cause severe economic loss to consumers and, especially in the case of engineers and architects, negligence or malpractice can result in serious injury, property loss, and even loss of life. Eliminating state regulation of these professions would expose the public to substantial danger. Finally, a persuasive consideration is that engineers, architects, and land surveyors are regulated in all 50 states, and it is noteworthy that all of the states require licensure, the most stringent form of regulation that prohibits those without licenses from practicing.

Potential harm from landscape architects. We find that while the practice of landscape architecture may pose some threat of harm to public health, safety, or welfare, the risks and likelihood of harm are not significant enough to warrant state regulation. Additionally, we find that the licensing of landscape architects does not protect the public from harm in any meaningful or necessary manner.

The practice of landscape architecture can be broken down into two general categories: (1) large-scale land evaluation and analysis; and (2) detailed site planning. Both types of practice may involve some threat of public harm.

Large-scale land evaluation and analysis is concerned with the systematic evaluation of large areas of land in terms of the land's suitability for use and may result in land use policies and plans. Potentially harmful results posed by this type of practice include serious land erosion, environmental degradation, and improper utilization and management of precious land resources.

Detailed site planning represents the more conventional aspects of landscape architecture and involves the design and preparation of precise plans for a specific project site, including the determination of outdoor structures and equipment, approaches, walkways, steps, ramps, plants, trees, grading, drainage, etc.

Potential dangers posed by this type of landscape architecture include contamination of water supplies; injuries resulting from improperly designed outdoor structures, playground equipment, walkways, steps, ramps, etc.; fire and/or shock hazards resulting from improperly designed outdoor lighting systems; and flooding resulting from improperly designed storm drains.

Although there may be some relationship between the practice of landscape architecture and public health, safety, or welfare, our evaluation was unable to identify any instances in which any significant harm to the public resulted from the practice. Our review of all complaint cases filed with the board from 1977 to September 1982 indicated that not a single complaint was filed against a landscape architect.

Even the testimony supporting the 1970 legislation for the regulation of landscape architects did not contain any specific cases in Hawaii of harm to the public resulting from the practice of the profession. The rationale for licensing landscape architects was that since other design professionals (engineers and architects) were licensed, it seemed reasonable that landscape architects should also be regulated.

In the vast majority of cases, the direct consumers of both types of landscape architectural services are sophisticated users, such as county, state, or federal agencies, corporations, private developers, institutions, or large land owners. Only infrequently is the direct consumer an individual property owner.

Current users of landscape architectural services are capable of protecting their own interests by evaluating the professional's competence and monitoring the progress and quality of the work. Since these direct consumers bear primary liability for any unsafe design or construction, it is in their best interests to ensure that the landscape architect selected actually has the necessary qualifications, experience, and competence.

Regulation of landscape architects is relatively meaningless in another respect. A relatively large number of unlicensed persons engage in similar landscape architectural or related services. Physical land planners and city and urban planners engage in the same kind of large-scale land evaluation and analysis without a license.

Additionally, there are numerous persons who are not landscape architects who engage in detailed site planning. These include: architects who design structures and approaches for structures; electrical engineers who work on landscape and exterior lighting systems; civil engineers who design walkways, roadways, grading and irrigation systems; and landscape contractors who work on drainage and sprinkler systems, ornamental pools and fountains, rockscaping, plantings and vegetation, walls, fences, and walks.

Other unlicensed persons who engage in landscape architectural services include arborists, landscape nurserymen, gardeners, landscape designers and consultants, horticulturists, agriculturists, tree experts, foresters, lawn caretakers, and gardenshop operators. The law does not prohibit these individuals from providing their respective services so long as they do not call themselves landscape architects.

We also find that the public is already protected against the potential harm posed by landscape architects through numerous federal, state, and county statutes, regulations, and codes on environmental protection, safety, land use and planning. These regulations safeguard the public against such possible harmful results as, for example, environmental degradation, improper management and use of lands, and improperly designed outdoor structures, equipment, walkways, steps, ramps, etc.

County zoning codes regulate how land is to be used by establishing zoning districts. Each type of district is subclassified to further define the permitted use and density. In addition, the code regulates height, lot and floor area, bulk, location, and parking requirements for buildings and uses within each zoning district.

Subdivision rules and regulations contain design standards and specific requirements for such things as access to public streets; drainage, water, sewers, and utilities; grading; street lighting; water supply and systems; planting; pedestrian ways; and street trees.

Environmental impact statements, informational reports disclosing the potential environmental effects of proposed developments, are required by state law under Chapter 343, HRS, for some land development projects.

The State Coastal Zone Management Law (Chapter 205A, HRS) authorizes the State Land Use Commission to administer land and water use regulations in coastal zones and to control development in those areas.

Additionally, based on the specific purpose, nature, and location of a proposed land use, a variety of permits or applications may be required. These include, for example, zoning variances, special management area permits, zone changes, special permits, conditional use permits, shoreline setback variances, and flood hazard district applications.

With these existing laws, regulations, and restrictions, it appears that there is little opportunity for licensed or even unlicensed landscape architects to become involved in unsupervised or unapproved projects that could pose any significant threat to public health, safety, or welfare.

Finally, we note that landscape architects, unlike engineers, architects, and land surveyors, are not regulated in all 50 states. In 14 of the states, landscape architects are unregulated.¹⁶ Of the 14 states that do not regulate landscape architects, two states, Colorado in 1977 and Utah in 1981, deregulated the profession as the result of sunset evaluations.

Regulatory Operations

Our evaluation of the board's existing regulatory practices indicates that improvements could be achieved by implementing changes in several key areas. This portion of the report will focus on suggested improvements in the following areas: (1) standards for licensing; (2) applications administration; (3) examinations; and (4) miscellaneous board operations.

Standards for licensing. While experience and apprenticeship requirements are valuable in helping to distinguish between the competent and incompetent applicant, such requirements may be unnecessarily restrictive and anticompetitive. They may prolong the period necessary for entry into the profession or give undue control to existing professionals over entry by new persons into the field. We find that existing board standards for licensing should be modified so that they are less restrictive and arbitrary.

According to several board members, the most difficult qualification requirement for applicants to meet and the requirement most troublesome for board members to evaluate is the work experience requirement. This may be due to the absence of any clearly defined, sufficiently detailed, written guidelines or standards that adequately explain what constitutes acceptable work experience.

16. States in which landscape architects are not regulated: Alaska, Colorado, Illinois, Missouri, New Hampshire, New Jersey, New Mexico, North Dakota, South Dakota, Utah, Vermont, Wisconsin, and Wyoming. Virginia provides optional certification. See Council of Landscape Architectural Boards. *State Comparison Chart*. Date: 1982.

Without such written guidelines, the board is unable to evaluate consistently whether the applicants actually meet the requirements. These guidelines should clearly specify those types of work experience which are relevant and acceptable to the board. The use of these guidelines would help ensure the uniform and equitable evaluation of applicants and protect the board from possible charges that it is arbitrary and unfair in its review process.

Under existing requirements, an applicant for registration as a landscape architect must meet certain educational requirements and possess three years of experience prior to taking the registration examination. Hawaii's experience requirement is more stringent than most states. Of the 35 other states that regulate landscape architects, 25 allow applicants meeting comparable educational requirements to take the examination with less than three years of experience; of these 25 states, ten require no work experience.

Under present requirements, no experience credit is extended to engineering or landscape architecture applicants who possess advanced degrees. In several states, advanced degrees may be used in lieu of some years of experience. However, in Hawaii, candidates with a masters or more-advanced degree in either of these two fields must also have three years of experience. Other states have not had problems as a result of allowing those with advanced degrees to practice with fewer years of experience.

The law requires persons without the necessary educational background in landscape architecture to possess at least 12 years of experience to qualify for the registration examination. Of the 35 other states that regulate the profession, only two require persons without the necessary education to possess 12 or more years of experience to qualify for the examination. Nationally, the average number of years of experience required of such candidates is only 7.6 years. Consideration should be given to shortening Hawaii's experience requirement.

Under existing board requirements, all applicants for registration as land surveyors must possess at least three years of experience in Hawaii regardless of the applicant's experience elsewhere. The rationale for this requirement is that Hawaii has a unique and different land survey system and that a surveyor cannot practice competently in Hawaii unless the surveyor understands the local system and is knowledgeable about local surveying practices and techniques.

Local land surveyors cite various factors that contribute to the uniqueness of land surveying in Hawaii. These include: (1) the necessity of understanding the unique history of the subdividing, granting, and transfer of land in Hawaii; (2) the necessity of being able to understand Hawaiian and to translate key Hawaiian land terms and phrases; (3) the prevalence of irregularly-shaped and difficult to measure parcels of land in Hawaii; (4) the preferred use locally of the azimuth and distance system of measurement; (5) the preferred use of metes and bounds in local land descriptions; (6) the great difficulty locally in retracing old surveys; (7) the use of the land court or torrens system in Hawaii; (8) the absence of any one comprehensive text or manual explaining local surveying techniques and practices; and (9) the accepted local practice of obtaining experience through a “master-apprentice” relationship.

While there is some merit to the board’s contention that land surveying in Hawaii is somewhat unique, other states are similarly unique. The requirement that applicants must have three years of experience in Hawaii is unnecessarily stringent and tends to restrict entry into the profession. Several land surveyors indicated that one or two years of experience in Hawaii is sufficient.

Moreover, knowledge about conditions and problems peculiar to Hawaii can be more directly measured by the land surveyor’s examination, which includes a component on Hawaii land matters.

Applications administration. We find that board members devote an inordinate amount of time reviewing applications. Some of this time might better be spent on such other board functions as policy discussion, professional development, legislative activities, rulemaking, complaints resolution, and examination activities.

Much of this review is devoted to evaluating the qualifying experience of applicants. As mentioned earlier, the development of written guidelines would, in addition to ensuring uniform and fair treatment of applicants, enable staff persons to participate more actively in the application review process and thereby eliminate the need for board members to spend as much time reviewing applications.

We also find that the board’s application forms and process contain several irrelevant and improper requirements.

(1) The requirements that applicants submit a personal photograph and divulge their birthdates, in addition to being irrelevant and unnecessary, can potentially result in accusations of race, age, or sex discrimination.

(2) Engineers, architects, and landscape architects seeking registration through endorsement are required to submit in writing the reasons for the desired certificate. This requirement is irrelevant, unnecessary, and unrelated to the qualifications and competence of the applicant.

(3) Applicants for registration are required to submit character reference forms. The usefulness of such forms is questionable. Applicants are unlikely to submit unfavorable references, and these forms often result in unnecessary work and inconvenience for board members, staff, and applicants.

(4) The requirement for character references relates to the statutory requirement that applicants be “of good character and reputation.” The problem, of course, is that there is no valid and reliable method for the board to determine an applicant’s character.

Examinations. The board currently utilizes uniform national examinations, sponsored by the National Council of Engineering Examiners (NCEE), National Council of Architectural Registration Boards (NCARB), and Council of Landscape Architectural Registration Boards (CLARB), as the licensing examination for engineers, architects, and landscape architects.

In addition to these national examinations, all applicants for registration are required to pass a locally developed and graded half-hour examination on the board’s registration laws and rules. Structural engineer candidates must pass a “tri-state or common” examination developed by board representatives from Washington, Oregon, and Hawaii. Landscape architecture candidates are required to pass a supplemental, one-hour, local examination on Hawaii plants.

Land surveyors, unlike the other three professions, do not use a uniform national examination. The local examination consists of two parts: (1) an eight-hour qualifying examination (general surveying) given during one day in September; and (2) a 12-hour

professional examination consisting of three components (advanced surveying, Hawaiian land matters, and special problems) given over a two-day period in April. The entire examination is developed and graded by the board but is usually administered by the department's examination branch.

We find several deficiencies with this local examination. New questions for some parts of the examination are developed on an infrequent and inconsistent basis, examination questions are not pretested or checked for item difficulty, and the examination has never undergone any kind of rigorous scrutiny to determine its validity and reliability.

Several land surveyors have remarked that the same questions seemed to appear on the examination year after year. Others have stated that the board has only a limited pool of questions to be used for the examination. Still others have expressed concern about the unfair advantage held by examinees who take the examination several times and begin to recognize questions.

Only one of 16 applicants passed the land surveyor examination given in April 1982, for a passing rate of six percent. The passing rate for the 1981 examination was 50 percent, and the average passing rate for the past five years was 41 percent.

A properly developed and designed examination would not result in such disparate passing rates. When questioned about the dramatically low passing rate for the 1982 examination, an individual familiar with the examination explained that some of the problem solving questions might have been too difficult and that possibly insufficient time was allotted to solving these problems.

The board justifies its use of the local examination by responding that a national examination cannot adequately test an applicant's understanding and knowledge of local surveying techniques, practices, and principles. This justification is invalid.

The NCEE sponsors a two-part uniform national examination for land surveyors. The first part consists of an eight-hour "fundamentals" examination which is equivalent to the board's "qualifying" examination. This part of the examination is used by 38 jurisdictions.

The NCEE, aware of the various regional and state differences in land surveying practices, sponsors only a four-hour "principles and practice" examination for the second

part of its national examination. This four-hour examination, used by 32 jurisdictions, is equivalent to a portion of the board's "professional" examination.

Under current arrangements with the states, the NCEE allows individual states to develop their own supplemental four-hour examinations which are tailored to test applicants on local surveying practices, procedures, etc.¹⁷

Should the board decide to utilize the NCEE national examination for land surveyors, it could supplement the NCEE examination with a four-hour local examination designed specifically to test applicants on their knowledge of our unique Hawaii land surveying practices, conditions, and problems. The advantage of using the national examination for other than Hawaii land matters is that it has been developed and updated through the consensus of a broad representation of academic personnel as well as practitioners, quality and reliability of the examination have been reviewed, minimum passing standards have been arrived at through expert consensus, and clarity of the examination has been enhanced by professional editing.

Miscellaneous board operations. Consideration should be given to modifying existing requirements for board membership. Current requirements stipulate that board members must be residents of Hawaii and have been engaged in professional practice for at least nine years immediately preceding the date of appointment to the board.

While these requirements may ensure that board members are familiar with local conditions and have adequate knowledge and experience in their professions, these standards tend to restrict representation on the board to older, more established professionals, whereas allowing for newer professionals to serve on the board might bring new ideas and a wider range of perspectives.

Act 208, SLH 1978, required public representation on all state regulatory boards and commissions. One of the advantages of such representation is that it helps reduce the threat of board decisions favoring the regulated industry over public interest.

Unfortunately, participation and involvement of public members in board operations have been limited. Their attendance at board meetings has been inconsistent, and they participate only minimally in the activities of the four professional committees.

17. *NCEE Uniform Engineering Examination and Uniform Land Surveying Examinations, Development and Productions, Standard Operation Procedures*, June 30, 1982.

A concerted effort should be made to involve public members in committee work. Consideration should be given to formally assigning these members to specific committees. The engineers and architects, for example, must devote much time to reviewing applications. Public members should be utilized to assist these two committees in their work. There is also a need to develop better orientation and training programs for public members. Such training could help to clarify their role which is not necessarily to deal with technical decisions but with broader policy issues affecting the general public.

Recommendations

We recommend that:

1. *Chapter 464, Hawaii Revised Statutes, be reenacted to allow for the continued regulation of engineers, architects, and land surveyors. In reenacting the chapter, consideration be given to the following changes:*

- . Deleting the requirement that eligibility for registration is contingent upon "good character and reputation."*
- . Allowing for advanced degrees in engineering to be applied towards work experience requirements for engineering applicants.*
- . Reducing or deleting the requirement that professional members of the board must have been in practice for at least nine years prior to their appointment.*

2. *Chapter 464 be amended to discontinue the regulation of landscape architects. If the regulation of landscape architects is continued, consideration be given to the following changes:*

- . Reducing the three-year work experience requirement for landscape architect applicants who meet educational qualifications.*
- . Reducing the 12-year work experience requirement for landscape architect applicants who do not meet educational qualifications.*
- . Allowing for advanced degrees in landscape architecture to be applied towards work experience requirements.*

3. *The board's rules be amended to reduce the requirement that land surveyor applicants have three years of experience in Hawaii.*

4. *The board improve its operations through the following:*

- . *Developing written guidelines to ensure the uniform and fair evaluation of the qualifying experience of applicants.*
- . *Eliminating irrelevant and unnecessary requirements from the applicant forms and the applications process.*
- . *Utilizing a national examination for land surveyors and supplementing it with a local examination on Hawaii land matters.*
- . *Developing appropriate orientation and training to encourage the active participation and involvement of public members in board operations and committee work.*

APPENDIX
RESPONSES OF AFFECTED AGENCIES

COMMENTS ON AGENCY RESPONSES

A preliminary draft of this Sunset Evaluation Report was transmitted on December 8, 1982 to the Board of Registration of Professional Engineers, Architects, Surveyors and Landscape Architects and to the Department of Commerce and Consumer Affairs for their review and comments. A copy of the transmittal letter to the board is included as Attachment 1 of this appendix. A similar letter was sent to the department. The responses from the board and the department are included as Attachments 2 and 3.

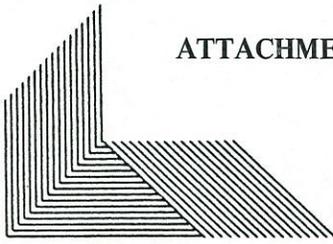
The board is in agreement with our basic recommendations relating to the regulation of engineers, architects, surveyors and landscape architects. The board agreed unanimously to follow our recommendations on reducing the three year Hawaii experience requirement for land surveyors and to utilize a national examination for surveyors supplemented by a local examination. The Board also voted in favor of our recommendation to discontinue the regulation of landscape architects, with two landscape architect members of the board dissenting.

A minority report opposing the deregulation of landscape architects was submitted by the Landscape Architecture Subcommittee of the board. The minority report is included in this appendix as part of Attachment 2. The Subcommittee defends the regulation of landscape architects on the basis of such factors as the comprehensiveness and complexity of their work and its impact on public health and welfare. Our evaluation of the regulation of landscape architects concluded that there is little likelihood that their practice poses any significant harm to the public.

The Department of Commerce and Consumer Affairs agrees with our recommendation that a national examination be used for land surveyors, supplemented by a local examination.

ATTACHMENT 1

THE OFFICE OF THE AUDITOR
STATE OF HAWAII
465 S. KING STREET, RM. 500
HONOLULU, HAWAII 96813
(808) 548-2450



CLINTON T. TANIMURA
AUDITOR
RALPH W. KONDO
DEPUTY AUDITOR

December 8, 1982

COPY

Mr. Tadaka Nakahata, Chairman
Board of Registration of Professional
Engineers, Architects and Surveyors
Department of Commerce and Consumer Affairs
State of Hawaii
Honolulu, Hawaii 96813

Dear Mr. Nakahata:

Enclosed are 15 preliminary copies, numbered 4 through 18, of our *Sunset Evaluation Report, Professional Engineers, Architects, Surveyors and Landscape Architects*. These copies are for review by you, other members of the board, and your executive secretary. This preliminary report has also been transmitted to Dr. Mary G. F. Bitterman, Director, Department of Commerce and Consumer Affairs.

The report contains our recommendations relating to the regulation of engineers, architects, surveyors and landscape architects. If you have any comments on our recommendations, we would appreciate receiving them by January 6, 1983. Any comments we receive will be included as part of the final report which will be submitted to the Legislature.

Since the report is not in final form and changes may possibly be made to it, access to this report should be restricted solely to board members and those officials whom you might wish to call upon to assist you in your response. We request that you exercise controls over access to the report and ensure that the report will not be reproduced. Should you require additional copies, please contact our office. Public release of the report will be made solely by our office and only after the report is published in its final form.

We appreciate the assistance and cooperation extended to us.

Sincerely,

Clinton T. Tanimura
Legislative Auditor

Enclosures

ATTACHMENT 2



GEORGE R. ARIYOSHI
GOVERNOR

MARY G. F. BITTERMAN
DIRECTOR

DICK H. OKAJI
LICENSING ADMINISTRATOR

BOARD OF REGISTRATION OF PROFESSIONAL
ENGINEERS, ARCHITECTS AND SURVEYORS
STATE OF HAWAII
PROFESSIONAL & VOCATIONAL LICENSING DIVISION
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

P. O. BOX 3469
HONOLULU, HAWAII 96801

January 4, 1983

RECEIVED

JAN 5 9 00 AM '83

OFF. OF THE AUDITOR
STATE OF HAWAII

Honorable Clinton T. Tanimura
Legislative Auditor
State of Hawaii
465 South King Street, Room 500
Honolulu, Hawaii 96813

Dear Mr. Tanimura:

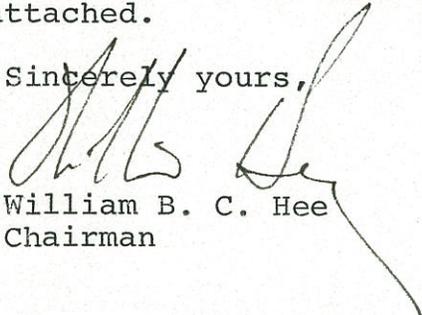
Thank you for the opportunity to comment on your sunset evaluation report on professional engineers, architects, surveyors and landscape architects.

On December 16, 1982, the Board of Registration of Professional Engineers, Architects and Surveyors reviewed the sunset evaluation report and is in agreement with all of the Auditor's recommendations relating to the regulation of engineers, architects, surveyors and landscape architects.

The board unanimously agreed that Chapter 464, Hawaii Revised Statutes, be reenacted to allow for the continued regulation of engineers, architects and surveyors; that the board's rules be amended to reduce the requirement that land surveyor applicants have three years of Hawaii experience; and, that the board improve its operations to include the utilization of a national examination for land surveyors, supplemented by a local examination.

In regards to the Auditor's recommendation that Chapter 464 be amended to discontinue the regulation of landscape architects, the board voted in favor of this recommendation with two landscape architect members dissenting. A minority report opposing deregulation of landscape architects is attached.

Sincerely yours,


William B. C. Hee
Chairman

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51	The testimony was . . .
52	The assumption that . . .
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RECEIVED
PROF. & VOCATIONAL
LICENSED'S DIVISION

JAN 3 3 24 PM '83

DEPARTMENT OF COMMERCE
AND CONSUMER AFFAIRS
STATE OF HAWAII

MINORITY REPORT
TO THE LEGISLATIVE AUDITOR IN OPPOSITION
TO DE-REGULATION OF LANDSCAPE ARCHITECTURE.

DECEMBER 30, 1982

Legislative Auditor's Note: The page references cited in the minority report refer to pages in the preliminary report. The reference to page 2-8 is page 14 of this report; page 3-7 is page 27; page 3-8 is page 28; page 3-9 is page 29; and page 3-10 is page 30.

MINORITY REPORT

TO THE LEGISLATIVE AUDITOR IN OPPOSITION

TO DE-REGULATION OF LANDSCAPE ARCHITECTURE.

DECEMBER 30, 1982

**LETTER/SUMMARY
TO THE LEGISLATIVE AUDITOR**

**LETTER/SUMMARY
TO THE LEGISLATIVE AUDITOR**

LANDSCAPE ARCHITECTURE SUB-COMMITTEE
BOARD OF REGISTRATION FOR ENGINEERS, ARCHITECTS,
LAND SURVEYORS AND LANDSCAPE ARCHITECTS

December 30, 1982

Mr. Clinton T. Tanimura
Legislative Auditor
The Office of the Auditor
State of Hawaii
465 S. King Street, Room 500
Honolulu, Hawaii 96813

Dear Mr. Tanimura:

This minority report has been prepared for attachment to your Legislative Auditor's "Sunset" report on professional registration of engineers, architects, land surveyors and landscape architects for two reasons:

1. Your Auditor's report is inaccurate,
2. In approving your report the Registration Board acted precipitously, without the appropriate attention and the deliberate action warranted by the seriousness of the report's content.

We include the following statements to explain and support the above two comments.

THE LEGISLATIVE AUDITOR'S REPORT

On page 3-7, the Auditor's Report concludes:

"Potential harm from landscape architects. We find that while the practice of landscape architecture may pose some threat of harm to public health, safety, or welfare, the risks and likelihood of harm are not significant enough to warrant state regulation. Additionally, we find that the licensing of landscape architects does not protect the public from harm in any meaningful or necessary manner."

The Auditor's Report then presents ten supporting comments. Our response to these is summarized as follows:

Page 3-8. "Although there may be some relationship between the practice of landscape architecture and public health, safety, or welfare, our evaluation was unable to identify any instances in which any significant harm to the public resulted from the practice. Our review of all complaint cases filed with the board from 1977 to September 1982 indicated that not a single complaint was filed against a landscape architect."

This is like saying that the validity of any law can be accurately measured by the magnitude or number of violations, i.e., how many speeding tickets did the police issue? We can present a number of horror stories that will justify strengthening the law because the consumer's interest has been violated. Such considerations apparently were beyond both the Auditor's and the Board's interest.

Any evaluation which fails to identify any instance where landscape architecture does not affect the public health, safety, and welfare is without foundation. The fact that the Auditor's review did not find a single complaint filed against a landscape architect is a tribute to the quality of the work being performed by local landscape architects, quality which no doubt would suffer if the profession was allowed to become deregulated.

Historically, there is legal precedent which justifies the relationship between the profession of landscape architecture and the public health, safety, and welfare. The 1964 court decision of Patterson vs. State University of New York directly addressed the issue of the regulation of the profession of Landscape Architecture and ruled that "the regulation and practice of Landscape Architecture is clearly related to the public health and welfare, and, as such, constitutes a valid exercise of the police power" (American Jurisprudence, Administrative Law, 58, 2d, para. 1, pp. 881-882).

Page 3-8. "Even the testimony supporting the 1970 legislation did not contain any specific cases in Hawaii of harm to the public resulting from the practice of the profession. The rationale for licensing landscape architects was that since other design professionals (engineers and architects) were licensed, it seemed reasonable that landscape architects should also be regulated."

The Auditor's paragraph is a casual and superficial misinterpretation of the facts. From Legislative Auditor's report page 2-8, "It was noted in legislative testimony that Landscape Architects design, prepare working drawings for, and supervise the installation of millions of dollars worth of public and private construction involving land development, consequently the public should be protected from incompetent landscape architect practitioners."

The testimony was communicating the fact that landscape architects do a great deal of design, and prepare construction plans, for outdoor structures, playground equipment, walkways, steps, ramps, outdoor lighting systems, drainage--all of which now also are designed by registered architects and engineers. If it is in the public interest to require registration for architects and engineers to perform this work, it follows that landscape architects must be licensed.

Page 3-8. "In the vast majority of cases, the direct consumers of both types of landscape architectural services are sophisticated users, such as county, state, or federal agencies, corporations, private developers, institutions, or large land owners. Only infrequently is the direct consumer an individual property owner."

This statement is, at least, misleading and, at most, false. This is like saying that a large corporation doesn't need to engage licensed physicians for its health plan because their sophisticated judgment in providing medical care is adequate to protect the consumer's interest.

The statement that the direct consumers of both types of landscape architectural services are sophisticated users is simply incorrect. County, state and federal agencies hire landscape architects because of their professional abilities and the "assurance" of competency of a licensed landscape architect.

The statement "only infrequently is the direct consumer an individual property owner" is not correct. Many Landscape Architects provide service to "individual property owners", with many basing their whole practice on this clientele. Most (and probably all) of the other consumers have been developers, large landowners and governmental agencies who have come to use landscape architects as professionals and experts in our fields. They recognize our expertise, the same as the general public recognizes the expertise and professionalism of a doctor.

"Current users of landscape architectural services are capable of protecting their own interests by evaluating the professional's competence and monitoring the progress and quality of the work. Since these direct consumers bear primary liability for any unsafe design or construction, it is in their best interests to ensure that the landscape architect selected has the necessary qualifications, experience, and competence."

The assumption that users of landscape architectural services are capable of protecting their own interests is unfounded. The services provided by landscape architects are far too complex for the average consumer to monitor with regard to the quality of work. Landscape architects require rigorous technical training. The knowledge they acquire during their education and subsequent experience is not generally understood by the consumers who utilize their services.

Landscape architects deal in services rather than in goods. Goods can be readily inspected by prospective buyers who generally cannot adequately evaluate a professional service. Moreover, the "quality" of many goods can be scientifically measured, and such stipulations can be provided for in contracts. On the other hand, many professional services cannot be readily standardized by objective measurements, and the public is especially vulnerable to various manifestations of malpractice whose consequences may not become evident until some time well after the service has been rendered.

Page 3-8. "Regulation of landscape architects is relatively meaningless in another respect. A relatively large number of unlicensed persons engage in similar landscape architectural or related services. Physical land planners and city and urban planners engage in the same kind of large-scale land evaluation and analysis without a license."

We continue to be baffled by the author's fuzzy thinking. Architects and engineers also do all of the above, yet no one has presented those activities as a basis for their de-regulation. Because a portion of a professional field includes activities not deemed appropriate for licensing by the lawmakers, it does not follow that the entire field should be "de-regulated."

While some planners deal with physical design, many consider themselves policy planners dealing with statistics, demographics, survey techniques and so forth. Those dealing with physical planning have often come from an Architectural, Engineering or Landscape Architectural educational background or have extensive experience working for professionals in these disciplines.

Page 3-8. "Additionally, there are numerous persons who are not landscape architects who engage in detailed site planning. These include: architects who design structures and approaches for structures; electrical engineers who work on landscape and exterior lighting systems; civil engineers who design walkways, roadways, grading and irrigation systems; and landscape contractors who work on drainage and sprinkler systems, ornamental pools and fountains, rockscaping, plantings and vegetation, walls, fences, and walks."

It is true that no clear mark of demarcation exists between architecture, landscape architecture and civil engineering because their common objective is the design and control of the form of the total environment for the health, safety and welfare of the citizenry.

The landscape architects' prime professional education and abilities are directed toward comprehensive physical land planning, detailed site design and construction documentation of the spaces between buildings. The climatic, environmental and cultural characteristics of the Hawaiian Islands are such that the landscape architects' role in the islands is perhaps more important than in some of the mainland states.

Page 3-9. "Other unlicensed persons who engage in landscape architectural services include arborists, landscape nurserymen, gardeners, landscape designers, and consultants, horticulturists, agriculturists, tree experts, foresters, lawn caretakers, and gardeshop operators. The law does not prohibit these individuals from providing their respective services so long as they do not call themselves landscape architects."

Landscape architects provide comprehensive expertise combining the professional expertise of architects and engineers in providing these services. Since phases of the various professional's responsibilities overlap, no professional has exclusive rights to any landscape related design. The last portion of this item refers to "landscape contractors who construct drainage and sprinkler systems, (etc.)." The Auditor has completely ignored the difference between the design and construction aspects of landscape architectural work. Of course, landscape contractors install and work on the items noted. It is when they attempt to design them that the public gets in trouble.

Page 3-9. "We also find that the public is already protected against potential harm posed by landscape architects through numerous federal, state, and county statutes, regulations, and codes on environmental protection, safety, land use and planning. These regulations safeguard the public against such possible harmful results as, for example, environmental degradation, improper management and use of lands, and improperly designed outdoor structures, equipment, walkways, steps, ramps, etc."

The Legislative Auditor has just told the legislature, indirectly, to discontinue the registration of architects and engineers. It would be hard to find a "health, safety and welfare" activity now carried out by architects and engineers that isn't covered by laws, codes, regulations, or governmental standards, building codes, electrical codes,

official drainage standards, structural standards for earthquakes, and on and on. Because all these are standards set forth by law, do we need licensing for architects and engineers? It is not the standard that is at issue, it is the professional judgment in applying the standard (which often is a minimum standard) that is important.

Page 3-10. "With these existing laws, regulations, and restrictions, it appears that there is little opportunity for licensed or even unlicensed landscape architects to become involved in unsupervised or unapproved projects that could pose any significant threat to public health, safety, or welfare."

If regulations prevent catastrophies, we wonder how the author explains the Kansas City Hyatt hanging walkway disaster. Surely, the Kansas City building code did not permit the failing design. The report elsewhere cites that disaster as illustrating the need for architectural licensing, and here he is saying that regulations (such as the Kansas City Building Code) "provide little opportunity (for)...projects that could pose any significant threat to public health, safety, or welfare."

Page 3-10. "Finally, we note that landscape architects, unlike engineers, architects, and land surveyors, are not regulated in all 50 states. In 14 states, landscape architects are unregulated. Of the 14 states that do not regulate landscape architects, two states, Colorado in 1977 and Utah in 1981, deregulated the profession as the result of sunset evaluations."

The report notes that in 28% of the states, landscape architects are not regulated. Conversely, landscape architects are regulated in 72% of the states. Earlier, the report used the rationale that all other states license architects and engineers, therefore we should license them also. This type of logic (if carried through all of the states) would simply result in a continuation of the licensing of architects and engineers since "everyone does it."

It should also be noted that the landscape architectural profession is relatively young in comparison to architecture and engineering; and these professions did not become regulated in all 50 states at one time. The national trend is toward registration of the profession. Since 1954 when California first registered landscape architects, 35 other states have passed similar legislation.

SUMMARY OF THE LEGISLATIVE AUDITOR'S REPORT

We find nothing in the Auditor's report to warrant his conclusion that landscape architecture should be deregulated in Hawaii. We believe that the above comments prove the need for landscape architectural registration.

THE REGISTRATION BOARD ACTION ON DECEMBER 16, 1982

The Auditor's Report was an agenda item for this meeting. Copies were distributed to Board members dated December 8, 1982. The undersigned actually received his copy on Monday, December 13, leaving only two days before the Thursday morning meeting for review of the report. The other landscape architectural board member was out of town the two days prior to the meeting and therefore unable to even read the report prior to the meeting. It seems incredible that the architects, engineers and land surveyors should all have been of such firm opinions, on such short notice, and without any further consideration, to vote unanimously for the deregulation of landscape architects and the continuing regulation of their own professions. We have not had an adequate explanation.

In the Board's discussion, a sub-committee was proposed to examine the Auditor's report, and report back to the board, this was felt unnecessary by the architects, engineers and surveyors. It was stated that there are ordinances that cover our work, and therefore professional regulation is unnecessary. We have stated that if applied to landscape architects, such an argument also applies to architects and engineers.

A full report prepared by me with the cooperation of a sub-committee of interested landscape architects is appended. We request your favorable reconsideration of the issues presented.

Sincerely yours,



Michael Miyabara, ASLA
Board Member and Chairman,
Landscape Architecture Sub-Committee

MINORITY REPORT

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IN OPPOSITION TO DE-REGULATION OF LANDSCAPE ARCHITECTURE**

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Historically, there is legal precedent which justifies the relationship between the profession of landscape architecture and the public health, safety, and welfare. The 1964 court decision of Patterson vs. State University of New York directly addressed the issue of the regulation of the profession of Landscape Architecture and ruled that "the regulation and practice of Landscape Architecture is clearly related to the public health and welfare, and, as such, constitutes a valid exercise of the police power" (American Jurisprudence, Administrative Law, 58, 2d, para. 1, pp. 881-882). This clear and direct relationship between protection of the public and the practice of Landscape Architecture may be seen in the following examples:

1. Improperly specified relationships between water supplies, such as to artificial ponds, fountains, etc., and water drainage facilities could result in contamination of a water supply system of an entire community.
2. Improper design of outdoor lighting systems and their supply lines could present undue fire and/or shock hazards. Other kinds of hazards result from inadequate visibility and excessive glare.
3. Inadequate design of outdoor structures such as those used in parks and other recreational facilities could result in injury should those structures fail.
4. Specification of unsafe playground equipment could result in injury and consequent liabilities. Incorrect specification of surfaces could cause injury.
5. Improperly designed walkways, steps, ramps, etc., can expose users to undue hazards.

6. Inadequate provision for storm drainage can result in flooding of foundations, basements, walkways, highway rights-of-way, recreation areas, and other kinds of facilities used by the public. This could present particularly serious hazards under freezing conditions. Improper plant placement can cause snow buildup as well as adversely affect water run-off during melting periods. Freeze-thaw cycles, and how they cause falling snow and falling ice, also become important design considerations. (Obviously we don't have this problem in Hawaii.)
7. Improper specification and supervision for grading and filling can result in soil slippage and washing, even massive erosion.
8. Inadequate observation and supervision during construction can result in structural failure of the foundation.

The landscape architect's involvement with the public health, safety, and welfare can be seen in these few examples:

Health

1. Arrangement of structures and open spaces, together with the proper sloping and modeling of the earth surfaces, for adequate and healthful drainage, light, air, and space in general.
2. Arrangement of planting and land forms can provide measurable insulation from - and control of - noise, heat, dust, winds, and unpleasant views.
3. Trees and other plants absorb carbon dioxide and pollutants, and at the same time give off oxygen, tend to filter and purify the air around them - an extremely desirable factor in smoggy areas.
4. Properly designed and oriented parks and playgrounds provide respite and sanctuary from the tensions and frustrations of modern urban existence.

Safety

1. Design and arrangement of use areas for both pedestrian and vehicular traffic; safety in the design areas for shifting pedestrian to motor traffic, or combinations and conflicts of both. Safety in playground design involving equipping, surfacing, and circulation; the design of such areas involves elements such as steps, ramps, walks, pools, fences, play areas and equipment, parking service areas, points of vehicular and pedestrian access, and relation of land to water areas. These are all points of latent accident and injury which must be knowledgeably planned.
2. Avoiding trees which, though fast-growing, have weak and brittle wood and which drop limbs.
3. Selecting nonpoisonous plants in heavily used areas.

Public Welfare

1. Design for conservation of tree and vegetative cover, soil stabilization, proper drainage, and erosion control.
2. Adequate planning of the rapidly diminishing inventory of open land still available in metropolitan areas becomes of increasing importance and urgency to meet human needs for utility and beauty to create a more relaxing, refreshing, and regarding environment.
3. Protection of the public against fraudulent or incompetent operations.
4. Public well-being includes elements of individual self-renewal, possibly to include certain psychological aspects of how the design of certain outdoor spaces contributes to the following considerations:
 - a. Shaping human behavior.
 - b. The sense of a "defensible space."
 - c. The sense of a given space functioning as a "people place."
 - d. The role of aesthetics.

The Legislative Auditor has divided the practice into two general categories and briefly (albeit superficially) described the activities of each general category. The report attempts to minimize the potential dangers yet lists (in the last paragraph on 3-7) a series of substantial dangers created through the improper practice of the profession of landscape architecture. "Potential dangers posed by this type of landscape architecture include contamination of water supplies; injuries resulting from improperly designed outdoor structures, playground equipment, walkways, steps, ramps, etc.; fire and/or shock hazards resulting from improperly designed outdoor lighting systems; and flooding resulting from improperly designed storm drains." In many cases, the dangers listed are much more significant than an architect's failure in the design of a building.

The fact that no complaints have been filed with the Board of Registration in the five years prior to the report indicates only that the state has been adequate in registering landscape architects and the landscape architects have fulfilled their legal responsibilities. There have, however, been numerous lawsuits and claims against the registered landscape architects of Hawaii, and throughout the nation, as there are in all other types of professions. These claims, resolved both in and out of court, are the major exposure of all licensed professionals. Malpractice suits against doctors are tried in courts, not before the Medical Registration Board.

Page 3-8. "Even the testimony supporting the 1970 legislation did not contain any specific cases in Hawaii of harm to the public resulting from the practice of the profession. The rationale for licensing landscape architects was that since other design professionals (engineers and architects) were licensed, it seemed reasonable that landscape architects should also be regulated."

The Auditor's paragraph is a casual and superficial misinterpretation of the facts. From Legislative Auditor's report page 2-8, "It was noted in legislative testimony that Landscape Architects design, prepare working drawings for, and supervise the installation of millions of dollars worth of public and private construction involving land development, consequently the public should be protected from incompetent landscape architect practitioners."

The testimony was communicating the fact that landscape architects do a great deal of design, and prepare construction plans, for outdoor structures, playground equipment, walkways, steps, ramps, outdoor lighting systems, drainage--all of which

now also are designed by registered architects and engineers. If it is in the public interest to require registration for architects and engineers to perform this work, it follows that landscape architects must be registered.

If landscape architecture is properly practiced, there should be no harm to the public. It is from the improper practice - and the failure of the licensing and codes - that the public is exposed to and suffers harm. From our experience, we have been involved in several projects where landscape contractors, gardeners and nurserymen practicing "landscape design" have wasted client's money and designed improper, unsafe landscape developments.

Page 3-8. "In the vast majority of cases, the direct consumers of both types of landscape architectural services are sophisticated users, such as county, state, or federal agencies, corporations, private developers, institutions, or large land owners. Only infrequently is the direct consumer an individual property owner."

This statement is, at least, misleading and, at most, false. This is like saying that a large corporation doesn't need to engage licensed physicians for its health plan because their sophisticated judgment in providing medical care is adequate to protect the consumer's interest.

The landscape architects service as a land planner deciding appropriate and safe locations and interrelationships of where uses such as residential, commercial or industrial will be sited, designer of subdivisions, layout of roadways, bicycle and pedestrian systems, in communities such as Mililani Town on Oahu, Wailea and Kahului on Maui, Princeville on Kauai, Hilo redevelopment after the 1960 Tsunami on Hawaii has had a direct effect upon health, safety and welfare of the general public, the homebuyers and consumers and importantly in Hawaii a direct effect upon the majority of the four million tourists who visit our islands each year.

Unsophisticated consumers, generally unaware of the difference between landscape architects and landscape designers, have wasted many thousands of dollars because of this misleading practice.

The statement that the direct consumers of both types of landscape architectural services are sophisticated users is simply incorrect. County, state and federal agencies hire landscape architects because of their professional abilities and the "assurance" of competency of a licensed landscape architect.

The statement "only infrequently is the direct consumer an individual property owner" is not correct. Many landscape architects provide service to "individual property owners", with many basing their whole practice on this clientele. Most of the other consumers have been developers, large landowners and governmental agencies who have come to use landscape architects as professionals and experts in our fields. They recognize our expertise, the same as the general public recognizes the expertise and professionalism of a doctor.

"Current users of landscape architectural services are capable of protecting their own interests by evaluating the professional's competence and monitoring the progress and quality of the work. Since these direct consumers bear primary liability for any unsafe design or construction, it is in their best interests to ensure that the landscape architect selected has the necessary qualifications, experience, and competence."

The assumption that users of landscape architectural services are capable of protecting their own interests is unfounded. The services provided by landscape architects are far too complex for the average consumer to monitor with regard to the quality of work. Landscape architects require rigorous technical training. The knowledge they acquire during their education and subsequent experience is not generally understood by the consumers who utilize their services.

Landscape architects deal in services rather than in goods. Goods can be readily inspected by prospective buyers who generally cannot adequately evaluate a professional service. Moreover, the "quality" of many goods can be scientifically measured, and such stipulations can be provided for in contracts. On the other hand, many professional services cannot be readily standardized by objective measurements, and the public is especially vulnerable to various manifestations of malpractice whose consequences may not become evident until some time well after the service has been rendered.

The design of a given area of land requires systematic analysis and the proper application of numerous and complex factors to arrive at a functional, safe, and humanly enjoyable land development. The minimum number of years of educational training which an individual must go through to receive a degree in Landscape Architecture is four years, during which he or she learns the principles of land development, proper land use relationships, proper grading and modeling of the earth surfaces for adequate and safe drainage, light, air, and space in general; the

arrangements of planting and land forms to provide measurable insulation from, and control of, noise, heat, dust, wind, and unpleasant views; the proper and safe design and arrangement of use areas for both pedestrian and vehicular traffic; design for conservation of trees and vegetative cover, etc., all of which enable the landscape architect to provide protective services to the public's health, safety, and welfare and that, without formal training and experience, could not be achieved.

It is generally accepted that in professions whose work involves a large component of research information, analysis, and professional judgment, as is certainly the case in the work of landscape architects, that the wide ranges of approaches to, and often variable use of, research, analysis, and professional judgment in Landscape Architecture leaves many possibilities for uneven quality in the delivery of professional services - deficiencies which the average consumer cannot be expected to detect. It follows that licensing can provide some protections against such contingencies by taking steps to assure competence, to weed out incompetence, and to take disciplinary action when cases of proven abuse require it.

Landscape Architects in Hawaii have been significantly involved in the design and construction documentation of many of our urban spaces and public malls. They are responsible for some of our most highly used areas directly affecting thousands of residents who live and work in our urban areas. The major public spaces between the buildings in downtown Honolulu have been designed by landscape architects (for example, Grosvenor Center plaza, the Amfac Center plaza and roof garden, the Davies Pacific Center plaza, the Kukui Garden and Queen Emma open spaces and recreational roof gardens, the River Street Mall).

In Waikiki many of the most used pedestrian areas along Kalakaua Avenue have been designed by landscape architects, for example, the walks, structures and design of the area fronting Kuhio Beach and the pedestrian area and open spaces of the Royal Hawaiian Shopping Center. These areas have safely contributed to the welfare of thousands of visitors (consumers) to Hawaii each year.

The contracting government agency or private corporation may be an enlightened client, however, the ultimate user very often is an individual property owner, the Hawaii resident public or one of the many visitors to Hawaii. They are the ultimate consumers of our services.

Many of the sophisticated users listed in the legislative auditors report employ or have employed registered landscape architects on their staffs.

Federal Government (locally)

Federal Housing Administration (HUD) - Frank Johnson

State of Hawaii

State Parks Department - Joe Sousa (Former Head), Gene Renard

County of Honolulu

Department of General Planning

Former Directors - Robert Way, Rom Duran

Department of Land Utilization - Robert Jones

Department of Parks and Recreation - Michael Creagh, James Nakasone

Former Directors - Ted Green, Rom Duran

Department of Transportation Services - Former Director - Robert Way

County of Maui

Deputy Planning Director - Christopher Hart

Hawaiian Electric - Ted Damron

Campbell Estate - Willard Stluka

Wailea Development Co. - Bob Everingham

First Hawaiian Bank - Don Daley

Honolulu Botanic Garden

Director - Paul Weissich

The statement that "current users of landscape architectural services are capable of protecting their own interests" has no basis in reality. As mentioned earlier, we have assisted victimized owners in attempting to recover from the unsatisfactory performance of unlicensed operators. We have watched unsophisticated consumers compare our services with those of an unlicensed landscape contractor and make a decision simply on the cost of the final product. The results in these cases have been traumatic and disappointing to all concerned. The report also states that "direct consumers bear primary liability for any unsafe design or construction" is also (absolutely) incorrect. How can a consumer who does not know the difference between a remote control valve and an atmospheric vacuum breaker evaluate a landscape architect's irrigation design and determine if the appropriate cross-connection controls have been utilized in the system's design. The failure of a sprinkler system (to continue the same example) would not bear upon the owner. He would immediately

turn to the landscape architect/designer to recover damages and for the appropriate relief. The report states "it is in their (the consumers) best interest to insure that the landscape architect selected actually has the necessary qualifications, experience and competence." Other than registration, which gives some assurance of minimum competence and education, how else can a consumer even begin to have these assurances?

Page 3-8. "Regulation of landscape architects is relatively meaningless in another respect. A relatively large number of unlicensed persons engage in similar landscape architectural or related services. Physical land planners and city and urban planners engage in the same kind of large-scale land evaluation and analysis without a license."

We continue to be baffled by the author's fuzzy thinking. Architects and engineers also do all of the above, yet no one has presented those activities as a basis for their de-registration. Because a portion of a professional field includes activities not deemed appropriate for licensing by the lawmakers, it does not follow that the entire field should be "de-registered."

While some planners deal with physical design, many consider themselves policy planners dealing with statistics, demographics, survey techniques and so forth. Those dealing with physical planning have often come from an Architectural, Engineering or Landscape Architectural educational background or have extensive experience working for professionals in these disciplines.

Page 3-8. "Additionally, there are numerous persons who are not landscape architects who engage in detailed site planning. These include: architects who design structures and approaches for structures; electrical engineers who work on landscape and exterior lighting systems; civil engineers who design walkways, roadways, grading and irrigation systems; and landscape contractors who work on drainage and sprinkler systems, ornamental pools and fountains, rockscaping, plantings and vegetation, walls, fences, and walks."

The overlapping of the professions of architecture, landscape architecture, and engineering has been a fact since the inception of the professions, and the public interest and public welfare is serviced only by what each profession does best. Few engineers are competent to prepare grading plans for a golf course; few architects do their own structural design; few landscape architects are competent to design major

exterior lighting system; yet in each case some may have the competence. In each case the judgment of the professional concerned is at stake. It is not a question of who should, and who should not, be registered.

The landscape architects' prime professional education and abilities are directed toward comprehensive physical land planning, detailed site design and construction documentation of the spaces between buildings. The climatic, environmental and cultural characteristics of the Hawaiian Islands are such that the landscape architects' role in the islands is perhaps more important than in some of the mainland states.

It is true that no clear mark of demarcation exists between architecture, landscape architecture and civil engineering because their common objective is the design and control of the form of the total environment for the health, safety and welfare of the citizenry.

While the landscape architect is primarily concerned with the spaces between buildings and not the actual structures, he is the only profession trained to comprehensively design these spaces and the appurtenant objects and equipment sited within these areas.

Landscape Architects' designs affect health and safety:

1. The provide functional solutions to:
 - a. Circulation and movement patterns. Design, layout, geometrics of roadways, parking lots, service areas for fire access, service delivery and trash collection.
 - b. Relationship and segregation of pedestrian corridors, walkways, plazas and malls including coordination of lighting, irrigation and drainage.
2. Creative solutions to grading and erosion control problems. We have seen numerous disastrous engineering and contractor "solutions" to these situations. The landscape architect is trained to design roads and site buildings to be in harmony with the natural topography minimizing the need for

severe grading cuts and fills and exposure of steep slopes. Remember Pao's cut in Manoa? Consider some of the highway cuts along the H-1 and H-2 where severe erosion to bared slopes continues to result in loss of soil and contamination of our offshore waters during heavy rainfall. These were not designed by landscape architects.

3. Proper physical land planning. Landscape architects have pioneered the comprehensive analysis of our natural systems primarily to provide the necessary data base to properly physically prepare land plans for the health, safety and welfare of the public and the environment. The landscape architects' analysis of the existing physical constraints of topography, soil, slope, drainage characteristics and climate has proven to result in superior land plans where applied in Hawaii and elsewhere.

The physical selection study of appropriate outer island tourist destination areas was prepared by landscape architectural firms. The primary physical planning for Ewa, targeted as Honolulu's secondary urban center was prepared by a local landscape architectural firm.

Site planning involves the systematic analysis, evaluation, synthesis and design of the functional, utilitarian, circulation and siting of objects (buildings, structures) and equipment (utility systems, roadways, street furniture, etc.) in space. Properly designed, these systems function safely and provide for the health and welfare of the user or consumer. While true that individual parts are and can be designed by architects, civil, electrical and structural engineers and constructed by landscape contractors, it is the landscape architect who is qualified to design all these elements and to coordinate the comprehensive design of the total system.

Improperly sited buildings can be subject to flooding, settlement, wind and solar exposure. Improperly designed street furniture, shade structures, benches, roads, walks can cause physical harm and be detrimental to public welfare. Improperly graded sites and poor drainage can cause erosion and contamination of water resources. Improperly designed irrigation systems can cause pollution and contamination of domestic water systems with pesticides, herbicides and potentially harmful fertilizers.

Just as you would employ an architect to coordinate the design of a building where one would use a structural, electrical, mechanical, civil engineer and a surveyor, so too, the landscape architect has the prime responsibility to coordinate the comprehensive design of the exterior spaces. The building contractor builds the structure but generally does not know the first thing about how to design the system.

In urban areas these systems can be as elaborate as the building structures. If poorly designed, they can be detrimental to human health, safety and welfare.

The argument that landscape architects should not be registered because others (physical land planners and city and urban planners) engage in the same kind of large-scale land evaluation would also apply for the architects and engineers providing these same services. We should stress that the training and background landscape architects specializing in this field have is the only assurance the consumer and the public will be protected from improper land use and land development.

Page 3-9. "Other unlicensed persons who engage in landscape architectural services include arborists, landscape nurserymen, gardeners, landscape designers, and consultants, horticulturists, agriculturists, tree experts, foresters, lawn caretakers, and garden shop operators. The law does not prohibit these individuals from providing their respective services so long as they do not call themselves landscape architects."

The law does not prohibit material houses from providing free house plans prepared by unlicensed draftsmen to purchasers of building materials, does not prohibit draftsmen from calling themselves "architectural designers," and actually authorizes a man to both design and build his own house, and thereby expose himself, family and guests to any faulty or inadequate construction it contains. The fact that unlicensed persons may be doing certain things does not mean that they are practicing architecture as professionally defined, or landscape architecture. The argument displays a lack of understanding by the Legislative Auditor and is therefore irrelevant.

Landscape architects provide comprehensive expertise combining the professional expertise of architects and engineers in providing these services. Since phases of the various professional's responsibilities overlap, no professional has exclusive rights to any landscape related design. The last portion of this item refers to "landscape contractors who construct drainage and sprinkler systems, (etc.)." The Auditor has completely ignored the difference between the design and construction

aspects of landscape architectural work. Of course, landscape contractors install and work on the items noted. It is when they attempt to design them that the public gets in trouble.

Page 3-9. "We also find that the public is already protected against potential harm posed by landscape architects through numerous federal, state, and county statutes, regulations, and codes on environmental protection, safety, land use and planning. These regulations safeguard the public against such possible harmful results as, for example, environmental degradation, improper management and use of lands, and improperly designed outdoor structures, equipment, walkways, steps, ramps, etc."

The Legislative Auditor has just told the legislature, indirectly, to discontinue the registration of architects and engineers. It would be hard to find a "health, safety and welfare" activity now carried out by architects and engineers that isn't covered by laws, codes, regulations or governmental standards, building codes, electrical codes, official drainage standards, structural standards for earthquakes, and on and on. Because all these are standards set forth by law, do we need licensing for architects and engineers? It is not the standard that is at issue, it is the professional judgment in applying the standard (which often is a minimum standard) that is important.

We are baffled by the fact that the architect and engineer members of the Board, on December 16, gave this as a reason for discontinuing landscape architectural registration. In fact, they were arguing for their own "de-regulation," obviously without recognizing it.

It is true that numerous Federal, State and County codes, ordinances and regulations exist to protect human health, safety and welfare. The properly educated and trained profession is responsible for knowing and understanding these ordinances and being able to properly apply them in the appropriate manner for each unique design situation. Most of the codes and ordinances establish minimum criteria and standards. The proper evaluation and application of these codes becomes the professional responsibility.

The architectural and engineering disciplines including land surveyors also have building codes, public works standards, water, drainage, sewer ordinances, land use law, State Land Court, Bureau of Conveyances, electrical codes, plumbing codes, special structural and seismic codes, and so forth to protect the public.

It takes the professional expertise (education and experience) for the architect to know how to use the Uniform Building Code. In no way does the UBC tell the architect how to design a building. It provides minimum guidelines on particular building systems to protect human safety, health and welfare.

If the public is adequately protected because of the existence of codes, ordinances and regulations and the legislature auditors' reasoning is correct, then the public is already protected against the potential harm posed by architects, engineers, land surveyors and landscape architects.

We believe that it requires the professional expertise (through education and experience) of the above noted professionals to have full knowledge of the codes, ordinances and regulations and their applicability to each unique design situation. None of these codes, ordinances or regulations indicate how to analyze or evaluate a potential development site of a thousand acres or one acre. Nor do any tell how to: design a residential community; an industrial park; an urban mall; a regional park; a road system; a drainage system; grade 50 acres or even an 8000 sq.ft. residential lot; or design a major irrigation system or a simple irrigation system.

A Chapter 343 EIS is simply a disclosure document and is required for a limited number of projects.

The landscape architect needs to be registered because, like the architect, engineer and land surveyor, he deals with physical systems, physical plans and designs which have potential for bodily harm and physical safety. In the case of poorly designed drainage, irrigation and grading systems, pollution of groundwater, domestic water and offshore waters leading to potential human health problems. In the case of poorly physical siting land uses potential harm to human welfare.

Page 3-10. "With these existing laws, regulations, and restrictions, it appears that there is little opportunity for licensed or even unlicensed landscape architects to become involved in unsupervised or unapproved projects that could pose any significant threat to public health, safety, or welfare."

If regulations prevent catastrophies, we wonder how the author explains the Kansas City Hyatt hanging walkway disaster. Surely, the Kansas City building code did not permit the failing design. The report elsewhere cites that disaster as

illustrating the need for architectural registration, and here he is saying that regulations (such as the Kansas City Building Code) "provide little opportunity (for)...projects that could pose any significant threat to public health, safety, or welfare."

Page 3-10. "Finally, we note that landscape architects, unlike engineers, architects, and land surveyors, are not regulated in all 50 states. In 14 states, landscape architects are unregulated. Of the 14 states that do not regulate landscape architects, two states, Colorado in 1977 and Utah in 1981, deregulated the profession as the result of sunset evaluations."

The report notes that in 28% of the states, landscape architects are not regulated. Conversely, landscape architects are regulated in 72% of the states. Earlier, the report used the rationale that all other states license architects and engineers, therefore we should license them also. This type of logic (if carried through all of the states) would simply result in a continuation of the licensing of architects and engineers since "everyone does it."

Attorneys, by the nature of their profession, are advocates and as advocates, submit only evidence supporting their case. Our feeling is that this is more of an advocacy report supporting its recommendations, than a judicial evaluation. Unstated facts, added here include:

1. Engineering as a profession is thousands of years old. The first professional registration for engineers took place in 1921 and by 1950 80% of the states adopted registration.
2. The first architectural registration was in 1897, and by 1939 80% of the states had adopted registration.
3. Landscape architecture as a profession, according to the Auditor's report, was founded by Olmsted in 1858. The first state to require licensing was California in 1954.

As the above notes state, it took the engineering profession 29 years to achieve regulation in 80% of the states, and architecture 42 years. In 28 years, 36 states have recognized the public need for landscape architecture registration. Furthermore,

Oregon deregulated landscape architecture under Sunset review during the 70's and, recognizing its mistake, restored it two years later. It always is better to have the full picture when considering controversial issues.

SUMMARY OF THE LEGISLATIVE AUDITOR'S REPORT

We find nothing in the Auditor's report to warrant his conclusion that landscape architecture should be deregulated in Hawaii. We believe that the above comments prove the need for landscape architectural registration.

THE REGISTRATION BOARD ACTION ON DECEMBER 16, 1982

The Auditor's Report was an agenda item for this meeting. Copies were distributed to Board members dated December 8, 1982. The undersigned actually received his copy on Monday, December 13, leaving only two days before the Thursday morning meeting for review of the report. The other landscape architectural board member was out of town the two days prior to the meeting and therefore unable to even read the report prior to the meeting. It seems incredible that the architects, engineers and land surveyors should all have been of such firm opinions, on such short notice, and without any further consideration, to vote unanimously for the deregulation of landscape architects and the continuing regulation of their own professions. We have not had an adequate explanation.

In the Board's discussion, a sub-committee was proposed to examine the Auditor's report, and report back to the board, this was felt unnecessary by the architects, engineers and surveyors. It was stated that there are ordinances that cover our work, and therefore professional regulation is unnecessary. We have stated that if applied to landscape architects, such an argument also applies to architects and engineers.

OTHER PERTINENT INFORMATION

- State/City and County Civil Service Requirements require landscape architectural registration for promotion to higher positions in respective departments.

- Council of Landscape Architectural Registration Boards (CLARB) requires registration locally to get CLARB certification. CLARB certification facilitates reciprocity with other states and the export of local landscape architects services.
- Absence of local registration would restrain local Landscape Architects from doing business intra State and overseas. Hawaiian landscape architects have had excellent success exporting their services to the Pacific Rim countries (i.e. Tahiti, Fiji, Southeast Asia, Australia, etc.).
- Project manager in State of Hawaii Department of Transportation requires appropriate registration. De-registration of landscape architects would preclude them from job opportunities for which they may otherwise be qualified by education and experience.

By: Landscape Architecture Sub-Committee
Board of Registration for Engineers, Architects,
Land Surveyors and Landscape Architects.

ATTACHMENT 3

GEORGE R. ARIYOSHI
GOVERNOR



MARY G. F. BITTERMAN
DIRECTOR
Commissioner of Securities

STATE OF HAWAII
OFFICE OF THE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
1010 RICHARDS STREET
P. O. BOX 541
HONOLULU, HAWAII 96809

DONALD D.H. CHING
DEPUTY DIRECTOR

December 21, 1982

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OFF. OF THE AUDITOR
STATE OF HAWAII

Honorable Clinton T. Tanimura
Legislative Auditor
State of Hawaii
465 South King Street, Room 500
Honolulu, Hawaii 96813

Dear Mr. Tanimura:

Thank you for the opportunity to comment on your sunset evaluation report on professional engineers, architects, surveyors and landscape architects.

The Department of Commerce and Consumer Affairs is in agreement with the Auditor's recommendation that the Board of Registration of Professional Engineers, Architects and Surveyors utilize a national examination for land surveyors, supplemented by a local examination.

By imposing the requirement of a combined national and local examination in addition to the requirement of three years of local experience in surveying, the Board can ensure that licensees will have sufficient knowledge of surveying practices in Hawaii to warrant public confidence.

Sincerely yours,

Donald D. H. Ching
Acting Director